SULLIVAN, MO LANDFILL CLOSURE

FINAL CONSTRUCTION REPORT

VOLUME III
APPENDIX C, D, AND E

Prepared for:

SULLIVAN LANDFILL PRP GROUP

Prepared by:

ABB Environmental Services, Inc.
Portland, ME

Project No. 8960-02

RECEIVED
JUL 13 1995
HAZARDOUS WASTE PROGRAM
MISSOURI DEPARTMENT OF
NATURAL RESOURCES

July 1995

30057213
Superfund

ABB Environmental Services, Inc.

ABB
ASEA BROWN BOVERI

RECEIVED
JUL 13 1995
HAZARDOUS WASTE PROGRAM
MISSOURI DEPARTMENT OF
NATURAL RESOURCES

ABB-ES TESTING RESULTS OF GAS VENT SOIL

ABB-ES
GEOSCIENCES LABORATORY

SULLIVAN LANDFILL GASVENT SOIL RESULTS

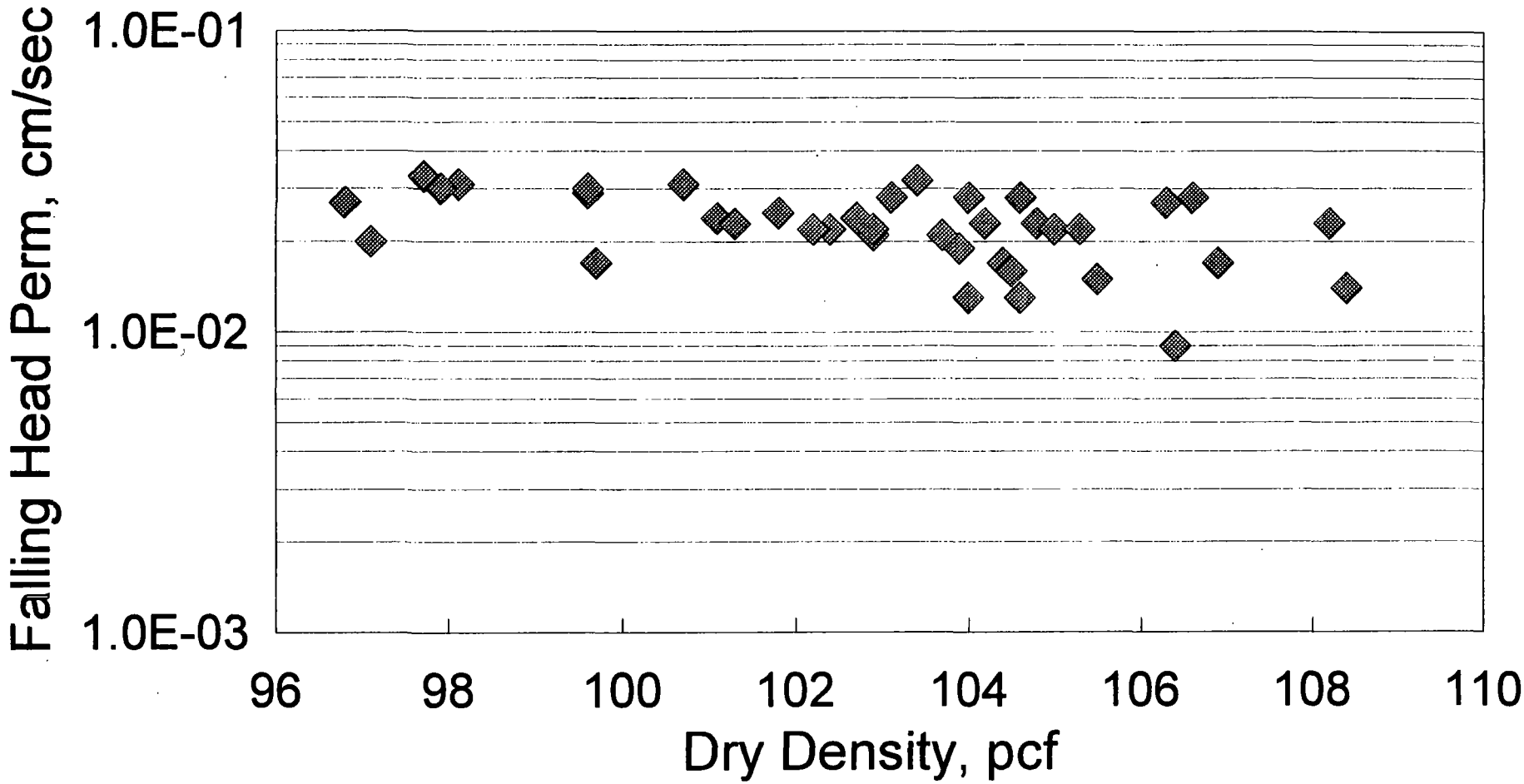
GAS VENT #	K-VALUE
1	2.8E-02
2	3.2E-02
3	2.9E-02
4	3.3E-02
5	3.0E-02
6	3.1E-02
7	3.1E-02
8	2.3E-02
9	2.4E-02
10	2.8E-02
11	2.3E-02
12	2.3E-02
13	2.7E-02
14	2.8E-02
15	2.3E-02
16	3.0E-02
17	2.8E-02
18	2.5E-02
19	2.2E-02
20	1.7E-02
21	2.7E-02
22	1.7E-02
23	2.1E-02
24	1.9E-02
25	1.7E-02
26	1.6E-02
27	2.1E-02
28	1.3E-02
29	1.5E-02
30	2.0E-02
31	2.2E-02
32	1.3E-02
33	2.4E-02
34	2.2E-02
35	2.2E-02
36	1.2E-02
37	2.3E-02
38	9.0E-03
39	1.5E-02
40	2.3E-02
41	2.3E-02
42	1.1E-02
43	2.6E-02
44	1.4E-02
45	2.5E-02

46	3.4E-02
47	2.1E-02
48	3.6E-02
49	3.0E-02
50	3.2E-02
51	2.3E-02
52	2.6E-02
53	2.3E-02
54	2.3E-02
55	1.9E-02
56	3.0E-02
57	3.0E-02
58	1.8E-02
59	2.8E-02
60	2.7E-02
61	4.0E-02
62	3.4E-02
63	3.4E-02
64	2.5E-02
65	3.0E-02
66	3.0E-02
67	4.0E-02
68	3.0E-02
69	2.2E-02
70	3.2E-02
71	2.2E-02
72	3.0E-02
73	3.2E-02
74	3.5E-02
75	3.0E-02
76	2.0E-02
77	2.4E-02
78	3.5E-02
79	2.1E-02
80	3.0E-02
81	2.5E-02
82	2.5E-02
83	2.5E-02
84	3.0E-02
85	3.5E-02
86	2.2E-02
87	2.6E-02
88	2.0E-02
89	3.0E-02
90	8.0E-03
91	2.5E-02
92	3.0E-02
93	3.5E-02
94	2.8E-02
95	3.5E-02
96	3.0E-02

97	2.7E-02
98	3.3E-02
99	3.4E-02
100	2.7E-02
101	4.0E-02
102	3.0E-02
103	3.5E-02
104	3.0E-02
105	3.2E-02
106	3.0E-02
107	3.5E-02
108	3.0E-02
109	3.2E-02
110	4.8E-02
111	3.3E-02
112	3.2E-02
113	3.3E-02
114	3.3E-02
115	3.2E-02
116	3.3E-02
117	3.3E-02
118	3.0E-02
119	2.7E-02
120	3.2E-02

SULLIVAN LANDFILL

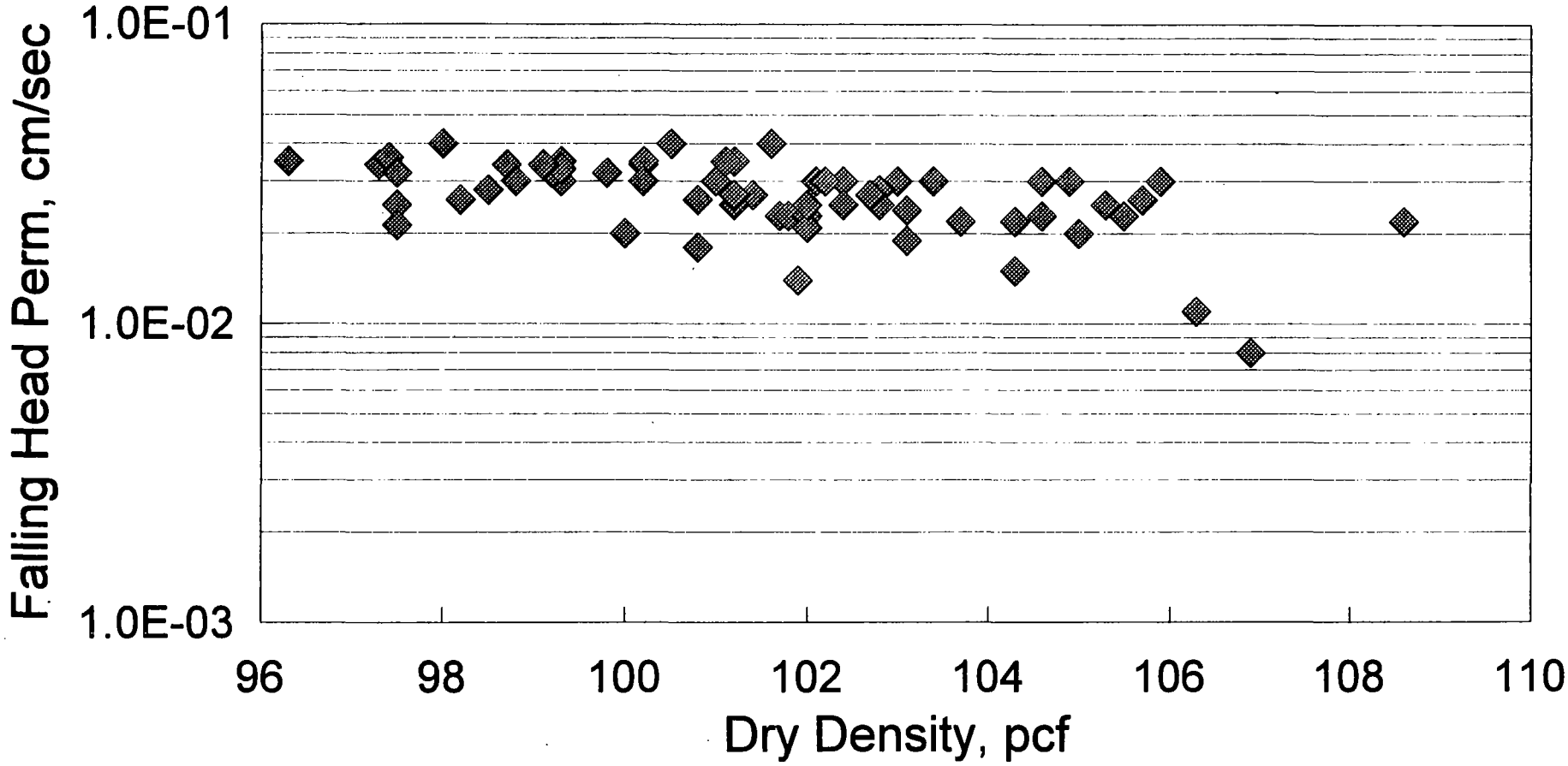
GAS VENT SOIL 1



FOR SAMPLES 1 THROUGH 38, INPLACE DRY DENSITY WAS 105

SULLIVAN LANDFILL

GAS VENT SOIL 2



FOR SAMPLES 39 THROUGH 109, INPLACE DRY DENSITY WAS 102 pcf

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/20/94

Project Number: 8940–83 Tested By: RS/BS Checked By: ST

SAMPLE NUMBER: GV–001

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #			90
Tare Weight, (g)			37.3
Tare + Wet Soil, (g)			182
Tare + Dry Soil, (g)			173.7
Sample for WATER CONTENT, %			6.09%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3903	grams
Dry Soil + Sieve after	1196	grams
Percent greater than	0.75	19.17%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2800			
Distance from top of mold to top of stone, (in)	0.97	0.94	0.98	0.96
Height of Sample, (in)	5.157			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	32.82	2.73E–02	20	33.84	2.65E–02			
30	50.64	2.89E–02	30	52.22	2.80E–02			
40	69.74	3.00E–02	40	72.12	2.88E–02			
50	90.59	3.10E–02	50	93.89	2.97E–02			

SAMPLE PERMEABILITY 2.8E–02 cm/sec

SAMPLE DRY DENSITY 104.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/20/94

Project Number: 8940-83 Tested By: RS/BS Checked By: BZ

SAMPLE NUMBER: GV-002

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	90		26
Tare Weight, (g)	38		52
Tare + Wet Soil, (g)	253		216.5
Tare + Dry Soil, (g)	238		207.1
Sample for WATER CONTENT, %	7.50%		6.06%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3993	grams
Dry Soil + Sieve after	955	grams
Percent greater than	0.75	11.66%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2800			
Distance from top of mold to top of stone, (in)	0.95	0.899	0.94	0.93
Height of Sample, (in)	5.190			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	30.19	2.99E-02	20	30.15	2.99E-02			
30	46.21	3.24E-02	30	46.75	3.13E-02			
40	64.06	3.24E-02	40	64.88	3.19E-02			
50	82.96	3.45E-02	50	84.15	3.38E-02			

SAMPLE PERMEABILITY 3.2E-02 cm/sec

SAMPLE DRY DENSITY 103.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/20/94

Project Number: 8940–83 Tested By: RS/BS Checked By: BJ

SAMPLE NUMBER: GV–003

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		19
Tare Weight, (g)	218		41.9
Tare + Wet Soil, (g)	5253		211.7
Tare + Dry Soil, (g)	4940		201.7
Sample for WATER CONTENT, %	6.63%		6.26%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	4225	grams
Dry Soil + Sieve after	1092	grams
Percent greater than	0.75	14.66%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1765			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2820			
Distance from top of mold to top of stone, (in)	0.789	0.734	0.716	0.75
Height of Sample, (in)	5.374			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	33.64	2.78E–02	20	34.02	2.74E–02			
30	51.63	2.99E–02	30	52.84	2.85E–02			
40	71.55	3.00E–02	40	73.06	2.96E–02			
50	92.85	3.17E–02	50	95.11	3.06E–02			

SAMPLE PERMEABILITY 2.9E–02 cm/sec

SAMPLE DRY DENSITY 99.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/20/94

Project Number: 8940-83 Tested By: RS/BS Checked By: RBS

SAMPLE NUMBER: GV-004

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234-A		78
Tare Weight, (g)	235		37.6
Tare + Wet Soil, (g)	7834		192.3
Tare + Dry Soil, (g)	7266		182.2
Sample for WATER CONTENT, %	8.08%		6.98%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	3877	grams
Dry Soil + Sieve after	1301	grams
Percent greater than	0.75	14.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1741			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2790			
Distance from top of mold to top of stone, (in)	0.73	0.664	0.724	0.71
Height of Sample, (in)	5.414			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	28.52	3.30E-02	20	29.56	3.18E-02			
30	43.85	3.53E-02	30	45.39	3.42E-02			
40	60.27	3.67E-02	40	62.41	3.54E-02			
50	78.29	3.77E-02	50	81.13	3.63E-02			

SAMPLE PERMEABILIT 3.3E-02 cm/sec

SAMPLE DRY DENSITY 97.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/20/94

Project Number: 8940-83 Tested By: RS/BS Checked By: BS

SAMPLE NUMBER: GV-005

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #			106
Tare Weight, (g)			10.6
Tare + Wet Soil, (g)			46
Tare + Dry Soil, (g)			43.9
Sample for WATER CONTENT, %			6.31%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	2719	grams
Dry Soil + Sieve after	1276	grams
Percent greater than	0.75	33.35%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2801			
Distance from top of mold to top of stone, (in)	0.74	0.768	0.73	0.75
Height of Sample, (in)	5.374			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	33.2	2.81E-02	20	33.25	2.81E-02			
30	51.32	2.96E-02	30	51.46	2.95E-02			
40	71.13	3.02E-02	40	71.49	2.99E-02			
50	92.59	3.14E-02	50	93.58	3.05E-02			

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 99.6 pcf

NOTES:

SAMPLE PERMEABILIT 3.1E-02 cm/sec

SAMPLE DRY DENSITY 98.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: KBJ

SAMPLE NUMBER: GV-009

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2		26
Tare Weight, (g)	312		52
Tare + Wet Soil, (g)	3984		168.6
Tare + Dry Soil, (g)	3640		160.5
Sample for WATER CONTENT, %	10.34%		7.47%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3882	grams
Dry Soil + Sieve after	1524	grams
Percent greater than	0.75	29.15%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2792			
Distance from top of mold to top of stone, (in)	0.856	0.98	0.933	0.92
Height of Sample, (in)	5.197			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	36.98	2.44E-02	20	38.31	2.36E-02			
30	57.38	2.55E-02	30	59.8	2.42E-02			
40	79.91	2.57E-02	40	83.16	2.48E-02			
50	104.77	2.62E-02	50	109.01	2.52E-02			

SAMPLE PERMEABILIT 2.4E-02 cm/sec

SAMPLE DRY DENSITY 101.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: RS Checked By: BBJ

SAMPLE NUMBER: GV-010

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		19
Tare Weight, (g)	314		41.8
Tare + Wet Soil, (g)	3683		170.7
Tare + Dry Soil, (g)	3403		161.7
Sample for WATER CONTENT, %	9.06%		7.51%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3643	grams
Dry Soil + Sieve after	1008	grams
Percent greater than	0.75	14.70%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1762			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2828			
Distance from top of mold to top of stone, (in)	0.929	0.872	0.993	0.93
Height of Sample, (in)	5.189			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	34.47	2.62E-02	20	35.33	2.55E-02			
30	52.89	2.82E-02	30	54.34	2.73E-02			
40	72.84	2.89E-02	40	75.1	2.78E-02			
50	94.63	2.99E-02	50	97.97	2.85E-02			

SAMPLE PERMEABILIT: 2.8E-02 cm/sec

SAMPLE DRY DENSITY: 103.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: BCJ

SAMPLE NUMBER: GV-011

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A		90-7
Tare Weight, (g)	315		34.3
Tare + Wet Soil, (g)	3773		155.6
Tare + Dry Soil, (g)	3455		147.1
Sample for WATER CONTENT, %	10.13%		7.54%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3694	grams
Dry Soil + Sieve after	962	grams
Percent greater than	0.75	12.99%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2804			
Distance from top of mold to top of stone, (in)	0.872	0.874	0.933	0.89
Height of Sample, (in)	5.227			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	39.31	2.31E-02	20	39.87	2.28E-02			
30	61.17	2.39E-02	30	62.12	2.35E-02			
40	85.09	2.43E-02	40	86.71	2.37E-02			
50	111.7	2.47E-02	50	113.97	2.41E-02			

SAMPLE PERMEABILIT: 2.3E-02 cm/sec

SAMPLE DRY DENSITY: 101.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV-012

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		12A
Tare Weight, (g)	313		34.6
Tare + Wet Soil, (g)	3644		188.9
Tare + Dry Soil, (g)	3421		177.6
Sample for WATER CONTENT, %	7.18%		7.90%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3662	grams
Dry Soil + Sieve after	1423	grams
Percent greater than	0.75	27.96%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1764			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2817			
Distance from top of mold to top of stone, (in)	1.075	1.094	1.118	1.10
Height of Sample, (in)	5.024			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	38.44	2.27E-02	20	40.84	2.14E-02			
30	59.84	2.35E-02	30	63.45	2.22E-02			
40	83.31	2.38E-02	40	88.53	2.23E-02			
50	109.42	2.42E-02	50	116.46	2.26E-02			

SAMPLE PERMEABILIT	2.3E-02 cm/sec
SAMPLE DRY DENSITY	104.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV-013

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234-A		39
Tare Weight, (g)	235		33.3
Tare + Wet Soil, (g)	3760		193.9
Tare + Dry Soil, (g)	3562		182.2
Sample for WATER CONTENT, %	5.95%		7.86%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3881	grams
Dry Soil + Sieve after	1565	grams
Percent greater than	0.75	30.39%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2797			
Distance from top of mold to top of stone, (in)	0.71	0.692	0.691	0.70
Height of Sample, (in)	5.422			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
20	36.3	2.60E-02	20	37.38	2.52E-02			
30	56.37	2.70E-02	30	57.74	2.66E-02			
40	78.23	2.76E-02	40	80.12	2.70E-02			
50	102.17	2.84E-02	50	105.3	2.70E-02			

SAMPLE PERMEABILIT: 2.7E-02 cm/sec

SAMPLE DRY DENSITY: 96.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: BV

SAMPLE NUMBER: GV-014

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		17
Tare Weight, (g)	501		42.1
Tare + Wet Soil, (g)	3947		235.8
Tare + Dry Soil, (g)	3692		222.2
Sample for WATER CONTENT, %	7.99%		7.55%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	554	grams
Dry Soil + Sieve before	3754	grams
Dry Soil + Sieve after	1141	grams
Percent greater than	0.75	18.34%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1766			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2824			
Distance from top of mold to top of stone, (in)	1.029	1.056	1.06	1.05
Height of Sample, (in)	5.072			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
20	31.09	2.84E-02	20	32.58	2.71E-02	10	15.53	2.72E-02
30	48.14	2.98E-02	30	50.8	2.79E-02	20	32.34	2.74E-02
40	66.76	3.04E-02	40	70.85	2.82E-02	30	50.54	2.79E-02
50	87.46	3.08E-02	50	93.22	2.85E-02	40	70.66	2.81E-02
						50	92.9	2.87E-02

SAMPLE PERMEABILITY 2.8E-02 cm/sec

SAMPLE DRY DENSITY 104.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: MBV

SAMPLE NUMBER: GV-015

FIELD DATA

Density: 105 (pcf). Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234-A		90-21
Tare Weight, (g)	235		34.1
Tare + Wet Soil, (g)	5139		171.7
Tare + Dry Soil, (g)	4928		160.8
Sample for WATER CONTENT, %	4.50%		8.60%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5797	grams
Dry Soil + Sieve after	2102	grams
Percent greater than	0.75	25.02%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2803			
Distance from top of mold to top of stone, (in)	0.944	1.31	1.11	1.12
Height of Sample, (in)	4.999			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		6.1 0	0		0	0	
10	19.47	2.13E-02	10	20.31	2.04E-02	10	19.99	2.08E-02
15	29.53	2.20E-02	15	29.83	2.33E-02	15	29.95	2.22E-02
20	39.89	2.24E-02	20	40.51	2.17E-02	20	40.44	2.21E-02
30	61.99	2.26E-02	25	51.63	2.19E-02	25	51.36	2.23E-02
40	86.66	2.25E-02	30	63.2	2.21E-02	30	66.49	1.69E-02
50	113.6	2.33E-02	40	88.24	2.22E-02	40	86.75	2.75E-02
			50	116.08	2.25E-02	50	113.74	2.32E-02

SAMPLE PERMEABILIT **2.2E-02 cm/sec**

SAMPLE DRY DENSITY **105.0 pcf**

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: BBJ

SAMPLE NUMBER: GV-016

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		90-13
Tare Weight, (g)	216		34
Tare + Wet Soil, (g)	3551		160.6
Tare + Dry Soil, (g)	3351		152.8
Sample for WATER CONTENT, %	6.38%		6.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4220	grams
Dry Soil + Sieve after	1333	grams
Percent greater than	0.75	13.85%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1793			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2828			
Distance from top of mold to top of stone, (in)	0.798	0.749	0.761	0.77
Height of Sample, (in)	5.351			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.65	2.84E-02	10	16.16	2.75E-02	10	17.15	2.59E-02
20	31.65	3.03E-02	20	32.89	2.90E-02	20	34.49	2.80E-02
30	48.6	3.16E-02	30	50.7	3.00E-02	30	53.11	2.87E-02
40	66.83	3.27E-02	40	69.92	3.10E-02	40	73.16	2.97E-02
50	86.91	3.34E-02	50	90.74	3.23E-02	50	95.07	3.07E-02

SAMPLE PERMEABILIT: 3.0E-02 cm/sec

SAMPLE DRY DENSITY: 97.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/21/94

Project Number: 8940-83 Tested By: BS Checked By: BBT

SAMPLE NUMBER: GV-017

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		7A
Tare Weight, (g)	314		37.3
Tare + Wet Soil, (g)	4978		157.5
Tare + Dry Soil, (g)	4736		148.6
Sample for WATER CONTENT, %	5.47%		8.00%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5605	grams
Dry Soil + Sieve after	2633	grams
Percent greater than	0.75	37.25%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2808			
Distance from top of mold to top of stone, (in)	1.32	1.169	1.18	1.22
Height of Sample, (in)	4.897			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	16	2.54E-02	10	15.95	2.55E-02	10	0	~~ERR~~ BJ OK
20	32.4	2.71E-02	20	31.44	2.87E-02	20	32.75	1.36E-02
25	41.05	2.76E-02	25	39.58	2.93E-02	25	41.6	2.69E-02
30	49.83	2.86E-02	30	47.9	3.02E-02	30	50.27	2.89E-02
35	59.09	2.86E-02	35	56.93	2.93E-02	35	59.72	2.80E-02
40	68.87	2.86E-02	40	65.68	3.20E-02	40	69.24	2.94E-02
50	89.55	2.97E-02	50	85.04	3.17E-02	50	89.91	2.97E-02

SAMPLE PERMEABILIT **2.8E-02 cm/sec**

SAMPLE DRY DENSITY 106.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/22/94

Project Number: 8940-83 Tested By: RS Checked By: RJZ

SAMPLE NUMBER: GV_018

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		10
Tare Weight, (g)	285		41
Tare + Wet Soil, (g)	4215		168.6
Tare + Dry Soil, (g)	3995		158.8
Sample for WATER CONTENT, %	5.93%		8.32%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4864	grams
Dry Soil + Sieve after	1795	grams
Percent greater than	0.75	23.18%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2802			
Distance from top of mold to top of stone, (in)	0.943	0.934	0.969 0.978 RJZ OK	0.95
Height of Sample, (in)	5.168			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	18.03	2.38E-02	10	19	2.26E-02	15	28.59	2.30E-02
20	37	2.47E-02	20	37.88	2.48E-02	20	38.43	2.44E-02
25	46.74	2.58E-02	25	47.91	2.51E-02	25	48.52	2.49E-02
30	56.66	2.67E-02	30	58.24	2.56E-02	30	59.11	2.50E-02
35	67.66	2.54E-02	35	69.35	2.52E-02	35	70.31	2.49E-02
40	78.67	2.69E-02	40	80.33	2.69E-02	40	82	2.53E-02
50	102.5	2.72E-02	50	105.47	2.58E-02	50	107.13	2.58E-02

SAMPLE PERMEABILIT 2.5E-02 cm/sec

SAMPLE DRY DENSITY 101.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/22/94

Project Number: 8940–83 Tested By: RS Checked By: RC pV

SAMPLE NUMBER: GV–019

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		106
Tare Weight, (g)	501		39.6
Tare + Wet Soil, (g)	4152		224.4
Tare + Dry Soil, (g)	3944		211.5
Sample for WATER CONTENT, %	6.04%		7.50%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4813	grams
Dry Soil + Sieve after	1602	grams
Percent greater than	0.75	18.59%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1767			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2825			
Distance from top of mold to top of stone, (in)	1.105	1.001	1.133	1.08
Height of Sample, (in)	5.040			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.84	1.92E–02	10	19.84	2.11E–02	10	19.94	2.10E–02
20	43.77	2.08E–02	20	40.6	2.20E–02	20	41.17	2.15E–02
25	55	2.19E–02	25	51.64	2.22E–02	25	52.22	2.22E–02
30	66.48	2.25E–02	30	62.76	2.32E–02	30	63.65	2.26E–02
35	79.15	2.15E–02	35	74.86	2.25E–02	35	76.08	2.19E–02
40	92.02	2.24E–02	40	87.49	2.28E–02	40	88.72	2.28E–02
50	119.7	2.29E–02	50	114.51	2.34E–02	50	116.43	2.28E–02

SAMPLE PERMEABILITY 2.2E–02 cm/sec

SAMPLE DRY DENSITY 105.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 7/22/94

Project Number: 08940-83 Tested By: rs Checked By: BS pd

SAMPLE NUMBER: GV-020

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1a		33
Tare Weight, (g)	314		57.3
Tare + Wet Soil, (g)	4011		192
Tare + Dry Soil, (g)	3766		182
Sample for WATER CONTENT, %	7.10%		8.02%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4320	grams
Dry Soil + Sieve after	1370	grams
Percent greater than	0.75	14.54%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2807			
Distance from top of mold to top of stone, (in)	1.079	1.085	1.062	1.08
Height of Sample, (in)	5.045			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.74	1.69E-02	10	24.71	1.70E-02			
20	51.27	1.72E-02	20	51.51	1.71E-02			
25	65.18	1.77E-02	25	65.7	1.73E-02			
30	79.71	1.78E-02	30	80.81	1.71E-02			
35	95.45	1.73E-02	35	96.52	1.74E-02			
40	111.62	1.78E-02	40	113.02	1.75E-02			
50	147.3	1.77E-02	50	149.32	1.74E-02			

SAMPLE PERMEABILITY 1.7E-02 cm/sec

SAMPLE DRY DENSITY 104.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–22–94

Project Number: 08940–83 Tested By: BS Checked By: BS BT

SAMPLE NUMBER: GV–21

FIELD DATA

Density: 105 (pcf) Water Content: 6

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		90–7
Tare Weight, (g)	235		34.3
Tare + Wet Soil, (g)	4325		212.7
Tare + Dry Soil, (g)	4160		202.5
Sample for WATER CONTENT, %	4.20%		6.06%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	4714	grams
Dry Soil + Sieve after	1584	grams
Percent greater than	0.75	20.25%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2799			
Distance from top of mold to top of stone, (in)	1.136	1.231	1.12	1.16
Height of Sample, (in)	4.958			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.94	2.58E–02	10	16.36	2.52E–02	10	17.33	2.38E–02
20	32.7	2.68E–02	20	33.56	2.61E–02	20	35.25	2.51E–02
30	50.83	2.73E–02	30	52.2	2.66E–02	30	54.81	2.53E–02
40	70.48	2.81E–02	40	72.52	2.71E–02	40	76.26	2.57E–02
50	92.56	2.82E–02	50	95.24	2.74E–02	50	100.22	2.60E–02

SAMPLE PERMEABILITY 2.7E–02 cm/sec

SAMPLE DRY DENSITY 106.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/22/94

Project Number: 8940-83 Tested By: BS Checked By: BT

SAMPLE NUMBER: GV-022

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		90-21
Tare Weight, (g)	216		34.1
Tare + Wet Soil, (g)	4350		196.5
Tare + Dry Soil, (g)	4168		184.2
Sample for WATER CONTENT, %	4.61%		8.19%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4722	grams
Dry Soil + Sieve after	1592	grams
Percent greater than	0.75	20.80%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2797			
Distance from top of mold to top of stone, (in)	0.858	0.872	0.836	0.86
Height of Sample, (in)	5.265			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	25.99	1.68E-02	10	24.19	1.81E-02	10	25.16	1.74E-02
20	55.98	1.59E-02	20	50.9	1.79E-02	20	53.45	1.69E-02
30	88.85	1.60E-02	30	80.38	1.78E-02	30	84.22	1.71E-02
40	125.31	1.61E-02	40	112.25	1.84E-02	40	118.06	1.73E-02
50	165.81	1.63E-02	50	145.99	1.96E-02	50	155.2	1.78E-02

SAMPLE PERMEABILITY 1.7E-02 cm/sec

SAMPLE DRY DENSITY 99.7 pcf

NOTES: Seems low OK.

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/22/94

Project Number: 8940–83 Tested By: RS Checked By: FS BV

SAMPLE NUMBER: GV–023

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		90
Tare Weight, (g)	501		37.2
Tare + Wet Soil, (g)	3904		182.3
Tare + Dry Soil, (g)	3661		171.1
Sample for WATER CONTENT, %	7.69%		8.36%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4215	grams
Dry Soil + Sieve after	1838	grams
Percent greater than	0.75	24.78%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1790			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2846			
Distance from top of mold to top of stone, (in)	0.563	1.284	1.195	1.01
Height of Sample, (in)	5.106			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
15	27.47	2.37E–02	10	16.37	2.59E–02	10	16.47	2.57E–02
25	49.24	2.23E–02	20	33.65	2.68E–02	20	34.28	2.60E–02
35	74.9	2.10E–02	25	42.99	2.66E–02	25	44.16	2.52E–02
40	90.08	1.92E–02	30	52.6	2.72E–02	30	53.79	2.72E–02
50	120.96	2.08E–02	35	63.23	2.60E–02	35	64.22	2.65E–02
			40	73.97	2.72E–02	40	75.08	2.69E–02
			50	97.4	2.74E–02	50	99.18	2.66E–02

SAMPLE PERMEABILITY 2.6E–02 cm/sec

SAMPLE DRY DENSITY 102.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/22/94

Project Number: 8940–83 Tested By: BS Checked By: BS BJ

SAMPLE NUMBER: GV–024

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		78
Tare Weight, (g)	286		37.6
Tare + Wet Soil, (g)	4026		197.3
Tare + Dry Soil, (g)	3890		185.3
Sample for WATER CONTENT, %	3.77%		8.12%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	4444	grams
Dry Soil + Sieve after	1583	grams
Percent greater than	0.75	20.62%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1762			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2814			
Distance from top of mold to top of stone, (in)	1.04	1.085	1.085	1.07
Height of Sample, (in)	5.050			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.52	1.95E–02	10	22.66	1.85E–02	10	23.84	1.76E–02
20	45	1.95E–02	20	47.45	1.85E–02	20	50.12	1.74E–02
30	69.76	2.04E–02	30	74.22	1.89E–02	30	77.93	1.81E–02
40	97.45	2.03E–02	40	103.43	1.92E–02	40	108.25	1.85E–02
50	128.37	2.05E–02	50	136.34	1.93E–02	50	142.33	1.86E–02

SAMPLE PERMEABILITY 1.9E–02 cm/sec

SAMPLE DRY DENSITY 103.9 pcf

NOTES: % S = 97

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/25/94

Project Number: 08940–83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV–025

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		33
Tare Weight, (g)	216		57.3
Tare + Wet Soil, (g)	2794		183.8
Tare + Dry Soil, (g)	2575		172.6
Sample for WATER CONTENT, %	9.28%		9.71%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	3129	grams
Dry Soil + Sieve after	1126	grams
Percent greater than	0.75	15.09%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1760			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2829			
Distance from top of mold to top of stone, (in)	1.229	1.233	1.152	1.20
Height of Sample, (in)	4.915			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	23.1	1.77E–02	10	23.59	1.73E–02	10	24.7	1.65E–02
20	47.57	1.82E–02	20	48.91	1.76E–02	20	52.52	1.60E–02
25	60.62	1.83E–02	25	62.51	1.76E–02	25	67.69	1.58E–02
30	74.59	1.80E–02	30	76.36	1.82E–02	30	83.49	1.59E–02
35	89.08	1.83E–02	35	91.39	1.77E–02	35	100.91	1.53E–02
40	101.21	2.32E–02	40	107.31	1.77E–02	40	119.24	1.53E–02
50	137.77	1.69E–02	50	141.74	1.79E–02	50	160.37	1.50E–02

SAMPLE PERMEABILITY 1.7E–02 cm/sec

SAMPLE DRY DENSITY 106.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–25–94

Project Number: 08940–83 Tested By: BS Checked By: BS 89

SAMPLE NUMBER: GV_026

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		90
Tare Weight, (g)	314		37.2
Tare + Wet Soil, (g)	3494		197.1
Tare + Dry Soil, (g)	3312		183.7
Sample for WATER CONTENT, %	6.07%		9.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	3866	grams
Dry Soil + Sieve after	1488	grams
Percent greater than	0.75	20.68%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2808			
Distance from top of mold to top of stone, (in)	1.06	1.132	1.079	1.09
Height of Sample, (in)	5.030			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	23.14	1.81E–02	10	24.46	1.71E–02	10	26.84	1.56E–02
20	49.17	1.76E–02	20	51.92	1.67E–02	20	57.12	1.51E–02
30	77.64	1.77E–02	30	82.52	1.65E–02	30	91.4	1.47E–02
40	109.64	1.75E–02	40	116.77	1.64E–02	40	130.9	1.42E–02
50	145.67	1.76E–02	50	155.89	1.62E–02	50	176.18	1.40E–02

SAMPLE PERMEABILITY 1.6E–02 cm/sec

SAMPLE DRY DENSITY 104.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: RS Checked By: BS BG

SAMPLE NUMBER: GV-027

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234-A		90-21
Tare Weight, (g)	235		34.2
Tare + Wet Soil, (g)	3934		163.4
Tare + Dry Soil, (g)	3650		152
Sample for WATER CONTENT, %	8.32%		9.68%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	4204	grams
Dry Soil + Sieve after	1436	grams
Percent greater than	0.75	18.95%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1793			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2858			
Distance from top of mold to top of stone, (in)	1.036	1.163	1.008	1.07
Height of Sample, (in)	5.051			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	20.88	2.01E-02	10	19.33	2.17E-02	10	21.62	1.94E-02
20	41.89	2.18E-02	20	40.31	2.18E-02	20	43.58	2.09E-02
25	53.06	2.20E-02	25	51.31	2.24E-02	25		~~5.64E-08~~
30	64.56	2.25E-02	30	63.03	2.21E-02	30	67.2	~~8.85E-03~~
35	77.07	2.18E-02	35	75.49	2.19E-02	35	79.77	2.17E-02
40	90.02	2.23E-02	40	88.29	2.26E-02	40	93:14	2.16E-02
50	118.24	2.25E-02	50	116.63	2.24E-02	50	124	2.05E-02

SAMPLE PERMEABILITY 2.1E-02 cm/sec

SAMPLE DRY DENSITY 103.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–25–94

Project Number: 08940–83 Tested By: BS Checked By: BS BG

SAMPLE NUMBER: GV–028

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		90–7
Tare Weight, (g)	312		34.3
Tare + Wet Soil, (g)	3544		189.4
Tare + Dry Soil, (g)	3380		175.7
Sample for WATER CONTENT, %	5.35%		9.69%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	3934	grams
Dry Soil + Sieve after	1312	grams
Percent greater than	0.75	14.54%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2820			
Distance from top of mold to top of stone, (in)	1.072	1.096	1.025	1.06
Height of Sample, (in)	5.056			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	26.7	1.58E–02	10	31.43	1.34E–02	10	33.77	1.25E–02
20	58.17	1.46E–02	20	68.55	1.24E–02	20	72.92	1.17E–02
30	93.86	1.42E–02	30	110.3	1.21E–02	30	116.98	1.15E–02
40	135.02	1.37E–02	40	157.68	1.19E–02	40	167.67	1.11E–02
50	182.64	1.34E–02	50	221.99	9.90E–03	50	225.83	1.09E–02

SAMPLE PERMEABILITY 1.3E–02 cm/sec

SAMPLE DRY DENSITY 104.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-26-94

Project Number: 08940-83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV-029

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		10
Tare Weight, (g)	215		40.1
Tare + Wet Soil, (g)	4926		189.6
Tare + Dry Soil, (g)	4531		179.4
Sample for WATER CONTENT, %	9.15%		7.32%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	5085	grams
Dry Soil + Sieve after	1837	grams
Percent greater than	0.75	24.75%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1767			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2812			
Distance from top of mold to top of stone, (in)	1.145	1.152	1.125	1.14
Height of Sample, (in)	4.979			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.98	1.88E-02	10	24.05	1.72E-02	10	27.17	1.52E-02
20	48.17	1.73E-02	20	51.68	1.64E-02	20	58.36	1.45E-02
25	62.32	1.72E-02	25	66.8	1.61E-02	25	75.58	1.41E-02
30	77.36	1.70E-02	30	82.77	1.60E-02	30	93.83	1.40E-02
35	93.42	1.68E-02	35	100.3	1.54E-02	35	113.48	1.37E-02
40	110.42	1.68E-02	40	118.83	1.54E-02	40	134.61	1.35E-02
50	147.76	1.68E-02	50	159.96	1.52E-02	50	181.48	1.34E-02

SAMPLE PERMEABILITY 1.5E-02 cm/sec

SAMPLE DRY DENSITY 105.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-26-94

Project Number: 08940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: GV-030

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B		106
Tare Weight, (g)	216		39.8
Tare + Wet Soil, (g)	3854		193.5
Tare + Dry Soil, (g)	3545		183.3
Sample for WATER CONTENT, %	9.28%		7.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4099	grams
Dry Soil + Sieve after	1448	grams
Percent greater than	0.75	20.37%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2805			
Distance from top of mold to top of stone, (in)	0.682	0.64	0.632	0.65
Height of Sample, (in)	5.469			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	20.69	2.19E-02	10	22.62	2.01E-02	10	22.45	2.02E-02
20	43.39	2.19E-02	20	47.39	2.00E-02	20	47.55	1.98E-02
30	68.48	2.18E-02	30	74.97	1.98E-02	30	74.84	2.00E-02
40	96.37	2.18E-02	40	105.2	2.01E-02	40	105.66	1.97E-02
50	127.24	2.22E-02	50	139.01	2.03E-02	50	138.62	2.08E-02

SAMPLE PERMEABILITY 2.0E-02 cm/sec

SAMPLE DRY DENSITY 97.1 pcf

NOTES: Seems low

BJ OK BJ.

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/26/94

Project Number: 8940–83 Tested By: DPL Checked By: BS BJ

SAMPLE NUMBER: GV–031

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		39
Tare Weight, (g)	312		33.4
Tare + Wet Soil, (g)	4277		155
Tare + Dry Soil, (g)	4023		147.3
Sample for WATER CONTENT, %	6.84%		6.76%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4577	grams
Dry Soil + Sieve after	1520	grams
Percent greater than	0.75	17.62%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2838			
Distance from top of mold to top of stone, (in)	0.664	0.744	0.769	0.73
Height of Sample, (in)	5.394			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	19.26	2.33E–02	10	20.64	2.17E–02	10	21.43	2.09E–02
20	39.61	2.40E–02	20	42.49	2.24E–02	20	44.13	2.16E–02
25	51	2.31E–02	25	54.28	2.23E–02	25	56.12	2.19E–02
30	61.91	2.53E–02	30	66.49	2.26E–02	30	68.92	2.16E–02
35	74.02	2.41E–02	35	79.29	2.28E–02	35	82.24	2.19E–02
40	86.5	2.47E–02	40	92.68	2.30E–02	40	96.34	2.19E–02
50	114.78	2.39E–02	50	122.45	2.27E–02	50	126.83	2.22E–02

SAMPLE PERMEABILITY 2.2E–02 cm/sec

SAMPLE DRY DENSITY 102.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/26/94

Project Number: 8940–83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV–032

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		90–13
Tare Weight, (g)	314		34
Tare + Wet Soil, (g)	4627		177.7
Tare + Dry Soil, (g)	4358		168.1
Sample for WATER CONTENT, %	6.65%		7.16%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4912	grams
Dry Soil + Sieve after	1959	grams
Percent greater than	0.75	26.98%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2815			
Distance from top of mold to top of stone, (in)	1.119	1.125	1.069	1.10
Height of Sample, (in)	5.016			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	24.37	1.71E–02	10	29.24	1.43E–02	10	32.11	1.30E–02
20	51.77	1.66E–02	20	63.14	1.34E–02	20	69.08	1.23E–02
25	66.77	1.63E–02	25	82.2	1.28E–02	25	89.55	1.20E–02
30	82.74	1.61E–02	30	102.52	1.27E–02	30	111.49	1.17E–02
35	100.18	1.56E–02	35	124.36	1.24E–02	35	135.24	1.14E–02
40	118.93	1.53E–02	40	148.17	1.21E–02	40	160.96	1.12E–02
50	160.81	1.51E–02	50	201.95	1.17E–02	50	219.17	1.08E–02

SAMPLE PERMEABILITY 1.3E–02 cm/sec

SAMPLE DRY DENSITY 104.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: DPL Checked By: BS BG

SAMPLE NUMBER: GV-033

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		7A
Tare Weight, (g)	501		37.1
Tare + Wet Soil, (g)	4489		218.3
Tare + Dry Soil, (g)	4227		203.8
Sample for WATER CONTENT, %	7.03%		8.70%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4781	grams
Dry Soil + Sieve after	2023	grams
Percent greater than	0.75	25.98%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2835			
Distance from top of mold to top of stone, (in)	0.87	0.84	0.858	0.86
Height of Sample, (in)	5.264			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	3			
Height from Datum to 0 ml line, (in)	33.125			
Height from Datum to 50 ml line, (in)	11.75			
Area of supply tubes used, (in^3)	4.56			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	23.06	2.67E-02	10	23.52	2.62E-02	10	24.14	2.55E-02
20	49.72	2.48E-02	20	49.93	2.51E-02	20	52.26	2.36E-02
30	78.65	2.48E-02	30	78.58	2.50E-02	30	82.2	2.40E-02
39	107.37	2.44E-02	39	107.05	2.46E-02	40	112.01	2.63E-02
50	146.78	2.39E-02	50	145.68	2.44E-02	50	152.51	2.13E-02

SAMPLE PERMEABILITY 2.4E-02 cm/sec

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: RS Checked By: BS

SAMPLE NUMBER: GV-034

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		106
Tare Weight, (g)	216		49.5
Tare + Wet Soil, (g)	4378		214
Tare + Dry Soil, (g)	4165		201.1
Sample for WATER CONTENT, %	5.39%		8.51%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770.1	grams
Dry Soil + Sieve before	4719	grams
Dry Soil + Sieve after	1786	grams
Percent greater than	0.75	25.73%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1771			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2828			
Distance from top of mold to top of stone, (in)	1.039	0.978	1.022	1.01
Height of Sample, (in)	5.107			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	.29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	19.72	2.15E-02	10	20.24	2.10E-02	10		ERR
20	40.78	2.20E-02	20	41.52	2.18E-02	20	42.4	1.09E-02
25	52.02	2.21E-02	25	53.06	2.16E-02	25	54.07	2.13E-02
30	63.88	2.21E-02	30	64.88	2.21E-02	30	65.94	2.20E-02
35	76.2	2.24E-02	35	77.55	2.18E-02	35	78.86	2.14E-02
40	89.09	2.27E-02	40	90.62	2.24E-02	40	92.19	2.19E-02
50	117.51	2.26E-02	50	119.2	2.24E-02	50	121.06	2.22E-02

SAMPLE PERMEABILITY 2.2E-02 cm/sec

SAMPLE DRY DENSITY 102.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: RS Checked By: BS pJ

SAMPLE NUMBER: GV-035

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		39
Tare Weight, (g)	286		33.2
Tare + Wet Soil, (g)	4653		214.9
Tare + Dry Soil, (g)	4332		200.6
Sample for WATER CONTENT, %	7.93%		8.54%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	839.9	grams
Dry Soil + Sieve before	4886	grams
Dry Soil + Sieve after	1921	grams
Percent greater than	0.75	26.72%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2832			
Distance from top of mold to top of stone, (in)	0.965	0.952	0.998	0.97
Height of Sample, (in)	5.148			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	19.77	2.16E-02	10	20.27	2.11E-02	10		ERR
20	40.02	2.31E-02	20	41.84	2.17E-02	20	42.63	1.10E-02
25	50.98	2.29E-02	25	53.46	2.16E-02	25	54.41	2.13E-02
30	61.79	2.44E-02	30	65.36	2.22E-02	30	66.55	2.17E-02
35	73.87	2.30E-02	35	78.44	2.13E-02	35	79.58	2.14E-02
40	86.31	2.37E-02	40	91.69	2.22E-02	40	93.39	2.13E-02
50	114.05	2.33E-02	50	120.87	2.21E-02	50	123.6	2.14E-02

SAMPLE PERMEABILITY 2.2E-02 cm/sec

SAMPLE DRY DENSITY 102.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: BS Checked By: BS pg

SAMPLE NUMBER: GV-036

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2		35
Tare Weight, (g)	309		50.1
Tare + Wet Soil, (g)	4438		222.7
Tare + Dry Soil, (g)	4151		209.9
Sample for WATER CONTENT, %	7.47%		8.01%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862.6	grams
Dry Soil + Sieve before	4705	grams
Dry Soil + Sieve after	1573	grams
Percent greater than	0.75	18.49%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1795			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2845			
Distance from top of mold to top of stone, (in)	1.335	1.305	1.205	1.28
Height of Sample, (in)	4.838			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	23.21	1.73E-02	10	26.89	1.50E-02	10	30.3	1.33E-02
20	49.62	1.67E-02	20	57.17	1.45E-02	20	64.61	1.28E-02
30	79.31	1.63E-02	30	91.77	1.40E-02	30	103.7	1.24E-02
40	113.21	1.59E-02	40	131.24	1.37E-02	40	149.33	1.18E-02
50	152.02	1.57E-02	50	177.36	1.32E-02	50	202.39	1.15E-02

SAMPLE PERMEABILITY 1.4E-02 cm/sec

SAMPLE DRY DENSITY 108.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–25–94

Project Number: 08940–83 Tested By: BS Checked By: BSPV

SAMPLE NUMBER: GV–037

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		10
Tare Weight, (g)	343		39.8
Tare + Wet Soil, (g)	4113		223.5
Tare + Dry Soil, (g)	3848		212.4
Sample for WATER CONTENT, %	7.56%		6.43%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897.2	grams
Dry Soil + Sieve before	4402	grams
Dry Soil + Sieve after	1544	grams
Percent greater than	0.75	18.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1793			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2829			
Distance from top of mold to top of stone, (in)	1.248	1.251	1.305	1.27
Height of Sample, (in)	4.852			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.34	2.63E–02	10	17.87	2.26E–02	10	18.42	2.19E–02
20	33.3	2.46E–02	20	37.49	2.25E–02	20	39.49	2.09E–02
30	52.8	2.49E–02	30	58.96	2.26E–02	30	62.77	2.09E–02
40	74.52	2.49E–02	40	82.93	2.26E–02	40	88.58	2.10E–02
50	98.49	2.55E–02	50	109.71	2.28E–02	50	117.45	2.12E–02

SAMPLE PERMEABILITY 2.3E–02 cm/sec

SAMPLE DRY DENSITY 108.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-25-94

Project Number: 08940-83 Tested By: DPL Checked By: BSJ

SAMPLE NUMBER: GV-038

FIELD DATA

Density: 105 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		78
Tare Weight, (g)	313		37.6
Tare + Wet Soil, (g)	4731		288.4
Tare + Dry Soil, (g)	4409		270.5
Sample for WATER CONTENT, %	7.86%		7.69%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4963	grams
Dry Soil + Sieve after	1743	grams
Percent greater than	0.75	21.39%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2865			
Distance from top of mold to top of stone, (in)	0.86	0.82	0.86	0.85
Height of Sample, (in)	5.273			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	3			
Height from Datum to 0 ml line, (in)	33.125			
Height from Datum to 50 ml line, (in)	11.75			
Area of supply tubes used, (in ^ 3)	4.56			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	40.03	1.54E-02	10	49.8	1.24E-02	10	62.92	9.79E-03
20	85.4	1.46E-02	20	108.02	1.14E-02	20	136.02	9.08E-03
30	138.24	1.36E-02	30	174.27	1.08E-02	30	220.89	8.47E-03
39	194.12	1.26E-02	39	240.21	1.07E-02	39	309.48	7.93E-03
450	272.28	ERR	50	340.02	9.46E-03	50	430.27	7.82E-03

ok BZ

SAMPLE PERMEABILITY 9.0E-03 cm/sec

SAMPLE DRY DENSITY 106.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/27/94

Project Number: 8940-83 Tested By: BS Checked By: pS

SAMPLE NUMBER: GV-039

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		90
Tare Weight, (g)	314		37.4
Tare + Wet Soil, (g)	4660		157.4
Tare + Dry Soil, (g)	4507		148.3
Sample for WATER CONTENT, %	3.65%		8.21%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5061	grams
Dry Soil + Sieve after	2473	grams
Percent greater than	0.75	38.28%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2789			
Distance from top of mold to top of stone, (in)	1.211	1.201	1.24	1.22
Height of Sample, (in)	4.903			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.52	1.89E-02	10	24.06	1.69E-02	10	27.08	1.50E-02
20	46.06	1.81E-02	20	52.13	1.58E-02	20	59.16	1.39E-02
25	59.45	1.78E-02	25	67.41	1.56E-02	25	76.48	1.38E-02
30	73.34	1.81E-02	30	83.45	1.57E-02	30	94.84	1.37E-02
35	88.35	1.77E-02	35	100.61	1.54E-02	35	114.32	1.36E-02
40	104.05	1.79E-02	40	118.68	1.55E-02	40	134.9	1.36E-02
50	138.35	1.79E-02	50	158.61	1.54E-02	50	180.63	1.35E-02

SAMPLE PERMEABILIT 1.5E-02 cm/sec

SAMPLE DRY DENSITY 104.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/27/94

Project Number: 8940–83 Tested By: BS Checked By: PEF

SAMPLE NUMBER: GV–040

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		39
Tare Weight, (g)	215.2		33.4
Tare + Wet Soil, (g)	4826		182.5
Tare + Dry Soil, (g)	4549		168.9
Sample for WATER CONTENT, %	6.39%		10.04%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769.2	grams
Dry Soil + Sieve before	5103	grams
Dry Soil + Sieve after	1615	grams
Percent greater than	0.75	19.52%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1771			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2814			
Distance from top of mold to top of stone, (in)	1.074	1.081	1.129	1.09
Height of Sample, (in)	5.025			
Mold Area, (in^3)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.73	2.35E–02	10	18.38	2.27E–02	10	18.91	2.21E–02
20	36.73	2.40E–02	20	37.82	2.34E–02	20	39.29	2.24E–02
25	46.99	2.39E–02	25	48.12	2.38E–02	25	50.16	2.25E–02
30	57.46	2.46E–02	30	58.78	2.42E–02	30	61.38	2.30E–02
35	68.52	2.46E–02	35	70.14	2.39E–02	35	73.56	2.23E–02
40	80.34	2.43E–02	40	82.04	2.42E–02	40	86.09	2.29E–02
50	105.85	2.47E–02	50	107.88	2.44E–02	50	113.25	2.32E–02

SAMPLE PERMEABILITY 2.3E–02 cm/sec

SAMPLE DRY DENSITY 101.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–27–94

Project Number: 8940–83 Tested By: BS Checked By: bf

SAMPLE NUMBER: GV–041

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		78
Tare Weight, (g)	312		37.6
Tare + Wet Soil, (g)	4060		166.8
Tare + Dry Soil, (g)	3871		156
Sample for WATER CONTENT, %	5.31%		9.12%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4425	grams
Dry Soil + Sieve after	1695	grams
Percent greater than	0.75	23.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2777			
Distance from top of mold to top of stone, (in)	1.074	1.103	1.143	1.11
Height of Sample, (in)	5.013			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.53	2.38E–02	10	18.25	2.29E–02	10	19.27	2.16E–02
20	35.59	2.52E–02	20	37.66	2.35E–02	20	39.82	2.22E–02
25	45.23	2.54E–02	25	48.09	2.35E–02	25	50.88	2.21E–02
30	55.09	2.61E–02	30	58.88	2.39E–02	30	62.47	2.22E–02
35	65.85	2.53E–02	35	70.41	2.36E–02	35	74.87	2.19E–02
40	76.95	2.59E–02	40	82.51	2.38E–02	40	87.86	2.21E–02
50	101.14	2.61E–02	50	108.68	2.41E–02	50	115.99	2.24E–02

SAMPLE PERMEABILITY 2.3E–02 cm/sec

SAMPLE DRY DENSITY 101.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-29-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV-042 (re-run)

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		10
Tare Weight, (g)	285.9		39.7
Tare + Wet Soil, (g)	4223		184.5
Tare + Dry Soil, (g)	4066		172.7
Sample for WATER CONTENT, %	4.15%		8.87%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	839.9	grams
Dry Soil + Sieve before	4620	grams
Dry Soil + Sieve after	1464	grams
Percent greater than	0.75	16.51%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1766			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2799			
Distance from top of mold to top of stone, (in)	1.27	1.358	1.294	1.31
Height of Sample, (in)	4.813			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	29.14	1.37E-02	10	36.23	1.10E-02	10	42.7	9.36E-03
20	62.63	1.30E-02	20	78.71	1.03E-02	20	93	8.68E-03
25	81.22	1.26E-02	25	102.79	9.73E-03	25	121.4	8.25E-03
30	101.18	1.24E-02	30	128.36	9.64E-03	30	152.19	8.01E-03
35	122.71	1.21E-02	35	156.91	9.11E-03	35	186.06	7.68E-03
40	146.27	1.17E-02	40	187.61	8.97E-03	40	222.76	7.50E-03
50	199.39	1.14E-02	50	258.56	8.51E-03	50	308.19	7.07E-03

SAMPLE PERMEABILITY 1.1E-02 cm/sec

SAMPLE DRY DENSITY 106.3 pcf

NOTES: 99% Saturated BS

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 7/28/94

Project Number: 8940–83 Tested By: rs Checked By: BZ

SAMPLE NUMBER: GV–043

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		8a
Tare Weight, (g)	213		33.4
Tare + Wet Soil, (g)	3295		155.2
Tare + Dry Soil, (g)	3136		145.6
Sample for WATER CONTENT, %	5.44%		8.56%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	3690	grams
Dry Soil + Sieve after	1109	grams
Percent greater than	0.75	11.70%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2792			
Distance from top of mold to top of stone, (in)	0.972	0.882	0.883	0.91
Height of Sample, (in)	5.208			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.42	2.48E–02	10	17.39	2.49E–02	10	17.87	2.42E–02
20	35.73	2.58E–02	20	35.48	2.61E–02	20	36.56	2.53E–02
25	45.78	2.52E–02	25	45.27	2.59E–02	25	46.43	2.57E–02
30	55.73	2.68E–02	30	55.53	2.60E–02	30	56.92	2.54E–02
35	66.63	2.58E–02	35	66.09	2.67E–02	35	68.12	2.51E–02
40	78.05	2.61E–02	40	77.46	2.62E–02	40	79.52	2.61E–02
50	102.71	2.65E–02	50	102.06	2.66E–02	50	104.94	2.57E–02

SAMPLE PERMEABILITY 2.6E–02 cm/sec

SAMPLE DRY DENSITY 98.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–27–94

Project Number: 8940–83 Tested By: BS Checked By: BBY

SAMPLE NUMBER: GV–044

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		35
Tare Weight, (g)	312		55.1
Tare + Wet Soil, (g)	3713		209.6
Tare + Dry Soil, (g)	3415		198.3
Sample for WATER CONTENT, %	9.60%		7.89%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	3969	grams
Dry Soil + Sieve after	1204	grams
Percent greater than	0.75	10.89%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1770			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2790			
Distance from top of mold to top of stone, (in)	1.142	1.147	1.062	1.12
Height of Sample, (in)	5.003			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	23.77	1.75E–02	10	25.56	1.63E–02	10	28.41	1.46E–02
20	51.64	1.63E–02	20	55.89	1.50E–02	20	61.42	1.37E–02
25	67.01	1.59E–02	25	72.5	1.47E–02	25	79.41	1.35E–02
30	83.23	1.58E–02	30	90.15	1.45E–02	30	98.36	1.35E–02
35	100.52	1.56E–02	35	109.07	1.43E–02	35	118.91	1.32E–02
40	118.99	1.55E–02	40	129.46	1.40E–02	40	140.89	1.30E–02
50	160.41	1.52E–02	50	174	1.41E–02	50	190.29	1.27E–02

SAMPLE PERMEABILITY 1.4E–02 cm/sec

SAMPLE DRY DENSITY 101.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 7/28/94

Project Number: 8940–83 Tested By: rs Checked By: BJ

SAMPLE NUMBER: GV–045

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		90–7
Tare Weight, (g)	213		34.2
Tare + Wet Soil, (g)	3638		170.4
Tare + Dry Soil, (g)	3351		161.8
Sample for WATER CONTENT, %	9.15%		6.74%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	3905	grams
Dry Soil + Sieve after	1241	grams
Percent greater than	0.75	15.11%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2751			
Distance from top of mold to top of stone, (in)	0.91	0.889	0.868	0.89
Height of Sample, (in)	5.231			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	19.01	2.29E–02	10	18.9	2.30E–02	10	19.13	2.27E–02
20	38.11	2.48E–02	20	38.08	2.47E–02	20	38.44	2.46E–02
25	48.37	2.48E–02	25	48.27	2.50E–02	25	48.8	2.46E–02
30	58.63	2.61E–02	30	59.1	2.48E–02	30	59.2	2.58E–02
35	69.94	2.50E–02	35	70.27	2.53E–02	35	70.66	2.47E–02
40	81.59	2.57E–02	40	81.9	2.57E–02	40	82.32	2.57E–02
50	107.04	2.58E–02	50	107.56	2.56E–02	50	107.74	2.58E–02

SAMPLE PERMEABILITY 2.5E–02 cm/sec

SAMPLE DRY DENSITY 97.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–28–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV–046

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		33
Tare Weight, (g)	314		57.2
Tare + Wet Soil, (g)	3580		211.2
Tare + Dry Soil, (g)	3326		200.9
Sample for WATER CONTENT, %	8.43%		7.17%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	3880	grams
Dry Soil + Sieve after	1321	grams
Percent greater than	0.75	15.04%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1776			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2788			
Distance from top of mold to top of stone, (in)	0.911	0.91	0.83	0.88
Height of Sample, (in)	5.236			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	14.59	2.99E–02	10	14.02	3.11E–02	10	14.68	2.97E–02
20	27.55	3.67E–02	20	27.77	3.46E–02	20	28.71	3.39E–02
25	34.7	3.57E–02	25	35.05	3.51E–02	25	36.33	3.35E–02
30	42.02	3.67E–02	30	42.52	3.60E–02	30	44.02	3.50E–02
35	49.7	3.70E–02	35	50.43	3.59E–02	35	52.08	3.52E–02
40	57.58	3.81E–02	40	58.46	3.74E–02	40	60.49	3.57E–02
50	74.55	3.88E–02	50	75.99	3.76E–02	50	78.27	3.71E–02

SAMPLE PERMEABILITY 3.4E–02 cm/sec

SAMPLE DRY DENSITY 97.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 7/28/94

Project Number: 08940–83 Tested By: rs Checked By: BZ

SAMPLE NUMBER: GV–047

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216b		90–21
Tare Weight, (g)	214		34.1
Tare + Wet Soil, (g)	3996		174
Tare + Dry Soil, (g)	3735		162.6
Sample for WATER CONTENT, %	7.41%		8.87%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4289	grams
Dry Soil + Sieve after	1571	grams
Percent greater than	0.75	22.81%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1768			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2796			
Distance from top of mold to top of stone, (in)	0.896	0.921	0.882	0.90
Height of Sample, (in)	5.220			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	29			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.76	2.18E–02	10	18.46	2.10E–02	10	17.9	2.17E–02
20	36.76	2.21E–02	20	37.99	2.15E–02	20	37.07	2.19E–02
25	47.04	2.17E–02	25	48.68	2.09E–02	25	47.18	2.21E–02
30	57.88	2.16E–02	30	59.66	2.13E–02	30	58.1	2.14E–02
35	69.35	2.13E–02	35	71.04	2.15E–02	35	69.24	2.20E–02
40	81.85	2.06E–02	40	83.22	2.11E–02	40	81.16	2.16E–02
50 ~~100.37~~	108.37	~~2.85E–01~~	50	109.58	2.11E–02	50	106.46	2.20E–02

BZ OK

SAMPLE PERMEABILITY 2.1~~8~~2E–02cm/sec

SAMPLE DRY DENSITY 97.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 7/28/94

Project Number: 08940-83 Tested By: bs Checked By: MJ

SAMPLE NUMBER: GV-048

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		7a
Tare Weight, (g)	287		36.7
Tare + Wet Soil, (g)	4964		159.9
Tare + Dry Soil, (g)	4626		151.1
Sample for WATER CONTENT, %	7.79%		7.69%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	841	grams
Dry Soil + Sieve before	5180	grams
Dry Soil + Sieve after	1943	grams
Percent greater than	0.75	25.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1784			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2803			
Distance from top of mold to top of stone, (in)	0.864	0.895	0.883	0.88
Height of Sample, (in)	5.239			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.46	2.82E-02	10	14.62	2.98E-02	10	14.6	2.99E-02
20	28.74	3.59E-02	20	28.37	3.46E-02	20	28.3	3.48E-02
25	35.77	3.64E-02	25	35.55	3.56E-02		na	
30	43.14	3.65E-02	30	43.08	3.57E-02	30	43.02	3.34E-02
35	50.61	3.80E-02	35	50.77	3.69E-02	35	50.67	3.71E-02
40	58.52	3.80E-02	40	58.87	3.71E-02	40	58.86	3.67E-02
50	74.86	4.04E-02	50	75.96	3.86E-02	50	76.05	3.84E-02

SAMPLE PERMEABILITY 3.6E-02 cm/sec

SAMPLE DRY DENSITY 97.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/28/94

Project Number: 8940–83 Tested By: BS Checked By: bbt

SAMPLE NUMBER: GV–049

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		39
Tare Weight, (g)	501		33.5
Tare + Wet Soil, (g)	4502		226.8
Tare + Dry Soil, (g)	4272		212.2
Sample for WATER CONTENT, %	6.10%		8.17%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4826	grams
Dry Soil + Sieve after	1748	grams
Percent greater than	0.75	18.38%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2768			
Distance from top of mold to top of stone, (in)	0.992	1.28	0.955	1.08
Height of Sample, (in)	5.044			
Mold Area, (in ^ 3)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	14.84	2.82E–02	10	15.33	2.73E–02	10	15.34	2.73E–02
20	30.33	2.95E–02	20	30.56	3.00E–02	20	30.38	3.04E–02
25	37.14	3.61E–02	25	38.53	3.08E–02	25	38.24	3.13E–02
30	45.35	3.15E–02	30	46.56	3.22E–02	30	46.4	3.17E–02
35	53.65	3.29E–02	35	55.34	3.11E–02	35	55.06	3.15E–02
40	62.52	3.25E–02	40	64.35	3.20E–02	40	63.78	3.31E–02
50	81.22	3.39E–02	50	83.62	3.29E–02	50	82.78	3.33E–02

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 101.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–28–94

Project Number: 8940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–050

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		~~3878~~ BJ
Tare Weight, (g)	313		37.5
Tare + Wet Soil, (g)	4349		201.5
Tare + Dry Soil, (g)	4150		191.1
Sample for WATER CONTENT, %	5.19%		6.77%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4704	grams
Dry Soil + Sieve after	1732	grams
Percent greater than	0.75	22.54%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1766			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	0.893	0.959	0.83	0.89
Height of Sample, (in)	5.226			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	14.47	3.00E–02	10	14.86	2.92E–02	10	15.01	2.89E–02
20	28.97	3.27E–02	20	29.65	3.21E–02	20	30.5	3.06E–02
25	36.52	3.37E–02	25	37.39	3.29E–02	25	38.3	3.26E–02
30	44.62	3.31E–02	30	45.52	3.29E–02	30	46.59	3.23E–02
35	52.92	3.40E–02	35	53.85	3.39E–02	35		~~6.06E–03~~
40	61.59	3.45E–02	40	62.63	3.41E–02	40	64.6	~~4.06E–06~~ BJ
50	80.06	3.55E–02	50	81.7	3.44E–02	50	84.63	3.27E–02

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 97.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7/28/94

Project Number: 8940-83 Tested By: BS Checked By: BV

SAMPLE NUMBER: GV-051

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		8A
Tare Weight, (g)	216		33.5
Tare + Wet Soil, (g)	4612		176.8
Tare + Dry Soil, (g)	4392		165.9
Sample for WATER CONTENT, %	5.27%		8.23%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4417	grams
Dry Soil + Sieve after	2209	grams
Percent greater than	0.75	39.46%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1791			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2816			
Distance from top of mold to top of stone, (in)	1.302	1.156	1.26	1.24
Height of Sample, (in)	4.881			
Mold Area, (in ^ 3)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.71	2.29E-02	10	18.67	2.17E-02	10	19.6	2.07E-02
20	36.13	2.40E-02	20	38.31	2.25E-02	20	40.03	2.17E-02
25	45.97	2.42E-02	25	48.81	2.26E-02	25	50.99	2.17E-02
30	56.03	2.49E-02	30	59.82	2.27E-02	30	62.13	2.25E-02
35	66.85	2.44E-02	35	71.25	2.31E-02	35	73.93	2.24E-02
40	77.99	2.51E-02	40	83.47	2.29E-02	40	86.45	2.23E-02
50	102.31	2.52E-02	50	109.7	2.34E-02	50	113.64	2.25E-02

SAMPLE PERMEABILITY 2.3E-02 cm/sec

SAMPLE DRY DENSITY 104.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–28–94

Project Number: 8940–83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: GV–052

FIELD DATA

Density: 102 (pcf) Water Content: NA %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2		10
Tare Weight, (g)	310		39.8
Tare + Wet Soil, (g)	4979		191.8
Tare + Dry Soil, (g)	4701		182.4
Sample for WATER CONTENT, %	6.33%		6.59%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	864	grams
Dry Soil + Sieve before	5255	grams
Dry Soil + Sieve after	2153	grams
Percent greater than	0.75	29.36%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1791			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2802			
Distance from top of mold to top of stone, (in)	1.3	1.225	1.315	1.28
Height of Sample, (in)	4.840			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.99	2.52E–02	10	16.73	2.41E–02	10	17.12	2.35E–02
20	32.2	2.71E–02	20	33.59	2.61E–02	20	34.52	2.53E–02
25	40.81	2.74E–02	25	42.48	2.66E–02	25	43.8	2.55E–02
30	49.63	2.82E–02	30	51.73	2.69E–02	30	53.4	2.59E–02
35	59.16	2.75E–02	35	61.68	2.64E–02	35	63.41	2.62E–02
40	68.89	2.85E–02	40	71.79	2.75E–02	40	74.21	2.57E–02
50	90.05	2.88E–02	50	93.89	2.76E–02	50	97.11	2.66E–02

SAMPLE PERMEABILITY 2.6E–02 cm/sec

SAMPLE DRY DENSITY 105.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-29-94

Project Number: 8940-83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: GV-053

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		39
Tare Weight, (g)	216		33.3
Tare + Wet Soil, (g)	4392		186.9
Tare + Dry Soil, (g)	4130		176.7
Sample for WATER CONTENT, %	6.69%		7.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4684	grams
Dry Soil + Sieve after	1710	grams
Percent greater than	0.75	24.02%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1769			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2805			
Distance from top of mold to top of stone, (in)	1.2	1.142	1.182	1.17
Height of Sample, (in)	4.945			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	18.27	2.25E-02	10	19.33	2.12E-02	10	20.06	2.05E-02
20	37.53	2.33E-02	20	39.87	2.18E-02	20	41.48	2.09E-02
25	48.02	2.30E-02	25	50.91	2.18E-02	25	52.94	2.10E-02
30	58.86	2.34E-02	30	62.32	2.22E-02	30	64.75	2.15E-02
35		~~4.54E-03~~	35	74.35	2.22E-02	35	77.45	2.11E-02
40	82.55	~~3.43E-03~~	40	87.16	2.21E-02	40	90.6	2.15E-02
50	109.11	2.34E-02	50	114.81	2.24E-02	50	119.47	2.15E-02

BJ

SAMPLE PERMEABILITY 2.3E-02 cm/sec

SAMPLE DRY DENSITY 105.5 pcf

NOTES: 92.3% Saturated

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7–29–94

Project Number: 8940–83 Tested By: BS Checked By: BBJ

SAMPLE NUMBER: GV–054

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		35
Tare Weight, (g)	313		55
Tare + Wet Soil, (g)	5221		246.4
Tare + Dry Soil, (g)	4871		231.6
Sample for WATER CONTENT, %	7.68%		8.38%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5425	grams
Dry Soil + Sieve after	2378	grams
Percent greater than	0.75	33.15%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2767			
Distance from top of mold to top of stone, (in)	1.119	1.127	1.112	1.12
Height of Sample, (in)	5.001			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	18.25	2.28E–02	10	19.42	2.14E–02	10	19.95	2.08E–02
20	37.47	2.36E–02	20	39.74	2.23E–02	20	41.02	2.15E–02
25	47.78	2.36E–02	25	50.57	2.25E–02	25	52.26	2.17E–02
30	58.34	2.43E–02	30	61.73	2.30E–02	30	63.72	2.24E–02
35	69.58	2.41E–02	35	73.5	2.30E–02	35	75.81	2.24E–02
40	81.28	2.45E–02	40	85.81	2.32E–02	40	88.58	2.24E–02
50	106.66	2.47E–02	50	112.49	2.35E–02	50	116.16	2.28E–02

SAMPLE PERMEABILITY 2.3E–02 cm/sec

SAMPLE DRY DENSITY 102.0 pcf

NOTES: 90% Saturated

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 7-29-94

Project Number: 8940-83 Tested By: BS Checked By: BOY

SAMPLE NUMBER: GV-055

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234-A		90
Tare Weight, (g)	235		37.2
Tare + Wet Soil, (g)	4886		187.3
Tare + Dry Soil, (g)	4578		175.7
Sample for WATER CONTENT, %	7.09%		8.38%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5132	grams
Dry Soil + Sieve after	1498	grams
Percent greater than	0.75	16.33%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1770			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2805			
Distance from top of mold to top of stone, (in)	1.15	1.066	1.16	1.13
Height of Sample, (in)	4.995			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.86	1.90E-02	10	23.05	1.80E-02	10	24.32	1.71E-02
20	45.17	1.94E-02	20	47.81	1.83E-02	20	50.5	1.73E-02
25	57.81	1.92E-02	25	61.09	1.83E-02	25	64.8	1.70E-02
30	70.82	1.97E-02	30	74.87	1.86E-02	30	79.64	1.72E-02
35	84.76	1.94E-02	35	89.81	1.81E-02	35	95.66	1.69E-02
40	99.29	1.97E-02	40	105.15	1.86E-02	40	112.37	1.71E-02
50	131.69	1.93E-02	50	139.71	1.81E-02	50	149.53	1.69E-02

SAMPLE PERMEABILITY 1.9E-02 cm/sec

SAMPLE DRY DENSITY 103.1 pcf

NOTES: 93% Saturated

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/01/94

Project Number: 08940–83 Tested By: RS Checked By: BZ

SAMPLE NUMBER: GV–056

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		90–4
Tare Weight, (g)	314		34.8
Tare + Wet Soil, (g)	5300		182.9
Tare + Dry Soil, (g)	4988		171.1
Sample for WATER CONTENT, %	6.68%		8.66%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5542	grams
Dry Soil + Sieve after	1786	grams
Percent greater than	0.75	19.64%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2774			
Distance from top of mold to top of stone, (in)	1.029	0.887	1.008	0.97
Height of Sample, (in)	5.145			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	16.07	2.66E–02	10	16.09	2.66E–02	10	16.03	2.67E–02
20	32.09	2.92E–02	20	32.25	2.89E–02	20	32.12	2.91E–02
25	40.59	2.95E–02	25	40.63	3.00E–02	25	40.63	2.95E–02
30	49.18	3.08E–02	30	49.54	2.97E–02	30	49.29	3.05E–02
35	58.12	3.12E–02	35	58.39	3.15E–02	35	58.4	3.06E–02
40	67.56	3.13E–02	40		~~5.06E–03~~ BZ	40	67.74	3.16E–02
50	87.57	3.24E–02	50	87.73	~~7.38E–03~~	50	87.43	3.29E–02

3.0 BZ

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 99.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/02/94

Project Number: 08940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–057

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		90–17
Tare Weight, (g)	213		33
Tare + Wet Soil, (g)	5338		204.9
Tare + Dry Soil, (g)	5076		191.9
Sample for WATER CONTENT, %	5.39%		8.18%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5630	grams
Dry Soil + Sieve after	1797	grams
Percent greater than	0.75	21.18%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2788			
Distance from top of mold to top of stone, (in)	1.285	1.048	1.122	1.15
Height of Sample, (in)	4.968			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.49	2.66E–02	10	15.5	2.66E–02	10	15.69	2.63E–02
20	30.77	2.95E–02	20	31.34	2.85E–02	20	31.35	2.88E–02
25	38.41	3.17E–02	25	39.06	3.13E–02	25	39.63	2.92E–02
30	46.44	3.17E–02	30	47.58	2.99E–02	30	48.31	2.93E–02
35	54.95	3.16E–02	35	56.04	3.18E–02	35	56.75	3.18E–02
40	63.84	3.20E–02	40	65.38	3.04E–02	40	65.74	3.16E–02
50	82.45	3.35E–02	50	84.44	3.27E–02	50	85.59	3.14E–02

SAMPLE PERMEABILITY 3.2E–02 cm/sec (3.0) BJ

SAMPLE DRY DENSITY 103.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/01/94

Project Number: 08940-83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV-058

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234A		6A
Tare Weight, (g)	235		34.9
Tare + Wet Soil, (g)	5302		196.1
Tare + Dry Soil, (g)	5024		181.2
Sample for WATER CONTENT, %	5.80%		10.18%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5578	grams
Dry Soil + Sieve after	1715	grams
Percent greater than	0.75	19.34%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1765			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2802			
Distance from top of mold to top of stone, (in)	1.091	1.129	1.03	1.08
Height of Sample, (in)	5.037			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	21.95	1.91E-02	10	22.18	1.89E-02	10	23.38	1.79E-02
20	45.92	1.91E-02	20	46.24	1.90E-02	20	48.84	1.80E-02
25	58.8	1.91E-02	25	59.27	1.89E-02	25	62.79	1.76E-02
30	72.58	1.88E-02	30	72.93	1.89E-02	30	77.37	1.77E-02
35	87.45	1.84E-02	35	87.96	1.82E-02	35	92.82	1.77E-02
40	102.92	1.87E-02	40	103.56	1.85E-02	40	109.3	1.75E-02
50	137.39	1.84E-02	50	138.18	1.83E-02	50	145.78	1.74E-02

SAMPLE PERMEABILITY 1.8E-02 cm/sec

SAMPLE DRY DENSITY 100.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/01/94

Project Number: 08940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV–058A sample was 5% over density

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		6A
Tare Weight, (g)	235		34.9
Tare + Wet Soil, (g)	5302		196.1
Tare + Dry Soil, (g)	5024		181.2
Sample for WATER CONTENT, %	5.80%		10.18%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5578	grams
Dry Soil + Sieve after	1715	grams
Percent greater than	0.75	19.34%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1765			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2802			
Distance from top of mold to top of stone, (in)	1.388	1.415	1.36	1.39
Height of Sample, (in)	4.732			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	39.39	1.00E–02	10	48.58	8.11E–03	10	55.74	7.06E–03
20	85.49	9.33E–03	20	107.33	7.32E–03	20	121.86	6.51E–03
25	111.24	8.97E–03	25	140.43	6.98E–03	25	159.3	6.17E–03
30	139.33	8.65E–03	30	177.18	6.61E–03	30	200.24	5.94E–03
35	169.77	8.43E–03	35	217.86	6.31E–03	35	245.83	5.63E–03
40	203.71	8.00E–03	40	261.61	6.21E–03	40	295.8	5.43E–03
50	281.36	7.67E–03	50	365.68	5.72E–03	50	411.33	5.16E–03

SAMPLE PERMEABILITY 8.0E–03 cm/sec

SAMPLE DRY DENSITY 107.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/01/94

Project Number: 08940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV–059

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		90–13
Tare Weight, (g)	313		34
Tare + Wet Soil, (g)	4927		182.1
Tare + Dry Soil, (g)	4689		170.1
Sample for			
WATER CONTENT, %	5.44%		8.82%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5243	grams
Dry Soil + Sieve after	1829	grams
Percent greater than	0.75	21.98%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2779			
Distance from top of mold to top of stone, (in)	1.265	1.104	1.089	1.15
Height of Sample, (in)	4.967			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	17.27	2.39E–02	10	16.57	2.49E–02	10	16.41	2.51E–02
20	32.91	2.88E–02	20	32.87	2.76E–02	20	33.2	2.68E–02
25	41.66	2.76E–02				25	41.73	2.84E–02
30	51.02	2.72E–02	28	46.49	~~2.70E–02~~ BJ	30	50.97	2.75E–02
35	60.05	2.97E–02	35	59.75	2.81E–02	35	60.41	2.84E–02
41	72.35	2.79E–02	41	71.38	2.95E–02	40	70.34	2.86E–02
50	91.59	2.93E–02	50	90.45	2.96E–02	50	91.72	2.92E–02

SAMPLE PERMEABILITY 2.8E–02 cm/sec

SAMPLE DRY DENSITY 102.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/02/94

Project Number: 08940-83 Tested By: BS Checked By: PZ

SAMPLE NUMBER: GV-060

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		55
Tare Weight, (g)	314		40.4
Tare + Wet Soil, (g)	4910		223.4
Tare + Dry Soil, (g)	4698		208.9
Sample for WATER CONTENT, %	4.84%		8.61%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5252	grams
Dry Soil + Sieve after	1490	grams
Percent greater than	NA	14.19%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.117	1.192	1.11	1.14
Height of Sample, (in)	4.980			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	35.41	2.97E-02	10	37.46	2.81E-02	10	41.2	2.55E-02
20	78.98	3.08E-02	20	84.8	2.83E-02	20	93.68	2.55E-02
25	106.18	3.08E-02	25	114.41	2.83E-02	25	126.25	2.58E-02
30	138.07	3.18E-02	30	149.59	2.88E-02	30	164.8	2.63E-02
35	178.49	3.16E-02	35	193.74	2.90E-02	35	213.89	2.60E-02
40	231.27	3.29E-02	40	252.73	2.94E-02	40	280.2	2.62E-02

SAMPLE PERMEABILITY 2.7E-02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/02/94

Project Number: 08940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: GV-061

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		10
Tare Weight, (g)	286		39.8
Tare + Wet Soil, (g)	5492		216.6
Tare + Dry Soil, (g)	5187		205.6
Sample for WATER CONTENT, %	6.22%		6.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	5741	grams
Dry Soil + Sieve after	2035	grams
Percent greater than	0.75	24.38%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1753			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2762			
Distance from top of mold to top of stone, (in)	1.005	1.045	1.083	1.04
Height of Sample, (in)	5.076			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	27.59	3.88E-02	10	28.31	3.78E-02	10	29.18	3.67E-02
20	60.23	4.18E-02	20	62.27	4.02E-02	20	64.63	3.85E-02
25	79.51	4.43E-02	25	82.6	4.20E-02	25	86.13	3.98E-02
30	101.63	4.67E-02	30	106.49	4.32E-02	30	110.56	4.23E-02
35	129.57	4.66E-02	35	136.03	4.41E-02	35	141.53	4.21E-02
40	166.58	4.78E-02	40	174.83	4.56E-02	40	182.44	4.32E-02

SAMPLE PERMEABILITY	4.0E-02 cm/sec
SAMPLE DRY DENSITY	100.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/02/94

Project Number: 08940–83 Tested By: RS Checked By: BZ

SAMPLE NUMBER: GV–062

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		50
Tare Weight, (g)	213		39
Tare + Wet Soil, (g)	4963		237.9
Tare + Dry Soil, (g)	4761		227.2
Sample for WATER CONTENT, %	4.44%		5.69%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5315	grams
Dry Soil + Sieve after	1769	grams
Percent greater than	0.75	22.03%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	0.991	0.834	0.989	0.94
Height of Sample, (in)	5.182			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	13.02	3.31E–02	10	13.18	3.27E–02	10	14.4	2.99E–02
20	27.4	3.28E–02	20	26.33	3.58E–02	20	28.46	3.35E–02
25	34.93	3.36E–02						
30	42.96	3.31E–02	30	42.18	~~3.37E–02~~ 3.39	30	42.18	~~6.37E–02~~ 3.87
35	49.9	4.05E–02	35	48.55	4.41E–02	35	52.24	2.79E–02
40	57.37	3.98E–02	40	56.93	3.55E–02	40	60.46	3.62E–02
50	72	4.46E–02	50	75.05	3.60E–02	50	78.46	3.62E–02

SAMPLE PERMEABILITY 3.4E–02 cm/sec

SAMPLE DRY DENSITY 98.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/02/94

Project Number: 08940–83 Tested By: ~~BS~~ R Checked By: BJ

SAMPLE NUMBER: GV–063

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		90–7
Tare Weight, (g)	313		34.3
Tare + Wet Soil, (g)	4581		183.7
Tare + Dry Soil, (g)	4298		172.2
Sample for WATER CONTENT, %	7.10%		8.34%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4852	grams
Dry Soil + Sieve after	1633	grams
Percent greater than	0.75	19.22%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1771			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2800			
Distance from top of mold to top of stone, (in)	1.099	0.91	1.018	1.01
Height of Sample, (in)	5.111			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	30.39	3.51E–02	10	31.52	3.39E–02	10	33.33	3.20E–02
20	68.11	3.60E–02	20	70.77	3.46E–02	20	74.77	3.28E–02
25	91.99	3.55E–02	25	85.39	5.79E–02	25	102.11	3.10E–02
30	120.46	3.58E–02	30	124.95	2.58E–02	30	133.55	3.24E–02
35	157.33	3.47E–02	35	163.33	3.34E–02	35	175.36	3.06E–02
40	207.3	3.45E–02	40	216.33	3.25E–02	40	233.61	2.96E–02

SAMPLE PERMEABILITY 3.4E–02 cm/sec

SAMPLE DRY DENSITY 100.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: MMR Landfill #1, AREA C Date: 8/03/94

Project Number: 7623-66 Tested By: bs Checked By: RS PZ

SAMPLE NUMBER: GV-064

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13	na	75
Tare Weight, (g)	286		38.1
Tare + Wet Soil, (g)	4594		187.3
Tare + Dry Soil, (g)	4376		176.6
Sample for WATER CONTENT, %	5.33%		7.73%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	4930	grams
Dry Soil + Sieve after	1560	grams
Percent greater than	0.75	17.60%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1776			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2795			
Distance from top of mold to top of stone, (in)	1.155	1.188	1.128	1.16
Height of Sample, (in)	4.963			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33.00			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	18.5	2.23E-02	10	16.95	2.43E-02	10	17.17	2.40E-02
20	38.24	2.28E-02	20	34.51	2.56E-02	20	34.83	2.55E-02
25	48.34	2.39E-02	25	43.7	2.63E-02	25	44.21	2.58E-02
30	59.54	2.27E-02	30	53.19	2.68E-02	30	53.7	2.68E-02
35	70.76	2.39E-02	35	63.2	2.68E-02	35	63.91	2.63E-02
40	82.9	2.34E-02	40	73.33	2.80E-02	40	74.61	2.65E-02
50	104.84	2.84E-02	50	95.63	2.79E-02	50	97.34	2.74E-02

SAMPLE PERMEABILITY 2.5E-02 cm/sec

SAMPLE DRY DENSITY 102.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940-83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: GV-065

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: na

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		103
Tare Weight, (g)	213		39.5
Tare + Wet Soil, (g)	4351		197.6
Tare + Dry Soil, (g)	4088		185.1
Sample for WATER CONTENT, %	6.79%		8.59%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4642	grams
Dry Soil + Sieve after	1635	grams
Percent greater than	NA	22.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.322	1.335	1.311	1.32
Height of Sample, (in)	4.797			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0		
10	34.14	2.96E-02	10	35.35	2.86E-02	10		ERR
20	76.77	3.03E-02	20	78.59	2.99E-02	20		ERR
25	103.17	3.06E-02	25	105.09	3.05E-02	25		ERR
30	134.17	3.15E-02	30	136.45	3.11E-02	30		ERR
35	172.33	3.23E-02	35	175.45	3.16E-02	35		ERR
40	223.13	3.29E-02	40	227.1	3.24E-02	40		ERR

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 105.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 8/03/94

Project Number: 08940–83 Tested By: rs Checked By: BZ

SAMPLE NUMBER: GV–066

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217–B	na	34
Tare Weight, (g)	216		55.8
Tare + Wet Soil, (g)	4757		211.5
Tare + Dry Soil, (g)	4497		200.6
Sample for WATER CONTENT, %	6.07%		7.53%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5051	grams
Dry Soil + Sieve after	1461	grams
Percent greater than	0.75	16.14%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1778			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2800			
Distance from top of mold to top of stone, (in)	1.034	1.055	1.04	1.04
Height of Sample, (in)	5.077			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.36	2.94E–02	10	16.48	2.56E–02			
20	30.51	2.85E–02	20	33.3	2.74E–02			
25	38.86	2.96E–02	25	42.08	2.82E–02			
30	47.76	2.92E–02	30	51.02	2.91E–02			
35	56.89	3.01E–02	35	60.52	2.89E–02			
40	66.51	3.02E–02	40	71.42	2.66E–02			
50	87.04	3.10E–02	50	92.27	3.06E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 101.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 8/03/94

Project Number: 8940–83 Tested By: rs Checked By: 3- pf

SAMPLE NUMBER: GV–067

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4a	na	93–12
Tare Weight, (g)	313		34.1
Tare + Wet Soil, (g)	4421		152.5
Tare + Dry Soil, (g)	4158		142.5
Sample for WATER CONTENT, %	6.84%		9.23%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4712	grams
Dry Soil + Sieve after	1464	grams
Percent greater than	0.75	15.53%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1775			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2811			
Distance from top of mold to top of stone, (in)	1.071	1.11	1.079	1.09
Height of Sample, (in)	5.033			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.78	3.57E–02	10	29.9	3.55E–02			
20	64.14	3.94E–02	20	64.34	3.93E–02			
25	84.7	4.12E–02	25	85.06	4.09E–02			
30	108.73	4.26E–02	30	108.84	4.30E–02			
35	136.99	4.57E–02	35	137.9	4.45E–02			
40	174.08	4.73E–02	40	175.66	4.65E–02			

SAMPLE PERMEABILITY: 4.0E–02 cm/sec

SAMPLE DRY DENSITY: 101.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: Sullivan Landfill Date: 8/03/94

Project Number: 8940–83 Tested By: BS Checked By: R BZ

SAMPLE NUMBER: GV–068

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1a	na	93–1
Tare Weight, (g)	314		32.1
Tare + Wet Soil, (g)	4910		189.1
Tare + Dry Soil, (g)	4628		177.6
Sample for WATER CONTENT, %	6.54%		7.90%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5182	grams
Dry Soil + Sieve after	1575	grams
Percent greater than	0.75	16.39%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.278	1.227	1.289	1.26
Height of Sample, (in)	4.855			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	34.24	2.96E–02	10	36.05	2.81E–02			
20	76.89	3.02E–02	20	80.88	2.88E–02			
25	102.62	3.13E–02	25	108.77	2.88E–02			
30	133.06	3.18E–02	30	141.95	2.92E–02			
35	170.47	3.25E–02	35	184.45	2.86E–02			
40	220.22	3.29E–02	40	242.43	2.82E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 104.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940–83 Tested By: BS Checked By:

SAMPLE NUMBER: GV–069

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217–B		50
Tare Weight, (g)	216		39.1
Tare + Wet Soil, (g)	5011		184.4
Tare + Dry Soil, (g)	4651		171.8
Sample for WATER CONTENT, %	8.12%		9.50%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5205	grams
Dry Soil + Sieve after	1767	grams
Percent greater than	0.75	22.48%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1753			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2787			
Distance from top of mold to top of stone, (in)	1.195	1.27	1.16	1.21
Height of Sample, (in)	33.000			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	20.33	2.39E–02	5	22.11	2.19E–02			
10	43.49	2.33E–02	10	47.2	2.15E–02			
15	69.83	2.31E–02	15	75.58	2.14E–02			
20	100.05	2.30E–02	20	109.05	2.08E–02			
25	135.46	2.29E–02	25	148.67	2.05E–02			

SAMPLE PERMEABILITY 2.2E–02 cm/sec

SAMPLE DRY DENSITY 103.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940–83 Tested By: RS Checked By: RS BT

SAMPLE NUMBER: GV–070

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density: NA

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		51
Tare Weight, (g)	285.9		39.5
Tare + Wet Soil, (g)	5031		130.5
Tare + Dry Soil, (g)	4761		122.5
Sample for WATER CONTENT, %	6.03%		9.64%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	839.9	grams
Dry Soil + Sieve before	5315	grams
Dry Soil + Sieve after	2093	grams
Percent greater than	~~NA~~ .75	28.00%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1777			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2816			
Distance from top of mold to top of stone, (in)	0.992	0.848	1.064	0.97
Height of Sample, (in)	5.152			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.02	2.85E–02	10	15.29	2.80E–02			
20	30.02	3.12E–02	20	30.55	3.06E–02			
25	37.98	3.15E–02	25	38.7	3.08E–02			
30	45.79	3.38E–02	30	46.84	3.24E–02			
35	54.37	3.25E–02	35	55.38	3.26E–02			
40	62.95	3.44E–02	40	64.17	3.35E–02			
50	81.45	3.50E–02	50	83.13	3.41E–02			

SAMPLE PERMEABILITY: 3.2E–02 cm/sec

SAMPLE DRY DENSITY: 99.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940–83 Tested By: BS Checked By: BS DZ

SAMPLE NUMBER: GV–071

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101		34
Tare Weight, (g)	213		55.7
Tare + Wet Soil, (g)	4727		203.9
Tare + Dry Soil, (g)	4422		192.7
Sample for WATER CONTENT, %	7.25%		8.18%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4976	grams
Dry Soil + Sieve after	1689	grams
Percent greater than	0.75	21.91%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.27	1.185	1.278	1.24
Height of Sample, (in)	4.876			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	18.12	2.23E–02	10	18.81	2.15E–02			
20	37.74	2.25E–02	20	39.22	2.17E–02			
25	48.23	2.26E–02	25	50.38	2.13E–02			
30	59.34	2.25E–02	30	61.66	2.21E–02			
35	70.77	2.31E–02	35	73.1	2.30E–02			
40	82.62	2.35E–02	40	85.63	2.23E–02			
50	108.19	2.39E–02	50	112.38	2.29E–02			

SAMPLE PERMEABILITY 2.2E–02 cm/sec

SAMPLE DRY DENSITY 104.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940-83 Tested By: BS/RS Checked By: F. B.

SAMPLE NUMBER: GV-072

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		76
Tare Weight, (g)	312		38.4
Tare + Wet Soil, (g)	5279		175.7
Tare + Dry Soil, (g)	4900		165.3
Sample for WATER CONTENT, %	8.26%		8.20%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	5454	grams
Dry Soil + Sieve after	1736	grams
Percent greater than	0.75	18.96%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.145	1.183	1.263	1.20
Height of Sample, (in)	4.920			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	16.2	3.03E-02	5	16.2	3.03E-02			
10	33.38	3.19E-02	10	33.88	3.10E-02			
15	51.95	3.32E-02	15	53.09	3.21E-02			
20	73.16	3.34E-02	20	74.69	3.28E-02			
25	97.3	3.43E-02	25	99.78	3.30E-02			

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 102.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940–83 Tested By: BS Checked By: BS BJ

SAMPLE NUMBER: GV–073

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		34
Tare Weight, (g)	314		55.7
Tare + Wet Soil, (g)	5103		198.2
Tare + Dry Soil, (g)	4765		187.5
Sample for WATER CONTENT, %	7.59%		8.12%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5319	grams
Dry Soil + Sieve after	1875	grams
Percent greater than	0.75	22.62%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	0.994	1.035	0.989	1.01
Height of Sample, (in)	5.114			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	15.52	3.26E–02	5	15.31	3.30E–02			
10	32.27	3.36E–02	10	32.49	3.27E–02			
15	50.77	3.42E–02	15	51.74	3.29E–02			
20	71.46	3.50E–02	20	73.68	3.30E–02			
25	95.05	3.59E–02	25	99.24	3.32E–02			

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 99.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940–83 Tested By: BS Checked By: BS BT

SAMPLE NUMBER: GV–074

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		75
Tare Weight, (g)	501		38.2
Tare + Wet Soil, (g)	4586		228.6
Tare + Dry Soil, (g)	4306		213.8
Sample for WATER CONTENT, %	7.36%		8.43%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4860	grams
Dry Soil + Sieve after	1782	grams
Percent greater than	0.75	19.11%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1753			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.13	1.07	1.072	1.09
Height of Sample, (in)	5.029			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	14.13	3.55E–02	5	14.56	3.45E–02			
10	29.5	3.64E–02	10	30.15	3.59E–02			
15	45.98	3.83E–02	15	46.91	3.76E–02			
20	64.32	3.94E–02	20	66.16	3.75E–02			
25	85.54	3.99E–02	25	87.65	3.94E–02			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940–83 Tested By: RS Checked By: RC PH

SAMPLE NUMBER: GV–075

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		75
Tare Weight, (g)	343		38.1
Tare + Wet Soil, (g)	4266		205.7
Tare + Dry Soil, (g)	3943		191.8
Sample for WATER CONTENT, %	8.97%		9.04%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4497	grams
Dry Soil + Sieve after	1358	grams
Percent greater than	0.75	12.81%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1776			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2811			
Distance from top of mold to top of stone, (in)	1.132	1.269	1.276	1.23
Height of Sample, (in)	4.894			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0		
5	15.63	3.13E–02	5	15.99	3.06E–02	10		ERR
10	31.95	3.33E–02	10	32.59	3.28E–02	20		ERR
15		~~1.02E–02~~	15	50.59	3.41E–02	25		ERR
20	70.35	~~1.00E–02~~	20	71.05	3.44E–02	30		ERR
25	91.19	3.96E–02	25	94.88	3.46E–02	35		ERR
						40		ERR
						50		ERR

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 104.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940–83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: GV–076

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		106
Tare Weight, (g)	235		39.7
Tare + Wet Soil, (g)	5413		202.9
Tare + Dry Soil, (g)	5010		188.7
Sample for WATER CONTENT, %	8.44%		9.53%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5564	grams
Dry Soil + Sieve after	1454	grams
Percent greater than	0.75	13.93%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1754			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2793			
Distance from top of mold to top of stone, (in)	1.007	1.015	0.989	1.00
Height of Sample, (in)	5.116			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	45.58	2.34E–02	10	44.68	2.39E–02	10	51.11	2.09E–02
20	102.43	2.39E–02	20	101.68	2.38E–02	20	116.96	2.06E–02
25	136.08	2.52E–02	25	137.15	2.39E–02	25	158.3	2.05E–02
30	174.68	2.64E–02	30	179.49	2.41E–02	30	206.68	2.11E–02
35	221.68	2.73E–02	35	232.87	2.40E–02	35	267.99	2.09E–02
40	281.68	2.87E–02	40	303.87	2.43E–02	40	349.33	2.12E–02

SAMPLE PERMEABILITY 2.0E–02 cm/sec

SAMPLE DRY DENSITY 100.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940-83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV-077

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		81
Tare Weight, (g)	216		36.6
Tare + Wet Soil, (g)	4593		189.8
Tare + Dry Soil, (g)	4306		176.6
Sample for WATER CONTENT, %	7.02%		9.43%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4860	grams
Dry Soil + Sieve after	1291	grams
Percent greater than	0.75	12.74%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1775			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2811			
Distance from top of mold to top of stone, (in)	1.15	1.161	1.196	1.17
Height of Sample, (in)	4.951			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	19.63	2.49E-02	5	20.38	2.40E-02			
10	41.41	2.50E-02	10	43.52	2.35E-02			
15	65.98	2.50E-02	15	69.54	2.36E-02			
20	93.65	2.54E-02	20	98.99	2.38E-02			
25	125.75	2.56E-02	25	134.27	2.33E-02			

SAMPLE PERMEABILITY 2.4E-02 cm/sec

SAMPLE DRY DENSITY 103.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/04/94

Project Number: 08940–83 Tested By: BS Checked By: BS

SAMPLE NUMBER: GV–078

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A		103
Tare Weight, (g)	315		39.5
Tare + Wet Soil, (g)	4602		135.9
Tare + Dry Soil, (g)	4295		128.7
Sample for WATER CONTENT, %	7.71%		8.07%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4849	grams
Dry Soil + Sieve after	1782	grams
Percent greater than	0.75	22.94%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.04	1.036	1.033	1.04
Height of Sample, (in)	5.084			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^2)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	14.81	3.39E–02	5	15.59	3.22E–02			
10	31.28	3.37E–02	10	32.45	3.32E–02			
15	49.17	3.54E–02	15	50.96	3.40E–02			
20	69.58	3.48E–02	20	72.16	3.40E–02			
25	93.77	3.53E–02	25	96.62	3.44E–02			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 100.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/05/94

Project Number: 08940–83 Tested By: BS Checked By: RS BY

SAMPLE NUMBER: GV–079

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4a		39
Tare Weight, (g)	313		33.3
Tare + Wet Soil, (g)	4939		179.9
Tare + Dry Soil, (g)	4626		167
Sample for WATER CONTENT, %	7.26%		9.65%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5180	grams
Dry Soil + Sieve after	1656	grams
Percent greater than	0.75	18.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1756			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2794			
Distance from top of mold to top of stone, (in)	1.134	1.144	1.062	1.11
Height of Sample, (in)	5.007			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	20.88	2.39E–02	5	22.59	2.21E–02			
10	45.2	2.29E–02	10	48.69	2.13E–02			
15	72.74	2.28E–02	15	78.19	2.13E–02			
20	104	2.30E–02	20	111.84	2.14E–02			
25	141.16	2.27E–02	25	152.12	2.09E–02			

SAMPLE PERMEABILITY 2.1E–02 cm/sec

SAMPLE DRY DENSITY 102.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/09/94

Project Number: 08940–83 Tested By: RS Checked By: RS PJ.

SAMPLE NUMBER: GV–080

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		5
Tare Weight, (g)	235		39.6
Tare + Wet Soil, (g)	4775		225.2
Tare + Dry Soil, (g)	4481		213.1
Sample for WATER CONTENT, %	6.92%		6.97%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5035	grams
Dry Soil + Sieve after	1852	grams
Percent greater than	0.75	25.04%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1767			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2784			
Distance from top of mold to top of stone, (in)	1.083	1.152	1.078	1.10
Height of Sample, (in)	5.016			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.17	2.95E–02	10	13.98	2.99E–02			
20	28.56	3.17E–02	20	28.13	3.22E–02			
25	36.06	3.26E–02	25	35.56	3.30E–02			
30	43.97	3.26E–02	30	43.3	3.33E–02			
35	51.92	3.42E–02	35	51.23	3.43E–02			
40	60.52	3.35E–02	40	59.79	3.36E–02			
50	78.77	3.46E–02	50	77.84	3.50E–02			

SAMPLE PERMEABILITY: 3.0E–02 cm/sec

SAMPLE DRY DENSITY: 102.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940-83 Tested By: ~~BG~~ RS Checked By: RS BJ.

SAMPLE NUMBER: GV-081

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216-B		17
Tare Weight, (g)	215		42
Tare + Wet Soil, (g)	4005		176.3
Tare + Dry Soil, (g)	3801		166.6
Sample for WATER CONTENT, %	5.69%		7.78%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4355	grams
Dry Soil + Sieve after	1267	grams
Percent greater than	0.75	13.89%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2765			
Distance from top of mold to top of stone, (in)	1.113	1.041	1.053	1.07
Height of Sample, (in)	5.051			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.31	2.42E-02	10	17.61	2.38E-02			
20	35.47	2.52E-02	20	35.61	2.55E-02			
25	45.03	2.57E-02	25	45.165	2.57E-02			
30	54.89	2.63E-02	30	54.97	2.64E-02			
35	65.41	2.60E-02	35	65.4	2.62E-02			
40	76.58	2.59E-02	40	76.31	2.65E-02			
50	100.46	2.65E-02	50	99.93	2.68E-02			

SAMPLE PERMEABILITY 2.5E-02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/09/94

Project Number: 08940–83 Tested By: RS Checked By: BT

SAMPLE NUMBER: GV–0082

FIELD DATA

Density: 102 (pcf) Water Content: 6 %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2		89
Tare Weight, (g)	311		38.7
Tare + Wet Soil, (g)	5213		228.2
Tare + Dry Soil, (g)	5057		214.2
Sample for WATER CONTENT, %	3.29%		7.98%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	865	grams
Dry Soil + Sieve before	5611	grams
Dry Soil + Sieve after	1948	grams
Percent greater than	0.75	22.82%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2795			
Distance from top of mold to top of stone, (in)	1.07	1.17	1.106	1.12
Height of Sample, (in)	5.005			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.7	2.35E–02	10	16.79	2.48E–02			
20	36.16	2.46E–02	20	34.07	2.63E–02			
25	45.9	2.50E–02	25	43.16	2.68E–02			
30	55.88	2.57E–02	30	52.61	2.71E–02			
35	65.78	2.73E–02	35	62.46	2.75E–02			
40	76.3	2.72E–02	40	72.64	2.81E–02			
50	98.43	2.84E–02	50	94.94	2.82E–02			

SAMPLE PERMEABILITY 2.5E–02 cm/sec
SAMPLE DRY DENSITY 102.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/09/94

Project Number: 08940-83 Tested By: RS Checked By: RS pf.

SAMPLE NUMBER: GV-083

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		57
Tare Weight, (g)	286		41.4
Tare + Wet Soil, (g)	4735		166.9
Tare + Dry Soil, (g)	4559		158
Sample for WATER CONTENT, %	4.12%		7.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	5113	grams
Dry Soil + Sieve after	1717	grams
Percent greater than	0.75	20.52%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1758			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.25	1.25	1.253	1.25
Height of Sample, (in)	4.869			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.91	2.26E-02	10	16.21	2.49E-02			
20	35.84	2.46E-02	20	32.61	2.69E-02			
25	44.16	2.85E-02	25	41.38	2.70E-02			
30	53.48	2.68E-02	30	50.11	2.86E-02			
35	63.52	2.62E-02	35	59.56	2.79E-02			
40	73.73	2.73E-02	40	69.38	2.84E-02			
50	95.79	2.77E-02	50	90.11	2.95E-02			

SAMPLE PERMEABILITY 2.5E-02 cm/sec

SAMPLE DRY DENSITY 105.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940–83 Tested By: BS Checked By: BT

SAMPLE NUMBER: GV–084

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		26
Tare Weight, (g)	501		52
Tare + Wet Soil, (g)	4565		212.8
Tare + Dry Soil, (g)	4318		202.4
Sample for WATER CONTENT, %	6.47%		6.91%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4872	grams
Dry Soil + Sieve after	1994	grams
Percent greater than	0.75	24.60%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1776			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2789			
Distance from top of mold to top of stone, (in)	1.189	1.087	1.116	1.13
Height of Sample, (in)	4.989			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	16.02	2.59E–02	10	16.65	2.49E–02			
20	32.24	2.80E–02	20	33.74	2.65E–02			
25	40.84	2.83E–02	25	42.46	2.79E–02			
30	49.56	2.94E–02	30	51.82	2.74E–02			
35	58.82	2.92E–02	35	61.32	2.85E–02			
40	68.31	3.02E–02	40	71.3	2.87E–02			
50	89.08	3.02E–02	50	93.02	2.89E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 102.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940-83 Tested By: BS Checked By: RSBF

SAMPLE NUMBER: GV-085

FIELD DATA

Density: 102 (pcf) Water Content: 6 %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		90
Tare Weight, (g)	343		37.1
Tare + Wet Soil, (g)	4712		228.6
Tare + Dry Soil, (g)	4495		214.6
Sample for WATER CONTENT, %	5.23%		7.89%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	5049	grams
Dry Soil + Sieve after	1884	grams
Percent greater than	0.75	23.77%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1767			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2789			
Distance from top of mold to top of stone, (in)	1.111	1.076	1.012	1.07
Height of Sample, (in)	5.054			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	13.06	3.21E-02	10	12.97	3.24E-02			
20	25.63	3.65E-02	20	25.69	3.60E-02			
25	32.14	3.78E-02	25	32.24	3.76E-02			
30	38.98	3.79E-02	30	39.02	3.82E-02			
35	45.81	4.00E-02	35	46.12	3.85E-02			
40	53.2	3.91E-02	40	53.24	4.06E-02			
50	68.65	4.11E-02	50	68.92	4.05E-02			

SAMPLE PERMEABILITY 3.5E-02 cm/sec
SAMPLE DRY DENSITY 101.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940–83 Tested By: ~~BS~~ RS Checked By: RS pg

SAMPLE NUMBER: GV–086

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		57
Tare Weight, (g)	216		41.4
Tare + Wet Soil, (g)	4567		178.2
Tare + Dry Soil, (g)	4420		168.1
Sample for WATER CONTENT, %	3.50%		7.97%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4974	grams
Dry Soil + Sieve after	1462	grams
Percent greater than	0.75	16.46%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1780			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2805			
Distance from top of mold to top of stone, (in)	1.523	1.331	1.369	1.41
Height of Sample, (in)	4.712			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	18.95	2.06E–02	10	18.81	2.08E–02			
20	38.34	2.20E–02	20	38.31	2.19E–02			
25	48.47	2.27E–02	25	48.74	2.20E–02			
30	59.21	2.25E–02	30	59.69	2.21E–02			
35	70.41	2.27E–02	35	71.12	2.23E–02			
40	81.99	2.33E–02	40	83.42	2.19E–02			
50	107.3	2.34E–02	50	109.29	2.29E–02			

SAMPLE PERMEABILITY 2.2E–02 cm/sec

SAMPLE DRY DENSITY 108.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940–83 Tested By: ~~BS~~ RS Checked By: RS

SAMPLE NUMBER: GV–087

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101		8
Tare Weight, (g)	213		38.9
Tare + Wet Soil, (g)	5004		189.3
Tare + Dry Soil, (g)	4663		178.2
Sample for WATER CONTENT, %	7.66%		7.97%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5217	grams
Dry Soil + Sieve after	2050	grams
Percent greater than	0.75	28.83%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1756			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2779			
Distance from top of mold to top of stone, (in)	1.114	1.03	1.01	1.05
Height of Sample, (in)	5.069			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.89	2.65E–02	10	16.52	2.55E–02			
20	31.84	2.88E–02	20	34.16	2.61E–02			
25	40.35	2.90E–02	25	42.21	3.07E–02			
30	48.99	3.01E–02	30	51.38	2.83E–02			
35	58.17	2.99E–02	35	60.95	2.86E–02			
40	67.73	3.03E–02	40	71.04	2.87E–02			
50	87.91	3.15E–02	50		~~–8.96E–08~~ RS			

SAMPLE PERMEABILITY ~~3.0E–02~~ 2.68E-2 cm/sec

SAMPLE DRY DENSITY 100.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940–83 Tested By: ~~BS~~ RS Checked By: RSW

SAMPLE NUMBER: GV–088

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A		72
Tare Weight, (g)	313		41.1
Tare + Wet Soil, (g)	4581		212.8
Tare + Dry Soil, (g)	4307		198.4
Sample for WATER CONTENT, %	6.86%		9.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4861	grams
Dry Soil + Sieve after	1560	grams
Percent greater than	0.75	17.35%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1777			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2810			
Distance from top of mold to top of stone, (in)	1.27	1.306	1.208	1.26
Height of Sample, (in)	4.859			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	19.95	2.02E–02	10	21.21	1.90E–02			
20	41.87	2.01E–02	20	43.58	1.97E–02			
25	52.37	2.25E–02	25	55.52	1.98E–02			
30	64.2	2.10E–02	30	68.04	1.99E–02			
35	76.93	2.06E–02	35	81.62	1.93E–02			
40	90.26	2.09E–02	40	95.84	1.95E–02			
50	119.44	2.09E–02	50	127.12	1.95E–02			

SAMPLE PERMEABILITY 2.0E–02 cm/sec

SAMPLE DRY DENSITY 105.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940–83 Tested By: ~~BS~~ RS Checked By: RS BJ

SAMPLE NUMBER: GV–089

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1a		5
Tare Weight, (g)	314		39.9
Tare + Wet Soil, (g)	5061		184.4
Tare + Dry Soil, (g)	4807		172.8
Sample for WATER CONTENT, %	5.65%		8.73%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5361	grams
Dry Soil + Sieve after	2273	grams
Percent greater than	0.75	31.27%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1777			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2806			
Distance from top of mold to top of stone, (in)	1.102	0.882	0.878	0.95
Height of Sample, (in)	5.166			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^2)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.09	2.84E–02	10	15.62	2.75E–02			
20	30.22	3.10E–02	20	31.29	2.99E–02			
25	38.05	3.21E–02	25	39.44	3.09E–02			
30	46.3	3.21E–02	30	47.93	3.12E–02			
35	54.66	3.34E–02	35	56.74	3.17E–02			
40	63.7	3.27E–02	40	65.88	3.23E–02			
50	82.59	3.43E–02	50	85.66	3.28E–02			

SAMPLE PERMEABILITY: 3.0E–02 cm/sec

SAMPLE DRY DENSITY: 98.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/08/94

Project Number: 08940-83 Tested By: ~~BB~~ RS Checked By: RS

SAMPLE NUMBER: GV-090

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		8
Tare Weight, (g)	312		39.1
Tare + Wet Soil, (g)	4382		165.4
Tare + Dry Soil, (g)	4228		156.1
Sample for WATER CONTENT, %	3.93%		7.95%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4782	grams
Dry Soil + Sieve after	1561	grams
Percent greater than	0.75	17.75%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2766			
Distance from top of mold to top of stone, (in)	1.285	1.372	1.371	1.34
Height of Sample, (in)	4.777			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	62.9	6.32E-03	10	51.88	7.66E-03			
20	115.68	8.23E-03	20	106.39	7.97E-03			
25	143.1	8.50E-03	25	135.21	8.09E-03			
30	170.99	8.80E-03	30	164.55	8.36E-03			
35	200.63	8.74E-03	35	198.66	7.59E-03			
40	230.53	9.17E-03	40	227.58	9.48E-03			
50	294.34	9.42E-03	50	296.84	8.68E-03			

SAMPLE PERMEABILITY: 8.0E-03 cm/sec

SAMPLE DRY DENSITY: 106.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/06/94

Project Number: 08940–83 Tested By: RS Checked By: RSB

SAMPLE NUMBER: GV–091

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217–B		17
Tare Weight, (g)	216		42.1
Tare + Wet Soil, (g)	4837		109
Tare + Dry Soil, (g)	4630		103.4
Sample for WATER CONTENT, %	4.69%		9.14%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5184	grams
Dry Soil + Sieve after	1500	grams
Percent greater than	0.75	16.54%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1776			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2808			
Distance from top of mold to top of stone, (in)	1.16	1.139	1.116	1.14
Height of Sample, (in)	4.982			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.7	2.34E–02	10	18.26	2.27E–02			
20	35.82	2.49E–02	20	37.07	2.40E–02			
25	45.23	2.58E–02	25	46.74	2.51E–02			
30	55.2	2.56E–02	30	57.25	2.43E–02			
35	65.55	2.60E–02	35	68.12	2.48E–02			
40	76.25	2.66E–02	40	79.5	2.50E–02			
50	99.77	2.66E–02	50	104.27	2.52E–02			

SAMPLE PERMEABILITY 2.5E–02 cm/sec

SAMPLE DRY DENSITY 102.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: CS BZ

SAMPLE NUMBER: GV–092

FIELD DATA

Density: 102 (pcf) Water Content: 6 %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		17
Tare Weight, (g)	235		41.7
Tare + Wet Soil, (g)	4556		190.1
Tare + Dry Soil, (g)	4275		180.2
Sample for WATER CONTENT, %	6.96%		7.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	4829	grams
Dry Soil + Sieve after	1634	grams
Percent greater than	0.75	20.92%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1759			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2777			
Distance from top of mold to top of stone, (in)	1.153	1.163	1.178	1.16
Height of Sample, (in)	4.955			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.74	2.61E–02	10	15.98	2.58E–02			
20	31.27	2.89E–02	20	31.8	2.84E–02			
25		~~7.72E–03~~ CS	25	40.16	2.89E–02			
30	48.02	~~5.29E–03~~ RS	30	48.77	2.95E–02			
35	56.86	3.03E–02	35	57.75	2.98E–02			
40	65.93	3.13E–02	40	66.96	3.08E–02			
50	85.61	3.16E–02	50	86.83	3.13E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec
SAMPLE DRY DENSITY 103.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: RS BZ

SAMPLE NUMBER: GV–093

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		88
Tare Weight, (g)	286		36.4
Tare + Wet Soil, (g)	4924		212.2
Tare + Dry Soil, (g)	4616		198.5
Sample for WATER CONTENT, %	7.11%		8.45%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	5170	grams
Dry Soil + Sieve after	1682	grams
Percent greater than	0.75	19.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2790			
Distance from top of mold to top of stone, (in)	0.977	0.948	0.975	0.97
Height of Sample, (in)	5.153			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.78	2.90E–02	10	14.71	2.91E–02			
20	29.1	3.26E–02	20	29.3	3.20E–02			
25	36.45	3.41E–02	25	36.9	3.30E–02			
30	44.24	3.39E–02	30	44.63	3.42E–02			
35	52.33	3.44E–02	35	53.01	3.32E–02			
40	60.52	3.60E–02	40	61.3	3.56E–02			
50	78.15	3.67E–02	50	79.35	3.58E–02			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 99.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: RS

SAMPLE NUMBER: GV–094

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		95
Tare Weight, (g)	215		35.4
Tare + Wet Soil, (g)	4814		168.5
Tare + Dry Soil, (g)	4550		157.3
Sample for WATER CONTENT, %	6.09%		9.19%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	5104	grams
Dry Soil + Sieve after	2203	grams
Percent greater than	0.75	33.08%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1791			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2824			
Distance from top of mold to top of stone, (in)	0.933	0.946	0.943	0.94
Height of Sample, (in)	5.179			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.06	2.52E–02	10	18.68	2.30E–02			
20	34.44	2.70E–02	20	37.64	2.48E–02			
25	43.49	2.79E–02	25	47.45	2.57E–02			
30	52.99	2.79E–02	30	57.75	2.58E–02			
35	62.52	2.94E–02	35	68.38	2.63E–02			
40	72.66	2.92E–02	40	79.61	2.64E–02			
50	94.14	3.03E–02	50	103.56	2.71E–02			

SAMPLE PERMEABILITY 2.5E–02 cm/sec

SAMPLE DRY DENSITY 98.5 pcf

NOTES:

very low

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/09/94

Project Number: 08940–83 Tested By: RS Checked By: KB

SAMPLE NUMBER: GV–095

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		57
Tare Weight, (g)	501		41.1
Tare + Wet Soil, (g)	4705		203.6
Tare + Dry Soil, (g)	4462		193.1
Sample for WATER CONTENT, %	6.13%		6.91%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	5016	grams
Dry Soil + Sieve after	1756	grams
Percent greater than	0.75	17.70%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1758			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	0.767	0.81	0.891	0.82
Height of Sample, (in)	5.297			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	2			
Height from Datum to 0 ml line, (in)	33.5			
Height from Datum to 50 ml line, (in)	8.13			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

was stone removed ?

BB 8/15/94

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	19.5	2.26E–02	10	13.31	3.81E–02			
20	35.13	3.08E–02	20	26.45	3.66E–02			
25	42.05	3.74E–02	25	40.58	1.83E–02			
30	48.94	3.95E–02	30	47.92	3.71E–02			
35	56.18	3.97E–02	35	55.8	3.64E–02			
40	63.7	4.04E–02	40		~~5.45E–03~~ RS			
50	79.77	4.15E–02	50	72.27	~~9.29E–03~~ RS			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 96.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: BT

SAMPLE NUMBER: GV–096

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		34
Tare Weight, (g)	314		55.8
Tare + Wet Soil, (g)	4760		233
Tare + Dry Soil, (g)	4611		220.4
Sample for WATER CONTENT, %	3.47%		7.65%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5165	grams
Dry Soil + Sieve after	1510	grams
Percent greater than	0.75	14.94%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1757			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.144	1.132	1.093	1.12
Height of Sample, (in)	4.997			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.62	2.66E–02	10	15.09	2.75E–02			
20	30.99	2.95E–02	20	30.66	2.91E–02			
25	38.98	3.05E–02	25	38.61	3.06E–02			
30	47.14	3.14E–02	30	46.76	3.14E–02			
35	55.75	3.14E–02	35	55.34	3.15E–02			
40	64.76	3.17E–02	40	64.38	3.16E–02			
50	83.49	3.35E–02	50	83.31	3.31E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 102.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: RS BJ

SAMPLE NUMBER: GV–097

FIELD DATA

Density: 102 (pcf) Water Content: 6 %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	13		72
Tare Weight, (g)	286		39.6
Tare + Wet Soil, (g)	4806		183.7
Tare + Dry Soil, (g)	4665		172.9
Sample for WATER CONTENT, %	3.22%		8.10%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	840	grams
Dry Soil + Sieve before	5219	grams
Dry Soil + Sieve after	1641	grams
Percent greater than	0.75	18.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1758			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2784			
Distance from top of mold to top of stone, (in)	1.046	1.082	1.053	1.06
Height of Sample, (in)	5.060			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.34	2.42E–02	10	17.46	2.41E–02			
20	34.57	2.66E–02	20	35.19	2.59E–02			
25	43.74	2.69E–02	25	44.53	2.64E–02			
30	53.17	2.75E–02	30	54.35	2.64E–02			
35	63.15	2.74E–02	35	64.31	2.75E–02			
40	73.49	2.80E–02	40	75.07	2.69E–02			
50	95.99	2.82E–02	50	98.02	2.77E–02			

SAMPLE PERMEABILITY 2.7E–02 cm/sec BJ
SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/19/94

Project Number: 08940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–098

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	234–A		75
Tare Weight, (g)	235		38.2
Tare + Wet Soil, (g)	5189		185.9
Tare + Dry Soil, (g)	5035		175.5
Sample for WATER CONTENT, %	3.21%		7.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	789	grams
Dry Soil + Sieve before	5589	grams
Dry Soil + Sieve after	1860	grams
Percent greater than	0.75	22.31%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1757			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	0.978	0.945	1.017	0.98
Height of Sample, (in)	5.140			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.41	2.77E–02	10	15.92	2.68E–02			
20	30.58	3.07E–02	20	31.62	2.97E–02			
25	38.56	3.14E–02	25	39.78	3.07E–02			
30	46.78	3.20E–02	30	48.11	3.16E–02			
35	55.36	3.24E–02	35	57.06	3.10E–02			
40	64.35	3.27E–02	40	66.16	3.23E–02			
50	83.6	3.35E–02	50	85.8	3.28E–02			

SAMPLE PERMEABILITY 3.3E–02 cm/sec

SAMPLE DRY DENSITY 99.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: RS BL

SAMPLE NUMBER: GV–099

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		90
Tare Weight, (g)	501		37.3
Tare + Wet Soil, (g)	4469		217.8
Tare + Dry Soil, (g)	4377		204.2
Sample for			
WATER CONTENT, %	2.37%		8.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	4931	grams
Dry Soil + Sieve after	1790	grams
Percent greater than	0.75	18.96%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2786			
Distance from top of mold to top of stone, (in)	0.985	0.955	0.953	0.96
Height of Sample, (in)	5.156			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.99	2.86E–02	10	15.13	2.83E–02			
20	29.74	3.17E–02	20	30.24	3.10E–02			
25	37.33	3.31E–02	25	38.13	3.18E–02			
30	45.38	3.28E–02	30	46.32	3.23E–02			
35	53.81	3.31E–02	35	54.74	3.31E–02			
40	62.4	3.43E–02	40	63.47	3.38E–02			
50	80.69	3.54E–02	50	82.34	3.43E–02			

SAMPLE PERMEABILITY	3.~~0~~4E–03 cm/sec BJ
SAMPLE DRY DENSITY	99.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: BS BZ

SAMPLE NUMBER: GV–100

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		26
Tare Weight, (g)	215		51.9
Tare + Wet Soil, (g)	4772		200
Tare + Dry Soil, (g)	4648		188.9
Sample for WATER CONTENT, %	2.80%		8.10%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	5202	grams
Dry Soil + Sieve after	1908	grams
Percent greater than	0.75	25.69%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1756			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2814			
Distance from top of mold to top of stone, (in)	0.981	1.01	.0.957	0.98
Height of Sample, (in)	5.137			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.53	2.43E–02	10	17.22	2.48E–02			
20	35.52	2.59E–02	20	34.57	2.69E–02			
25	44.2	2.88E–02	25	48.83	2.70E–02			
30	55.32	2.37E–02	30	53.37	2.76E–02			
35	65.16	2.82E–02	35	63.18	2.83E–02			
40	75.95	2.72E–02	40	73.77	2.78E–02			
50	99.32	2.76E–02	50	96.27	2.87E–02			

SAMPLE PERMEABILITY 2.5E–02 cm/sec BZ

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–101

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A		5
Tare Weight, (g)	315		39.9
Tare + Wet Soil, (g)	5145		180.9
Tare + Dry Soil, (g)	4896		170.2
Sample for WATER CONTENT, %	5.44%		8.21%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5450	grams
Dry Soil + Sieve after	2390	grams
Percent greater than	0.75	33.20%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2785			
Distance from top of mold to top of stone, (in)	0.916	0.916	0.899	0.91
Height of Sample, (in)	5.210			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.16	3.06E–02	10	14.2	3.05E–02			
20	27.96	3.42E–02	20	28.06	3.41E–02			
25	35.06	3.57E–02	25	35.21	3.55E–02			
30	42.41	3.63E–02	30	42.53	3.65E–02			
35	50.12	3.65E–02	35	50.18	3.68E–02			
40	58.06	3.75E–02	40	58.09	3.77E–02			
50	74.78	3.91E–02	50	74.82	3.91E–02			

SAMPLE PERMEABILITY ~~3.6~~ 4.0E–02 cm/sec BJ

SAMPLE DRY DENSITY 98.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940-83 Tested By: RS Checked By: ESB2

SAMPLE NUMBER: GV-102

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		75
Tare Weight, (g)	216		38.1
Tare + Wet Soil, (g)	5132		186.6
Tare + Dry Soil, (g)	4833		174.6
Sample for WATER CONTENT, %	6.48%		8.79%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5387	grams
Dry Soil + Sieve after	2159	grams
Percent greater than	0.75	30.08%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2790			
Distance from top of mold to top of stone, (in)	1.014	1.005	1.064	1.03
Height of Sample, (in)	5.092			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.85	2.67E-02	10	16.06	2.63E-02			
20	31.8	2.90E-02	20	32.5	2.81E-02			
25	40.13	2.98E-02	25	41.18	2.86E-02			
30	48.82	3.00E-02	30	50.14	2.91E-02			
35	57.79	3.07E-02	35	59.45	2.96E-02			
40	67.56	2.98E-02	40	69.35	2.94E-02			
50	87.21	3.25E-02	50	90.65	3.00E-02			

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 100.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/19/94

Project Number: 08940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–103

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	213–C		75
Tare Weight, (g)	213		38.1
Tare + Wet Soil, (g)	4751		197.7
Tare + Dry Soil, (g)	4497		184.4
Sample for WATER CONTENT, %	5.93%		9.09%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5061	grams
Dry Soil + Sieve after	2009	grams
Percent greater than	0.75	28.92%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1759			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2850			
Distance from top of mold to top of stone, (in)	0.918	0.94	0.982	0.95
Height of Sample, (in)	5.173			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.26	2.82E–02	10	14.54	2.95E–02			
20	29.53	3.29E–02	20	28.81	3.29E–02			
25	36.88	3.43E–02	25	36.27	3.38E–02			
30	44.49	3.48E–02	30	43.87	3.49E–02			
35	52.46	3.51E–02	35	52.11	3.39E–02			
40	60.5	3.68E–02	40	60.07	3.72E–02			
50	77.85	3.74E–02	50	77.53	3.72E–02			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 104.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/19/94

Project Number: 08940-83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV-104

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217-B		17
Tare Weight, (g)	216		42
Tare + Wet Soil, (g)	4380		199
Tare + Dry Soil, (g)	4148		186.4
Sample for WATER CONTENT, %	5.90%		8.73%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4702	grams
Dry Soil + Sieve after	1798	grams
Percent greater than	0.75	26.14%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1757			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2789			
Distance from top of mold to top of stone, (in)	0.868	0.827	0.84	0.85
Height of Sample, (in)	5.275			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.87	2.76E-02	10	15.68	2.79E-02			
20	31.45	3.07E-02	20	31.28	3.07E-02			
25	39.55	3.17E-02	25	39.49	3.13E-02			
30	47.94	3.22E-02	30		~~6.88E-03~~ BJ			
35	56.7	3.26E-02	35	56.49	~~5.05E-03~~			
40	65.84	3.30E-02	40	65.63	3.30E-02			
50	86.23	3.25E-02	50	85.06	3.41E-02			

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 97.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/17/94

Project Number: 08940–83 Tested By: RS Checked By: RS

SAMPLE NUMBER: GV–105

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		33
Tare Weight, (g)	312		57.3
Tare + Wet Soil, (g)	4407		180.6
Tare + Dry Soil, (g)	4138		171.4
Sample for WATER CONTENT, %	7.03%		8.06%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4692	grams
Dry Soil + Sieve after	2012	grams
Percent greater than	0.75	29.95%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1762			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2784			
Distance from top of mold to top of stone, (in)	1	0.994	0.98	0.99
Height of Sample, (in)	5.129			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.41	2.76E–02	10	15.56	2.74E–02			
20	30.91	3.00E–02	20	31.13	2.99E–02			
25	38.99	3.09E–02	25	39.41	3.02E–02			
30	47.2	3.20E–02	30	47.8	3.13E–02			
35	56.14	3.10E–02	35	56.6	3.15E–02			
40	65.27	3.21E–02	40	65.8	3.19E–02			
50	84.66	3.32E–02	50	85.45	3.28E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 99.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: BZ

SAMPLE NUMBER: GV–106

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		33
Tare Weight, (g)	216		36.6
Tare + Wet Soil, (g)	3878		179.7
Tare + Dry Soil, (g)	3653		167.7
Sample for WATER CONTENT, %	6.55%		9.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4207	grams
Dry Soil + Sieve after	1557	grams
Percent greater than	0.75	22.90%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1762			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2795			
Distance from top of mold to top of stone, (in)	0.935	0.95	0.925	0.94
Height of Sample, (in)	5.183			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.32	2.81E–02	10	15.88	2.71E–02			
20	30.57	3.08E–02	20	31.84	2.95E–02			
25	38.51	3.18E–02	25	40.2	3.02E–02			
30	47.53	2.94E–02	30	48.93	3.04E–02			
35	55.68	3.44E–02	35	58.02	3.08E–02			
40	64.69	3.29E–02	40	67.73	3.05E–02			
50	84.07	3.36E–02	50	88.11	3.19E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 98.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV–107

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		39
Tare Weight, (g)	215		33.3
Tare + Wet Soil, (g)	4750		198
Tare + Dry Soil, (g)	4438		186.2
Sample for WATER CONTENT, %	7.39%		7.72%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4992	grams
Dry Soil + Sieve after	1723	grams
Percent greater than	0.75	22.59%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1761			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	0.973	0.979	0.983	0.98
Height of Sample, (in)	5.142			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.56	2.93E–02	10	14.61	2.92E–02			
20	28.81	3.27E–02	20	28.99	3.24E–02			
25	36.24	3.37E–02	25	36.4	3.38E–02			
30	43.82	3.48E–02	30	44.2	3.38E–02			
35	51.84	3.47E–02	35	52.2	3.47E–02			
40	59.93	3.64E–02	40	60.56	3.52E–02			
50	77.44	3.69E–02	50	78.17	3.66E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 99.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/18/94

Project Number: 08940–83 Tested By: RS Checked By: pl

SAMPLE NUMBER: GV–108

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		61
Tare Weight, (g)	312		36.5
Tare + Wet Soil, (g)	4250		177.7
Tare + Dry Soil, (g)	4039		169.2
Sample for WATER CONTENT, %	5.66%		6.41%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4593	grams
Dry Soil + Sieve after	1965	grams
Percent greater than	0.75	29.49%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1757			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2764			
Distance from top of mold to top of stone, (in)	0.917	0.9	0.89	0.90
Height of Sample, (in)	5.218			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.2	2.85E–02	10	15.65	2.77E–02			
20	30.34	3.13E–02	20	31.42	3.00E–02			
25	38.27	3.20E–02	25	39.76	3.05E–02			
30	46.52	3.24E–02	30	48.09	3.21E–02			
35	55.21	3.25E–02	35	56.99	3.17E–02			
40	64.25	3.30E–02	40	66.37	3.18E–02			
50	83.44	3.41E–02	50	86.46	3.26E–02			

SAMPLE PERMEABILITY 3.0E–02 cm/sec

SAMPLE DRY DENSITY 97.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 08/19/94

Project Number: 08940-83 Tested By: RS Checked By: BJ

SAMPLE NUMBER: GV-109

FIELD DATA

Density: 102 (pcf) Water Content: 6 %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A		95
Tare Weight, (g)	314		35.8
Tare + Wet Soil, (g)	4790		155.6
Tare + Dry Soil, (g)	4524		147.5
Sample for WATER CONTENT, %	6.32%		7.25%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5344	grams
Dry Soil + Sieve after	1640	grams
Percent greater than	0.75	17.25%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1754			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	0.947	0.947	0.97	0.95
Height of Sample, (in)	5.165			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	15.07	2.85E-02	10	15.63	2.74E-02			
20	30.11	3.12E-02	20	31	3.05E-02			
25	37.94	3.21E-02	25	39.16	3.08E-02			
30	46.32	3.16E-02	30	48.38	2.87E-02			
35	54.44	3.44E-02	35	56.09	3.62E-02			
40	63.22	3.37E-02	40	65.3	3.21E-02			
50	81.99	3.45E-02	50	84.51	3.37E-02			

SAMPLE PERMEABILITY 3.2E-02 cm/sec

SAMPLE DRY DENSITY 98.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9-23-94

Project Number: 08940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV-110

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	216B		95
Tare Weight, (g)	215		35.7
Tare + Wet Soil, (g)	4429		269.7
Tare + Dry Soil, (g)	4327		251.7
Sample for WATER CONTENT, %	2.48%		8.33%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4881	grams
Dry Soil + Sieve after	1326	grams
Percent greater than	0.75	13.55%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1759			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2784			
Distance from top of mold to top of stone, (in)	1.233	1.19	1.254	1.23
Height of Sample, (in)	4.894			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
5	11.69	4.18E-02	5	12.19	4.01E-02			
10	23.32	4.68E-02	10	24.66	4.36E-02			
15	36.11	4.80E-02	15	38.28	4.50E-02			
20	50.14	5.01E-02	20	52.82	4.84E-02			
25	66.09	5.17E-02	25	69.74	4.87E-02			
30	84.64	5.37E-02	30	88.64	5.27E-02			

SAMPLE PERMEABILITY 4.8E-02 cm/sec Higher

SAMPLE DRY DENSITY 104.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9-23-94

Project Number: 08940-83 Tested By: BS Checked By: BT

SAMPLE NUMBER: GV-111

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42		75
Tare Weight, (g)	216		38
Tare + Wet Soil, (g)	5809		339
Tare + Dry Soil, (g)	5559		320.7
Sample for WATER CONTENT, %	4.68%		6.47%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	6113	grams
Dry Soil + Sieve after	1911	grams
Percent greater than	0.75	21.36%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1765			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2772			
Distance from top of mold to top of stone, (in)	1.075	1.05	1.086	1.07
Height of Sample, (in)	5.050			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	13.89	3.02E-02	10	14.15	2.96E-02			
20	27.74	3.31E-02	20	28.2	3.26E-02			
25	34.89	3.44E-02	25	35.59	3.33E-02			
30	42.36	3.46E-02	30	43.06	3.46E-02			
35	49.95	3.60E-02	35	51.02	3.43E-02			
40	57.91	3.63E-02	40	59.15	3.55E-02			
50	74.63	3.79E-02	50	76.36	3.68E-02			

SAMPLE PERMEABILITY 3.3E-02 cm/sec 3.5

SAMPLE DRY DENSITY 101.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9-23-94

Project Number: 08940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: GV-112

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B		39
Tare Weight, (g)	216		33.4
Tare + Wet Soil, (g)	4673		252.6
Tare + Dry Soil, (g)	4488		237.4
Sample for WATER CONTENT, %	4.33%		7.45%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5042	grams
Dry Soil + Sieve after	1613	grams
Percent greater than	0.75	19.73%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1764			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.175	1.129	1.118	1.14
Height of Sample, (in)	4.979			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.44	2.86E-02	10	14.75	2.80E-02			
20	28.91	3.12E-02	20	29.49	3.06E-02			
25	36.31	3.28E-02	25	37.22	3.14E-02			
30	44.01	3.31E-02	30	45.06	3.25E-02			
35	52.08	3.34E-02	35	53.27	3.28E-02			
40	60.37	3.44E-02	40	61.88	3.31E-02			
50	77.9	3.57E-02	50	79.88	3.47E-02			

SAMPLE PERMEABILITY: 3.2E-02 cm/sec

SAMPLE DRY DENSITY: 102.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9–23–94

Project Number: 08940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV–113

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101		5
Tare Weight, (g)	213		39.9
Tare + Wet Soil, (g)	4693		258.9
Tare + Dry Soil, (g)	4568		245.4
Sample for WATER CONTENT, %	2.87%		6.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5122	grams
Dry Soil + Sieve after	1394	grams
Percent greater than	0.75	14.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1764			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2772			
Distance from top of mold to top of stone, (in)	1.205	1.211	1.171	1.20
Height of Sample, (in)	4.924			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.79	2.76E–02	10	14.81	2.76E–02			
20	29.48	3.04E–02	20	29.72	3.00E–02			
25	37.2	3.11E–02	25	37.56	3.06E–02			
30	45.01	3.23E–02	30	45.47	3.19E–02			
35	53.29	3.22E–02	35	53.78	3.20E–02			
40	61.74	3.33E–02	40	62.36	3.28E–02			
50	79.84	3.41E–02	50	80.76	3.36E–02			

SAMPLE PERMEABILITY 3.3E–02 cm/sec

SAMPLE DRY DENSITY 103.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9–23–94

Project Number: 08940–83 Tested By: BS Checked By: BF

SAMPLE NUMBER: GV–11~~4~~5

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1		99
Tare Weight, (g)	343		39.3
Tare + Wet Soil, (g)	4691		258.5
Tare + Dry Soil, (g)	4525		239.9
Sample for WATER CONTENT, %	3.97%		9.27%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	5079	grams
Dry Soil + Sieve after	1545	grams
Percent greater than	0.75	15.49%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1764			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2798			
Distance from top of mold to top of stone, (in)	1.068	1.077	1.062	1.07
Height of Sample, (in)	5.051			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.61	2.87E–02	10	14.83	2.83E–02			
20	29.24	3.13E–02	20	29.7	3.08E–02			
25	36.95	3.19E–02	25	37.45	3.17E–02			
30	44.74	3.32E–02	30	45.31	3.29E–02			
35	52.82	3.38E–02	35	53.69	3.26E–02			
40	61.33	3.40E–02	40	62.24	3.38E–02			
50	79.33	3.52E–02	50	80.33	3.50E–02			

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 101.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9-23-94

Project Number: 08940-83 Tested By: BS Checked By: BF

SAMPLE NUMBER: GV-116

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9		81
Tare Weight, (g)	501		36.6
Tare + Wet Soil, (g)	4583		274.5
Tare + Dry Soil, (g)	4513		252.9
Sample for WATER CONTENT, %	1.74%		9.99%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	5067	grams
Dry Soil + Sieve after	1848	grams
Percent greater than	0.75	19.77%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1764			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2804			
Distance from top of mold to top of stone, (in)	1.041	1.07	1.036	1.05
Height of Sample, (in)	5.071			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.56	2.89E-02	10	14.85	2.84E-02			
20	29.27	3.13E-02	20	29.78	3.08E-02			
25	36.98	3.20E-02	25	37.57	3.17E-02			
30	44.77	3.34E-02	30	45.56	3.25E-02			
35	53	3.33E-02	35	53.77	3.34E-02			
40	61.45	3.43E-02	40	62.49	3.33E-02			
50	79.47	3.53E-02	50	80.84	3.47E-02			

SAMPLE PERMEABILITY: 3.3E-02 cm/sec

SAMPLE DRY DENSITY: 100.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9–24–94

Project Number: 08940–83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: gv–117

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1a		17
Tare Weight, (g)	314		42
Tare + Wet Soil, (g)	4366		227.3
Tare + Dry Soil, (g)	4317		213.4
Sample for WATER CONTENT, %	1.22%		8.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4871	grams
Dry Soil + Sieve after	1500	grams
Percent greater than	0.75	15.79%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1756			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2779			
Distance from top of mold to top of stone, (in)	1.011	1.024	1.027	1.02
Height of Sample, (in)	5.099			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.46	2.93E–02	10	14.96	2.83E–02			
20	29.02	3.18E–02	20	29.3	3.23E–02			
25	36.61	3.27E–02	25	37.2	3.14E–02			
30	44.28	3.41E–02	30	44.66	3.50E–02			
35	52.35	3.42E–02	35	52.95	3.33E–02			
40	60.66	3.51E–02	40	61.33	3.48E–02			
50	78.35	3.62E–02	50	79.31	3.56E–02			

SAMPLE PERMEABILITY: 3.3E–02 cm/sec

SAMPLE DRY DENSITY: 100.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9–24–94

Project Number: 08940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: GV–118

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A		3
Tare Weight, (g)	312		38.4
Tare + Wet Soil, (g)	4442		258.6
Tare + Dry Soil, (g)	4366		243.1
Sample for WATER CONTENT, %	1.87%		7.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4920	grams
Dry Soil + Sieve after	1531	grams
Percent greater than	0.75	16.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.211	1.203	1.223	1.21
Height of Sample, (in)	4.908			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.99	2.72E–02	10	15.14	2.69E–02			
20	30.06	2.95E–02	20	30.41	2.92E–02			
25	37.94	3.03E–02	25	38.35	3.01E–02			
30	45.97	3.13E–02	30	46.48	3.09E–02			
35	54.31	3.18E–02	35	55.12	3.07E–02			
40	63.03	3.22E–02	40	63.8	3.23E–02			
50	81.59	3.32E–02	50	82.67	3.26E–02			

SAMPLE PERMEABILITY	3.0E–02 cm/sec
SAMPLE DRY DENSITY	103.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 9-24-94

Project Number: 08940-83 Tested By: BS Checked By: BV

SAMPLE NUMBER: GV-119

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A		89
Tare Weight, (g)	315		38.7
Tare + Wet Soil, (g)	4367		229.1
Tare + Dry Soil, (g)	4148		213.9
Sample for WATER CONTENT, %	5.71%		8.68%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4702	grams
Dry Soil + Sieve after	1869	grams
Percent greater than	0.75	26.09%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1763			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2790			
Distance from top of mold to top of stone, (in)	1.082	1.069	1.061	1.07
Height of Sample, (in)	5.049			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	16.76	2.50E-02	10	16.86	2.49E-02			
20	33.75	2.70E-02	20	34.2	2.64E-02			
25	42.74	2.74E-02	25	43.34	2.69E-02			
30	52.06	2.78E-02	30	52.74	2.75E-02			
35	61.75	2.82E-02	35	62.61	2.77E-02			
40	71.91	2.84E-02	40	72.88	2.81E-02			
50	93.7	2.91E-02	50	95.05	2.86E-02			

SAMPLE PERMEABILITY	2.7E-02 cm/sec
SAMPLE DRY DENSITY	100.9 pcf

NOTES:

SULLIVAN LANDFILL HYDRAULIC BARRIOR LAYOR

SUMMARY OF CONSTANT HEAD TEST RESULTS

#	dry density (pcf)	k (cm/sec)	%w
39	101.7	1.00E-06	25.1
40	98.9	3.00E-07	26.34
41	99.1	4.00E-07	25.88
42	100.3	7.00E-08	26.15
43	101.8	1.00E-07	24.89
44	103.5	4.00E-08	23.82
45	103.5	1.00E-07	24.36
46	99	2.00E-07	26.71
47	99.7	6.00E-08	26.53
48	102	1.00E-07	24.68
49	99	5.00E-08	26.94
50	98.5	5.00E-08	27.71
51	101.8	6.00E-08	25.02
52	100.6	8.00E-08	27.36
53	96.5	3.00E-08	28.43
54	98.7	4.00E-08	27.49
55	99	8.00E-08	23.92
56	103.4	1.00E-07	22.8
57	98.7	7.00E-08	25.98
58	102.3	3.00-07	25.07
59	97.3	8.00E-08	28.81
60	95.5	4.00E-08	28.67
61	100.2	6.00E-08	26.19
62	98.7	2.00E-07	27.21
63	96.6	1.00E-06	27.95
64	102.3	5.00E-08	25.35
65	106.1	6.00E-08	25.02
66	109.1	1.00E-07	21.68
67	103.3	9.00E-08	25.14
68	108.1	8.00E-08	23.38
69	105	8.00E-08	22.93
70	104.8	1.00E-07	22.81
71	99.4	9.00E-08	26.72
72	99.3	8.00E-08	26.26
73	103.1	3.00E-08	25.42
74	99.6	2.00E-07	26.54
75	92.6	9.00E-08	30.58
76	95.6	4.00E-08	28.66

SULLIVAN LANDFILL HYDRAULIC BARRIOR LAYOR

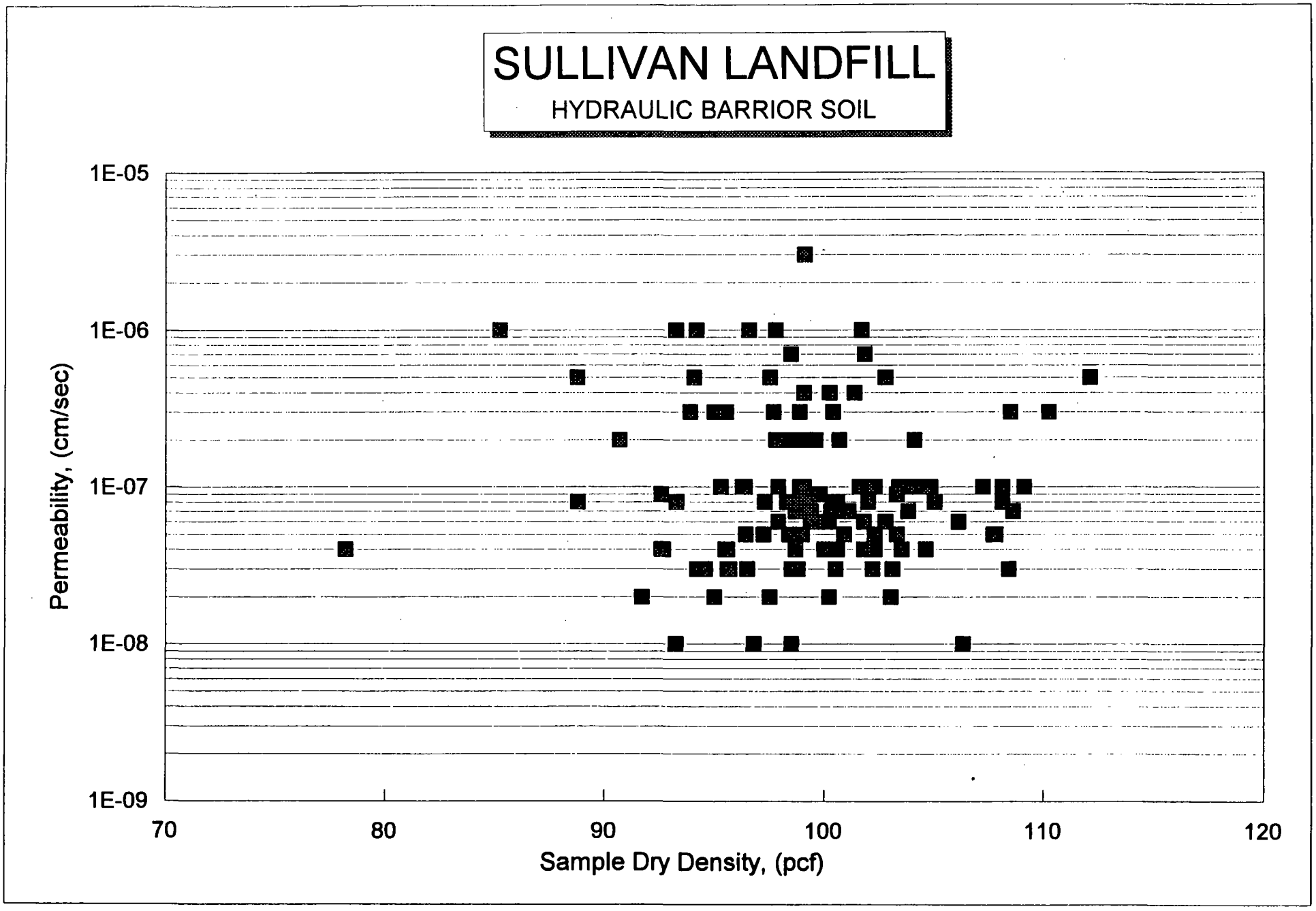
SUMMARY OF CONSTANT HEAD TEST RESULTS

#	dry density (pcf)	k (cm/sec)	%w
77	96.3	1.00E-07	26.63
78	94.2	1.00E-06	29.97
79	92.7	4.00E-08	30.68
80	78.2	4.00E-08	29
81	95.3	1.00E-07	27.87
82	97.7	3.00E-07	27.04
83	98.8	3.00E-08	26.27
84	95	2.00E-08	30.28
85	100.9	5.00E-08	25.51
86	100.7	2.00E-07	26.15
87	98	2.00E-07	27.3
88	98.5	3.00E-08	27.22
89	95.7	3.00E-08	29.17
90	98.5	1.00E-08	27
91	96.8	1.00E-08	28.31
92	98.9	1.00E-07	26.18
93	97.8	1.00E-06	27.14
94	99.8	9.00E-08	25.89
95	102	8.00E-08	24.75
96	97.5	2.00E-08	27.85
97	102.8	6.00E-08	23.19
98	99.4	6.00E-08	26.44
99	102.3	1.00E-07	25.17
100	97.8	2.00E-07	28.02
101	107.2	1.00E-07	21.35
102	104.1	2.00E-07	24.41
103	101.4	4.00E-07	24.41
104	92.6	4.00E-08	30.68
105	108.1	1.00E-07	23.37
106	98.3	8.00E-08	25.55
107	98.4	5.00E-08	26.06
108	100.5	3.00E-08	25.25
109	100.6	4.00E-08	25.25
110	98.9	8.00E-08	23.92
111	88.8	8.00E-08	34
112	100.4	8.00E-08	25.41
113	93.3	8.00E-08	29.85
114	108.6	7.00E-08	18.55

SULLIVAN LANDFILL HYDRAULIC BARRIOR LAYOR

SUMMARY OF CONSTANT HEAD TEST RESULTS

#	dry density (pcf)	k (cm/sec)	%w
115	102.3	4.00E-08	24.57
116	104.6	4.00E-08	19.08
117	100.2	2.00E-08	25.6
118	100.4	3.00E-07	24.04
119	103.3	5.00E-08	23.28
120	100	4.00E-08	26.15
121	99.4	7.00E-08	25.37
122	99.4	6.00E-08	26.53
123	101.1	7.00E-08	24.86
124	103.8	7.00E-08	23
125	107.8	5.00E-08	23.38
126	101.8	4.00E-08	24.65
127	95.60	3.00E-08	29.21
128	97.9	1.00E-07	27.57



DRAFT, CREATED 03/02/9508:51 AM

THE FOLLOWING IS A REPORT SUMMARY AND WILL BE GENERATED AUTOMATICALLY
EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMA

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job # 8940-83
Sample: HB-001	CHK BY:	DATE: 8/3/94

INCREMENTAL TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
3900	0.05	1.2	6	ERR	1.37E-07
8100	0.09	1.4	6	ERR	1.48E-07
11400	0.13	1	6	ERR	1.35E-07
27480	0.32	Reset			
83700	0.97	14.13	6	ERR	1.12E-07
83760	0.97	Reset			
96480	1.12	2.9	6	ERR	1.01E-07
106800	1.24	2.35	6	ERR	1.01E-07
116220	1.35	2.15	6	ERR	1.01E-07
116280	1.35	Reset			
161820	1.87	5.5	6	ERR	5.36E-08
162600	1.88	Reset			
173400	2.01	1.42	6	ERR	5.84E-08
193380	2.24	2.38	6	ERR	5.29E-08
242400	2.81	5.28	6	ERR	4.78E-08

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	2.81 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	39.7 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5.0E-08 cm/sec

DATE: 08/09/94 TIME: 10:06 PM

THE FOLLOWING IS A REPORT SUMMARY AND WILL BE GENERATED AUTOMATICALLY
EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMA

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job # 8940-83
Sample: HB-002	CHK BY: BZ	DATE: 8/4/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0		ERR	
10020	0.12	3.1	6	ERR	1.4E-07
20280	0.23	2.2	6	ERR	9.6E-08
29760	0.34	1.85	6	ERR	8.8E-08
29820	0.35	Reset		ERR	
75060	0.87	9.55	6	ERR	9.5E-08
86940	1.01	2.2	6		8.3E-08
106920	1.24	3.43	6		7.7E-08
155940	1.80	8.57	6		7.8E-08
ERR	ERR				ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	30.9 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 1E-07 cm/sec

ABB-ENVIRONMENTAL SERVICES GEOTECHNICAL LAB DATE: 08/18/94 TIME: 04:40 AM

THE FOLLOWING IS A REPORT SUMMARY AND WILL BE GENERATED AUTOMATICALLY

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-003	CHK BY: BZ	DATE:	8/4/94

INCREMENTAL TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
11340	0.13	8.8	6	ERR	3.4E-07
21480	0.25	7.1	6	ERR	3.1E-07
31140	0.36	6.3	6	ERR	2.9E-07
31200	0.36	Reset		ERR	
76200	0.88	27.285	6	ERR	2.7E-07
77220	0.89	Reset		ERR	
88080	1.02	5.4925	6	ERR	2.2E-07
108120	1.25	10.3625	6	ERR	2.3E-07
ERR	ERR	ERR	ERR	ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	ERR cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL Sample: HB-004	Comp BY: DPL CHK BY:	Job # 8940-83 DATE: 8/5/94

INCREME TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
49320	0.57	27.705	6	ERR	2.5E-07
65460	0.76	7.485	6	ERR	2.1E-07
88260	1.02	9.465	6	ERR	1.9E-07
91260	1.06	1.245	6	ERR	1.9E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	45.9 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample	HB-005	CHK BY:		DATE:	8/5/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
48660	0.56	96.645	6	ERR	9.1E-07
64680	0.75	Reset		ERR	
87480	1.01	33.915	6	ERR	6.8E-07
93840	1.09	8.925	6	ERR	6.5E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	139.5 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 7E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMAT

PROJECT: SULLIVAN LANDFILL CLOSURE	Comp BY: DPL	Job #	8940-83
Sample: HB-006	CHK BY:	DATE:	8/9/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
33540	0.39	6.28	6	ERR	8.1E-08
36240	0.42	Reset		ERR	
38640	0.45	2	6	ERR	3.6E-07
45540	0.53	2.55	6	ERR	1.6E-07
45600	0.53	Reset		ERR	
50040	0.58	1.55	6	ERR	1.5E-07
62040	0.72	3.05	6	ERR	1.1E-07
72120	0.83	2.2	6	ERR	9.4E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	17.6 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 1E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMAT

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-007	CHK BY:		DATE:	8/9/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
33540	0.39	1.22	6	ERR	1.6E-08
34560	0.40	Reset		ERR	
38580	0.45	0.2	6	ERR	2.1E-08
45240	0.52	0.15	6	ERR	9.7E-09
50220	0.58	0.1	6	ERR	8.6E-09
62040	0.72	0.25	6	ERR	9.1E-09
72060	0.83	0.2	6	ERR	8.6E-09
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	2.1 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 9E-09 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-008	CHK BY:		DATE:	8/9/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
33540	0.39	92	6	ERR	1.2E-06
33600	0.39	Reset		ERR	
38580	0.45	11.35	6	ERR	1.0E-06
38640	0.45	Reset		ERR	
44700	0.52	20.6	6	ERR	1.5E-06
44820	0.52	Reset		ERR	
49500	0.57	19.8	6	ERR	1.9E-06
49560	0.57	Reset		ERR	
52920	0.61	21.95	6	ERR	3.0E-06
52980	0.61	Reset		ERR	
62040	0.72	62.215	6	ERR	3.1E-06
62100	0.72	Reset		ERR	
72060	0.83	53.61	6	ERR	2.4E-06
74580	0.86	15.385	6	ERR	2.8E-06
77220	0.89	11.9875	6	ERR	2.1E-06
78240	0.91	6.565	6	ERR	2.9E-06
0		0			

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	0.91 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	315.5 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-06 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMA

PROJECT	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample	HB-009	CHK BY:		DATE:	8/9/94

INCREMENTAL TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
33960	0.39	108.12	6	ERR	1.5E-06
34080	0.39	Reset		ERR	
38700	0.45	7.25	6	ERR	7.2E-07
44520	0.52	5.65	6	ERR	4.4E-07
45780	0.53	1.25	6	ERR	4.5E-07
45840	0.53	Reset		ERR	
50280	0.58	4.6	6	ERR	4.7E-07
62280	0.72	Reset		ERR	
62340	0.72	Reset		ERR	
72060	0.83	10.55	6	ERR	5.0E-07

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	0.83 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	137.4 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5.0E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-010	CHK BY:	DATE:	8/9/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
34200	0.40	35.7	6	ERR	4.9E-07
34260	0.40	Reset		ERR	
38700	0.45	Reset		ERR	
44400	0.51	4.9	6	ERR	4.0E-07
50400	0.58	5	6	ERR	3.9E-07
53100	0.61	2.1	6	ERR	3.6E-07
53160	0.62	Reset		ERR	
62400	0.72	7.65	6	ERR	3.9E-07
ERR	ERR	ERR	ERR	ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	ERR cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 4E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-011	CHK BY:		DATE:	8/11/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
9120	0.11	3.5	5	ERR	2.3E-07
9180	0.11	Reset		ERR	
44700	0.52	12.63	5	ERR	2.1E-07
44760	0.52	Reset		ERR	
46560	0.54	1.5	5	ERR	5.0E-07
49440	0.57	2.3	5	ERR	4.8E-07
52800	0.61	2.5	5	ERR	4.5E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	22.4 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-012	CHK BY:		DATE:	8/11/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
5220	0.06	3.25	5	ERR	3.3E-07
15420	0.18	Reset		ERR	
15480	0.18	Reset		ERR	
50400	0.58	16.8	5	ERR	2.6E-07
50460	0.58	Reset		ERR	
52860	0.61	0.9	5	ERR	2.0E-07
55800	0.65	1.2	5	ERR	2.2E-07
59100	0.68	1.45	5	ERR	2.4E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	23.6 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-013	CHK BY:		DATE:	8/11/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
8640	0.10	4.15	5	ERR	2.6E-07
8700	0.10	Reset		ERR	
44100	0.51	14.28	5	ERR	2.2E-07
44160	0.51	Reset		ERR	
45900	0.53	0.7	5	ERR	2.2E-07
48840	0.57	1.25	5	ERR	2.3E-07
52200	0.60	1.3	5	ERR	2.1E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	21.7 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-014	CHK BY:		DATE:	8/11/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
7680	0.09	0.75	5	ERR	5.2E-08
7740	0.09	Reset		ERR	
43200	0.50	1.7	5	ERR	2.5E-08
43260	0.50	Reset		ERR	
45180	0.52	0.1	5	ERR	2.8E-08
48060	0.56	0.1	5	ERR	1.8E-08
51420	0.60	0		ERR	
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	2.7 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-08 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-015	CHK BY:	DATE:	8/12/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
4980	0.06	12.95	5	ERR	1.4E-06
8040	0.09	6.95	5	ERR	1.3E-06
8100	0.09	Reset		ERR	
16080	0.19	18.9	5	ERR	1.3E-06
16140	0.19	Reset		ERR	
25620	0.30	22.25	5	ERR	1.3E-06
25680	0.30	Reset		ERR	
34080	0.39	18.85	5	ERR	1.2E-06
34140	0.40	Reset		ERR	
77580	0.90	72.67	5	ERR	9.3E-07
		Reset			
0		0			0

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	0.90 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	152.6 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 1E-06 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-016	CHK BY:	DATE:	8/12/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
5100	0.06	4.75	5	ERR	5.0E-07
7740	0.09	2.2	5	ERR	4.5E-07
15600	0.18	6.35	5	ERR	4.3E-07
15660	0.18	Reset		ERR	
25800	0.30	8.5	5	ERR	4.5E-07
25860	0.30	Reset		ERR	
33720	0.39	6.45	5	ERR	4.4E-07
33780	0.39	Reset		ERR	
77100	0.89	ERR	ERR	ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	0.89 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	ERR cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-017	CHK BY:	DATE:	8/12/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
5820	0.07	0.15	5	ERR	1.3E-08
15060	0.17	0.4	5	ERR	2.3E-08
25560	0.30	0.5	5	ERR	2.5E-08
33120	0.38	0.25	5	ERR	1.7E-08
33180	0.38	Reset		ERR	
76440	0.88	1.81	5	ERR	2.2E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR	DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	3.1	cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR	

SAMPLE PERMEABILITY 3E-08 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-018	CHK BY:	DATE:	8/12/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
5580	0.06	4.65	5	ERR	4.5E-07
14400	0.17	6.7	5	ERR	4.1E-07
14460	0.17	Reset		ERR	
25020	0.29	8.2	5	ERR	4.2E-07
25080	0.29	Reset		ERR	
32400	0.38	Reset		ERR	
75720	0.88	28.695	5	ERR	3.6E-07
81720	0.95	Reset		ERR	
85380	0.99	1.725	5	ERR	2.5E-07

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	0.99 DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	50.0 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-019	CHK BY:	DATE:	8/12/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
7320	0.08	2.1	5	ERR	1.5E-07
18180	0.21	2.65	5	ERR	1.3E-07
25440	0.29	1.7	5	ERR	1.2E-07
25500	0.30	Reset		ERR	
68640	0.79	8.415	5	ERR	1.0E-07
75300	0.87	Reset		ERR	
78180	0.90	0.51	5	ERR	9.4E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	15.4 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 1E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-020	CHK BY:	DATE:	8/15/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
4680	0.05	0.7	5	ERR	7.9E-08
9840	0.11	0.6	5	ERR	6.1E-08
13440	0.16	0.45	5	ERR	6.6E-08
15240	0.18	0.2	5	ERR	5.9E-08
19740	0.23	0.4	5	ERR	4.7E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	2.4 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 5E-08 cm/sec

ABB-ENVIRONMENTAL SERVICES DATE: 08/18/94 TIME: 03:35 AM

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT: SULLIVAN LANDFILL	Comp BY: DPL	Job #	8940-83
Sample: HB-021	CHK BY:	DATE:	8/15/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
4260	0.05	0.9	5	ERR	1.2E-07
9420	0.11	0.9	5	ERR	1.0E-07
13020	0.15	0.4	5	ERR	6.5E-08
15360	0.18	0.3	5	ERR	7.5E-08
19320	0.22	0.6	5	ERR	8.8E-08
21180	0.25	0.25	5	ERR	7.8E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	3.3 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 1E-07 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-022	CHK BY:	BJ	DATE:	8/15/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
3660	0.04	0.3	5	ERR	4.5E-08
8820	0.10	0.2	5	ERR	2.1E-08
12420	0.14	0.15	5	ERR	2.3E-08
15180	0.18	0.1	5	ERR	2.0E-08
18660	0.22	0.1	5	ERR	1.6E-08
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	0.9 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 2E-08 cm/sec

EXCEPT FOR THE FINAL ASSIGNMENT OF A k VALUE AND ANY NOTES YOU MAY WISH TO ENTER

THIS IS A DATA SUMMARY TABLE, FOR REPORTING PURPOSES ONLY, SEE SUPPORTING DATA FOR MORE TEST INFORMATION

PROJECT:	SULLIVAN LANDFILL	Comp BY:	DPL	Job #	8940-83
Sample:	HB-023	CHK BY:		DATE:	8/15/94

INCREMEN TIME (sec)	ELAPSED TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TOTAL PORE WATER VOLUMES THROUGH THE TEST SAMPLE	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0		0			
3060	0.04	1.9	5	ERR	3.4E-07
8280	0.10	2.25	5	ERR	2.4E-07
11880	0.14	1.45	5	ERR	2.2E-07
14880	0.17	1.05	5	ERR	1.9E-07
18060	0.21	1.25	5	ERR	2.2E-07
ERR	ERR			ERR	ERR

SUMMARY:

TOTAL ELAPSED TIME, FOR THIS TEST	ERR DAYS
TOTAL PERMEANT VOLUME PASSED THROUGH THE SAMPLE	7.9 cc
TOTAL PORE VOLUMES PASSED THROUGH THE SAMPLE	ERR

SAMPLE PERMEABILITY 3E-07 cm/sec

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-024 CHK. BY: BJ DATE: 8/16/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.92%	18.55%
SAMPLE DIAMETER (in) D	2.869	2.879
SAMPLE HEIGHT (in) L	2.725	2.734
SAMPLE WEIGHT, total (g)	571.65	581.07
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	5.42	
AVERAGE GRADIENT (in/in)	50.8	
TOTAL VOLUME OF FLUID, (cc)	15.5	

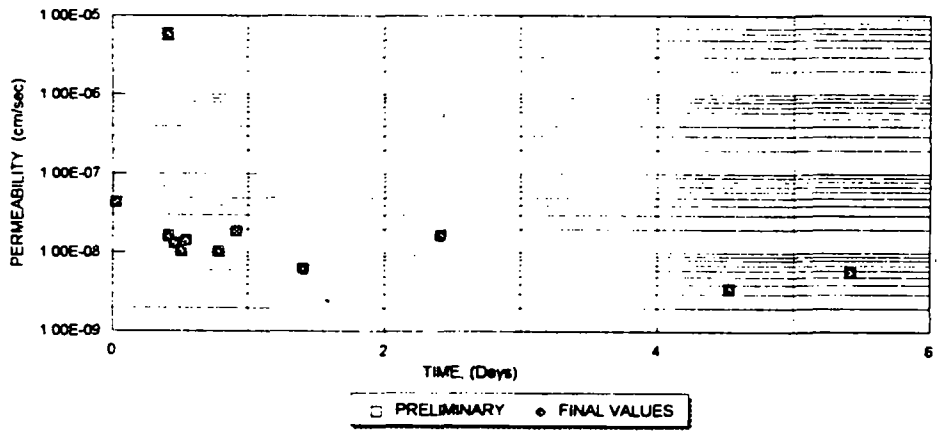
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.3
POST-TEST DENSITY	106.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	31%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2160	0.03	0.2	5.00	4.4E-08
60	0.03	5.52	5.00	
33540	0.41	1.15	5.00	1.6E-08
60	0.41	0.75	5.00	5.9E-06
3540	0.46	0.1	5.00	1.3E-08
4440	0.51	0.1	5.00	1.1E-08
3300	0.55	0.1	5.00	1.4E-08
60	0.55	0.92	5.00	
20640	0.78	0.46	5.00	1.0E-08
11400	0.92	0.46	5.00	1.9E-08
7440	1.00	0	5.00	
34860	1.41	0.46	5.00	6.2E-09
86940	2.41	2.99	5.00	1.6E-08
182940	4.53	1.38	5.00	3.5E-09
76800	5.42	0.92	5.00	5.6E-09

SAMPLE PERMEABILITY 1E-08 cm/sec



08/23/9403:20 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-025 CHK. BY: BJ DATE: 8/16/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.52%	29.45%
SAMPLE DIAMETER (in) D	2.869	2.907
SAMPLE HEIGHT (in) L	3.233	3.287
SAMPLE WEIGHT, total (g)	632.05	663.65
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.54	
AVERAGE GRADIENT (in/in)	42.8	
TOTAL VOLUME OF FLUID, (cc)	18.5	

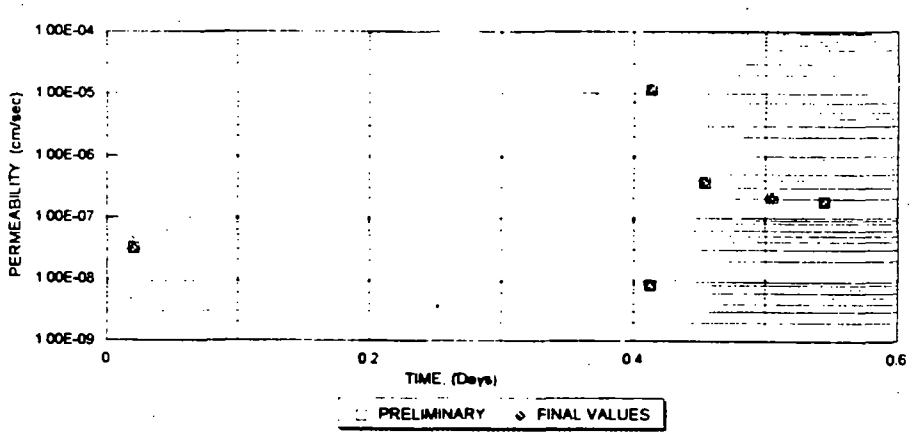
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	93.0
POST-TEST DENSITY	90.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
1800	0.02	0.1	5.00	3.1E-08
60	0.02	11.52	5.00	
33780	0.41	0.48	5.00	7.9E-09
60	0.41	1.25	5.00	0.000012
3480	0.45	2.35	5.00	3.7E-07
4440	0.50	1.7	5.00	2.1E-07
3420	0.54	1.1	5.00	1.8E-07

SAMPLE PERMEABILITY 2E-07 cicm/sec



08/18/9407:51 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-026 CHK. BY: BJ DATE: 8/16/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.80%	29.85%
SAMPLE DIAMETER (in) D	2.820	2.801
SAMPLE HEIGHT (in) L	3.101	3.093
SAMPLE WEIGHT, total (g)	571.79	598.42
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.54	
AVERAGE GRADIENT (in/in)	44.6	
TOTAL VOLUME OF FLUID, (cc)	73.4	

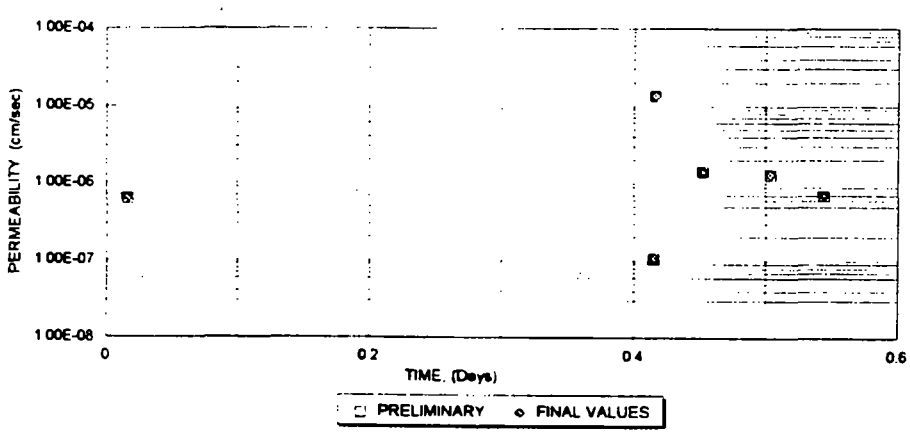
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	93.5
POST-TEST DENSITY	93.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
1380	0.02	1.55	5.00	6.3E-07
60	0.02	19.89	5.00	
34440	0.42	6.63	5.00	1.1E-07
60	0.42	1.45	5.00	0.000014
3120	0.45	7.9	5.00	1.4E-06
4440	0.50	10.3	5.00	1.3E-06
60	0.50	21.4	5.00	
3420	0.54	4.3	5.00	7.1E-07

SAMPLE PERMEABILITY 1E-06 cicm/sec



08/18/9408:03 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-027 CHK. BY: BG DATE: 8/16/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.08%	24.59%
SAMPLE DIAMETER (in) D	2.868	2.553
SAMPLE HEIGHT (in) L	3.072	3.064
SAMPLE WEIGHT, total (g)	641.13	650.9
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.54	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	22.2	

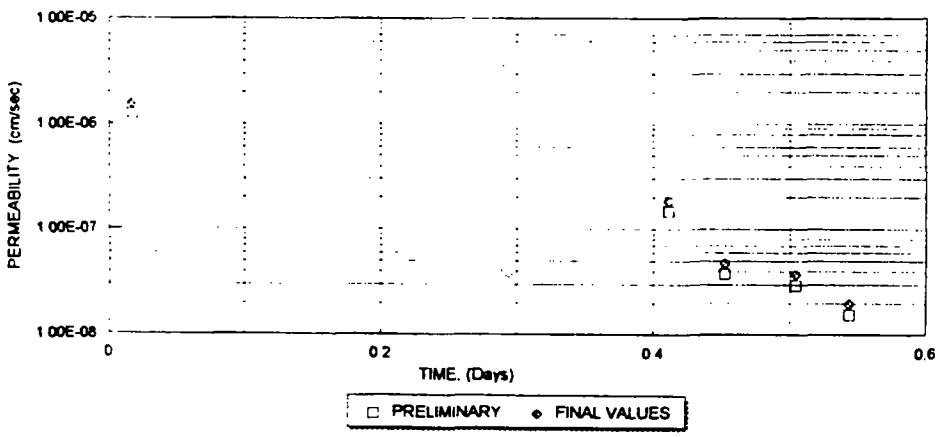
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.8
POST-TEST DENSITY	128.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	42%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
1500	0.02	3.5	5.00	1.6E-06
60	0.02	8.67	5.00	
33960	0.41	9.435	5.00	1.9E-07
3540	0.45	0.25	5.00	4.7E-08
4500	0.50	0.25	5.00	3.7E-08
3420	0.54	0.1	5.00	2.0E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



08/18/9408:16 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-028 CHK. BY: [illegible] DATE: 8/17/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.42%	25.55%
SAMPLE DIAMETER (in) D	2.846	2.871
SAMPLE HEIGHT (in) L	3.294	3.223
SAMPLE WEIGHT, total (g)	644.27	688.85
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.62	
AVERAGE GRADIENT (in/in)	42.0	
TOTAL VOLUME OF FLUID, (cc)	16.5	

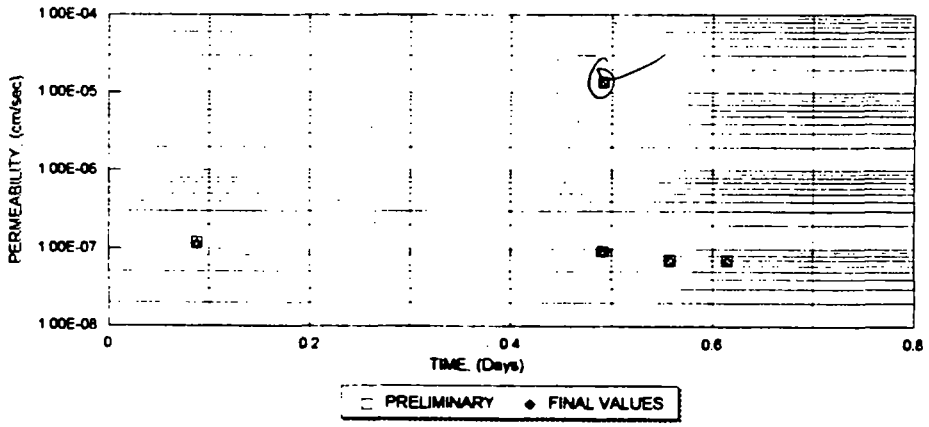
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.3
POST-TEST DENSITY	98.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	115%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
7560	0.09	1.55	5.00	1.1E-07
60	0.09	6.72	5.00	
34800	0.49	5.52	5.00	8.8E-08
60	0.49	1.4	5.00	0.000013
5760	0.56	0.7	5.00	6.8E-08
4920	0.62	0.6	5.00	6.8E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



08/19/9408:20 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-029 CHK. BY: BZ DATE: 8/17/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.91%	25.06%
SAMPLE DIAMETER (in) D	2.893	2.893
SAMPLE HEIGHT (in) L	3.262	3.288
SAMPLE WEIGHT, total (g)	703.52	722.08
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.61	
AVERAGE GRADIENT (in/in)	42.4	
TOTAL VOLUME OF FLUID, (cc)	15.1	

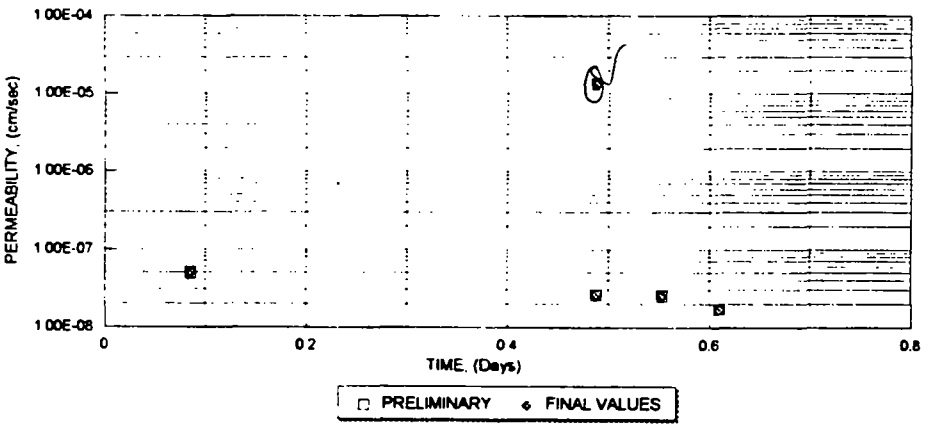
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.9
POST-TEST DENSITY	103.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	67%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
7380	0.09	0.65	5.00	4.9E-08
60	0.09	11.04	5.00	
34740	0.49	1.61	5.00	2.6E-08
60	0.49	1.45	5.00	0.000014
5580	0.55	0.25	5.00	2.5E-08
4860	0.61	0.15	5.00	1.7E-08

SAMPLE PERMEABILITY 2E-08 cm/sec



08/19/9408:28 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-030 CHK. BY: BJ DATE: 8/17/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.37%	23.51%
SAMPLE DIAMETER (in) D	2.887	2.868
SAMPLE HEIGHT (in) L	3.149	3.147
SAMPLE WEIGHT, total (g)	657.71	673.64
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.60	
AVERAGE GRADIENT (in/in)	44.0	
TOTAL VOLUME OF FLUID, (cc)	29.8	

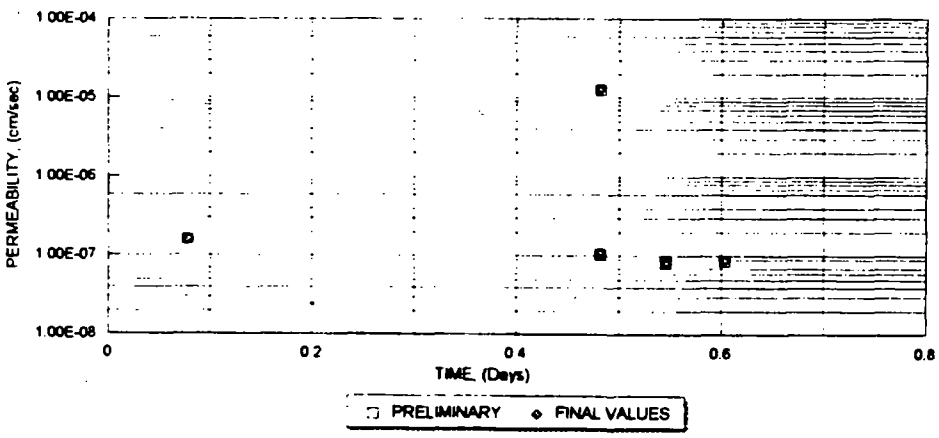
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.8
POST-TEST DENSITY	103.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	49%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6780	0.08	2	5.00	1.6E-07
60	0.08	17.85	5.00	
34740	0.48	6.885	5.00	1.1E-07
60	0.48	1.4	5.00	0.000013
5520	0.55	0.85	5.00	8.4E-08
4920	0.60	0.8	5.00	8.9E-08

SAMPLE PERMEABILITY 1X10-7 cm/sec



08/19/9408:46 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-031 CHK. BY: MA DATE: 8/17/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.39%	25.04%
SAMPLE DIAMETER (in) D	2.893	2.865
SAMPLE HEIGHT (in) L	3.082	3.106
SAMPLE WEIGHT, total (g)	654.7	663.83
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.60	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	11.7	

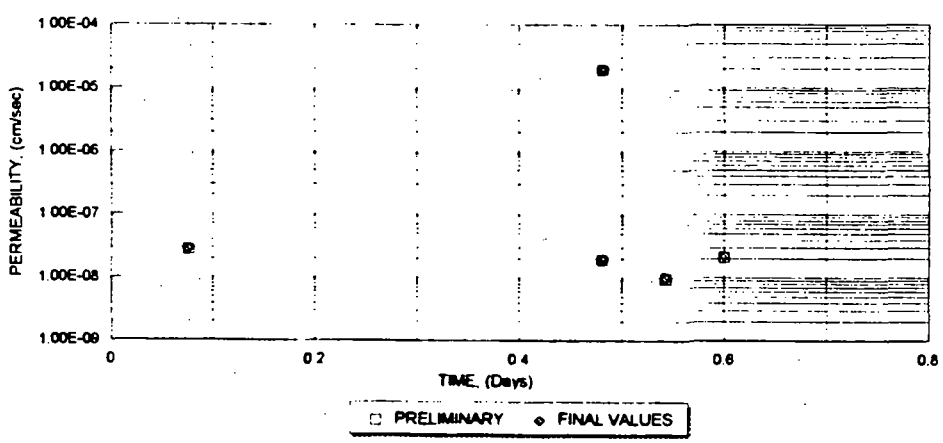
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.7
POST-TEST DENSITY	102.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	62%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6600	0.08	0.35	5.00	2.9E-08
60	0.08	7.65	5.00	
34860	0.48	1.275	5.00	2.0E-08
60	0.48	2.15	5.00	0.000019
5340	0.54	0.1	5.00	1.0E-08
4920	0.60	0.2	5.00	2.2E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



08/19/9408:38 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-032 CHK. BY: BY DATE: 8/19/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.11%	26.36%
SAMPLE DIAMETER (in) D	2.845	2.892
SAMPLE HEIGHT (in) L	3.069	3.154
SAMPLE WEIGHT, total (g)	647.06	671.62
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	90%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.54	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	10.0	

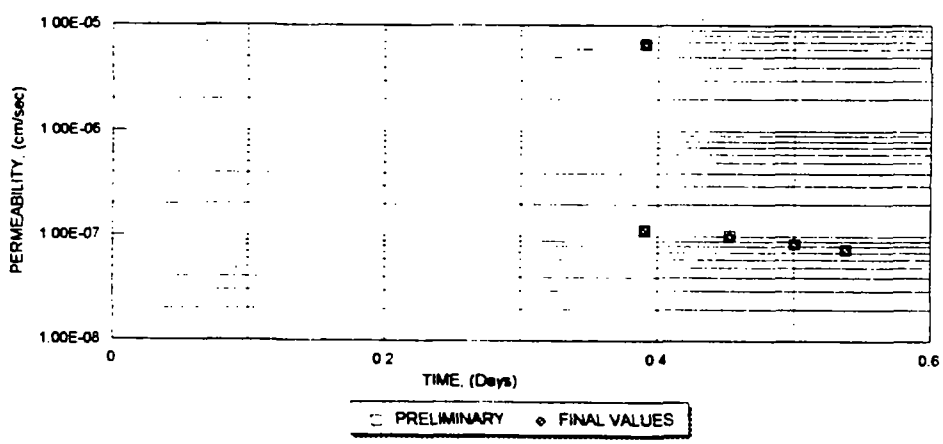
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.8
POST-TEST DENSITY	98.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	43%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
33720	0.39	7.2	5.00	1.1E-07
60	0.39	0.75	5.00	6.7E-06
5340	0.45	1	5.00	1.0E-07
4140	0.50	0.65	5.00	8.4E-08
3240	0.54	0.45	5.00	7.5E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



08/23/9402:22 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-033 CHK. BY: MV DATE: 8/18/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	8.26%	31.68%
SAMPLE DIAMETER (in) D	2.838	2.873
SAMPLE HEIGHT (in) L	3.173	3.216
SAMPLE WEIGHT, total (g)	629.56	652.58
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.54	
AVERAGE GRADIENT (in/in)	43.6	
TOTAL VOLUME OF FLUID, (cc)	7.1	

DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	111.7
POST-TEST DENSITY	91.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	49%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
34080	0.39	3.91	5.00	6.4E-08
60	0.40	2.45	5.00	0.000023
5340	0.46	0.4	5.00	4.2E-08
3960	0.50	0.25	5.00	3.5E-08
3300	0.54	0.1	5.00	1.7E-08

SAMPLE PERMEABILITY 2E-08 cm/sec

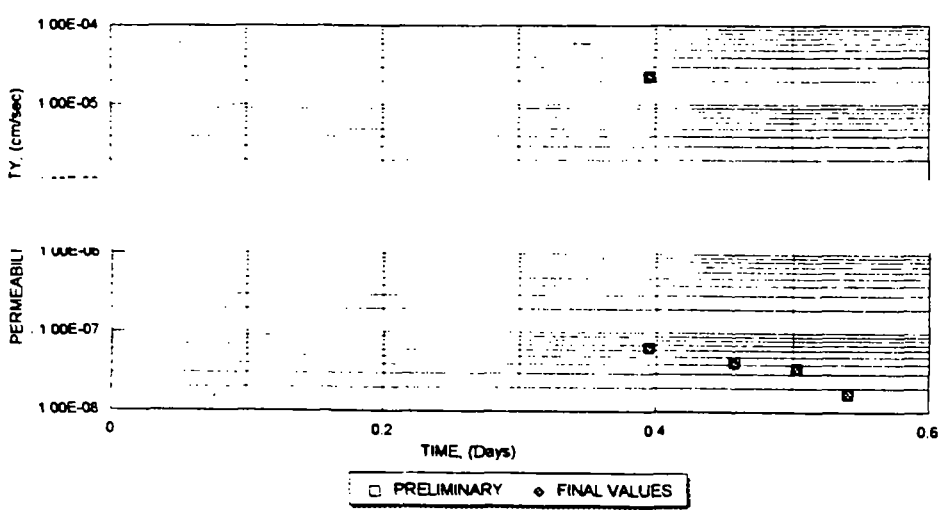


ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT.

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-034 CHK. BY: BG DATE: 8/18/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	9.52%	27.09%
SAMPLE DIAMETER (in) D	2.874	2.890
SAMPLE HEIGHT (in) L	3.072	3.209
SAMPLE WEIGHT, total (g)	656.15	678.66
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.57	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	5.6	

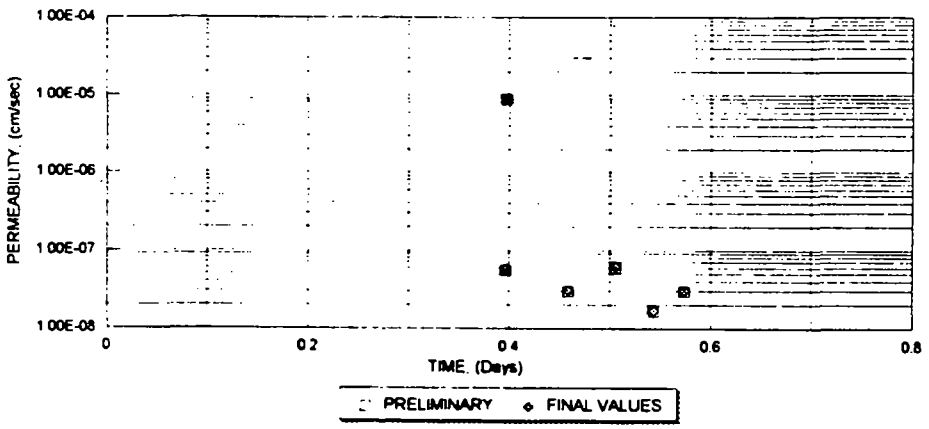
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	116.0
POST-TEST DENSITY	97.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	94%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
34260	0.40	3.57	5.00	5.7E-08
60	0.40	1	5.00	9.1E-06
5340	0.46	0.3	5.00	3.1E-08
4020	0.51	0.45	5.00	6.1E-08
3240	0.54	0.1	5.00	1.7E-08
2700	0.57	0.15	5.00	3.0E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



08/23/9402:36 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-035 CHK. BY: BZ DATE: 8/18/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.37%	34.00%
SAMPLE DIAMETER (in) D	2.850	2.868
SAMPLE HEIGHT (in) L	3.140	3.159
SAMPLE WEIGHT, total (g)	656.49	629.54
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.59	
AVERAGE GRADIENT (in/in)	44.1	
TOTAL VOLUME OF FLUID, (cc)	69.4	

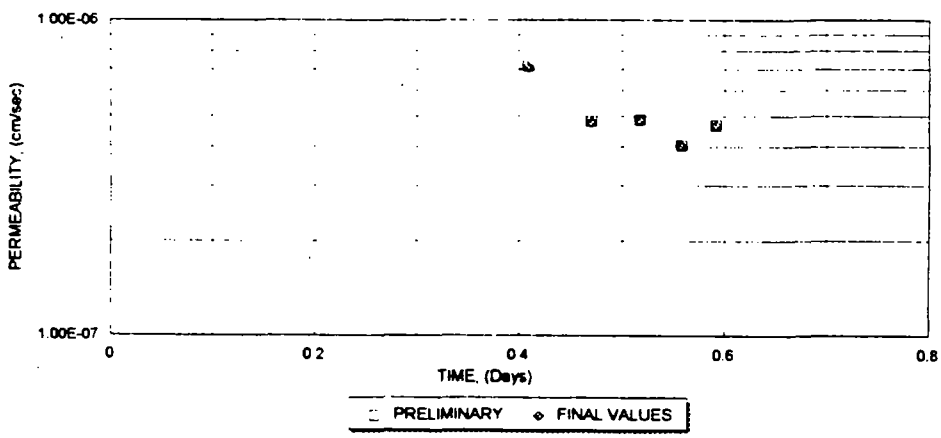
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.0
POST-TEST DENSITY	88.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	70%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
35280	0.41	45.9	5.00	7.1E-07
60	0.41	10.3	5.00	
5280	0.47	4.6	5.00	4.8E-07
4080	0.52	3.6	5.00	4.8E-07
3540	0.56	2.6	5.00	4.0E-07
2880	0.59	2.45	5.00	4.7E-07

SAMPLE PERMEABILITY 5E-07 cm/sec



08/23/9402:32 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-036 CHK. BY: MY DATE: 8/18/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	30.34%	26.74%
SAMPLE DIAMETER (in) D	2.856	2.861
SAMPLE HEIGHT (in) L	3.201	3.252
SAMPLE WEIGHT, total (g)	669.25	684.36
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.62	
AVERAGE GRADIENT (in/in)	43.3	
TOTAL VOLUME OF FLUID, (cc)	13.0	

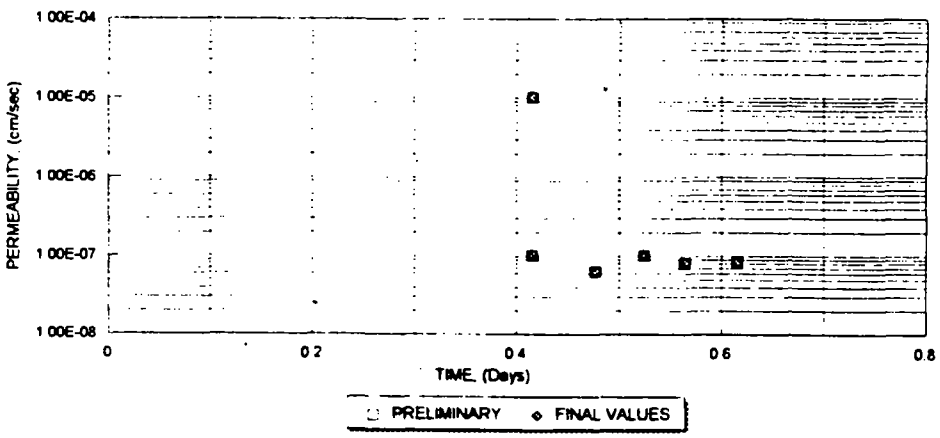
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.6
POST-TEST DENSITY	99.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	100%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
35880	0.42	6.63	5.00	1.0E-07
60	0.42	1.1	5.00	0.00001
5280	0.48	0.6	5.00	6.4E-08
4080	0.52	0.75	5.00	1.0E-07
60	0.53	2.8	5.00	
3420	0.56	0.5	5.00	8.3E-08
4380	0.62	0.65	5.00	8.4E-08

SAMPLE PERMEABILITY 9E-08 cm/sec



08/23/9402:43 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-037 CHK. BY: DY DATE: 8/19/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.92%	25.26%
SAMPLE DIAMETER (in) D	2.857	2.890
SAMPLE HEIGHT (in) L	2.941	2.990
SAMPLE WEIGHT, total (g)	621.69	639.16
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.33	
AVERAGE GRADIENT (in/in)	47.1	
TOTAL VOLUME OF FLUID, (cc)	2.5	

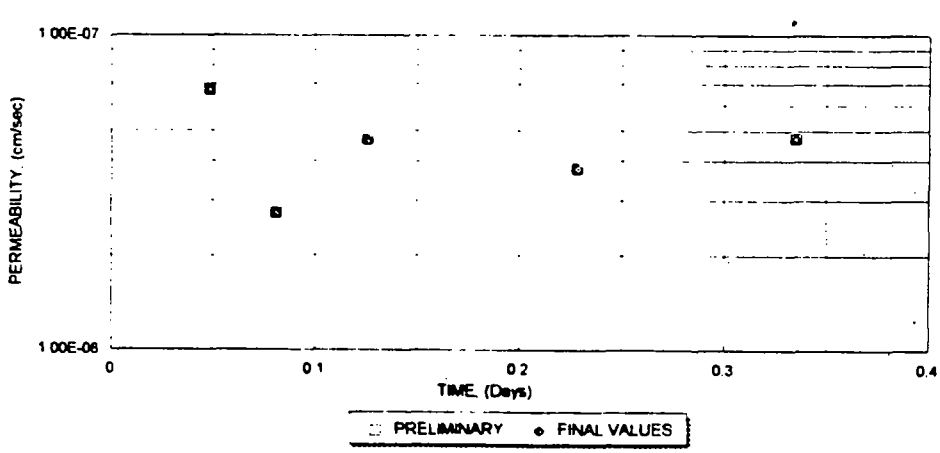
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.3
POST-TEST DENSITY	100.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	67%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4200	0.05	0.55	5.00	6.7E-08
2820	0.08	0.15	5.00	2.7E-08
3840	0.13	0.35	5.00	4.7E-08
8820	0.23	0.65	5.00	3.8E-08
9240	0.33	0.85	5.00	4.7E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



08/23/9402:49 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-038 CHK. BY: BJ DATE: 8/19/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	30.15%	26.59%
SAMPLE DIAMETER (in) D	2.877	2.902
SAMPLE HEIGHT (in) L	3.090	3.169
SAMPLE WEIGHT, total (g)	649.71	673.45
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.34	
AVERAGE GRADIENT (in/in)	44.8	
TOTAL VOLUME OF FLUID, (cc)	6.2	

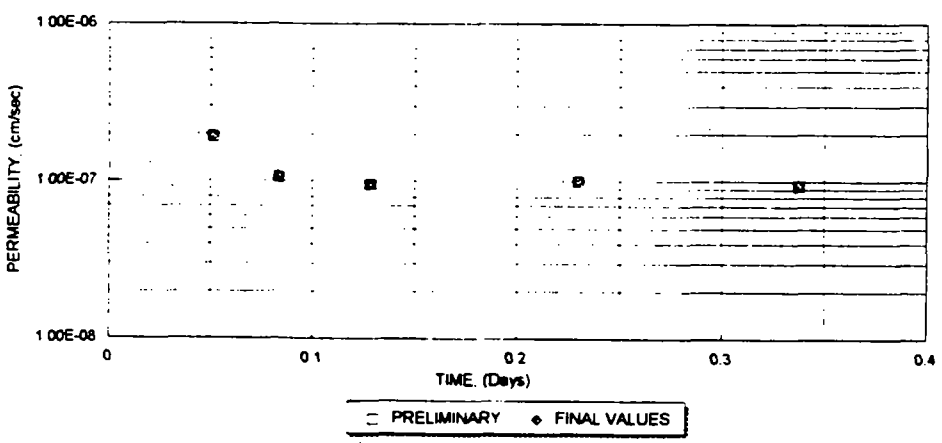
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	95.9
POST-TEST DENSITY	97.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	48%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4440	0.05	1.6	5.00	1.9E-07
2760	0.08	0.55	5.00	1.1E-07
3900	0.13	0.7	5.00	9.6E-08
8760	0.23	1.65	5.00	1.0E-07
9300	0.34	1.65	5.00	9.5E-08

SAMPLE PERMEABILITY 1X10-7 cm/sec



08/23/9402:55 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-039 CHK. BY: BG DATE: 8/19/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.46%	25.10%
SAMPLE DIAMETER (in) D	2.836	2.810
SAMPLE HEIGHT (in) L	3.045	3.125
SAMPLE WEIGHT, total (g)	612.12	639.35
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	92%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.38	
AVERAGE GRADIENT (in/in)	45.5	
TOTAL VOLUME OF FLUID, (cc)	142.1	

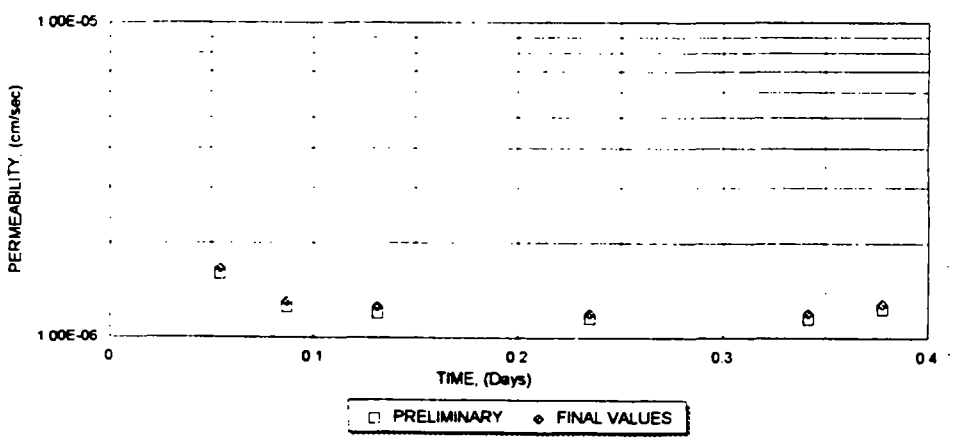
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.8
POST-TEST DENSITY	101.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	88%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4680	0.05	13.8	5.00	1.7E-06
60	0.05	14.7	5.00	
2760	0.09	6.4	5.00	1.3E-06
3840	0.13	8.55	5.00	1.3E-06
60	0.13	15.8	5.00	
8880	0.23	18.95	5.00	1.2E-06
60	0.24	18.6	5.00	
9180	0.34	19.55	5.00	1.2E-06
540	0.35	19.9	5.00	
2580	0.38	5.9	5.00	1.3E-06

SAMPLE PERMEABILITY 1E-06 cm/sec



08/23/9403:02 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-041 CHK. BY: BJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.95%	25.88%
SAMPLE DIAMETER (in) D	2.851	2.872
SAMPLE HEIGHT (in) L	3.062	3.063
SAMPLE WEIGHT, total (g)	610.55	642.14
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.65	
AVERAGE GRADIENT (in/in)	45.2	
TOTAL VOLUME OF FLUID, (cc)	50.1	

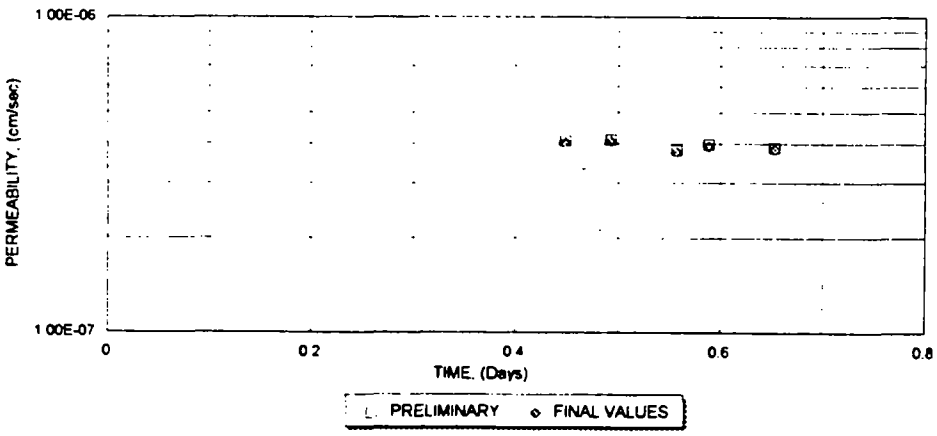
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.3
POST-TEST DENSITY	99.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	52%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38760	0.45	29.44	5.00	4.0E-07
60	0.45	7.8	5.00	
3720	0.49	2.85	5.00	4.1E-07
5640	0.56	4	5.00	3.8E-07
2700	0.59	2	5.00	3.9E-07
5520	0.65	4	5.00	3.8E-07

SAMPLE PERMEABILITY 4E-07 cm/sec



08/24/9410:26 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-042 CHK. BY: BJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.36%	26.15%
SAMPLE DIAMETER (in) D	2.855	2.870
SAMPLE HEIGHT (in) L	3.072	3.149
SAMPLE WEIGHT, total (g)	642.56	668.36
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.65	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	13.2	

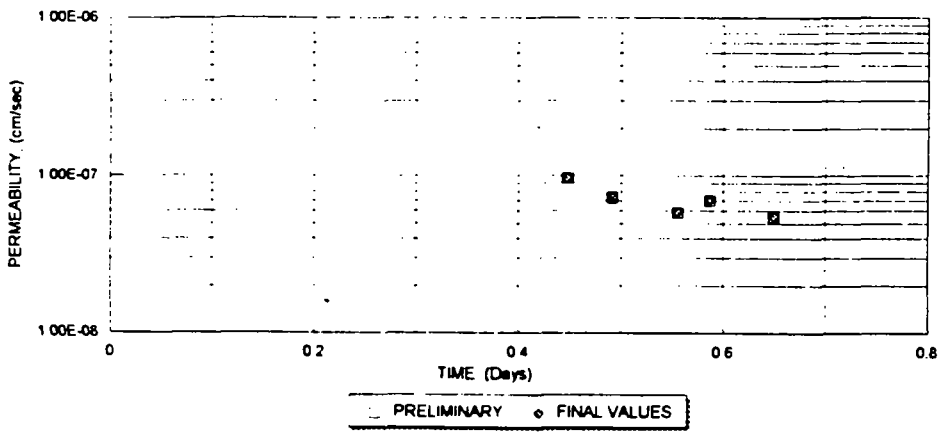
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	106.4
POST-TEST DENSITY	100.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	54%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38700	0.45	6.96	5.00	9.8E-08
60	0.45	4.2	5.00	
3720	0.49	0.5	5.00	7.3E-08
5520	0.56	0.6	5.00	5.9E-08
2700	0.59	0.35	5.00	7.1E-08
5400	0.65	0.55	5.00	5.6E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



08/24/9410:32 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-043 CHK. BY: DJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.38%	24.89%
SAMPLE DIAMETER (in) D	2.843	2.842
SAMPLE HEIGHT (in) L	3.079	3.105
SAMPLE WEIGHT, total (g)	627.95	649.46
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.65	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	16.1	

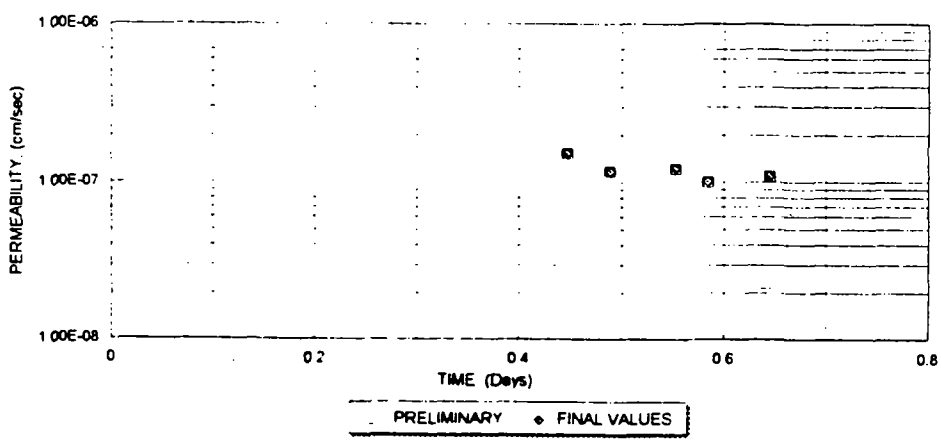
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.7
POST-TEST DENSITY	101.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	43%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38700	0.45	10.81	5.00	1.5E-07
60	0.45	1.7	5.00	
3480	0.49	0.75	5.00	1.2E-07
5580	0.55	1.25	5.00	1.2E-07
2700	0.58	0.5	5.00	1.0E-07
5220	0.65	1.05	5.00	1.1E-07

SAMPLE PERMEABILITY 1E-07 cm/sec



08/24/9410:39 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-044 CHK. BY: BJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.58%	23.82%
SAMPLE DIAMETER (in) D	2.854	2.862
SAMPLE HEIGHT (in) L	2.990	2.996
SAMPLE WEIGHT, total (g)	632.01	640.18
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	23%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	1.47	
AVERAGE GRADIENT (in/in)	46.3	
TOTAL VOLUME OF FLUID, (cc)	-10.5	

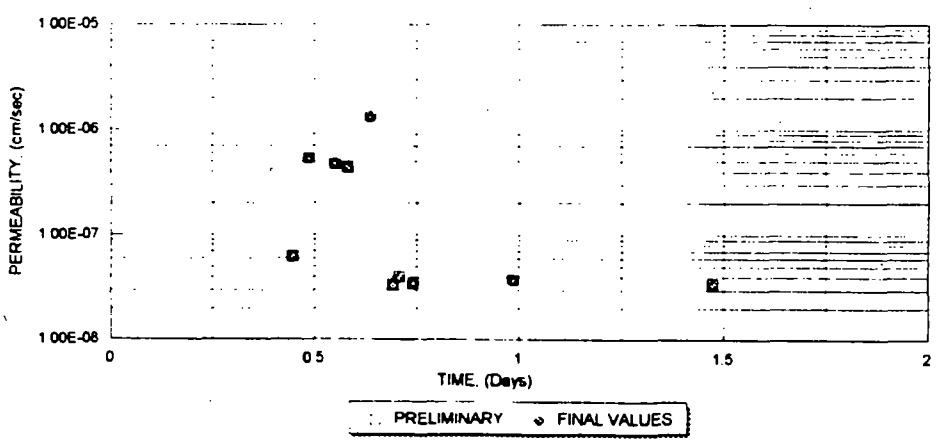
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	107.5
POST-TEST DENSITY	103.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	6%
PERCENT COMPRESSION	62%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38580	0.45	4.59	5.00	6.2E-08
60	0.45	2.3	5.00	
3480	0.49	3.6	5.00	5.4E-07
5520	0.55	5.05	5.00	4.8E-07
2700	0.58	2.25	5.00	4.3E-07
60	0.58	-20.6	5.00	
4620	0.64	11.55	5.00	1.3E-06
60	0.64	-24.1	5.00	
4680	0.69	0.3	5.00	3.3E-08
1320	0.71	0.1	5.00	3.9E-08
3000	0.74	0.2	5.00	3.5E-08
21000	0.98	1.5	5.00	3.7E-08
42240	1.47	2.75	5.00	3.4E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



08/26/9412:09 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-045 CHK. BY: BJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.39%	24.36%
SAMPLE DIAMETER (in) D	2.861	2.854
SAMPLE HEIGHT (in) L	3.068	3.085
SAMPLE WEIGHT, total (g)	637	658.75
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.63	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	9.4	

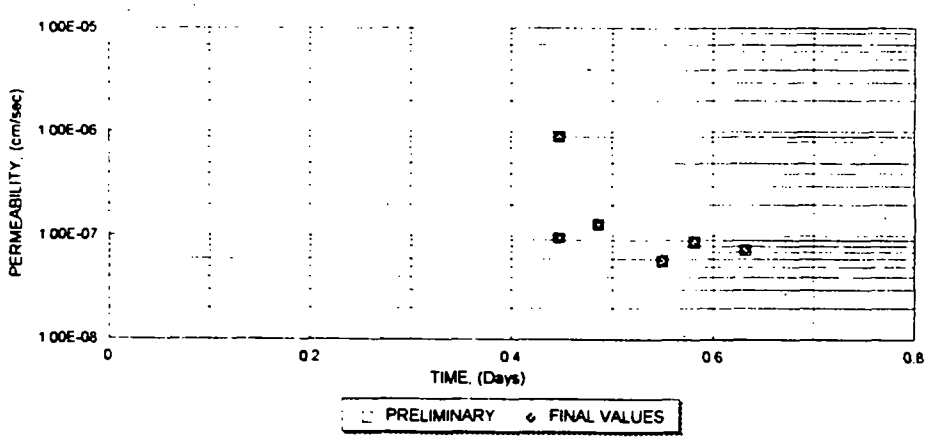
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.7
POST-TEST DENSITY	103.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	40%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38580	0.45	6.885	5.00	9.6E-08
60	0.45	0.1	5.00	9.0E-07
3300	0.49	0.8	5.00	1.3E-07
5520	0.55	0.6	5.00	5.9E-08
2760	0.58	0.45	5.00	8.8E-08
4380	0.63	0.6	5.00	7.4E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



08/24/9410:45 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-046 CHK. BY: BJ DATE: 8/22/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	28.60%	26.71%
SAMPLE DIAMETER (in) D	2.853	2.875
SAMPLE HEIGHT (in) L	2.984	3.013
SAMPLE WEIGHT, total (g)	618.44	635.86
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.63	
AVERAGE GRADIENT (in/in)	46.4	
TOTAL VOLUME OF FLUID, (cc)	22.8	

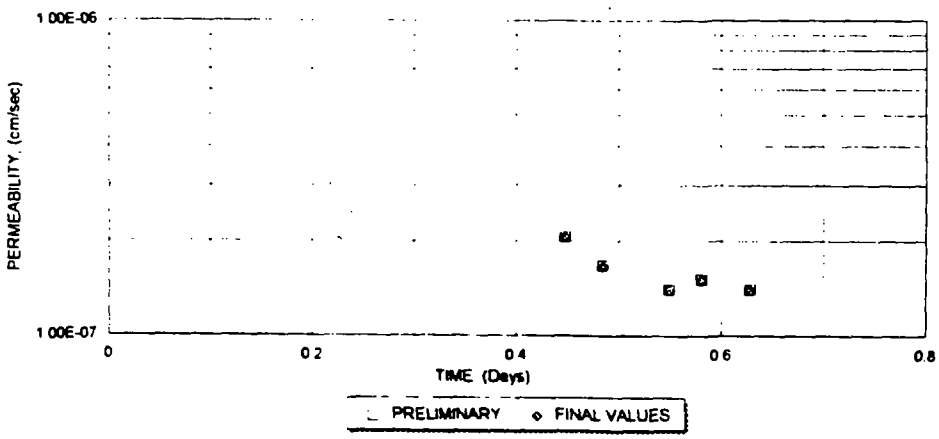
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	97.2
POST-TEST DENSITY	99.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	45%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
38640	0.45	15.3	5.00	2.1E-07
60	0.45	3.1	5.00	
3120	0.48	1	5.00	1.7E-07
5580	0.55	1.5	5.00	1.4E-07
2760	0.58	0.8	5.00	1.5E-07
4080	0.63	1.1	5.00	1.4E-07

SAMPLE PERMEABILITY 2E-07 cm/sec



08/24/9410:50 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-049 CHK. BY: BY DATE: 8/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.20%	26.94%
SAMPLE DIAMETER (in) D	2.873	2.869
SAMPLE HEIGHT (in) L	3.061	3.063
SAMPLE WEIGHT, total (g)	640.36	644.97
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	92%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.68	
AVERAGE GRADIENT (in/in)	45.2	
TOTAL VOLUME OF FLUID, (cc)	7.1	

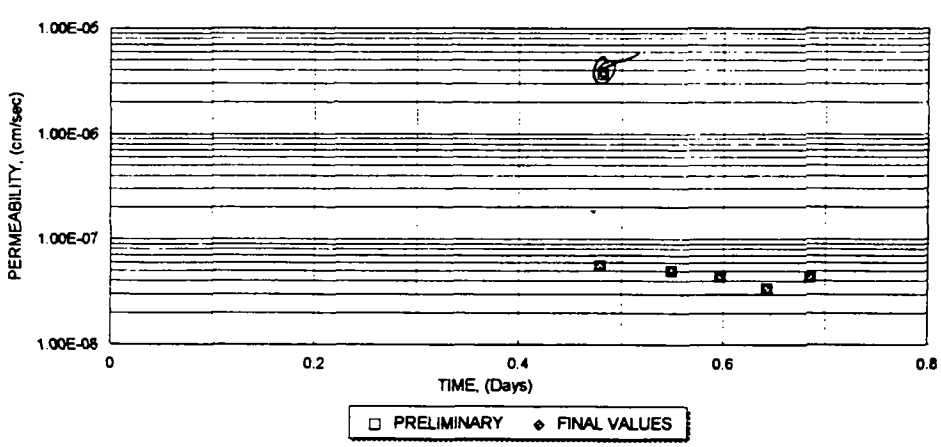
DRY DENSITY INFO	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.2
POST-TEST DENSITY	99.0

SAMPLE COLLECTION INFO	
PERCENT COMPRESSION	6%
PERCENT COMPRESSION	29%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
41400	0.48	4.37	5.00	5.6E-08
180	0.48	1.25	5.00	3.7E-06
5820	0.55	0.55	5.00	5.0E-08
4200	0.60	0.35	5.00	4.4E-08
3900	0.64	0.25	5.00	3.4E-08
3660	0.68	0.3	5.00	4.3E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



08/26/9412:00 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB # 8940-83

Sample: HB-050 CHK. BY: BJ DATE: 8/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.06%	27.71%
SAMPLE DIAMETER (in) D	2.864	2.867
SAMPLE HEIGHT (in) L	2.991	3.007
SAMPLE WEIGHT, total (g)	627.18	633.04
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.69	
AVERAGE GRADIENT (in/in)	46.3	
TOTAL VOLUME OF FLUID, (cc)	7.9	

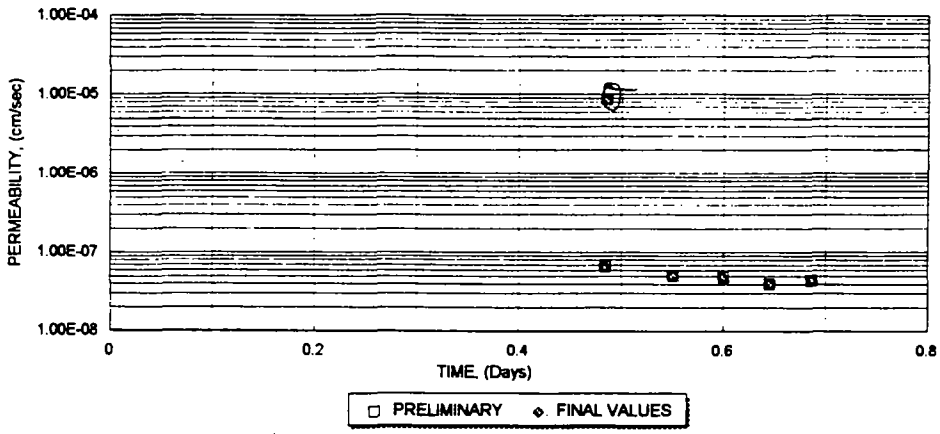
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.6
POST-TEST DENSITY	98.5

SAMPLE COLLECTION INFO	
PERCENT COMPRESSION	6%
PERCENT COMPRESSION	45%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
41880	0.48	5.355	5.00	6.7E-08
60	0.49	1	5.00	8.7E-06
5640	0.55	0.55	5.00	5.1E-08
4260	0.60	0.4	5.00	4.9E-08
3900	0.65	0.3	5.00	4.0E-08
3540	0.69	0.3	5.00	4.4E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



08/26/9412:25 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: ·HB-051 CHK. BY: BL DATE: 8/24/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.74%	25.02%
SAMPLE DIAMETER (in) D	2.869	2.872
SAMPLE HEIGHT (in) L	3.005	3.041
SAMPLE WEIGHT, total (g)	640.1	649.69
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.24	
AVERAGE GRADIENT (in/in)	46.1	
TOTAL VOLUME OF FLUID, (cc)	2.0	

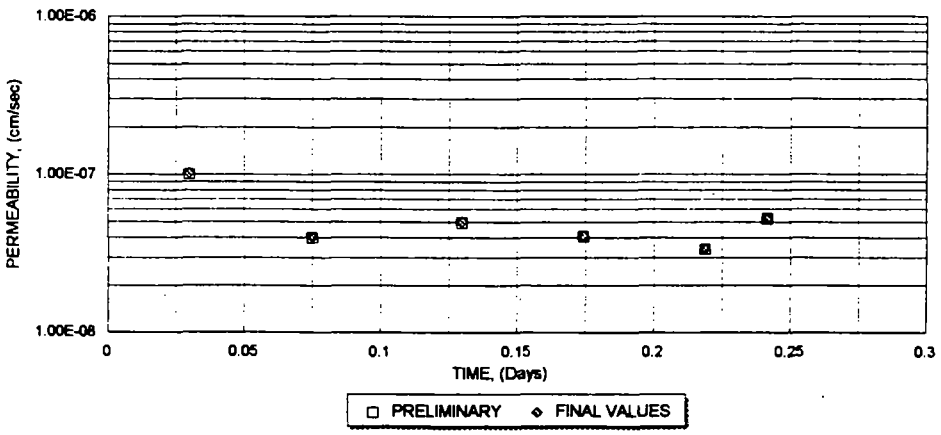
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.3
POST-TEST DENSITY	101.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	7%
PERCENT COMPRESSION	61%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2580	0.03	0.5	5.00	1.0E-07
3900	0.08	0.3	5.00	4.0E-08
4740	0.13	0.45	5.00	5.0E-08
3840	0.17	0.3	5.00	4.1E-08
3840	0.22	0.25	5.00	3.4E-08
1980	0.24	0.2	5.00	5.3E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



08/26/9411:04 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-052 CHK. BY: PJ DATE: 8/24/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.75%	27.36%
SAMPLE DIAMETER (in) D	2.878	2.869
SAMPLE HEIGHT (in) L	2.985	2.978
SAMPLE WEIGHT, total (g)	611.68	619.67
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.24	
AVERAGE GRADIENT (in/in)	46.4	
TOTAL VOLUME OF FLUID, (cc)	3.3	

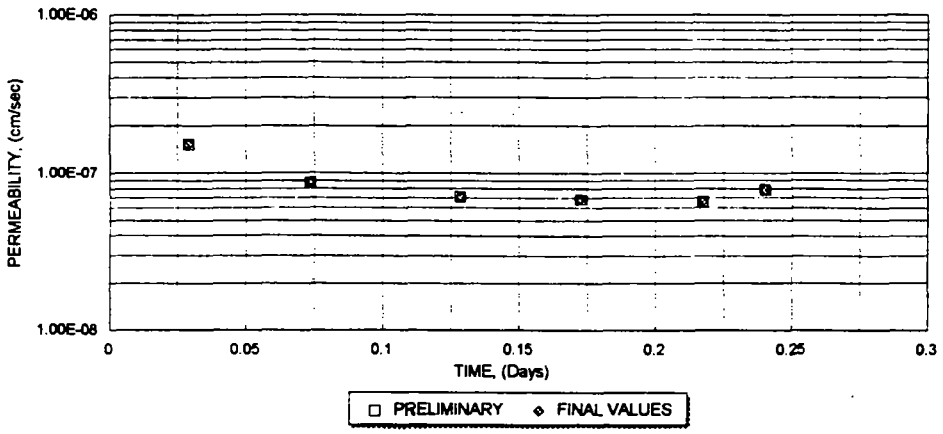
DRY DENSITY INFO	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.6
POST-TEST DENSITY	97.5

SAMPLE COLLECTION INFO	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	21%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2520	0.03	0.75	5.00	1.5E-07
3840	0.07	0.65	5.00	8.7E-08
4740	0.13	0.65	5.00	7.1E-08
3780	0.17	0.5	5.00	6.8E-08
3900	0.22	0.5	5.00	6.6E-08
1980	0.24	0.3	5.00	7.8E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



08/26/9411:10 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-053 CHK. BY: BJ DATE: 8/24/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.62%	28.43%
SAMPLE DIAMETER (in) D	2.859	2.856
SAMPLE HEIGHT (in) L	2.820	2.847
SAMPLE WEIGHT, total (g)	578.93	586.39
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.24	
AVERAGE GRADIENT (in/in)	49.1	
TOTAL VOLUME OF FLUID, (cc)	1.4	

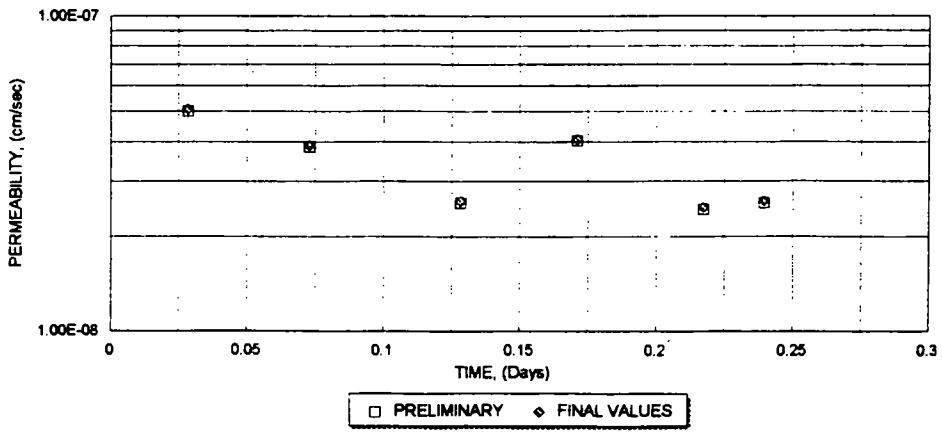
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.3
POST-TEST DENSITY	96.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	7%
PERCENT COMPRESSION	27%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2460	0.03	0.25	5.00	5.1E-08
3840	0.07	0.3	5.00	3.9E-08
4800	0.13	0.25	5.00	2.6E-08
3660	0.17	0.3	5.00	4.1E-08
4020	0.22	0.2	5.00	2.5E-08
1920	0.24	0.1	5.00	2.6E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



08/26/9411:16 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-054 CHK. BY: MY DATE: 8/24/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.28%	27.49%
SAMPLE DIAMETER (in) D	2.873	2.853
SAMPLE HEIGHT (in) L	3.025	3.010
SAMPLE WEIGHT, total (g)	622.38	627.66
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.24	
AVERAGE GRADIENT (in/in)	45.8	
TOTAL VOLUME OF FLUID, (cc)	6.2	

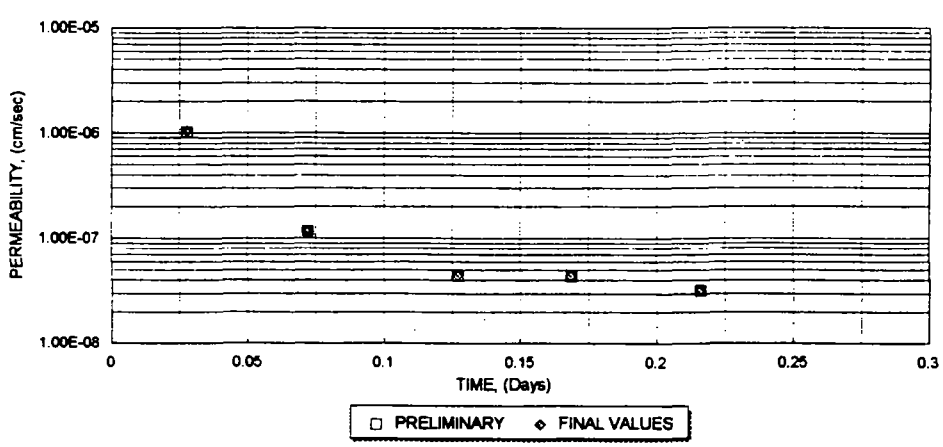
DRY DENSITY INFO	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	97.7
POST-TEST DENSITY	98.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	44%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2400	0.03	4.7	5.00	1.0E-06
2940	0.06	0.2	5.00	
900	0.07	0.2	5.00	1.2E-07
4740	0.13	0.4	5.00	4.4E-08
3600	0.17	0.3	5.00	4.4E-08
4080	0.22	0.25	5.00	3.2E-08
1980	0.24	0.1	5.00	

SAMPLE PERMEABILITY 4E-08 cm/sec



08/26/9411:25 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-055 CHK. BY: MJ DATE: 8/25/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.44%	23.92%
SAMPLE DIAMETER (in) D	2.851	2.885
SAMPLE HEIGHT (in) L	3.064	3.105
SAMPLE WEIGHT, total (g)	625.43	645.46
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	45.2	
TOTAL VOLUME OF FLUID, (cc)	3.5	

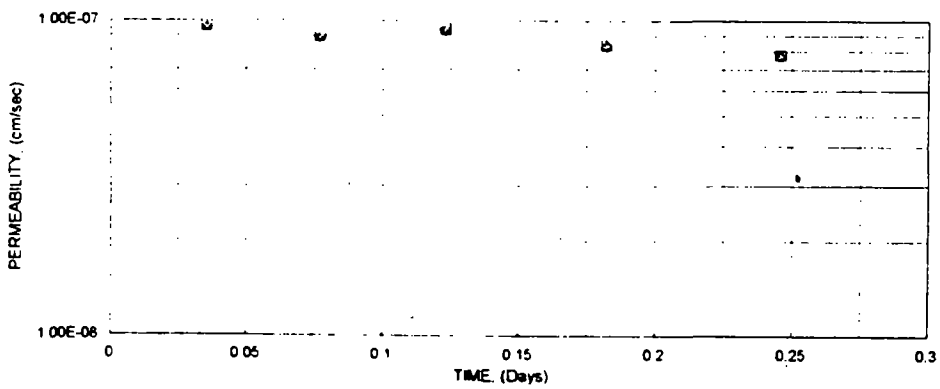
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.4
POST-TEST DENSITY	99.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	31%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.55	5.00	9.6E-08
3600	0.08	0.6	5.00	8.9E-08
3960	0.12	0.7	5.00	9.4E-08
5100	0.18	0.8	5.00	8.3E-08
5520	0.25	0.8	5.00	7.7E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



PRELIMINARY ◇ FINAL VALUES

08/29/9407:26 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-056 CHK. BY: DJ DATE: 8/25/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.60%	22.80%
SAMPLE DIAMETER (in) D	2.874	2.887
SAMPLE HEIGHT (in) L	3.081	3.176
SAMPLE WEIGHT, total (g)	665.86	684.04
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	93%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	4.3	

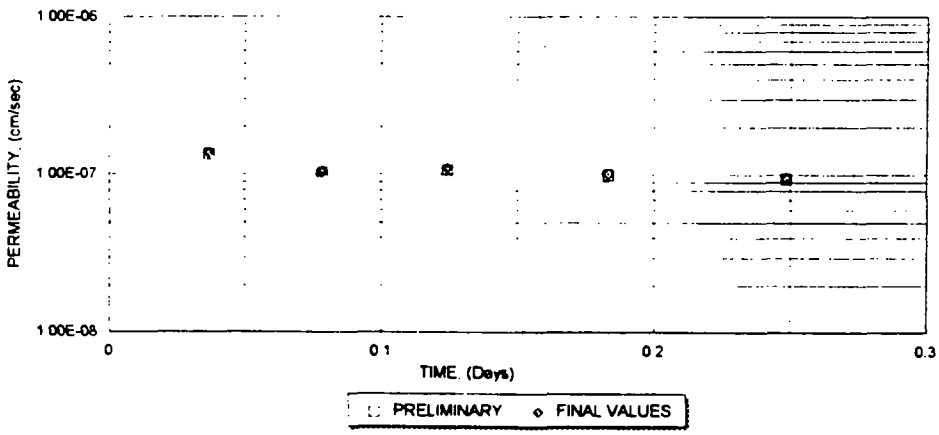
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	106.5
POST-TEST DENSITY	103.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	2%
PERCENT COMPRESSION	47%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3180	0.04	0.8	5.00	1.4E-07
3600	0.08	0.7	5.00	1.1E-07
3960	0.12	0.8	5.00	1.1E-07
5100	0.18	0.95	5.00	1.0E-07
5640	0.25	1	5.00	9.6E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



08/29/9407:31 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-057 CHK. BY: BY DATE: 8/25/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.60%	25.98%
SAMPLE DIAMETER (in) D	2.870	2.876
SAMPLE HEIGHT (in) L	3.075	3.135
SAMPLE WEIGHT, total (g)	639.75	656.67
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	2.8	

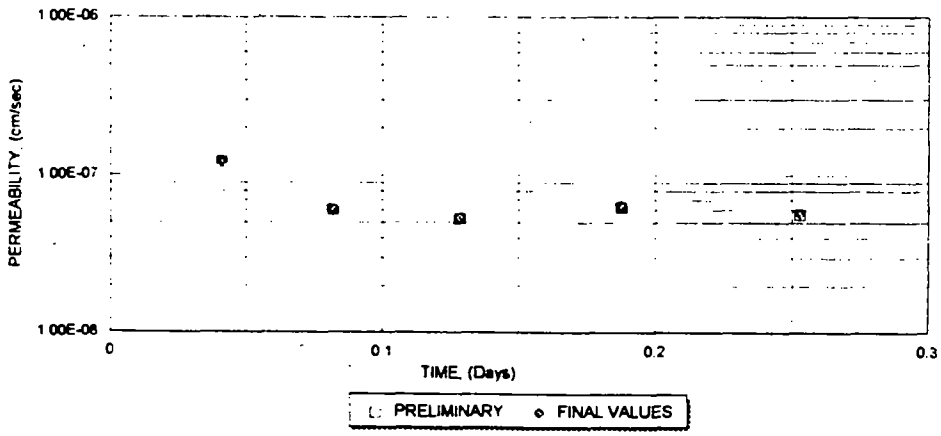
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.6
POST-TEST DENSITY	98.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	49%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3540	0.04	0.8	5.00	1.2E-07
3540	0.08	0.4	5.00	6.1E-08
4020	0.13	0.4	5.00	5.4E-08
5100	0.19	0.6	5.00	6.4E-08
5640	0.25	0.6	5.00	5.7E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



08/29/9407:36 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-058 CHK. BY: BY DATE: 8/25/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.89%	25.07%
SAMPLE DIAMETER (in) D	2.870	2.847
SAMPLE HEIGHT (in) L	2.942	3.005
SAMPLE WEIGHT, total (g)	617.54	634.84
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	47.1	
TOTAL VOLUME OF FLUID, (cc)	9.9	

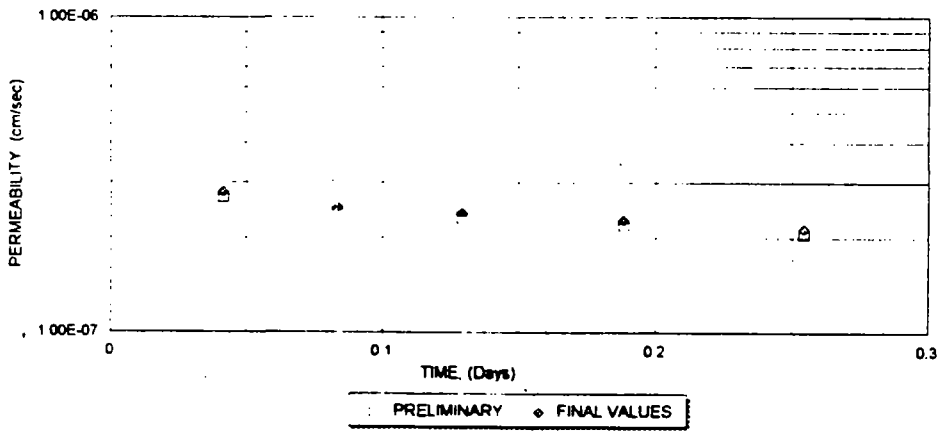
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.4
POST-TEST DENSITY	102.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	49%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3600	0.04	1.9	5.00	2.8E-07
3600	0.08	1.7	5.00	2.5E-07
3960	0.13	1.8	5.00	2.4E-07
5100	0.19	2.2	5.00	2.3E-07
5700	0.25	2.3	5.00	2.1E-07

SAMPLE PERMEABILITY 3E-07 cm/sec



08/29/9407:43 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-059 CHK. BY: BJ DATE: 8/26/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.81%	28.81%
SAMPLE DIAMETER (in) D	2.840	2.828
SAMPLE HEIGHT (in) L	3.253	3.281
SAMPLE WEIGHT, total (g)	652.88	669.96
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	42.6	
TOTAL VOLUME OF FLUID, (cc)	4.0	

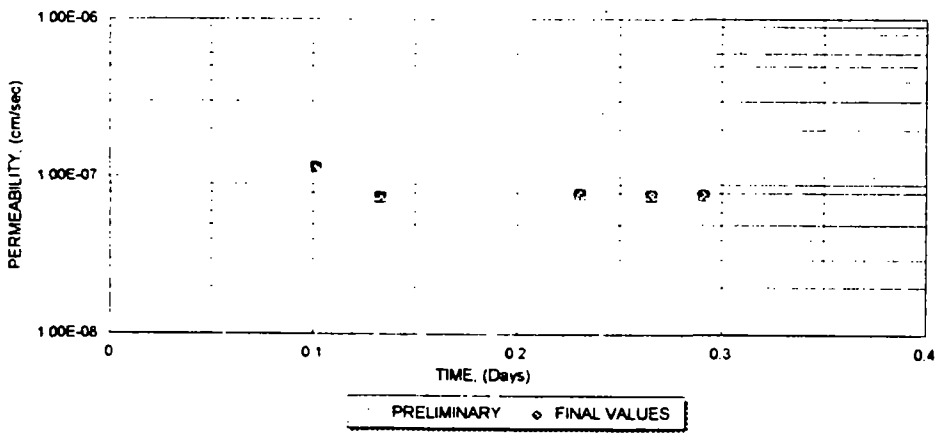
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.9
POST-TEST DENSITY	97.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	31%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8760	0.10	1.75	5.00	1.2E-07
2700	0.13	0.35	5.00	7.6E-08
8460	0.23	1.15	5.00	7.9E-08
3000	0.27	0.4	5.00	7.8E-08
2220	0.29	0.3	5.00	7.9E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



08/29/9409:37 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-060 CHK. BY: BJ DATE: 8/26/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.93%	28.67%
SAMPLE DIAMETER (in) D	2.873	2.881
SAMPLE HEIGHT (in) L	3.021	3.083
SAMPLE WEIGHT, total (g)	623.63	640.1
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.38	
AVERAGE GRADIENT (in/in)	45.8	
TOTAL VOLUME OF FLUID, (cc)	1.3	

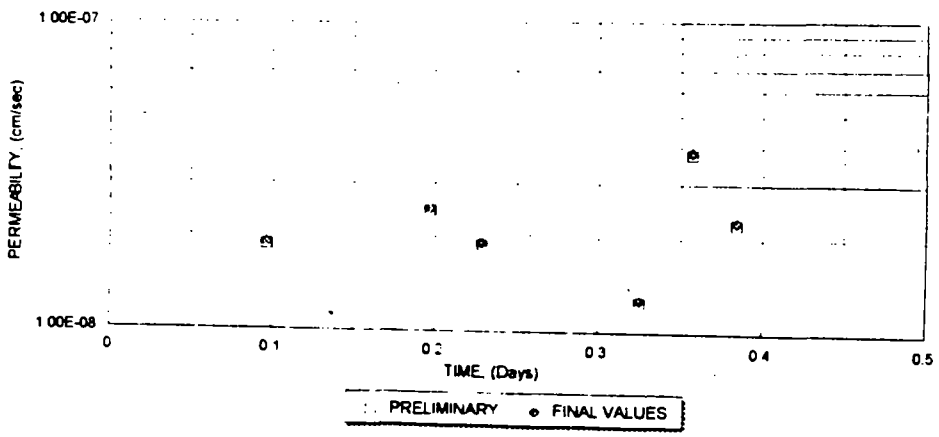
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.1
POST-TEST DENSITY	95.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	-58%
PERCENT COMPRESSION	37%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8340	0.10	0.3	5.00	1.9E-08
8640	0.20	0.4	5.00	2.5E-08
2760	0.23	0.1	5.00	1.9E-08
8340	0.33	0.2	5.00	1.3E-08
2760	0.36	0.2	5.00	3.8E-08
2340	0.38	0.1	5.00	2.3E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



08/29/9409:43 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-061 CHK. BY: [illegible] DATE: 8/26/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.43%	26.19%
SAMPLE DIAMETER (in) D	2.882	2.871
SAMPLE HEIGHT (in) L	3.076	3.089
SAMPLE WEIGHT, total (g)	642.08	655.26
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.38	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	5.7	

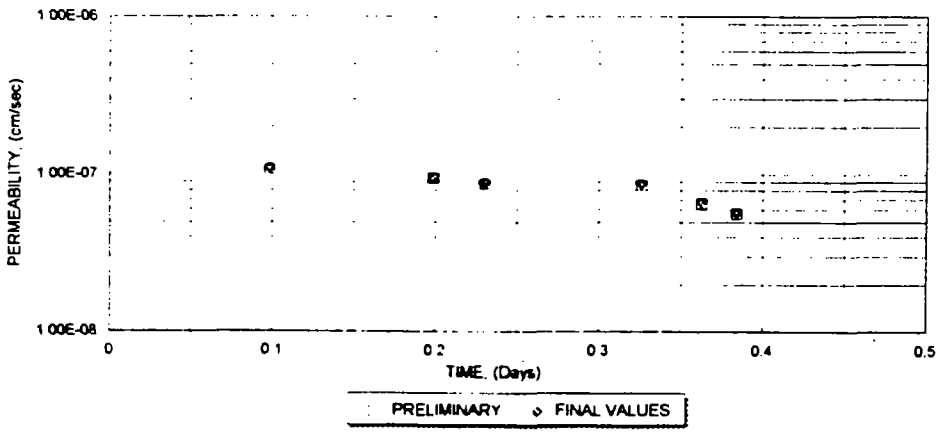
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.0
POST-TEST DENSITY	100.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	6%
PERCENT COMPRESSION	81%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8520	0.10	1.75	5.00	1.1E-07
8640	0.20	1.55	5.00	9.6E-08
2700	0.23	0.45	5.00	8.9E-08
8280	0.33	1.35	5.00	8.7E-08
3180	0.36	0.4	5.00	6.7E-08
1860	0.38	0.2	5.00	5.7E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



08/29/9409:49 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-062 CHK. BY: BJ DATE: 8/26/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.09%	27.21%
SAMPLE DIAMETER (in) D	2.808	2.827
SAMPLE HEIGHT (in) L	3.078	3.086
SAMPLE WEIGHT, total (g)	609.16	630.79
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.38	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	52.2	

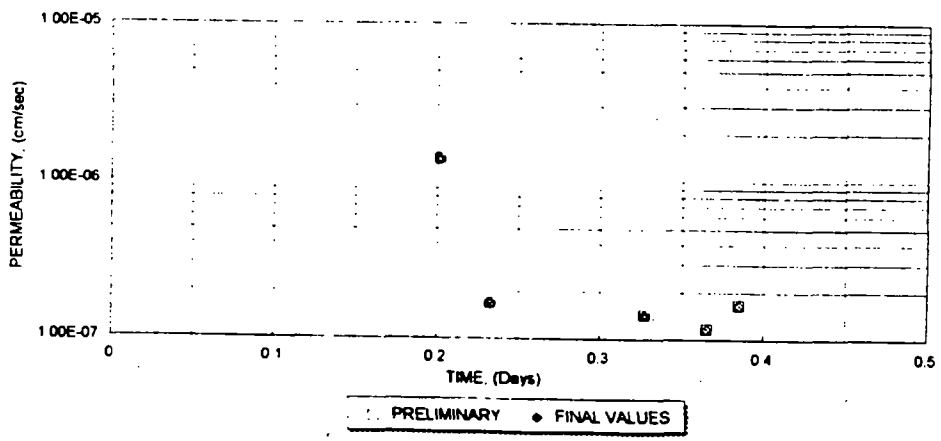
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.1
POST-TEST DENSITY	98.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	54%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8760	0.10	2.4	5.00	
8640	0.20	21.55	5.00	1.4E-06
60	0.20	24.1	5.00	
2640	0.23	0.8	5.00	1.7E-07
8160	0.33	2.1	5.00	1.4E-07
3300	0.37	0.7	5.00	1.2E-07
1680	0.38	0.5	5.00	1.6E-07

SAMPLE PERMEABILITY 2E-07 cm/sec



08/29/9410:03 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-063 CHK. BY: BG DATE: 8/26/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.65%	27.95%
SAMPLE DIAMETER (in) D	2.866	2.879
SAMPLE HEIGHT (in) L	3.161	3.172
SAMPLE WEIGHT, total (g)	626.75	661.35
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.39	
AVERAGE GRADIENT (in/in)	43.8	
TOTAL VOLUME OF FLUID, (cc)	67.8	

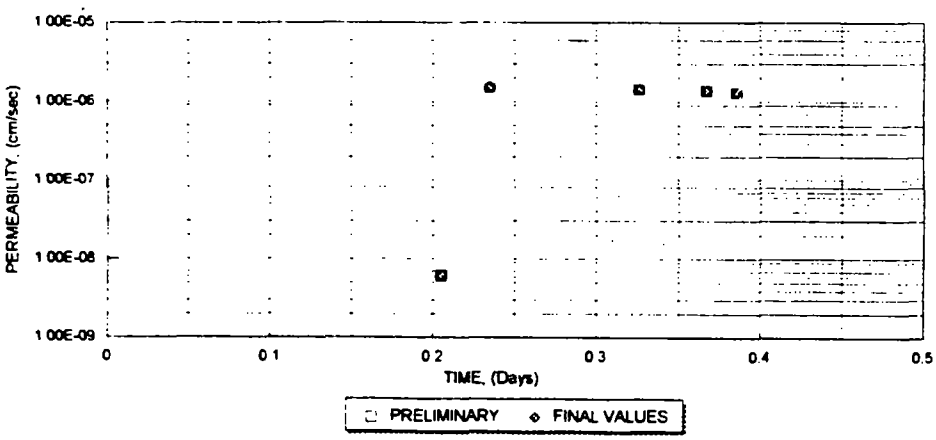
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.2
POST-TEST DENSITY	96.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	3%
PERCENT COMPRESSION	90%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8940	0.10	0.3	5.00	
8760	0.20	0.1	5.00	6.2E-09
2580	0.23	7.15	5.00	1.5E-06
60	0.24	7.8	5.00	
7800	0.33	20.4	5.00	1.4E-06
60	0.33	19.3	5.00	
3540	0.37	8.95	5.00	1.4E-06
1560	0.39	3.75	5.00	1.3E-06

SAMPLE PERMEABILITY 1E-06 cm/sec



08/29/9410:09 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-064 CHK. BY: BJ DATE: 9/1/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.57%	25.35%
SAMPLE DIAMETER (in) D	2.854	2.861
SAMPLE HEIGHT (in) L	3.061	3.062
SAMPLE WEIGHT, total (g)	646.76	654.32
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.73	
AVERAGE GRADIENT (in/in)	45.2	
TOTAL VOLUME OF FLUID, (cc)	12.8	

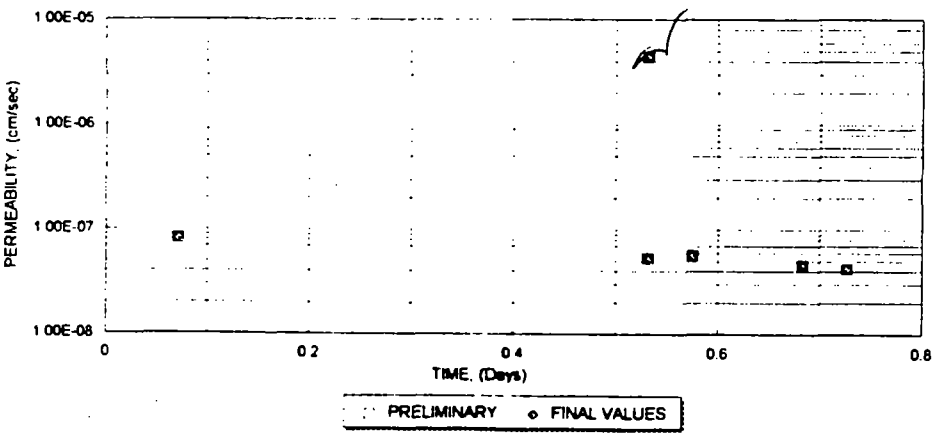
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.5
POST-TEST DENSITY	102.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	2%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6180	0.07	0.95	5.00	8.2E-08
60	0.07	5.98	5.00	
39660	0.53	3.91	5.00	5.3E-08
60	0.53	0.5	5.00	4.4E-06
3720	0.58	0.4	5.00	5.7E-08
9360	0.68	0.8	5.00	4.6E-08
3780	0.73	0.3	5.00	4.2E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



09/07/9408:46 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-065 CHK. BY: DG DATE: 9/1/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.66%	25.02%
SAMPLE DIAMETER (in) D	2.860	2.848
SAMPLE HEIGHT (in) L	3.098	3.052
SAMPLE WEIGHT, total (g)	656.88	668.55
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	79%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.73	
AVERAGE GRADIENT (in/in)	44.7	
TOTAL VOLUME OF FLUID, (cc)	9.6	

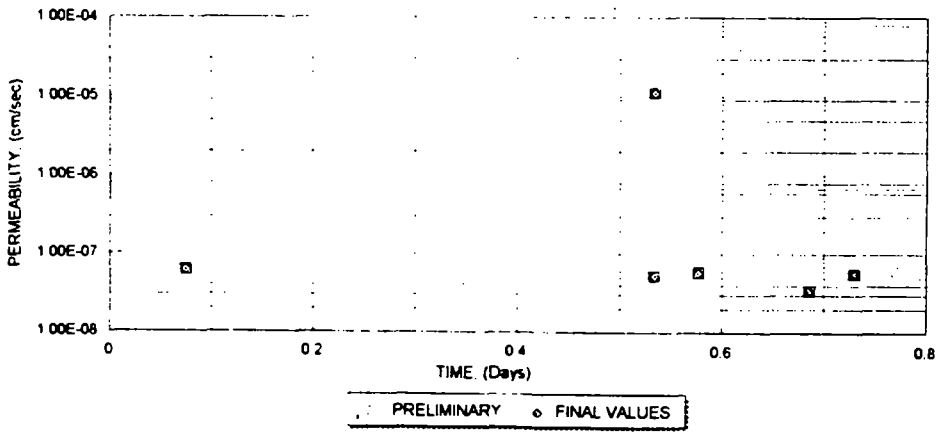
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.8
POST-TEST DENSITY	106.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	44%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6480	0.08	0.75	5.00	6.2E-08
60	0.08	2.4	5.00	
39540	0.53	3.84	5.00	5.2E-08
60	0.53	1.25	5.00	0.000011
3720	0.58	0.4	5.00	5.8E-08
9360	0.69	0.6	5.00	3.4E-08
3780	0.73	0.4	5.00	5.7E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



09/07/9410:04 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-066 CHK. BY: BJ DATE: 9/1/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.23%	21.68%
SAMPLE DIAMETER (in) D	2.860	2.854
SAMPLE HEIGHT (in) L	2.963	3.009
SAMPLE WEIGHT, total (g)	653.65	662.4
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.73	
AVERAGE GRADIENT (in/in)	46.7	
TOTAL VOLUME OF FLUID, (cc)	30.9	

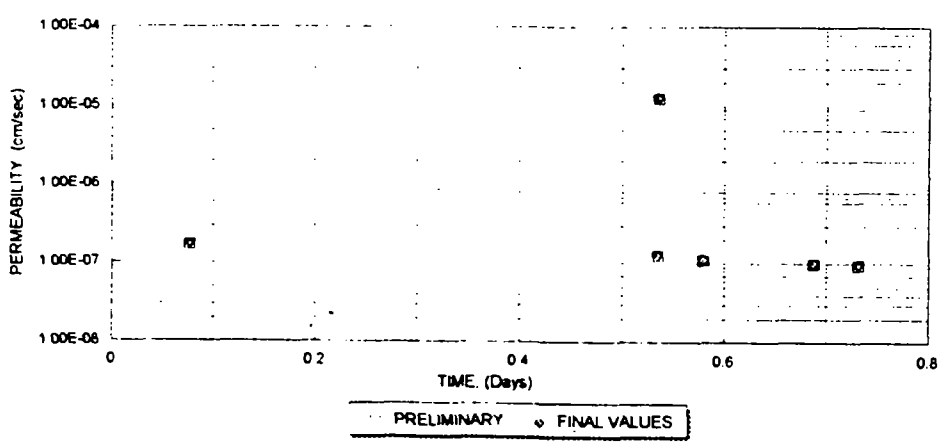
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	108.4
POST-TEST DENSITY	109.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	68%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6660	0.08	2.2	5.00	1.7E-07
60	0.08	14.26	5.00	
39540	0.54	9.66	5.00	1.3E-07
60	0.54	1.45	5.00	0.000013
3720	0.58	0.8	5.00	1.1E-07
9360	0.69	1.8	5.00	1.0E-07
3780	0.73	0.7	5.00	9.8E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



09/07/9409:54 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-067 CHK. BY: BY DATE: 9/2/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.45%	25.14%
SAMPLE DIAMETER (in) D	2.861	2.874
SAMPLE HEIGHT (in) L	3.083	3.032
SAMPLE WEIGHT, total (g)	639.84	659.16
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	92%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.74	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	15.0	

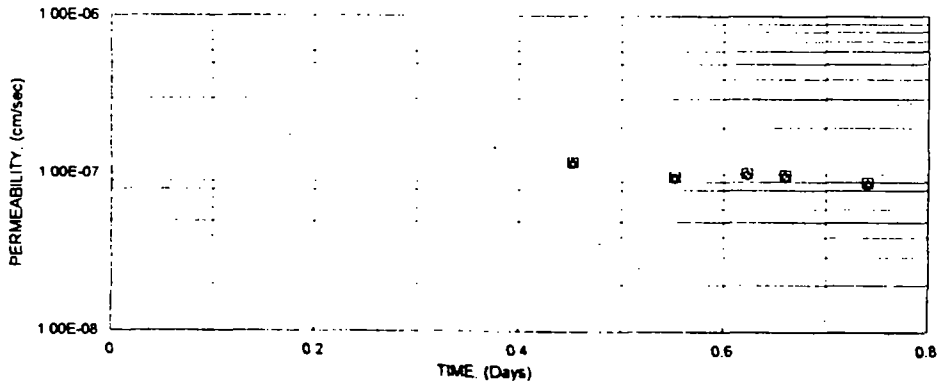
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.4
POST-TEST DENSITY	103.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	18%
PERCENT COMPRESSION	61%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
39060	0.45	8.74	5.00	1.2E-07
60	0.45	1.8	5.00	
8580	0.55	1.55	5.00	9.5E-08
6060	0.62	1.15	5.00	9.9E-08
3240	0.66	0.6	5.00	9.7E-08
6960	0.74	1.15	5.00	8.6E-08

SAMPLE PERMEABILITY 9E-08 cm/sec



PRELIMINARY ◇ FINAL VALUES

09/08/9406:21 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-068 CHK. BY: [illegible] DATE: 9/2/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.62%	23.38%
SAMPLE DIAMETER (in) D	2.864	2.829
SAMPLE HEIGHT (in) L	3.017	3.055
SAMPLE WEIGHT, total (g)	652.28	663.66
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.74	
AVERAGE GRADIENT (in/in)	45.9	
TOTAL VOLUME OF FLUID, (cc)	10.1	

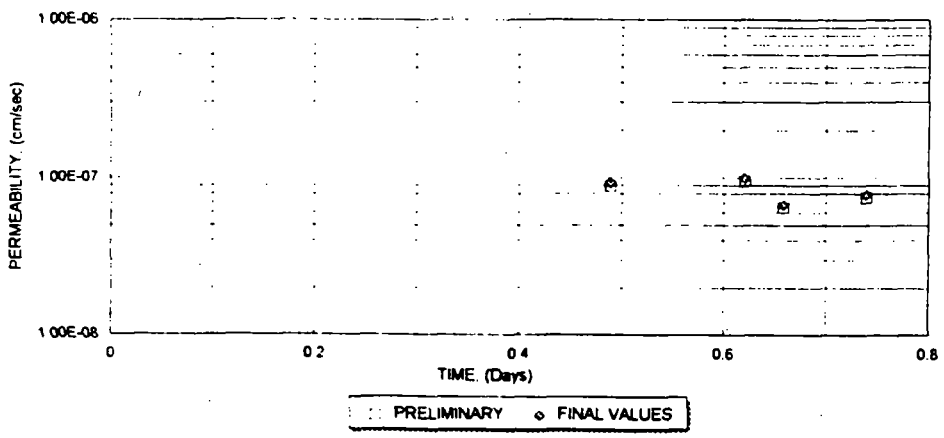
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	106.4
POST-TEST DENSITY	108.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	7%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
42240	0.49	7.2	5.00	9.3E-08
60	0.49	0.4	5.00	
5340	0.55	0	5.00	
6000	0.62	1.1	5.00	1.0E-07
3240	0.66	0.4	5.00	6.7E-08
6960	0.74	1	5.00	7.8E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



09/08/9406:28 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-069 CHK. BY: MJ DATE: 9/2/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.01%	22.93%
SAMPLE DIAMETER (in) D	2.863	2.866
SAMPLE HEIGHT (in) L	3.344	3.340
SAMPLE WEIGHT, total (g)	696.96	721.16
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.74	
AVERAGE GRADIENT (in/in)	41.4	
TOTAL VOLUME OF FLUID, (cc)	137.1	

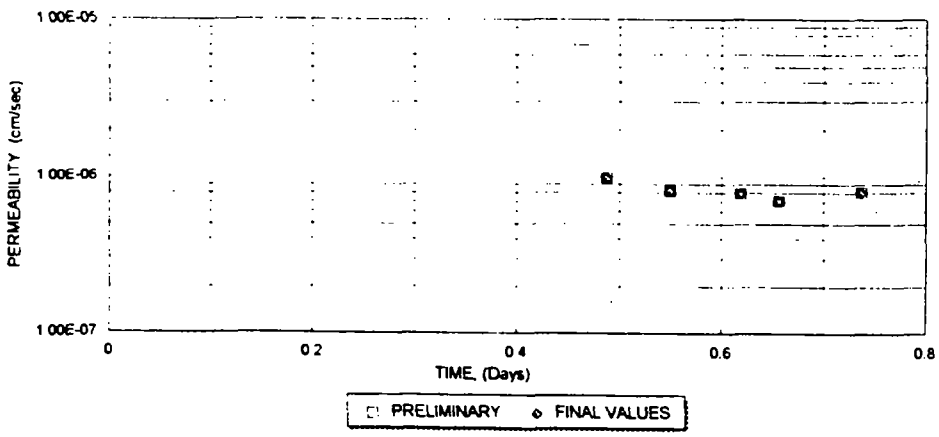
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.9
POST-TEST DENSITY	105.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	15%
PERCENT COMPRESSION	83%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
42120	0.49	71.99	5.00	9.9E-07
60	0.49	16.2	5.00	
5280	0.55	7.45	5.00	8.2E-07
6000	0.62	8.15	5.00	7.9E-07
3240	0.66	3.95	5.00	7.1E-07
60	0.66	19.8	5.00	
6900	0.74	9.55	5.00	8.0E-07

SAMPLE PERMEABILITY 8E-08 cm/sec



09/08/9406:37 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-070 CHK. BY: [illegible] DATE: 9/2/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.86%	22.81%
SAMPLE DIAMETER (in) D	2.857	2.868
SAMPLE HEIGHT (in) L	3.039	3.111
SAMPLE WEIGHT, total (g)	656.76	670.5
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.73	
AVERAGE GRADIENT (in/in)	45.6	
TOTAL VOLUME OF FLUID, (cc)	28.5	

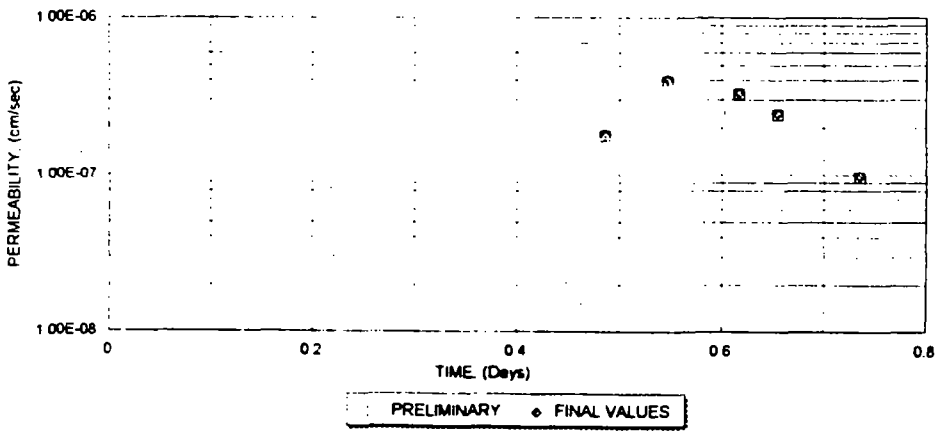
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.5
POST-TEST DENSITY	104.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	15%
PERCENT COMPRESSION	110%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
42060	0.49	14.025	5.00	1.8E-07
60	0.49	1.3	5.00	
5160	0.55	3.9	5.00	4.1E-07
6000	0.62	3.7	5.00	3.3E-07
3300	0.65	1.5	5.00	2.4E-07
60	0.66	2.8	5.00	
6840	0.73	1.25	5.00	9.8E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



09/08/9406:44 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-071 CHK. BY: [illegible] DATE: 9/7/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.73%	26.72%
SAMPLE DIAMETER (in) D	2.864	2.875
SAMPLE HEIGHT (in) L	2.992	3.045
SAMPLE WEIGHT, total (g)	622.91	645.29
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.23	
AVERAGE GRADIENT (in/in)	46.3	
TOTAL VOLUME OF FLUID, (cc)	4.6	

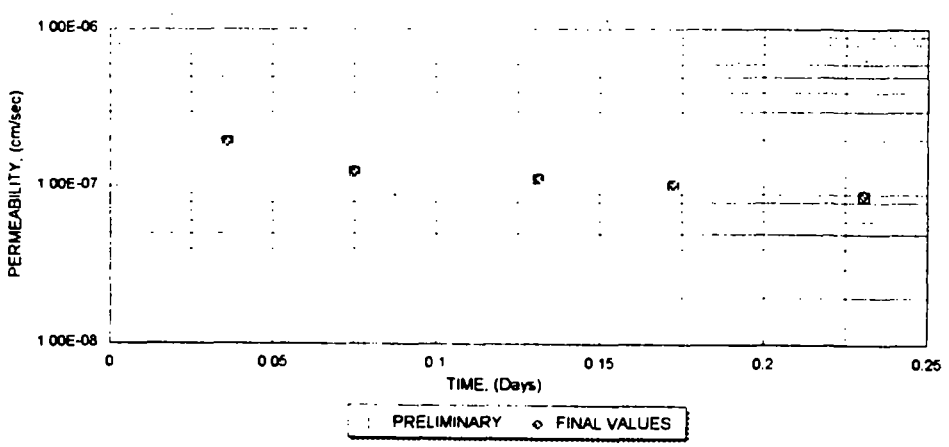
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.6
POST-TEST DENSITY	99.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	9%
PERCENT COMPRESSION	56%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3120	0.04	1.15	5.00	1.9E-07
3360	0.08	0.8	5.00	1.3E-07
4860	0.13	1.05	5.00	1.1E-07
3540	0.17	0.7	5.00	1.0E-07
5040	0.23	0.85	5.00	8.9E-08

SAMPLE PERMEABILITY 9E-08 cm/sec



09/09/9407:03 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-072 CHK. BY: BY DATE: 9/7/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.71%	26.26%
SAMPLE DIAMETER (in) D	2.848	2.843
SAMPLE HEIGHT (in) L	2.976	2.995
SAMPLE WEIGHT, total (g)	601.2	618.1
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.23	
AVERAGE GRADIENT (in/in)	46.5	
TOTAL VOLUME OF FLUID, (cc)	3.3	

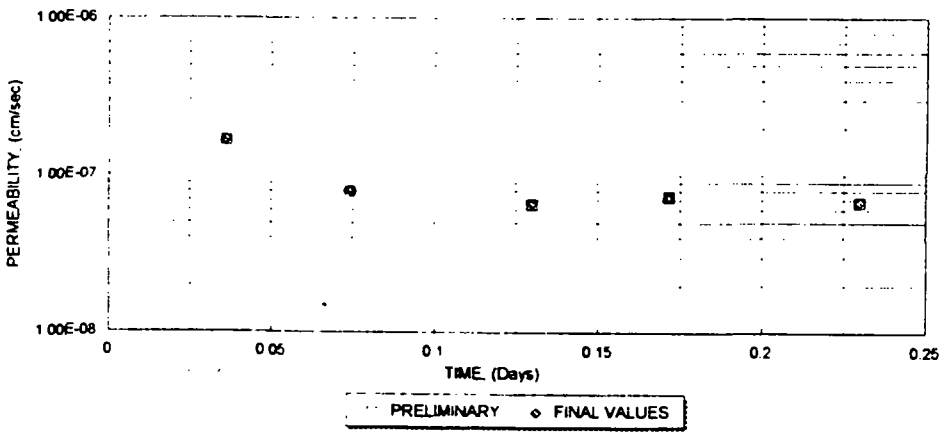
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.9
POST-TEST DENSITY	99.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	17%
PERCENT COMPRESSION	37%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3120	0.04	1	5.00	1.7E-07
3300	0.07	0.5	5.00	8.0E-08
4800	0.13	0.6	5.00	6.6E-08
3600	0.17	0.5	5.00	7.3E-08
5040	0.23	0.65	5.00	6.8E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



09/09/9407:20 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-073 CHK. BY: BY DATE: 9/7/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.41%	25.42%
SAMPLE DIAMETER (in) D	2.846	2.849
SAMPLE HEIGHT (in) L	2.994	3.035
SAMPLE WEIGHT, total (g)	641.89	649
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.23	
AVERAGE GRADIENT (in/in)	46.2	
TOTAL VOLUME OF FLUID, (cc)	0.5	

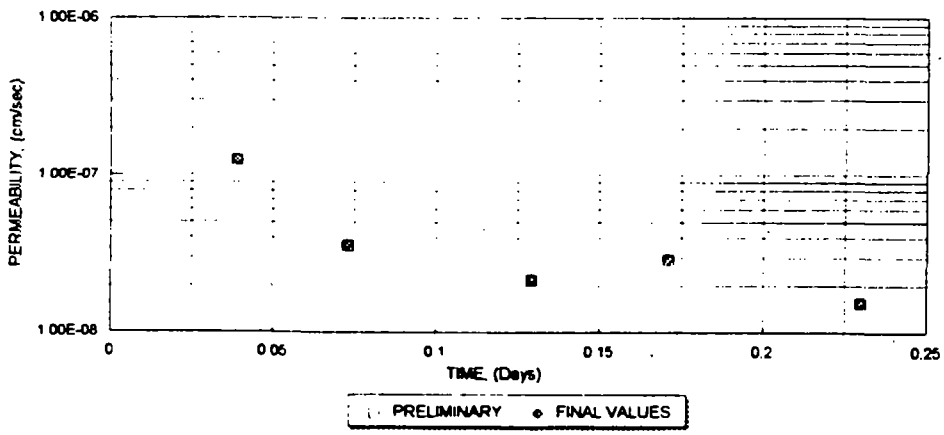
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	104.5
POST-TEST DENSITY	103.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	50%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3360	0.04	0.8	5.00	1.3E-07
2940	0.07	0.2	5.00	3.6E-08
60	0.07	-1.1	5.00	
4800	0.13	0.2	5.00	2.2E-08
3600	0.17	0.2	5.00	3.0E-08
5100	0.23	0.15	5.00	1.6E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



09/09/9407:29 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-074 CHK. BY: BV DATE: 9/8/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.99%	26.54%
SAMPLE DIAMETER (in) D	2.835	2.844
SAMPLE HEIGHT (in) L	3.010	3.059
SAMPLE WEIGHT, total (g)	618.06	635.05
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	46.0	
TOTAL VOLUME OF FLUID, (cc)	9.8	

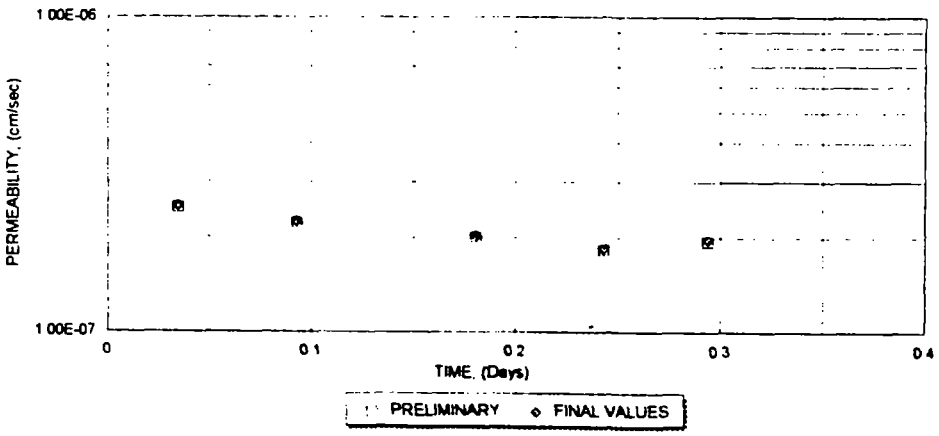
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.7
POST-TEST DENSITY	99.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	20%
PERCENT COMPRESSION	66%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3000	0.03	1.4	5.00	2.5E-07
5040	0.09	2.1	5.00	2.2E-07
7560	0.18	2.85	5.00	2.0E-07
5400	0.24	1.85	5.00	1.8E-07
4380	0.29	1.6	5.00	2.0E-07

SAMPLE PERMEABILITY 2E-07 cm/sec



09/11/9409:51 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-075 CHK. BY: BY DATE: 9/9/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.11%	30.58%
SAMPLE DIAMETER (in) D	2.855	2.854
SAMPLE HEIGHT (in) L	3.024	3.106
SAMPLE WEIGHT, total (g)	589.54	623.03
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.28	
AVERAGE GRADIENT (in/in)	45.8	
TOTAL VOLUME OF FLUID, (cc)	4.1	

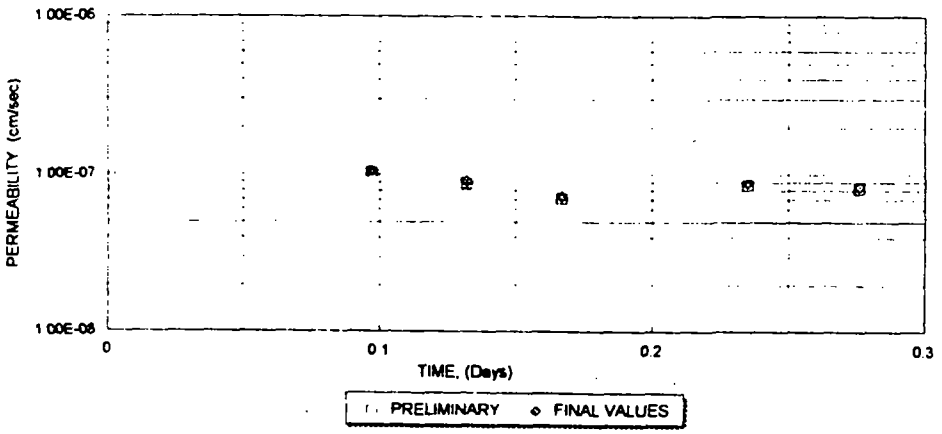
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	94.6
POST-TEST DENSITY	92.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	8%
PERCENT COMPRESSION	95%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8400	0.10	1.65	5.00	1.1E-07
3000	0.13	0.5	5.00	9.1E-08
3000	0.17	0.4	5.00	7.3E-08
5880	0.23	0.95	5.00	8.8E-08
3540	0.28	0.55	5.00	8.4E-08

SAMPLE PERMEABILITY 9E-08 cm/sec



09/11/9410:14 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-076 CHK. BY: BZ DATE: 9/9/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.66%	28.66%
SAMPLE DIAMETER (in) D	2.866	2.884
SAMPLE HEIGHT (in) L	3.032	3.056
SAMPLE WEIGHT, total (g)	628.84	636.96
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.27	
AVERAGE GRADIENT (in/in)	45.7	
TOTAL VOLUME OF FLUID, (cc)	2.0	

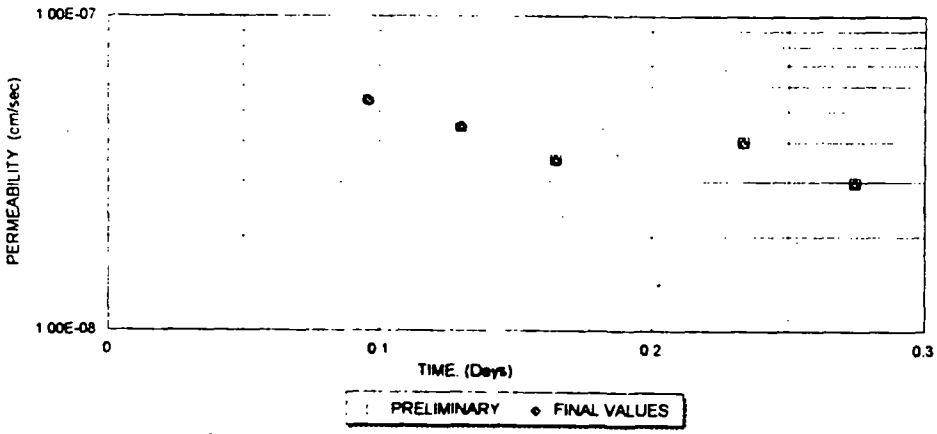
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.7
POST-TEST DENSITY	95.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	9%
PERCENT COMPRESSION	57%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8280	0.10	0.85	5.00	5.4E-08
2940	0.13	0.25	5.00	4.5E-08
3000	0.16	0.2	5.00	3.5E-08
5940	0.23	0.45	5.00	4.0E-08
3540	0.27	0.2	5.00	3.0E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



09/11/9410:27 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-077 CHK. BY: BV DATE: 9/9/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.23%	26.63%
SAMPLE DIAMETER (in) D	2.858	2.878
SAMPLE HEIGHT (in) L	2.435	2.484
SAMPLE WEIGHT, total (g)	494.81	510.59
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.27	
AVERAGE GRADIENT (in/in)	56.9	
TOTAL VOLUME OF FLUID, (cc)	8.4	

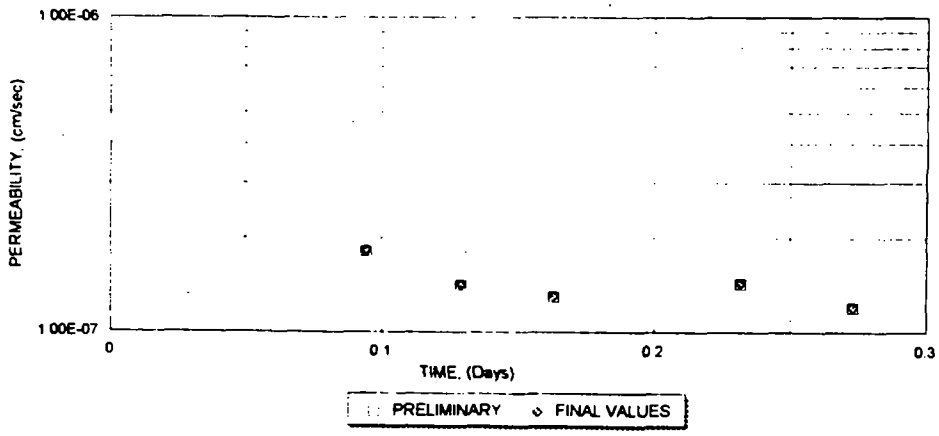
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.8
POST-TEST DENSITY	96.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	18%
PERCENT COMPRESSION	81%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME. (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
8160	0.09	3.5	5.00	1.8E-07
3000	0.13	1	5.00	1.4E-07
2940	0.16	0.9	5.00	1.3E-07
5940	0.23	2	5.00	1.4E-07
3540	0.27	1	5.00	1.2E-07

SAMPLE PERMEABILITY 1E-07 cm/sec



09/11/9410:39 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-078 CHK. BY: BZ DATE: 9/9/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.64%	29.97%
SAMPLE DIAMETER (in) D	2.861	2.862
SAMPLE HEIGHT (in) L	3.044	3.049
SAMPLE WEIGHT, total (g)	589.25	622.65
ABB CONSTANT HEAD BOARD #	479.5	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.27	
AVERAGE GRADIENT (in/in)	45.5	
TOTAL VOLUME OF FLUID, (cc)	77.0	

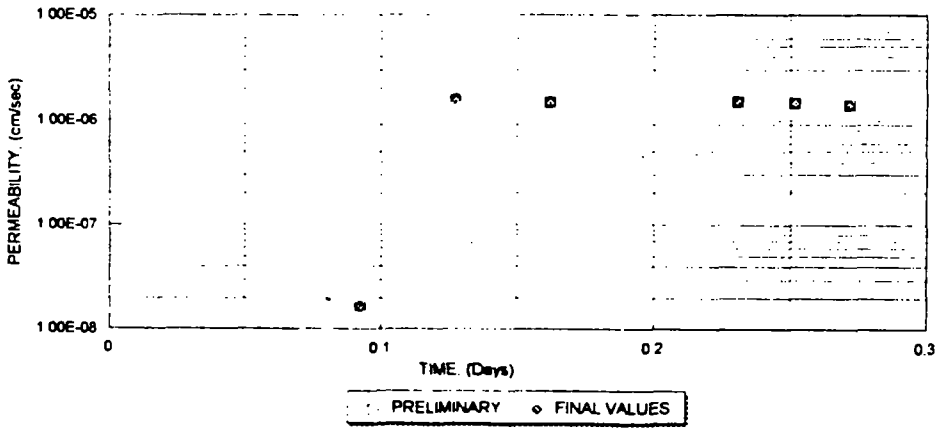
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	94.7
POST-TEST DENSITY	94.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	15%
PERCENT COMPRESSION	78%

ANNULUS CORRECTIONS	
CELL	
BOTTOM	
TOP	

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
7980	0.09	0.25	5.00	1.7E-08
3000	0.13	8.9	5.00	1.6E-06
60	0.13	9.7	5.00	
2940	0.16	8.2	5.00	1.5E-06
60	0.16	8.5	5.00	
5880	0.23	16.45	5.00	1.5E-06
60	0.23	15.7	5.00	
1740	0.25	4.75	5.00	1.4E-06
1740	0.27	4.55	5.00	1.4E-06

SAMPLE PERMEABILITY 1E-06 cm/sec



09/11/9410:53 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-079 CHK. BY: BF DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.74%	30.68%
SAMPLE DIAMETER (in) D	2.861	2.843
SAMPLE HEIGHT (in) L	3.162	3.233
SAMPLE WEIGHT, total (g)	631	644.81
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.99	
AVERAGE GRADIENT (in/in)	43.8	
TOTAL VOLUME OF FLUID, (cc)	18.4	

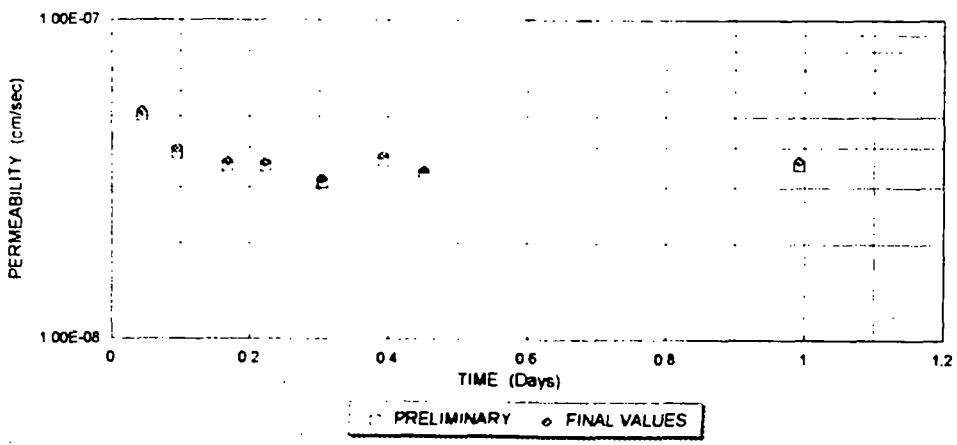
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.0
POST-TEST DENSITY	92.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	16%
PERCENT COMPRESSION	74%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3840	0.04	0.35	5.00	5.2E-08
4320	0.09	0.3	5.00	4.0E-08
6300	0.17	0.4	5.00	3.6E-08
4740	0.22	0.3	5.00	3.6E-08
7140	0.30	0.4	5.00	3.2E-08
7560	0.39	0.5	5.00	3.8E-08
5040	0.45	0.3	5.00	3.4E-08
60	0.45	12.88	5.00	
46740	0.99	2.99	5.00	3.6E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



09/16/9401:01 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-080 CHK. BY: PZ DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.53%	29.00%
SAMPLE DIAMETER (in) D	2.852	2.874
SAMPLE HEIGHT (in) L	3.059	3.666
SAMPLE WEIGHT, total (g)	617.22	621.85
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.99	
AVERAGE GRADIENT (in/in)	45.3	
TOTAL VOLUME OF FLUID, (cc)	17.2	

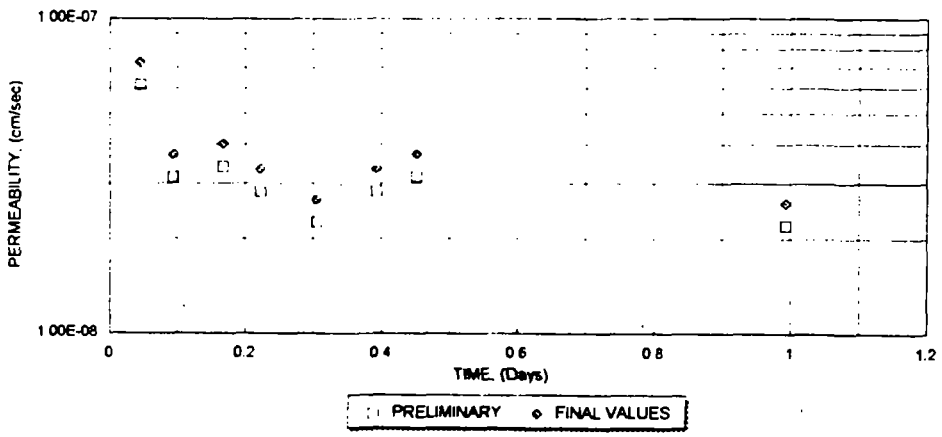
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.4
POST-TEST DENSITY	78.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	8%
PERCENT COMPRESSION	73%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3900	0.05	0.45	5.00	7.3E-08
4260	0.09	0.25	5.00	3.7E-08
6300	0.17	0.4	5.00	4.0E-08
4740	0.22	0.25	5.00	3.3E-08
7140	0.30	0.3	5.00	2.7E-08
7560	0.39	0.4	5.00	3.3E-08
5100	0.45	0.3	5.00	3.7E-08
60	0.45	12.96	5.00	
46740	0.99	1.92	5.00	2.6E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



09/16/9401:08 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-081 CHK. BY: BJ DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.00%	27.87%
SAMPLE DIAMETER (in) D	2.844	2.864
SAMPLE HEIGHT (in) L	3.059	3.153
SAMPLE WEIGHT, total (g)	613.67	641.66
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	99%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.99	
AVERAGE GRADIENT (in/in)	45.3	
TOTAL VOLUME OF FLUID, (cc)	56.3	

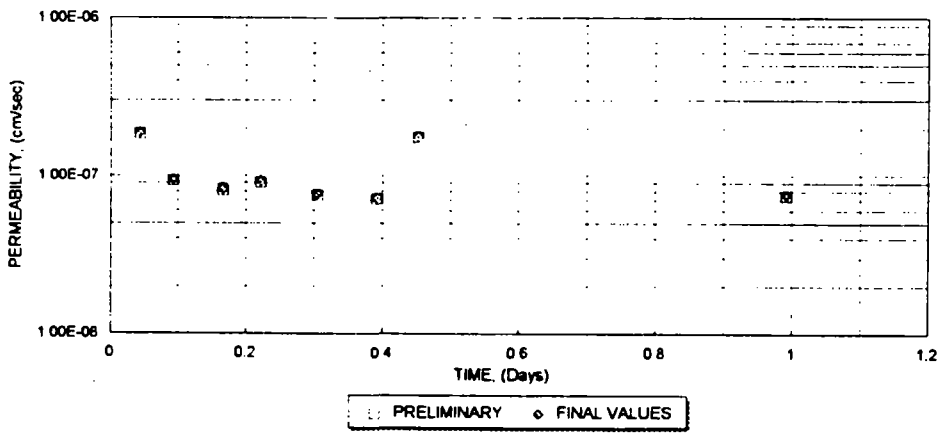
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	97.4
POST-TEST DENSITY	95.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	19%
PERCENT COMPRESSION	63%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3780	0.04	1.3	5.00	1.9E-07
4320	0.09	0.75	5.00	9.5E-08
6300	0.17	0.95	5.00	8.3E-08
4740	0.22	0.8	5.00	9.2E-08
7140	0.30	1	5.00	7.7E-08
7560	0.39	1	5.00	7.2E-08
5220	0.45	1.7	5.00	1.8E-07
60	0.45	42.32	5.00	
46560	0.99	6.44	5.00	7.6E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



09/16/9401:13 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-082 CHK. BY: DJ DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	27.84%	27.04%
SAMPLE DIAMETER (in) D	2.871	2.869
SAMPLE HEIGHT (in) L	3.083	3.163
SAMPLE WEIGHT, total (g)	630.32	657.94
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.45	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	33.9	

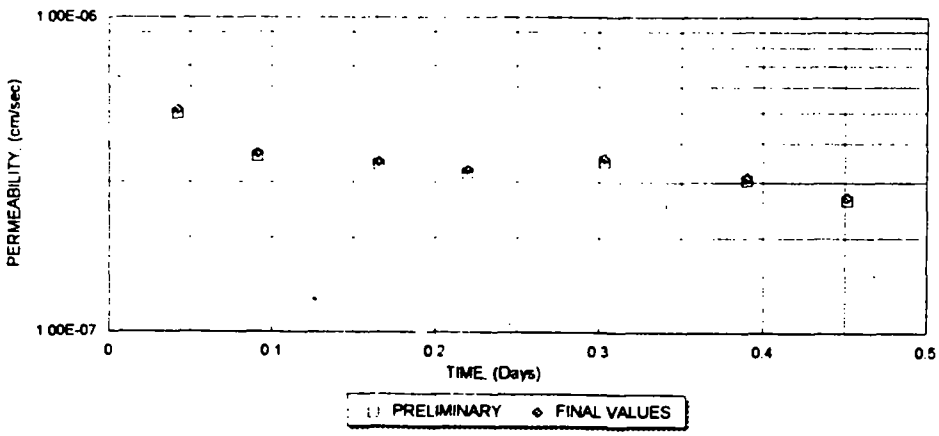
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	95.3
POST-TEST DENSITY	97.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	12%
PERCENT COMPRESSION	88%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3660	0.04	3.4	5.00	5.1E-07
4200	0.09	2.85	5.00	3.7E-07
6420	0.17	4.1	5.00	3.5E-07
4680	0.22	2.8	5.00	3.3E-07
60	0.22	9.2	5.00	
7140	0.30	4.65	5.00	3.6E-07
7560	0.39	4.3	5.00	3.1E-07
5280	0.45	2.6	5.00	2.7E-07

SAMPLE PERMEABILITY 3E-07 cm/sec



09/16/9401:18 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-083 CHK. BY: [illegible] DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.63%	26.27%
SAMPLE DIAMETER (in) D	2.866	2.869
SAMPLE HEIGHT (in) L	3.097	3.124
SAMPLE WEIGHT, total (g)	643.9	653.05
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.99	
AVERAGE GRADIENT (in/in)	44.7	
TOTAL VOLUME OF FLUID, (cc)	27.7	

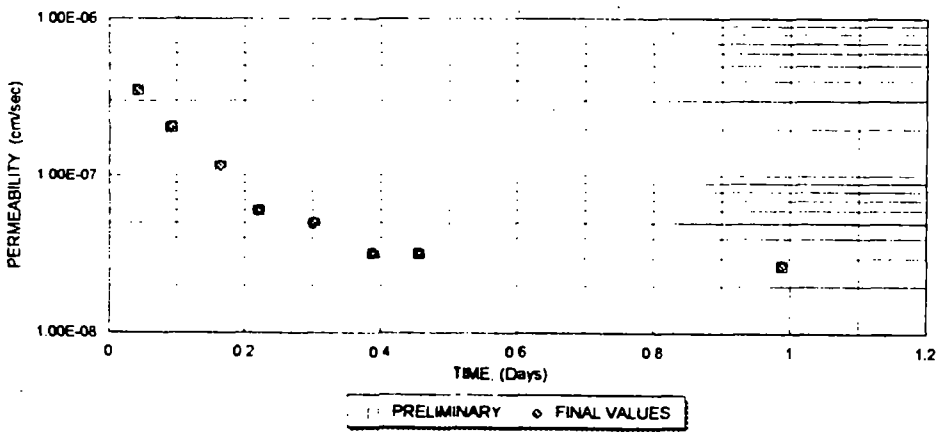
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.4
POST-TEST DENSITY	98.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	10%
PERCENT COMPRESSION	109%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3660	0.04	2.4	5.00	3.5E-07
4200	0.09	1.6	5.00	2.1E-07
6300	0.16	1.35	5.00	1.2E-07
4920	0.22	0.55	5.00	6.0E-08
60	0.22	11.4	5.00	
6960	0.30	0.65	5.00	5.1E-08
7500	0.39	0.45	5.00	3.2E-08
5880	0.46	0.35	5.00	3.2E-08
60	0.46	6.63	5.00	
45840	0.99	2.295	5.00	2.7E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



09/16/9401:23 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-084 CHK. BY: BZ DATE: 9/12/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.79%	30.28%
SAMPLE DIAMETER (in) D	2.851	2.849
SAMPLE HEIGHT (in) L	3.032	3.010
SAMPLE WEIGHT, total (g)	612.77	615.73
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.98	
AVERAGE GRADIENT (in/in)	45.7	
TOTAL VOLUME OF FLUID, (cc)	10.3	

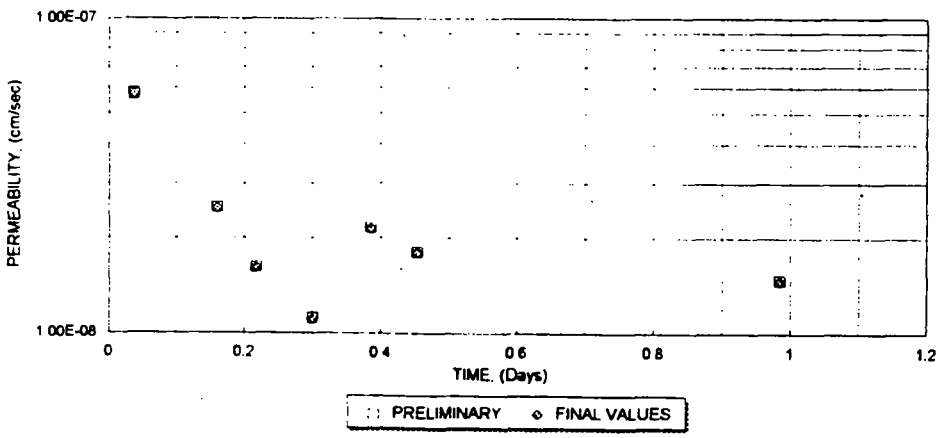
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.3
POST-TEST DENSITY	95.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	17%
PERCENT COMPRESSION	60%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3240	0.04	0.35	5.00	5.7E-08
4260	0.09	0.4	5.00	
6360	0.16	0.3	5.00	2.5E-08
4920	0.22	0.15	5.00	1.6E-08
7140	0.30	0.15	5.00	1.1E-08
7380	0.39	0.3	5.00	2.1E-08
5880	0.45	0.2	5.00	1.8E-08
60	0.45	7.14	5.00	
45780	0.98	1.275	5.00	1.5E-08

SAMPLE PERMEABILITY 2E-08 cm/sec



09/16/9401:27 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-085 CHK. BY: BJ DATE: 9/15/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.26%	25.51%
SAMPLE DIAMETER (in) D	2.845	2.851
SAMPLE HEIGHT (in) L	3.185	3.190
SAMPLE WEIGHT, total (g)	660.03	668.32
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.22	
AVERAGE GRADIENT (in/in)	43.5	
TOTAL VOLUME OF FLUID, (cc)	1.1	

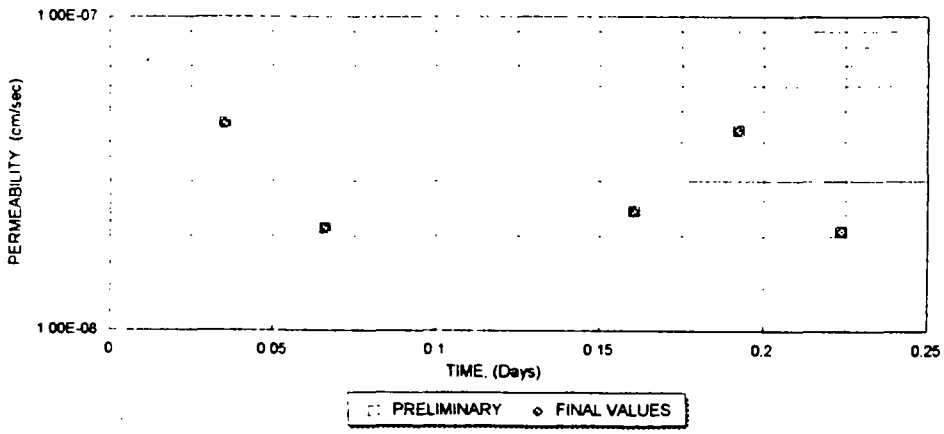
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.8
POST-TEST DENSITY	100.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	16%
PERCENT COMPRESSION	105%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.25	5.00	4.6E-08
2640	0.07	0.1	5.00	2.1E-08
8160	0.16	0.35	5.00	2.4E-08
180	0.16	0.1	5.00	
2580	0.19	0.2	5.00	4.3E-08
2700	0.22	0.1	5.00	2.1E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



09/20/9409:07 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-086 CHK. BY: AZ DATE: 9/15/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.02%	26.15%
SAMPLE DIAMETER (in) D	2.856	2.863
SAMPLE HEIGHT (in) L	3.082	3.117
SAMPLE WEIGHT, total (g)	647.94	660.5
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.22	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	4.1	

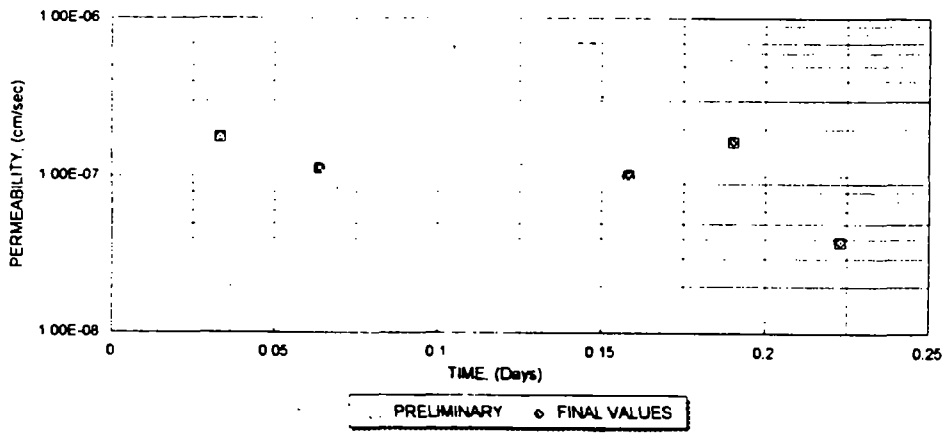
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.9
POST-TEST DENSITY	100.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	2%
PERCENT COMPRESSION	90%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2880	0.03	0.95	5.00	1.8E-07
2640	0.06	0.55	5.00	1.1E-07
8160	0.16	1.55	5.00	1.0E-07
2760	0.19	0.85	5.00	1.7E-07
2820	0.22	0.2	5.00	3.8E-08

SAMPLE PERMEABILITY 2E-07 cm/sec



09/20/9409:00 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-087 CHK. BY: bJ DATE: 9/15/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.58%	27.30%
SAMPLE DIAMETER (in) D	2.865	2.871
SAMPLE HEIGHT (in) L	3.129	3.225
SAMPLE WEIGHT, total (g)	649.21	675.7
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	99%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.22	
AVERAGE GRADIENT (in/in)	44.3	
TOTAL VOLUME OF FLUID, (cc)	5.0	

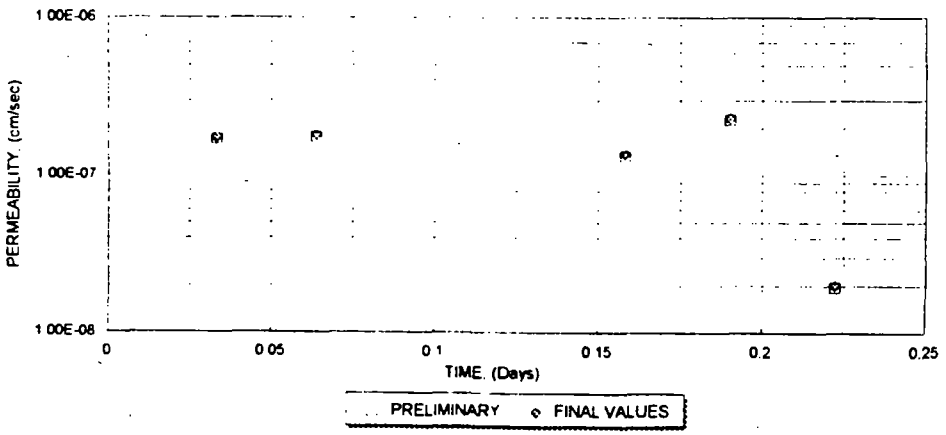
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.3
POST-TEST DENSITY	98.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	15%
PERCENT COMPRESSION	78%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2880	0.03	0.9	5.00	1.7E-07
2640	0.06	0.85	5.00	1.8E-07
8160	0.16	2	5.00	1.4E-07
2760	0.19	1.15	5.00	2.3E-07
2760	0.22	0.1	5.00	2.0E-08

SAMPLE PERMEABILITY 2E-07 cm/sec



09/20/9408:50 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-088 CHK. BY: BJ DATE: 9/15/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.62%	27.22%
SAMPLE DIAMETER (in) D	2.866	2.885
SAMPLE HEIGHT (in) L	3.166	3.119
SAMPLE WEIGHT, total (g)	643.46	662.35
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.22	
AVERAGE GRADIENT (in/in)	43.7	
TOTAL VOLUME OF FLUID, (cc)	16.0	

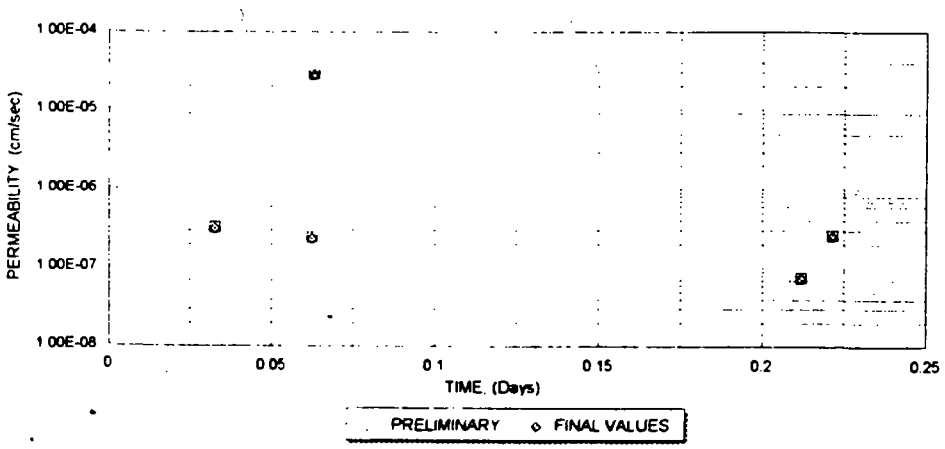
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.1
POST-TEST DENSITY	98.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	98%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2820	0.03	1.65	5.00	3.1E-07
2580	0.06	1.15	5.00	2.4E-07
60	0.06	3.1	5.00	0.000028
60	0.06	7.9	5.00	
12780	0.21	1.75	5.00	7.3E-08
840	0.22	0.4	5.00	2.5E-07

SAMPLE PERMEABILITY 3E-08 cm/sec



09/20/9408:31 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-089 CHK. BY: BZ DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.28%	29.17%
SAMPLE DIAMETER (in) D	2.853	2.856
SAMPLE HEIGHT (in) L	3.113	3.130
SAMPLE WEIGHT, total (g)	627.88	642.93
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	44.5	
TOTAL VOLUME OF FLUID, (cc)	2.1	

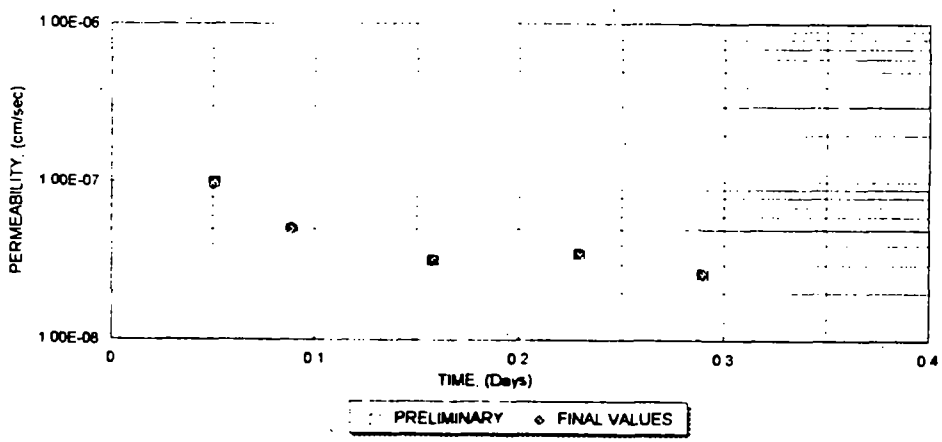
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	97.9
POST-TEST DENSITY	95.7

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	3%
PERCENT COMPRESSION	103%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4380	0.05	0.8	5.00	1.0E-07
60	0.05	0	5.00	
3240	0.09	0.3	5.00	5.1E-08
5940	0.16	0.35	5.00	3.2E-08
6180	0.23	0.4	5.00	3.5E-08
5220	0.29	0.25	5.00	2.6E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



09/24/9411:54 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-090 CHK. BY: MJ DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	27.36%	27.00%
SAMPLE DIAMETER (in) D	2.862	2.867
SAMPLE HEIGHT (in) L	3.071	3.118
SAMPLE WEIGHT, total (g)	640.15	652.89
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	0.7	

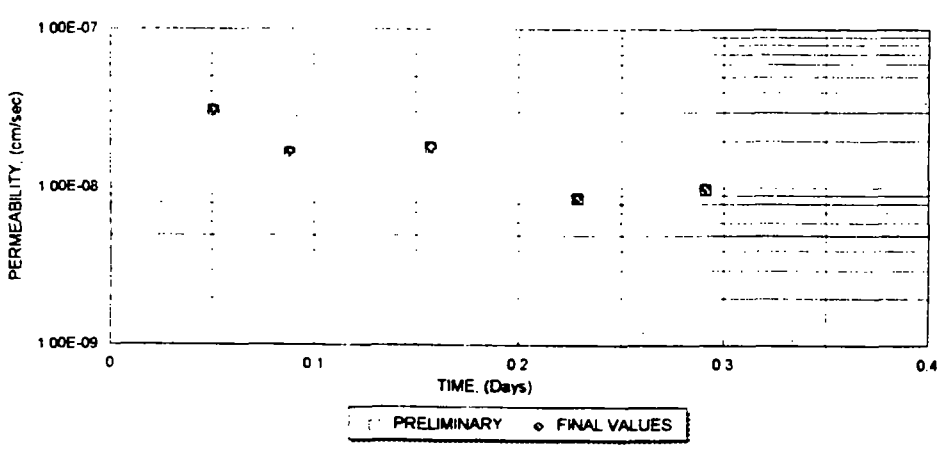
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.1
POST-TEST DENSITY	98.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	92%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4380	0.05	0.25	5.00	3.1E-08
60	0.05	0	5.00	
3180	0.09	0.1	5.00	1.7E-08
5940	0.16	0.2	5.00	1.8E-08
6180	0.23	0.1	5.00	8.8E-09
5400	0.29	0.1	5.00	1.0E-08

SAMPLE PERMEABILITY ~~4X10-7~~ 1E-08 cm/sec



09/22/9410:19 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-091 CHK. BY: DF DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	27.53%	28.31%
SAMPLE DIAMETER (in) D	2.860	2.860
SAMPLE HEIGHT (in) L	3.097	3.115
SAMPLE WEIGHT, total (g)	637.06	643.99
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	44.7	
TOTAL VOLUME OF FLUID, (cc)	0.8	

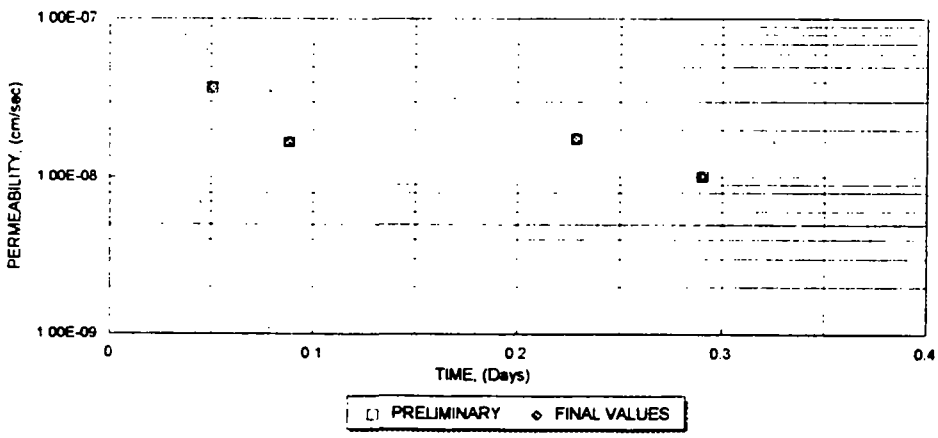
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.9
POST-TEST DENSITY	96.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	8%
PERCENT COMPRESSION	89%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4380	0.05	0.3	5.00	3.7E-08
3240	0.09	0.1	5.00	1.7E-08
5940	0.16	0.1	5.00	
6180	0.23	0.2	5.00	1.8E-08
5340	0.29	0.1	5.00	1.0E-08

SAMPLE PERMEABILITY 1E-08 cm/sec



09/22/9410:10 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-092 CHK. BY: BY DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.33%	26.18%
SAMPLE DIAMETER (in) D	2.852	2.864
SAMPLE HEIGHT (in) L	3.109	3.072
SAMPLE WEIGHT, total (g)	632.25	640.59
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	44.5	
TOTAL VOLUME OF FLUID, (cc)	18.6	

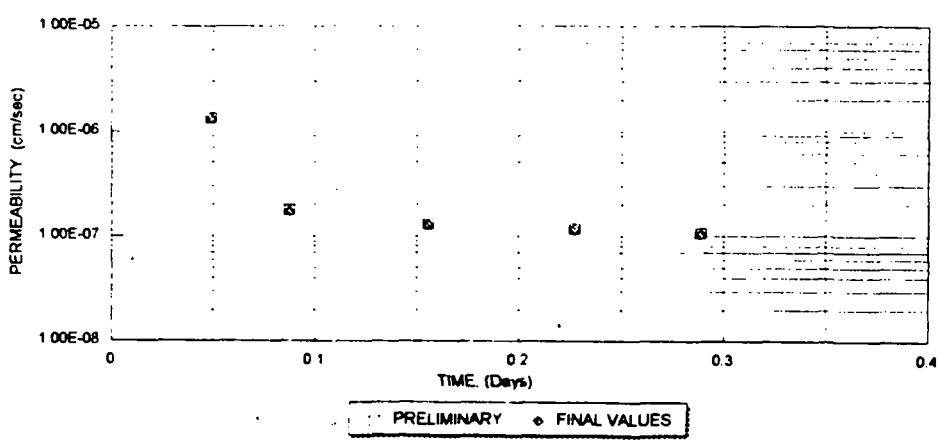
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.0
POST-TEST DENSITY	98.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	10%
PERCENT COMPRESSION	89%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4260	0.05	10.5	5.00	1.3E-06
60	0.05	3.2	5.00	
3240	0.09	1.05	5.00	1.7E-07
5880	0.16	1.4	5.00	1.3E-07
6180	0.23	1.35	5.00	1.2E-07
5340	0.29	1.05	5.00	1.0E-07

SAMPLE PERMEABILITY 1E-07 cm/sec



09/22/9410:03 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-093 CHK. BY: BT DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.09%	27.14%
SAMPLE DIAMETER (in) D	2.862	2.874
SAMPLE HEIGHT (in) L	3.082	3.123
SAMPLE WEIGHT, total (g)	633.16	653.1
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.29	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	88.0	

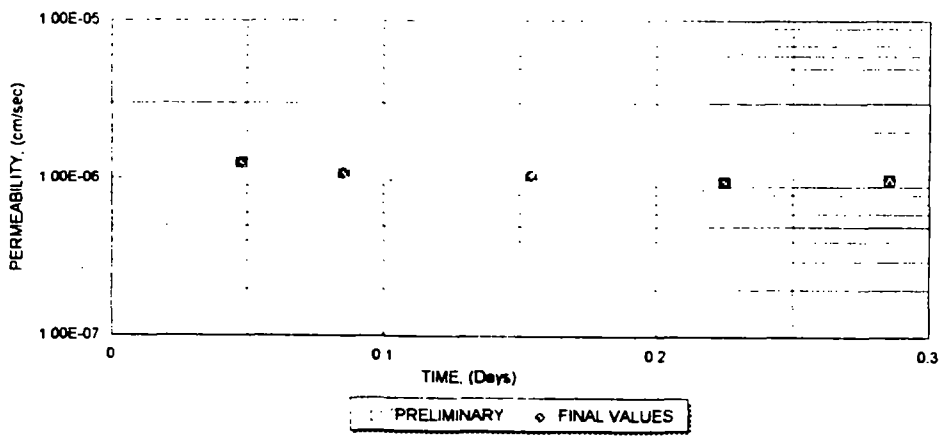
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.7
POST-TEST DENSITY	97.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	109%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4140	0.05	9.65	5.00	1.3E-06
3240	0.09	6.5	5.00	1.1E-06
60	0.09	16.9	5.00	
5880	0.15	11.45	5.00	1.0E-06
6120	0.23	10.9	5.00	9.6E-07
60	0.23	23	5.00	
5160	0.29	9.6	5.00	1.0E-06

SAMPLE PERMEABILITY 1E-06 cm/sec



09/22/9409:38 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-094 CHK. BY: bf DATE: 9/20/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.20%	25.89%
SAMPLE DIAMETER (in) D	2.866	2.874
SAMPLE HEIGHT (in) L	3.051	3.049
SAMPLE WEIGHT, total (g)	635.52	644.26
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.28	
AVERAGE GRADIENT (in/in)	45.4	
TOTAL VOLUME OF FLUID, (cc)	4.2	

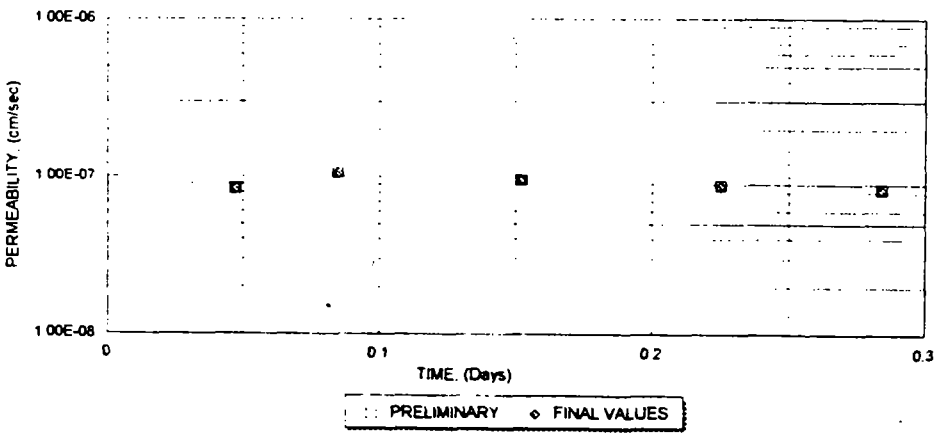
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.6
POST-TEST DENSITY	99.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	103%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4080	0.05	0.65	5.00	8.4E-08
3240	0.08	0.65	5.00	1.1E-07
5820	0.15	1.05	5.00	9.5E-08
6300	0.23	1.05	5.00	8.8E-08
5100	0.28	0.8	5.00	8.3E-08

SAMPLE PERMEABILITY 9E-08 cm/sec



09/22/9409:31 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-095 CHK. BY: BF DATE: 9/21/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.41%	24.75%
SAMPLE DIAMETER (in) D	2.849	2.859
SAMPLE HEIGHT (in) L	3.269	3.258
SAMPLE WEIGHT, total (g)	666.83	689.86
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.26	
AVERAGE GRADIENT (in/in)	42.4	
TOTAL VOLUME OF FLUID, (cc)	3.5	

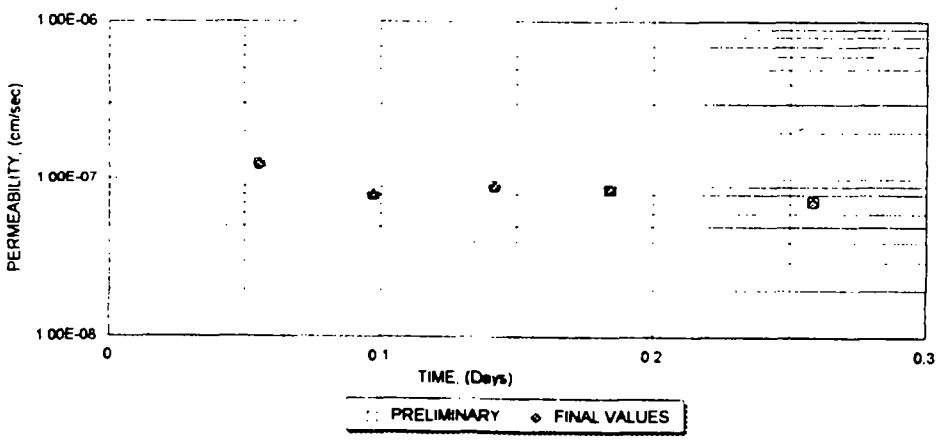
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.4
POST-TEST DENSITY	102.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	13%
PERCENT COMPRESSION	77%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4800	0.06	1.05	5.00	1.2E-07
3600	0.10	0.5	5.00	7.9E-08
3840	0.14	0.6	5.00	8.9E-08
3660	0.18	0.55	5.00	8.5E-08
6420	0.26	0.8	5.00	7.1E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



09/23/9411:12 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-096 CHK. BY: bf DATE: 9/21/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.44%	27.85%
SAMPLE DIAMETER (in) D	2.872	2.860
SAMPLE HEIGHT (in) L	3.088	3.044
SAMPLE WEIGHT, total (g)	628.13	632.12
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.26	
AVERAGE GRADIENT (in/in)	44.8	
TOTAL VOLUME OF FLUID, (cc)	1.3	

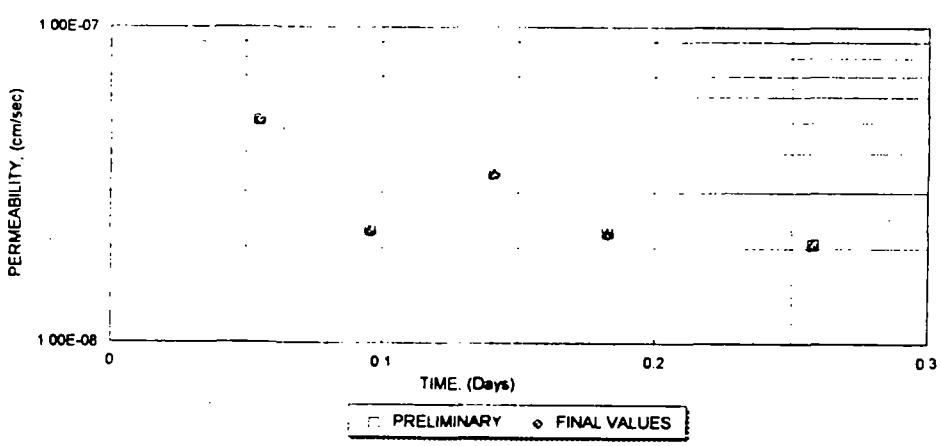
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.7
POST-TEST DENSITY	97.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	24%
PERCENT COMPRESSION	76%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4740	0.05	0.45	5.00	5.0E-08
3540	0.10	0.15	5.00	2.2E-08
3900	0.14	0.25	5.00	3.4E-08
3600	0.18	0.15	5.00	2.2E-08
6480	0.26	0.25	5.00	2.0E-08

SAMPLE PERMEABILITY 2E-08 cm/sec



09/23/9411:07 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-097 CHK. BY: BJ DATE: 9/21/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	23.30%	23.19%
SAMPLE DIAMETER (in) D	2.875	2.888
SAMPLE HEIGHT (in) L	3.074	3.145
SAMPLE WEIGHT, total (g)	656.53	676.45
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.26	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	2.9	

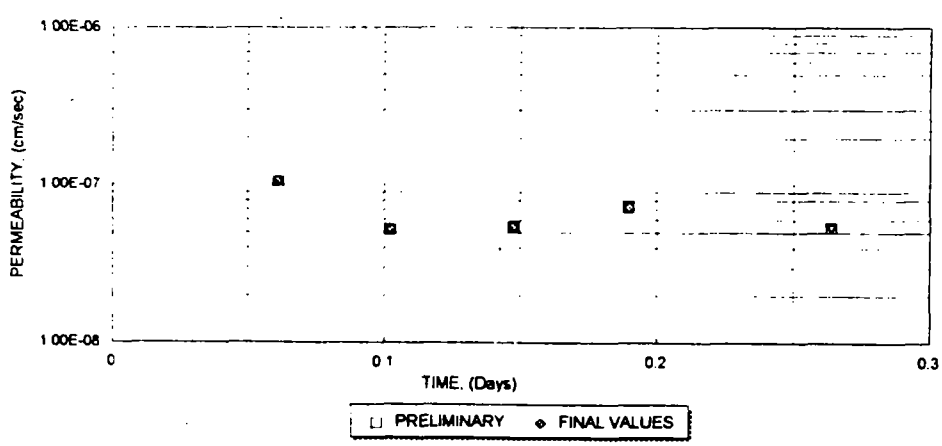
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.9
POST-TEST DENSITY	102.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	2%
PERCENT COMPRESSION	90%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
5280	0.06	1.05	5.00	1.1E-07
3540	0.10	0.35	5.00	5.3E-08
3900	0.15	0.4	5.00	5.5E-08
3660	0.19	0.5	5.00	7.3E-08
6420	0.26	0.65	5.00	5.4E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



09/23/9411:02 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-098 CHK. BY: DJ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	17.24%	26.44%
SAMPLE DIAMETER (in) D	2.877	2.883
SAMPLE HEIGHT (in) L	3.185	3.224
SAMPLE WEIGHT, total (g)	664.05	685.5
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	43.5	
TOTAL VOLUME OF FLUID, (cc)	1.5	

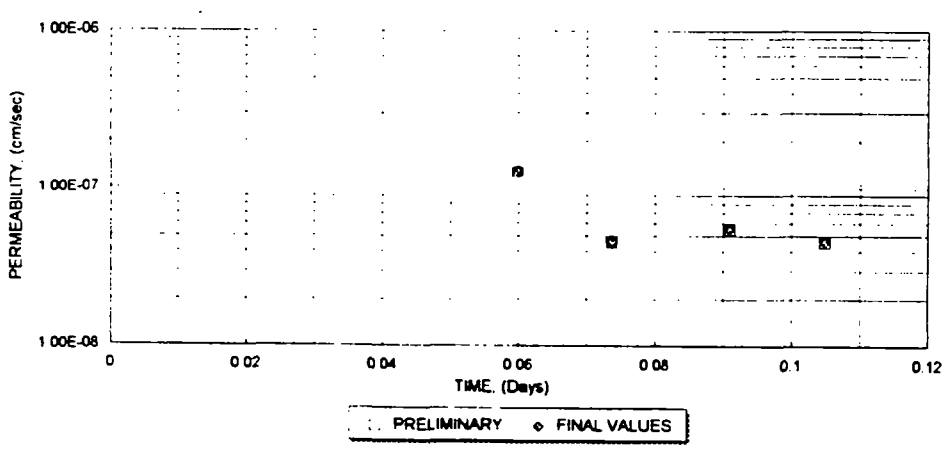
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.6
POST-TEST DENSITY	99.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	12%
PERCENT COMPRESSION	87%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
5160	0.06	1.2	5.00	1.3E-07
1200	0.07	0.1	5.00	4.6E-08
1500	0.09	0.15	5.00	5.5E-08
1200	0.10	0.1	5.00	4.6E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



09/27/9409:02 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-099 CHK. BY: DJ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	16.51%	25.17%
SAMPLE DIAMETER (in) D	2.877	2.868
SAMPLE HEIGHT (in) L	3.010	3.050
SAMPLE WEIGHT, total (g)	640.32	654.04
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	46.0	
TOTAL VOLUME OF FLUID, (cc)	1.7	

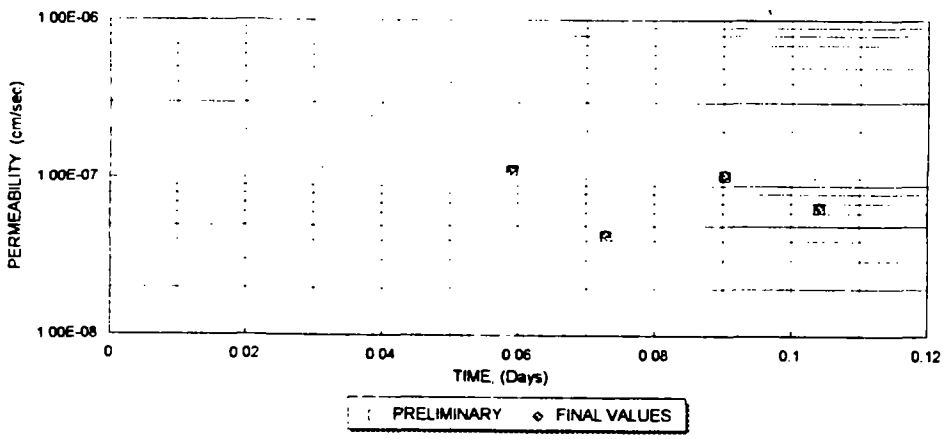
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	108.4
POST-TEST DENSITY	102.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	105%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
5100	0.06	1.1	5.00	1.1E-07
1200	0.07	0.1	5.00	4.4E-08
1500	0.09	0.3	5.00	1.1E-07
1200	0.10	0.15	5.00	6.6E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



09/27/9408:57 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-100 CHK. BY: BJ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.43%	28.02%
SAMPLE DIAMETER (in) D	2.856	2.871
SAMPLE HEIGHT (in) L	3.068	3.118
SAMPLE WEIGHT, total (g)	637.02	655.26
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	45.1	
TOTAL VOLUME OF FLUID, (cc)	3.8	

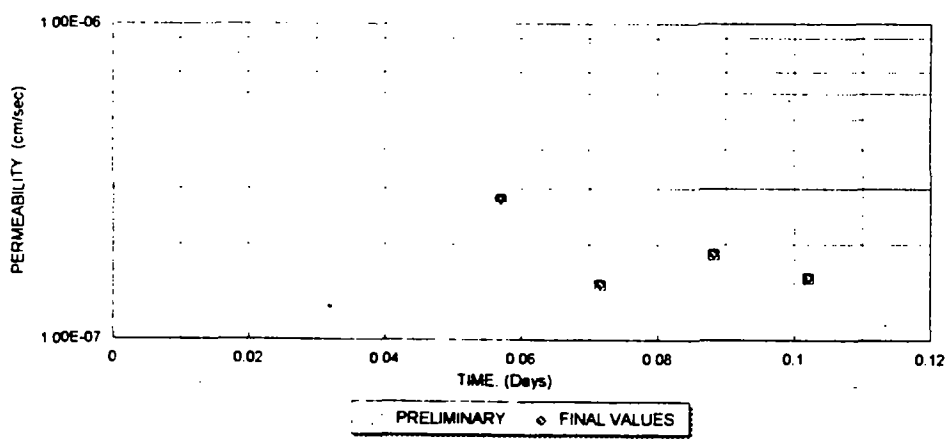
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.5
POST-TEST DENSITY	97.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	27%
PERCENT COMPRESSION	81%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4920	0.06	2.55	5.00	2.8E-07
1260	0.07	0.35	5.00	1.5E-07
1440	0.09	0.5	5.00	1.9E-07
1200	0.10	0.35	5.00	1.6E-07

SAMPLE PERMEABILITY 2E-07 cm/sec



09/27/9408:48 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-101 CHK. BY: BZ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	16.91%	21.35%
SAMPLE DIAMETER (in) D	2.865	2.869
SAMPLE HEIGHT (in) L	3.109	3.077
SAMPLE WEIGHT, total (g)	656.1	671.01
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	44.5	
TOTAL VOLUME OF FLUID, (cc)	1.5	

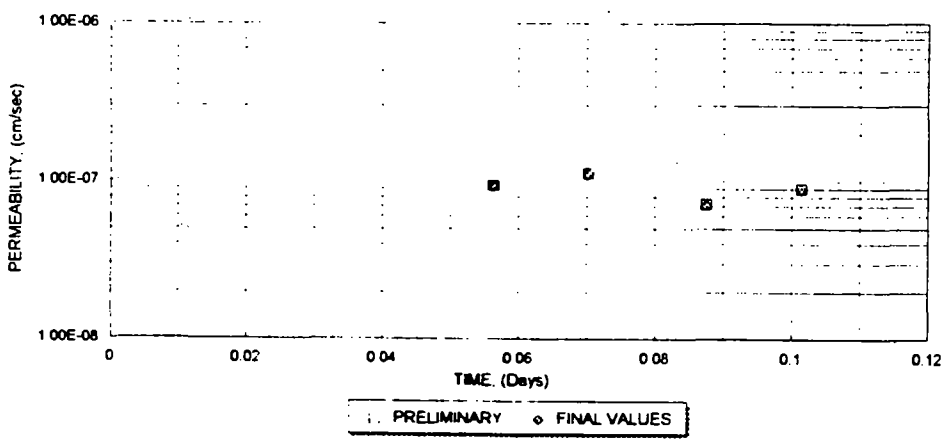
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	108.0
POST-TEST DENSITY	107.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	103%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4860	0.06	0.85	5.00	9.3E-08
1200	0.07	0.25	5.00	1.1E-07
1500	0.09	0.2	5.00	7.1E-08
1200	0.10	0.2	5.00	8.9E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



09/27/9408:23 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-102 CHK. BY: DJ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	27.29%	24.41%
SAMPLE DIAMETER (in) D	2.856	2.840
SAMPLE HEIGHT (in) L	3.083	3.095
SAMPLE WEIGHT, total (g)	650.01	658.48
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	2.8	

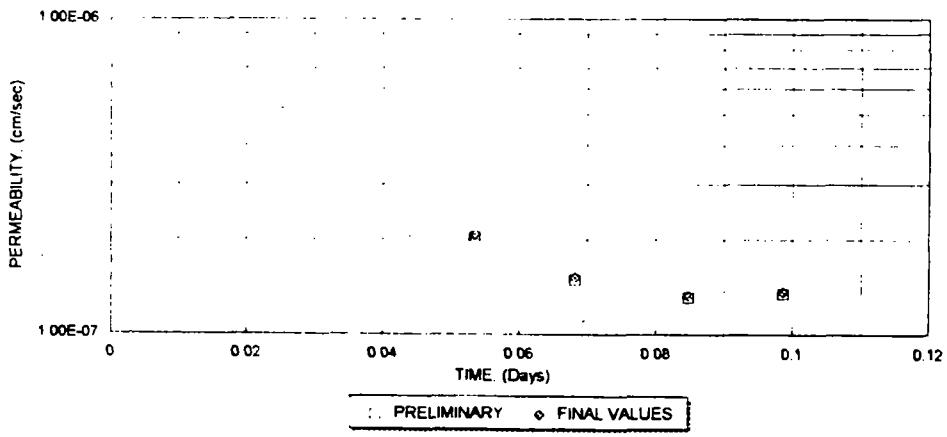
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.7
POST-TEST DENSITY	104.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	8%
PERCENT COMPRESSION	74%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4620	0.05	1.75	5.00	2.1E-07
1260	0.07	0.35	5.00	1.5E-07
1440	0.08	0.35	5.00	1.3E-07
1200	0.10	0.3	5.00	1.4E-07

SAMPLE PERMEABILITY 2E-07 cm/sec



09/27/9408:15 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-103 CHK. BY: DJ DATE: 9/23/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.98%	24.41%
SAMPLE DIAMETER (in) D	2.869	2.880
SAMPLE HEIGHT (in) L	3.082	3.113
SAMPLE WEIGHT, total (g)	630.41	663.5
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	5.8	

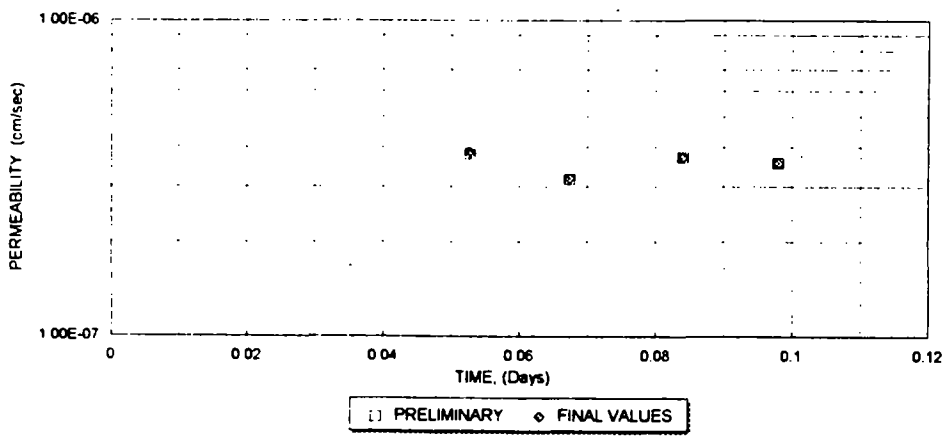
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.9
POST-TEST DENSITY	101.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	24%
PERCENT COMPRESSION	89%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4560	0.05	3.25	5.00	3.8E-07
1260	0.07	0.75	5.00	3.2E-07
1440	0.08	1	5.00	3.7E-07
1200	0.10	0.8	5.00	3.6E-07

SAMPLE PERMEABILITY 4E-07 cm/sec



09/27/9408:09 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-104 CHK. BY: pf DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.48%	30.68%
SAMPLE DIAMETER (in) D	2.862	2.844
SAMPLE HEIGHT (in) L	3.159	3.234
SAMPLE WEIGHT, total (g)	631.21	644.81
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.30	
AVERAGE GRADIENT (in/in)	43.8	
TOTAL VOLUME OF FLUID, (cc)	1.8	

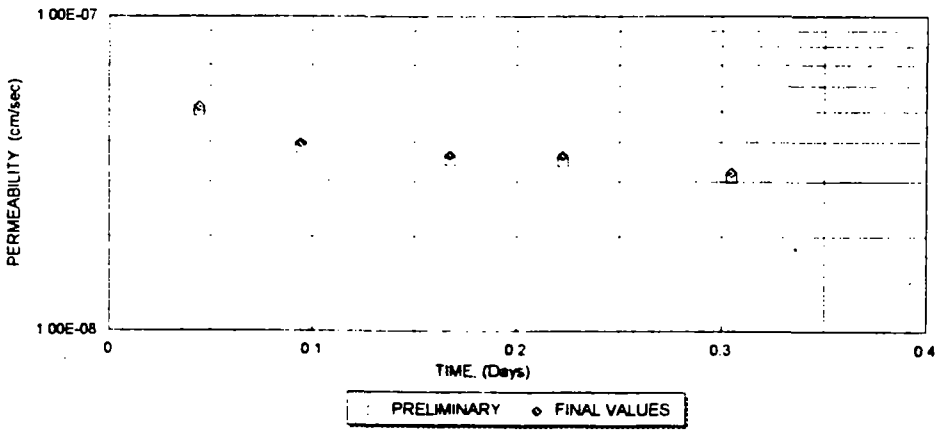
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	96.2
POST-TEST DENSITY	92.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	16%
PERCENT COMPRESSION	74%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3840	0.04	0.35	5.00	5.2E-08
4320	0.09	0.3	5.00	4.0E-08
6300	0.17	0.4	5.00	3.6E-08
4740	0.22	0.3	5.00	3.6E-08
7140	0.30	0.4	5.00	3.2E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/03/9412:11 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-105 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.85%	23.37%
SAMPLE DIAMETER (in) D	2.866	2.829
SAMPLE HEIGHT (in) L	3.051	3.055
SAMPLE WEIGHT, total (g)	653	663.63
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.19	
AVERAGE GRADIENT (in/in)	45.4	
TOTAL VOLUME OF FLUID, (cc)	2.5	

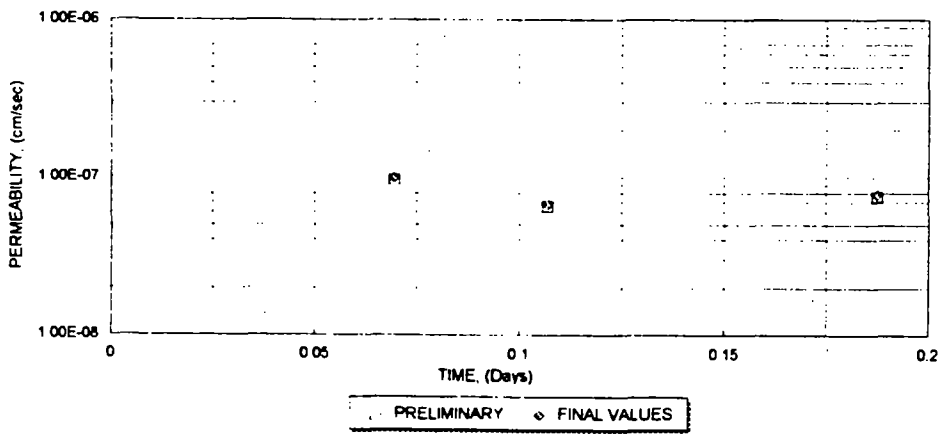
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.9
POST-TEST DENSITY	108.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	7%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
6000	0.07	1.1	5.00	1.0E-07
3240	0.11	0.4	5.00	6.7E-08
6960	0.19	1	5.00	7.8E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



10/03/9412:45 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-106 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.42%	25.55%
SAMPLE DIAMETER (in) D	2.846	2.871
SAMPLE HEIGHT (in) L	3.294	3.227
SAMPLE WEIGHT, total (g)	644.27	668.85
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.22	
AVERAGE GRADIENT (in/in)	42.0	
TOTAL VOLUME OF FLUID, (cc)	2.1	

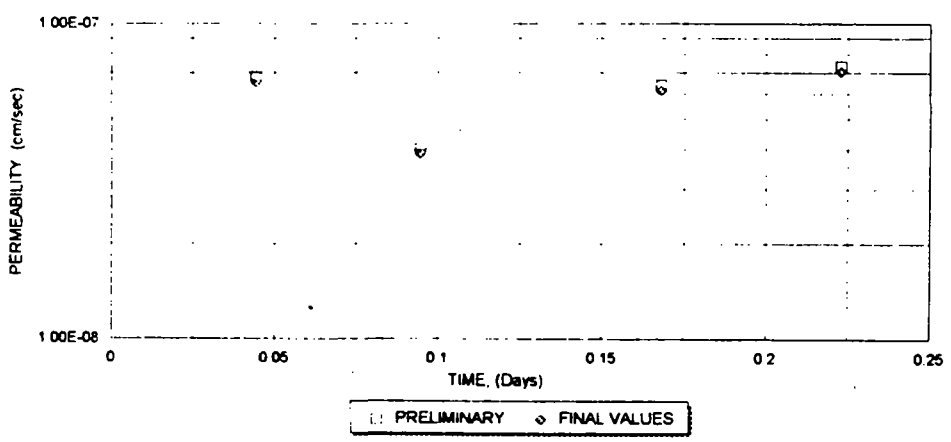
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.3
POST-TEST DENSITY	98.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	115%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3840	0.04	0.45	5.00	6.5E-08
4320	0.09	0.3	5.00	3.9E-08
6360	0.17	0.7	5.00	6.1E-08
4740	0.22	0.6	5.00	7.1E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



10/03/9412:53 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-107 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.65%	26.06%
SAMPLE DIAMETER (in) D	2.847	2.875
SAMPLE HEIGHT (in) L	3.015	3.061
SAMPLE WEIGHT, total (g)	627.49	638.84
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.23	
AVERAGE GRADIENT (in/in)	45.9	
TOTAL VOLUME OF FLUID, (cc)	2.4	

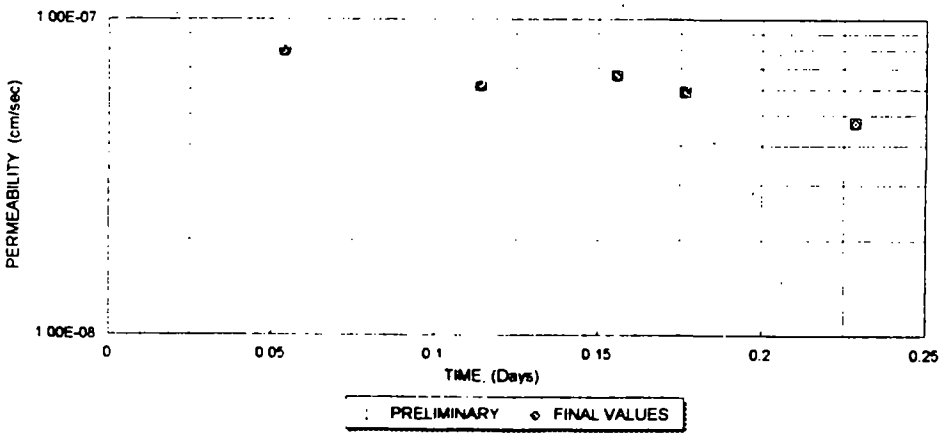
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.8
POST-TEST DENSITY	98.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	13%
PERCENT COMPRESSION	63%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
4680	0.05	0.7	5.00	7.9E-08
5160	0.11	0.6	5.00	6.1E-08
3600	0.16	0.45	5.00	6.6E-08
1800	0.18	0.2	5.00	5.9E-08
4500	0.23	0.4	5.00	4.7E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



10/03/9401:02 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-108 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.99%	25.25%
SAMPLE DIAMETER (in) D	2.852	2.865
SAMPLE HEIGHT (in) L	3.042	3.072
SAMPLE WEIGHT, total (g)	623.69	646.6
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.30	
AVERAGE GRADIENT (in/in)	45.5	
TOTAL VOLUME OF FLUID, (cc)	1.8	

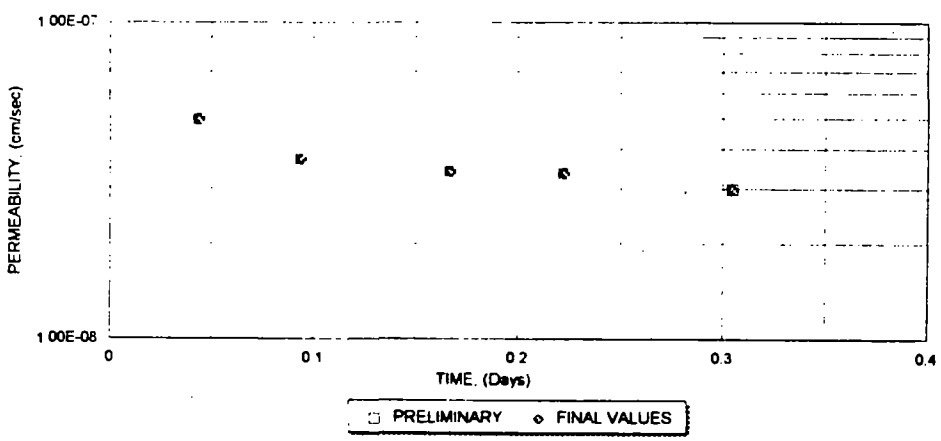
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.5
POST-TEST DENSITY	100.5

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	45%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3780	0.04	0.35	5.00	4.9E-08
4320	0.09	0.3	5.00	3.7E-08
6300	0.17	0.4	5.00	3.4E-08
4800	0.22	0.3	5.00	3.3E-08
7140	0.30	0.4	5.00	3.0E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



10/03/9401:11 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-109 CHK. BY: DJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	22.00%	25.25%
SAMPLE DIAMETER (in) D	2.852	2.866
SAMPLE HEIGHT (in) L	3.042	3.069
SAMPLE WEIGHT, total (g)	623.69	646.6
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.30	
AVERAGE GRADIENT (in/in)	45.5	
TOTAL VOLUME OF FLUID, (cc)	1.9	

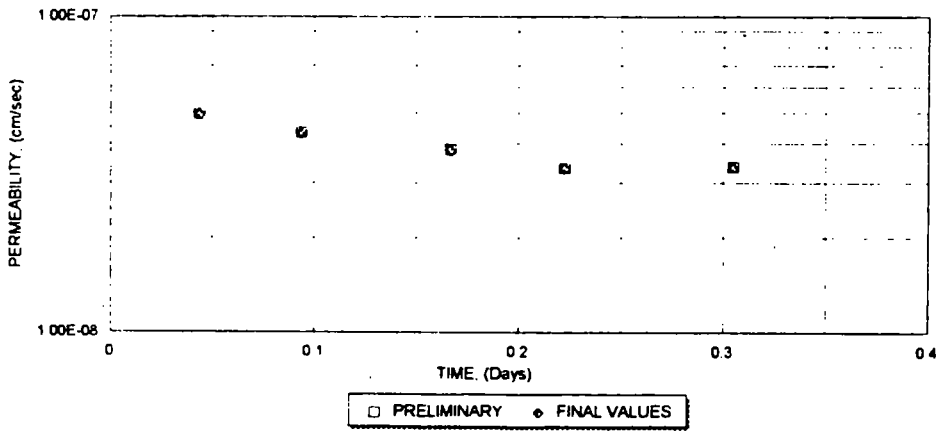
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.5
POST-TEST DENSITY	100.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	18%
PERCENT COMPRESSION	61%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3780	0.04	0.35	5.00	4.9E-08
4320	0.09	0.35	5.00	4.3E-08
6300	0.17	0.45	5.00	3.8E-08
4800	0.22	0.3	5.00	3.3E-08
7140	0.30	0.45	5.00	3.4E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/03/9401:20 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-110 CHK. BY: MJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.44%	23.92%
SAMPLE DIAMETER (in) D	2.851	2.887
SAMPLE HEIGHT (in) L	3.091	3.104
SAMPLE WEIGHT, total (g)	625.42	645.46
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	44.8	
TOTAL VOLUME OF FLUID, (cc)	3.5	

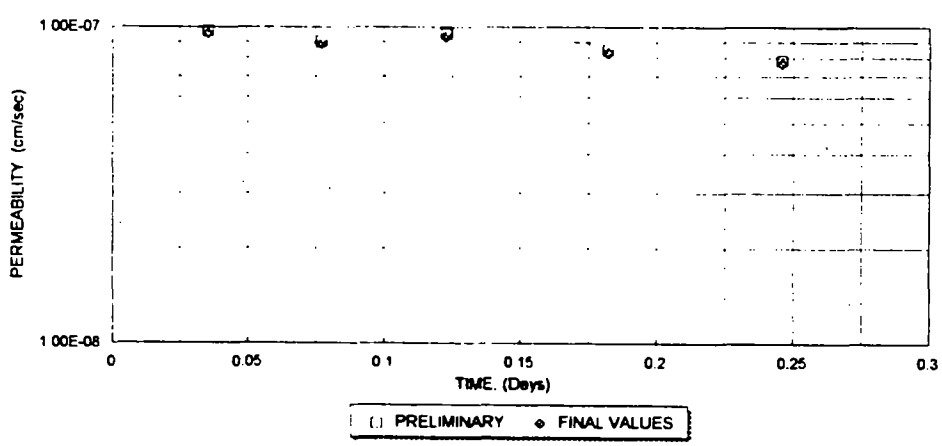
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.5
POST-TEST DENSITY	98.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	11%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.55	5.00	9.5E-08
3600	0.08	0.6	5.00	8.8E-08
3960	0.12	0.7	5.00	9.4E-08
5100	0.18	0.8	5.00	8.3E-08
5520	0.25	0.8	5.00	7.7E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



10/03/9401:29 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-111 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	26.37%	34.00%
SAMPLE DIAMETER (in) D	2.858	2.868
SAMPLE HEIGHT (in) L	3.140	3.159
SAMPLE WEIGHT, total (g)	656.49	629.54
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	44.1	
TOTAL VOLUME OF FLUID, (cc)	4.4	

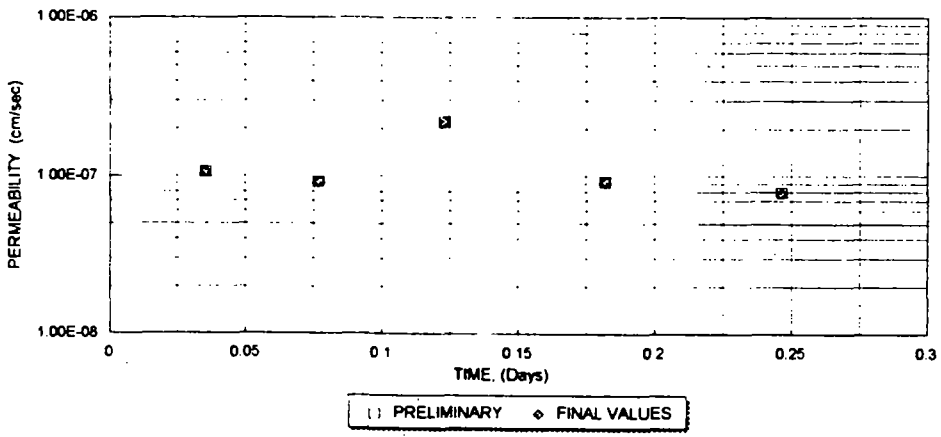
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.5
POST-TEST DENSITY	88.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	70%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.6	5.00	1.1E-07
3600	0.08	0.6	5.00	9.1E-08
3960	0.12	1.6	5.00	2.2E-07
5100	0.18	0.85	5.00	9.1E-08
5580	0.25	0.8	5.00	7.8E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



10/03/9401:37 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-112 CHK. BY: BY DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.51%	25.41%
SAMPLE DIAMETER (in) D	2.852	2.865
SAMPLE HEIGHT (in) L	3.038	3.072
SAMPLE WEIGHT, total (g)	623.49	646.59
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	45.6	
TOTAL VOLUME OF FLUID, (cc)	3.4	

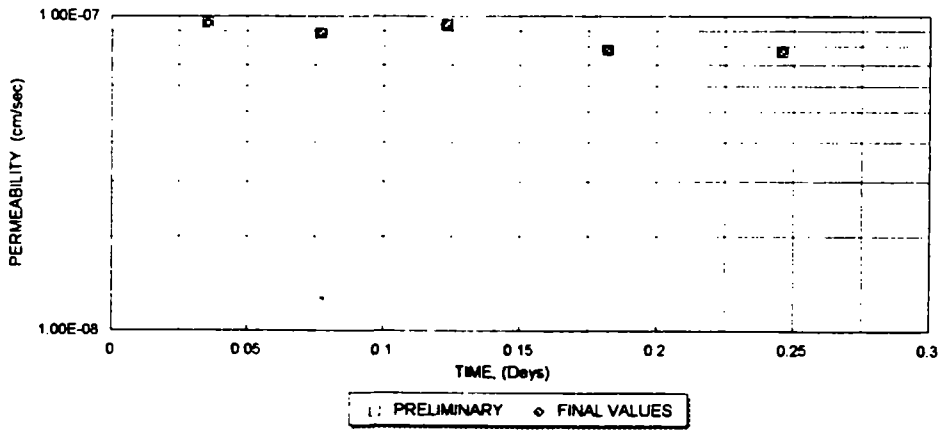
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.0
POST-TEST DENSITY	100.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	5%
PERCENT COMPRESSION	45%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.55	5.00	9.6E-08
3600	0.08	0.6	5.00	8.9E-08
3960	0.12	0.7	5.00	9.4E-08
5100	0.18	0.75	5.00	7.8E-08
5520	0.25	0.8	5.00	7.7E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



10/03/9401:46 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-113 CHK. BY: DJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.80%	29.85%
SAMPLE DIAMETER (in) D	2.820	2.801
SAMPLE HEIGHT (in) L	3.100	3.093
SAMPLE WEIGHT, total (g)	571.72	598.42
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	44.7	
TOTAL VOLUME OF FLUID, (cc)	3.3	

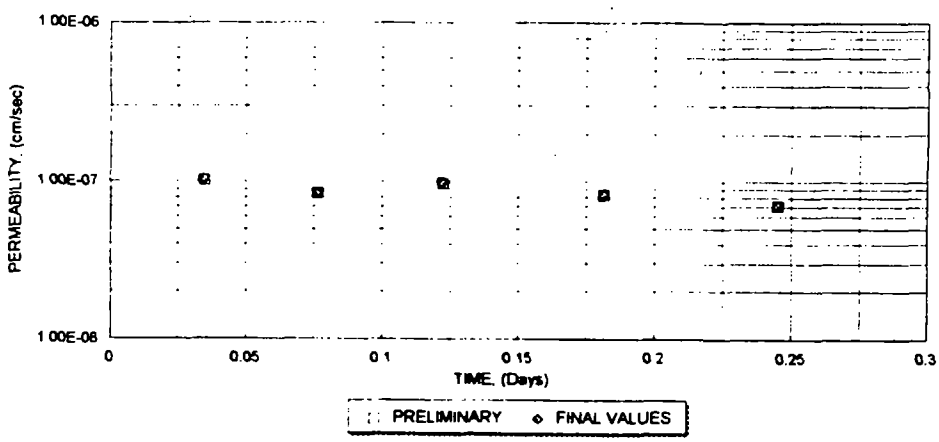
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	93.5
POST-TEST DENSITY	93.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	51%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3000	0.03	0.55	5.00	1.0E-07
3600	0.08	0.55	5.00	8.6E-08
3960	0.12	0.7	5.00	9.9E-08
5100	0.18	0.75	5.00	8.3E-08
5520	0.25	0.7	5.00	7.1E-08

SAMPLE PERMEABILITY 8E-08 cm/sec



10/03/9401:55 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-114 CHK. BY: BJ DATE: 9/30/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.92%	18.55%
SAMPLE DIAMETER (in) D	2.869	2.845
SAMPLE HEIGHT (in) L	2.725	2.737
SAMPLE WEIGHT, total (g)	571.65	581.07
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.25	
AVERAGE GRADIENT (in/in)	50.8	
TOTAL VOLUME OF FLUID, (cc)	3.5	

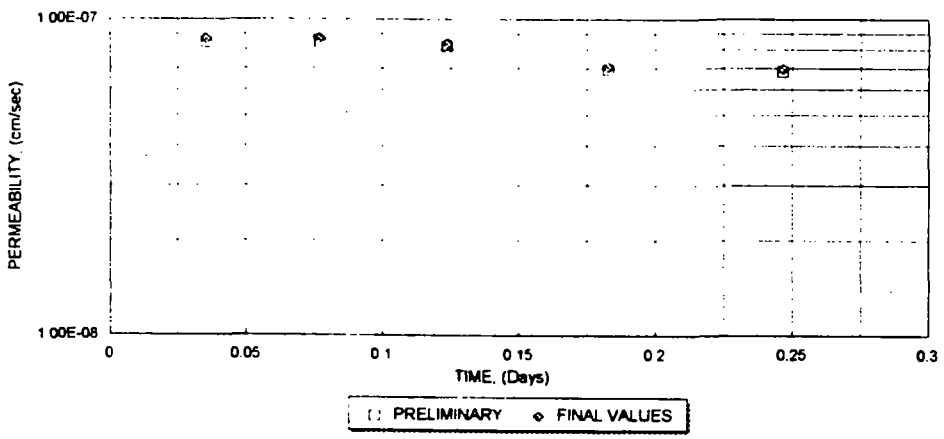
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.3
POST-TEST DENSITY	108.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	11%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3060	0.04	0.55	5.00	8.7E-08
3600	0.08	0.65	5.00	8.7E-08
4020	0.12	0.7	5.00	8.4E-08
5100	0.18	0.75	5.00	7.1E-08
5520	0.25	0.8	5.00	7.0E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



10/03/9402:04 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-115 CHK. BY: HY DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.09%	24.57%
SAMPLE DIAMETER (in) D	2.852	2.866
SAMPLE HEIGHT (in) L	3.131	3.097
SAMPLE WEIGHT, total (g)	656.2	660.2
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	44.2	
TOTAL VOLUME OF FLUID, (cc)	1.2	

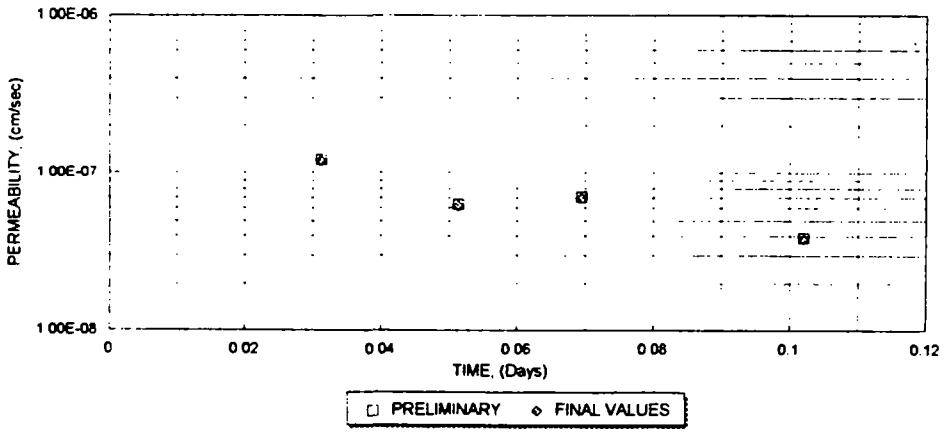
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.4
POST-TEST DENSITY	102.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	82%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2700	0.03	0.6	5.00	1.2E-07
1740	0.05	0.2	5.00	6.2E-08
1560	0.07	0.2	5.00	6.9E-08
2820	0.10	0.2	5.00	3.8E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/07/9408:55 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-116 CHK. BY: BK DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.29%	19.08%
SAMPLE DIAMETER (in) D	2.862	2.870
SAMPLE HEIGHT (in) L	3.083	3.113
SAMPLE WEIGHT, total (g)	667.92	650.35
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.10	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	0.9	

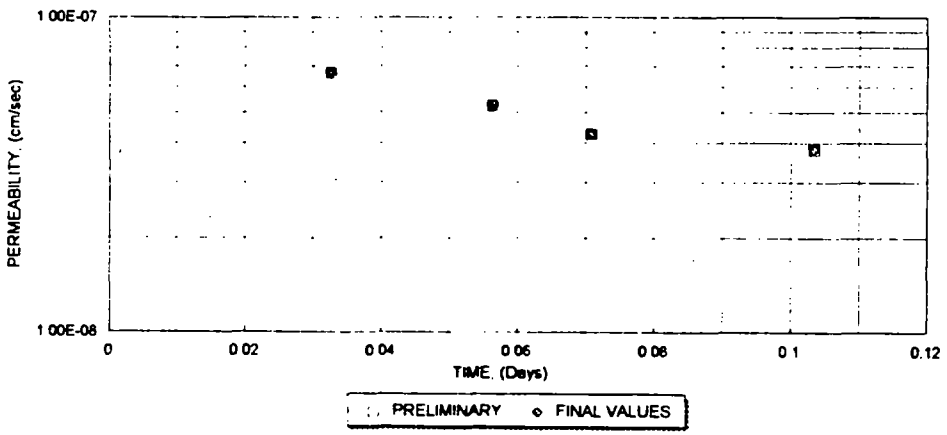
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	107.1
POST-TEST DENSITY	104.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	71%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2820	0.03	0.35	5.00	6.7E-08
2040	0.06	0.2	5.00	5.3E-08
1260	0.07	0.1	5.00	4.3E-08
2820	0.10	0.2	5.00	3.8E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/07/9409:01 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-117 CHK. BY: DY DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.98%	25.60%
SAMPLE DIAMETER (in) D	2.851	2.849
SAMPLE HEIGHT (in) L	3.036	3.022
SAMPLE WEIGHT, total (g)	625.01	628.64
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	97%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.11	
AVERAGE GRADIENT (in/in)	45.6	
TOTAL VOLUME OF FLUID, (cc)	0.7	

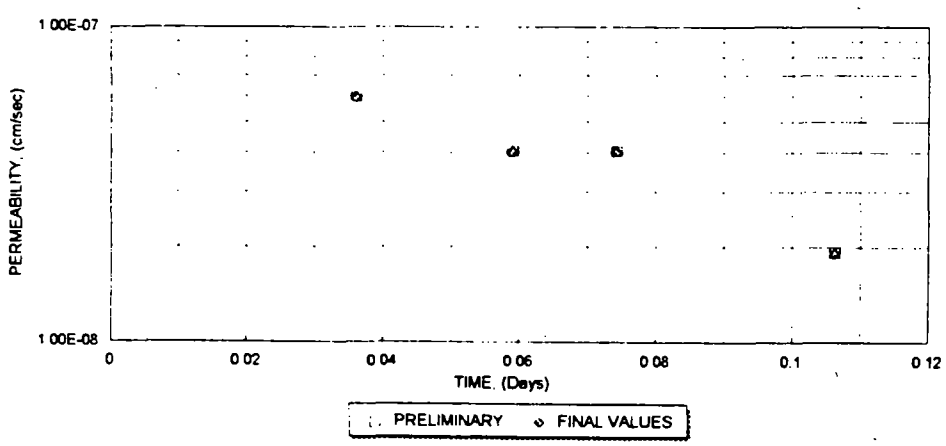
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.9
POST-TEST DENSITY	100.2

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	52%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3120	0.04	0.35	5.00	6.0E-08
1980	0.06	0.15	5.00	4.0E-08
1320	0.07	0.1	5.00	4.0E-08
2760	0.11	0.1	5.00	1.9E-08

SAMPLE PERMEABILITY 2E-08 cm/sec



10/07/94 09:49 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-118 CHK. BY: BJ DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.12%	24.04%
SAMPLE DIAMETER (in) D	2.867	2.881
SAMPLE HEIGHT (in) L	3.012	2.999
SAMPLE WEIGHT, total (g)	616.95	631.36
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	99%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.11	
AVERAGE GRADIENT (in/in)	46.0	
TOTAL VOLUME OF FLUID, (cc)	7.0	

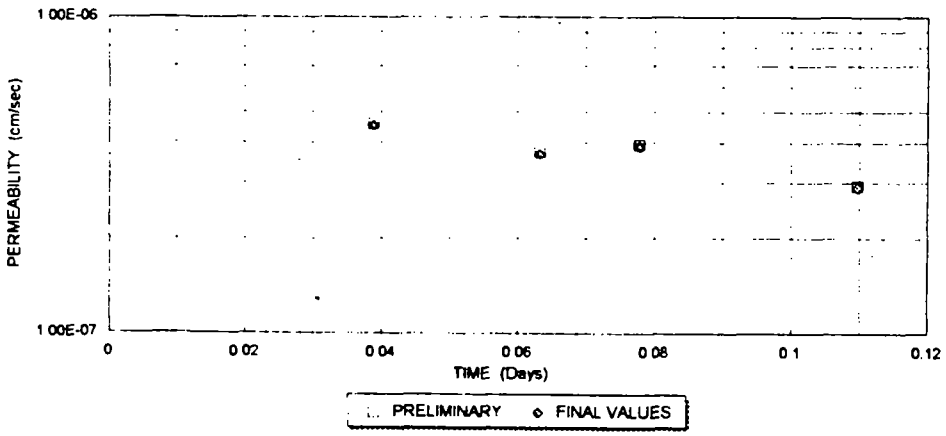
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.8
POST-TEST DENSITY	100.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	80%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3360	0.04	2.95	5.00	4.5E-07
2100	0.06	1.5	5.00	3.7E-07
1260	0.08	0.95	5.00	3.9E-07
2760	0.11	1.55	5.00	2.9E-07

SAMPLE PERMEABILITY 3E-07 cm/sec



10/07/9410:09 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-119 CHK. BY: BJ DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	19.17%	23.28%
SAMPLE DIAMETER (in) D	2.867	2.885
SAMPLE HEIGHT (in) L	2.895	2.882
SAMPLE WEIGHT, total (g)	611.6	622.29
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.11	
AVERAGE GRADIENT (in/in)	47.8	
TOTAL VOLUME OF FLUID, (cc)	39.3	

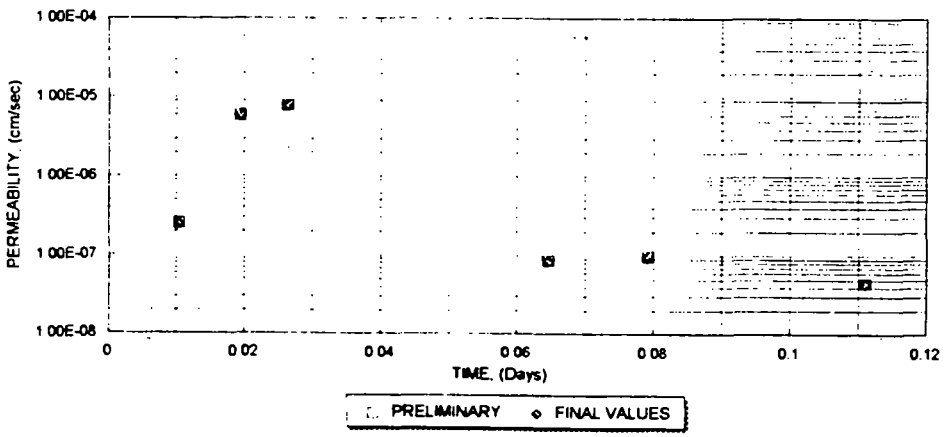
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.9
POST-TEST DENSITY	103.3

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	68%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
900	0.01	0.45	5.00	2.5E-07
780	0.02	9.25	5.00	5.9E-06
600	0.03	9.3	5.00	7.7E-06
60	0.03	19.4	5.00	
1200	0.04	0	5.00	
2040	0.06	0.35	5.00	8.5E-08
1260	0.08	0.25	5.00	9.8E-08
2760	0.11	0.25	5.00	4.5E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



10/07/9410:17 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-120 CHK. BY: MJ DATE: 10/5/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	27.43%	26.15%
SAMPLE DIAMETER (in) D	2.862	2.833
SAMPLE HEIGHT (in) L	3.107	3.108
SAMPLE WEIGHT, total (g)	630.59	640.36
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.12	
AVERAGE GRADIENT (in/in)	44.6	
TOTAL VOLUME OF FLUID, (cc)	1.3	

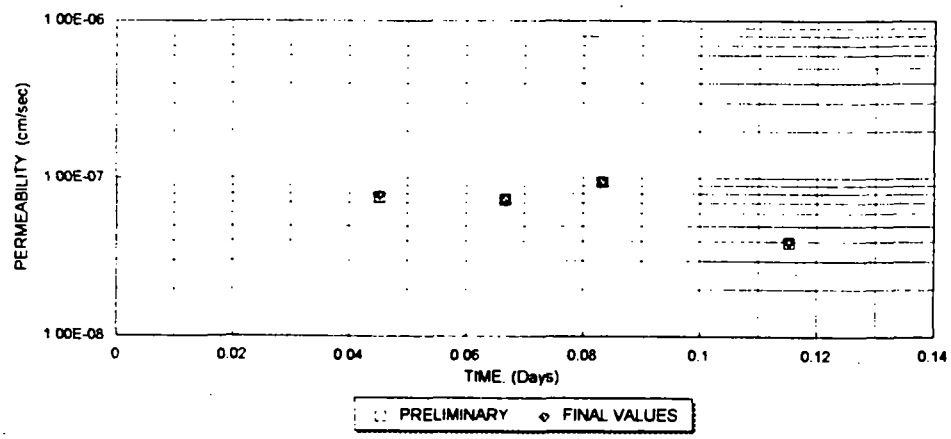
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	95.5
POST-TEST DENSITY	100.0

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	73%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3900	0.05	0.55	5.00	7.8E-08
1860	0.07	0.25	5.00	7.4E-08
1440	0.08	0.25	5.00	9.6E-08
2760	0.12	0.2	5.00	4.0E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/07/9410:23 AM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-121 CHK. BY: BJ DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	18.84%	25.37%
SAMPLE DIAMETER (in) D	2.954	2.874
SAMPLE HEIGHT (in) L	3.032	3.134
SAMPLE WEIGHT, total (g)	639.75	656.67
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.19	
AVERAGE GRADIENT (in/in)	45.7	
TOTAL VOLUME OF FLUID, (cc)	2.2	

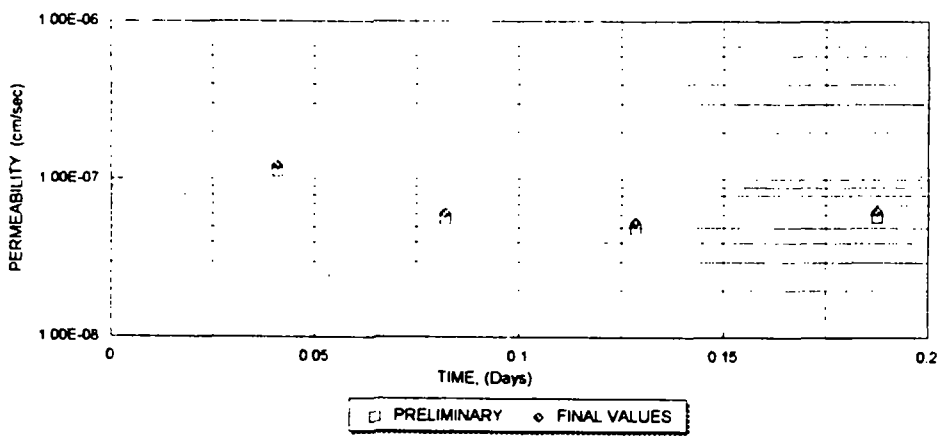
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	99.9
POST-TEST DENSITY	99.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	1%
PERCENT COMPRESSION	49%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3540	0.04	0.8	5.00	1.2E-07
3540	0.08	0.4	5.00	6.1E-08
4020	0.13	0.4	5.00	5.4E-08
5100	0.19	0.6	5.00	6.4E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



10/07/9408:36 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-122 CHK. BY: BJ DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.73%	26.53%
SAMPLE DIAMETER (in) D	2.855	2.852
SAMPLE HEIGHT (in) L	3.005	3.014
SAMPLE WEIGHT, total (g)	619.35	627.78
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	69%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.18	
AVERAGE GRADIENT (in/in)	46.1	
TOTAL VOLUME OF FLUID, (cc)	2.1	

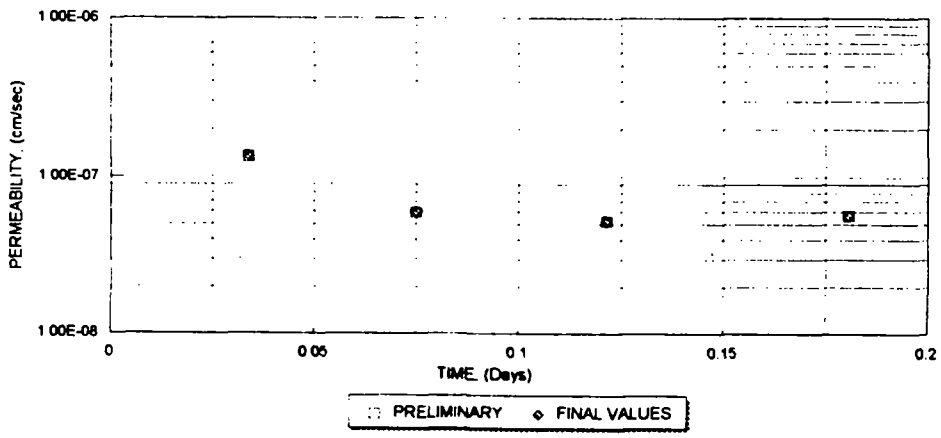
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	102.0
POST-TEST DENSITY	99.4

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	8%
PERCENT COMPRESSION	86%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2940	0.03	0.75	5.00	1.3E-07
3540	0.08	0.4	5.00	6.0E-08
4020	0.12	0.4	5.00	5.3E-08
5100	0.18	0.55	5.00	5.7E-08

SAMPLE PERMEABILITY 6E-08 cm/sec



10/07/9408:59 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-123 CHK. BY: BJ DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	25.85%	24.86%
SAMPLE DIAMETER (in) D	2.864	2.868
SAMPLE HEIGHT (in) L	3.044	3.050
SAMPLE WEIGHT, total (g)	642.23	644.49
ABB CONSTANT HEAD BOARD #	3	
SATURATION AT TEST START	73%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.18	
AVERAGE GRADIENT (in/in)	45.5	
TOTAL VOLUME OF FLUID, (cc)	2.3	

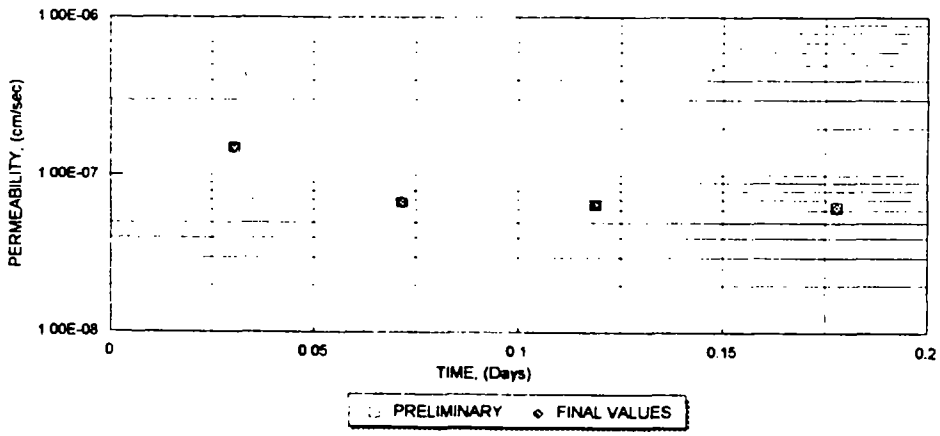
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.4
POST-TEST DENSITY	101.1

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	4%
PERCENT COMPRESSION	48%

ANNULUS CORRECTIONS	
CELL	3.6
BOTTOM	3.6
TOP	3.45

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2640	0.03	0.75	5.00	1.5E-07
3540	0.07	0.45	5.00	6.7E-08
4080	0.12	0.5	5.00	6.5E-08
5100	0.18	0.6	5.00	6.2E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



10/07/9409:08 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-124 CHK. BY: BY DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.45%	23.00%
SAMPLE DIAMETER (in) D	2.860	2.871
SAMPLE HEIGHT (in) L	3.083	3.080
SAMPLE WEIGHT, total (g)	639.84	660.16
ABB CONSTANT HEAD BOARD #	4	
SATURATION AT TEST START	92%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.17	
AVERAGE GRADIENT (in/in)	44.9	
TOTAL VOLUME OF FLUID, (cc)	2.2	

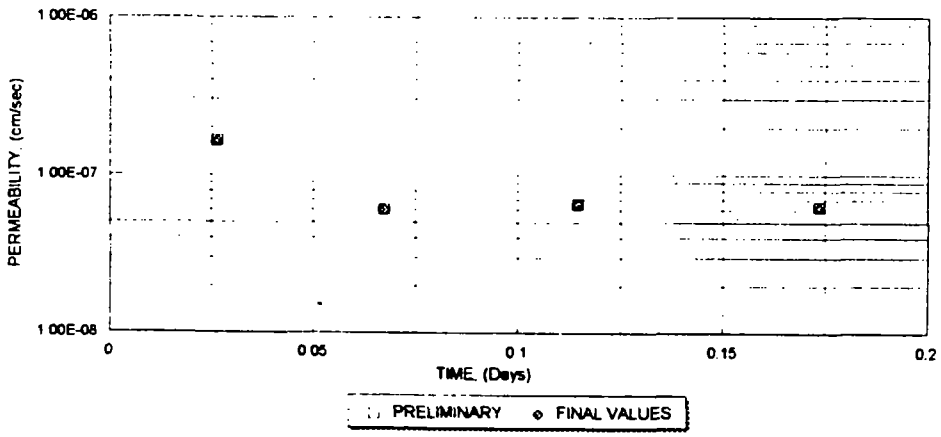
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	103.4
POST-TEST DENSITY	103.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	14%
PERCENT COMPRESSION	67%

ANNULUS CORRECTIONS	
CELL	3.8
BOTTOM	4.1
TOP	3.8

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2280	0.03	0.7	5.00	1.6E-07
3540	0.07	0.4	5.00	6.0E-08
4080	0.11	0.5	5.00	6.5E-08
5100	0.17	0.6	5.00	6.3E-08

SAMPLE PERMEABILITY 7E-08 cm/sec



10/07/9409:18 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-125 CHK. BY: BJ DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	21.62%	23.38%
SAMPLE DIAMETER (in) D	2.864	2.832
SAMPLE HEIGHT (in) L	3.039	3.054
SAMPLE WEIGHT, total (g)	652.28	663.66
ABB CONSTANT HEAD BOARD #	5	
SATURATION AT TEST START	96%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.17	
AVERAGE GRADIENT (in/in)	45.6	
TOTAL VOLUME OF FLUID, (cc)	2.1	

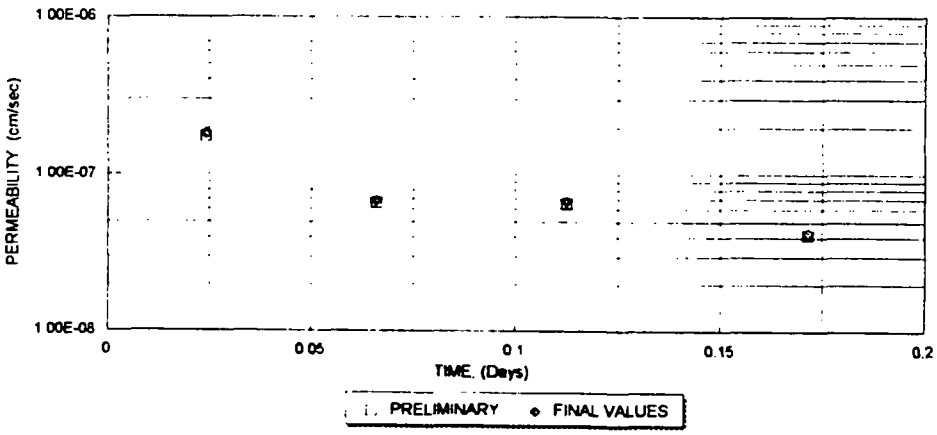
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	105.6
POST-TEST DENSITY	107.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	58%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
2100	0.02	0.7	5.00	1.8E-07
3600	0.07	0.45	5.00	6.8E-08
4020	0.11	0.5	5.00	6.8E-08
5100	0.17	0.4	5.00	4.3E-08

SAMPLE PERMEABILITY 5E-08 cm/sec



10/07/9409:29 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-126 CHK. BY: BY DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.98%	24.65%
SAMPLE DIAMETER (in) D	2.866	2.877
SAMPLE HEIGHT (in) L	3.073	3.110
SAMPLE WEIGHT, total (g)	630.41	664.81
ABB CONSTANT HEAD BOARD #	6	
SATURATION AT TEST START	98%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.17	
AVERAGE GRADIENT (in/in)	45.0	
TOTAL VOLUME OF FLUID, (cc)	1.8	

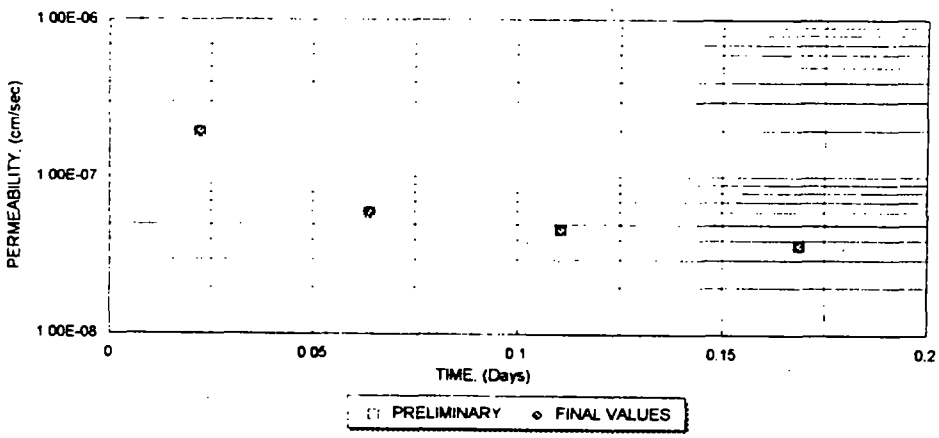
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	101.4
POST-TEST DENSITY	101.8

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	24%
PERCENT COMPRESSION	89%

ANNULUS CORRECTIONS	
CELL	4.1
BOTTOM	4.1
TOP	4.1

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
1920	0.02	0.7	5.00	2.0E-07
3600	0.06	0.4	5.00	6.0E-08
4020	0.11	0.35	5.00	4.7E-08
5040	0.17	0.35	5.00	3.7E-08

SAMPLE PERMEABILITY 4E-08 cm/sec



10/07/9409:39 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-127 CHK. BY: BY DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	20.65%	29.21%
SAMPLE DIAMETER (in) D	2.866	2.879
SAMPLE HEIGHT (in) L	3.166	3.167
SAMPLE WEIGHT, total (g)	626.75	660.15
ABB CONSTANT HEAD BOARD #	1	
SATURATION AT TEST START	95%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.20	
AVERAGE GRADIENT (in/in)	43.7	
TOTAL VOLUME OF FLUID, (cc)	2.0	

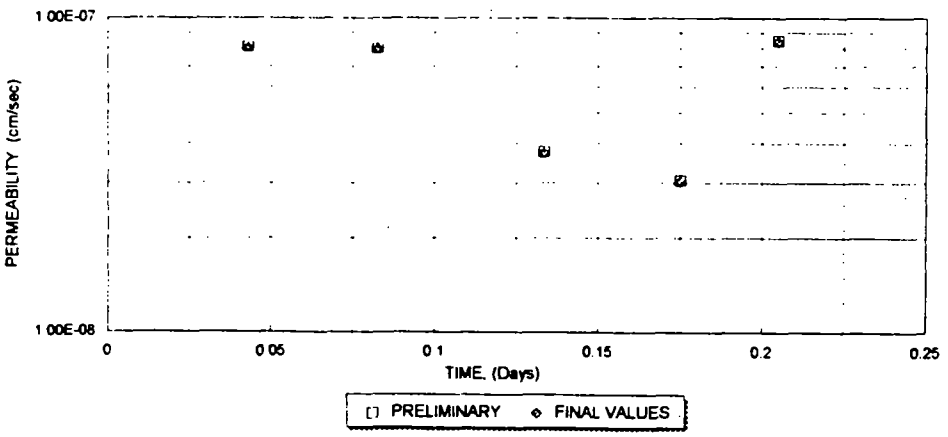
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	98.1
POST-TEST DENSITY	95.6

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	94%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.6
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3720	0.04	0.55	5.00	8.1E-08
3420	0.08	0.5	5.00	8.0E-08
4380	0.13	0.3	5.00	3.7E-08
3600	0.18	0.2	5.00	3.0E-08
2580	0.20	0.4	5.00	8.4E-08

SAMPLE PERMEABILITY 3E-08 cm/sec



10/07/9410:01 PM

ABB ENVIRONMENTAL SERVICES , Inc.
GEOTECHNICAL TESTING LABORATORY

FLEXABLE WALL CONSTANT HEAD PERMEABILITY TEST DATA REPORT

Project: SULIVAN LANDFILL CLOSURE, HYDRAULIC BARRIOR Comp. BY: DPL JOB #: 8940-83

Sample: HB-128 CHK. BY: BY DATE: 10/6/94

PRE TEST DATA	PRE-TEST DENSITY	TEST CUTTINGS
WATER CONTENT, (%)	24.01%	27.57%
SAMPLE DIAMETER (in) D	2.870	2.870
SAMPLE HEIGHT (in) L	3.058	3.098
SAMPLE WEIGHT, total (g)	641.09	648.71
ABB CONSTANT HEAD BOARD #	2	
SATURATION AT TEST START	94%	
AVERAGE HEAD FOR TEST, (psi)	5	
TEST DURATION, (days)	0.20	
AVERAGE GRADIENT (in/in)	45.3	
TOTAL VOLUME OF FLUID, (cc)	2.6	

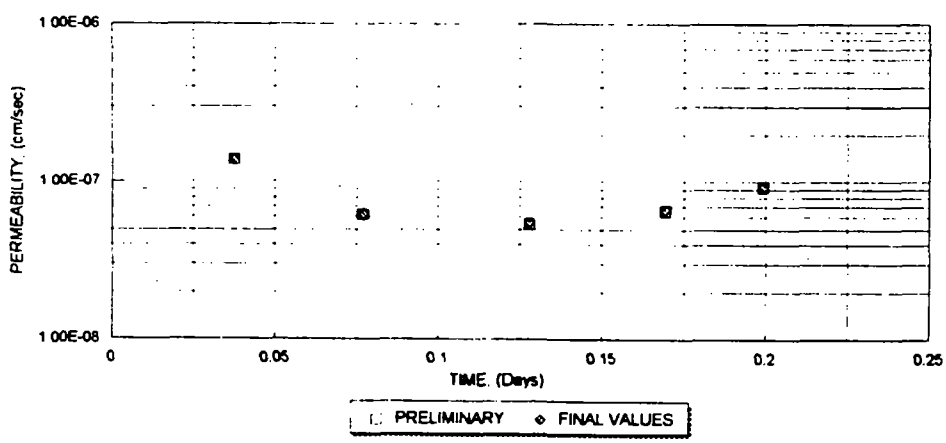
DRY DENSITY INFO.	DRY DENSITY
FIELD NUC. RESULT	0.0
PRE-TEST DENSITY	100.8
POST-TEST DENSITY	97.9

SAMPLE COLLECTION INFO.	
PERCENT COMPRESSION	0%
PERCENT COMPRESSION	45%

ANNULUS CORRECTIONS	
CELL	4
BOTTOM	3.8
TOP	4

INCREMENTAL TIME (Seconds)	TOTAL TIME (Days)	TOTAL PERMEANT FLOW THROUGH THE TEST SAMPLE (cc)	CHANGE IN TOTAL HEAD ACROSS THE TEST SAMPLE (cm water)	TEST SAMPLE PERMEABILITY FOR EACH TIME INCREMENT (cm/sec)
0	0.00			
3240	0.04	0.85	5.00	1.4E-07
3420	0.08	0.4	5.00	6.3E-08
4380	0.13	0.45	5.00	5.5E-08
3600	0.17	0.45	5.00	6.7E-08
2580	0.20	0.45	5.00	9.4E-08

SAMPLE PERMEABILITY 1E-07 cm/sec



10/07/9410:13 PM

ABB-ES TESTING RESULTS OF THE DRAINAGE SOIL

SULLIVAN LANDFILL, DRAINAGE SOIL

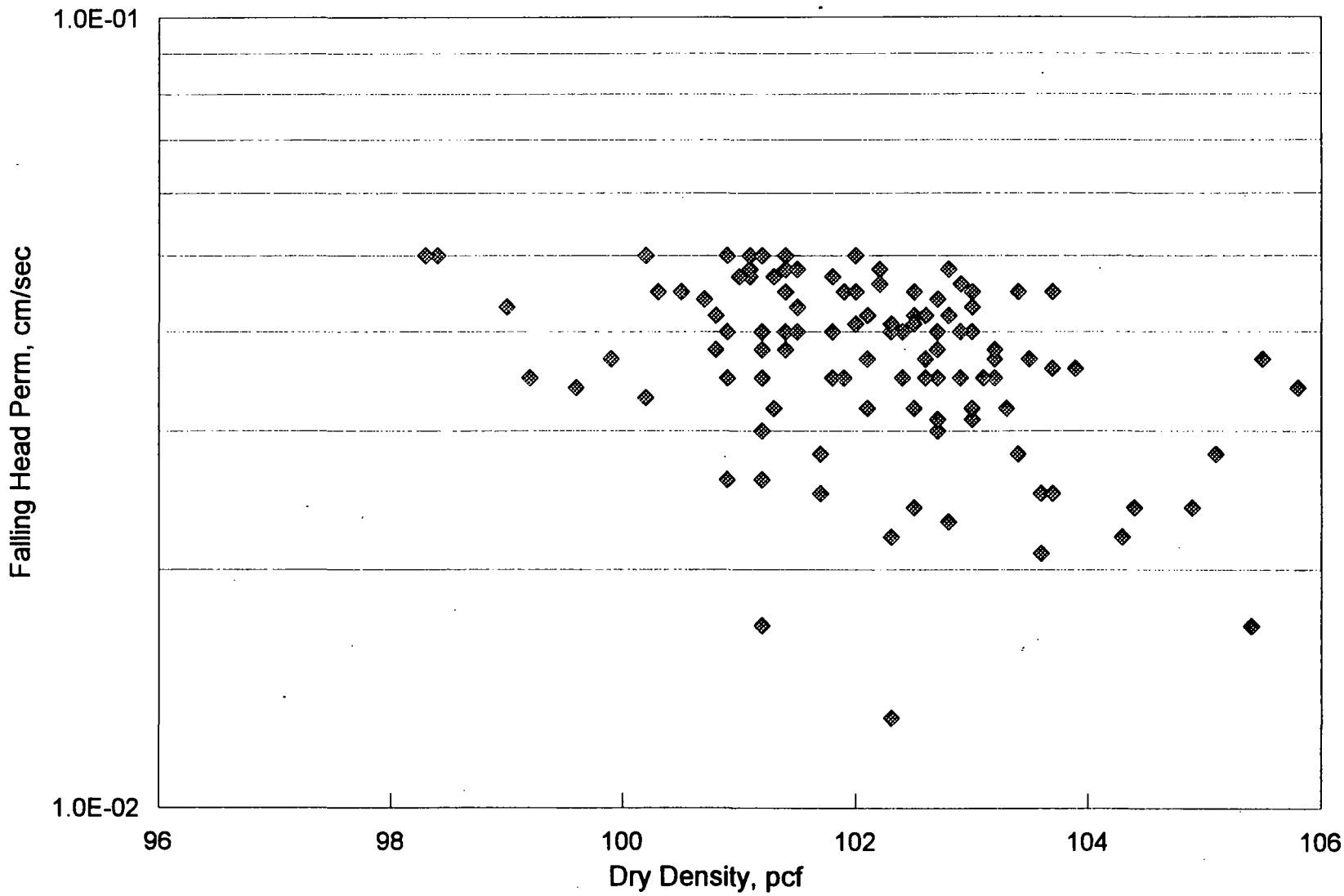
Drain soil	density	% OF 102	perm
1	99.6	98	3.4E-02
2	101.7	100	2.5E-02
3	100.9	99	2.6E-02
4	101.2	99	2.6E-02
5	102.7	101	4.0E-02
6	103	101	3.1E-02
7	101.8	100	3.5E-02
8	101.3	99	3.2E-02
9	101.2	99	3.0E-02
10	103.4	101	2.8E-02
11	102.5	100	3.2E-02
12	102.5	100	2.4E-02
13	98.4	96	5.0E-02
14	100.3	98	4.5E-02
15	105.4	103	1.7E-02
16	102.6	101	3.7E-02
17	102.7	101	3.0E-02
18	102.8	101	2.3E-02
19	101.4	99	3.8E-02
20	103.2	101	3.5E-02
21	105.1	103	2.8E-02
22	102.7	101	3.5E-02
23	100.8	99	4.2E-02
24	101.3	99	4.7E-02
25	102.4	100	3.5E-02
26	102.4	100	4.0E-02
27	103.3	101	3.2E-02
28	100.8	99	3.8E-02
29	102.7	101	4.0E-02
30	101.9	100	4.5E-02
31	100.9	99	4.0E-02
32	102.9	101	3.5E-02
33	102.1	100	3.7E-02
34	105.8	104	3.4E-02
35	101.9	100	3.5E-02
36	103	101	4.0E-02
37	103.5	101	3.7E-02
38	102.9	101	4.0E-02
39	103.7	102	4.5E-02
40	101.1	99	4.7E-02
41	101.1	99	4.7E-02
42	102.8	101	4.8E-02
43	103.4	101	4.5E-02
44	101.4	99	4.5E-02
45	103	101	4.5E-02
46	103	101	4.3E-02
47	102.5	100	4.5E-02

48	102.3	100	4.0E-02
49	102	100	5.0E-02
50	101.4	99	5.0E-02
51	101.4	99	4.8E-02
52	102	100	4.1E-02
53	100.9	99	5.0E-02
54	102.9	101	4.6E-02
55	102.1	100	4.2E-02
56	101.5	100	4.3E-02
57	102.8	101	4.2E-02
58	102.5	100	4.2E-02
59	101.1	99	4.8E-02
60	101.4	99	4.0E-02
61	102.2	100	4.8E-02
62	101.2	99	5.0E-02
63	101.1	99	5.0E-02
64	101.4	99	4.8E-02
65	101.5	100	4.8E-02
66	100.7	99	4.4E-02
67	102.3	100	4.1E-02
68	103.2	101	3.7E-02
69	101	99	4.7E-02
70	100.8	99	4.2E-02
71	101.1	99	5.0E-02
72	101.5	100	4.0E-02
73	101.8	100	4.0E-02
74	102.6	101	4.2E-02
75	102.5	100	4.1E-02
76	101.8	100	4.7E-02
77	102.5	100	4.5E-02
78	100.2	98	5.0E-02
79	102.2	100	4.6E-02
80	102	100	4.5E-02
81	102.7	101	4.4E-02
82	98.3	96	5.0E-02
83	104.9	103	2.4E-02
84	102.3	100	2.2E-02
85	104.3	102	2.2E-02
86	102.3	100	1.3E-02
87	101.2	99	1.7E-02
88	99.2	97	3.5E-02
89	100.9	99	3.5E-02
90	99	97	4.3E-02
91	104.4	102	2.4E-02
92	106.1	104	3.0E-02
93	102.1	100	3.2E-02
94	99.9	98	3.7E-02
95	101.2	99	3.5E-02
96	105.5	103	3.7E-02
97	103.2	101	3.8E-02

98	102.7	101	3.8E-02
99	103.9	102	3.6E-02
100	101.2	99	4.0E-02
101	101.7	100	2.8E-02
102	103.7	102	3.6E-02
103	101.2	99	3.8E-02
104	102.6	101	3.5E-02
105	101.4	99	4.5E-02
106	102.7	101	3.1E-02
107	103.6	102	2.5E-02
108	100.2	98	3.3E-02
109	103.1	101	3.5E-02
110	103	101	3.2E-02
111	103.7	102	2.5E-02
112	101.2	99	4.0E-02
113	103.6	102	2.1E-02
114	100.5	99	4.5E-02
115	101.2	99	5.0E-02

SULLIVAN LANDFILL

DRAINAGE SOIL 1



FOR SAMPLES 1 THROUGH 115, INPLACE DRY DENSITY WAS 102 pcf

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-8-94

Project Number: 8940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: DS-1

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	17
Tare Weight, (g)	343		42.1
Tare + Wet Soil, (g)	4158		258.4
Tare + Dry Soil, (g)	3931		239.5
Sample for WATER CONTENT, %	6.33%		9.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4485	grams
Dry Soil + Sieve after	1174	grams
Percent greater than	0.75	7.72%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2778			
Distance from top of mold to top of stone, (in)	1.014	0.997	1.006	1.01
Height of Sample, (in)	5.114			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.94	2.84E-02	10	15.19	2.80E-02			
20	29.84	3.11E-02	20	30.45	3.04E-02			
25	37.68	3.18E-02	25	38.55	3.08E-02			
30	45.74	3.25E-02	30	46.71	3.21E-02			
35	54.02	3.34E-02	35	55.25	3.24E-02			
40	62.63	3.40E-02	40	64.3	3.23E-02			
50	81.03	3.49E-02	50	83.22	3.39E-02			

SAMPLE PERMEABILITY 3.2E-02 cm/sec

SAMPLE DRY DENSITY 99.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-8-94

Project Number: 8940-83 Tested By: BS Checked By: M

SAMPLE NUMBER: ds-2

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2a	na	81
Tare Weight, (g)	312		36.6
Tare + Wet Soil, (g)	4569		225.5
Tare + Dry Soil, (g)	4298		209.3
Sample for WATER CONTENT, %	6.80%		9.38%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	5406	grams
Dry Soil + Sieve after	1268	grams
Percent greater than	0.75	8.85%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2785			
Distance from top of mold to top of stone, (in)	1.101	1.158	1.069	1.11
Height of Sample, (in)	5.011			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	18.07	2.30E-02	10	18.21	2.28E-02			
20	36.81	2.43E-02	20	37.2	2.39E-02			
25	46.78	2.45E-02	25	47.29	2.42E-02			
30	57.06	2.50E-02	30	57.7	2.47E-02			
35	67.94	2.49E-02	35	68.69	2.46E-02			
40	79.24	2.54E-02	40	80.23	2.48E-02			
50	103.63	2.58E-02	50	105.24	2.51E-02			

SAMPLE PERMEABILITY 2.5e-02 cm/sec

SAMPLE DRY DENSITY 101.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-8-94

Project Number: 8940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: DS-3

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	5
Tare Weight, (g)	315		39.9
Tare + Wet Soil, (g)	4974		259.4
Tare + Dry Soil, (g)	4662		244.3
Sample for WATER CONTENT, %	7.18%		7.39%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5216	grams
Dry Soil + Sieve after	1353	grams
Percent greater than	0.75	11.13%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2767			
Distance from top of mold to top of stone, (in)	1.096	1.07	1.038	1.07
Height of Sample, (in)	5.052			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	16.64	2.52E-02	10	17.31	2.42E-02			
20	33.68	2.69E-02	20	35.08	2.58E-02			
25	42.72	2.72E-02	25	44.52	2.61E-02			
30	51.91	2.82E-02	30	54.28	2.65E-02			
35	61.77	2.77E-02	35	64.45	2.69E-02			
40	71.93	2.84E-02	40	75.03	2.73E-02			
50	93.68	2.92E-02	50	97.91	2.77E-02			

SAMPLE PERMEABILITY: 2.6E-02 cm/sec

SAMPLE DRY DENSITY: 100.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-8-94

Project Number: 8940-83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: DS-4

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	39
Tare Weight, (g)	313		33.4
Tare + Wet Soil, (g)	4738		272.7
Tare + Dry Soil, (g)	4452		254.3
Sample for WATER CONTENT, %	6.91%		8.33%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5006	grams
Dry Soil + Sieve after	1394	grams
Percent greater than	0.75	12.73%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.08	1.101	1.037	1.07
Height of Sample, (in)	5.047			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	29			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	17.16	2.44E-02	10	17.54	2.39E-02			
20	35.02	2.56E-02	20	35.77	2.51E-02			
25	44.39	2.62E-02	25	45.36	2.56E-02			
30	54.13	2.66E-02	30	55.29	2.60E-02			
35	64.24	2.70E-02	35	65.66	2.63E-02			
40	74.91	2.71E-02	40	76.52	2.66E-02			
50	97.82	2.77E-02	50	99.98	2.70E-02			

SAMPLE PERMEABILITY: 2.6E-02 cm/sec

SAMPLE DRY DENSITY: 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–005

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	10	na	85
Tare Weight, (g)	217		35.9
Tare + Wet Soil, (g)	3993		175.17
Tare + Dry Soil, (g)	3765		162.72
Sample for WATER CONTENT, %	6.43%		9.82%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	771	grams
Dry Soil + Sieve before	4319	grams
Dry Soil + Sieve after	1498.52	grams
Percent greater than	NA	20.51%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2827			
Distance from top of mold to top of stone, (in)	0.916	0.959	0.914	0.93
Height of Sample, (in)	5.190			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.12	3.64E–02	10	31.13	3.52E–02			
15	46.81	3.90E–02	15	48.61	3.72E–02			
20	65.39	4.01E–02	20	68.27	3.79E–02			
25	86.77	4.09E–02	25	90.54	3.92E–02			
30	111.89	4.20E–02	30	116.76	4.03E–02			

SAMPLE PERMEABILITY ~~3.91~~ 4x10^-2 E–02 cm/sec PS

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-13-94

Project Number: 8940-83 Tested By: DL Checked By: BJ

SAMPLE NUMBER: DL-006

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	85
Tare Weight, (g)	215		35.74
Tare + Wet Soil, (g)	3522		79.58
Tare + Dry Soil, (g)	3270		75.93
Sample for WATER CONTENT, %	8.25%		9.08%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	3824	grams
Dry Soil + Sieve after	1048.81	grams
Percent greater than	NA	9.16%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.36			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.184	1.146	1.168	1.17
Height of Sample, (in)	4.954			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	35.13	2.98E-02	10	36.03	2.90E-02			
15	55.24	3.09E-02	15	56.44	3.04E-02			
20	77.85	3.15E-02	20	79.88	3.04E-02			
25	103.88	3.21E-02	25	107.03	3.07E-02			
30	134.27	3.32E-02	30	139.04	3.15E-02			

SAMPLE PERMEABILITY 3.1E-02 cm/sec

SAMPLE DRY DENSITY 103.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-007

FIELD DATA

Density: 162 (pcf) Water Content: B %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	100
Tare Weight, (g)	309		38.9
Tare + Wet Soil, (g)	3946		164.88
Tare + Dry Soil, (g)	3706		153.81
Sample for WATER CONTENT, %	7.07%		9.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	863	grams
Dry Soil + Sieve before	4260	grams
Dry Soil + Sieve after	1509.76	grams
Percent greater than	NA	19.04%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2867	-2767?		
Distance from top of mold to top of stone, (in)	0.892	0.855	0.958	0.90
Height of Sample, (in)	5.218			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	42.34	2.60E-02	10	41.99	2.62E-02			
15	66.74	2.68E-02	15	66.98	2.62E-02			
20	95.08	2.65E-02	20	95.24	2.65E-02			
25	127.38	2.72E-02	25	128.53	2.64E-02			
30	165.2	2.81E-02	30	167.45	2.73E-02			

SAMPLE PERMEABILITY 2.7E-02 cm/sec

SAMPLE DRY DENSITY 106.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940–83 Tested By: DPL Checked By: [illegible]

SAMPLE NUMBER: DL–008

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	89
Tare Weight, (g)	319		38.69
Tare + Wet Soil, (g)	4844		189.01
Tare + Dry Soil, (g)	4765		179.29
Sample for WATER CONTENT, %	1.78%		6.91%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	873	grams
Dry Soil + Sieve before	5319	grams
Dry Soil + Sieve after	1491.48	grams
Percent greater than	NA	13.91%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2792			
Distance from top of mold to top of stone, (in)	0.923	0.878	0.876	0.89
Height of Sample, (in)	5.228			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	28.75			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	14.89	2.93E–02	10	15.15	2.88E–02			
20	29.86	3.18E–02	20	30.59	3.09E–02			
25	37.67	3.28E–02	25	38.63	3.18E–02			
30	45.59	3.40E–02	30	46.92	3.25E–02			
35	53.7	3.50E–02	35	55.58	3.28E–02			
40	62.6	3.38E–02	40	64.7	3.30E–02			
50	80.9	3.61E–02	50	83.93	3.43E–02			

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 101.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–009

FIELD DATA

Density: (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	91
Tare Weight, (g)	312		37.4
Tare + Wet Soil, (g)	4173		210.99
Tare + Dry Soil, (g)	4111		198.61
Sample for WATER CONTENT, %	1.63%		7.68%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4665	grams
Dry Soil + Sieve after	1448.05	grams
Percent greater than	NA	15.32%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2788			
Distance from top of mold to top of stone, (in)	0.924	0.97	0.942	0.95
Height of Sample, (in)	5.175			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	28.75			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	15.41	2.80E–02	10	16.1	2.68E–02	10	16.64	2.59E–02
20	31.14	3.00E–02	20	32.45	2.88E–02	20	33.47	2.80E–02
25	39.42	3.06E–02	25	40.94	2.98E–02	25	42.35	2.85E–02
30	47.75	3.20E–02	30	49.91	2.97E–02	30	51.61	2.88E–02
35	56.63	3.17E–02	35	59.27	3.01E–02	35	61.34	2.89E–02
40	66.11	3.14E–02	40	68.97	3.07E–02	40	71.43	2.95E–02
50	85.84	3.31E–02	50	89.81	3.14E–02	50	93.15	3.01E–02

SAMPLE PERMEABILITY: 3E–02 cm/sec

SAMPLE DRY DENSITY: 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 503

Project Number: 8940–83 Tested By: DPL Checked By: pg

SAMPLE NUMBER: DL–010

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	9	na	85
Tare Weight, (g)	501		35.8
Tare + Wet Soil, (g)	3532		118.39
Tare + Dry Soil, (g)	3336		111.29
Sample for WATER CONTENT, %	6.91%		9.41%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	1055	grams
Dry Soil + Sieve before	3890	grams
Dry Soil + Sieve after	1295.35	grams
Percent greater than	NA	8.48%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.87			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.219	1.18	1.157	1.19
Height of Sample, (in)	4.935			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	37.49	2.78E–02	10	39.42	2.64E–02			
15	58.75	2.91E–02	15	62.41	2.69E–02			
20	83.55	2.86E–02	20	88.58	2.71E–02			
25	111.77	2.94E–02	25	118.74	2.76E–02			
30	145.15	3.01E–02	30	154.38	2.82E–02			

SAMPLE PERMEABILITY 2.8E–02 cm/sec

SAMPLE DRY DENSITY 103.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–13–94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–011

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	91
Tare Weight, (g)	314		37.24
Tare + Wet Soil, (g)	3835		123.45
Tare + Dry Soil, (g)	3570		116.73
Sample for WATER CONTENT, %	8.14%		8.45%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4124	grams
Dry Soil + Sieve after	1635.22	grams
Percent greater than	NA	23.56%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.14			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.118	1.144	1.165	1.14
Height of Sample, (in)	4.978			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	33.43	3.14E–02	10	34.23	3.07E–02			
15	52.54	3.27E–02	15	54.06	3.15E–02			
20	73.95	3.34E–02	20	76.07	3.25E–02			
25	98.48	3.42E–02	25	101.61	3.28E–02			
30	126.96	3.55E–02	30	130.87	3.46E–02			

SAMPLE PERMEABILITY 3.2E–02 cm/sec

SAMPLE DRY DENSITY 102.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–13–94

Project Number: 8940–83 Tested By: DPL Checked By: DY

SAMPLE NUMBER: DL–012

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214B	na	100
Tare Weight, (g)	214		38.81
Tare + Wet Soil, (g)	3947		130.94
Tare + Dry Soil, (g)	3688		122.38
Sample for WATER CONTENT, %	7.46%		10.24%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4242	grams
Dry Soil + Sieve after	1306.68	grams
Percent greater than	NA	15.51%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.8			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2789			
Distance from top of mold to top of stone, (in)	1.159	1.13	1.145	1.14
Height of Sample, (in)	4.975			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	43.85	2.39E–02	10	45.44	2.31E–02			
15	69.25	2.46E–02	15	72.06	2.34E–02			
20	98.14	2.48E–02	20	102.55	2.35E–02			
25	131.33	2.52E–02	25	137.72	2.38E–02			
30	170.93	2.56E–02	30	179.18	2.44E–02			

SAMPLE PERMEABILITY: 2.4E–02 cm/sec

SAMPLE DRY DENSITY: 102.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–013

FIELD DATA

Density: (D) (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2	na	88
Tare Weight, (g)	308		37.08
Tare + Wet Soil, (g)	4747		194.65
Tare + Dry Soil, (g)	4361		181
Sample for WATER CONTENT, %	9.52%		9.48%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862	grams
Dry Soil + Sieve before	4915	grams
Dry Soil + Sieve after	1709.13	grams
Percent greater than	NA	20.90%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2779			
Distance from top of mold to top of stone, (in)	0.916	0.929	0.948	0.93
Height of Sample, (in)	5.189			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.77	4.25E–02	10	26.27	4.17E–02			
15	39.78	4.64E–02	15	40.74	4.50E–02			
20	55.3	4.81E–02	20	56.62	4.70E–02			
25	72.72	5.02E–02	25	74.37	4.92E–02			
30	92.62	5.30E–02	30	94.79	5.17E–02			

SAMPLE PERMEABILITY ~~4.7~~ 5.0 E–02 cm/sec

SAMPLE DRY DENSITY 98.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/13/94

Project Number: 8940–83 Tested By: DPL Checked By: BF

SAMPLE NUMBER: DL–014

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	3
Tare Weight, (g)	216		38.5
Tare + Wet Soil, (g)	4288		161.23
Tare + Dry Soil, (g)	4084		150.64
Sample for WATER CONTENT, %	5.27%		9.44%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4638	grams
Dry Soil + Sieve after	1637.13	grams
Percent greater than	NA	22.42%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2812			
Distance from top of mold to top of stone, (in)	0.85	0.888	0.856	0.86
Height of Sample, (in)	5.255			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.86	4.13E–02	10	27.85	3.98E–02			
15	42.07	4.33E–02	15	43.6	4.18E–02			
20	59.19	4.41E–02	20	60.94	4.36E–02			
25	78.58	4.56E–02	25	80.81	4.45E–02			
30	100.46	4.88E–02	30	103.31	4.75E–02			

SAMPLE PERMEABILITY 4.4E–02 cm/sec

SAMPLE DRY DENSITY 100.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-14-94

Project Number: 8940-83 Tested By: DL Checked By: BJ

SAMPLE NUMBER: DL-015

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2	na	88
Tare Weight, (g)	308		36.86
Tare + Wet Soil, (g)	3558		131.15
Tare + Dry Soil, (g)	3334		122.8
Sample for			
WATER CONTENT, %	7.40%		9.72%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862	grams
Dry Soil + Sieve before	3888	grams
Dry Soil + Sieve after	1683.02	grams
Percent greater than	NA	27.13%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742.97			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.281	1.28	1.28	1.28
Height of Sample, (in)	4.840			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0		0	0	
10	53.71	1.90E-02	10	59.73	1.71E-02	10	64.12	1.59E-02
15	86.49	1.85E-02	15	95.37	1.70E-02	15	102.92	1.56E-02
20	124.27	1.84E-02	20	136.7	1.68E-02	20	147.8	1.55E-02
25	168.48	1.84E-02	25	185.85	1.66E-02	25	200.75	1.54E-02
30	222.02	1.84E-02	30	244.58	1.68E-02	30	264.54	1.54E-02

SAMPLE PERMEABILITY: 1.7E-02 cm/sec

SAMPLE DRY DENSITY: 105.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–14–94

Project Number: 8940–83 Tested By: DL Checked By: BJ

SAMPLE NUMBER: DL–016

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	3
Tare Weight, (g)	216		38.51
Tare + Wet Soil, (g)	3207		115.8
Tare + Dry Soil, (g)	3002		109.35
Sample for WATER CONTENT, %	7.36%		9.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	3556	grams
Dry Soil + Sieve after	1392.96	grams
Percent greater than	NA	22.36%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.72			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2779			
Distance from top of mold to top of stone, (in)	1.137	1.117	1.179	1.14
Height of Sample, (in)	4.976			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.61	3.55E–02	10	30.88	3.40E–02			
15	46.22	3.76E–02	15	48.11	3.62E–02			
20	64.95	3.82E–02	20	67.36	3.71E–02			
25	86.2	3.94E–02	25	89.17	3.84E–02			
30	110.48	4.17E–02	30	114.41	4.01E–02			

SAMPLE PERMEABILITY 3.7E–02 cm/sec

SAMPLE DRY DENSITY 102.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-14-94

Project Number: 8940-83 Tested By: DL Checked By: DL

SAMPLE NUMBER: DL-017

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	10	na	5
Tare Weight, (g)	216		39.99
Tare + Wet Soil, (g)	3774		99.49
Tare + Dry Soil, (g)	3546		94.48
Sample for WATER CONTENT, %	6.85%		9.19%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4100	grams
Dry Soil + Sieve after	1699.62	grams
Percent greater than	NA	27.92%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.76			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.145	1.152	1.16	1.15
Height of Sample, (in)	4.968			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	35.59	2.95E-02	10	36.86	2.84E-02			
15	56.31	3.01E-02	15	58.09	2.93E-02			
20	79.54	3.07E-02	20	82.28	2.95E-02			
25	106.3	3.13E-02	25	110.13	3.00E-02			
30	137.45	3.24E-02	30	142.96	3.08E-02			

SAMPLE PERMEABILITY 3.0E-02 cm/sec

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–14–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–018

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	89
Tare Weight, (g)	312		38.76
Tare + Wet Soil, (g)	3570		133.72
Tare + Dry Soil, (g)	3363		124.28
Sample for WATER CONTENT, %	6.78%		11.04%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	3917	grams
Dry Soil + Sieve after	1563.55	grams
Percent greater than	NA	22.86%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.58			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2797			
Distance from top of mold to top of stone, (in)	1.15	1.155	1.167	1.16
Height of Sample, (in)	4.963			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	43.08	2.43E–02	10	46.04	2.27E–02			
15	68.57	2.44E–02	15	72.14	2.38E–02			
20	97.49	2.47E–02	20	104.17	2.23E–02			
25	130.95	2.50E–02	25	139.85	2.34E–02			
30	170.81	2.53E–02	30	182.41	2.37E–02			

SAMPLE PERMEABILITY: 2.3E–02 cm/sec

SAMPLE DRY DENSITY: 102.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–14–94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–019

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	85
Tare Weight, (g)	343		35.81
Tare + Wet Soil, (g)	3758		105.27
Tare + Dry Soil, (g)	3482		99.5
Sample for WATER CONTENT, %	8.79%		9.06%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4036	grams
Dry Soil + Sieve after	2182.83	grams
Percent greater than	NA	40.96%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.87			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776.87			
Distance from top of mold to top of stone, (in)	1.09	1.07	1.112	1.09
Height of Sample, (in)	5.029			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.85	3.56E–02	10	30.84	3.44E–02			
15	46.91	3.70E–02	15	48.43	3.58E–02			
20	66.01	3.78E–02	20	67.86	3.72E–02			
25	87.72	3.90E–02	25	90.26	3.78E–02			
30	112.74	4.09E–02	30	116.2	3.94E–02			

SAMPLE PERMEABILITY 3.8E–02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/17/94

Project Number: 8940-83 Tested By: DPL Checked By: [illegible]

SAMPLE NUMBER: DL-020

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	85
Tare Weight, (g)	343		35.77
Tare + Wet Soil, (g)	3390		104.78
Tare + Dry Soil, (g)	3167		99.49
Sample for WATER CONTENT, %	7.90%		8.30%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	3721	grams
Dry Soil + Sieve after	1495.61	grams
Percent greater than	NA	21.20%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742.33			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2767			
Distance from top of mold to top of stone, (in)	1.144	1.19	1.2	1.18
Height of Sample, (in)	4.942			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.24	3.23E-02	10	32.99	3.16E-02			
15	50.47	3.40E-02	15	51.68	3.31E-02			
20	70.82	3.49E-02	20	72.66	3.39E-02			
25	93.85	3.61E-02	25	96.7	3.46E-02			
30	120.45	3.78E-02	30	124.63	3.60E-02			

SAMPLE PERMEABILITY 3.5E-02 cm/sec

SAMPLE DRY DENSITY 103.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/17/94

Project Number: 8940–83 Tested By: DPL Checked By: BA

SAMPLE NUMBER: DL–021

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	5
Tare Weight, (g)	312		39.9
Tare + Wet Soil, (g)	3637		115.19
Tare + Dry Soil, (g)	3433		109.27
Sample for WATER CONTENT, %	6.54%		8.53%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	3987	grams
Dry Soil + Sieve after	1739	grams
Percent greater than	NA	27.97%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.31			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2772			
Distance from top of mold to top of stone, (in)	1.258	1.28	1.263	1.27
Height of Sample, (in)	4.853			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	38.05	2.69E–02	10	39.08	2.62E–02			
15	59.94	2.78E–02	15	61.55	2.71E–02			
20	84.72	2.81E–02	20	87.09	2.73E–02			
25	113.02	2.89E–02	25	116.27	2.80E–02			
30	145.5	3.04E–02	30	150.36	2.90E–02			

SAMPLE PERMEABILITY: 2.8E–02 cm/sec

SAMPLE DRY DENSITY: 105.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/17/94

Project Number: 8940–83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL–022

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	3
Tare Weight, (g)	215		38.46
Tare + Wet Soil, (g)	4510		117.71
Tare + Dry Soil, (g)	4247		111.26
Sample for WATER CONTENT, %	6.52%		8.86%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4801	grams
Dry Soil + Sieve after	1973.53	grams
Percent greater than	NA	29.87%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.74			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.173	1.152	1.125	1.15
Height of Sample, (in)	4.970			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.71	3.21E–02	10	33.09	3.17E–02			
15	50.93	3.42E–02	15	51.83	3.32E–02			
20	71.48	3.48E–02	20	72.97	3.38E–02			
25	94.66	3.61E–02	25	96.91	3.50E–02			
30	121.6	3.75E–02	30	124.53	3.66E–02			

SAMPLE PERMEABILITY 3.5E–02 cm/sec

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/17/94

Project Number: 8940-83 Tested By: DPL Checked By: [illegible]

SAMPLE NUMBER: DL-023

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	89
Tare Weight, (g)	216		38.74
Tare + Wet Soil, (g)	4525		129.73
Tare + Dry Soil, (g)	4217		122.95
Sample for WATER CONTENT, %	7.70%		8.05%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4771	grams
Dry Soil + Sieve after	2082.45	grams
Percent greater than	NA	32.80%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748.7			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.026	1.055	1.09	1.06
Height of Sample, (in)	5.063			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.56	3.88E-02	10	28.63	3.73E-02			
15	43.28	4.04E-02	15	44.66	3.96E-02			
20	60.63	4.19E-02	20	62.5	4.08E-02			
25	80.45	4.30E-02	25	82.7	4.22E-02			
30	102.9	4.59E-02	30	105.63	4.49E-02			

SAMPLE PERMEABILITY 4.2E-02 cm/sec

SAMPLE DRY DENSITY 100.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–024

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	88
Tare Weight, (g)	312		36.83
Tare + Wet Soil, (g)	5148		98.15
Tare + Dry Soil, (g)	4818		93.54
Sample for WATER CONTENT, %	7.32%		8.13%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	5372	grams
Dry Soil + Sieve after	2389.24	grams
Percent greater than	NA	33.80%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743.56			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2766			
Distance from top of mold to top of stone, (in)	1.056	1.056	1.146	1.09
Height of Sample, (in)	5.034			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.66	3.98E–02	10	26.8	3.96E–02			
15	41.45	4.27E–02	15	41.57	4.27E–02			
20	57.82	4.42E–02	20	58.2	4.35E–02			
25	76.35	4.58E–02	25	76.77	4.57E–02			
30	97.38	4.87E–02	30	98.16	4.79E–02			

SAMPLE PERMEABILITY 4.7×10^{-2} cm/sec

SAMPLE DRY DENSITY 101.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–025

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	89
Tare Weight, (g)	343		38.75
Tare + Wet Soil, (g)	3987		103.26
Tare + Dry Soil, (g)	3713		97.84
Sample for WATER CONTENT, %	8.13%		9.17%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4267	grams
Dry Soil + Sieve after	1488.94	grams
Percent greater than	NA	17.56%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748.37			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780.5			
Distance from top of mold to top of stone, (in)	1.13	1.145	1.15	1.14
Height of Sample, (in)	4.978			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.39	3.24E–02	10	32.5	3.23E–02			
15	50.64	3.42E–02	15	51.25	3.33E–02			
20	70.99	3.52E–02	20	72.25	3.41E–02			
25	94.24	3.61E–02	25	96.2	3.50E–02			
30	121.03	3.78E–02	30	124.23	3.61E–02			

SAMPLE PERMEABILITY 3.5x10^-2 cm/sec

SAMPLE DRY DENSITY 102.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–026

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	10	na	85
Tare Weight, (g)	216		35.79
Tare + Wet Soil, (g)	4064		128.31
Tare + Dry Soil, (g)	3800		120.8
Sample for WATER CONTENT, %	7.37%		8.83%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4354	grams
Dry Soil + Sieve after	1602.6	grams
Percent greater than	NA 75	23.23%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748.5			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2778			
Distance from top of mold to top of stone, (in)	1.158	1.157	1.099	1.14
Height of Sample, (in)	4.982			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.49	3.56E–02	10	30.78	3.42E–02			
15	46.02	3.78E–02	15	47.98	3.63E–02			
20	64.57	3.86E–02	20	67.27	3.71E–02			
25	85.52	4.00E–02	25	89.56	3.76E–02			
30	109.84	4.17E–02	30	114.26	4.10E–02			

SAMPLE PERMEABILITY 4.16 cm/sec

SAMPLE DRY DENSITY 102.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–027

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217–B	na	5
Tare Weight, (g)	216		39.89
Tare + Wet Soil, (g)	4874		108.79
Tare + Dry Soil, (g)	4504.13		102.98
Sample for WATER CONTENT, %	8.63%		9.21%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5058.13	grams
Dry Soil + Sieve after	1604.13	grams
Percent greater than	NA	19.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.22			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2777			
Distance from top of mold to top of stone, (in)	1.18	1.145	1.219	1.18
Height of Sample, (in)	4.939			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.81	3.18E–02	10	34.8	2.99E–02			
15	52.02	3.22E–02	15	54.61	3.13E–02			
20	73.47	3.31E–02	20	77.25	3.14E–02			
25	98.22	3.36E–02	25	103.35	3.19E–02			
30	126.95	3.50E–02	30	134.09	3.27E–02			

SAMPLE PERMEABILITY: 3.27×10^{-2} cm/sec

SAMPLE DRY DENSITY: 103.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–028

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	12	na	3
Tare Weight, (g)	214		38.47
Tare + Wet Soil, (g)	4219		111.48
Tare + Dry Soil, (g)	3948		105.45
Sample for WATER CONTENT, %	7.26%		9.00%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4502	grams
Dry Soil + Sieve after	1736.88	grams
Percent greater than	NA	25.95%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.85			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.06	1.059	1.055	1.06
Height of Sample, (in)	5.062			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.2	3.54E–02	10	30.63	3.49E–02			
15	47.22	3.73E–02	15	48.02	3.65E–02			
20	66.34	3.80E–02	20	67.59	3.72E–02			
25	88.27	3.89E–02	25	90.09	3.79E–02			
30	114.02	4.00E–02	30	116.31	3.93E–02			

SAMPLE PERMEABILITY 3.8E-2 cm/sec

SAMPLE DRY DENSITY 100.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: DL-029

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217-C	na	5
Tare Weight, (g)	216		39.89
Tare + Wet Soil, (g)	3904		99.23
Tare + Dry Soil, (g)	3591		94.4
Sample for WATER CONTENT, %	9.27%		8.86%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4145	grams
Dry Soil + Sieve after	1336.23	grams
Percent greater than	NA	16.78%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.37			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2774			
Distance from top of mold to top of stone, (in)	1.145	1.187	1.126	1.15
Height of Sample, (in)	4.967			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.31	3.70E-02	10	28.64	3.66E-02			
15	44.13	3.94E-02	15	44.89	3.83E-02			
20	61.63	4.08E-02	20	63.35	3.87E-02			
25	81.44	4.22E-02	25	84.27	4.00E-02			
30	104.16	4.45E-02	30	108.09	4.24E-02			

SAMPLE PERMEABILITY 4×10^{-2} cm/sec

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 6940–83 Tested By: BS Checked By: BG

SAMPLE NUMBER: DL–030

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217–B	na	3
Tare Weight, (g)	216		38.6
Tare + Wet Soil, (g)	4194		112.26
Tare + Dry Soil, (g)	3877		106.69
Sample for WATER CONTENT, %	8.66%		8.18%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4431	grams
Dry Soil + Sieve after	1784.44	grams
Percent greater than	NA	27.71%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.38			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.03	1.14	1.16	1.11
Height of Sample, (in)	5.010			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.93	3.93E–02	10	27.32	3.87E–02			
15	41.71	4.25E–02	15	42.84	4.05E–02			
20	58.38	4.32E–02	20	59.94	4.21E–02			
25	77.31	4.46E–02	25	79.36	4.34E–02			
30	98.77	4.75E–02	30	101.83	4.53E–02			

SAMPLE PERMEABILITY 4.5X10^-2 cm/sec

SAMPLE DRY DENSITY 101.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940-83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: DL-031

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	85
Tare Weight, (g)	343		35.79
Tare + Wet Soil, (g)	4125		131.96
Tare + Dry Soil, (g)	3855		123.81
Sample for WATER CONTENT, %	7.69%		9.26%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4409	grams
Dry Soil + Sieve after	1560.29	grams
Percent greater than	NA	18.89%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.7			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.06	1.051	1.091	1.07
Height of Sample, (in)	5.053			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.85	3.70E-02	10	30.12	3.54E-02			
15	45.2	3.87E-02	15	47	3.75E-02			
20	63.38	3.99E-02	20	66.07	3.81E-02			
25	84.1	4.11E-02	25	88.01	3.88E-02			
30	108.02	4.30E-02	30	113.45	4.04E-02			

SAMPLE PERMEABILITY 4.7E-2 cm/sec

SAMPLE DRY DENSITY 100.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: DL–032

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214B	na	89
Tare Weight, (g)	214		38.76
Tare + Wet Soil, (g)	4477		160.9
Tare + Dry Soil, (g)	4180		150.56
Sample for WATER CONTENT, %	7.49%		9.25%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4734	grams
Dry Soil + Sieve after	1405.5	grams
Percent greater than	NA	16.07%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.25			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.194	1.134	1.148	1.16
Height of Sample, (in)	4.961			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	31.15	3.36E–02	10	32.03	3.27E–02			
15	49.06	3.47E–02	15	50.68	3.33E–02			
20	69.11	3.56E–02	20	71.38	3.44E–02			
25	91.98	3.65E–02	25	95.3	3.49E–02			
30	120.11	3.59E–02	30	123.41	3.59E–02			

SAMPLE PERMEABILITY 3.5×10^{-2} cm/sec

SAMPLE DRY DENSITY 102.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BG

SAMPLE NUMBER: DL–033

FIELD DATA

Density: 102 (pcf) Water Content: %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	88
Tare Weight, (g)	312		36.85
Tare + Wet Soil, (g)	4382		144.03
Tare + Dry Soil, (g)	4080		134.77
Sample for WATER CONTENT, %	8.01%		9.46%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4634	grams
Dry Soil + Sieve after	1685.66	grams
Percent greater than	NA	21.75%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.96			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2783			
Distance from top of mold to top of stone, (in)	1.156	1.09	1.11	1.12
Height of Sample, (in)	5.001			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.4	3.59E–02	10	31.02	3.40E–02			
15	46.09	3.76E–02	15	48.44	3.60E–02			
20	64.81	3.84E–02	20	68.18	3.64E–02			
25	86.04	3.97E–02	25	90.54	3.77E–02			
30	110.82	4.10E–02	30	116.67	3.89E–02			

SAMPLE PERMEABILITY 3.7E-2 cm/sec
SAMPLE DRY DENSITY 102.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–034

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	91
Tare Weight, (g)	312		37.24
Tare + Wet Soil, (g)	4773		125.21
Tare + Dry Soil, (g)	4539		118.34
Sample for WATER CONTENT, %	5.54%		8.47%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	5093	grams
Dry Soil + Sieve after	1280.04	grams
Percent greater than	NA	9.80%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.19			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.3	1.3	1.301	1.30
Height of Sample, (in)	4.820			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	31.73	3.21E–02	10	33.08	3.07E–02			
15	49.75	3.35E–02	15	51.94	3.20E–02			
20	69.8	3.45E–02	20	73.14	3.27E–02			
25	92.83	3.52E–02	25	97.56	3.32E–02			
30	119.48	3.68E–02	30	125.56	3.50E–02			

SAMPLE PERMEABILITY 3.4 10^{-2} cm/sec

SAMPLE DRY DENSITY 105.8 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-~~2~~22-94

Project Number: 8940-83 Tested By: BS Checked By: DBD/PG

SAMPLE NUMBER: DL-035

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214B	na	89
Tare Weight, (g)	214		38.79
Tare + Wet Soil, (g)	3565		151.6
Tare + Dry Soil, (g)	3387		142.45
Sample for WATER CONTENT, %	5.61%		8.83%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	3941	grams
Dry Soil + Sieve after	1226.63	grams
Percent greater than	NA	14.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2773			
Distance from top of mold to top of stone, (in)	1.079	1.141	1.122	1.11
Height of Sample, (in)	5.006			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.45	3.47E-02	10	31.34	3.37E-02			
15	47.71	3.64E-02	15	49.05	3.54E-02			
20	66.94	3.74E-02	20	69.36	3.54E-02			
25	88.6	3.89E-02	25	91.87	3.75E-02			
30	114	4.01E-02	30	118.17	3.87E-02			

SAMPLE PERMEABILITY 3.5E-02 cm/sec

SAMPLE DRY DENSITY 101.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–22–94

Project Number: 8940–83 Tested By: BS Checked By: DBD/BJ

SAMPLE NUMBER: DL–036

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	5
Tare Weight, (g)	343		40.03
Tare + Wet Soil, (g)	3903		131
Tare + Dry Soil, (g)	3723		124.6
Sample for WATER CONTENT, %	~~1264.27%~~		7.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4277	grams
Dry Soil + Sieve after	1322.21	grams
Percent greater than	NA	12.58%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1754			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2772			
Distance from top of mold to top of stone, (in)	1.162	1.143	1.191	1.17
Height of Sample, (in)	4.955			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.38	3.56E–02	10	29.91	3.50E–02			
15	45.71	3.80E–02	15	46.69	3.70E–02			
20	64.13	3.87E–02	20	65.34	3.82E–02			
25	84.61	4.07E–02	25	86.37	3.97E–02			
30	108.52	4.21E–02	30	110.92	4.10E–02			

SAMPLE PERMEABILITY: ~~3.7E–02~~ 4x10^-2 cm/sec

SAMPLE DRY DENSITY: 103.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–22–94

Project Number: 8940–83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: DL–037

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	100
Tare Weight, (g)	216		38.8
Tare + Wet Soil, (g)	3722		116.97
Tare + Dry Soil, (g)	3543		110.93
Sample for WATER CONTENT, %	5.38%		8.37%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4097	grams
Dry Soil + Sieve after	1162.07	grams
Percent greater than	NA	11.78%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2778			
Distance from top of mold to top of stone, (in)	1.193	1.187	1.177	1.19
Height of Sample, (in)	4.934			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.75	3.50E–02	10	30.45	3.42E–02			
15	46.31	3.74E–02	15	47.34	3.66E–02			
20	64.83	3.83E–02	20	66.26	3.75E–02			
25	86.08	3.91E–02	25	87.73	3.87E–02			
30	110.11	4.18E–02	30	112.4	4.07E–02			

SAMPLE PERMEABILITY: 3.7E–02 cm/sec

SAMPLE DRY DENSITY: 103.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/18/94

Project Number: 8940–83 Tested By: BS Checked By: BS

SAMPLE NUMBER: DL–038

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	88
Tare Weight, (g)	216		36.95
Tare + Wet Soil, (g)	4189		94.37
Tare + Dry Soil, (g)	3913		89.89
Sample for WATER CONTENT, %	7.47%		8.46%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4467	grams
Dry Soil + Sieve after	1896.58	grams
Percent greater than	NA	30.47%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742.79			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.186	1.155	1.137	1.16
Height of Sample, (in)	4.961			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.76	3.64E–02	10	28.6	3.66E–02			
15	N/A	–2.16E–02	15	44.91	3.81E–02			
20	62.77	1.14E–02	20	63.12	3.92E–02			
25	82.9	4.15E–02	25	83.39	4.12E–02			
30	106.19	4.33E–02	30	106.9	4.29E–02			

SAMPLE PERMEABILITY 4x10^-2 cm/sec

SAMPLE DRY DENSITY 102.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/25/94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-039

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217-B	na	3
Tare Weight, (g)	216		38.49
Tare + Wet Soil, (g)	3906		241.78
Tare + Dry Soil, (g)	3712		229.81
Sample for WATER CONTENT, %	5.55%		6.26%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4266	grams
Dry Soil + Sieve after	1168	grams
Percent greater than	NA	11.38%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2754			
Distance from top of mold to top of stone, (in)	1.191	1.201	1.212	1.20
Height of Sample, (in)	4.919			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.02	3.84E-02	10	27.18	3.82E-02			
15	41.95	4.13E-02	15	42.2	4.10E-02			
20	58.27	4.33E-02	20	59.09	4.19E-02			
25	76.95	4.43E-02	25	78.01	4.38E-02			
30	98.33	4.68E-02	30	99.8	4.59E-02			

SAMPLE PERMEABILITY 4.5 x10^-2 cm/sec

SAMPLE DRY DENSITY 103.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/~~18~~ 25/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–040

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	89
Tare Weight, (g)	343		38.74
Tare + Wet Soil, (g)	3638		247.24
Tare + Dry Soil, (g)	3459		233.31
Sample for WATER CONTENT, %	5.74%		7.16%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4013	grams
Dry Soil + Sieve after	1272	grams
Percent greater than	NA	12.03%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2762			
Distance from top of mold to top of stone, (in)	1.063	1.076	1.074	1.07
Height of Sample, (in)	5.049			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.47	4.02E–02	10	26.91	3.96E–02			
15	40.94	4.37E–02	15	41.66	4.29E–02			
20	57.13	4.48E–02	20	58.02	4.44E–02			
25	75.24	4.70E–02	25	76.89	4.51E–02			
30	96.17	4.91E–02	30	98.37	4.78E–02			

SAMPLE PERMEABILITY 4.7×10^{-2} cm/sec

SAMPLE DRY DENSITY 101.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/25/94

Project Number: 8940-83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: DL-041

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214-B	na	39
Tare Weight, (g)	213		33.51
Tare + Wet Soil, (g)	4505		301.85
Tare + Dry Soil, (g)	4287		278.65
Sample for WATER CONTENT, %	5.35%		9.46%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4841	grams
Dry Soil + Sieve after	1435	grams
Percent greater than	NA	16.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2787			
Distance from top of mold to top of stone, (in)	1.085	1.071	1.063	1.07
Height of Sample, (in)	5.047			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.31	4.05E-02	10	26.72	3.99E-02			
15	40.96	4.32E-02	15	41.56	4.26E-02			
20	57.03	4.51E-02	20	57.88	4.44E-02			
25	75.17	4.69E-02	25	76.41	4.59E-02			
30	95.94	4.94E-02	30	97.58	4.85E-02			

SAMPLE PERMEABILITY 4.7E-2 cm/sec

SAMPLE DRY DENSITY 101.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/~~18~~ 25/94

Project Number: 8940–83 Tested By: BS Checked By: PT

SAMPLE NUMBER: DL–042

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	42	na	5
Tare Weight, (g)	216		39.91
Tare + Wet Soil, (g)	4163		269.83
Tare + Dry Soil, (g)	3971		253.06
Sample for WATER CONTENT, %	5.11%		7.87%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4525	grams
Dry Soil + Sieve after	1471	grams
Percent greater than	NA	18.67%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.13	1.191	1.142	1.15
Height of Sample, (in)	4.966			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.66	4.08E–02	10	25.88	4.05E–02			
15	39.71	4.43E–02	15	39.93	4.43E–02			
20	55.14	4.63E–02	20	55.51	4.58E–02			
25	72.56	4.80E–02	25	73.04	4.77E–02			
30	92.24	5.13E–02	30	93.03	5.05E–02			

SAMPLE PERMEABILITY: 4.8×10^{-2} cm/sec

SAMPLE DRY DENSITY: 102.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/~~18~~ 25/94

Project Number: 8940–83 Tested By: BS Checked By: BT

SAMPLE NUMBER: DL–043

FIELD DATA

Density: 102 (pcf) Water Content: %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101	na	100
Tare Weight, (g)	213		38.76
Tare + Wet Soil, (g)	3714		243.17
Tare + Dry Soil, (g)	3536		229.5
Sample for WATER CONTENT, %	5.36%		7.17%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4090	grams
Dry Soil + Sieve after	1162	grams
Percent greater than	NA	11.89%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2764			
Distance from top of mold to top of stone, (in)	1.177	1.206	1.17	1.18
Height of Sample, (in)	4.936			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.83	3.74E–02	10	27.26	3.82E–02			
15	43.04	4.07E–02	15	42.14	4.16E–02			
20	60.09	4.16E–02	20	58.84	4.25E–02			
25	79.38	4.31E–02	25	77.81	4.38E–02			
30	101.66	4.51E–02	30	99.46	4.64E–02			

SAMPLE PERMEABILITY 4.5710^-2 cm/sec
SAMPLE DRY DENSITY 103.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/25/94

Project Number: 8940-83 Tested By: BS Checked By: PZ

SAMPLE NUMBER: DL-044

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	34
Tare Weight, (g)	215		55.83
Tare + Wet Soil, (g)	4185		282.59
Tare + Dry Soil, (g)	3998		264.75
Sample for WATER CONTENT, %	4.94%		8.54%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4552	grams
Dry Soil + Sieve after	1420	grams
Percent greater than	NA	17.21%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	1.121	1.103	1.059	1.09
Height of Sample, (in)	5.026			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.48	4.00E-02	10	26.85	3.95E-02			
15	40.97	4.35E-02	15	41.68	4.25E-02			
20	57.06	4.49E-02	20	58.41	4.32E-02			
25	75.16	4.68E-02	25	77.32	4.48E-02			
30	96.13	4.87E-02	30	99.41	4.63E-02			

SAMPLE PERMEABILITY 4.5×10^{-2} cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/26/94

Project Number: 8940–83 Tested By: BS Checked By: RV

SAMPLE NUMBER: DL–045

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	24
Tare Weight, (g)	314		42.26
Tare + Wet Soil, (g)	4120		279.78
Tare + Dry Soil, (g)	3923		261.73
Sample for WATER CONTENT, %	5.46%		8.22%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4477	grams
Dry Soil + Sieve after	1403	grams
Percent greater than	NA	14.82%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1741			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2765			
Distance from top of mold to top of stone, (in)	1.176	1.143	1.184	1.17
Height of Sample, (in)	4.952			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.71	3.91E–02	10	26.92	3.88E–02			
15	41.46	4.21E–02	15	41.72	4.19E–02			
20	57.77	4.36E–02	20	58.12	4.34E–02			
25	76.09	4.55E–02	25	76.82	4.46E–02			
30	97.09	4.80E–02	30	97.97	4.76E–02			

SAMPLE PERMEABILITY 4.57E–2 cm/sec

SAMPLE DRY DENSITY 103.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/26/94

Project Number: 8940–83 Tested By: BS Checked By: BF

SAMPLE NUMBER: DL–046

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	85
Tare Weight, (g)	313		35.82
Tare + Wet Soil, (g)	4179		305.91
Tare + Dry Soil, (g)	3969		286.51
Sample for WATER CONTENT, %	5.74%		7.74%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4523	grams
Dry Soil + Sieve after	1272	grams
Percent greater than	NA	11.08%

TEST DATA

Weight of Cell + Stone + Filter, (g)	N/A	1750		
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2765			
Distance from top of mold to top of stone, (in)	1.187	1.166	1.195	1.18
Height of Sample, (in)	4.937			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.48	3.79E–02	10	27.52	3.79E–02			
15	42.63	4.09E–02	15	42.81	4.05E–02			
20	59.59	4.18E–02	20	59.87	4.16E–02			
25	78.41	4.42E–02	25	79.06	4.33E–02			
30	100.1	4.63E–02	30	101.16	4.54E–02			

SAMPLE PERMEABILITY 4.3 BS cm/sec

SAMPLE DRY DENSITY 280.3 pcf ~103 BS

NOTES: Weight of cell + stone + filter was not listed on original sheet.

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/26/94

Project Number: 8940–83 Tested By: BS Checked By: BV

SAMPLE NUMBER: DL–047

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	91
Tare Weight, (g)	315		37.28
Tare + Wet Soil, (g)	3912		309.03
Tare + Dry Soil, (g)	3723		289.66
Sample for WATER CONTENT, %	5.55%		7.67%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4277	grams
Dry Soil + Sieve after	1424	grams
Percent greater than	NA	16.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2766			
Distance from top of mold to top of stone, (in)	1.138	1.159	1.129	1.14
Height of Sample, (in)	4.978			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.57	3.95E–02	10	26.34	3.99E–02			
15	41.07	4.30E–02	15	40.84	4.30E–02			
20	57.14	4.45E–02	20	56.73	4.50E–02			
25	75.22	4.64E–02	25	74.99	4.59E–02			
30	95.82	4.91E–02	30	95.73	4.88E–02			

SAMPLE PERMEABILITY 4.5x10^-2 cm/sec

SAMPLE DRY DENSITY 102.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/26/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–048

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	88
Tare Weight, (g)	216		36.81
Tare + Wet Soil, (g)	3957		270.78
Tare + Dry Soil, (g)	3776		254.79
Sample for WATER CONTENT, %	5.08%		7.34%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4330	grams
Dry Soil + Sieve after	1284	grams
Percent greater than	NA	14.44%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.122	1.173	1.105	1.13
Height of Sample, (in)	4.987			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.69	3.67E–02	10	29.19	3.60E–02			
15	44.52	3.95E–02	15	45.38	3.86E–02			
20	62.36	4.02E–02	20	63.63	3.93E–02			
25	82.55	4.16E–02	25	84.35	4.05E–02			
30	105.99	4.33E–02	30	108.52	4.20E–02			

SAMPLE PERMEABILITY 4.0 10^-2 cm/sec

SAMPLE DRY DENSITY 102.3 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10/26/94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–049

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214	na	81
Tare Weight, (g)	312		36.63
Tare + Wet Soil, (g)	3863		279.06
Tare + Dry Soil, (g)	3682		261.26
Sample for WATER CONTENT, %	5.37%		7.92%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4236	grams
Dry Soil + Sieve after	1330	grams
Percent greater than	NA	13.77%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.115	1.129	1.114	1.12
Height of Sample, (in)	5.001			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.62	4.12E–02	10	25.4	4.15E–02			
15	39.17	4.63E–02	15	39.11	4.57E–02			
20	54.36	4.73E–02	20	54.39	4.70E–02			
25	71.51	4.91E–02	25	71.83	4.83E–02			
30	90.95	5.23E–02	30	91.56	5.15E–02			

SAMPLE PERMEABILITY: 5x10^-2 cm/sec

SAMPLE DRY DENSITY: 102.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–27–94

Project Number: 8940–83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: GL–050

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214B	na	39
Tare Weight, (g)	213		33.4
Tare + Wet Soil, (g)	4268		267.06
Tare + Dry Soil, (g)	4095		249.95
Sample for WATER CONTENT, %	4.46%		7.90%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4649	grams
Dry Soil + Sieve after	1435	grams
Percent greater than	NA	17.21%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.046	1.091	1.127	1.09
Height of Sample, (in)	5.032			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	23.77	4.47E–02	10	24.6	4.32E–02			
15	36.89	4.81E–02	15	38.05	4.69E–02			
20	51.33	5.01E–02	20	52.7	4.94E–02			
25	67.7	5.18E–02	25	69.18	5.14E–02			
30	86.19	5.53E–02	30	87.88	5.47E–02			

SAMPLE PERMEABILITY ~~4.8~~ 5.0E–02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-27-94

Project Number: 8940-83 Tested By: BS Checked By: DJ

SAMPLE NUMBER: GL-051

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	218C	na	24
Tare Weight, (g)	216		42.36
Tare + Wet Soil, (g)	4207		309.19
Tare + Dry Soil, (g)	4096		290.92
Sample for WATER CONTENT, %	2.86%		7.35%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4650	grams
Dry Soil + Sieve after	1385	grams
Percent greater than	NA	15.85%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2764			
Distance from top of mold to top of stone, (in)	1.082	1.11	1.084	1.09
Height of Sample, (in)	5.028			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.31	4.19E-02	10	25.34	4.19E-02			
15	39.04	4.59E-02	15	39.12	4.57E-02			
20	54.15	4.78E-02	20	54.25	4.78E-02			
25	71.23	4.96E-02	25	71.24	4.98E-02			
30	90.38	5.34E-02	30	90.56	5.29E-02			

SAMPLE PERMEABILITY 4.8E-02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–27–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–052

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	34
Tare Weight, (g)	216		55.8
Tare + Wet Soil, (g)	4131		293.14
Tare + Dry Soil, (g)	3982		276.56
Sample for WATER CONTENT, %	3.96%		7.51%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4536	grams
Dry Soil + Sieve after	1334	grams
Percent greater than	NA	14.98%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2762			
Distance from top of mold to top of stone, (in)	1.109	1.085	1.142	1.11
Height of Sample, (in)	5.008			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.54	3.84E–02	10	27.89	3.79E–02			
15	42.69	4.14E–02	15	43.34	4.06E–02			
20	59.73	4.22E–02	20	60.55	4.18E–02			
25	78.96	4.39E–02	25	80.26	4.28E–02			
30	101.02	4.62E–02	30	102.89	4.50E–02			

SAMPLE PERMEABILITY: 4.1E–02 cm/sec

SAMPLE DRY DENSITY: 102.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-27-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-053

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	85
Tare Weight, (g)	343		35.9
Tare + Wet Soil, (g)	4227		319.85
Tare + Dry Soil, (g)	4117		303.46
Sample for WATER CONTENT, %	2.91%		6.13%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4671	grams
Dry Soil + Sieve after	1619	grams
Percent greater than	NA	19.13%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2754			
Distance from top of mold to top of stone, (in)	1.063	1.051	1.083	1.07
Height of Sample, (in)	5.054			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.62	4.33E-02	10	25.24	4.23E-02			
15	37.91	4.77E-02	15	38.72	4.70E-02			
20	52.63	4.93E-02	20	53.68	4.86E-02			
25	69.09	5.17E-02	25	70.51	5.06E-02			
30	87.66	5.54E-02	30	89.49	5.42E-02			

SAMPLE PERMEABILITY 4.8E-02 cm/sec

SAMPLE DRY DENSITY 100.9 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–28–94

Project Number: 8940–83 Tested By: BS Checked By: MK

SAMPLE NUMBER: DL–054

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	5
Tare Weight, (g)	313		39.96
Tare + Wet Soil, (g)	4358		273.25
Tare + Dry Soil, (g)	4202		251.53
Sample for WATER CONTENT, %	4.01%		10.27%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4756	grams
Dry Soil + Sieve after	1563	grams
Percent greater than	NA	17.90%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2791			
Distance from top of mold to top of stone, (in)	1.192	1.123	1.186	1.17
Height of Sample, (in)	4.953			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.11	4.16E–02	10	25.49	4.10E–02			
15	38.68	4.58E–02	15	39.36	4.48E–02			
20	53.81	4.70E–02	20	54.69	4.64E–02			
25	70.58	4.97E–02	25	71.82	4.87E–02			
30	89.81	5.24E–02	30	91.35	5.16E–02			

SAMPLE PERMEABILITY: 4.6E–02 cm/sec

SAMPLE DRY DENSITY: 102.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-28-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-055

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	88
Tare Weight, (g)	314		36.99
Tare + Wet Soil, (g)	4316		266.87
Tare + Dry Soil, (g)	4156		250.33
Sample for WATER CONTENT, %	4.16%		7.75%

SAMPLE PREPARATION

Sieve size used,	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4170	grams
Dry Soil + Sieve after	1553	grams
Percent greater than	NA	20.75%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2765			
Distance from top of mold to top of stone, (in)	1.083	1.115	1.169	1.12
Height of Sample, (in)	4.998			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.31	4.01E-02	10	27.01	3.90E-02			
15	40.93	4.29E-02	15	42.06	4.16E-02			
20	57.02	4.46E-02	20	58.74	4.31E-02			
25	75.51	4.55E-02	25	77.59	4.46E-02			
30	96.73	4.79E-02	30	99.55	4.63E-02			

SAMPLE PERMEABILITY 4.2E-02 cm/sec

SAMPLE DRY DENSITY 102.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–28–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–056

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	88
Tare Weight, (g)	215		37.02
Tare + Wet Soil, (g)	4107		319.94
Tare + Dry Soil, (g)	3944		298.73
Sample for WATER CONTENT, %	4.37%		8.10%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4498	grams
Dry Soil + Sieve after	1420	grams
Percent greater than	NA	17.46%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2766			
Distance from top of mold to top of stone, (in)	1.089	1.105	1.082	1.09
Height of Sample, (in)	5.028			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.97	4.09E–02	10	26.46	4.01E–02			
15	40.24	4.42E–02	15	40.99	4.34E–02			
20	56.16	4.54E–02	20	57.31	4.43E–02			
25	74.17	4.70E–02	25	75.57	4.64E–02			
30	94.75	4.97E–02	30	96.91	4.79E–02			

SAMPLE PERMEABILITY 4.3E–02 cm/sec

SAMPLE DRY DENSITY 101.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-28-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-057

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101	na	5
Tare Weight, (g)	213		40.18
Tare + Wet Soil, (g)	4273		325.77
Tare + Dry Soil, (g)	4094		306.72
Sample for WATER CONTENT, %	4.61%		7.15%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4648	grams
Dry Soil + Sieve after	1411	grams
Percent greater than	NA	16.59%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2760			
Distance from top of mold to top of stone, (in)	1.148	1.163	1.166	1.16
Height of Sample, (in)	4.961			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.7	3.92E-02	10	27.24	3.84E-02			
15	41.66	4.16E-02	15	42.19	4.16E-02			
20	57.92	4.38E-02	20	58.72	4.31E-02			
25	76.41	4.52E-02	25	77.58	4.43E-02			
30	97.59	4.76E-02	30	99.24	4.66E-02			

SAMPLE PERMEABILITY 4.1E-02 cm/sec

SAMPLE DRY DENSITY 102.8 pcf

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10–28–94

Project Number: 8940–83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: DL–058

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	91
Tare Weight, (g)	312		37.26
Tare + Wet Soil, (g)	4349		283.39
Tare + Dry Soil, (g)	4200		265.95
Sample for WATER CONTENT, %	3.83%		7.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4754	grams
Dry Soil + Sieve after	1522	grams
Percent greater than	NA	16.87%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2764			
Distance from top of mold to top of stone, (in)	1.147	1.179	1.107	1.14
Height of Sample, (in)	4.976			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.84	3.91E–02	10	27.19	3.86E–02			
15	41.63	4.22E–02	15	42.08	4.19E–02			
20	57.91	4.39E–02	20	58.81	4.27E–02			
25	76.56	4.49E–02	25	77.64	4.45E–02			
30	97.71	4.78E–02	30	99.19	4.70E–02			

SAMPLE PERMEABILITY: 4.2E–02 cm/sec

SAMPLE DRY DENSITY: 102.5 pcf

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-28-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-059

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	34
Tare Weight, (g)	213		55.99
Tare + Wet Soil, (g)	4242		333.89
Tare + Dry Soil, (g)	4084		313.74
Sample for WATER CONTENT, %	4.08%		7.82%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4638	grams
Dry Soil + Sieve after	1420	grams
Percent greater than	NA	16.87%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2765			
Distance from top of mold to top of stone, (in)	1.073	1.061	1.092	1.08
Height of Sample, (in)	5.045			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.82	4.29E-02	10	24.98	4.26E-02			
15	38.29	4.69E-02	15	38.64	4.63E-02			
20	53.14	4.88E-02	20	53.81	4.78E-02			
25	69.85	5.08E-02	25	70.65	5.04E-02			
30	89	5.36E-02	30	90.02	5.30E-02			

SAMPLE PERMEABILITY: 4.8E-02 cm/sec

SAMPLE DRY DENSITY: 101.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 10-28-94

Project Number: 8940-83 Tested By: BS Checked By: BZ

SAMPLE NUMBER: DL-060

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	81
Tare Weight, (g)	315		36.63
Tare + Wet Soil, (g)	4290		323.04
Tare + Dry Soil, (g)	4181		302.92
Sample for WATER CONTENT, %	2.82%		7.56%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4735	grams
Dry Soil + Sieve after	1357	grams
Percent greater than	NA	12.62%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.091	1.076	1.1	1.09
Height of Sample, (in)	5.031			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.55	3.85E-02	10	28.24	3.76E-02			
15	42.74	4.15E-02	15	43.89	4.03E-02			
20	59.7	4.26E-02	20	61.21	4.17E-02			
25	79	4.39E-02	25	81.11	4.26E-02			
30	101.37	4.57E-02	30	104.14	4.44E-02			

SAMPLE PERMEABILITY 4.0E-02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–03–94

Project Number: 8940–83 Tested By: BS Checked By: [illegible]

SAMPLE NUMBER: DL–061

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	68
Tare Weight, (g)	315		37.29
Tare + Wet Soil, (g)	4152		332.61
Tare + Dry Soil, (g)	3952		311.68
Sample for WATER CONTENT, %	5.50%		7.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4506	grams
Dry Soil + Sieve after	1288	grams
Percent greater than	NA	11.52%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1740			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2758			
Distance from top of mold to top of stone, (in)	1.126	1.117	1.142	1.13
Height of Sample, (in)	4.992			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.38	4.32E–02	10	24.57	4.29E–02			
15	37.69	4.70E–02	15	37.99	4.66E–02			
20	52.41	4.87E–02	20	52.9	4.81E–02			
25	68.95	5.08E–02	25	69.74	4.99E–02			
30	87.86	5.37E–02	30	88.94	5.29E–02			

SAMPLE PERMEABILITY 4.8E–02 cm/sec

SAMPLE DRY DENSITY 102.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–03–94

Project Number: 8940–83 Tested By: BS Checked By: DJ

SAMPLE NUMBER: DL–062

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	85
Tare Weight, (g)	214		36.1
Tare + Wet Soil, (g)	4205		284.5
Tare + Dry Soil, (g)	3995		267.34
Sample for WATER CONTENT, %	5.55%		7.42%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4549	grams
Dry Soil + Sieve after	1451	grams
Percent greater than	NA	18.06%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2759			
Distance from top of mold to top of stone, (in)	1.067	1.059	1.106	1.08
Height of Sample, (in)	5.043			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	23.81	4.47E–02	10	24.06	4.42E–02			
15	36.62	4.93E–02	15	37.08	4.85E–02			
20	50.94	5.06E–02	20	51.37	5.07E–02			
25	66.57	5.43E–02	25	67.45	5.28E–02			
30	84.78	5.63E–02	30	85.73	5.61E–02			

SAMPLE PERMEABILITY 5.0E–02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: DJ

SAMPLE NUMBER: DL–063

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	91
Tare Weight, (g)	312		37.32
Tare + Wet Soil, (g)	3886		307.8
Tare + Dry Soil, (g)	3691		289.49
Sample for WATER CONTENT, %	5.77%		7.26%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	4245	grams
Dry Soil + Sieve after	1331	grams
Percent greater than	NA	13.76%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1741			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2756			
Distance from top of mold to top of stone, (in)	1.073	1.082	1.067	1.07
Height of Sample, (in)	5.046			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	23.74	4.48E–02	10	23.81	4.47E–02			
15	36.67	4.89E–02	15	36.7	4.91E–02			
20	50.87	5.11E–02	20	50.89	5.11E–02			
25	66.69	5.37E–02	25	66.94	5.29E–02			
30	84.66	5.71E–02	30	85.1	5.65E–02			

SAMPLE PERMEABILITY 5.0E–02 cm/sec

SAMPLE DRY DENSITY 101.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: DJ

SAMPLE NUMBER: DL–064

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101	na	3
Tare Weight, (g)	213		38.51
Tare + Wet Soil, (g)	4405		289.59
Tare + Dry Soil, (g)	4182		271.96
Sample for WATER CONTENT, %	5.62%		7.55%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4736	grams
Dry Soil + Sieve after	1656	grams
Percent greater than	NA	22.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.063	1.112	1.094	1.09
Height of Sample, (in)	5.030			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.15	4.40E–02	10	24.63	4.31E–02			
15	37.27	4.81E–02	15	38.01	4.71E–02			
20	51.78	4.98E–02	20	52.92	4.85E–02			
25	68.27	5.14E–02	25	69.52	5.10E–02			
30	86.81	5.52E–02	30	88.51	5.39E–02			

SAMPLE PERMEABILITY 4.8E–02 cm/sec

SAMPLE DRY DENSITY 101.4 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: PZ

SAMPLE NUMBER: DL–065

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	89
Tare Weight, (g)	215		38.79
Tare + Wet Soil, (g)	4254		290.21
Tare + Dry Soil, (g)	4040		273.47
Sample for WATER CONTENT, %	5.59%		7.13%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4594	grams
Dry Soil + Sieve after	1310	grams
Percent greater than	NA	14.14%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2760			
Distance from top of mold to top of stone, (in)	1.102	1.108	1.061	1.09
Height of Sample, (in)	5.030			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	23.97	4.43E–02	10	24.34	4.36E–02			
15	36.99	4.84E–02	15	37.63	4.74E–02			
20	51.36	5.03E–02	20	52.31	4.92E–02			
25	67.33	5.30E–02	25	68.86	5.12E–02			
30	85.79	5.54E–02	30	87.7	5.43E–02			

SAMPLE PERMEABILITY 4.8E–02 cm/sec

SAMPLE DRY DENSITY 101.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: PG

SAMPLE NUMBER: DL–066

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	5
Tare Weight, (g)	215.39		40.08
Tare + Wet Soil, (g)	7147		328.93
Tare + Dry Soil, (g)	6791		312.67
Sample for WATER CONTENT, %	5.41%		5.97%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769.39	grams
Dry Soil + Sieve before	7345	grams
Dry Soil + Sieve after	2098	grams
Percent greater than	NA	20.21%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2749			
Distance from top of mold to top of stone, (in)	1.058	1.05	1.041	1.05
Height of Sample, (in)	5.070			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.8	4.15E–02	10	26.71	4.01E–02			
15	39.98	4.48E–02	15	41.68	4.25E–02			
20	55.78	4.61E–02	20	58.21	4.41E–02			
25	74.05	4.67E–02	25	77.31	4.47E–02			
30	94.78	4.97E–02	30	99.5	4.65E–02			

SAMPLE PERMEABILITY: 4.4E–02 cm/sec

SAMPLE DRY DENSITY: 100.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11-04-94

Project Number: 8940-83 Tested By: BS Checked By: DJ

SAMPLE NUMBER: DL-067

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	34
Tare Weight, (g)	315.23		56
Tare + Wet Soil, (g)	9205		339.74
Tare + Dry Soil, (g)	8690		324.77
Sample for WATER CONTENT, %	6.15%		5.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869.23	grams
Dry Soil + Sieve before	9244	grams
Dry Soil + Sieve after	2803	grams
Percent greater than	NA	23.09%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2747			
Distance from top of mold to top of stone, (in)	1.117	1.157	1.115	1.13
Height of Sample, (in)	4.990			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.38	3.99E-02	10	27.97	3.76E-02			
15	41.13	4.24E-02	15	43.5	4.03E-02			
20	57.63	4.35E-02	20	61.07	4.08E-02			
25	76.49	4.46E-02	25	81.27	4.16E-02			
30	98.3	4.65E-02	30	104.6	4.35E-02			

SAMPLE PERMEABILITY 4.1E-02 cm/sec

SAMPLE DRY DENSITY 102.3 pcf

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: DZ

SAMPLE NUMBER: DL–068

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	88
Tare Weight, (g)	308.12		37.19
Tare + Wet Soil, (g)	7365		326.53
Tare + Dry Soil, (g)	7004		308.75
Sample for WATER CONTENT, %	5.39%		6.55%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862.12	grams
Dry Soil + Sieve before	7558	grams
Dry Soil + Sieve after	2079	grams
Percent greater than	NA	18.17%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2754			
Distance from top of mold to top of stone, (in)	1.176	1.184	1.161	1.17
Height of Sample, (in)	4.946			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.67	3.40E–02	10	30.45	3.43E–02			
15	47.18	3.76E–02	15	47.69	3.60E–02			
20	65.86	3.81E–02	20	66.86	3.71E–02			
25	87.05	3.93E–02	25	89.01	3.76E–02			
30	112.09	4.02E–02	30	114.64	3.92E–02			

SAMPLE PERMEABILITY: 3.7E–02 cm/sec

SAMPLE DRY DENSITY: 103.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11-04-94

Project Number: 8940-83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: DL-069

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	100
Tare Weight, (g)	213.15		38.84
Tare + Wet Soil, (g)	8272		358.22
Tare + Dry Soil, (g)	7776		341.4
Sample for WATER CONTENT, %	6.56%		5.56%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767.15	grams
Dry Soil + Sieve before	8330	grams
Dry Soil + Sieve after	2650	grams
Percent greater than	NA	24.90%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2748			
Distance from top of mold to top of stone, (in)	1.062	1.045	1.094	1.07
Height of Sample, (in)	5.053			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.88	4.29E-02	10	25.42	4.19E-02			
15	38.46	4.66E-02	15	39.42	4.52E-02			
20	53.63	4.79E-02	20	54.88	4.70E-02			
25	70.49	5.05E-02	25	72.35	4.87E-02			
30	89.85	5.31E-02	30	92.3	5.15E-02			

SAMPLE PERMEABILITY 4.7E-02 cm/sec

SAMPLE DRY DENSITY 101.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–070

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101	na	24
Tare Weight, (g)	218.87		42.53
Tare + Wet Soil, (g)	7273		369.09
Tare + Dry Soil, (g)	6848		350.91
Sample for WATER CONTENT, %	6.41%		5.90%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	772.67	grams
Dry Soil + Sieve before	7956	grams
Dry Soil + Sieve after	2011	grams
Percent greater than	NA	17.24%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2748			
Distance from top of mold to top of stone, (in)	1.072	1.041	1.066	1.06
Height of Sample, (in)	5.060			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.95	3.96E–02	10	27.97	3.82E–02			
15	41.88	4.25E–02	15	43.56	4.07E–02			
20	58.67	4.33E–02	20	61.09	4.15E–02			
25	77.82	4.45E–02	25	81	4.28E–02			
30	99.88	4.67E–02	30	104.29	4.42E–02			

SAMPLE PERMEABILITY 4.2E–02 cm/sec

SAMPLE DRY DENSITY 100.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–071

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	85
Tare Weight, (g)	314		36.1
Tare + Wet Soil, (g)	4082		293.74
Tare + Dry Soil, (g)	3903		275.6
Sample for WATER CONTENT, %	4.99%		7.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4457	grams
Dry Soil + Sieve after	1294	grams
Percent greater than	NA	11.87%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.07	1.061	1.08	1.07
Height of Sample, (in)	5.050			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.21	4.40E–02	10	24.59	4.33E–02			
15	37.47	4.77E–02	15	38.03	4.71E–02			
20	52	4.99E–02	20	52.95	4.86E–02			
25	68.37	5.19E–02	25	69.57	5.12E–02			
30	87.04	5.50E–02	30	88.63	5.39E–02			

SAMPLE PERMEABILITY: ~~4.8~~ 5.0E–02 cm/sec BJ

SAMPLE DRY DENSITY: 101.1 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–072

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	34
Tare Weight, (g)	313		55.89
Tare + Wet Soil, (g)	4478		319.81
Tare + Dry Soil, (g)	4334		299.33
Sample for WATER CONTENT, %	3.58%		8.41%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5442	grams
Dry Soil + Sieve after	1805	grams
Percent greater than	NA	20.50%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2773			
Distance from top of mold to top of stone, (in)	1.14	1.069	1.076	1.10
Height of Sample, (in)	5.025			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.47	3.86E–02	10	28.64	3.70E–02			
15	42.83	4.10E–02	15	44.7	3.92E–02			
20	59.98	4.21E–02	20	62.83	3.98E–02			
25	79.61	4.31E–02	25	83.42	4.11E–02			
30	102.38	4.49E–02	30	107.37	4.27E–02			

SAMPLE PERMEABILITY: 4.0E–02 cm/sec

SAMPLE DRY DENSITY: 101.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: BY

SAMPLE NUMBER: DL–073

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	100
Tare Weight, (g)	343		38.92
Tare + Wet Soil, (g)	3981		335.01
Tare + Dry Soil, (g)	3809		319.2
Sample for WATER CONTENT, %	4.96%		5.64%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4363	grams
Dry Soil + Sieve after	1241	grams
Percent greater than	NA	9.92%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2746			
Distance from top of mold to top of stone, (in)	1.063	1.147	1.119	1.11
Height of Sample, (in)	5.010			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.24	3.74E–02	10	28.91	3.66E–02			
15	43.91	4.01E–02	15	45.27	3.84E–02			
20	61.54	4.08E–02	20	63.66	3.92E–02			
25	81.85	4.15E–02	25	84.61	4.03E–02			
30	105.55	4.30E–02	30	109.16	4.15E–02			

SAMPLE PERMEABILITY: 4.0E–02 cm/sec

SAMPLE DRY DENSITY: 101.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: BG

SAMPLE NUMBER: DL–074

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	5
Tare Weight, (g)	315		40.08
Tare + Wet Soil, (g)	4180		279.44
Tare + Dry Soil, (g)	4000		265.95
Sample for WATER CONTENT, %	4.88%		5.97%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4554	grams
Dry Soil + Sieve after	1357	grams
Percent greater than	NA	13.24%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2749			
Distance from top of mold to top of stone, (in)	1.197	1.139	1.118	1.15
Height of Sample, (in)	4.969			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.31	3.98E–02	10	26.96	3.89E–02			
15	40.99	4.24E–02	15	41.81	4.19E–02			
20	57.3	4.38E–02	20	58.49	4.28E–02			
25	75.93	4.49E–02	25	77.47	4.41E–02			
30	97.38	4.71E–02	30	99.39	4.61E–02			

SAMPLE PERMEABILITY 4.2E–02 cm/sec

SAMPLE DRY DENSITY 102.6 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: PY

SAMPLE NUMBER: DL–075

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	89
Tare Weight, (g)	215		39.02
Tare + Wet Soil, (g)	4407		289.75
Tare + Dry Soil, (g)	4292		276.52
Sample for WATER CONTENT, %	2.82%		5.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4846	grams
Dry Soil + Sieve after	1808	grams
Percent greater than	NA	25.48%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2745			
Distance from top of mold to top of stone, (in)	1.081	1.192	1.148	1.14
Height of Sample, (in)	4.980			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.66	3.80E–02	10	28.27	3.72E–02			
15	43.09	4.05E–02	15	44.09	3.95E–02			
20	60.32	4.15E–02	20	61.7	4.06E–02			
25	80.02	4.26E–02	25	81.97	4.14E–02			
30	102.84	4.44E–02	30	105.38	4.33E–02			

4.1 PY

SAMPLE PERMEABILITY 4.0E–02 cm/sec

SAMPLE DRY DENSITY 102.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–04–94

Project Number: 8940–83 Tested By: BS Checked By: CJ

SAMPLE NUMBER: DL–076

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	91
Tare Weight, (g)	216		37.56
Tare + Wet Soil, (g)	4137		274.96
Tare + Dry Soil, (g)	3981		262.86
Sample for WATER CONTENT, %	4.14%		5.37%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4535	grams
Dry Soil + Sieve after	1396	grams
Percent greater than	NA	16.63%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2743			
Distance from top of mold to top of stone, (in)	1.135	1.086	1.094	1.11
Height of Sample, (in)	5.015			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.78	4.27E–02	10	24.92	4.25E–02			
15	38.11	4.72E–02	15	38.56	4.61E–02			
20	53.08	4.81E–02	20	53.7	4.76E–02			
25	69.93	5.01E–02	25	70.59	5.00E–02			
30	89.03	5.34E–02	30	90.09	5.23E–02			

SAMPLE PERMEABILITY: 4.7E–02 cm/sec

SAMPLE DRY DENSITY: 101.8 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–08–94

Project Number: 8940–83 Tested By: BS Checked By: pf

SAMPLE NUMBER: DL–077

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	5
Tare Weight, (g)	343		40.05
Tare + Wet Soil, (g)	3828		246.88
Tare + Dry Soil, (g)	3634		234.91
Sample for WATER CONTENT, %	5.89%		6.14%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	4188	grams
Dry Soil + Sieve after	1634	grams
Percent greater than	NA	22.39%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1740			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2745			
Distance from top of mold to top of stone, (in)	1.136	1.151	1.129	1.14
Height of Sample, (in)	4.981			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.06	4.03E–02	10	26.41	3.98E–02			
15	40.48	4.33E–02	15	41	4.28E–02			
20	56.48	4.47E–02	20	57.09	4.45E–02			
25	74.66	4.61E–02	25	75.31	4.60E–02			
30	95.46	4.87E–02	30	96.26	4.84E–02			

4.5 pf

SAMPLE PERMEABILITY 4.2E–02 cm/sec

SAMPLE DRY DENSITY 102.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11-08-94

Project Number: 8940-83 Tested By: BS Checked By: BS

SAMPLE NUMBER: DL-078

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	89
Tare Weight, (g)	315		38.9
Tare + Wet Soil, (g)	4188		283.28
Tare + Dry Soil, (g)	3984		270.34
Sample for WATER CONTENT, %	5.56%		5.59%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4538	grams
Dry Soil + Sieve after	1360	grams
Percent greater than	NA	13.38%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2750			
Distance from top of mold to top of stone, (in)	1.027	1.015	1.043	1.03
Height of Sample, (in)	5.092			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	23.88	4.50E-02	10	24.17	4.44E-02			
15	36.92	4.89E-02	15	37.33	4.85E-02			
20	51.36	5.07E-02	20	51.83	5.05E-02			
25	67.34	5.37E-02	25	68.13	5.26E-02			
30	85.56	5.68E-02	30	86.7	5.58E-02			

SAMPLE PERMEABILITY ~~4.9~~ 5.0E-02 cm/sec

SAMPLE DRY DENSITY 100.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–08–94

Project Number: 8940–83 Tested By: BS Checked By: BV

SAMPLE NUMBER: DL–079

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	100
Tare Weight, (g)	216		38.9
Tare + Wet Soil, (g)	3890		298.44
Tare + Dry Soil, (g)	3700		287.09
Sample for WATER CONTENT, %	5.45%		4.57%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4254	grams
Dry Soil + Sieve after	1471	grams
Percent greater than	NA	20.12%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2739			
Distance from top of mold to top of stone, (in)	1.127	1.123	1.105	1.12
Height of Sample, (in)	5.002			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.64	4.28E–02	10	24.81	4.25E–02			
15	38.02	4.69E–02	15	38.34	4.63E–02			
20	52.82	4.86E–02	20	53.33	4.80E–02			
25	69.55	5.03E–02	25	70.17	5.00E–02			
30	88.62	5.33E–02	30	89.48	5.27E–02			

SAMPLE PERMEABILITY: 4.6E–02 cm/sec

SAMPLE DRY DENSITY: 102.2 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–09–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–080

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	85
Tare Weight, (g)	313		35.87
Tare + Wet Soil, (g)	4062		289.92
Tare + Dry Soil, (g)	3841		277.58
Sample for WATER CONTENT, %	6.26%		5.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4395	grams
Dry Soil + Sieve after	1430	grams
Percent greater than	NA	15.96%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1741			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2735			
Distance from top of mold to top of stone, (in)	1.075	1.151	1.128	1.12
Height of Sample, (in)	5.002			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.27	4.35E–02	10	25.05	4.21E–02			
15	38.21	4.50E–02	15	38.76	4.57E–02			
20	52.92	4.89E–02	20	53.95	4.73E–02			
25	69.92	4.96E–02	25	71.14	4.90E–02			
30	89.46	5.21E–02	30	90.69	5.20E–02			

SAMPLE PERMEABILITY 4.5E–02 cm/sec

SAMPLE DRY DENSITY 102.0 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11–09–94

Project Number: 8940–83 Tested By: BS Checked By: bl

SAMPLE NUMBER: DL–081

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	88
Tare Weight, (g)	314		36.85
Tare + Wet Soil, (g)	4186		292.93
Tare + Dry Soil, (g)	3978		282.78
Sample for WATER CONTENT, %	5.68%		4.13%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	4532	grams
Dry Soil + Sieve after	1315	grams
Percent greater than	NA	12.20%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2736			
Distance from top of mold to top of stone, (in)	1.142	1.198	1.111	1.15
Height of Sample, (in)	4.970			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in ^ 3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	25.45	4.12E–02	10	25.64	4.09E–02			
15	39.42	4.46E–02	15	39.63	4.45E–02			
20	54.91	4.61E–02	20	55.15	4.60E–02			
25	72.39	4.79E–02	25	72.77	4.75E–02			
30	92.35	5.06E–02	30	92.91	5.02E–02			

SAMPLE PERMEABILITY 4.4E–02 cm/sec

SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-082

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	101	na	5
Tare Weight, (g)	213		40
Tare + Wet Soil, (g)	4145		266.92
Tare + Dry Soil, (g)	3859		255.83
Sample for WATER CONTENT, %	7.84%		5.14%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	4413	grams
Dry Soil + Sieve after	1532	grams
Percent greater than	NA	20.98%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1738.75			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2733			
Distance from top of mold to top of stone, (in)	0.98	0.95	0.865	0.93
Height of Sample, (in)	5.188			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.9	4.40E-02	10	24.74	4.42E-02			
15	38.24	4.88E-02	15	38.38	4.77E-02			
20	53.34	4.94E-02	20	53.44	4.95E-02			
25	70.13	5.20E-02	25	70.34	5.17E-02			
30	89.41	5.47E-02	30	89.66	5.46E-02			

SAMPLE PERMEABILIT ~~4.9~~5E-02 cm/sec

SAMPLE DRY DENSITY 98.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-083

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	214C	na	3
Tare Weight, (g)	214		38.8
Tare + Wet Soil, (g)	3971		229.34
Tare + Dry Soil, (g)	3688		219.82
Sample for WATER CONTENT, %	8.15%		5.26%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	768	grams
Dry Soil + Sieve before	4242	grams
Dry Soil + Sieve after	1354	grams
Percent greater than	NA	16.87%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.79			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2743			
Distance from top of mold to top of stone, (in)	1.265	1.275	1.228	1.26
Height of Sample, (in)	4.864			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	44.44	2.31E-02	10	44.49	2.31E-02			
15	70.17	2.37E-02	15	70.16	2.38E-02			
20	100.26	2.32E-02	20	100.2	2.33E-02			
25	135.51	2.32E-02	25	135.62	2.31E-02			
30	175.85	2.45E-02	30	175.91	2.46E-02			

SAMPLE PERMEABILIT **2.4E-02** cm/sec

SAMPLE DRY DENSITY 104.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-084

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	39
Tare Weight, (g)	215		33.78
Tare + Wet Soil, (g)	4069		282.24
Tare + Dry Soil, (g)	3844		270.24
Sample for WATER CONTENT, %	6.20%		5.07%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769	grams
Dry Soil + Sieve before	4398	grams
Dry Soil + Sieve after	1209	grams
Percent greater than	NA	12.12%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.42			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2741			
Distance from top of mold to top of stone, (in)	1.085	1.158	1.142	1.13
Height of Sample, (in)	4.992			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	46.85	2.25E-02	10	48.73	2.16E-02			
15	75.08	2.22E-02	15	75.11	2.37E-02			
20	108.49	2.15E-02	20	108.48	2.15E-02			
25	148.92	2.08E-02	25	148.96	2.08E-02			
30	195.99	2.16E-02	30	194.67	2.22E-02			

SAMPLE PERMEABILIT: 2.2E-02 cm/sec

SAMPLE DRY DENSITY: 102.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-085

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	100
Tare Weight, (g)	313		38.88
Tare + Wet Soil, (g)	4251		287.27
Tare + Dry Soil, (g)	4028		275.62
Sample for WATER CONTENT, %	6.00%		4.92%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	4582	grams
Dry Soil + Sieve after	1398	grams
Percent greater than	NA	14.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.31			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2740			
Distance from top of mold to top of stone, (in)	1.248	1.21	1.23	1.23
Height of Sample, (in)	4.891			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1 TEST # 2 TEST # 3

Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	46.18	2.23E-02	10	50.13	2.06E-02			
15	74.7	2.15E-02	15	80.66	2.01E-02			
20	106.33	2.22E-02	20	134.57	1.30E-02			
25	142.83	2.26E-02	25	153.16	4.43E-02			
30	185.59	2.33E-02	30	196.81	2.28E-02			

BJ

miss Read

?

SAMPLE PERMEABILIT: 2.2E-02 cm/sec

SAMPLE DRY DENSITY: 104.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: BL

SAMPLE NUMBER: DL-086

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	5
Tare Weight, (g)	216		39.98
Tare + Wet Soil, (g)	3727		152.46
Tare + Dry Soil, (g)	3486		146.67
Sample for WATER CONTENT, %	7.37%		5.43%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4040	grams
Dry Soil + Sieve after	1139.59	grams
Percent greater than	NA	11.30%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.36			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2745			
Distance from top of mold to top of stone, (in)	1.136	1.111	1.145	1.13
Height of Sample, (in)	4.989			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	71.63	1.47E-02	10	81.48	1.29E-02			
15	121.41	1.26E-02	15	134.86	1.17E-02			
20	181.27	1.20E-02	20	192.44	1.25E-02			
25	251.78	1.19E-02	25	255.51	1.33E-02			
30	318.87	1.51E-02	30	327.38	1.41E-02			

SAMPLE PERMEABILIT	1.3E-02 cm/sec
SAMPLE DRY DENSITY	102.3 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/28/94

Project Number: 8940-83 Tested By: DPL Checked By: [illegible]

SAMPLE NUMBER: DL-087

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	3
Tare Weight, (g)	315		38.77
Tare + Wet Soil, (g)	3999		159.78
Tare + Dry Soil, (g)	3764		152.92
Sample for WATER CONTENT, %	6.81%		6.01%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	4318	grams
Dry Soil + Sieve after	1603.13	grams
Percent greater than	NA	21.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.29			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2750			
Distance from top of mold to top of stone, (in)	1.058	1.064	1.115	1.08
Height of Sample, (in)	5.041			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	54.75	1.94E-02	10	64.77	1.64E-02			
15	90.12	1.79E-02	15	104.27	1.60E-02			
20	130.75	1.78E-02	20	150.37	1.57E-02			
25	177.36	1.82E-02	25	202.92	1.62E-02			
30	232.34	1.86E-02	30	265.31	1.64E-02			

SAMPLE PERMEABILIT: 1.7E-02 cm/sec

SAMPLE DRY DENSITY: 101.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/30/94

Project Number: 8940-83 Tested By: DPL Checked By: DJ

SAMPLE NUMBER: DL-088

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2	na	89
Tare Weight, (g)	308		39.19
Tare + Wet Soil, (g)	4900		139.77
Tare + Dry Soil, (g)	4621		133.53
Sample for WATER CONTENT, %	6.47%		6.61%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862	grams
Dry Soil + Sieve before	5175	grams
Dry Soil + Sieve after	1935.65	grams
Percent greater than	NA	24.89%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.37			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2756			
Distance from top of mold to top of stone, (in)	0.95	0.938	1.04	0.98
Height of Sample, (in)	5.144			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.04	3.39E-02	10	33.99	3.19E-02			
15	50.51	3.49E-02	15	53.69	3.27E-02			
20	71.2	3.57E-02	20	76.04	3.31E-02			
25	94.86	3.66E-02	25	101.25	3.44E-02			
30	122.9	3.73E-02	30	130.02	3.64E-02			

SAMPLE PERMEABILIT: 3.5E-02 cm/sec

SAMPLE DRY DENSITY: 99.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/30/94

Project Number: 8940-83 Tested By: DPL Checked By: PJ

SAMPLE NUMBER: DL-089

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	91
Tare Weight, (g)	315		37.48
Tare + Wet Soil, (g)	5105		150.41
Tare + Dry Soil, (g)	4743		143.9
Sample for WATER CONTENT, %	8.18%		6.12%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5297	grams
Dry Soil + Sieve after	1694.42	grams
Percent greater than	NA	18.64%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.41			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2750			
Distance from top of mold to top of stone, (in)	1.037	1.074	1.093	1.07
Height of Sample, (in)	5.052			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.4	3.29E-02	10	32.92	3.24E-02			
15	50.89	3.43E-02	15	52.34	3.26E-02			
20	71.75	3.48E-02	20	73.74	3.39E-02			
25	95.59	3.57E-02	25	98.55	3.43E-02			
30	124.15	3.60E-02	30	127.85	3.51E-02			

SAMPLE PERMEABILIT: 3.4E-02 cm/sec

SAMPLE DRY DENSITY: 100.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/30/94

Project Number: 8940-83 Tested By: DPL Checked By: BG

SAMPLE NUMBER: DL-090

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	5
Tare Weight, (g)	216		39.91
Tare + Wet Soil, (g)	4616		163.97
Tare + Dry Soil, (g)	4314		157.71
Sample for WATER CONTENT, %	7.37%		5.31%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4868	grams
Dry Soil + Sieve after	1337.8	grams
Percent greater than	NA	13.86%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751.73			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2748			
Distance from top of mold to top of stone, (in)	0.988	0.938	0.98	0.97
Height of Sample, (in)	5.151			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	27.64	3.93E-02	10	28.47	3.82E-02			
15	43.22	4.14E-02	15	44.42	4.05E-02			
20	60.63	4.25E-02	20	62.09	4.19E-02			
25	79.98	4.48E-02	25	82.15	4.32E-02			
30	102.31	4.69E-02	30	105.54	4.48E-02			

SAMPLE PERMEABILIT	4.3E-02 cm/sec
SAMPLE DRY DENSITY	99.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/30/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-091

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	24
Tare Weight, (g)	313		42.18
Tare + Wet Soil, (g)	5633		164.41
Tare + Dry Soil, (g)	5342		157.6
Sample for WATER CONTENT, %	5.79%		5.90%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5896	grams
Dry Soil + Sieve after	1634.49	grams
Percent greater than	NA	15.26%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.45			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2749			
Distance from top of mold to top of stone, (in)	1.206	1.215	1.287	1.24
Height of Sample, (in)	4.884			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	44.97	2.29E-02	10	45.24	2.28E-02			
15	68.16	2.64E-02	15	70.61	2.41E-02			
20	96.99	2.43E-02	20	100.95	2.31E-02			
25	130.59	2.45E-02	25	136.28	2.33E-02			
30	171.01	2.46E-02	30	177.47	2.41E-02			

SAMPLE PERMEABILIT: 2.4E-02 cm/sec

SAMPLE DRY DENSITY: 104.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 11/30/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-092

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	3
Tare Weight, (g)	216		38.49
Tare + Wet Soil, (g)	5540		125.42
Tare + Dry Soil, (g)	5251		121.04
Sample for WATER CONTENT, %	5.74%		5.31%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5805	grams
Dry Soil + Sieve after	1808.09	grams
Percent greater than	NA	20.62%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.86			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2741			
Distance from top of mold to top of stone, (in)	1.305	1.31	1.32	1.31
Height of Sample, (in)	4.808			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	33.97	2.99E-02	10	35.92	2.82E-02			
15	53.64	3.06E-02	15	56.75	2.89E-02			
20	77.23	2.93E-02	20	80.16	2.95E-02			
25	100.33	3.51E-02	25	107.01	3.02E-02			
30	129.25	3.38E-02	30	138.68	3.09E-02			

SAMPLE PERMEABILIT: 3.0E-02 cm/sec

SAMPLE DRY DENSITY: 106.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: pf

SAMPLE NUMBER: DL-093

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	3
Tare Weight, (g)	216		38.48
Tare + Wet Soil, (g)	4249		187.89
Tare + Dry Soil, (g)	3923		175.78
Sample for WATER CONTENT, %	8.79%		8.82%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4477	grams
Dry Soil + Sieve after	1226.9	grams
Percent greater than	NA	12.33%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742.21			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.112	1.137	1.124	1.12
Height of Sample, (in)	4.996			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	33.35	3.16E-02	10	34.7	3.04E-02			
15	52.46	3.28E-02	15	54.9	3.10E-02			
20	74.11	3.32E-02	20	77.81	3.13E-02			
25	99.84	3.27E-02	25	104.27	3.18E-02			
30	129.36	3.44E-02	30	135.95	3.21E-02			

SAMPLE PERMEABILIT: 3.2E-02 cm/sec

SAMPLE DRY DENSITY: 102.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: PJ

SAMPLE NUMBER: DL-094

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2	na	91
Tare Weight, (g)	308		37.4
Tare + Wet Soil, (g)	5953		154.82
Tare + Dry Soil, (g)	5578		144.75
Sample for WATER CONTENT, %	7.12%		9.38%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862	grams
Dry Soil + Sieve before	6132	grams
Dry Soil + Sieve after	2600.58	grams
Percent greater than	NA	32.99%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.34			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.008	1.01	1.026	1.01
Height of Sample, (in)	5.105			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.38	3.55E-02	10	30.56	3.52E-02			
15	47.88	3.66E-02	15	47.92	3.69E-02			
20	67.59	3.72E-02	20	67.73	3.70E-02			
25	90.16	3.81E-02	25	90.41	3.79E-02			
30	116.66	3.92E-02	30	116.97	3.91E-02			

SAMPLE PERMEABILIT: 3.7E-02 cm/sec

SAMPLE DRY DENSITY: 99.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: BY

SAMPLE NUMBER: DL-095

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	85
Tare Weight, (g)	315		35.82
Tare + Wet Soil, (g)	5285		157.36
Tare + Dry Soil, (g)	4941		147.69
Sample for WATER CONTENT, %	7.44%		8.64%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5495	grams
Dry Soil + Sieve after	1698.75	grams
Percent greater than	NA	17.94%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.15			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2770			
Distance from top of mold to top of stone, (in)	1.09	1.087	1.094	1.09
Height of Sample, (in)	5.030			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	31.66	3.35E-02	10	33.56	3.16E-02			
15	49.71	3.49E-02	15	52.63	3.31E-02			
20	70.32	3.51E-02	20	74.57	3.29E-02			
25	94.07	3.57E-02	25	100	3.33E-02			
30	122.13	3.65E-02	30	130.38	3.37E-02			

SAMPLE PERMEABILIT: 3.5E-02 cm/sec

SAMPLE DRY DENSITY: 101.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: pt

SAMPLE NUMBER: DL-096

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	5
Tare Weight, (g)	216		39.92
Tare + Wet Soil, (g)	5525		188.41
Tare + Dry Soil, (g)	5395		177.86
Sample for WATER CONTENT, %	2.51%		7.65%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	5949	grams
Dry Soil + Sieve after	1781.65	grams
Percent greater than	NA	19.53%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.59			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.3	1.28	1.291	1.29
Height of Sample, (in)	4.830			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.58	3.57E-02	10	29.61	3.44E-02			
15	44.63	3.77E-02	15	46.37	3.61E-02			
20	62.89	3.80E-02	20	65.38	3.65E-02			
25	83.79	3.89E-02	25	87.12	3.74E-02			
30	108.28	4.01E-02	30	112.7	3.84E-02			

SAMPLE PERMEABILIT: 3.7E-02 cm/sec

SAMPLE DRY DENSITY: 105.5 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-097

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	88
Tare Weight, (g)	313		36.85
Tare + Wet Soil, (g)	6159		191.08
Tare + Dry Soil, (g)	5991		178.18
Sample for WATER CONTENT, %	2.96%		9.13%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	6545	grams
Dry Soil + Sieve after	1897	grams
Percent greater than	NA	18.14%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.8			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2778			
Distance from top of mold to top of stone, (in)	1.144	1.2	1.188	1.18
Height of Sample, (in)	4.943			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	3			
Height from Datum to 0 ml line, (in)	33.125			
Height from Datum to 50 ml line, (in)	11.75			
Area of supply tubes used, (in^3)	4.56			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	41.31	3.50E-02	10	41.69	3.47E-02			
15	63.81	3.71E-02	15	65.41	3.52E-02			
20	88.19	3.81E-02	20	90.68	3.68E-02			
25	114.32	4.02E-02	25	118.93	3.72E-02			
30	143.1	4.20E-02	30	150.35	3.84E-02			

SAMPLE PERMEABILIT: 3.8E-02 cm/sec

SAMPLE DRY DENSITY: 103.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/08/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-098

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	213A	na	91
Tare Weight, (g)	213		37.32
Tare + Wet Soil, (g)	5132		203.53
Tare + Dry Soil, (g)	4982		190.04
Sample for WATER CONTENT, %	3.15%		8.83%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	767	grams
Dry Soil + Sieve before	5536	grams
Dry Soil + Sieve after	1552.44	grams
Percent greater than	NA	16.47%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1745.06			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2774			
Distance from top of mold to top of stone, (in)	1.136	1.146	1.187	1.16
Height of Sample, (in)	4.964			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	28.77	3.64E-02	10	30	3.49E-02			
15	45.09	3.81E-02	15	47.02	3.66E-02			
20	63.45	3.89E-02	20	65.99	3.76E-02			
25	84.31	4.01E-02	25	87.63	3.86E-02			
30	108.65	4.15E-02	30	112.87	4.00E-02			

SAMPLE PERMEABILIT: 3.8E-02 cm/sec

SAMPLE DRY DENSITY: 102.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By: BG

SAMPLE NUMBER: DL-099

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	24	na	5
Tare Weight, (g)	308		39.96
Tare + Wet Soil, (g)	6050		199.35
Tare + Dry Soil, (g)	5876		188.63
Sample for WATER CONTENT, %	3.13%		7.21%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	862	grams
Dry Soil + Sieve before	6430	grams
Dry Soil + Sieve after	1679.93	grams
Percent greater than	NA	14.69%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748.78			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2763			
Distance from top of mold to top of stone, (in)	1.2	1.21	1.216	1.21
Height of Sample, (in)	4.911			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.58	3.39E-02	10	32.31	3.21E-02			
15	47.94	3.55E-02	15	50.82	3.33E-02			
20	67.75	3.56E-02	20	71.87	3.35E-02			
25	90.28	3.67E-02	25	96.29	3.39E-02			
30	117.04	3.73E-02	30	124.74	3.51E-02			

SAMPLE PERMEABILIT 3.6E-02 cm/sec

SAMPLE DRY DENSITY 103.9 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-100

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	85
Tare Weight, (g)	313		35.8
Tare + Wet Soil, (g)	5977		228.96
Tare + Dry Soil, (g)	5791		212.73
Sample for WATER CONTENT, %	3.40%		9.17%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	6345	grams
Dry Soil + Sieve after	2477.67	grams
Percent greater than	NA	29.40%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1744.94			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2777			
Distance from top of mold to top of stone, (in)	1.09	1.06	1.09	1.08
Height of Sample, (in)	5.040			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.02	3.66E-02	10	29.83	3.57E-02			
15	45.13	3.92E-02	15	46.81	3.72E-02			
20	63.45	3.95E-02	20	65.95	3.78E-02			
25	83.92	4.15E-02	25	87.77	3.89E-02			
30	108.09	4.24E-02	30	113.24	4.02E-02			

SAMPLE PERMEABILIT 3.9E-02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By:

SAMPLE NUMBER: DL-101

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1	na	88
Tare Weight, (g)	343		37.15
Tare + Wet Soil, (g)	5210		216.26
Tare + Dry Soil, (g)	5025		202.57
Sample for WATER CONTENT, %	3.95%		8.28%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	897	grams
Dry Soil + Sieve before	5579	grams
Dry Soil + Sieve after	1877.38	grams
Percent greater than	NA	20.94%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.01			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2770			
Distance from top of mold to top of stone, (in)	1.131	1.132	1.065	1.11
Height of Sample, (in)	5.011			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	38.02	2.78E-02	10	41.03	2.58E-02			
15	60.14	2.84E-02	15	64.81	2.64E-02			
20	85.22	2.87E-02	20	91.91	2.66E-02			
25	114.44	2.89E-02	25	123.15	2.70E-02			
30	149.31	2.92E-02	30	160.2	2.75E-02			

SAMPLE PERMEABILIT **2.8E-02 cm/sec**

SAMPLE DRY DENSITY 101.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By:

SAMPLE NUMBER: DL-102

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	33
Tare Weight, (g)	216.11		57.33
Tare + Wet Soil, (g)	5908		237.67
Tare + Dry Soil, (g)	5678		223.67
Sample for WATER CONTENT, %	4.21%		8.42%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770.11	grams
Dry Soil + Sieve before	6232	grams
Dry Soil + Sieve after	1989.5	grams
Percent greater than	NA	22.33%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1742.8			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.2	1.21	1.175	1.20
Height of Sample, (in)	4.925			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	30.54	3.40E-02	10	31.45	3.30E-02			
15	47.81	3.57E-02	15	49.38	3.44E-02			
20	67.43	3.61E-02	20	69.32	3.55E-02			
25	90	3.67E-02	25	92.4	3.59E-02			
30	116.31	3.81E-02	30	119.65	3.68E-02			

SAMPLE PERMEABILIT **3.6E-02** cm/sec

SAMPLE DRY DENSITY 103.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By:

SAMPLE NUMBER: DL-103

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	85
Tare Weight, (g)	311.6		36.05
Tare + Wet Soil, (g)	5623		233.58
Tare + Dry Soil, (g)	5410		217.74
Sample for WATER CONTENT, %	4.18%		8.72%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	865.6	grams
Dry Soil + Sieve before	5964	grams
Dry Soil + Sieve after	1750.69	grams
Percent greater than	NA	17.36%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1750.9			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2780			
Distance from top of mold to top of stone, (in)	1.062	1.06	1.11	1.08
Height of Sample, (in)	5.043			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	29.43	3.62E-02	10	31.09	3.42E-02			
15	46.28	3.75E-02	15	49.08	3.51E-02			
20	65.26	3.82E-02	20	69.52	3.55E-02			
25	86.82	3.94E-02	25	92.89	3.63E-02			
30	112.71	3.96E-02	30	120.43	3.72E-02			

SAMPLE PERMEABILIT	3.7E-02 cm/sec
SAMPLE DRY DENSITY	101.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By:

SAMPLE NUMBER: DL-104

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	88
Tare Weight, (g)	315.56		37.61
Tare + Wet Soil, (g)	6731		212.28
Tare + Dry Soil, (g)	6361		198.41
Sample for WATER CONTENT, %	6.12%		8.63%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869.56	grams
Dry Soil + Sieve before	6915	grams
Dry Soil + Sieve after	2359.54	grams
Percent greater than	NA	24.65%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1746.56			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2776			
Distance from top of mold to top of stone, (in)	1.145	1.137	1.136	1.14
Height of Sample, (in)	4.981			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	31.41	3.35E-02	10	32.03	3.28E-02			
15	49.32	3.49E-02	15	50.22	3.43E-02			
20	69.65	3.52E-02	20	70.76	3.48E-02			
25	92.97	3.60E-02	25	94.24	3.57E-02			
30	120.05	3.74E-02	30	121.77	3.68E-02			

SAMPLE PERMEABILIT **3.5E-02 cm/sec**

SAMPLE DRY DENSITY 102.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/12/94

Project Number: 8940-83 Tested By: DPL Checked By: PY

SAMPLE NUMBER: DL-105

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	85
Tare Weight, (g)	313		35.91
Tare + Wet Soil, (g)	5817		245.85
Tare + Dry Soil, (g)	1635		232
Sample for WATER CONTENT, %	316.34%		7.06%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	6189	grams
Dry Soil + Sieve after	2330.55	grams
Percent greater than	NA	27.50%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1743.18			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2757			
Distance from top of mold to top of stone, (in)	1.06	1.092	1.094	1.08
Height of Sample, (in)	5.038			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	26.03	4.08E-02	10	26.7	3.98E-02			
15	40.59	4.34E-02	15	41.63	4.23E-02			
20	56.88	4.44E-02	20	58.16	4.38E-02			
25	75.19	4.63E-02	25	77.16	4.47E-02			
30	96.23	4.87E-02	30	99.3	4.63E-02			

SAMPLE PERMEABILIT: **4.5E-02 cm/sec**

SAMPLE DRY DENSITY: 101.4 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/09/94

Project Number: 8940-83 Tested By: DPL Checked By:

SAMPLE NUMBER: DL-106

FIELD DATA

Density: 102 (pcf) Water Content: %
Percent Maximum Dry Density:
NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217C	na	5
Tare Weight, (g)	215.43		40.43
Tare + Wet Soil, (g)	5412		192.63
Tare + Dry Soil, (g)	5213		179.92
Sample for WATER CONTENT, %	3.98%		9.11%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	769.43	grams
Dry Soil + Sieve before	5767	grams
Dry Soil + Sieve after	1691.7	grams
Percent greater than	NA	18.45%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781			
Distance from top of mold to top of stone, (in)	1.136	1.142	1.185	1.15
Height of Sample, (in)	4.966			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.69	3.21E-02	10	35	2.99E-02			
15	51.92	3.24E-02	15	55.4	3.05E-02			
20	74.04	3.23E-02	20	78.63	3.07E-02			
25	100	3.22E-02	25	105.81	3.08E-02			
30	131.67	3.19E-02	30	138.88	3.05E-02			

SAMPLE PERMEABILIT **3.1E-02 cm/sec**
SAMPLE DRY DENSITY 102.7 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/12/94

Project Number: 8940-83 Tested By: DPL Checked By: BJ

SAMPLE NUMBER: DL-107

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	76
Tare Weight, (g)	315		38.73
Tare + Wet Soil, (g)	5732		271.49
Tare + Dry Soil, (g)	5364		254.07
Sample for WATER CONTENT, %	7.29%		8.09%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5918	grams
Dry Soil + Sieve after	1733	grams
Percent greater than	NA	17.11%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1748.26			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2771			
Distance from top of mold to top of stone, (in)	1.165	1.18	1.238	1.19
Height of Sample, (in)	4.926			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	39.86	2.61E-02	10	42.04	2.47E-02			
15	63.38	2.63E-02	15	67.02	2.47E-02			
20	90.59	2.60E-02	20	95.88	2.45E-02			
25	122.32	2.61E-02	25	130.04	2.43E-02			
30	161.21	2.58E-02	30	171.19	2.43E-02			

SAMPLE PERMEABILIT: 2.5E-02 cm/sec

SAMPLE DRY DENSITY: 103.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/12/94

Project Number: 8940-83 Tested By: DPL Checked By: MJ

SAMPLE NUMBER: DL-108

FIELD DATA

Density: 102 (pcf) Water Content: ____ %

Percent Maximum Dry Density: ____

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	50
Tare Weight, (g)	312		39.04
Tare + Wet Soil, (g)	5967		192.15
Tare + Dry Soil, (g)	5776		180.52
Sample for WATER CONTENT, %	3.50%		8.22%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	6330	grams
Dry Soil + Sieve after	1910.75	grams
Percent greater than	NA	19.12%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751.78			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2775			
Distance from top of mold to top of stone, (in)	1.025	1.021	1.048	1.03
Height of Sample, (in)	5.089			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	33.43	3.21E-02	10	35.66	3.01E-02			
15	52.63	3.32E-02	15	56.2	3.11E-02			
20	74.52	3.34E-02	20	79.74	3.11E-02			
25	99.63	3.41E-02	25	106.63	3.19E-02			
30	129.22	3.50E-02	30	138.33	3.26E-02			

SAMPLE PERMEABILIT: 3.3E-02 cm/sec

SAMPLE DRY DENSITY: 100.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/12/94

Project Number: 8940-83 Tested By: DPL Checked By: BF

SAMPLE NUMBER: DL-109

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217B	na	88
Tare Weight, (g)	216.5		37.29
Tare + Wet Soil, (g)	5865		249.4
Tare + Dry Soil, (g)	5477		231.34
Sample for WATER CONTENT,.%	7.38%		9.31%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770.5	grams
Dry Soil + Sieve before	6032	grams
Dry Soil + Sieve after	1695.13	grams
Percent greater than	NA	17.57%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1747.23			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2782			
Distance from top of mold to top of stone, (in)	1.168	1.167	1.172	1.17
Height of Sample, (in)	4.951			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	32.48	3.22E-02	10	33.58	3.11E-02			
15	51.04	3.34E-02	15	52.94	3.21E-02			
20	71.95	3.40E-02	20	74.47	3.30E-02			
25	95.8	3.50E-02	25	99.29	3.36E-02			
30	123.58	3.62E-02	30	128.28	3.47E-02			

SAMPLE PERMEABILIT: 3.5E-02 cm/sec

SAMPLE DRY DENSITY: 103.1 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12/12/94

Project Number: 8940-83 Tested By: DPL Checked By: pg

SAMPLE NUMBER: DL-110

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	10	na	5
Tare Weight, (g)	216		40.02
Tare + Wet Soil, (g)	5838		204.04
Tare + Dry Soil, (g)	5478		192.07
Sample for WATER CONTENT, %	6.84%		7.87%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	6032	grams
Dry Soil + Sieve after	2683.09	grams
Percent greater than	NA	36.36%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1749.3			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2769			
Distance from top of mold to top of stone, (in)	1.138	1.178	1.2	1.17
Height of Sample, (in)	4.948			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	33.99	3.07E-02	10	35.4	2.95E-02			
15	53.53	3.17E-02	15	55.8	3.04E-02			
20	75.67	3.21E-02	20	79.05	3.06E-02			
25	101.32	3.25E-02	25	105.89	3.10E-02			
30	131.5	3.33E-02	30	137.24	3.21E-02			

SAMPLE PERMEABILIT	3.2E-02 cm/sec
SAMPLE DRY DENSITY	103.0 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: MMR LANDFILL Date: 12-15-94

Project Number: 7623-66 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-111

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	3A	na	88
Tare Weight, (g)	315		36.89
Tare + Wet Soil, (g)	5417		240.17
Tare + Dry Soil, (g)	4997		229.67
Sample for WATER CONTENT, %	8.97%		5.45%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	869	grams
Dry Soil + Sieve before	5551	grams
Dry Soil + Sieve after	2000	grams
Percent greater than	NA	24.16%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1752.77			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2751.78			
Distance from top of mold to top of stone, (in)	1.221	1.189	1.172	1.19
Height of Sample, (in)	4.926			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	36.79	2.83E-02	10	40.1	2.59E-02			
15	58.74	2.81E-02	15	64.52	2.53E-02			
20	84.38	2.76E-02	20	93.12	2.48E-02			
25	114.52	2.75E-02	25	127.75	2.40E-02			
30	151.21	2.73E-02	30	170.52	2.34E-02			

SAMPLE PERMEABILITY 2.5E-02 cm/sec

SAMPLE DRY DENSITY 103.7 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 04

Project Number: 8940–83 Tested By: BS Checked By ~~12–15–94~~ HJ

SAMPLE NUMBER: DL–112

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	1A	na	5
Tare Weight, (g)	314		39.94
Tare + Wet Soil, (g)	5539		280.08
Tare + Dry Soil, (g)	5125		266.32
Sample for WATER CONTENT, %	8.61%		6.08%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	868	grams
Dry Soil + Sieve before	5679	grams
Dry Soil + Sieve after	1712	grams
Percent greater than	NA	17.54%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1773.56			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2778.53			
Distance from top of mold to top of stone, (in)	1.068	1.058	1.087	1.07
Height of Sample, (in)	5.049			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	3			
Height from Datum to 0 ml line, (in)	33.125			
Height from Datum to 50 ml line, (in)	11.75			
Area of supply tubes used, (in^3)	4.56			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	40.8	3.62E–02	10	40.52	3.65E–02			
15	63.18	3.81E–02	15	63.31	3.74E–02			
20	87.54	3.90E–02	20	87.61	3.91E–02			
25	113.95	4.06E–02	25	114.51	3.99E–02			
30	143.49	4.18E–02	30	144.52	4.11E–02			

SAMPLE PERMEABILITY ~~3.8~~ 4.0 E–02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12-15-94

Project Number: 8940-83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL-113

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	217-B	na	72
Tare Weight, (g)	216		41.16
Tare + Wet Soil, (g)	4591		242.44
Tare + Dry Soil, (g)	4261		231.27
Sample for WATER CONTENT, %	8.16%		5.88%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	770	grams
Dry Soil + Sieve before	4815	grams
Dry Soil + Sieve after	1510	grams
Percent greater than	NA	18.29%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1754.44			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2756.61			
Distance from top of mold to top of stone, (in)	1.22	1.214	1.146	1.19
Height of Sample, (in)	4.927			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	41.74	2.49E-02	10	46.13	2.25E-02			
15	67.21	2.42E-02	15	74.43	2.18E-02			
20	97.24	2.36E-02	20	107.8	2.12E-02			
25	133.52	2.29E-02	25	148.15	2.06E-02			
30	177.43	2.28E-02	30	196.35	2.08E-02			

SAMPLE PERMEABILITY 2.1E-02 cm/sec

SAMPLE DRY DENSITY 103.6 pcf

NOTES:

ABB-ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12-15-94

Project Number: 8940-83 Tested By: BS Checked By: PJ

SAMPLE NUMBER: DL-114

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	4A	na	24
Tare Weight, (g)	313		42.14
Tare + Wet Soil, (g)	5784		263.04
Tare + Dry Soil, (g)	5423		249.69
Sample for WATER CONTENT, %	7.06%		6.43%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	867	grams
Dry Soil + Sieve before	5977	grams
Dry Soil + Sieve after	2109	grams
Percent greater than	NA	24.31%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1777.48			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2781.34			
Distance from top of mold to top of stone, (in)	1.051	1.067	1.054	1.06
Height of Sample, (in)	5.063			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB-ES Falling Head Board	3			
Height from Datum to 0 ml line, (in)	33.125			
Height from Datum to 50 ml line, (in)	11.75			
Area of supply tubes used, (in^3)	4.56			
Height Datum to discharge level, (in)	-7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	36.4	4.07E-02	10	37.38	3.97E-02			
15	56.69	4.21E-02	15	58.54	4.04E-02			
20	78.91	4.29E-02	20	81.06	4.23E-02			
25	103.18	4.43E-02	25	106.77	4.19E-02			
30	129.93	4.62E-02	30	134.92	4.39E-02			

SAMPLE PERMEABILITY 4.2E-02 cm/sec

SAMPLE DRY DENSITY 100.5 pcf

NOTES:

ABB–ENVIRONMENTAL SERVICES, Inc.
GEOTECHNICAL TESTING LABORATORY
FALLING HEAD PERMEABILITY TEST RESULTS

Project: SULLIVAN LANDFILL Date: 12–16–94

Project Number: 8940–83 Tested By: BS Checked By: BJ

SAMPLE NUMBER: DL–115

FIELD DATA

Density: 102 (pcf) Water Content: %

Percent Maximum Dry Density:

NOTES:

MOISTURE CONTENT

	Bag	Bag	Test Sample
Tare #	2A	na	85
Tare Weight, (g)	312		35.81
Tare + Wet Soil, (g)	5641		297.32
Tare + Dry Soil, (g)	5283		283.01
Sample for WATER CONTENT, %	7.20%		5.79%

SAMPLE PREPARATION

Sieve size used	0.75	
Sieve Weight + Tare	866	grams
Dry Soil + Sieve before	5837	grams
Dry Soil + Sieve after	2398	grams
Percent greater than	NA	30.82%

TEST DATA

Weight of Cell + Stone + Filter, (g)	1751.98			
Weight of Wet SOIL + Cell + Stone + Filter, (g)	2753.48			
Distance from top of mold to top of stone, (in)	1.068	1.076	1.078	1.07
Height of Sample, (in)	5.046			
Mold Area, (in)	7.065			
Sample Construction Technique	compacted sample			
ABB–ES Falling Head Board	1			
Height from Datum to 0 ml line, (in)	33			
Height from Datum to 50 ml line, (in)	7.88			
Area of supply tubes used, (in^3)	2.73			
Height Datum to discharge level, (in)	–7			

TEST # 1			TEST # 2			TEST # 3		
Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)	Burette Level	Cumulative Time (Sec)	Permeability (cm/sec)
0	0		0	0				
10	24.59	4.33E–02	10	25.93	4.11E–02			
15	38.41	4.58E–02	15	40.47	4.35E–02			
20	53.75	4.73E–02	20	56.74	4.46E–02			
25	71.08	4.90E–02	25	75.12	4.62E–02			
30	90.95	5.16E–02	30	96.67	4.76E–02			

SAMPLE PERMEABILITY ~~4.7~~ 5E–02 cm/sec

SAMPLE DRY DENSITY 101.2 pcf

NOTES: