5101Permit1997 - Batch No.___

1/3 Johnston Co 5101
1997

5101 1997

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McKIM & CREED

December 12, 1997

M&C 358-0083.0R(10)

Mr. Jim Coffey
Head, Permitting Branch
NCDEHNR, Division of Solid Waste Management
Solid Waste Section
P.O. Box 27687
Raleigh, NC 27611-7687

RE: Johnston County Landfill - Permit Number 51-01
Revision To Transition Plan

Dear Mr. Coffey:

McKim and Creed Engineers, on behalf of Johnston County, NC, hereby submits a request for a revision to the Transition Plan (approved June 19, 1996). This revision requests the incorporation of a borrow area. The proposed area, as shown on the attached plan, occupies both sides of the line designating the current landfill boundary.

The proposed sequence of events is to submit a request to Land Quality for an Erosion Control Permit. This will allow, based on your input, the ability to borrow material from this pit for daily cover on the new Subtitle D landfill.

Jim Barber and Bobby Lutfy are both aware of the County's intentions for this property and have, on a preliminary basis, provided input to the overall plan. Their input has been very valuable to date.

Should you have any questions regarding the above information, please feel free to contact me.

Sincerely,

McKIM & CREED ENGINEERS, P.A.

Tom Wainwright

Thomas J. Wainwright, P.E.
Project Manager

cc: Warren Grimes - JCLF
C.T. Clayton,P.E.

DEC 1997
Received
Solid Waste
Section

ENGINEERS
SURVEYORS
ARCHITECTS
PLANNERS

SUITE 117
BUILDING I
5625 DILLARD ROAD
CARY, NC 27511
PHONE 919/233-8091
FAX 919/233-8031

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51-01

-Booklet-

Re: Report of Well Installation
Johnston County Subtitle D
Landfill

51-01

S&ME

May 30, 1997

McKim & Creed
5625 Dillard Road
Suite 117, Bldg. 1
Cary, North Carolina 27612

Attention: Mr. Tom Wainright

Reference: Report of Well Installation
Johnston County Subtitle D Landfill
S&ME Project No. 1054-95-286A

Dear Mr. Wainright:

S&ME, Inc. (S&ME) has completed the installation of the monitor wells surrounding the Phase 5 cell and leachate basin. Fourteen new wells were installed and existing well C-13 was repaired. The new wells were installed at the locations you specified with two exceptions. Well DMW L-3 (leachate basin) was offset approximately 20 feet east of the staked location due to shallow refusal conditions. Well DMW L-4, also located at the leachate basin, was moved approximately 39 feet west of the staked location due to shallow rock conditions at the staked location.

Soil test borings were advanced at each location. Split spoon samples were obtained during drilling to evaluate the lithology at each boring location. Recovered soil samples were visually examined in the field and classified according to the Unified Soil Classification System. Boring logs prepared from the field data are in Appendix I.

After reaching the termination depth, the borings were converted to monitor wells by installing 2-inch PVC well screen and riser through the augers. The annular space between the outside of the well screen and the borehole was filled with fine sand. The

S&ME, Inc. 3100 Spring Forest Road, Raleigh, North Carolina 27616, (919) 872-2660, Fax (919) 790-9827
Mailing address: P.O. Box 58069, Raleigh, North Carolina 27658-8069

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between the outside of the well screen and the borehole was filled with fine sand. The sand was extended at least one foot above the screen and sealed with a layer of bentonite pellets. After allowing the pellets to hydrate at least 24 hours, the remaining space was filled with cement grout. The well casings were extended above the ground surface within a steel protective casing with a lockable hinged cap. A 24-inch square concrete pad was cast around the protective casing. The well construction details for each well are shown on the Well Completion Records (Form GW-1) in Appendix II.

The wells were developed shortly after installation by either pumping or bailing water from the well until the pump discharge was relatively free of suspended soil particles. Aquifer tests were performed in each well. The tests were performed either by pumping a known quantity of water from the well and measuring recharge or by inserting and later removing a stainless steel slug. Water levels in the well during the test were monitored using a pressure transducer.

The aquifer tests were evaluated numerically using a proprietary Excel® Workbook program by Creative Scientific Applications. Hydraulic conductivity of the screen interval was calculated using two methods. Table 1 summarizes the calculated hydraulic conductivity values for Hvorslev's and the Bouwer and Rice methods. Typically, the Hvorslev method is used to evaluate conductivity of a confined aquifer. In unconfined aquifers, the Hvorslev Method tends to overestimate hydraulic conductivity and values determined by the Bouwer and Rice Method are more commonly used for estimation of unconfined aquifer conditions. The Hvorslev analyses are included for comparison purposes.

The test results were compared to the lithology present within the screened interval for each well and the conductivity data collected at the site in 1995. A table listing the calculated values for the previous wells and site map are included in Appendix II following the slug test results.

Table 2 shows a range of hydraulic conductivity values recommended for use in calculating groundwater flow rate at each well. The values are different than those calculated in some cases because the well screened is exposed to differing soil types, such as clay and sand. Groundwater flow in these cases, will be preferentially through the more sandy soils, as they have higher hydraulic conductivity. The values shown in Table 2, based on the test results modified by our judgement to best represent aquifer conditions, can be used to estimate groundwater flow velocity by multiplying the conductivity by the hydraulic gradient and dividing by the soil porosity. Groundwater flow gradient will be determined for each sampling event. An average value of 20 percent can be used as an estimate of soil porosity.

We appreciate the opportunity assist Johnston County and McKim & Creed on this phase of the project . Please call us at (919) 872-2660 if you have any questions.

Very truly yours,
S&ME, INC.

Walter J. Beckwith, P.G.
North Carolina Registration #584

Ernest F. Parker, P.E., P.G.
Senior Environmental Consultant

NORTH CAROLINA LICENSED SEAL 584 GEOLOGIST WALTER J. BECKWITH

TABLE 1
SUMMARY OF CALCULATED VALUES OF HYDRAULIC CONDUCTIVITY
MONITOR WELLS FOR PHASE 5 CONSTRUCTION
JOHNSTON COUNTY LANDFILL
S&ME Project No. 1054-95-286A

Well Number	Value by Hvorslev Method		Value by Bouwer and Rice Method	
	cm/sec	ft/year	cm/sec	ft/year
DMW 5-1	2.78E-03	2878	1.66E-03	1719
DMW 5-2	3.05E-04	316	1.85E-04	192
DMW 5-3	5.61E-04	581	3.51E-04	363
DMW 5-4	2.28E-04	236	1.64E-04	170
DMW 5-5	1.62E-04	168	9.22E-05	95
DMW 5-6	3.23E-04	334	1.29E-04	134
DMW 5-7	2.19E-04	227	1.49E-04	154
DMW 5-8	1.63E-04	169	1.10E-04	114
DMW 5-9	1.83E-04	189	1.09E-04	113
DMW 5-10	2.02E-05	21	1.30E-05	13
DMW L-1	1.39E-04	144	7.92E-05	82
DMW L-2	8.77E-04	908	5.02E-04	520
DMW L-3	1.63E-04	169	7.06E-05	73
DMW L-4	7.19E-03	7444	1.43E-03	1481

TABLE 2
SUGGESTED VALUES OF HYDRAULIC CONDUCTIVITY
MONITOR WELLS FOR PHASE 5 CONSTRUCTION
JOHNSTON COUNTY LANDFILL
S&ME Project No. 1054-95-286A

Well Number	Suggested Value for Hydraulic Conductivity	
	cm/sec	ft/year
DMW 5-1	1.64E-03	1700
DMW 5-2	3.86E-04	400
DMW 5-3	3.86E-04	400
DMW 5-4	2.41E-04	250
DMW 5-5	3.38E-04	350
DMW 5-6	1.93E-04	200
DMW 5-7	1.50E-04	155
DMW 5-8	3.38E-04	350
DMW 5-9	3.38E-04	350
DMW 5-10	3.38E-04	350
DMW L-1	9.66E-05	100
DMW L-2	1.45E-04	150
DMW L-3	9.66E-05	100
DMW L-4	1.45E-03	1500

PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-2
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/22/97	WATER LEVEL: 1.6' ON 4/25/97	
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		FILL: LOOSE LIGHT BROWN FINE TO MEDIUM GRAINED **SAND** (SP)						
		TOPSOIL: MEDIUM DENSE BLACK SILTY FINE TO COARSE **SAND** WITH SOME ORGANIC MATTER (SM)						
		MEDIUM DENSE LIGHT BROWN SLIGHTLY SILTY FINE TO COARSE **SAND** (SW)			SS-1			15
5		IRON CEMENTED CONGLOMERATE						
		VERY STIFF REDDISH BROWN BECOMING GRAY SILTY **CLAY** (CH)			SS-2			25
10		VERY STIFF GRAY SILTY **CLAY** WITH SOME FINE SAND AND OCCAISIONAL QUARTZ GRAVEL (CL-CH)			SS-3			16
15		LOOSE YELLOW BROWN AND GRAY SILTY FINE TO MEDIUM GRAINED **SAND** FINELY LAMINATED (SC)			SS-4			7
20		*BORING TERMINATED AT 22 FT.*						
25								
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-3
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*22 FEET*
DATE DRILLED :	*4/22/97*	WATER LEVEL :	*7.0' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		TOPSOIL: GRAY SILTY **SAND** (SM)						
		STIFF REDDISH TAN TO RED AND GRAY SILTY **CLAY** (CL)			SS-1			14
5								
		HARD GRAY SILTY **CLAY** WITH TRACE OF FINE SAND AND OCCAISIONAL GRAVEL BEDS (CL)			SS-2			31
10								
		VERY STIFF RED BROWN AND YELLOW SILTY FINE **SAND** FINELY LAMINATED WITH SILTY CLAY (CL)			SS-3			25
15								
		MEDIUM DENSE LIGHT GRAY AND BROWN SILTY VERY FINE **SAND** WITH CLAY LENSES (SM)			SS-4			13
20								
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-4
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*22 FEET*
DATE DRILLED :	*4/22/97*	WATER LEVEL :	*2.9' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		DARK GRAY SILTY **SAND** (SM)						
		LOOSE GRAY AND TAN CLAYEY **SAND** (SC)						
5					SS-1			8
		MEDIUM DENSE LIGHT GRAY STREAKED WITH YELLOW SILTY FINE TO MEDIUM **SAND** WITH TRACE OF MICA						
10					SS-2			19
		MEDIUM DENSE YELLOW BROWN TO ORANGE STREAKED WITH GRAY SILTY CLAYEY **SAND** (SM-SC)						
15					SS-3			12
		RESIDUUM: HARD YELLOW BROWN TO LIGHT GRAY FINE SANDY CLAYEY **SILT** (ML)						
20					SS-4			44
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-5
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*22 FEET*
DATE DRILLED :	*4/22/97*	WATER LEVEL :	*8.1' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		FILL: LOSSE BROWN SILTY **SAND** (SM)						
		MEDIUM DENSE PINKISH GRAY CLAYEY FINE TO MEDIUM **SAND** (SC)						
5					SS-1			19
					SS-2			15
10								
					SS-3			15
15		MEDIUM DENSE LIGHT GRAY AND YELLOW CLAYEY **SAND** (SC)						
		VERY STIFF ORANGE BROWN SILTY **CLAY** WITH ROUNDED QUARTZ GRAVEL UP TO 3/4"ø (CL)			SS-4			27
20		RESIDUUM: VERY STIFF YELLOW **SILT** (ML)						
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

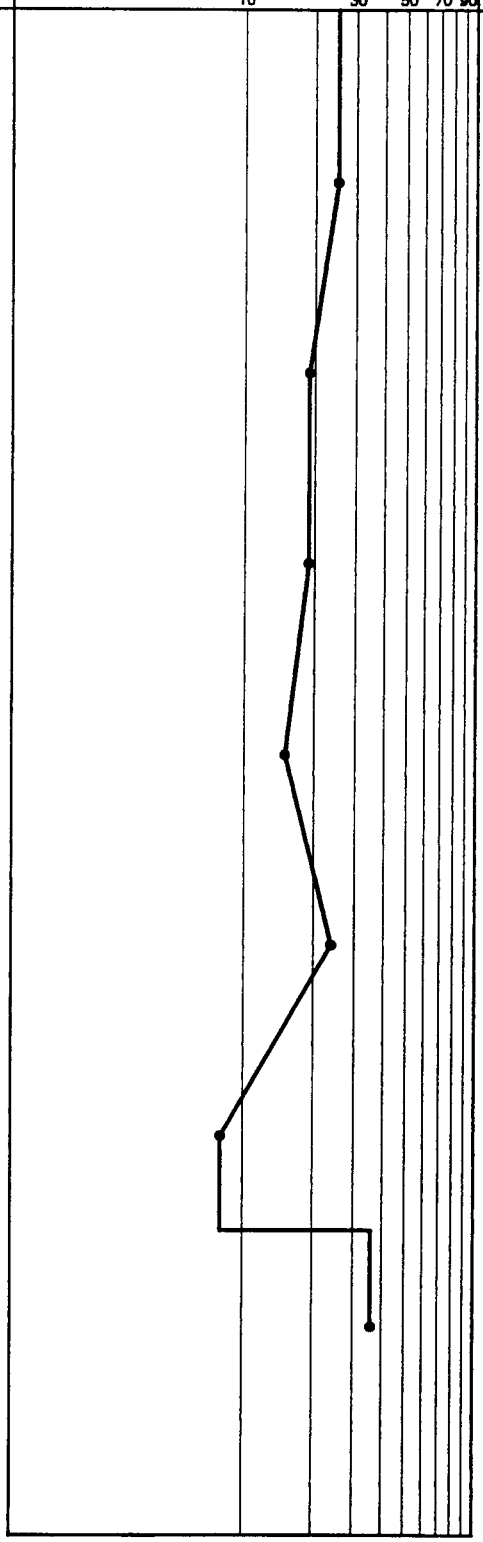
PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-6
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*39 FEET*
DATE DRILLED :	*4/22/97*	WATER LEVEL :	*25.5' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	Soil Description	SAMPLE	BPF
	LIGHT GRAY CLAYEY **SAND** (SC)		
	LIGHT GRAY SILTY **CLAY** (CH)		
5	MEDIUM DENSE YELLOW BROWN SLIGHTLY CLAYEY SILTY FINE TO MEDIUM GRAINED **SAND** (SC-SM)	SS-1	25
10	MEDIUM DENSE ORANGE BROWN SILTY FINE TO MEDIUM **SAND** WITH OCCASIONAL 1" THICK CLAY LENSES (SM WITH CL)	SS-2	19
15		SS-3	19
20	MEDIUM DENSE WHITE CLAYEY MEDIUM TO COARSE **SAND** (SC)	SS-4	15
25		SS-5	24
30		SS-6	8
35	HARD YELLOW BROWN AND LIGHT GRAY **SILT** (ML) SHOWS RELICT SLATE STRUCTURE	SS-7	36
40	*BORING TERMINATED AT 39 FT.*		



PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-7
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*23 FEET*
DATE DRILLED :	*4/18/97*	WATER LEVEL :	*7.0' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		TOPSOIL: LIGHT GRAY SILTY **SAND** (SM)						
		MEDIUM DENSE LIGHT BROWN SILTY FINE **SAND** WITH SOME WELL-ROUNDED QUARTZ GRAVEL (SM)						
5					SS-1			30
		MEDIUM DENSE BROWN MEDIUM TO COARSE **SAND** WITH TRACE OF SILT (SW)						
10					SS-2			13
		VERY STIFF TAN **SILT** (ML)						
15					SS-3			24
		HARD TAN **SILT** (ML) SHOWS RELICT BEDROCK TEXTURE						
20					SS-4			43
		BORING TERMINATED AT 23 FT.						
25								
30								
35								
40								

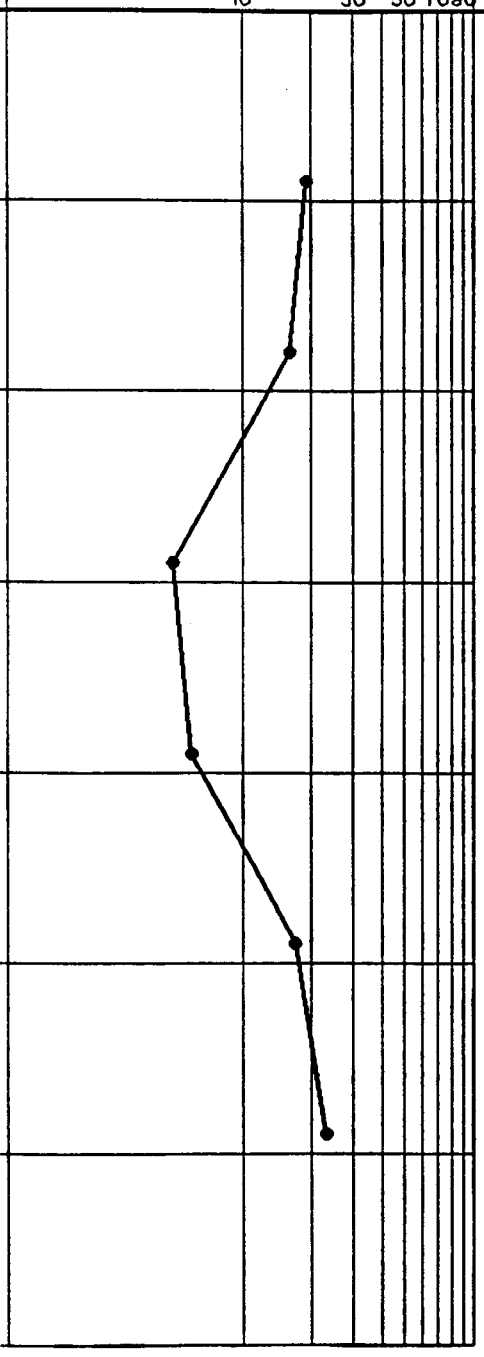
PROJECT: JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION		TEST BORING RECORD DMW 5-8
PROJECT NO.: 1054-95-286A	ELEVATION:	NOTES: 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING
LOGGED BY: W. BECKWITH	BORING DEPTH: 22 FEET	WELL SCHEMATIC LEGEND
DATE DRILLED: 4/21/97	WATER LEVEL: 3.2' ON 4/25/97	SCREEN INTERVAL, SANDPACK, BENTONITE, GROUT
DRILL METHOD: 4 ¼" H.S.A.	DRILL RIG: MOBILE B-57 ATV	

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		FILL: LOOSE REDDISH TAN SILTY **SAND** (SM)						
		TOPSOIL: LOOSE GRAY SILTY **SAND** (SM)						
		ALLUVIUM: LIGHT TAN FINE TO MEDIUM **SAND** WITH TRACE OF SILT (SP)		▼				
5					SS-1			12
		LOOSE GRAY SILTY FINE TO MEDIUM **SAND** (SM)						
10					SS-2			8
		WHITE YELLOW AND ORANGE SILTY VERY FINE **SAND** WITH OCCASIONAL FINE MICA (SM)						
15					SS-3			10
		REDDISH TAN SILTY WELL GRADED **SAND** WITH OCCASIONAL GRAVEL (SW)						
		LIGHT GRAY TAN FINELY LAMINATED **SILT** (ML)						
20					SS-4			15
		BORING TERMINATED AT 22 FT.						
25								
30								
35								
40								

PROJECT:	Johnston County Landfill Johnston County, NC	TEST BORING RECORD DMW 5-9
PROJECT NO.: 1054-95-286	ELEVATION: 195.53 FEET	NOTES: Monitor Well Installed
LOGGED BY: WJB	BORING DEPTH: 30.0 FEET	
DATE DRILLED: 3-16-95	WATER LEVEL: 10.8/6.65 FEET	
DRILLING METHOD: 3-1/4" I.D. HSA	DRILL RIG: Mobile B-57	

DEPTH (ft)	Soil Description	OVM (ppm)	WATER LEVEL	SAMPLE	ELEV.	BPF
	Topsoil					
	Stiff Yellow-Brown Wet Sandy Silty **CLAY** (CL)					
5	Medium Dense to Loose Red-Tan and Yellow-Gray Wet Clayey **SAND** (SC)				191	19
10					186	16
15	Loose Light Gray and Yellow Silty **SAND** (SM)				181	5
20					176	6
	Medium Dense Pink-Tan and Light Gray Silty **SAND** with Trace of Mica (SM)					
25	- with Iron-Cemented Fragments below 26.0'				171	17
30	Stiff to Very Stiff White-Tan Clayey **SILT** with occasional Quartz Fragments (ML-MH)				166	23
35	Boring terminated at 30.0. Groundwater encountered at 10.8' and 6.65' below existing grade at the completion of drilling and 24 hours after completion drilling, respectively.				161	

Standard Penetration Test Data (Blows/ft)



S&ME
Environmental Services
Engineering * Testing

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW 5-10
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*25 FEET*
DATE DRILLED :	*4/21/97*	WATER LEVEL :	*10.6' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	Soil Description	SAMPLE	BPF
	TOPSOIL: DARK GRAY SILTY FINE TO MEDIUM **SAND** (SM)		
	YELLOW TAN SLIGHTLY CLAYEY SILTY MEDIUM TO COARSE **SAND** (SM)	SS-1	14
5	VERY STIFF REDDISH BROWN AND GRAY FINE SANDY SILTY **CLAY** (CL)	SS-2	41
10	LIGHT GRAY AND YELLOW SILTY CLAYEY FINE **SAND** WITH SOME FINE MICA (SC)	SS-3	13
15	YELLOW TO LIGHT BROWN SILTY FINE TO MEDIUM **SAND** (SM)	SS-4	16
20		SS-5	13
25	*BORING TERMINATED AT 25 FT.*		
30			
35			
40			

Standard Penetration Test Data
BLOWS/FT
10 30 50 70 90

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW L-I
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*23 FEET*
DATE DRILLED :	*4/17/97*	WATER LEVEL :	*12.2' ON 4/18/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*DIETRICH D-100*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		LOOSE GRAY SILTY **SAND** (SM)						
		MEDIUM DENSE ORANGE BROWN CLAYEY FINE **SAND** (SC)			SS-1			16
5								
		HARD GREEN GRAY **SILT** (ML) SHOWS RELICT BEDROCK TEXTURE.			SS-2			42
10								
		PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS GREEN AND BROWN **SILT** AND SLATE FRAGMENTS		▼				
					SS-3			50/.42
15								
					SS-4			50/.25
20								
		BORING TERMINATED AT 23 FT.						
25								
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW L-2
PROJECT NO. :	1054-95-286A	ELEVATION :	
LOGGED BY :	W. BECKWITH	BORING DEPTH :	24 FEET
DATE DRILLED :	4/17/97	WATER LEVEL :	11.5' ON 4/18/97
DRILL METHOD :	4 ¼" H.S.A.	DRILL RIG :	DIETRICH D-100

NOTES : 2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		MEDIUM DENSE TAN CLAYEY FINE **SAND** WITH OCCAISIONAL SMALL WELL-ROUNDED QUARTZ GRAVEL (SC)						
5					SS-1			11
		HARD REDDISH BROWN **SILT** WITH WEATHERED SLATE FRAGMENTS (ML)						
		PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS BLUE GREEN **SILT** WITH SLATE FRAGMENTS			SS-2			50/.4
10								
					SS-3			50/.4
15								
					SS-4			50/.15
20								
		BORING TERMINATED AT 24 FT.						
25								
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW L-3
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*28 FEET*
DATE DRILLED :	*4/18/97*	WATER LEVEL :	*15.9 ON 4/21/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		LOOSE REDDISH TAN CLAYEY **SAND** WITH WELL-ROUNDED QUARTZ GRAVEL (SC)						
		STIFF REDDISH BROWN TO TAN **SILT** (ML)						
5								
		HARD GREEN-TAN **SILT** (ML) SHOWS RELICT BEDROCK TEXTURE						
10								
					SS-1			43
15								
					SS-2			37
20								
		PARTIALLY WEATHERED ROCK (SLATE) SAMPLED AS GREEN TAN **SILT** WITH SLATE FRAGMENTS			SS-3			50.3
25								
		BORING TERMINATED AT 28 FT.						
30								
35								
40								

PROJECT :	JOHNSTON COUNTY LANDFILL PHASE 5 MONITOR WELL INSTALLATION	TEST BORING RECORD	DMW L-4
PROJECT NO. :	*1054-95-286A*	ELEVATION :	
LOGGED BY :	*W. BECKWITH*	BORING DEPTH :	*14.5 FEET*
DATE DRILLED :	*4/24/97*	WATER LEVEL :	*4.0' ON 4/25/97*
DRILL METHOD :	*4 ¼" H.S.A.*	DRILL RIG :	*MOBILE B-57 ATV*

NOTES : *2" PVC MONITOR WELL INSTALLED IN BOREHOLE AT COMPLETION OF DRILLING*

WELL SCHEMATIC LEGEND

SCREEN INTERVAL | SANDPACK | BENTONITE | GROUT

DEPTH (ft)	GRAPHIC LOG	Soil Description	WELL SCHEMATIC	WATER LEVEL	SAMPLE	ELEVATION	Standard Penetration Test Data BLOWS/FT (10, 30, 50, 70, 90)	BPF
		STIFF RED BROWN CLAYEY **SILT** WITH DIABASE COBBLES (ML-CL)						
		STIFF YELLOW TO BROWN **SILT** WITH DIABASE COBBLES (ML)			SS-1			50/.5
5					SS-2			50/.5
10					SS-3			6
		DIABASE BEDROCK						
15		*BORING TERMINATED UPON AUGER REFUSAL AT 14.5 FT.*						
20								
25								
30								
35								
40								

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QUAD. NO. _____ SERIAL NO. _____
Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-1

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/16/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 30.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 19.4 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.25 FT. **Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From +2.83	To 2.17 Ft.	4"	SCH 10	METAL
From +2.25	To 14.0 Ft.	2"	SCH 40	PVC
From	To Ft.			

13. **GROUT:**

Depth		Material	Method
From 0.0	To 11.0 Ft.	CEMENT	POURED
From 11.0	To 13.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

Depth		Diameter	Slot Size	Material
From 14.0	To 29.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From	To Ft.	in.	in.	
From	To Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

Depth		Size	Material
From 13.0	To 30.0 Ft.	FINE	SAND
From	To Ft.		

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

16. **REMARKS:** _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter Rudd 5/9/97
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resoures
Division of Environmental Management – Groundwater Section
P.O. Box 29535 – Raleigh, N.C. 27626-0535
Phone (919) 733-3221

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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DWM 5-2

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/22/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 22.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 3.84 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.20 FT. **Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	+2.78	To	2.22 Ft.	4"	SCH 10	METAL
From	+2.20	To	5.0 Ft.	2"	SCH 40	PVC
From		To	Ft.			

13. **GROUT:**

	Depth			Material	Method
From	0.0	To	2.0 Ft.	CEMENT	POURED
From	2.0	To	4.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

	Depth			Diameter	Slot Size	Material
From	5.0	To	20.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From		To	Ft.	in.	in.	
From		To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

	Depth			Size	Material
From	4.0	To	22.0 Ft.	FINE	SAND
From		To	Ft.		

16. **REMARKS:** _____

DEPTH From	DEPTH To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter G. Pulliam 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resources
Division of Environmental Management – Groundwater Section
P.O. Box 29535 – Raleigh, N.C. 27626-0535
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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DWM 5-3

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/22/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 22.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 8.95 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.0 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	+2.58	To	2.42 Ft.	4"	SCH 10	METAL
From	+2.0	To	5.0 Ft.	2"	SCH 40	PVC
From		To	Ft.			

13. **GROUT:**

	Depth			Material	Method
From	0.0	To	3.0 Ft.	CEMENT	POURED
From	3.0	To	4.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

	Depth			Diameter	Slot Size	Material
From	5.0	To	20.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From		To	Ft.	in.	in.	
From		To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

	Depth			Size	Material
From	4.0	To	22.0 Ft.	FINE	SAND
From		To	Ft.		

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

16. **REMARKS:** _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J Bullins 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Division of Environmental Management – Groundwater Section
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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-4

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/22/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 22.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 5.15 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.25 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	+2.83	To	2.17 Ft.	4"	SCH 10	METAL
From	+2.25	To	5.0 Ft.	2"	SCH 40	PVC
From		To	Ft.			

13. **GROUT:**

	Depth			Material	Method
From	0.0	To	3.0 Ft.	CEMENT	POURED
From	3.0	To	4.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

	Depth			Diameter	Slot Size	Material
From	5.0	To	20.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From		To	Ft.	in.	in.	
From		To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

	Depth			Size	Material
From	4.0	To	22.0 Ft.	FINE	SAND
From		To	Ft.		

DEPTH (From / To) **DRILLING LOG** (Formation Description)

SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

16. **REMARKS:** _____

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J. Bennett 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resoures
Division of Environmental Management – Groundwater Section
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Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-5

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/22/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 22.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 10.47 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.33 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth From	Depth To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
+2.92	2.08		4"	SCH 10	METAL
+2.33	5.0		2"	SCH 40	PVC

13. **GROUT:**

Depth From	Depth To	Ft.	Material	Method
0.0	3.0		CEMENT	POURED
3.0	4.0		BENTONITE	PELLETS

14. **SCREEN:**

Depth From	Depth To	Ft.	Diameter	Slot Size	Material
5.0	20.0		2" in.	0.010 in.	SCH 40 PVC
			in.	in.	
			in.	in.	

15. **SAND/GRAVEL PACK:**

Depth From	Depth To	Ft.	Size	Material
4.0	22.0		FINE	SAND

16. **REMARKS:** _____

DEPTH From	DEPTH To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J. Roberts 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resources
Division of Environmental Management – Groundwater Section
P.O. Box 29535 – Raleigh, N.C. 27626-0535
Phone (919) 733-3221

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QUAD. NO. _____ SERIAL NO. _____
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Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DWM 5-6

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/22/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 39.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 28.5 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 3.0 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	+3.58	To	1.42 Ft.	4"	SCH 10	METAL
From	+3.00	To	21.0 Ft.	2"	SCH 40	PVC
From		To	Ft.			

13. **GROUT:**

	Depth			Material	Method
From	0.0	To	17.0 Ft.	CEMENT	POURED
From	17.0	To	19.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

	Depth			Diameter	Slot Size	Material
From	21.0	To	36.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From		To	Ft.	in.	in.	
From		To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

	Depth			Size	Material
From	19.0	To	39.0 Ft.	FINE	SAND
From		To	Ft.		

16. **REMARKS:** _____

DEPTH From	DEPTH To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J. Bulow 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resources
Division of Environmental Management – Groundwater Section
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Phone (919) 733-3221

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QUAD. NO. _____ SERIAL NO. _____
Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-7

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/18/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 23.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 9.58 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.5 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth		Diameter	Wall Thickness or Weight/Ft.	Material
From +3.08	To 1.92 Ft.	4"	SCH 10	METAL
From +2.50	To 6.0 Ft.	2"	SCH 40	PVC
From	To Ft.			

13. **GROUT:**

Depth		Material	Method
From 0.0	To 3.0 Ft.	CEMENT	POURED
From 3.0	To 4.5 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

Depth		Diameter	Slot Size	Material
From 6.0	To 21.0 Ft.	2" in.	0.010 in.	SCH 40 PVC
From	To Ft.	in.	in.	
From	To Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

Depth		Size	Material
From 4.5	To 23.0 Ft.	FINE	SAND
From	To Ft.		

16. **REMARKS:** _____

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J. Bullock 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

North Carolina – Department of Environment, Health and Natural Resources
Division of Environmental Management – Groundwater Section
P.O. Box 29535 – Raleigh, N.C. 27626-0535
Phone (919) 733-3221

FOR OFFICE USE ONLY
QUAD. NO. _____ SERIAL NO. _____
Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-8

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/21/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 22.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 6.23 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 3.0 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth From	Depth To	Diameter	Wall Thickness or Weight/Ft.	Material
	+3.58	1.42	4"	SCH 10	METAL
	+3.00	5.0	2"	SCH 40	PVC

13. **GROUT:**

Depth From	Depth To	Material	Method
0.0	2.5	CEMENT	POURED
2.5	4.0	BENTONITE	PELLETS

14. **SCREEN:**

Depth From	Depth To	Diameter	Slot Size	Material
5.0	20.0	2" in.	0.010 in.	SCH 40 PVC
		in.	in.	
		in.	in.	

15. **SAND/GRAVEL PACK:**

Depth From	Depth To	Size	Material
4.0	22.0	FINE	SAND

16. **REMARKS:** _____

DEPTH From	DEPTH To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter G. Bullard 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE

Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-9

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 3/29/95 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 30.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 11.13 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.8 FT. **Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

	Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From	+2.88	To	2.12 Ft.	4"	SCH 10	METAL
From	+2.3	To	6.4 Ft.	2"	SCH 40	PVC
From		To	Ft.			

13. **GROUT:**

	Depth			Material	Method
From	0.0	To	2.0 Ft.	CEMENT	POURED
From	2.0	To	4.0 Ft.	BENTONITE	PELLETS

14. **SCREEN:**

	Depth			Diameter	Slot Size	Material
From	6.4	To	21.4 Ft.	2" in.	0.010 in.	SCH 40 PVC
From		To	Ft.	in.	in.	
From		To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

	Depth			Size	Material
From	4.0	To	30.0 Ft.	FINE	SAND
From		To	Ft.		

16. **REMARKS:** THIS WELL WAS INSTALLED IN 1995 AS C-13

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J Bulkowski 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW 5-10

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/21/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 25.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 13.6 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 3.0 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
+3.58	1.42		4"	SCH 10	METAL
+3.0	8.0		2"	SCH 40	PVC

13. **GROUT:**

Depth From	To	Ft.	Material	Method
0.0	5.0		CEMENT	POURED
5.0	7.0		BENTONITE	PELLETS

14. **SCREEN:**

Depth From	To	Ft.	Diameter	Slot Size	Material
8.0	23.0		2" in.	0.010 in.	SCH 40 PVC
			in.	in.	
			in.	in.	

15. **SAND/GRAVEL PACK:**

Depth From	To	Ft.	Size	Material
7.0	25.0		FINE	SAND

16. **REMARKS:** _____

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter Bulwer 5-9-97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW L-1

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/17/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 23.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 15.2 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 3.0 FT. **Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
+3.58	1.42		4"	SCH 10	METAL
+3.0	7.0		2"	SCH 40	PVC

13. **GROUT:**

Depth From	To	Ft.	Material	Method
0.0	4.0		CEMENT	POURED
4.0	6.0		BENTONITE	PELLETS

14. **SCREEN:**

Depth From	To	Ft.	Diameter	in.	Slot Size	in.	Material
7.0	22.0		2"		0.010		SCH 40 PVC

15. **SAND/GRAVEL PACK:**

Depth From	To	Ft.	Size	Material
6.0	23.0		FINE	SAND

16. **REMARKS:** _____

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

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Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW L-2

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/17/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 24.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 14.0 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 3.5 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth			Diameter	Wall Thickness or Weight/Ft.	Material
From +4.08	To 0.92	Ft.	4"	SCH 10	METAL
From +3.5	To 8.0	Ft.	2"	SCH 40	PVC
From	To	Ft.			

13. **GROUT:**

Depth			Material	Method
From 0.0	To 4.5	Ft.	CEMENT	POURED
From 4.5	To 6.5	Ft.	BENTONITE	PELLETS

14. **SCREEN:**

Depth			Diameter	Slot Size	Material
From 8.0	To 23.0	Ft.	2" in.	0.010 in.	SCH 40 PVC
From	To	Ft.	in.	in.	
From	To	Ft.	in.	in.	

15. **SAND/GRAVEL PACK:**

Depth			Size	Material
From 6.5	To 24.0	Ft.	FINE	SAND
From	To	Ft.		

16. **REMARKS:** _____

DEPTH From	DEPTH To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter G. Baker 5/9/97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Lat. _____ Long. _____ RO _____
Minor Basin _____
Basin Code _____
Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER D-MW-L-3

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/18/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 28.0 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 18.4 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.5 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
+3.11	1.89		4"	SCH 10	METAL
+2.5	13.0		2"	SCH 40	PVC

13. **GROUT:**

Depth From	To	Ft.	Material	Method
0.0	9.0		CEMENT	POURED
9.0	10.0		BENTONITE	PELLETS

14. **SCREEN:**

Depth From	To	Ft.	Diameter	in.	Slot Size	in.	Material
11.0	26.0		2"		0.010		SCH 40 PVC

15. **SAND/GRAVEL PACK:**

Depth From	To	Ft.	Size	Material
10.0	28.0		FINE	SAND

16. **REMARKS:** _____

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

Walter J. Bunn 5/9/97
SIGNATURE OF CONTRACTOR OR AGENT DATE
Submit original to Division of Environmental Management and copy to well owner.

GW-1 REV. 9/91

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Header Ent. _____ GW-1 Ent.

WELL CONSTRUCTION RECORD

WELL NUMBER DMW L-4

DRILLING CONTRACTOR S&ME

DRILLER REGISTRATION NUMBER 1461

STATE WELL CONSTRUCTION PERMIT NUMBER: _____

1. **WELL LOCATION: (Show sketch of the location below)**
   Nearest Town: SMITHFIELD **County:** JOHNSTON
   COUNTY HOME ROAD (S.R. 1503)
   (Road, Community or Subdivision and Lot No.)
2. **OWNER** JOHNSTON COUNTY LANDFILL
   ADDRESS 126 THIRD STREET (P.O. BOX 2263)
   (Street or Route No.)
   SMITHFIELD (City or Town) NORTH CAROLINA (State) 27577 (Zip Code)
3. **DATE DRILLED** 4/24/97 **USE OF WELL** MONITOR
4. **TOTAL DEPTH** 14.5 FT.
5. **CUTTINGS COLLECTED** YES ☒ NO ☐
6. **DOES WELL REPLACE EXISTING WELL?** YES ☐ NO ☒
7. **STATIC WATER LEVEL Below Top of Casing:** 6.8 FT.
   (Use "+" if Above Top of Casing)
8. **TOP OF CASING IS** 2.75 **FT. Above Land Surface***
   *Casing Terminated at/or below land surface is illegal unless a variance is issued in accordance with 15A NCAC 2C.0118 (applies to water supply wells only)
9. **YIELD (gpm):** N/A **METHOD OF TEST** _____
10. **WATER ZONES (depth):** N/A
11. **CHLORINATION: Type** N/A **Amount** _____
12. **CASING:**

Depth From	To	Ft.	Diameter	Wall Thickness or Weight/Ft.	Material
+3.33	1.67		4"	SCH 10	METAL
+2.75	4.15		2"	SCH 40	PVC

13. **GROUT:**

Depth From	To	Ft.	Material	Method
0.0	2.5		CEMENT	POURED
2.5	3.5		BENTONITE	PELLETS

14. **SCREEN:**

Depth From	To	Ft.	Diameter	in.	Slot Size	in.	Material
4.15	14.15		2"		0.010		SCH 40 PVC

15. **SAND/GRAVEL PACK:**

Depth From	To	Ft.	Size	Material
3.5	14.5		FINE	SAND

16. **REMARKS:** _____

DEPTH From	To	DRILLING LOG Formation Description
		SEE ATTACHED BORING LOG

If additional space is needed use back of form

LOCATION SKETCH
(Show direction and distance from at least two State Roads or other map reference points)

I DO HEREBY CERTIFY THAT THIS WELL WAS CONSTRUCTED IN ACCORDANCE WITH 15A NCAC 2C, WELL CONSTRUCTION STANDARDS, AND THAT A COPY OF THIS RECORD HAS BEEN PROVIDED TO THE WELL OWNER.

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GW-1 REV. 9/91

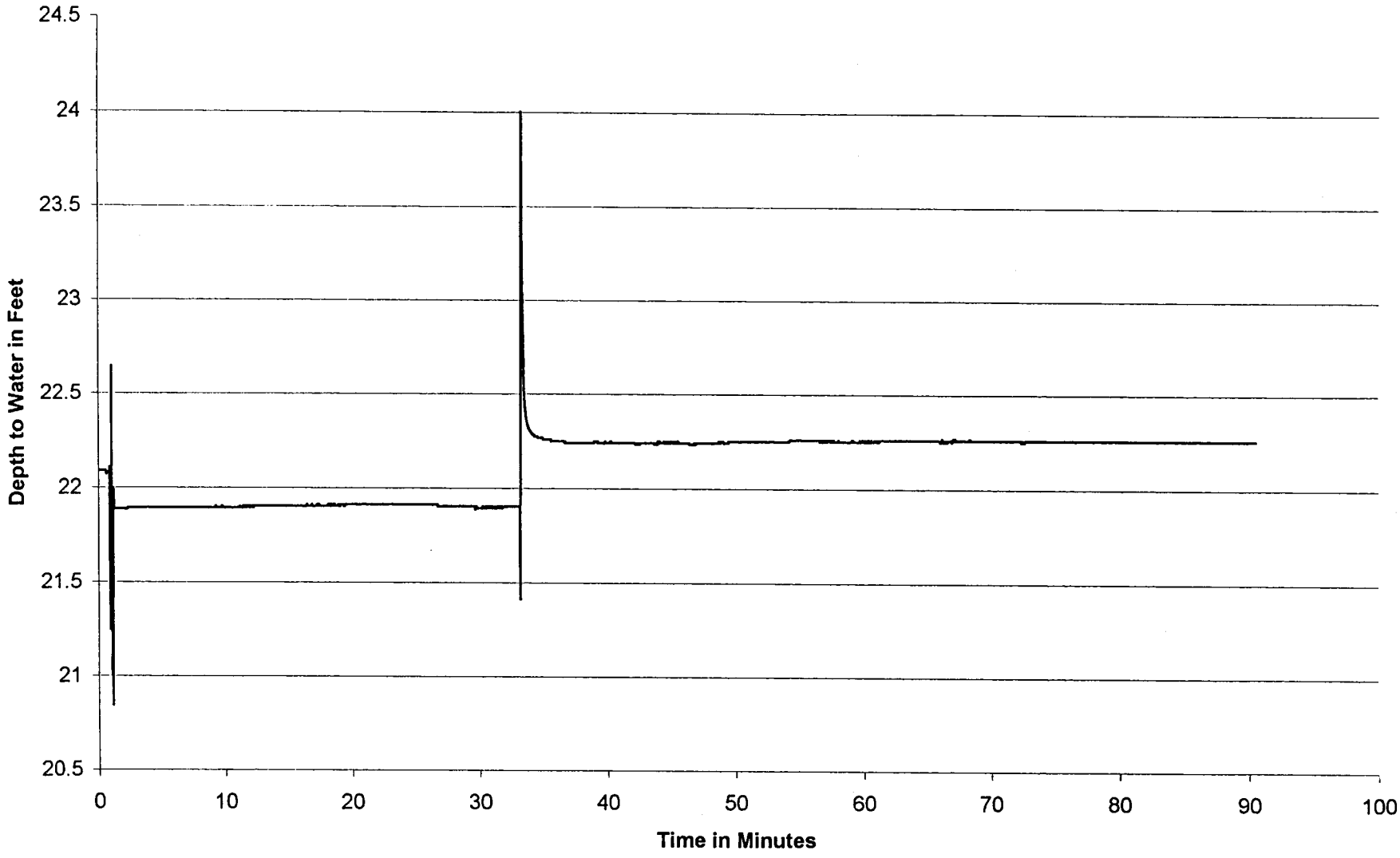
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-1

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	2.78E-03	cm/sec	or	2,878	ft/year
By Bouwer and Rice,	K=	1.66E-03	cm/sec	or	1,719	ft/year

AQUIFER TEST FOR WELL DMW 5-1

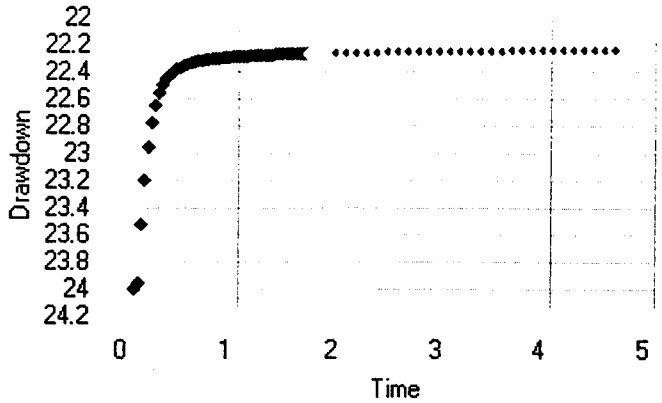


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-1** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 5/5/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	31.7
Static W/L-Depth (ft.):	22.04
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	24
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	15.7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	6.91
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.7
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

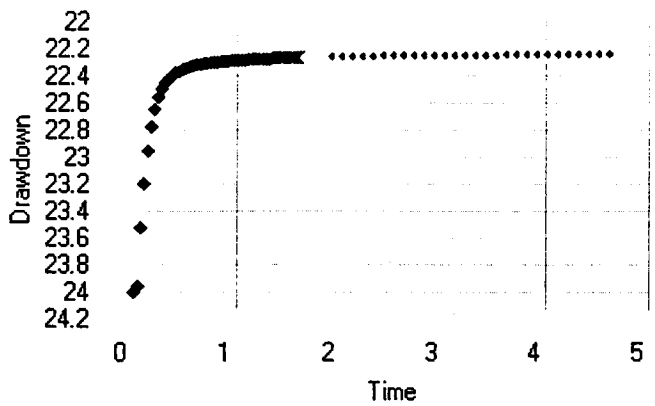
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.01	23.9995	1.68	22.268				
0.05	23.9572	1.71	22.268				
0.08	23.5263	1.75	22.268				
0.11	23.1968	1.78	22.259				
0.15	22.9517	1.81	22.259				
0.18	22.775	1.85	22.259				
0.21	22.648	1.88	22.259				
0.25	22.555	1.91	22.259				
0.28	22.496	2.01	22.259				
0.31	22.454	2.11	22.259				
0.35	22.42	2.21	22.259				
0.38	22.403	2.31	22.259				
0.41	22.378	2.41	22.251				
0.45	22.369	2.51	22.251				
0.48	22.352	2.61	22.251				
0.51	22.344	2.71	22.251				
0.55	22.335	2.81	22.251				
0.58	22.327	2.91	22.251				
0.61	22.318	3.01	22.251				
0.65	22.318	3.11	22.251				
0.68	22.31	3.21	22.251				
0.71	22.31	3.31	22.251				
0.75	22.302	3.41	22.251				
0.78	22.302	3.51	22.251				
0.81	22.302	3.61	22.242				
0.85	22.293	3.71	22.242				
0.88	22.293	3.81	22.242				
0.91	22.293	3.91	22.242				
0.95	22.285	4.01	22.242				
0.98	22.285	4.11	22.242				
1.01	22.285	4.21	22.242				
1.05	22.285	4.31	22.242				
1.08	22.285	4.41	22.242				
1.11	22.276	4.51	22.242				

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-1** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 5/5/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	31.7
Static W/L-Depth (ft.):	22.04
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	24
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	15.7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	6.91
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.7
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

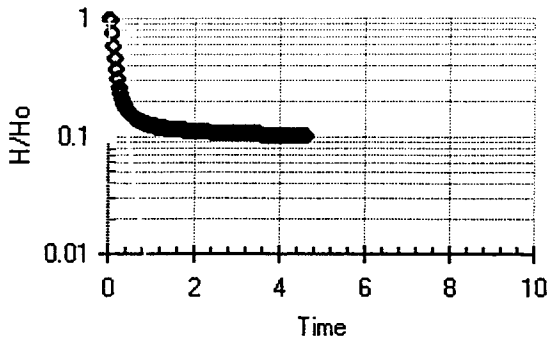
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.15	22.276	4.61	22.242				
1.18	22.276						
1.21	22.276						
1.25	22.276						
1.28	22.276						
1.31	22.276						
1.35	22.268						
1.38	22.268						
1.41	22.268						
1.45	22.268						
1.48	22.268						
1.51	22.268						
1.55	22.268						
1.58	22.268						
1.61	22.268						
1.65	22.268						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 18:36
Identification: **DMW 5-1**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	22.04	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	11	Max 85
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**2.78E-03**	cm./sec.
Basic Time Lag:	0.19	min.
Error of Fit:	0.0923	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.01	24.00	1.96	0.0000	0.0331
2)	0.05	23.96	1.92	-0.0218	-0.1828
3)	0.08	23.53	1.49	-0.2764	-0.3448
4)	0.11	23.20	1.16	-0.5270	-0.5067
5)	0.15	22.95	0.91	-0.7651	-0.7226
6)	0.18	22.78	0.73	-0.9806	-0.8846
7)	0.21	22.65	0.61	-1.1703	-1.0465
8)	0.25	22.56	0.52	-1.3363	-1.2624
9)	0.28	22.50	0.46	-1.4580	-1.4244
10)	0.31	22.45	0.41	-1.5546	-1.5863
11)	0.35	22.42	0.38	-1.6403	-1.8023
12)	0.38	22.40	0.36	-1.6860	-1.9642
13)	0.41	22.38	0.34	-1.7574	-2.1262
14)	0.45	22.37	0.33	-1.7844	-2.3421
15)	0.48	22.35	0.31	-1.8374	-2.5040
16)	0.51	22.34	0.30	-1.8634	-2.6660
17)	0.55	22.34	0.30	-1.8935	-2.8819
18)	0.58	22.33	0.29	-1.9210	-3.0439
19)	0.61	22.32	0.28	-1.9528	-3.2058
20)	0.65	22.32	0.28	-1.9528	-3.4217
21)	0.68	22.31	0.27	-1.9820	-3.5837
22)	0.71	22.31	0.27	-1.9820	-3.7456
23)	0.75	22.30	0.26	-2.0121	-3.9616
24)	0.78	22.30	0.26	-2.0121	-4.1235
25)	0.81	22.30	0.26	-2.0121	-4.2855
26)	0.85	22.29	0.25	-2.0471	-4.5014
27)	0.88	22.29	0.25	-2.0471	-4.6633
28)	0.91	22.29	0.25	-2.0471	-4.8253
29)	0.95	22.29	0.25	-2.0792	-5.0412

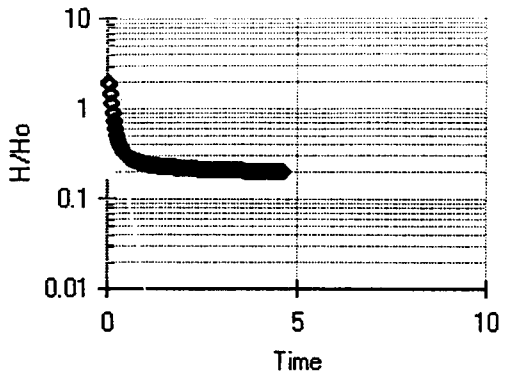
30)	0.98	22.29	0.25	-2.0792	-5.2032
31)	1.01	22.29	0.25	-2.0792	-5.3651
32)	1.05	22.29	0.25	-2.0792	-5.5810
33)	1.08	22.29	0.25	-2.0792	-5.7430
34)	1.11	22.28	0.24	-2.1166	-5.9049
35)	1.15	22.28	0.24	-2.1166	-6.1209
36)	1.18	22.28	0.24	-2.1166	-6.2828
37)	1.21	22.28	0.24	-2.1166	-6.4447
38)	1.25	22.28	0.24	-2.1166	-6.6607
39)	1.28	22.28	0.24	-2.1166	-6.8226
40)	1.31	22.28	0.24	-2.1166	-6.9846
41)	1.35	22.27	0.23	-2.1511	-7.2005
42)	1.38	22.27	0.23	-2.1511	-7.3624
43)	1.41	22.27	0.23	-2.1511	-7.5244
44)	1.45	22.27	0.23	-2.1511	-7.7403
45)	1.48	22.27	0.23	-2.1511	-7.9023
46)	1.51	22.27	0.23	-2.1511	-8.0642
47)	1.55	22.27	0.23	-2.1511	-8.2801
48)	1.58	22.27	0.23	-2.1511	-8.4421
49)	1.61	22.27	0.23	-2.1511	-8.6040
50)	1.65	22.27	0.23	-2.1511	-8.8200
51)	1.68	22.27	0.23	-2.1511	-8.9819
52)	1.71	22.27	0.23	-2.1511	-9.1439
53)	1.75	22.27	0.23	-2.1511	-9.3598
54)	1.78	22.26	0.22	-2.1914	-9.5217
55)	1.81	22.26	0.22	-2.1914	-9.6837
56)	1.85	22.26	0.22	-2.1914	-9.8996
57)	1.88	22.26	0.22	-2.1914	-10.0616
58)	1.91	22.26	0.22	-2.1914	-10.2235
59)	2.01	22.26	0.22	-2.1914	-10.7633
60)	2.11	22.26	0.22	-2.1914	-11.3031
61)	2.21	22.26	0.22	-2.1914	-11.8430
62)	2.31	22.26	0.22	-2.1914	-12.3828
63)	2.41	22.25	0.21	-2.2286	-12.9226
64)	2.51	22.25	0.21	-2.2286	-13.4624
65)	2.61	22.25	0.21	-2.2286	-14.0023
66)	2.71	22.25	0.21	-2.2286	-14.5421
67)	2.81	22.25	0.21	-2.2286	-15.0819
68)	2.91	22.25	0.21	-2.2286	-15.6217
69)	3.01	22.25	0.21	-2.2286	-16.1615
70)	3.11	22.25	0.21	-2.2286	-16.7014
71)	3.21	22.25	0.21	-2.2286	-17.2412
72)	3.31	22.25	0.21	-2.2286	-17.7810
73)	3.41	22.25	0.21	-2.2286	-18.3208
74)	3.51	22.25	0.21	-2.2286	-18.8607

75)	3.61	22.24	0.20	-2.2722	-19.4005
76)	3.71	22.24	0.20	-2.2722	-19.9403
77)	3.81	22.24	0.20	-2.2722	-20.4801
78)	3.91	22.24	0.20	-2.2722	-21.0199
79)	4.01	22.24	0.20	-2.2722	-21.5598
80)	4.11	22.24	0.20	-2.2722	-22.0996
81)	4.21	22.24	0.20	-2.2722	-22.6394
82)	4.31	22.24	0.20	-2.2722	-23.1792
83)	4.41	22.24	0.20	-2.2722	-23.7191
84)	4.51	22.24	0.20	-2.2722	-24.2589
85)	4.61	22.24	0.20	-2.2722	-24.7987

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW 5-1**
Analysis By: WJB
Run Date: 5/28/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	6.91	feet
Water Table Depth:	22.04	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	11	Max 85
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.66E-03**	cm./sec.
Error of Fit:	0.092	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.01	24.00	1.96		0.673	0.706
2)	0.05	23.96	1.92		0.651	0.490
3)	0.08	23.53	1.49		0.396	0.328
4)	0.11	23.20	1.16		0.146	0.166
5)	0.15	22.95	0.91		-0.092	-0.050
6)	0.18	22.78	0.73		-0.308	-0.212
7)	0.21	22.65	0.61		-0.498	-0.374
8)	0.25	22.56	0.52		-0.664	-0.590
9)	0.28	22.50	0.46		-0.785	-0.752
10)	0.31	22.45	0.41		-0.882	-0.914
11)	0.35	22.42	0.38		-0.968	-1.130
12)	0.38	22.40	0.36		-1.013	-1.292
13)	0.41	22.38	0.34		-1.085	-1.453
14)	0.45	22.37	0.33		-1.112	-1.669
15)	0.48	22.35	0.31		-1.165	-1.831
16)	0.51	22.34	0.30		-1.191	-1.993
17)	0.55	22.34	0.30		-1.221	-2.209
18)	0.58	22.33	0.29		-1.248	-2.371
19)	0.61	22.32	0.28		-1.280	-2.533
20)	0.65	22.32	0.28		-1.280	-2.749
21)	0.68	22.31	0.27		-1.309	-2.911
22)	0.71	22.31	0.27		-1.309	-3.073
23)	0.75	22.30	0.26		-1.339	-3.289
24)	0.78	22.30	0.26		-1.339	-3.451
25)	0.81	22.30	0.26		-1.339	-3.613
26)	0.85	22.29	0.25		-1.374	-3.829
27)	0.88	22.29	0.25		-1.374	-3.991
28)	0.91	22.29	0.25		-1.374	-4.153
29)	0.95	22.29	0.25		-1.406	-4.369

30)	0.98	22.29	0.25		-1.406	-4.530
31)	1.01	22.29	0.25		-1.406	-4.692
32)	1.05	22.29	0.25		-1.406	-4.908
33)	1.08	22.29	0.25		-1.406	-5.070
34)	1.11	22.28	0.24		-1.444	-5.232
35)	1.15	22.28	0.24		-1.444	-5.448
36)	1.18	22.28	0.24		-1.444	-5.610
37)	1.21	22.28	0.24		-1.444	-5.772
38)	1.25	22.28	0.24		-1.444	-5.988
39)	1.28	22.28	0.24		-1.444	-6.150
40)	1.31	22.28	0.24		-1.444	-6.312
41)	1.35	22.27	0.23		-1.478	-6.528
42)	1.38	22.27	0.23		-1.478	-6.690
43)	1.41	22.27	0.23		-1.478	-6.852
44)	1.45	22.27	0.23		-1.478	-7.068
45)	1.48	22.27	0.23		-1.478	-7.230
46)	1.51	22.27	0.23		-1.478	-7.392
47)	1.55	22.27	0.23		-1.478	-7.607
48)	1.58	22.27	0.23		-1.478	-7.769
49)	1.61	22.27	0.23		-1.478	-7.931
50)	1.65	22.27	0.23		-1.478	-8.147
51)	1.68	22.27	0.23		-1.478	-8.309
52)	1.71	22.27	0.23		-1.478	-8.471
53)	1.75	22.27	0.23		-1.478	-8.687
54)	1.78	22.26	0.22		-1.519	-8.849
55)	1.81	22.26	0.22		-1.519	-9.011
56)	1.85	22.26	0.22		-1.519	-9.227
57)	1.88	22.26	0.22		-1.519	-9.389
58)	1.91	22.26	0.22		-1.519	-9.551
59)	2.01	22.26	0.22		-1.519	-10.091
60)	2.11	22.26	0.22		-1.519	-10.630
61)	2.21	22.26	0.22		-1.519	-11.170
62)	2.31	22.26	0.22		-1.519	-11.710
63)	2.41	22.25	0.21		-1.556	-12.250
64)	2.51	22.25	0.21		-1.556	-12.790
65)	2.61	22.25	0.21		-1.556	-13.330
66)	2.71	22.25	0.21		-1.556	-13.869
67)	2.81	22.25	0.21		-1.556	-14.409
68)	2.91	22.25	0.21		-1.556	-14.949
69)	3.01	22.25	0.21		-1.556	-15.489
70)	3.11	22.25	0.21		-1.556	-16.029
71)	3.21	22.25	0.21		-1.556	-16.569
72)	3.31	22.25	0.21		-1.556	-17.108
73)	3.41	22.25	0.21		-1.556	-17.648
74)	3.51	22.25	0.21		-1.556	-18.188

75)	3.61	22.24	0.20		-1.599	-18.728
76)	3.71	22.24	0.20		-1.599	-19.268
77)	3.81	22.24	0.20		-1.599	-19.807
78)	3.91	22.24	0.20		-1.599	-20.347
79)	4.01	22.24	0.20		-1.599	-20.887
80)	4.11	22.24	0.20		-1.599	-21.427
81)	4.21	22.24	0.20		-1.599	-21.967
82)	4.31	22.24	0.20		-1.599	-22.507
83)	4.41	22.24	0.20		-1.599	-23.046
84)	4.51	22.24	0.20		-1.599	-23.586
85)	4.61	22.24	0.20		-1.599	-24.126

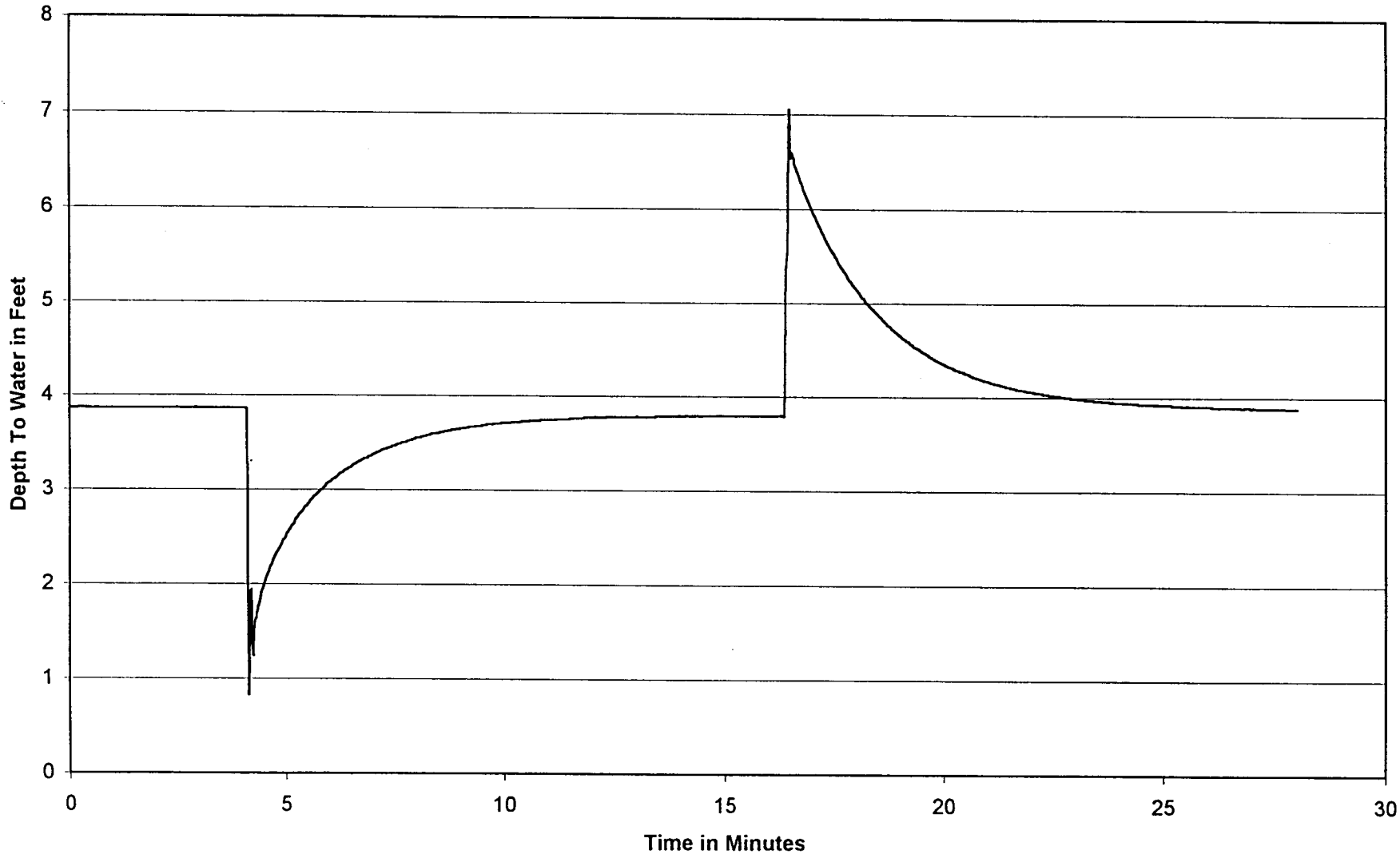
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-2

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	3.05E-04	cm/sec	or	316	ft/year
By Bouwer and Rice,	K=	1.85E-04	cm/sec	or	192	ft/year

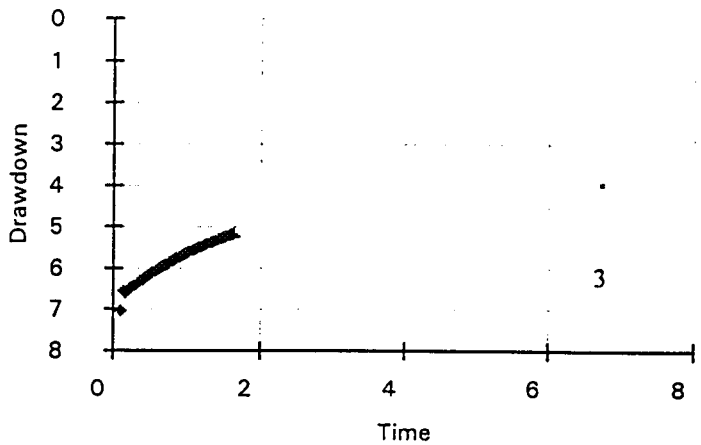
AQUIFER TEST FOR WELL DMW 5-2



SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: _____ Test Type: _____
Project No.: **1054-95-286A** Topo. Elev.: _____ Weather: _____
roject Name: **Phase 5 Cell** Analysis By: _____ Date Started: _____

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.5
Static W/L-Depth (ft.):	3.87
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	7.1
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	18.6
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



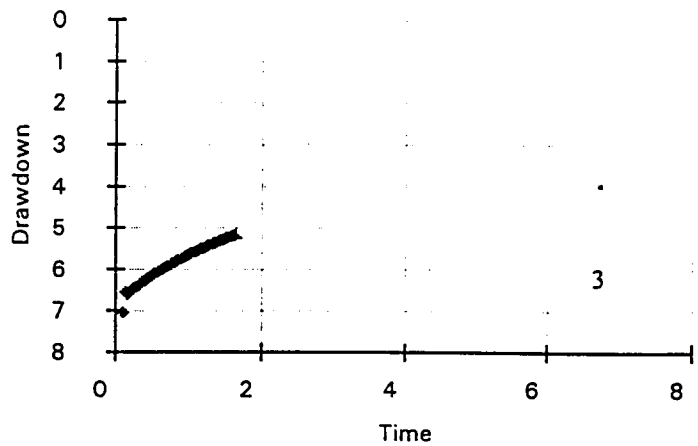
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	7.029	1.76	5.077	3.43	4.401	5.1	4.105
0.13	6.547	1.8	5.06	3.46	4.393	5.13	4.105
0.16	6.598	1.83	5.043	3.5	4.384	5.16	4.097
0.2	6.547	1.86	5.018	3.53	4.376	5.2	4.097
0.23	6.471	1.9	5.001	3.56	4.367	5.23	4.088
0.26	6.437	1.93	4.984	3.6	4.359	5.26	4.088
0.3	6.387	1.96	4.967	3.63	4.35	5.3	4.08
0.33	6.344	2	4.95	3.66	4.342	5.33	4.08
0.36	6.302	2.03	4.933	3.7	4.333	5.36	4.08
0.4	6.26	2.06	4.917	3.73	4.325	5.4	4.072
0.43	6.218	2.1	4.9	3.76	4.325	5.43	4.072
0.46	6.175	2.13	4.883	3.8	4.317	5.46	4.072
0.5	6.142	2.16	4.866	3.83	4.308	5.5	4.063
0.53	6.099	2.2	4.849	3.86	4.3	5.53	4.063
0.56	6.066	2.23	4.832	3.9	4.291	5.56	4.063
0.6	6.023	2.26	4.815	3.93	4.283	5.6	4.055
0.63	5.99	2.3	4.798	3.96	4.283	5.63	4.055
0.66	5.956	2.33	4.781	4	4.274	5.66	4.055
0.7	5.922	2.36	4.764	4.03	4.266	5.7	4.046
0.73	5.888	2.4	4.756	4.06	4.266	5.73	4.046
0.76	5.854	2.43	4.739	4.1	4.257	5.76	4.046
0.8	5.821	2.46	4.722	4.13	4.249	5.8	4.038
0.83	5.787	2.5	4.714	4.16	4.249	5.83	4.038
0.86	5.761	2.53	4.697	4.2	4.241	5.86	4.038
0.9	5.728	2.56	4.688	4.23	4.232	5.9	4.029
0.93	5.694	2.6	4.671	4.26	4.224	5.93	4.029
0.96	5.66	2.63	4.655	4.3	4.215	5.96	4.029
1	5.635	2.66	4.646	4.33	4.207	6	4.029
1.03	5.609	2.7	4.629	4.36	4.207	6.03	4.021

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: _____ Test Type: _____
Project No.: **1054-95-286A** Topo. Elev.: _____ Weather: _____
roject Name: **Phase 5 Cell** Analysis By: _____ Date Started: _____

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.5
Static W/L-Depth (ft.):	3.87
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	7.1
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	18.6
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



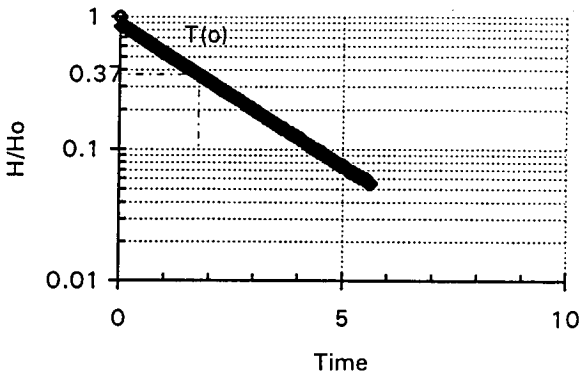
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.06	5.576	2.73	4.621	4.4	4.198	6.06	4.021
1.1	5.55	2.76	4.612	4.43	4.198	6.1	4.021
1.13	5.525	2.8	4.595	4.46	4.19	6.13	4.012
1.16	5.5	2.83	4.587	4.5	4.181	6.16	4.012
1.2	5.474	2.86	4.57	4.53	4.181	6.2	4.012
1.23	5.44	2.9	4.562	4.56	4.173	6.23	4.012
1.26	5.415	2.93	4.553	4.6	4.173	6.26	4.012
1.3	5.39	2.96	4.536	4.63	4.165	6.3	4.004
1.33	5.364	3	4.528	4.66	4.165	6.33	4.004
1.36	5.347	3.03	4.519	4.7	4.156	6.36	4.004
1.4	5.322	3.06	4.511	4.73	4.148	6.4	3.996
1.43	5.297	3.1	4.494	4.76	4.148	6.43	3.996
1.46	5.271	3.13	4.486	4.8	4.139	6.46	3.996
1.5	5.246	3.16	4.477	4.83	4.139	6.5	3.996
1.53	5.229	3.2	4.469	4.86	4.131	6.53	3.987
1.56	5.204	3.23	4.46	4.9	4.131	6.56	3.987
1.6	5.178	3.26	4.452	4.93	4.122	6.6	3.987
1.63	5.162	3.3	4.435	4.96	4.122	6.63	3.987
1.66	5.145	3.33	4.426	5	4.114	6.66	3.987
1.7	5.119	3.36	4.418	5.03	4.114	6.7	3.979
1.73	5.102	3.4	4.41	5.06	4.105	6.73	3.979

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	**Phase 5 Cell**	Project No.:	**1054-95-286A**
Client Name:	Johnston County	Run Date:	5/29/97 8:43
Analysis By:	WJB	Identification:	**DMW 5-2**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	3.87	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	100	Max 170
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**3.05E-04**	cm./sec.
Basic Time Lag:	1.75	min.
Error of Fit:	0.0196	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	7.03	3.16	0.0000	-0.1297
2)	0.13	6.55	2.68	-0.1656	-0.1446
3)	0.16	6.60	2.73	-0.1467	-0.1596
4)	0.20	6.55	2.68	-0.1656	-0.1795
5)	0.23	6.47	2.60	-0.1944	-0.1944
6)	0.26	6.44	2.57	-0.2075	-0.2093
7)	0.30	6.39	2.52	-0.2272	-0.2292
8)	0.33	6.34	2.47	-0.2444	-0.2441
9)	0.36	6.30	2.43	-0.2615	-0.2591
10)	0.40	6.26	2.39	-0.2790	-0.2790
11)	0.43	6.22	2.35	-0.2967	-0.2939
12)	0.46	6.18	2.31	-0.3152	-0.3088
13)	0.50	6.14	2.27	-0.3296	-0.3287
14)	0.53	6.10	2.23	-0.3487	-0.3437
15)	0.56	6.07	2.20	-0.3636	-0.3586
16)	0.60	6.02	2.15	-0.3834	-0.3785
17)	0.63	5.99	2.12	-0.3988	-0.3934
18)	0.66	5.96	2.09	-0.4150	-0.4084
19)	0.70	5.92	2.05	-0.4314	-0.4283
20)	0.73	5.89	2.02	-0.4481	-0.4432
21)	0.76	5.85	1.98	-0.4651	-0.4581
22)	0.80	5.82	1.95	-0.4819	-0.4780
23)	0.83	5.79	1.92	-0.4995	-0.4930
24)	0.86	5.76	1.89	-0.5131	-0.5079
25)	0.90	5.73	1.86	-0.5308	-0.5278

26)	0.93	5.69	1.82	-0.5492	-0.5427
27)	0.96	5.66	1.79	-0.5680	-0.5576
28)	1.00	5.64	1.77	-0.5821	-0.5775
29)	1.03	5.61	1.74	-0.5969	-0.5925
30)	1.06	5.58	1.71	-0.6161	-0.6074
31)	1.10	5.55	1.68	-0.6315	-0.6273
32)	1.13	5.53	1.66	-0.6465	-0.6422
33)	1.16	5.50	1.63	-0.6617	-0.6572
34)	1.20	5.47	1.60	-0.6778	-0.6771
35)	1.23	5.44	1.57	-0.6992	-0.6920
36)	1.26	5.42	1.55	-0.7152	-0.7069
37)	1.30	5.39	1.52	-0.7315	-0.7268
38)	1.33	5.36	1.49	-0.7488	-0.7418
39)	1.36	5.35	1.48	-0.7602	-0.7567
40)	1.40	5.32	1.45	-0.7773	-0.7766
41)	1.43	5.30	1.43	-0.7947	-0.7915
42)	1.46	5.27	1.40	-0.8131	-0.8064
43)	1.50	5.25	1.38	-0.8311	-0.8263
44)	1.53	5.23	1.36	-0.8435	-0.8413
45)	1.56	5.20	1.33	-0.8621	-0.8562
46)	1.60	5.18	1.31	-0.8818	-0.8761
47)	1.63	5.16	1.29	-0.8941	-0.8910
48)	1.66	5.15	1.28	-0.9073	-0.9060
49)	1.70	5.12	1.25	-0.9279	-0.9259
50)	1.73	5.10	1.23	-0.9416	-0.9408
51)	1.76	5.08	1.21	-0.9621	-0.9557
52)	1.80	5.06	1.19	-0.9763	-0.9756
53)	1.83	5.04	1.17	-0.9907	-0.9906
54)	1.86	5.02	1.15	-1.0122	-1.0055
55)	1.90	5.00	1.13	-1.0272	-1.0254
56)	1.93	4.98	1.11	-1.0423	-1.0403
57)	1.96	4.97	1.10	-1.0577	-1.0552
58)	2.00	4.95	1.08	-1.0733	-1.0751
59)	2.03	4.93	1.06	-1.0892	-1.0901
60)	2.06	4.92	1.05	-1.1043	-1.1050
61)	2.10	4.90	1.03	-1.1207	-1.1249
62)	2.13	4.88	1.01	-1.1373	-1.1398
63)	2.16	4.87	1.00	-1.1543	-1.1548
64)	2.20	4.85	0.98	-1.1715	-1.1747
65)	2.23	4.83	0.96	-1.1890	-1.1896
66)	2.26	4.82	0.95	-1.2068	-1.2045

67)	2.30	4.80	0.93	-1.2250	-1.2244
68)	2.33	4.78	0.91	-1.2435	-1.2394
69)	2.36	4.76	0.89	-1.2623	-1.2543
70)	2.40	4.76	0.89	-1.2713	-1.2742
71)	2.43	4.74	0.87	-1.2907	-1.2891
72)	2.46	4.72	0.85	-1.3104	-1.3040
73)	2.50	4.71	0.84	-1.3199	-1.3239
74)	2.53	4.70	0.83	-1.3402	-1.3389
75)	2.56	4.69	0.82	-1.3511	-1.3538
76)	2.60	4.67	0.80	-1.3721	-1.3737
77)	2.63	4.66	0.79	-1.3923	-1.3886
78)	2.66	4.65	0.78	-1.4039	-1.4036
79)	2.70	4.63	0.76	-1.4260	-1.4235
80)	2.73	4.62	0.75	-1.4366	-1.4384
81)	2.76	4.61	0.74	-1.4487	-1.4533
82)	2.80	4.60	0.73	-1.4718	-1.4732
83)	2.83	4.59	0.72	-1.4829	-1.4882
84)	2.86	4.57	0.70	-1.5069	-1.5031
85)	2.90	4.56	0.69	-1.5184	-1.5230
86)	2.93	4.55	0.68	-1.5315	-1.5379
87)	2.96	4.54	0.67	-1.5567	-1.5528
88)	3.00	4.53	0.66	-1.5688	-1.5728
89)	3.03	4.52	0.65	-1.5826	-1.5877
90)	3.06	4.51	0.64	-1.5950	-1.6026
91)	3.10	4.49	0.62	-1.6219	-1.6225
92)	3.13	4.49	0.62	-1.6348	-1.6374
93)	3.16	4.48	0.61	-1.6495	-1.6524
94)	3.20	4.47	0.60	-1.6627	-1.6723
95)	3.23	4.46	0.59	-1.6779	-1.6872
96)	3.26	4.45	0.58	-1.6915	-1.7021
97)	3.30	4.44	0.57	-1.7212	-1.7220
98)	3.33	4.43	0.56	-1.7372	-1.7370
99)	3.36	4.42	0.55	-1.7517	-1.7519
100)	3.40	4.41	0.54	-1.7664	-1.7718
101)	3.43	4.40	0.53	-1.7832	-1.7867
102)	3.46	4.39	0.52	-1.7984	-1.8016
103)	3.50	4.38	0.51	-1.8158	-1.8216
104)	3.53	4.38	0.51	-1.8315	-1.8365
105)	3.56	4.37	0.50	-1.8494	-1.8514
106)	3.60	4.36	0.49	-1.8656	-1.8713
107)	3.63	4.35	0.48	-1.8842	-1.8862

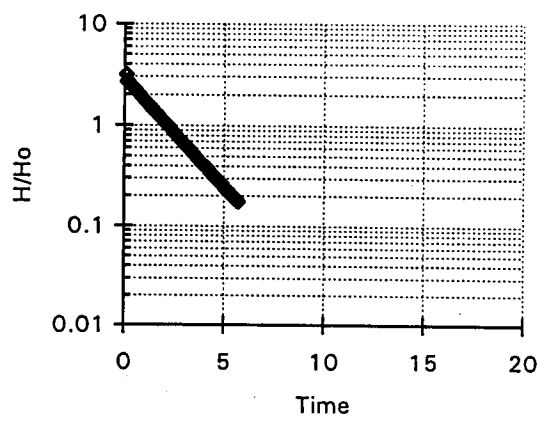
108)	3.66	4.34	0.47	-1.9010	-1.9012
109)	3.70	4.33	0.46	-1.9203	-1.9211
110)	3.73	4.33	0.46	-1.9377	-1.9360
111)	3.76	4.33	0.46	-1.9377	-1.9509
112)	3.80	4.32	0.45	-1.9555	-1.9708
113)	3.83	4.31	0.44	-1.9758	-1.9858
114)	3.86	4.30	0.43	-1.9942	-2.0007
115)	3.90	4.29	0.42	-2.0154	-2.0206
116)	3.93	4.28	0.41	-2.0346	-2.0355
117)	3.96	4.28	0.41	-2.0346	-2.0505
118)	4.00	4.27	0.40	-2.0566	-2.0704
119)	4.03	4.27	0.40	-2.0766	-2.0853
120)	4.06	4.27	0.40	-2.0766	-2.1002
121)	4.10	4.26	0.39	-2.0996	-2.1201
122)	4.13	4.25	0.38	-2.1205	-2.1350
123)	4.16	4.25	0.38	-2.1205	-2.1500
124)	4.20	4.24	0.37	-2.1418	-2.1699
125)	4.23	4.23	0.36	-2.1664	-2.1848
126)	4.26	4.22	0.35	-2.1887	-2.1997
127)	4.30	4.22	0.35	-2.2145	-2.2196
128)	4.33	4.21	0.34	-2.2379	-2.2346
129)	4.36	4.21	0.34	-2.2379	-2.2495
130)	4.40	4.20	0.33	-2.2650	-2.2694
131)	4.43	4.20	0.33	-2.2650	-2.2843
132)	4.46	4.19	0.32	-2.2897	-2.2993
133)	4.50	4.18	0.31	-2.3182	-2.3192
134)	4.53	4.18	0.31	-2.3182	-2.3341
135)	4.56	4.17	0.30	-2.3443	-2.3490
136)	4.60	4.17	0.30	-2.3443	-2.3689
137)	4.63	4.17	0.30	-2.3710	-2.3838
138)	4.66	4.17	0.30	-2.3710	-2.3988
139)	4.70	4.16	0.29	-2.4020	-2.4187
140)	4.73	4.15	0.28	-2.4304	-2.4336
141)	4.76	4.15	0.28	-2.4304	-2.4485
142)	4.80	4.14	0.27	-2.4633	-2.4684
143)	4.83	4.14	0.27	-2.4633	-2.4834
144)	4.86	4.13	0.26	-2.4935	-2.4983
145)	4.90	4.13	0.26	-2.4935	-2.5182
146)	4.93	4.12	0.25	-2.5286	-2.5331
147)	4.96	4.12	0.25	-2.5286	-2.5481
148)	5.00	4.11	0.24	-2.5608	-2.5680

149)	5.03	4.11	0.24	-2.5608	-2.5829
150)	5.06	4.11	0.24	-2.5984	-2.5978
151)	5.10	4.11	0.24	-2.5984	-2.6177
152)	5.13	4.11	0.24	-2.5984	-2.6326
153)	5.16	4.10	0.23	-2.6331	-2.6476
154)	5.20	4.10	0.23	-2.6331	-2.6675
155)	5.23	4.09	0.22	-2.6735	-2.6824
156)	5.26	4.09	0.22	-2.6735	-2.6973
157)	5.30	4.08	0.21	-2.7109	-2.7172
158)	5.33	4.08	0.21	-2.7109	-2.7322
159)	5.36	4.08	0.21	-2.7109	-2.7471
160)	5.40	4.07	0.20	-2.7497	-2.7670
161)	5.43	4.07	0.20	-2.7497	-2.7819
162)	5.46	4.07	0.20	-2.7497	-2.7969
163)	5.50	4.06	0.19	-2.7953	-2.8168
164)	5.53	4.06	0.19	-2.7953	-2.8317
165)	5.56	4.06	0.19	-2.7953	-2.8466
166)	5.60	4.06	0.19	-2.8377	-2.8665
167)	5.63	4.06	0.19	-2.8377	-2.8814
168)	5.66	4.06	0.19	-2.8377	-2.8964
169)	5.70	4.05	0.18	-2.8875	-2.9163
170)	5.73	4.05	0.18	-2.8875	-2.9312

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW 5-2**
Analysis By: WJB
Run Date: 5/29/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	18.6	feet
Water Table Depth:	3.87	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	100	Max 170
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.85E-04**	cm./sec.
Error of Fit:	0.020	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	7.03	3.16		1.150	1.021
2)	0.13	6.55	2.68		0.985	1.006
3)	0.16	6.60	2.73		1.004	0.991
4)	0.20	6.55	2.68		0.985	0.971
5)	0.23	6.47	2.60		0.956	0.956
6)	0.26	6.44	2.57		0.943	0.941
7)	0.30	6.39	2.52		0.923	0.921
8)	0.33	6.34	2.47		0.906	0.906
9)	0.36	6.30	2.43		0.889	0.891
10)	0.40	6.26	2.39		0.871	0.871
11)	0.43	6.22	2.35		0.854	0.856
12)	0.46	6.18	2.31		0.835	0.841
13)	0.50	6.14	2.27		0.821	0.822
14)	0.53	6.10	2.23		0.802	0.807
15)	0.56	6.07	2.20		0.787	0.792
16)	0.60	6.02	2.15		0.767	0.772
17)	0.63	5.99	2.12		0.751	0.757
18)	0.66	5.96	2.09		0.735	0.742
19)	0.70	5.92	2.05		0.719	0.722
20)	0.73	5.89	2.02		0.702	0.707
21)	0.76	5.85	1.98		0.685	0.692
22)	0.80	5.82	1.95		0.668	0.672
23)	0.83	5.79	1.92		0.651	0.657
24)	0.86	5.76	1.89		0.637	0.642
25)	0.90	5.73	1.86		0.620	0.622

26)	0.93	5.69	1.82		0.601	0.608
27)	0.96	5.66	1.79		0.582	0.593
28)	1.00	5.64	1.77		0.568	0.573
29)	1.03	5.61	1.74		0.553	0.558
30)	1.06	5.58	1.71		0.534	0.543
31)	1.10	5.55	1.68		0.519	0.523
32)	1.13	5.53	1.66		0.504	0.508
33)	1.16	5.50	1.63		0.489	0.493
34)	1.20	5.47	1.60		0.473	0.473
35)	1.23	5.44	1.57		0.451	0.458
36)	1.26	5.42	1.55		0.435	0.443
37)	1.30	5.39	1.52		0.419	0.423
38)	1.33	5.36	1.49		0.401	0.409
39)	1.36	5.35	1.48		0.390	0.394
40)	1.40	5.32	1.45		0.373	0.374
41)	1.43	5.30	1.43		0.356	0.359
42)	1.46	5.27	1.40		0.337	0.344
43)	1.50	5.25	1.38		0.319	0.324
44)	1.53	5.23	1.36		0.307	0.309
45)	1.56	5.20	1.33		0.288	0.294
46)	1.60	5.18	1.31		0.268	0.274
47)	1.63	5.16	1.29		0.256	0.259
48)	1.66	5.15	1.28		0.243	0.244
49)	1.70	5.12	1.25		0.222	0.224
50)	1.73	5.10	1.23		0.209	0.209
51)	1.76	5.08	1.21		0.188	0.195
52)	1.80	5.06	1.19		0.174	0.175
53)	1.83	5.04	1.17		0.160	0.160
54)	1.86	5.02	1.15		0.138	0.145
55)	1.90	5.00	1.13		0.123	0.125
56)	1.93	4.98	1.11		0.108	0.110
57)	1.96	4.97	1.10		0.093	0.095
58)	2.00	4.95	1.08		0.077	0.075
59)	2.03	4.93	1.06		0.061	0.060
60)	2.06	4.92	1.05		0.046	0.045
61)	2.10	4.90	1.03		0.030	0.025
62)	2.13	4.88	1.01		0.013	0.010
63)	2.16	4.87	1.00		-0.004	-0.005
64)	2.20	4.85	0.98		-0.021	-0.024
65)	2.23	4.83	0.96		-0.039	-0.039
66)	2.26	4.82	0.95		-0.057	-0.054

67)	2.30	4.80	0.93		-0.075	-0.074
68)	2.33	4.78	0.91		-0.093	-0.089
69)	2.36	4.76	0.89		-0.112	-0.104
70)	2.40	4.76	0.89		-0.121	-0.124
71)	2.43	4.74	0.87		-0.140	-0.139
72)	2.46	4.72	0.85		-0.160	-0.154
73)	2.50	4.71	0.84		-0.170	-0.174
74)	2.53	4.70	0.83		-0.190	-0.189
75)	2.56	4.69	0.82		-0.201	-0.204
76)	2.60	4.67	0.80		-0.222	-0.223
77)	2.63	4.66	0.79		-0.242	-0.238
78)	2.66	4.65	0.78		-0.254	-0.253
79)	2.70	4.63	0.76		-0.276	-0.273
80)	2.73	4.62	0.75		-0.286	-0.288
81)	2.76	4.61	0.74		-0.298	-0.303
82)	2.80	4.60	0.73		-0.322	-0.323
83)	2.83	4.59	0.72		-0.333	-0.338
84)	2.86	4.57	0.70		-0.357	-0.353
85)	2.90	4.56	0.69		-0.368	-0.373
86)	2.93	4.55	0.68		-0.381	-0.388
87)	2.96	4.54	0.67		-0.406	-0.403
88)	3.00	4.53	0.66		-0.419	-0.422
89)	3.03	4.52	0.65		-0.432	-0.437
90)	3.06	4.51	0.64		-0.445	-0.452
91)	3.10	4.49	0.62		-0.472	-0.472
92)	3.13	4.49	0.62		-0.485	-0.487
93)	3.16	4.48	0.61		-0.499	-0.502
94)	3.20	4.47	0.60		-0.512	-0.522
95)	3.23	4.46	0.59		-0.528	-0.537
96)	3.26	4.45	0.58		-0.541	-0.552
97)	3.30	4.44	0.57		-0.571	-0.572
98)	3.33	4.43	0.56		-0.587	-0.587
99)	3.36	4.42	0.55		-0.601	-0.602
100)	3.40	4.41	0.54		-0.616	-0.622
101)	3.43	4.40	0.53		-0.633	-0.636
102)	3.46	4.39	0.52		-0.648	-0.651
103)	3.50	4.38	0.51		-0.666	-0.671
104)	3.53	4.38	0.51		-0.681	-0.686
105)	3.56	4.37	0.50		-0.699	-0.701
106)	3.60	4.36	0.49		-0.715	-0.721
107)	3.63	4.35	0.48		-0.734	-0.736

108)	3.66	4.34	0.47		-0.751	-0.751
109)	3.70	4.33	0.46		-0.770	-0.771
110)	3.73	4.33	0.46		-0.787	-0.786
111)	3.76	4.33	0.46		-0.787	-0.801
112)	3.80	4.32	0.45		-0.805	-0.821
113)	3.83	4.31	0.44		-0.826	-0.836
114)	3.86	4.30	0.43		-0.844	-0.850
115)	3.90	4.29	0.42		-0.865	-0.870
116)	3.93	4.28	0.41		-0.884	-0.885
117)	3.96	4.28	0.41		-0.884	-0.900
118)	4.00	4.27	0.40		-0.906	-0.920
119)	4.03	4.27	0.40		-0.926	-0.935
120)	4.06	4.27	0.40		-0.926	-0.950
121)	4.10	4.26	0.39		-0.949	-0.970
122)	4.13	4.25	0.38		-0.970	-0.985
123)	4.16	4.25	0.38		-0.970	-1.000
124)	4.20	4.24	0.37		-0.992	-1.020
125)	4.23	4.23	0.36		-1.016	-1.035
126)	4.26	4.22	0.35		-1.038	-1.049
127)	4.30	4.22	0.35		-1.064	-1.069
128)	4.33	4.21	0.34		-1.088	-1.084
129)	4.36	4.21	0.34		-1.088	-1.099
130)	4.40	4.20	0.33		-1.115	-1.119
131)	4.43	4.20	0.33		-1.115	-1.134
132)	4.46	4.19	0.32		-1.139	-1.149
133)	4.50	4.18	0.31		-1.168	-1.169
134)	4.53	4.18	0.31		-1.168	-1.184
135)	4.56	4.17	0.30		-1.194	-1.199
136)	4.60	4.17	0.30		-1.194	-1.219
137)	4.63	4.17	0.30		-1.221	-1.234
138)	4.66	4.17	0.30		-1.221	-1.249
139)	4.70	4.16	0.29		-1.252	-1.268
140)	4.73	4.15	0.28		-1.280	-1.283
141)	4.76	4.15	0.28		-1.280	-1.298
142)	4.80	4.14	0.27		-1.313	-1.318
143)	4.83	4.14	0.27		-1.313	-1.333
144)	4.86	4.13	0.26		-1.343	-1.348
145)	4.90	4.13	0.26		-1.343	-1.368
146)	4.93	4.12	0.25		-1.378	-1.383
147)	4.96	4.12	0.25		-1.378	-1.398
148)	5.00	4.11	0.24		-1.411	-1.418
149)	5.03	4.11	0.24		-1.411	-1.433
150)	5.06	4.11	0.24		-1.448	-1.448
151)	5.10	4.11	0.24		-1.448	-1.467
152)	5.13	4.11	0.24		-1.448	-1.482
153)	5.16	4.10	0.23		-1.483	-1.497
154)	5.20	4.10	0.23		-1.483	-1.517

155)	5.23	4.09	0.22		-1.523	-1.532
156)	5.26	4.09	0.22		-1.523	-1.547
157)	5.30	4.08	0.21		-1.561	-1.567
158)	5.33	4.08	0.21		-1.561	-1.582
159)	5.36	4.08	0.21		-1.561	-1.597
160)	5.40	4.07	0.20		-1.599	-1.617
161)	5.43	4.07	0.20		-1.599	-1.632
162)	5.46	4.07	0.20		-1.599	-1.647
163)	5.50	4.06	0.19		-1.645	-1.667
164)	5.53	4.06	0.19		-1.645	-1.681
165)	5.56	4.06	0.19		-1.645	-1.696
166)	5.60	4.06	0.19		-1.687	-1.716
167)	5.63	4.06	0.19		-1.687	-1.731
168)	5.66	4.06	0.19		-1.687	-1.746
169)	5.70	4.05	0.18		-1.737	-1.766
170)	5.73	4.05	0.18		-1.737	-1.781

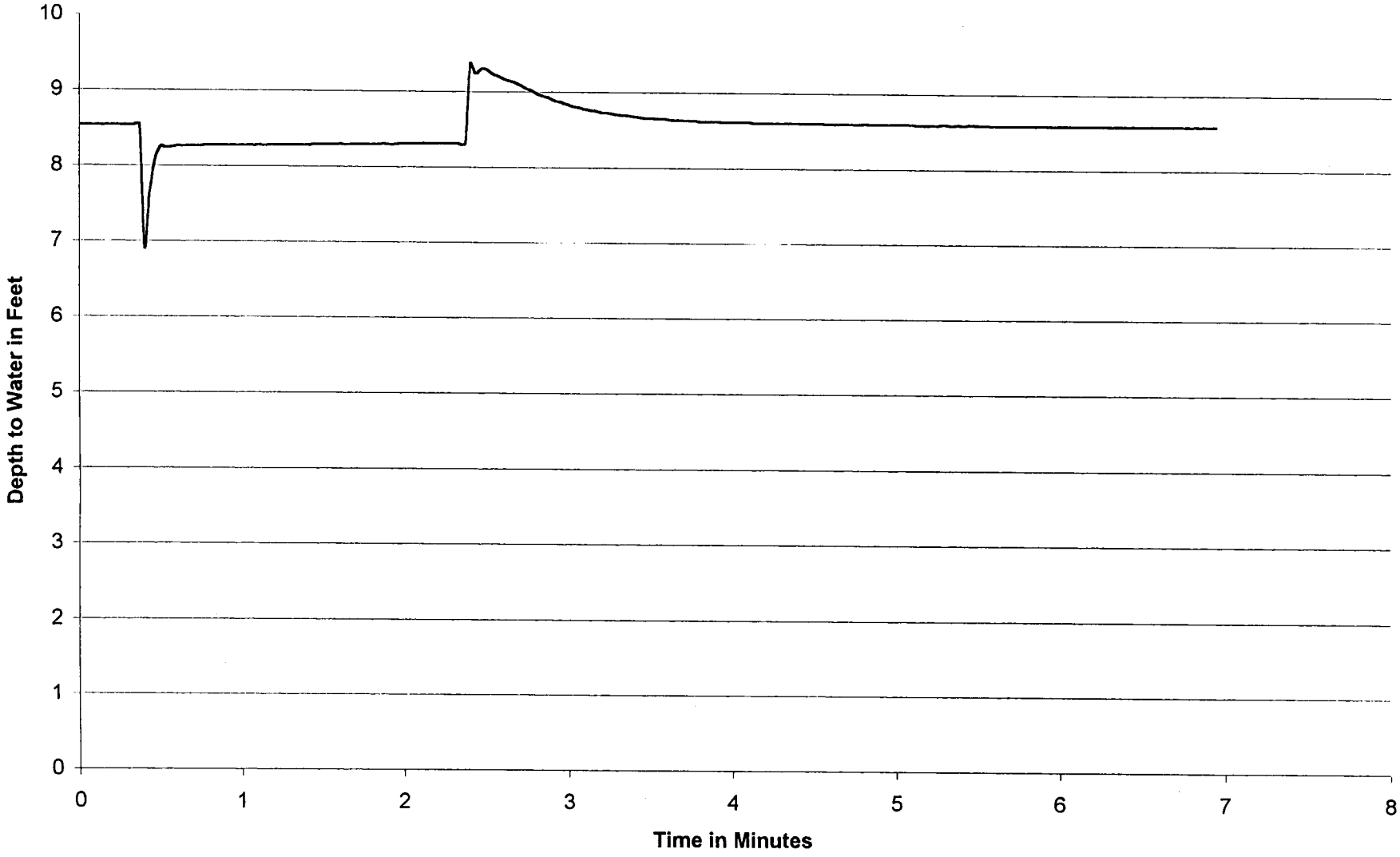
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-3

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	5.61E-04	cm/sec	or	581	ft/year
By Bouwer and Rice,	K=	3.51E-04	cm/sec	or	363	ft/year

AQUIFER TEST FOR WELL DMW 5-3

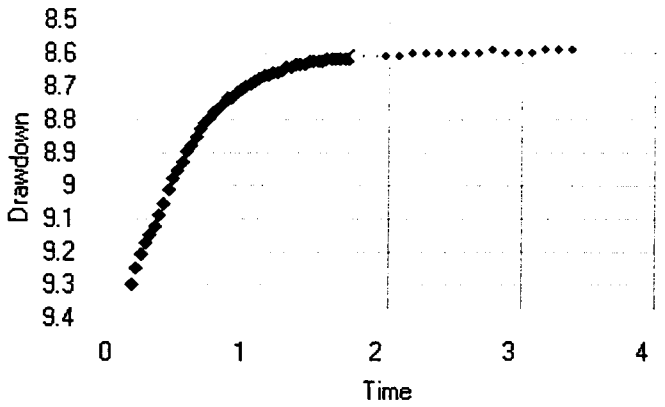


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-3** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/29/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.4
Static W/L-Depth (ft.):	8.26
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	9.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.4
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	13.74
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.4
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

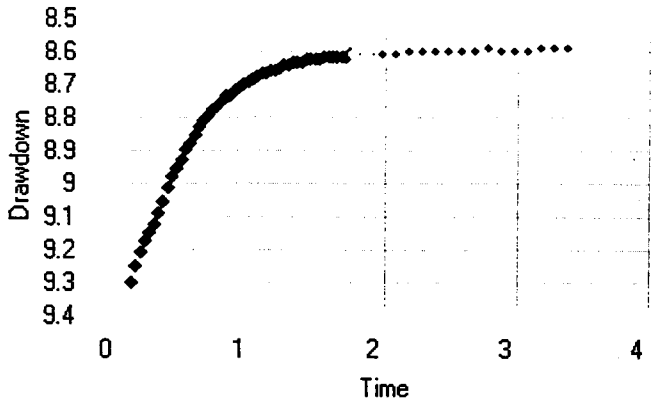
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	9.3	1.77	8.607				
0.13	9.249	1.8	8.607				
0.17	9.207	1.83	8.607				
0.2	9.173	1.87	8.607				
0.23	9.148	1.9	8.607				
0.27	9.123	1.93	8.607				
0.3	9.089	1.97	8.607				
0.33	9.055	2.07	8.607				
0.37	9.013	2.17	8.599				
0.4	8.979	2.27	8.599				
0.43	8.954	2.37	8.599				
0.47	8.928	2.47	8.599				
0.5	8.895	2.57	8.599				
0.53	8.878	2.67	8.599				
0.57	8.852	2.77	8.59				
0.6	8.827	2.87	8.599				
0.63	8.81	2.97	8.599				
0.67	8.793	3.07	8.599				
0.7	8.776	3.17	8.59				
0.73	8.768	3.27	8.59				
0.77	8.751	3.37	8.59				
0.8	8.734						
0.83	8.734						
0.87	8.717						
0.9	8.709						
0.93	8.7						
0.97	8.692						
1	8.683						
1.03	8.675						
1.07	8.666						
1.1	8.666						
1.13	8.658						
1.17	8.658						
1.2	8.65						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-3** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/29/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.4
Static W/L-Depth (ft.):	8.26
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	9.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.4
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	13.74
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.4
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

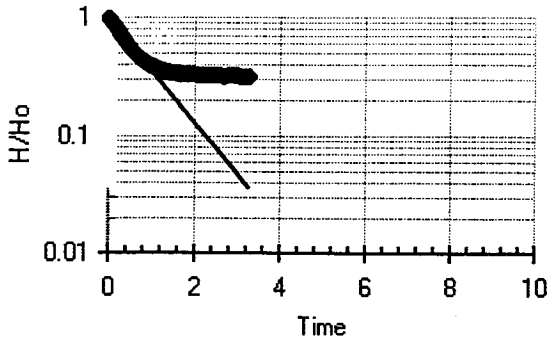
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.23	8.641						
1.27	8.641						
1.3	8.633						
1.33	8.633						
1.37	8.633						
1.4	8.624						
1.43	8.624						
1.47	8.624						
1.5	8.624						
1.53	8.616						
1.57	8.616						
1.6	8.616						
1.63	8.616						
1.67	8.616						
1.7	8.616						
1.73	8.607						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 18:32
Identification: **DMW 5-3**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	8.26	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 71
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**5.61E-04**	cm./sec.
Basic Time Lag:	0.95	min.
Error of Fit:	0.0433	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	9.30	1.04	0.0000	-0.0536
2)	0.13	9.25	0.99	-0.0503	-0.0835
3)	0.17	9.21	0.95	-0.0937	-0.1233
4)	0.20	9.17	0.91	-0.1302	-0.1532
5)	0.23	9.15	0.89	-0.1580	-0.1830
6)	0.27	9.12	0.86	-0.1866	-0.2228
7)	0.30	9.09	0.83	-0.2268	-0.2527
8)	0.33	9.06	0.80	-0.2686	-0.2826
9)	0.37	9.01	0.75	-0.3229	-0.3224
10)	0.40	8.98	0.72	-0.3691	-0.3522
11)	0.43	8.95	0.69	-0.4045	-0.3821
12)	0.47	8.93	0.67	-0.4427	-0.4219
13)	0.50	8.90	0.64	-0.4934	-0.4518
14)	0.53	8.88	0.62	-0.5205	-0.4816
15)	0.57	8.85	0.59	-0.5635	-0.5215
16)	0.60	8.83	0.57	-0.6066	-0.5513
17)	0.63	8.81	0.55	-0.6371	-0.5812
18)	0.67	8.79	0.53	-0.6685	-0.6210
19)	0.70	8.78	0.52	-0.7009	-0.6509
20)	0.73	8.77	0.51	-0.7165	-0.6807
21)	0.77	8.75	0.49	-0.7505	-0.7205
22)	0.80	8.73	0.47	-0.7858	-0.7504
23)	0.83	8.73	0.47	-0.7858	-0.7803
24)	0.87	8.72	0.46	-0.8223	-0.8201
25)	0.90	8.71	0.45	-0.8400	-0.8500
26)	0.93	8.70	0.44	-0.8602	-0.8798
27)	0.97	8.69	0.43	-0.8786	-0.9196
28)	1.00	8.68	0.42	-0.8996	-0.9495
29)	1.03	8.68	0.42	-0.9187	-0.9794

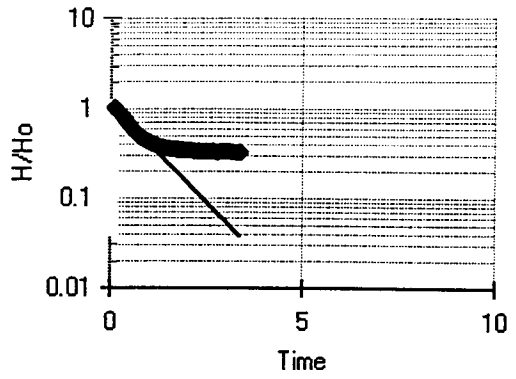
30)	1.07	8.67	0.41	-0.9406	-1.0192
31)	1.10	8.67	0.41	-0.9406	-1.0490
32)	1.13	8.66	0.40	-0.9605	-1.0789
33)	1.17	8.66	0.40	-0.9605	-1.1187
34)	1.20	8.65	0.39	-0.9808	-1.1486
35)	1.23	8.64	0.38	-1.0042	-1.1784
36)	1.27	8.64	0.38	-1.0042	-1.2183
37)	1.30	8.63	0.37	-1.0254	-1.2481
38)	1.33	8.63	0.37	-1.0254	-1.2780
39)	1.37	8.63	0.37	-1.0254	-1.3178
40)	1.40	8.62	0.36	-1.0498	-1.3477
41)	1.43	8.62	0.36	-1.0498	-1.3775
42)	1.47	8.62	0.36	-1.0498	-1.4173
43)	1.50	8.62	0.36	-1.0498	-1.4472
44)	1.53	8.62	0.36	-1.0720	-1.4771
45)	1.57	8.62	0.36	-1.0720	-1.5169
46)	1.60	8.62	0.36	-1.0720	-1.5467
47)	1.63	8.62	0.36	-1.0720	-1.5766
48)	1.67	8.62	0.36	-1.0720	-1.6164
49)	1.70	8.62	0.36	-1.0720	-1.6463
50)	1.73	8.61	0.35	-1.0977	-1.6761
51)	1.77	8.61	0.35	-1.0977	-1.7160
52)	1.80	8.61	0.35	-1.0977	-1.7458
53)	1.83	8.61	0.35	-1.0977	-1.7757
54)	1.87	8.61	0.35	-1.0977	-1.8155
55)	1.90	8.61	0.35	-1.0977	-1.8454
56)	1.93	8.61	0.35	-1.0977	-1.8752
57)	1.97	8.61	0.35	-1.0977	-1.9150
58)	2.07	8.61	0.35	-1.0977	-2.0146
59)	2.17	8.60	0.34	-1.1210	-2.1141
60)	2.27	8.60	0.34	-1.1210	-2.2137
61)	2.37	8.60	0.34	-1.1210	-2.3132
62)	2.47	8.60	0.34	-1.1210	-2.4128
63)	2.57	8.60	0.34	-1.1210	-2.5123
64)	2.67	8.60	0.34	-1.1210	-2.6118
65)	2.77	8.59	0.33	-1.1479	-2.7114
66)	2.87	8.60	0.34	-1.1210	-2.8109
67)	2.97	8.60	0.34	-1.1210	-2.9105
68)	3.07	8.60	0.34	-1.1210	-3.0100
69)	3.17	8.59	0.33	-1.1479	-3.1095
70)	3.27	8.59	0.33	-1.1479	-3.2091
71)	3.37	8.59	0.33	-1.1479	-3.3086

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW 5-3**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	13.74	feet
Water Table Depth:	8.26	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 71
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**3.51E-04**	cm./sec.
Error of Fit:	0.043	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	9.30	1.04		0.039	-0.014
2)	0.13	9.25	0.99		-0.011	-0.044
3)	0.17	9.21	0.95		-0.054	-0.084
4)	0.20	9.17	0.91		-0.091	-0.114
5)	0.23	9.15	0.89		-0.119	-0.144
6)	0.27	9.12	0.86		-0.147	-0.184
7)	0.30	9.09	0.83		-0.188	-0.213
8)	0.33	9.06	0.80		-0.229	-0.243
9)	0.37	9.01	0.75		-0.284	-0.283
10)	0.40	8.98	0.72		-0.330	-0.313
11)	0.43	8.95	0.69		-0.365	-0.343
12)	0.47	8.93	0.67		-0.403	-0.383
13)	0.50	8.90	0.64		-0.454	-0.413
14)	0.53	8.88	0.62		-0.481	-0.442
15)	0.57	8.85	0.59		-0.524	-0.482
16)	0.60	8.83	0.57		-0.567	-0.512
17)	0.63	8.81	0.55		-0.598	-0.542
18)	0.67	8.79	0.53		-0.629	-0.582
19)	0.70	8.78	0.52		-0.662	-0.612
20)	0.73	8.77	0.51		-0.677	-0.642
21)	0.77	8.75	0.49		-0.711	-0.681
22)	0.80	8.73	0.47		-0.747	-0.711
23)	0.83	8.73	0.47		-0.747	-0.741
24)	0.87	8.72	0.46		-0.783	-0.781
25)	0.90	8.71	0.45		-0.801	-0.811
26)	0.93	8.70	0.44		-0.821	-0.841
27)	0.97	8.69	0.43		-0.839	-0.880
28)	1.00	8.68	0.42		-0.860	-0.910
29)	1.03	8.68	0.42		-0.879	-0.940

30)	1.07	8.67	0.41		-0.901	-0.980
31)	1.10	8.67	0.41		-0.901	-1.010
32)	1.13	8.66	0.40		-0.921	-1.040
33)	1.17	8.66	0.40		-0.921	-1.079
34)	1.20	8.65	0.39		-0.942	-1.109
35)	1.23	8.64	0.38		-0.965	-1.139
36)	1.27	8.64	0.38		-0.965	-1.179
37)	1.30	8.63	0.37		-0.986	-1.209
38)	1.33	8.63	0.37		-0.986	-1.239
39)	1.37	8.63	0.37		-0.986	-1.279
40)	1.40	8.62	0.36		-1.011	-1.308
41)	1.43	8.62	0.36		-1.011	-1.338
42)	1.47	8.62	0.36		-1.011	-1.378
43)	1.50	8.62	0.36		-1.011	-1.408
44)	1.53	8.62	0.36		-1.033	-1.438
45)	1.57	8.62	0.36		-1.033	-1.478
46)	1.60	8.62	0.36		-1.033	-1.508
47)	1.63	8.62	0.36		-1.033	-1.537
48)	1.67	8.62	0.36		-1.033	-1.577
49)	1.70	8.62	0.36		-1.033	-1.607
50)	1.73	8.61	0.35		-1.058	-1.637
51)	1.77	8.61	0.35		-1.058	-1.677
52)	1.80	8.61	0.35		-1.058	-1.707
53)	1.83	8.61	0.35		-1.058	-1.736
54)	1.87	8.61	0.35		-1.058	-1.776
55)	1.90	8.61	0.35		-1.058	-1.806
56)	1.93	8.61	0.35		-1.058	-1.836
57)	1.97	8.61	0.35		-1.058	-1.876
58)	2.07	8.61	0.35		-1.058	-1.975
59)	2.17	8.60	0.34		-1.082	-2.075
60)	2.27	8.60	0.34		-1.082	-2.174
61)	2.37	8.60	0.34		-1.082	-2.274
62)	2.47	8.60	0.34		-1.082	-2.374
63)	2.57	8.60	0.34		-1.082	-2.473
64)	2.67	8.60	0.34		-1.082	-2.573
65)	2.77	8.59	0.33		-1.109	-2.672
66)	2.87	8.60	0.34		-1.082	-2.772
67)	2.97	8.60	0.34		-1.082	-2.871
68)	3.07	8.60	0.34		-1.082	-2.971
69)	3.17	8.59	0.33		-1.109	-3.070
70)	3.27	8.59	0.33		-1.109	-3.170
71)	3.37	8.59	0.33		-1.109	-3.269

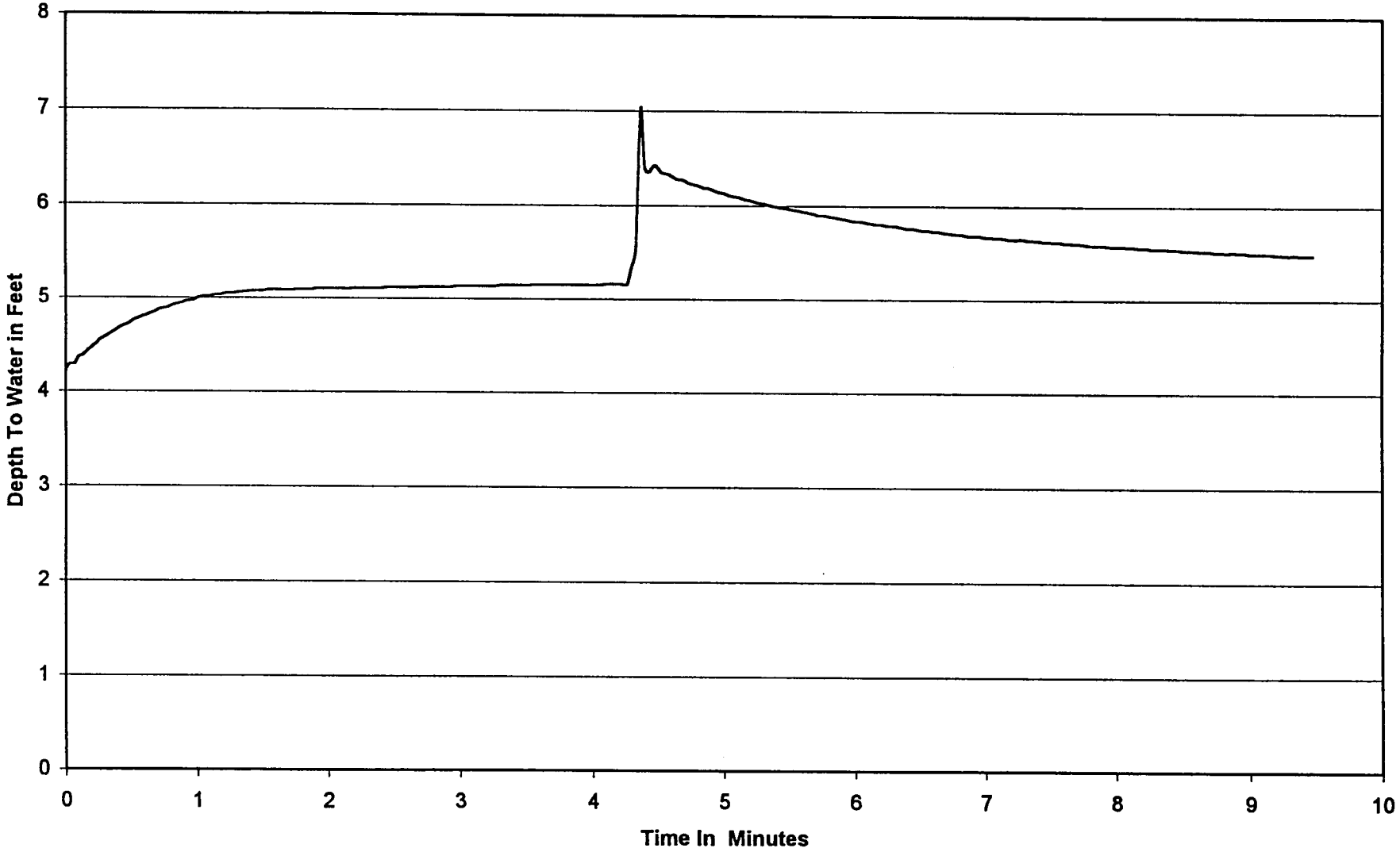
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-4

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	2.28E-04	cm/sec	or	236	ft/year
By Bouwer and Rice,	K=	1.64E-04	cm/sec	or	170	ft/year

AQUIFER TEST FOR WELL DMW 5-4

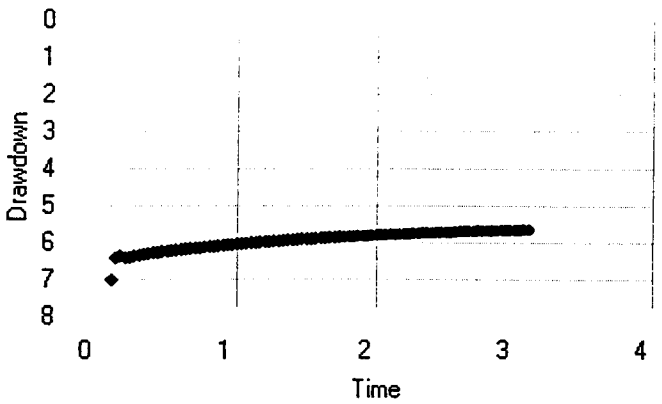


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-4** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/29/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.5
Static W/L-Depth (ft.):	5.21
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	7.1
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	17.29
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

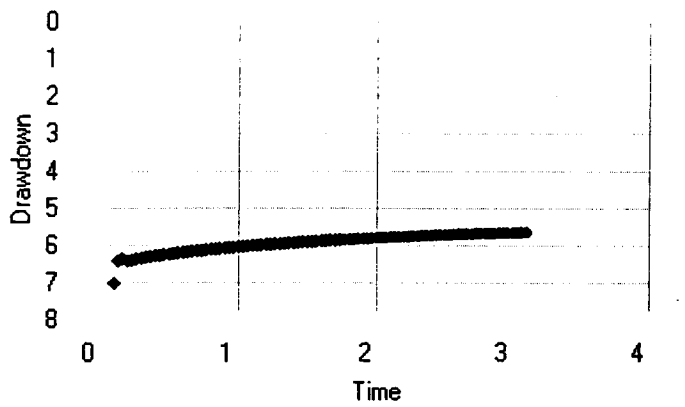
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	7.021	1.76	5.838				
0.13	6.412	1.8	5.829				
0.16	6.353	1.83	5.821				
0.2	6.421	1.86	5.813				
0.23	6.404	1.9	5.804				
0.26	6.353	1.93	5.804				
0.3	6.336	1.96	5.796				
0.33	6.319	2	5.787				
0.36	6.294	2.03	5.787				
0.4	6.277	2.06	5.779				
0.43	6.269	2.1	5.77				
0.46	6.243	2.13	5.762				
0.5	6.227	2.16	5.762				
0.53	6.218	2.2	5.753				
0.56	6.201	2.23	5.745				
0.6	6.184	2.26	5.736				
0.63	6.176	2.3	5.736				
0.66	6.159	2.33	5.728				
0.7	6.142	2.36	5.728				
0.73	6.134	2.4	5.72				
0.76	6.117	2.43	5.711				
0.8	6.1	2.46	5.711				
0.83	6.091	2.5	5.703				
0.86	6.083	2.53	5.703				
0.9	6.066	2.56	5.694				
0.93	6.058	2.6	5.686				
0.96	6.049	2.63	5.686				
1	6.032	2.66	5.686				
1.03	6.024	2.7	5.677				
1.06	6.015	2.73	5.669				
1.1	5.998	2.76	5.669				
1.13	5.99	2.8	5.66				
1.16	5.982	2.83	5.66				
1.2	5.973	2.86	5.66				

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-4** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/29/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.5
Static W/L-Depth (ft.):	5.21
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	7.1
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	17.29
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

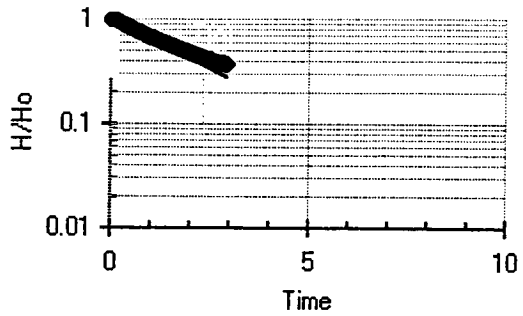
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.23	5.965	2.9	5.652				
1.26	5.956	2.93	5.644				
1.3	5.948	2.96	5.644				
1.33	5.939	3	5.652				
1.36	5.931	3.03	5.644				
1.4	5.922	3.06	5.635				
1.43	5.914	3.1	5.635				
1.46	5.897						
1.5	5.897						
1.53	5.889						
1.56	5.88						
1.6	5.872						
1.63	5.863						
1.66	5.855						
1.7	5.846						
1.73	5.838						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 18:28
Identification: **DMW 5-4**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	5.21	feet
Line Fit Starting No.:	3	Min 1 to
Line Fit Ending No.:	30	Max 91
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**2.28E-04**	cm./sec.
Basic Time Lag:	2.34	min.
Error of Fit:	0.0046	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	7.02	1.81	0.4602	0.0685
2)	0.13	6.41	1.20	0.0503	0.0551
3)	0.16	6.35	1.14	0.0000	0.0417
4)	0.20	6.42	1.21	0.0578	0.0239
5)	0.23	6.40	1.19	0.0437	0.0105
6)	0.26	6.35	1.14	0.0000	-0.0028
7)	0.30	6.34	1.13	-0.0150	-0.0207
8)	0.33	6.32	1.11	-0.0302	-0.0340
9)	0.36	6.29	1.08	-0.0530	-0.0474
10)	0.40	6.28	1.07	-0.0688	-0.0652
11)	0.43	6.27	1.06	-0.0763	-0.0786
12)	0.46	6.24	1.03	-0.1012	-0.0920
13)	0.50	6.23	1.02	-0.1168	-0.1098
14)	0.53	6.22	1.01	-0.1257	-0.1232
15)	0.56	6.20	0.99	-0.1427	-0.1365
16)	0.60	6.18	0.97	-0.1600	-0.1544
17)	0.63	6.18	0.97	-0.1682	-0.1677
18)	0.66	6.16	0.95	-0.1860	-0.1811
19)	0.70	6.14	0.93	-0.2041	-0.1989
20)	0.73	6.13	0.92	-0.2127	-0.2123
21)	0.76	6.12	0.91	-0.2313	-0.2257
22)	0.80	6.10	0.89	-0.2502	-0.2435
23)	0.83	6.09	0.88	-0.2604	-0.2569
24)	0.86	6.08	0.87	-0.2695	-0.2702
25)	0.90	6.07	0.86	-0.2891	-0.2881
26)	0.93	6.06	0.85	-0.2985	-0.3014
27)	0.96	6.05	0.84	-0.3092	-0.3148
28)	1.00	6.03	0.82	-0.3297	-0.3326
29)	1.03	6.02	0.81	-0.3395	-0.3460

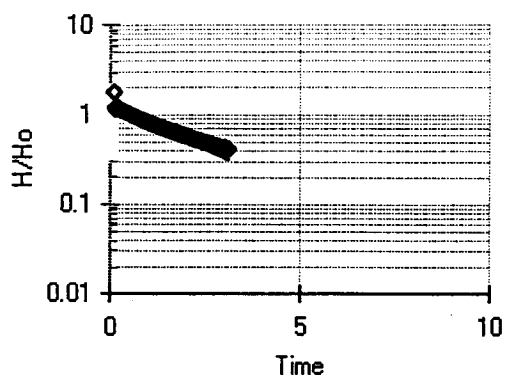
30)	1.06	6.02	0.81	-0.3506	-0.3594
31)	1.10	6.00	0.79	-0.3719	-0.3772
32)	1.13	5.99	0.78	-0.3821	-0.3906
33)	1.16	5.98	0.77	-0.3924	-0.4040
34)	1.20	5.97	0.76	-0.4042	-0.4218
35)	1.23	5.97	0.76	-0.4147	-0.4352
36)	1.26	5.96	0.75	-0.4267	-0.4485
37)	1.30	5.95	0.74	-0.4375	-0.4664
38)	1.33	5.94	0.73	-0.4497	-0.4797
39)	1.36	5.93	0.72	-0.4608	-0.4931
40)	1.40	5.92	0.71	-0.4733	-0.5109
41)	1.43	5.91	0.70	-0.4846	-0.5243
42)	1.46	5.90	0.69	-0.5091	-0.5377
43)	1.50	5.90	0.69	-0.5091	-0.5555
44)	1.53	5.89	0.68	-0.5208	-0.5689
45)	1.56	5.88	0.67	-0.5341	-0.5822
46)	1.60	5.87	0.66	-0.5461	-0.6001
47)	1.63	5.86	0.65	-0.5598	-0.6134
48)	1.66	5.86	0.65	-0.5722	-0.6268
49)	1.70	5.85	0.64	-0.5862	-0.6446
50)	1.73	5.84	0.63	-0.5989	-0.6580
51)	1.76	5.84	0.63	-0.5989	-0.6714
52)	1.80	5.83	0.62	-0.6133	-0.6892
53)	1.83	5.82	0.61	-0.6263	-0.7026
54)	1.86	5.81	0.60	-0.6395	-0.7160
55)	1.90	5.80	0.59	-0.6545	-0.7338
56)	1.93	5.80	0.59	-0.6545	-0.7472
57)	1.96	5.80	0.59	-0.6681	-0.7605
58)	2.00	5.79	0.58	-0.6836	-0.7784
59)	2.03	5.79	0.58	-0.6836	-0.7917
60)	2.06	5.78	0.57	-0.6975	-0.8051
61)	2.10	5.77	0.56	-0.7135	-0.8229
62)	2.13	5.76	0.55	-0.7279	-0.8363
63)	2.16	5.76	0.55	-0.7279	-0.8497
64)	2.20	5.75	0.54	-0.7443	-0.8675
65)	2.23	5.75	0.54	-0.7591	-0.8809
66)	2.26	5.74	0.53	-0.7761	-0.8942
67)	2.30	5.74	0.53	-0.7761	-0.9121
68)	2.33	5.73	0.52	-0.7914	-0.9254
69)	2.36	5.73	0.52	-0.7914	-0.9388
70)	2.40	5.72	0.51	-0.8070	-0.9566
71)	2.43	5.71	0.50	-0.8248	-0.9700
72)	2.46	5.71	0.50	-0.8248	-0.9834
73)	2.50	5.70	0.49	-0.8409	-1.0012
74)	2.53	5.70	0.49	-0.8409	-1.0146

75)	2.56	5.69	0.48	-0.8593	-1.0279
76)	2.60	5.69	0.48	-0.8760	-1.0458
77)	2.63	5.69	0.48	-0.8760	-1.0591
78)	2.66	5.69	0.48	-0.8760	-1.0725
79)	2.70	5.68	0.47	-0.8951	-1.0903
80)	2.73	5.67	0.46	-0.9124	-1.1037
81)	2.76	5.67	0.46	-0.9124	-1.1171
82)	2.80	5.66	0.45	-0.9322	-1.1349
83)	2.83	5.66	0.45	-0.9322	-1.1483
84)	2.86	5.66	0.45	-0.9322	-1.1617
85)	2.90	5.65	0.44	-0.9501	-1.1795
86)	2.93	5.64	0.43	-0.9684	-1.1929
87)	2.96	5.64	0.43	-0.9684	-1.2062
88)	3.00	5.65	0.44	-0.9501	-1.2241
89)	3.03	5.64	0.43	-0.9684	-1.2374
90)	3.06	5.64	0.43	-0.9893	-1.2508
91)	3.10	5.64	0.43	-0.9893	-1.2686

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW 5-4**
Analysis By: WJB
Run Date: 5/28/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	17.29	feet
Water Table Depth:	5.21	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	3	Min 1 to
Line Fit Ending No.:	30	Max 91
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.64E-04**	cm./sec.
Error of Fit:	0.005	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	7.02	1.81		0.594	0.202
2)	0.13	6.41	1.20		0.184	0.189
3)	0.16	6.35	1.14		0.134	0.175
4)	0.20	6.42	1.21		0.191	0.158
5)	0.23	6.40	1.19		0.177	0.144
6)	0.26	6.35	1.14		0.134	0.131
7)	0.30	6.34	1.13		0.119	0.113
8)	0.33	6.32	1.11		0.103	0.100
9)	0.36	6.29	1.08		0.081	0.086
10)	0.40	6.28	1.07		0.065	0.068
11)	0.43	6.27	1.06		0.057	0.055
12)	0.46	6.24	1.03		0.032	0.042
13)	0.50	6.23	1.02		0.017	0.024
14)	0.53	6.22	1.01		0.008	0.010
15)	0.56	6.20	0.99		-0.009	-0.003
16)	0.60	6.18	0.97		-0.026	-0.021
17)	0.63	6.18	0.97		-0.035	-0.034
18)	0.66	6.16	0.95		-0.052	-0.047
19)	0.70	6.14	0.93		-0.070	-0.065
20)	0.73	6.13	0.92		-0.079	-0.079
21)	0.76	6.12	0.91		-0.098	-0.092
22)	0.80	6.10	0.89		-0.117	-0.110
23)	0.83	6.09	0.88		-0.127	-0.123
24)	0.86	6.08	0.87		-0.136	-0.137
25)	0.90	6.07	0.86		-0.155	-0.154
26)	0.93	6.06	0.85		-0.165	-0.168
27)	0.96	6.05	0.84		-0.176	-0.181
28)	1.00	6.03	0.82		-0.196	-0.199
29)	1.03	6.02	0.81		-0.206	-0.212

30)	1.06	6.02	0.81		-0.217	-0.226
31)	1.10	6.00	0.79		-0.238	-0.244
32)	1.13	5.99	0.78		-0.248	-0.257
33)	1.16	5.98	0.77		-0.259	-0.270
34)	1.20	5.97	0.76		-0.270	-0.288
35)	1.23	5.97	0.76		-0.281	-0.302
36)	1.26	5.96	0.75		-0.293	-0.315
37)	1.30	5.95	0.74		-0.304	-0.333
38)	1.33	5.94	0.73		-0.316	-0.346
39)	1.36	5.93	0.72		-0.327	-0.359
40)	1.40	5.92	0.71		-0.340	-0.377
41)	1.43	5.91	0.70		-0.351	-0.391
42)	1.46	5.90	0.69		-0.375	-0.404
43)	1.50	5.90	0.69		-0.375	-0.422
44)	1.53	5.89	0.68		-0.387	-0.435
45)	1.56	5.88	0.67		-0.400	-0.449
46)	1.60	5.87	0.66		-0.412	-0.466
47)	1.63	5.86	0.65		-0.426	-0.480
48)	1.66	5.86	0.65		-0.439	-0.493
49)	1.70	5.85	0.64		-0.453	-0.511
50)	1.73	5.84	0.63		-0.465	-0.524
51)	1.76	5.84	0.63		-0.465	-0.538
52)	1.80	5.83	0.62		-0.480	-0.556
53)	1.83	5.82	0.61		-0.493	-0.569
54)	1.86	5.81	0.60		-0.506	-0.582
55)	1.90	5.80	0.59		-0.521	-0.600
56)	1.93	5.80	0.59		-0.521	-0.613
57)	1.96	5.80	0.59		-0.534	-0.627
58)	2.00	5.79	0.58		-0.550	-0.645
59)	2.03	5.79	0.58		-0.550	-0.658
60)	2.06	5.78	0.57		-0.564	-0.671
61)	2.10	5.77	0.56		-0.580	-0.689
62)	2.13	5.76	0.55		-0.594	-0.703
63)	2.16	5.76	0.55		-0.594	-0.716
64)	2.20	5.75	0.54		-0.611	-0.734
65)	2.23	5.75	0.54		-0.625	-0.747
66)	2.26	5.74	0.53		-0.642	-0.761
67)	2.30	5.74	0.53		-0.642	-0.778
68)	2.33	5.73	0.52		-0.658	-0.792
69)	2.36	5.73	0.52		-0.658	-0.805
70)	2.40	5.72	0.51		-0.673	-0.823
71)	2.43	5.71	0.50		-0.691	-0.836
72)	2.46	5.71	0.50		-0.691	-0.850
73)	2.50	5.70	0.49		-0.707	-0.868
74)	2.53	5.70	0.49		-0.707	-0.881

75)	2.56	5.69	0.48		-0.726	-0.894
76)	2.60	5.69	0.48		-0.742	-0.912
77)	2.63	5.69	0.48		-0.742	-0.925
78)	2.66	5.69	0.48		-0.742	-0.939
79)	2.70	5.68	0.47		-0.761	-0.957
80)	2.73	5.67	0.46		-0.779	-0.970
81)	2.76	5.67	0.46		-0.779	-0.983
82)	2.80	5.66	0.45		-0.799	-1.001
83)	2.83	5.66	0.45		-0.799	-1.015
84)	2.86	5.66	0.45		-0.799	-1.028
85)	2.90	5.65	0.44		-0.816	-1.046
86)	2.93	5.64	0.43		-0.835	-1.059
87)	2.96	5.64	0.43		-0.835	-1.073
88)	3.00	5.65	0.44		-0.816	-1.090
89)	3.03	5.64	0.43		-0.835	-1.104
90)	3.06	5.64	0.43		-0.856	-1.117
91)	3.10	5.64	0.43		-0.856	-1.135

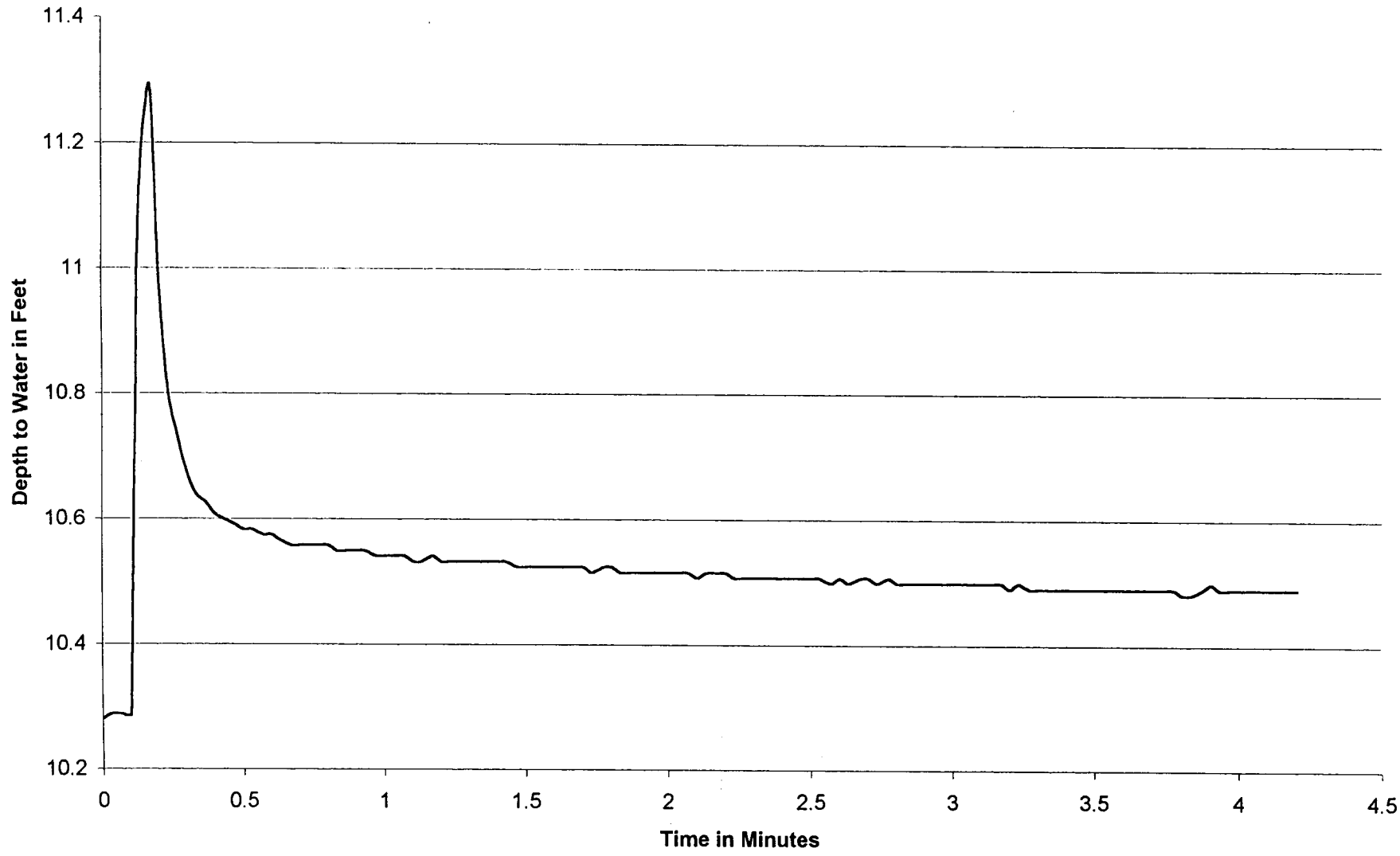
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-5

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	1.62E-04	cm/sec	or	168	ft/year
By Bouwer and Rice,	K=	9.22E-05	cm/sec	or	95	ft/year

AQUIFER TEST FOR WELL DMW 5-5

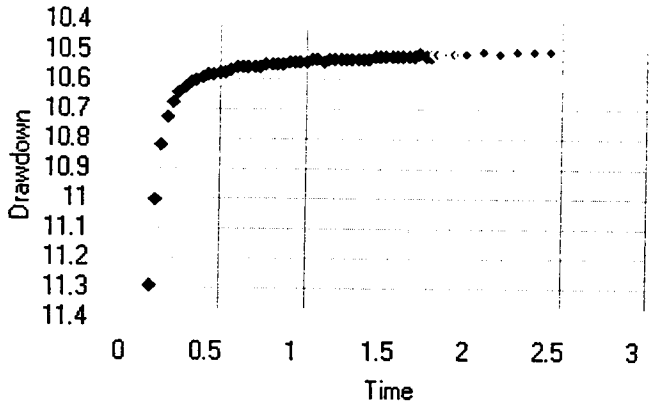


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-5** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/26/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.6
Static W/L-Depth (ft.):	10.28
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	11.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	12.32
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.6
Slug Volume (ft^3):	0.034
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

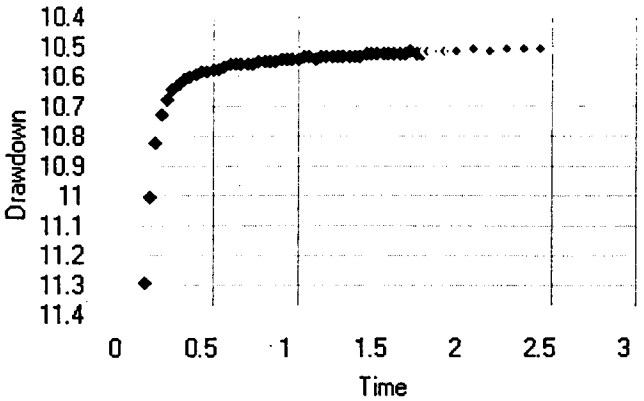
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	11.294	1.76	10.516				
0.13	11.006	1.8	10.516				
0.16	10.821	1.83	10.516				
0.2	10.728	1.86	10.516				
0.23	10.677	1.9	10.516				
0.26	10.643	1.93	10.516				
0.3	10.626	2.03	10.508				
0.33	10.609	2.13	10.516				
0.36	10.601	2.23	10.508				
0.4	10.592	2.33	10.508				
0.43	10.584	2.43	10.508				
0.46	10.584						
0.5	10.576						
0.53	10.576						
0.56	10.567						
0.6	10.559						
0.63	10.559						
0.66	10.559						
0.7	10.559						
0.73	10.559						
0.76	10.55						
0.8	10.55						
0.83	10.55						
0.86	10.55						
0.9	10.542						
0.93	10.542						
0.96	10.542						
1	10.542						
1.03	10.533						
1.06	10.533						
1.1	10.542						
1.13	10.533						
1.16	10.533						
1.2	10.533						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-5** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/26/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	22.6
Static W/L-Depth (ft.):	10.28
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	11.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	12.32
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.6
Slug Volume (ft^3):	0.034
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

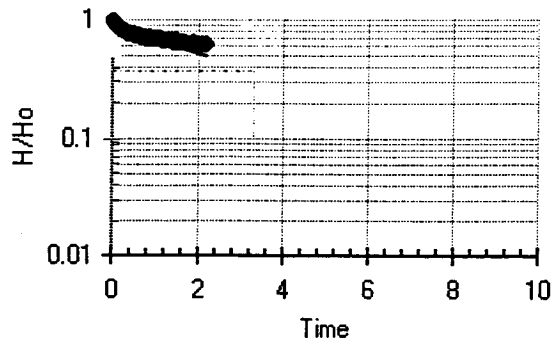
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.23	10.533						
1.26	10.533						
1.3	10.533						
1.33	10.533						
1.36	10.533						
1.4	10.525						
1.43	10.525						
1.46	10.525						
1.5	10.525						
1.53	10.525						
1.56	10.525						
1.6	10.525						
1.63	10.525						
1.66	10.516						
1.7	10.525						
1.73	10.525						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 18:25
Identification: **DMW 5-5**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	10.28	feet
Line Fit Starting No.:	6	Min 1 to
Line Fit Ending No.:	40	Max 61
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**1.62E-04**	cm./sec.
Basic Time Lag:	3.30	min.
Error of Fit:	0.0490	



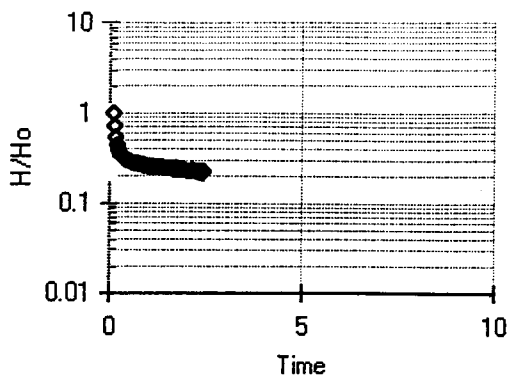
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	11.29	1.01	1.0273	-0.0784
2)	0.13	11.01	0.73	0.6931	-0.0864
3)	0.16	10.82	0.54	0.3990	-0.0944
4)	0.20	10.73	0.45	0.2104	-0.1051
5)	0.23	10.68	0.40	0.0895	-0.1131
6)	0.26	10.64	0.36	0.0000	-0.1211
7)	0.30	10.63	0.35	-0.0480	-0.1317
8)	0.33	10.61	0.33	-0.0983	-0.1397
9)	0.36	10.60	0.32	-0.1230	-0.1477
10)	0.40	10.59	0.31	-0.1514	-0.1584
11)	0.43	10.58	0.30	-0.1774	-0.1663
12)	0.46	10.58	0.30	-0.1774	-0.1743
13)	0.50	10.58	0.30	-0.2040	-0.1850
14)	0.53	10.58	0.30	-0.2040	-0.1930
15)	0.56	10.57	0.29	-0.2349	-0.2010
16)	0.60	10.56	0.28	-0.2632	-0.2116
17)	0.63	10.56	0.28	-0.2632	-0.2196
18)	0.66	10.56	0.28	-0.2632	-0.2276
19)	0.70	10.56	0.28	-0.2632	-0.2383
20)	0.73	10.56	0.28	-0.2632	-0.2463
21)	0.76	10.55	0.27	-0.2960	-0.2543
22)	0.80	10.55	0.27	-0.2960	-0.2649
23)	0.83	10.55	0.27	-0.2960	-0.2729
24)	0.86	10.55	0.27	-0.2960	-0.2809
25)	0.90	10.54	0.26	-0.3261	-0.2916
26)	0.93	10.54	0.26	-0.3261	-0.2996
27)	0.96	10.54	0.26	-0.3261	-0.3075
28)	1.00	10.54	0.26	-0.3261	-0.3182
29)	1.03	10.53	0.25	-0.3610	-0.3262

30)	1.06	10.53	0.25	-0.3610	-0.3342
31)	1.10	10.54	0.26	-0.3261	-0.3448
32)	1.13	10.53	0.25	-0.3610	-0.3528
33)	1.16	10.53	0.25	-0.3610	-0.3608
34)	1.20	10.53	0.25	-0.3610	-0.3715
35)	1.23	10.53	0.25	-0.3610	-0.3795
36)	1.26	10.53	0.25	-0.3610	-0.3875
37)	1.30	10.53	0.25	-0.3610	-0.3981
38)	1.33	10.53	0.25	-0.3610	-0.4061
39)	1.36	10.53	0.25	-0.3610	-0.4141
40)	1.40	10.53	0.25	-0.3931	-0.4248
41)	1.43	10.53	0.25	-0.3931	-0.4328
42)	1.46	10.53	0.25	-0.3931	-0.4408
43)	1.50	10.53	0.25	-0.3931	-0.4514
44)	1.53	10.53	0.25	-0.3931	-0.4594
45)	1.56	10.53	0.25	-0.3931	-0.4674
46)	1.60	10.53	0.25	-0.3931	-0.4781
47)	1.63	10.53	0.25	-0.3931	-0.4860
48)	1.66	10.52	0.24	-0.4306	-0.4940
49)	1.70	10.53	0.25	-0.3931	-0.5047
50)	1.73	10.53	0.25	-0.3931	-0.5127
51)	1.76	10.52	0.24	-0.4306	-0.5207
52)	1.80	10.52	0.24	-0.4306	-0.5313
53)	1.83	10.52	0.24	-0.4306	-0.5393
54)	1.86	10.52	0.24	-0.4306	-0.5473
55)	1.90	10.52	0.24	-0.4306	-0.5580
56)	1.93	10.52	0.24	-0.4306	-0.5660
57)	2.03	10.51	0.23	-0.4651	-0.5926
58)	2.13	10.52	0.24	-0.4306	-0.6193
59)	2.23	10.51	0.23	-0.4651	-0.6459
60)	2.33	10.51	0.23	-0.4651	-0.6725
61)	2.43	10.51	0.23	-0.4651	-0.6992

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW 5-5**
Analysis By: WJB
Run Date: 5/28/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	12.32	feet
Water Table Depth:	10.28	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	6	Min 1 to
Line Fit Ending No.:	40	Max 61
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**9.22E-05**	cm./sec.
Error of Fit:	0.049	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	11.29	1.01		0.014	-1.092
2)	0.13	11.01	0.73		-0.320	-1.100
3)	0.16	10.82	0.54		-0.614	-1.108
4)	0.20	10.73	0.45		-0.803	-1.118
5)	0.23	10.68	0.40		-0.924	-1.126
6)	0.26	10.64	0.36		-1.013	-1.134
7)	0.30	10.63	0.35		-1.061	-1.145
8)	0.33	10.61	0.33		-1.112	-1.153
9)	0.36	10.60	0.32		-1.136	-1.161
10)	0.40	10.59	0.31		-1.165	-1.172
11)	0.43	10.58	0.30		-1.191	-1.180
12)	0.46	10.58	0.30		-1.191	-1.188
13)	0.50	10.58	0.30		-1.217	-1.198
14)	0.53	10.58	0.30		-1.217	-1.206
15)	0.56	10.57	0.29		-1.248	-1.214
16)	0.60	10.56	0.28		-1.277	-1.225
17)	0.63	10.56	0.28		-1.277	-1.233
18)	0.66	10.56	0.28		-1.277	-1.241
19)	0.70	10.56	0.28		-1.277	-1.252
20)	0.73	10.56	0.28		-1.277	-1.260
21)	0.76	10.55	0.27		-1.309	-1.268
22)	0.80	10.55	0.27		-1.309	-1.278
23)	0.83	10.55	0.27		-1.309	-1.286
24)	0.86	10.55	0.27		-1.309	-1.294
25)	0.90	10.54	0.26		-1.339	-1.305
26)	0.93	10.54	0.26		-1.339	-1.313
27)	0.96	10.54	0.26		-1.339	-1.321
28)	1.00	10.54	0.26		-1.339	-1.332
29)	1.03	10.53	0.25		-1.374	-1.340

30)	1.06	10.53	0.25		-1.374	-1.348
31)	1.10	10.54	0.26		-1.339	-1.358
32)	1.13	10.53	0.25		-1.374	-1.366
33)	1.16	10.53	0.25		-1.374	-1.374
34)	1.20	10.53	0.25		-1.374	-1.385
35)	1.23	10.53	0.25		-1.374	-1.393
36)	1.26	10.53	0.25		-1.374	-1.401
37)	1.30	10.53	0.25		-1.374	-1.411
38)	1.33	10.53	0.25		-1.374	-1.419
39)	1.36	10.53	0.25		-1.374	-1.427
40)	1.40	10.53	0.25		-1.406	-1.438
41)	1.43	10.53	0.25		-1.406	-1.446
42)	1.46	10.53	0.25		-1.406	-1.454
43)	1.50	10.53	0.25		-1.406	-1.465
44)	1.53	10.53	0.25		-1.406	-1.473
45)	1.56	10.53	0.25		-1.406	-1.481
46)	1.60	10.53	0.25		-1.406	-1.491
47)	1.63	10.53	0.25		-1.406	-1.499
48)	1.66	10.52	0.24		-1.444	-1.507
49)	1.70	10.53	0.25		-1.406	-1.518
50)	1.73	10.53	0.25		-1.406	-1.526
51)	1.76	10.52	0.24		-1.444	-1.534
52)	1.80	10.52	0.24		-1.444	-1.545
53)	1.83	10.52	0.24		-1.444	-1.553
54)	1.86	10.52	0.24		-1.444	-1.561
55)	1.90	10.52	0.24		-1.444	-1.571
56)	1.93	10.52	0.24		-1.444	-1.579
57)	2.03	10.51	0.23		-1.478	-1.606
58)	2.13	10.52	0.24		-1.444	-1.633
59)	2.23	10.51	0.23		-1.478	-1.659
60)	2.33	10.51	0.23		-1.478	-1.686
61)	2.43	10.51	0.23		-1.478	-1.713

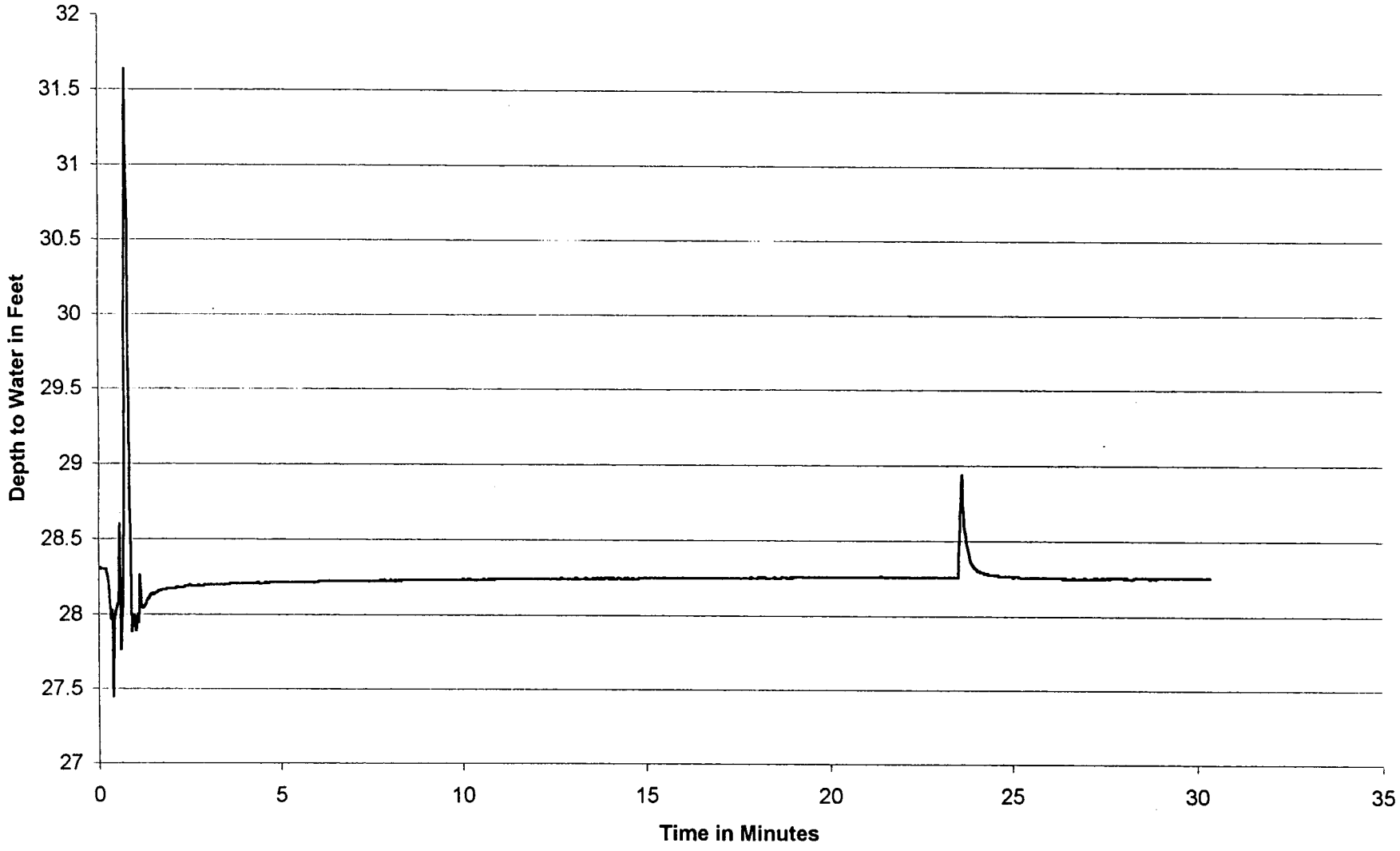
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-6

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	3.23E-04	cm/sec	or	334	ft/year
By Bouwer and Rice,	K=	1.29E-04	cm/sec	or	134	ft/year

AQUIFER TEST FOR WELL DMW 5-6

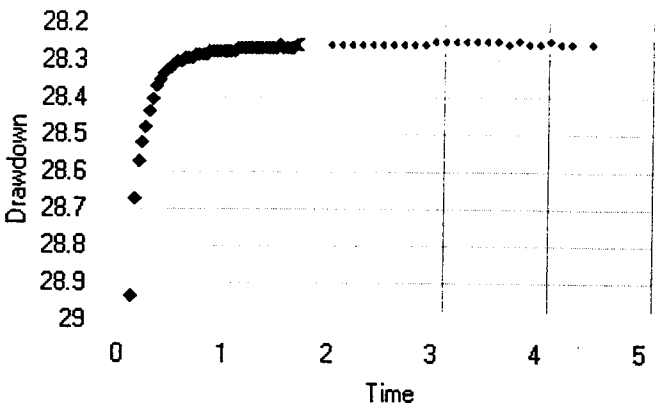


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-6** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 5/5/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	38.9
Static W/L-Depth (ft.):	28.15
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	28.94
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	21.9
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10.59
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.9
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

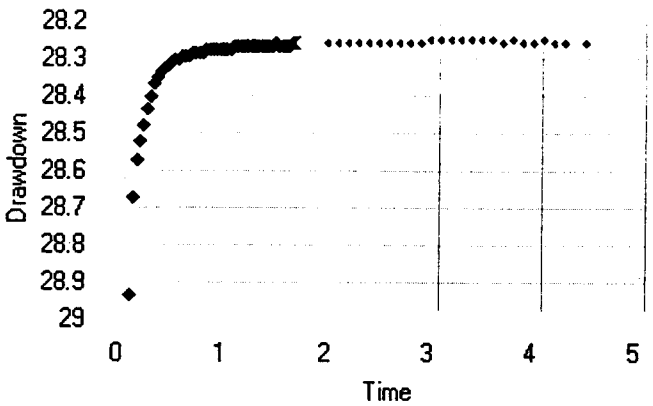
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.01	28.935	1.68	28.259				
0.04	28.673	1.71	28.259				
0.08	28.572	1.74	28.259				
0.11	28.521	1.78	28.259				
0.14	28.479	1.81	28.259				
0.18	28.437	1.84	28.259				
0.21	28.403	1.88	28.259				
0.24	28.369	1.91	28.259				
0.28	28.352	2.01	28.259				
0.31	28.335	2.11	28.259				
0.34	28.327	2.21	28.259				
0.38	28.318	2.31	28.259				
0.41	28.31	2.41	28.259				
0.44	28.302	2.51	28.259				
0.48	28.302	2.61	28.259				
0.51	28.293	2.71	28.259				
0.54	28.293	2.81	28.259				
0.58	28.293	2.91	28.251				
0.61	28.285	3.01	28.251				
0.64	28.285	3.11	28.251				
0.68	28.285	3.21	28.251				
0.71	28.285	3.31	28.251				
0.74	28.276	3.41	28.251				
0.78	28.276	3.51	28.251				
0.81	28.276	3.61	28.259				
0.84	28.276	3.71	28.251				
0.88	28.276	3.81	28.259				
0.91	28.276	3.91	28.259				
0.94	28.276	4.01	28.251				
0.98	28.276	4.11	28.259				
1.01	28.268	4.21	28.259				
1.04	28.268	4.41	28.259				
1.08	28.268						
1.11	28.268						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-6** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 5/5/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	38.9
Static W/L-Depth (ft.):	28.15
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	28.94
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	21.9
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10.59
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.9
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

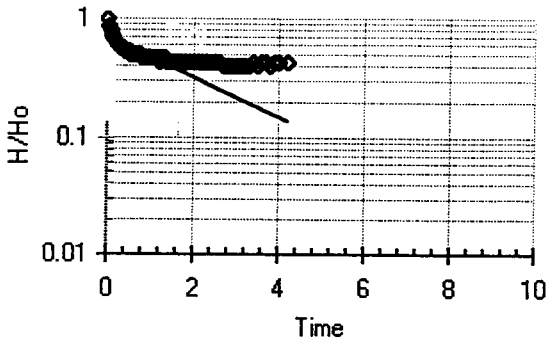
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.14	28.268						
1.18	28.268						
1.21	28.268						
1.24	28.268						
1.28	28.268						
1.31	28.268						
1.34	28.268						
1.38	28.268						
1.41	28.259						
1.44	28.268						
1.48	28.268						
1.51	28.268						
1.54	28.268						
1.58	28.259						
1.61	28.259						
1.64	28.259						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 18:21
Identification: **DMW 5-6**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	28.15	feet
Line Fit Starting No.:	7	Min 1 to
Line Fit Ending No.:	50	Max 82
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**3.23E-04**	cm./sec.
Basic Time Lag:	1.65	min.
Error of Fit:	0.4216	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.01	28.94	0.79	1.1323	-0.2919
2)	0.04	28.67	0.52	0.7262	-0.3034
3)	0.08	28.57	0.42	0.5116	-0.3187
4)	0.11	28.52	0.37	0.3828	-0.3302
5)	0.14	28.48	0.33	0.2627	-0.3417
6)	0.18	28.44	0.29	0.1261	-0.3570
7)	0.21	28.40	0.25	0.0000	-0.3685
8)	0.24	28.37	0.22	-0.1443	-0.3800
9)	0.28	28.35	0.20	-0.2251	-0.3953
10)	0.31	28.34	0.19	-0.3130	-0.4068
11)	0.34	28.33	0.18	-0.3572	-0.4183
12)	0.38	28.32	0.17	-0.4094	-0.4337
13)	0.41	28.31	0.16	-0.4582	-0.4452
14)	0.44	28.30	0.15	-0.5095	-0.4567
15)	0.48	28.30	0.15	-0.5095	-0.4720
16)	0.51	28.29	0.14	-0.5705	-0.4835
17)	0.54	28.29	0.14	-0.5705	-0.4950
18)	0.58	28.29	0.14	-0.5705	-0.5103
19)	0.61	28.29	0.14	-0.6281	-0.5218
20)	0.64	28.29	0.14	-0.6281	-0.5333
21)	0.68	28.29	0.14	-0.6281	-0.5486
22)	0.71	28.29	0.14	-0.6281	-0.5601
23)	0.74	28.28	0.13	-0.6971	-0.5716
24)	0.78	28.28	0.13	-0.6971	-0.5870
25)	0.81	28.28	0.13	-0.6971	-0.5985
26)	0.84	28.28	0.13	-0.6971	-0.6100
27)	0.88	28.28	0.13	-0.6971	-0.6253
28)	0.91	28.28	0.13	-0.6971	-0.6368
29)	0.94	28.28	0.13	-0.6971	-0.6483

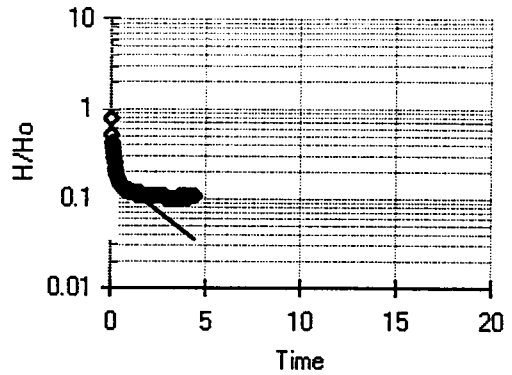
30)	0.98	28.28	0.13	-0.6971	-0.6636
31)	1.01	28.27	0.12	-0.7627	-0.6751
32)	1.04	28.27	0.12	-0.7627	-0.6866
33)	1.08	28.27	0.12	-0.7627	-0.7020
34)	1.11	28.27	0.12	-0.7627	-0.7134
35)	1.14	28.27	0.12	-0.7627	-0.7249
36)	1.18	28.27	0.12	-0.7627	-0.7403
37)	1.21	28.27	0.12	-0.7627	-0.7518
38)	1.24	28.27	0.12	-0.7627	-0.7633
39)	1.28	28.27	0.12	-0.7627	-0.7786
40)	1.31	28.27	0.12	-0.7627	-0.7901
41)	1.34	28.27	0.12	-0.7627	-0.8016
42)	1.38	28.27	0.12	-0.7627	-0.8169
43)	1.41	28.26	0.11	-0.8420	-0.8284
44)	1.44	28.27	0.12	-0.7627	-0.8399
45)	1.48	28.27	0.12	-0.7627	-0.8553
46)	1.51	28.27	0.12	-0.7627	-0.8668
47)	1.54	28.27	0.12	-0.7627	-0.8783
48)	1.58	28.26	0.11	-0.8420	-0.8936
49)	1.61	28.26	0.11	-0.8420	-0.9051
50)	1.64	28.26	0.11	-0.8420	-0.9166
51)	1.68	28.26	0.11	-0.8420	-0.9319
52)	1.71	28.26	0.11	-0.8420	-0.9434
53)	1.74	28.26	0.11	-0.8420	-0.9549
54)	1.78	28.26	0.11	-0.8420	-0.9702
55)	1.81	28.26	0.11	-0.8420	-0.9817
56)	1.84	28.26	0.11	-0.8420	-0.9932
57)	1.88	28.26	0.11	-0.8420	-1.0086
58)	1.91	28.26	0.11	-0.8420	-1.0201
59)	2.01	28.26	0.11	-0.8420	-1.0584
60)	2.11	28.26	0.11	-0.8420	-1.0967
61)	2.21	28.26	0.11	-0.8420	-1.1350
62)	2.31	28.26	0.11	-0.8420	-1.1734
63)	2.41	28.26	0.11	-0.8420	-1.2117
64)	2.51	28.26	0.11	-0.8420	-1.2500
65)	2.61	28.26	0.11	-0.8420	-1.2884
66)	2.71	28.26	0.11	-0.8420	-1.3267
67)	2.81	28.26	0.11	-0.8420	-1.3650
68)	2.91	28.25	0.10	-0.9183	-1.4033
69)	3.01	28.25	0.10	-0.9183	-1.4417
70)	3.11	28.25	0.10	-0.9183	-1.4800
71)	3.21	28.25	0.10	-0.9183	-1.5183
72)	3.31	28.25	0.10	-0.9183	-1.5566
73)	3.41	28.25	0.10	-0.9183	-1.5950
74)	3.51	28.25	0.10	-0.9183	-1.6333

75)	3.61	28.26	0.11	-0.8420	-1.6716
76)	3.71	28.25	0.10	-0.9183	-1.7099
77)	3.81	28.26	0.11	-0.8420	-1.7483
78)	3.91	28.26	0.11	-0.8420	-1.7866
79)	4.01	28.25	0.10	-0.9183	-1.8249
80)	4.11	28.26	0.11	-0.8420	-1.8633
81)	4.21	28.26	0.11	-0.8420	-1.9016
82)	4.41	28.26	0.11	-0.8420	-1.9782

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW 5-6**
Analysis By: WJB
Run Date: 5/28/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	10.59	feet
Water Table Depth:	28.15	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	7	Min 1 to
Line Fit Ending No.:	50	Max 82
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.29E-04**	cm./sec.
Error of Fit:	0.422	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.01	28.94	0.79		-0.242	-1.666
2)	0.04	28.67	0.52		-0.648	-1.678
3)	0.08	28.57	0.42		-0.863	-1.693
4)	0.11	28.52	0.37		-0.992	-1.705
5)	0.14	28.48	0.33		-1.112	-1.716
6)	0.18	28.44	0.29		-1.248	-1.731
7)	0.21	28.40	0.25		-1.374	-1.743
8)	0.24	28.37	0.22		-1.519	-1.754
9)	0.28	28.35	0.20		-1.599	-1.770
10)	0.31	28.34	0.19		-1.687	-1.781
11)	0.34	28.33	0.18		-1.732	-1.793
12)	0.38	28.32	0.17		-1.784	-1.808
13)	0.41	28.31	0.16		-1.833	-1.820
14)	0.44	28.30	0.15		-1.884	-1.831
15)	0.48	28.30	0.15		-1.884	-1.846
16)	0.51	28.29	0.14		-1.945	-1.858
17)	0.54	28.29	0.14		-1.945	-1.869
18)	0.58	28.29	0.14		-1.945	-1.885
19)	0.61	28.29	0.14		-2.002	-1.896
20)	0.64	28.29	0.14		-2.002	-1.908
21)	0.68	28.29	0.14		-2.002	-1.923
22)	0.71	28.29	0.14		-2.002	-1.935
23)	0.74	28.28	0.13		-2.071	-1.946
24)	0.78	28.28	0.13		-2.071	-1.961
25)	0.81	28.28	0.13		-2.071	-1.973
26)	0.84	28.28	0.13		-2.071	-1.984
27)	0.88	28.28	0.13		-2.071	-2.000
28)	0.91	28.28	0.13		-2.071	-2.011
29)	0.94	28.28	0.13		-2.071	-2.023

30)	0.98	28.28	0.13		-2.071	-2.038
31)	1.01	28.27	0.12		-2.137	-2.049
32)	1.04	28.27	0.12		-2.137	-2.061
33)	1.08	28.27	0.12		-2.137	-2.076
34)	1.11	28.27	0.12		-2.137	-2.088
35)	1.14	28.27	0.12		-2.137	-2.099
36)	1.18	28.27	0.12		-2.137	-2.115
37)	1.21	28.27	0.12		-2.137	-2.126
38)	1.24	28.27	0.12		-2.137	-2.138
39)	1.28	28.27	0.12		-2.137	-2.153
40)	1.31	28.27	0.12		-2.137	-2.164
41)	1.34	28.27	0.12		-2.137	-2.176
42)	1.38	28.27	0.12		-2.137	-2.191
43)	1.41	28.26	0.11		-2.216	-2.203
44)	1.44	28.27	0.12		-2.137	-2.214
45)	1.48	28.27	0.12		-2.137	-2.230
46)	1.51	28.27	0.12		-2.137	-2.241
47)	1.54	28.27	0.12		-2.137	-2.253
48)	1.58	28.26	0.11		-2.216	-2.268
49)	1.61	28.26	0.11		-2.216	-2.279
50)	1.64	28.26	0.11		-2.216	-2.291
51)	1.68	28.26	0.11		-2.216	-2.306
52)	1.71	28.26	0.11		-2.216	-2.318
53)	1.74	28.26	0.11		-2.216	-2.329
54)	1.78	28.26	0.11		-2.216	-2.345
55)	1.81	28.26	0.11		-2.216	-2.356
56)	1.84	28.26	0.11		-2.216	-2.368
57)	1.88	28.26	0.11		-2.216	-2.383
58)	1.91	28.26	0.11		-2.216	-2.394
59)	2.01	28.26	0.11		-2.216	-2.433
60)	2.11	28.26	0.11		-2.216	-2.471
61)	2.21	28.26	0.11		-2.216	-2.509
62)	2.31	28.26	0.11		-2.216	-2.548
63)	2.41	28.26	0.11		-2.216	-2.586
64)	2.51	28.26	0.11		-2.216	-2.624
65)	2.61	28.26	0.11		-2.216	-2.663
66)	2.71	28.26	0.11		-2.216	-2.701
67)	2.81	28.26	0.11		-2.216	-2.739
68)	2.91	28.25	0.10		-2.293	-2.778
69)	3.01	28.25	0.10		-2.293	-2.816
70)	3.11	28.25	0.10		-2.293	-2.854
71)	3.21	28.25	0.10		-2.293	-2.893
72)	3.31	28.25	0.10		-2.293	-2.931
73)	3.41	28.25	0.10		-2.293	-2.969
74)	3.51	28.25	0.10		-2.293	-3.008

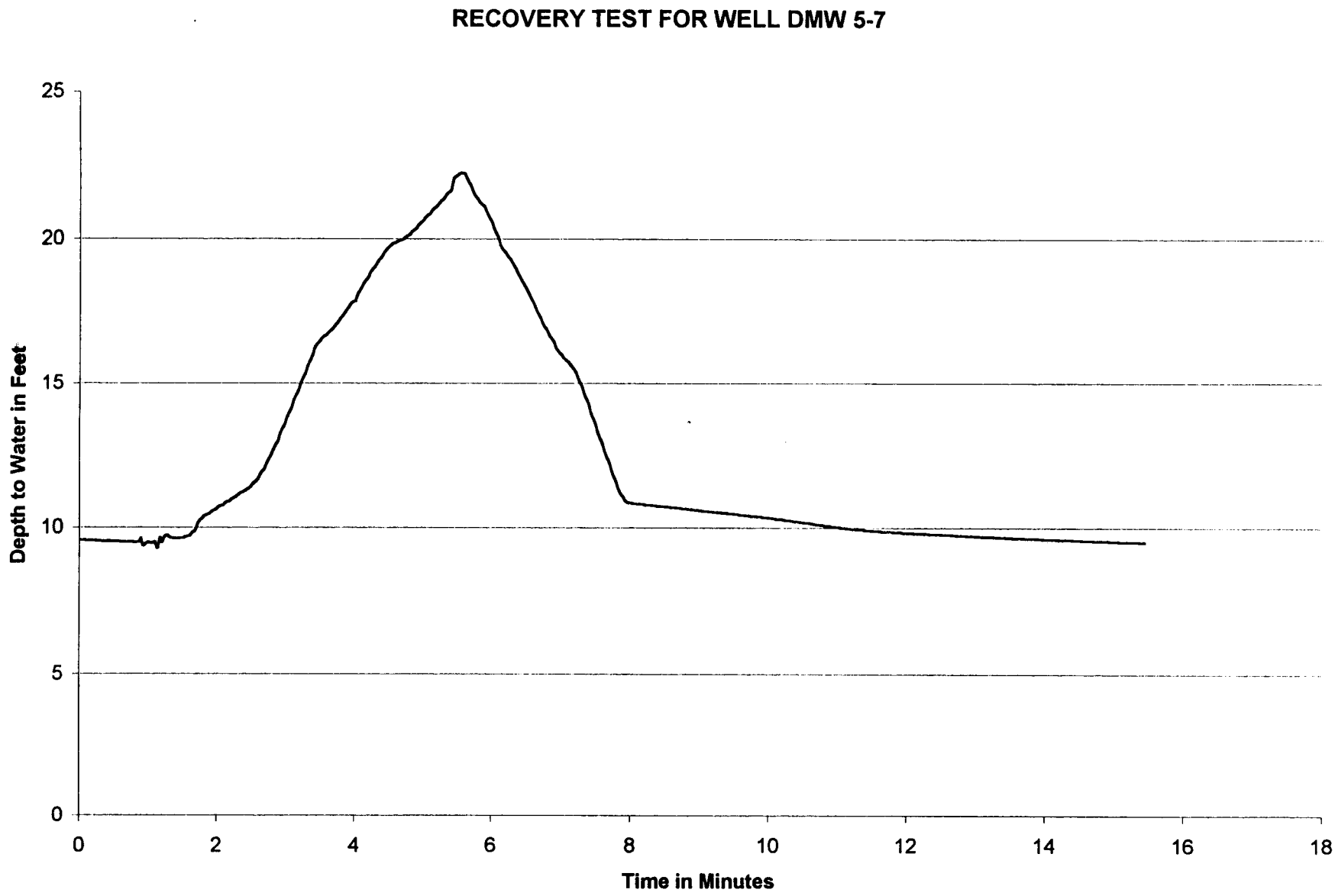
75)	3.61	28.26	0.11		-2.216	-3.046
76)	3.71	28.25	0.10		-2.293	-3.084
77)	3.81	28.26	0.11		-2.216	-3.123
78)	3.91	28.26	0.11		-2.216	-3.161
79)	4.01	28.25	0.10		-2.293	-3.199
80)	4.11	28.26	0.11		-2.216	-3.238
81)	4.21	28.26	0.11		-2.216	-3.276
82)	4.41	28.26	0.11		-2.216	-3.353

AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-7

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	2.19E-04	cm/sec	or	227	ft/year
By Bouwer and Rice,	K=	1.49E-04	cm/sec	or	154	ft/year

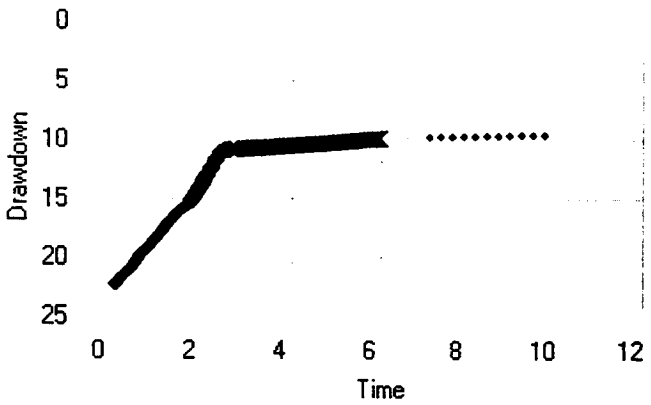

RECOVERY TEST FOR WELL DMW 5-7
Depth to Water in Feet
25
20
15
10
5
0
0
2
4
6
8
10
12
14
16
18
Time in Minutes

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-7** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/25/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	23.8
Static W/L-Depth (ft.):	9.58
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	22.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	14.22
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	1.6
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

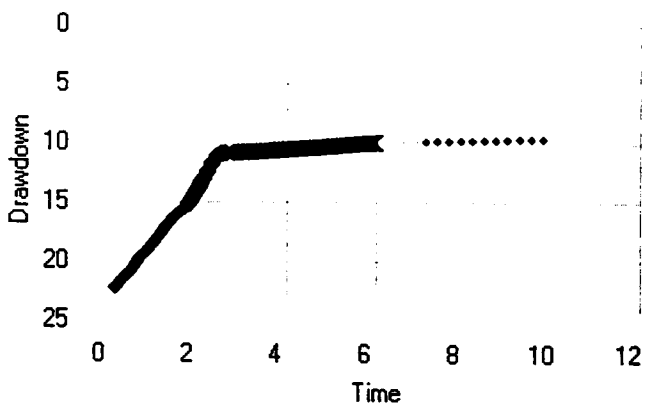
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	22.2451	1.76	15.1476	6.2	9.884		
0.13	22.1859	1.8	14.9533	6.3	9.876		
0.16	22.0338	1.83	14.759	6.4	9.859		
0.2	21.8649	1.86	14.5562	6.5	9.842		
0.23	21.7128	1.9	14.3449	6.6	9.833		
0.26	21.5522	1.93	14.1084	6.7	9.817		
0.3	21.4086	1.96	13.8971	6.8	9.808		
0.33	21.2987	2	13.6775	6.9	9.8		
0.36	21.2312	2.03	13.4493	7	9.791		
0.4	21.1467	2.06	13.2296	7.1	9.774		
0.43	20.9861	2.1	12.985	7.36	9.749		
0.46	20.834	2.2	12.326	7.63	9.715		
0.5	20.665	2.3	11.65	7.9	9.69		
0.53	20.5045	2.4	11.101	8.16	9.664		
0.56	20.3102	2.5	10.873	8.43	9.639		
0.6	20.0905	2.6	10.83	8.7	9.622		
0.63	19.8708	2.8	10.78	8.96	9.597		
0.66	19.6934	2.9	10.754	9.23	9.572		
0.7	19.5835	3	10.738	9.5	9.555		
0.73	19.4821	3.1	10.712	9.76	9.538		
0.76	19.3807	3.2	10.687				
0.8	19.2794	3.3	10.661				
0.83	19.1442	3.4	10.636				
0.86	18.9921	3.5	10.611				
0.9	18.8231	3.6	10.577				
0.93	18.6795	3.7	10.552				
0.96	18.5274	3.8	10.535				
1	18.3753	3.9	10.509				
1.03	18.2147	4	10.484				
1.06	18.0627	4.1	10.459				
1.1	17.9021	4.2	10.433				
1.13	17.7331	4.3	10.408				
1.16	17.5641	4.4	10.383				
1.2	17.3867	4.5	10.357				

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-7** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/25/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	23.8
Static W/L-Depth (ft.):	9.58
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	22.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	14.22
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	1.6
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

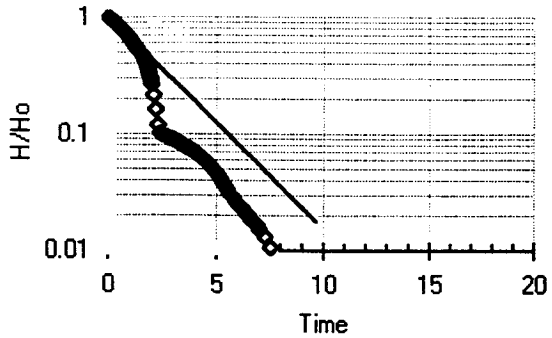
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.23	17.2262	4.6	10.324				
1.26	17.0487	4.7	10.298				
1.3	16.8966	4.8	10.264				
1.33	16.753	4.9	10.231				
1.36	16.6178	5	10.205				
1.4	16.4911	5.1	10.171				
1.43	16.2967	5.2	10.138				
1.46	16.1616	5.3	10.104				
1.5	16.0517	5.4	10.07				
1.53	15.9503	5.5	10.036				
1.56	15.8743	5.6	10.011				
1.6	15.7813	5.7	9.977				
1.63	15.6968	5.8	9.96				
1.66	15.6039	5.9	9.943				
1.7	15.4772	6	9.918				
1.73	15.3335	6.1	9.901				

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 22:52
Identification: **DMW 5-7**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	9.58	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 120
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**2.19E-04**	cm./sec.
Basic Time Lag:	2.43	min.
Error of Fit:	0.0027	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	22.25	12.67	0.0000	0.0181
2)	0.13	22.19	12.61	-0.0047	0.0056
3)	0.16	22.03	12.45	-0.0168	-0.0070
4)	0.20	21.86	12.28	-0.0305	-0.0237
5)	0.23	21.71	12.13	-0.0429	-0.0363
6)	0.26	21.55	11.97	-0.0563	-0.0489
7)	0.30	21.41	11.83	-0.0683	-0.0656
8)	0.33	21.30	11.72	-0.0777	-0.0782
9)	0.36	21.23	11.65	-0.0834	-0.0907
10)	0.40	21.15	11.57	-0.0907	-0.1075
11)	0.43	20.99	11.41	-0.1047	-0.1200
12)	0.46	20.83	11.25	-0.1181	-0.1326
13)	0.50	20.67	11.09	-0.1333	-0.1493
14)	0.53	20.50	10.92	-0.1478	-0.1619
15)	0.56	20.31	10.73	-0.1658	-0.1744
16)	0.60	20.09	10.51	-0.1865	-0.1912
17)	0.63	19.87	10.29	-0.2076	-0.2038
18)	0.66	19.69	10.11	-0.2250	-0.2163
19)	0.70	19.58	10.00	-0.2359	-0.2331
20)	0.73	19.48	9.90	-0.2461	-0.2456
21)	0.76	19.38	9.80	-0.2564	-0.2582
22)	0.80	19.28	9.70	-0.2668	-0.2749
23)	0.83	19.14	9.56	-0.2808	-0.2875
24)	0.86	18.99	9.41	-0.2969	-0.3000
25)	0.90	18.82	9.24	-0.3150	-0.3168
26)	0.93	18.68	9.10	-0.3306	-0.3293
27)	0.96	18.53	8.95	-0.3475	-0.3419
28)	1.00	18.38	8.80	-0.3646	-0.3587
29)	1.03	18.21	8.63	-0.3831	-0.3712

30)	1.06	18.06	8.48	-0.4008	-0.3838
31)	1.10	17.90	8.32	-0.4199	-0.4005
32)	1.13	17.73	8.15	-0.4405	-0.4131
33)	1.16	17.56	7.98	-0.4614	-0.4256
34)	1.20	17.39	7.81	-0.4839	-0.4424
35)	1.23	17.23	7.65	-0.5046	-0.4549
36)	1.26	17.05	7.47	-0.5281	-0.4675
37)	1.30	16.90	7.32	-0.5487	-0.4843
38)	1.33	16.75	7.17	-0.5685	-0.4968
39)	1.36	16.62	7.04	-0.5876	-0.5094
40)	1.40	16.49	6.91	-0.6057	-0.5261
41)	1.43	16.30	6.72	-0.6343	-0.5387
42)	1.46	16.16	6.58	-0.6546	-0.5512
43)	1.50	16.05	6.47	-0.6714	-0.5680
44)	1.53	15.95	6.37	-0.6872	-0.5805
45)	1.56	15.87	6.29	-0.6992	-0.5931
46)	1.60	15.78	6.20	-0.7141	-0.6098
47)	1.63	15.70	6.12	-0.7278	-0.6224
48)	1.66	15.60	6.02	-0.7431	-0.6350
49)	1.70	15.48	5.90	-0.7644	-0.6517
50)	1.73	15.33	5.75	-0.7890	-0.6643
51)	1.76	15.15	5.57	-0.8219	-0.6768
52)	1.80	14.95	5.37	-0.8574	-0.6936
53)	1.83	14.76	5.18	-0.8942	-0.7061
54)	1.86	14.56	4.98	-0.9342	-0.7187
55)	1.90	14.34	4.76	-0.9776	-0.7354
56)	1.93	14.11	4.53	-1.0285	-0.7480
57)	1.96	13.90	4.32	-1.0763	-0.7606
58)	2.00	13.68	4.10	-1.1285	-0.7773
59)	2.03	13.45	3.87	-1.1858	-0.7899
60)	2.06	13.23	3.65	-1.2442	-0.8024
61)	2.10	12.99	3.41	-1.3136	-0.8192
62)	2.20	12.33	2.75	-1.5287	-0.8610
63)	2.30	11.65	2.07	-1.8113	-0.9029
64)	2.40	11.10	1.52	-2.1195	-0.9448
65)	2.50	10.87	1.29	-2.2819	-0.9866
66)	2.60	10.83	1.25	-2.3157	-1.0285
67)	2.80	10.78	1.20	-2.3565	-1.1122
68)	2.90	10.75	1.17	-2.3784	-1.1541
69)	3.00	10.74	1.16	-2.3922	-1.1960
70)	3.10	10.71	1.13	-2.4149	-1.2378
71)	3.20	10.69	1.11	-2.4372	-1.2797
72)	3.30	10.66	1.08	-2.4610	-1.3216
73)	3.40	10.64	1.06	-2.4844	-1.3634
74)	3.50	10.61	1.03	-2.5083	-1.4053

75)	3.60	10.58	1.00	-2.5419	-1.4472
76)	3.70	10.55	0.97	-2.5672	-1.4890
77)	3.80	10.54	0.96	-2.5849	-1.5309
78)	3.90	10.51	0.93	-2.6125	-1.5728
79)	4.00	10.48	0.90	-2.6398	-1.6146
80)	4.10	10.46	0.88	-2.6678	-1.6565
81)	4.20	10.43	0.85	-2.6978	-1.6983
82)	4.30	10.41	0.83	-2.7276	-1.7402
83)	4.40	10.38	0.80	-2.7583	-1.7821
84)	4.50	10.36	0.78	-2.7912	-1.8239
85)	4.60	10.32	0.74	-2.8346	-1.8658
86)	4.70	10.30	0.72	-2.8701	-1.9077
87)	4.80	10.26	0.68	-2.9186	-1.9495
88)	4.90	10.23	0.65	-2.9681	-1.9914
89)	5.00	10.21	0.63	-3.0089	-2.0333
90)	5.10	10.17	0.59	-3.0648	-2.0751
91)	5.20	10.14	0.56	-3.1222	-2.1170
92)	5.30	10.10	0.52	-3.1851	-2.1589
93)	5.40	10.07	0.49	-3.2522	-2.2007
94)	5.50	10.04	0.46	-3.3241	-2.2426
95)	5.60	10.01	0.43	-3.3805	-2.2845
96)	5.70	9.98	0.40	-3.4627	-2.3263
97)	5.80	9.96	0.38	-3.5064	-2.3682
98)	5.90	9.94	0.36	-3.5522	-2.4101
99)	6.00	9.92	0.34	-3.6236	-2.4519
100)	6.10	9.90	0.32	-3.6752	-2.4938
101)	6.20	9.88	0.30	-3.7296	-2.5357
102)	6.30	9.88	0.30	-3.7562	-2.5775
103)	6.40	9.86	0.28	-3.8154	-2.6194
104)	6.50	9.84	0.26	-3.8783	-2.6613
105)	6.60	9.83	0.25	-3.9132	-2.7031
106)	6.70	9.82	0.24	-3.9785	-2.7450
107)	6.80	9.81	0.23	-4.0173	-2.7868
108)	6.90	9.80	0.22	-4.0530	-2.8287
109)	7.00	9.79	0.21	-4.0947	-2.8706
110)	7.10	9.77	0.19	-4.1787	-2.9124
111)	7.36	9.75	0.17	-4.3167	-3.0213
112)	7.63	9.72	0.14	-4.5413	-3.1343
113)	7.90	9.69	0.11	-4.7461	-3.2474
114)	8.16	9.66	0.08	-5.0158	-3.3562
115)	8.43	9.64	0.06	-5.3691	-3.4693
116)	8.70	9.62	0.04	-5.7089	-3.5823
117)	8.96	9.60	0.02	-6.6134	-3.6911
118)	9.23	9.57	0.01	-7.3672	-3.8042
119)	9.50	9.56	0.03	-6.2277	-3.9172

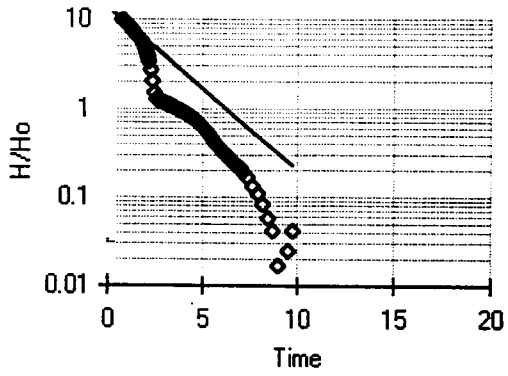
120)	9.76	9.54	0.04	-5.7089	-4.0261

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW 5-7**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	14.22	feet
Water Table Depth:	9.58	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 120
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.49E-04**	cm./sec.
Error of Fit:	0.003	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	22.25	12.67		2.539	2.557
2)	0.13	22.19	12.61		2.534	2.544
3)	0.16	22.03	12.45		2.522	2.532
4)	0.20	21.86	12.28		2.508	2.515
5)	0.23	21.71	12.13		2.496	2.503
6)	0.26	21.55	11.97		2.483	2.490
7)	0.30	21.41	11.83		2.471	2.473
8)	0.33	21.30	11.72		2.461	2.461
9)	0.36	21.23	11.65		2.455	2.448
10)	0.40	21.15	11.57		2.448	2.431
11)	0.43	20.99	11.41		2.434	2.419
12)	0.46	20.83	11.25		2.421	2.406
13)	0.50	20.67	11.09		2.406	2.390
14)	0.53	20.50	10.92		2.391	2.377
15)	0.56	20.31	10.73		2.373	2.364
16)	0.60	20.09	10.51		2.352	2.348
17)	0.63	19.87	10.29		2.331	2.335
18)	0.66	19.69	10.11		2.314	2.323
19)	0.70	19.58	10.00		2.303	2.306
20)	0.73	19.48	9.90		2.293	2.293
21)	0.76	19.38	9.80		2.282	2.281
22)	0.80	19.28	9.70		2.272	2.264
23)	0.83	19.14	9.56		2.258	2.251
24)	0.86	18.99	9.41		2.242	2.239
25)	0.90	18.82	9.24		2.224	2.222
26)	0.93	18.68	9.10		2.208	2.210
27)	0.96	18.53	8.95		2.191	2.197
28)	1.00	18.38	8.80		2.174	2.180
29)	1.03	18.21	8.63		2.156	2.168

30)	1.06	18.06	8.48		2.138	2.155
31)	1.10	17.90	8.32		2.119	2.138
32)	1.13	17.73	8.15		2.098	2.126
33)	1.16	17.56	7.98		2.077	2.113
34)	1.20	17.39	7.81		2.055	2.096
35)	1.23	17.23	7.65		2.034	2.084
36)	1.26	17.05	7.47		2.011	2.071
37)	1.30	16.90	7.32		1.990	2.055
38)	1.33	16.75	7.17		1.970	2.042
39)	1.36	16.62	7.04		1.951	2.029
40)	1.40	16.49	6.91		1.933	2.013
41)	1.43	16.30	6.72		1.905	2.000
42)	1.46	16.16	6.58		1.884	1.988
43)	1.50	16.05	6.47		1.867	1.971
44)	1.53	15.95	6.37		1.852	1.958
45)	1.56	15.87	6.29		1.840	1.946
46)	1.60	15.78	6.20		1.825	1.929
47)	1.63	15.70	6.12		1.811	1.916
48)	1.66	15.60	6.02		1.796	1.904
49)	1.70	15.48	5.90		1.774	1.887
50)	1.73	15.33	5.75		1.750	1.875
51)	1.76	15.15	5.57		1.717	1.862
52)	1.80	14.95	5.37		1.681	1.845
53)	1.83	14.76	5.18		1.645	1.833
54)	1.86	14.56	4.98		1.605	1.820
55)	1.90	14.34	4.76		1.561	1.803
56)	1.93	14.11	4.53		1.510	1.791
57)	1.96	13.90	4.32		1.463	1.778
58)	2.00	13.68	4.10		1.410	1.762
59)	2.03	13.45	3.87		1.353	1.749
60)	2.06	13.23	3.65		1.295	1.736
61)	2.10	12.99	3.41		1.225	1.720
62)	2.20	12.33	2.75		1.010	1.678
63)	2.30	11.65	2.07		0.728	1.636
64)	2.40	11.10	1.52		0.419	1.594
65)	2.50	10.87	1.29		0.257	1.552
66)	2.60	10.83	1.25		0.223	1.510
67)	2.80	10.78	1.20		0.182	1.427
68)	2.90	10.75	1.17		0.160	1.385
69)	3.00	10.74	1.16		0.147	1.343
70)	3.10	10.71	1.13		0.124	1.301
71)	3.20	10.69	1.11		0.102	1.259
72)	3.30	10.66	1.08		0.078	1.217
73)	3.40	10.64	1.06		0.054	1.175
74)	3.50	10.61	1.03		0.031	1.134

75)	3.60	10.58	1.00		-0.003	1.092
76)	3.70	10.55	0.97		-0.028	1.050
77)	3.80	10.54	0.96		-0.046	1.008
78)	3.90	10.51	0.93		-0.074	0.966
79)	4.00	10.48	0.90		-0.101	0.924
80)	4.10	10.46	0.88		-0.129	0.882
81)	4.20	10.43	0.85		-0.159	0.841
82)	4.30	10.41	0.83		-0.189	0.799
83)	4.40	10.38	0.80		-0.219	0.757
84)	4.50	10.36	0.78		-0.252	0.715
85)	4.60	10.32	0.74		-0.296	0.673
86)	4.70	10.30	0.72		-0.331	0.631
87)	4.80	10.26	0.68		-0.380	0.589
88)	4.90	10.23	0.65		-0.429	0.547
89)	5.00	10.21	0.63		-0.470	0.506
90)	5.10	10.17	0.59		-0.526	0.464
91)	5.20	10.14	0.56		-0.583	0.422
92)	5.30	10.10	0.52		-0.646	0.380
93)	5.40	10.07	0.49		-0.713	0.338
94)	5.50	10.04	0.46		-0.785	0.296
95)	5.60	10.01	0.43		-0.842	0.254
96)	5.70	9.98	0.40		-0.924	0.213
97)	5.80	9.96	0.38		-0.968	0.171
98)	5.90	9.94	0.36		-1.013	0.129
99)	6.00	9.92	0.34		-1.085	0.087
100)	6.10	9.90	0.32		-1.136	0.045
101)	6.20	9.88	0.30		-1.191	0.003
102)	6.30	9.88	0.30		-1.217	-0.039
103)	6.40	9.86	0.28		-1.277	-0.081
104)	6.50	9.84	0.26		-1.339	-0.122
105)	6.60	9.83	0.25		-1.374	-0.164
106)	6.70	9.82	0.24		-1.440	-0.206
107)	6.80	9.81	0.23		-1.478	-0.248
108)	6.90	9.80	0.22		-1.514	-0.290
109)	7.00	9.79	0.21		-1.556	-0.332
110)	7.10	9.77	0.19		-1.640	-0.374
111)	7.36	9.75	0.17		-1.778	-0.482
112)	7.63	9.72	0.14		-2.002	-0.595
113)	7.90	9.69	0.11		-2.207	-0.709
114)	8.16	9.66	0.08		-2.477	-0.817
115)	8.43	9.64	0.06		-2.830	-0.930
116)	8.70	9.62	0.04		-3.170	-1.043
117)	8.96	9.60	0.02		-4.075	-1.152
118)	9.23	9.57	0.01		-4.828	-1.265
119)	9.50	9.56	0.03		-3.689	-1.378

120)	9.76	9.54	0.04		-3.170	-1.487

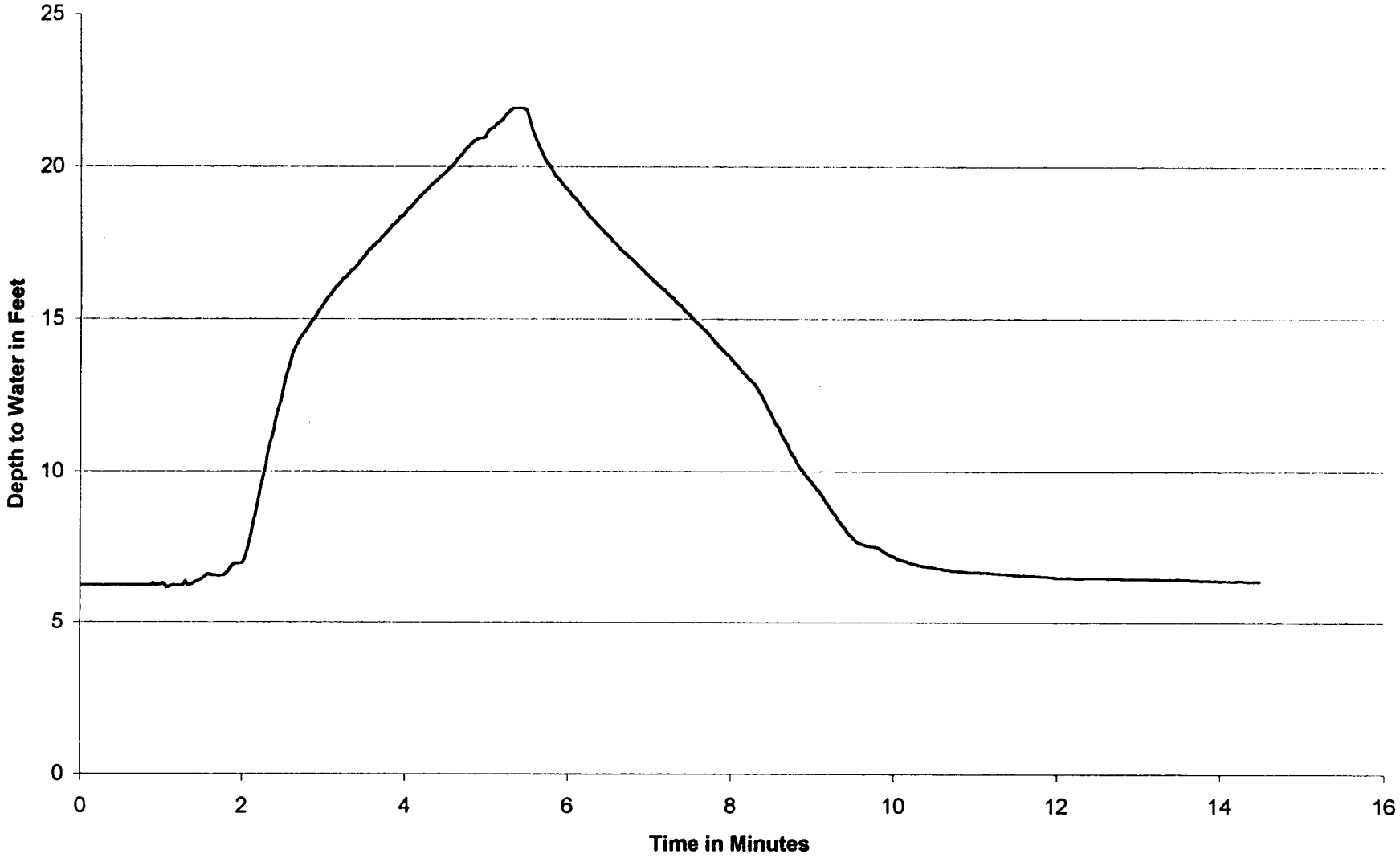
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-8

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	1.63E-04	cm/sec	or	169	ft/year
By Bouwer and Rice,	K=	1.10E-04	cm/sec	or	114	ft/year

RECOVERY TEST FOR WELL DMW 5-8

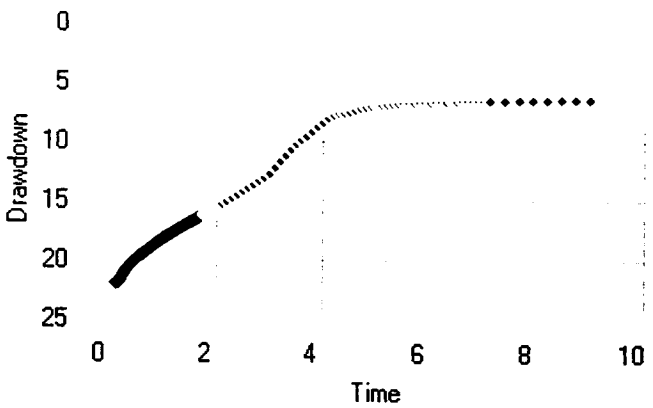


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-8** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/25/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	23.1
Static W/L-Depth (ft.):	6.23
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	22
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	16.77
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3
Slug Volume (ft^3):	1.06
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

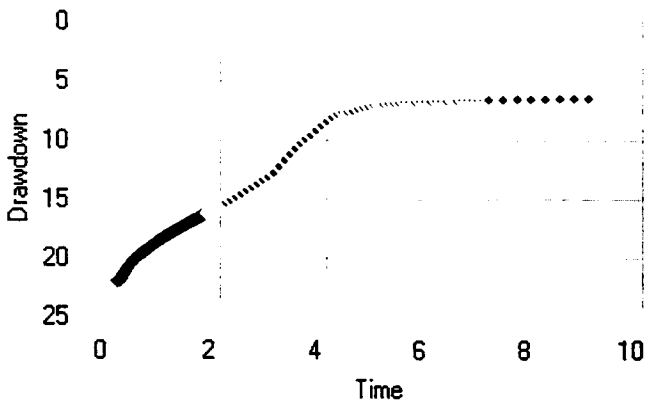
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	21.9455	1.77	16.107	6.1	6.5935		
0.14	21.8948	1.8	16.0225	6.2	6.568		
0.17	21.7089	1.84	15.9465	6.3	6.5595		
0.2	21.4132	1.87	15.862	6.4	6.5425		
0.24	21.109	1.9	15.7775	6.5	6.5255		
0.27	20.88935	1.94	15.693	6.6	6.509		
0.3	20.695	1.97	15.6085	6.7	6.4835		
0.34	20.4753	2	15.524	6.8	6.4835		
0.37	20.27255	2.04	15.4315	6.9	6.475		
0.4	20.1289	2.07	15.33	7	6.475		
0.44	20.0106	2.1	15.2455	7.1	6.475		
0.47	19.86695	2.2	14.992	7.37	6.4665		
0.5	19.7233	2.3	14.747	7.64	6.4495		
0.54	19.60505	2.4	14.468	7.9	6.441		
0.57	19.50365	2.5	14.1555	8.17	6.4325		
0.6	19.40225	2.6	13.8935	8.44	6.399		
0.64	19.28395	2.7	13.6145	8.7	6.382		
0.67	19.18255	2.8	13.3105	8.97	6.382		
0.7	19.0727	2.9	13.0315				
0.74	18.9629	3	12.6935				
0.77	18.8615	3.1	12.1785				
0.8	18.73475	3.2	11.6375				
0.84	18.6249	3.3	11.1305				
0.87	18.51505	3.4	10.6235				
0.9	18.41365	3.5	10.1675				
0.94	18.3123	3.6	9.8125				
0.97	18.21935	3.7	9.4915				
1	18.1264	3.8	9.1195				
1.04	18.025	3.9	8.7055				
1.07	17.9405	4	8.317				
1.1	17.8391	4.1	7.9535				
1.14	17.7462	4.2	7.6915				
1.17	17.67015	4.3	7.5735				
1.2	17.56875	4.4	7.5145				

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-8** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
Project Name: **Phase 5 Cell** Analysis By: WJB Date Started: 4/25/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	23.1
Static W/L-Depth (ft.):	6.23
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	22
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	7
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	16.77
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3
Slug Volume (ft^3):	1.06
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

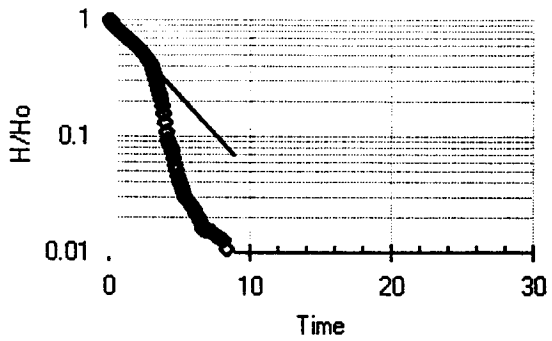
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.24	17.4758	4.5	7.4215				
1.27	17.38285	4.6	7.261				
1.3	17.2899	4.7	7.1255				
1.34	17.19695	4.8	7.041				
1.37	17.1125	4.9	6.948				
1.4	17.028	5	6.889				
1.44	16.9435	5.1	6.8385				
1.47	16.859	5.2	6.796				
1.5	16.7745	5.3	6.754				
1.54	16.69	5.4	6.7115				
1.57	16.6055	5.5	6.686				
1.6	16.521	5.6	6.6695				
1.64	16.437	5.7	6.661				
1.67	16.3525	5.8	6.644				
1.7	16.268	5.9	6.627				
1.74	16.1835	6	6.61				

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 23:09
Identification: **DMW 5-8**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	6.23	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 118
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**1.63E-04**	cm./sec.
Basic Time Lag:	3.28	min.
Error of Fit:	0.0038	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	21.95	15.72	0.0000	-0.0173
2)	0.14	21.89	15.66	-0.0032	-0.0293
3)	0.17	21.71	15.48	-0.0152	-0.0383
4)	0.20	21.41	15.18	-0.0345	-0.0473
5)	0.24	21.11	14.88	-0.0547	-0.0593
6)	0.27	20.89	14.66	-0.0696	-0.0683
7)	0.30	20.70	14.47	-0.0829	-0.0773
8)	0.34	20.48	14.25	-0.0982	-0.0893
9)	0.37	20.27	14.04	-0.1126	-0.0982
10)	0.40	20.13	13.90	-0.1228	-0.1072
11)	0.44	20.01	13.78	-0.1314	-0.1192
12)	0.47	19.87	13.64	-0.1419	-0.1282
13)	0.50	19.72	13.49	-0.1525	-0.1372
14)	0.54	19.61	13.38	-0.1613	-0.1492
15)	0.57	19.50	13.27	-0.1689	-0.1582
16)	0.60	19.40	13.17	-0.1765	-0.1672
17)	0.64	19.28	13.05	-0.1856	-0.1792
18)	0.67	19.18	12.95	-0.1934	-0.1882
19)	0.70	19.07	12.84	-0.2019	-0.1972
20)	0.74	18.96	12.73	-0.2105	-0.2091
21)	0.77	18.86	12.63	-0.2185	-0.2181
22)	0.80	18.73	12.50	-0.2285	-0.2271
23)	0.84	18.62	12.39	-0.2374	-0.2391
24)	0.87	18.52	12.29	-0.2463	-0.2481
25)	0.90	18.41	12.18	-0.2546	-0.2571
26)	0.94	18.31	12.08	-0.2629	-0.2691
27)	0.97	18.22	11.99	-0.2706	-0.2781
28)	1.00	18.13	11.90	-0.2784	-0.2871
29)	1.04	18.03	11.80	-0.2870	-0.2991

30)	1.07	17.94	11.71	-0.2942	-0.3080
31)	1.10	17.84	11.61	-0.3029	-0.3170
32)	1.14	17.75	11.52	-0.3109	-0.3290
33)	1.17	17.67	11.44	-0.3175	-0.3380
34)	1.20	17.57	11.34	-0.3264	-0.3470
35)	1.24	17.48	11.25	-0.3347	-0.3590
36)	1.27	17.38	11.15	-0.3430	-0.3680
37)	1.30	17.29	11.06	-0.3513	-0.3770
38)	1.34	17.20	10.97	-0.3598	-0.3890
39)	1.37	17.11	10.88	-0.3675	-0.3980
40)	1.40	17.03	10.80	-0.3753	-0.4070
41)	1.44	16.94	10.71	-0.3831	-0.4189
42)	1.47	16.86	10.63	-0.3911	-0.4279
43)	1.50	16.77	10.54	-0.3990	-0.4369
44)	1.54	16.69	10.46	-0.4071	-0.4489
45)	1.57	16.61	10.38	-0.4152	-0.4579
46)	1.60	16.52	10.29	-0.4234	-0.4669
47)	1.64	16.44	10.21	-0.4316	-0.4789
48)	1.67	16.35	10.12	-0.4399	-0.4879
49)	1.70	16.27	10.04	-0.4483	-0.4969
50)	1.74	16.18	9.95	-0.4567	-0.5089
51)	1.77	16.11	9.88	-0.4644	-0.5179
52)	1.80	16.02	9.79	-0.4730	-0.5268
53)	1.84	15.95	9.72	-0.4808	-0.5388
54)	1.87	15.86	9.63	-0.4896	-0.5478
55)	1.90	15.78	9.55	-0.4984	-0.5568
56)	1.94	15.69	9.46	-0.5073	-0.5688
57)	1.97	15.61	9.38	-0.5162	-0.5778
58)	2.00	15.52	9.29	-0.5253	-0.5868
59)	2.04	15.43	9.20	-0.5353	-0.5988
60)	2.07	15.33	9.10	-0.5464	-0.6078
61)	2.10	15.25	9.02	-0.5557	-0.6168
62)	2.20	14.99	8.76	-0.5842	-0.6467
63)	2.30	14.75	8.52	-0.6126	-0.6767
64)	2.40	14.47	8.24	-0.6459	-0.7067
65)	2.50	14.16	7.93	-0.6846	-0.7366
66)	2.60	13.89	7.66	-0.7182	-0.7666
67)	2.70	13.61	7.38	-0.7553	-0.7966
68)	2.80	13.31	7.08	-0.7973	-0.8266
69)	2.90	13.03	6.80	-0.8375	-0.8565
70)	3.00	12.69	6.46	-0.8885	-0.8865
71)	3.10	12.18	5.95	-0.9715	-0.9165
72)	3.20	11.64	5.41	-1.0669	-0.9465
73)	3.30	11.13	4.90	-1.1653	-0.9764
74)	3.40	10.62	4.39	-1.2745	-1.0064

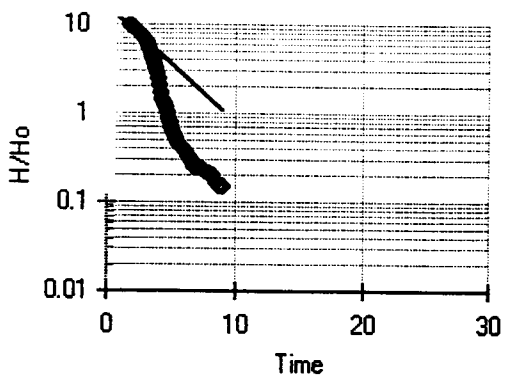
75)	3.50	10.17	3.94	-1.3841	-1.0364
76)	3.60	9.81	3.58	-1.4786	-1.0663
77)	3.70	9.49	3.26	-1.5725	-1.0963
78)	3.80	9.12	2.89	-1.6936	-1.1263
79)	3.90	8.71	2.48	-1.8482	-1.1563
80)	4.00	8.32	2.09	-2.0189	-1.1862
81)	4.10	7.95	1.72	-2.2103	-1.2162
82)	4.20	7.69	1.46	-2.3752	-1.2462
83)	4.30	7.57	1.34	-2.4594	-1.2761
84)	4.40	7.51	1.28	-2.5043	-1.3061
85)	4.50	7.42	1.19	-2.5794	-1.3361
86)	4.60	7.26	1.03	-2.7241	-1.3661
87)	4.70	7.13	0.90	-2.8650	-1.3960
88)	4.80	7.04	0.81	-2.9641	-1.4260
89)	4.90	6.95	0.72	-3.0859	-1.4560
90)	5.00	6.89	0.66	-3.1717	-1.4859
91)	5.10	6.84	0.61	-3.2514	-1.5159
92)	5.20	6.80	0.57	-3.3238	-1.5459
93)	5.30	6.75	0.52	-3.4009	-1.5759
94)	5.40	6.71	0.48	-3.4855	-1.6058
95)	5.50	6.69	0.46	-3.5399	-1.6358
96)	5.60	6.67	0.44	-3.5768	-1.6658
97)	5.70	6.66	0.43	-3.5963	-1.6958
98)	5.80	6.64	0.41	-3.6365	-1.7257
99)	5.90	6.63	0.40	-3.6785	-1.7557
100)	6.00	6.61	0.38	-3.7222	-1.7857
101)	6.10	6.59	0.36	-3.7666	-1.8156
102)	6.20	6.57	0.34	-3.8394	-1.8456
103)	6.30	6.56	0.33	-3.8648	-1.8756
104)	6.40	6.54	0.31	-3.9178	-1.9056
105)	6.50	6.53	0.30	-3.9737	-1.9355
106)	6.60	6.51	0.28	-4.0312	-1.9655
107)	6.70	6.48	0.25	-4.1270	-1.9955
108)	6.80	6.48	0.25	-4.1270	-2.0254
109)	6.90	6.48	0.24	-4.1611	-2.0554
110)	7.00	6.48	0.24	-4.1611	-2.0854
111)	7.10	6.48	0.24	-4.1611	-2.1154
112)	7.37	6.47	0.24	-4.1965	-2.1963
113)	7.64	6.45	0.22	-4.2711	-2.2772
114)	7.90	6.44	0.21	-4.3105	-2.3551
115)	8.17	6.43	0.20	-4.3517	-2.4361
116)	8.44	6.40	0.17	-4.5325	-2.5170
117)	8.70	6.38	0.15	-4.6385	-2.5949
118)	8.97	6.38	0.15	-4.6385	-2.6758

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW 5-8**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	16.77	feet
Water Table Depth:	6.23	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	30	Max 118
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.10E-04**	cm./sec.
Error of Fit:	0.004	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	21.95	15.72		2.755	2.737
2)	0.14	21.89	15.66		2.751	2.725
3)	0.17	21.71	15.48		2.739	2.716
4)	0.20	21.41	15.18		2.720	2.707
5)	0.24	21.11	14.88		2.700	2.695
6)	0.27	20.89	14.66		2.685	2.686
7)	0.30	20.70	14.47		2.672	2.677
8)	0.34	20.48	14.25		2.656	2.665
9)	0.37	20.27	14.04		2.642	2.656
10)	0.40	20.13	13.90		2.632	2.647
11)	0.44	20.01	13.78		2.623	2.635
12)	0.47	19.87	13.64		2.613	2.626
13)	0.50	19.72	13.49		2.602	2.617
14)	0.54	19.61	13.38		2.593	2.605
15)	0.57	19.50	13.27		2.586	2.596
16)	0.60	19.40	13.17		2.578	2.587
17)	0.64	19.28	13.05		2.569	2.575
18)	0.67	19.18	12.95		2.561	2.566
19)	0.70	19.07	12.84		2.553	2.557
20)	0.74	18.96	12.73		2.544	2.546
21)	0.77	18.86	12.63		2.536	2.537
22)	0.80	18.73	12.50		2.526	2.528
23)	0.84	18.62	12.39		2.517	2.516
24)	0.87	18.52	12.29		2.508	2.507
25)	0.90	18.41	12.18		2.500	2.498
26)	0.94	18.31	12.08		2.492	2.486
27)	0.97	18.22	11.99		2.484	2.477
28)	1.00	18.13	11.90		2.476	2.468
29)	1.04	18.03	11.80		2.468	2.456

30)	1.07	17.94	11.71		2.460	2.447
31)	1.10	17.84	11.61		2.452	2.438
32)	1.14	17.75	11.52		2.444	2.426
33)	1.17	17.67	11.44		2.437	2.417
34)	1.20	17.57	11.34		2.428	2.408
35)	1.24	17.48	11.25		2.420	2.396
36)	1.27	17.38	11.15		2.412	2.387
37)	1.30	17.29	11.06		2.403	2.378
38)	1.34	17.20	10.97		2.395	2.366
39)	1.37	17.11	10.88		2.387	2.357
40)	1.40	17.03	10.80		2.379	2.348
41)	1.44	16.94	10.71		2.372	2.336
42)	1.47	16.86	10.63		2.364	2.327
43)	1.50	16.77	10.54		2.356	2.318
44)	1.54	16.69	10.46		2.348	2.306
45)	1.57	16.61	10.38		2.339	2.297
46)	1.60	16.52	10.29		2.331	2.288
47)	1.64	16.44	10.21		2.323	2.276
48)	1.67	16.35	10.12		2.315	2.267
49)	1.70	16.27	10.04		2.306	2.258
50)	1.74	16.18	9.95		2.298	2.246
51)	1.77	16.11	9.88		2.290	2.237
52)	1.80	16.02	9.79		2.282	2.228
53)	1.84	15.95	9.72		2.274	2.216
54)	1.87	15.86	9.63		2.265	2.207
55)	1.90	15.78	9.55		2.256	2.198
56)	1.94	15.69	9.46		2.247	2.186
57)	1.97	15.61	9.38		2.238	2.177
58)	2.00	15.52	9.29		2.229	2.168
59)	2.04	15.43	9.20		2.219	2.156
60)	2.07	15.33	9.10		2.208	2.147
61)	2.10	15.25	9.02		2.199	2.138
62)	2.20	14.99	8.76		2.170	2.108
63)	2.30	14.75	8.52		2.142	2.078
64)	2.40	14.47	8.24		2.109	2.048
65)	2.50	14.16	7.93		2.070	2.018
66)	2.60	13.89	7.66		2.036	1.988
67)	2.70	13.61	7.38		1.999	1.958
68)	2.80	13.31	7.08		1.957	1.928
69)	2.90	13.03	6.80		1.917	1.898
70)	3.00	12.69	6.46		1.866	1.868
71)	3.10	12.18	5.95		1.783	1.838
72)	3.20	11.64	5.41		1.688	1.808
73)	3.30	11.13	4.90		1.589	1.778
74)	3.40	10.62	4.39		1.480	1.748

75)	3.50	10.17	3.94		1.371	1.718
76)	3.60	9.81	3.58		1.276	1.688
77)	3.70	9.49	3.26		1.182	1.658
78)	3.80	9.12	2.89		1.061	1.628
79)	3.90	8.71	2.48		0.906	1.598
80)	4.00	8.32	2.09		0.736	1.568
81)	4.10	7.95	1.72		0.544	1.538
82)	4.20	7.69	1.46		0.379	1.508
83)	4.30	7.57	1.34		0.295	1.479
84)	4.40	7.51	1.28		0.250	1.449
85)	4.50	7.42	1.19		0.175	1.419
86)	4.60	7.26	1.03		0.031	1.389
87)	4.70	7.13	0.90		-0.110	1.359
88)	4.80	7.04	0.81		-0.209	1.329
89)	4.90	6.95	0.72		-0.331	1.299
90)	5.00	6.89	0.66		-0.417	1.269
91)	5.10	6.84	0.61		-0.497	1.239
92)	5.20	6.80	0.57		-0.569	1.209
93)	5.30	6.75	0.52		-0.646	1.179
94)	5.40	6.71	0.48		-0.731	1.149
95)	5.50	6.69	0.46		-0.785	1.119
96)	5.60	6.67	0.44		-0.822	1.089
97)	5.70	6.66	0.43		-0.842	1.059
98)	5.80	6.64	0.41		-0.882	1.029
99)	5.90	6.63	0.40		-0.924	0.999
100)	6.00	6.61	0.38		-0.968	0.969
101)	6.10	6.59	0.36		-1.012	0.939
102)	6.20	6.57	0.34		-1.085	0.909
103)	6.30	6.56	0.33		-1.110	0.879
104)	6.40	6.54	0.31		-1.163	0.849
105)	6.50	6.53	0.30		-1.219	0.819
106)	6.60	6.51	0.28		-1.277	0.789
107)	6.70	6.48	0.25		-1.372	0.759
108)	6.80	6.48	0.25		-1.372	0.729
109)	6.90	6.48	0.24		-1.406	0.699
110)	7.00	6.48	0.24		-1.406	0.669
111)	7.10	6.48	0.24		-1.406	0.639
112)	7.37	6.47	0.24		-1.442	0.558
113)	7.64	6.45	0.22		-1.516	0.477
114)	7.90	6.44	0.21		-1.556	0.400
115)	8.17	6.43	0.20		-1.597	0.319
116)	8.44	6.40	0.17		-1.778	0.238
117)	8.70	6.38	0.15		-1.884	0.160
118)	8.97	6.38	0.15		-1.884	0.079

AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-9

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	1.83E-04	cm/sec	or	0	ft/year
By Bouwer and Rice,	K=	1.09E-04	cm/sec	or	0	ft/year

Note:
This well was installed as C-13 in 1995

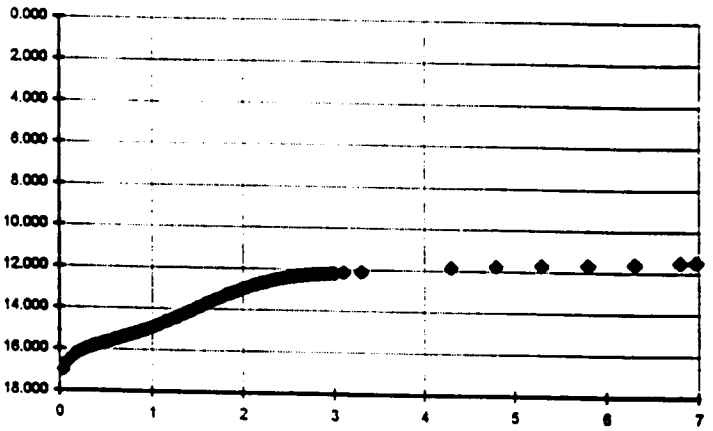
SLUG TEST DATA ENTRY FORM

Client Name: McKimm & Creed
Project No.: 1054-95-286
Project Name: Johnston Co. Landfil

Well Number: C-13
Topo. Elev.: 224.96
Tested By: LEL

Test Type: Slug Out
Weather: Warm Dry
Date Started: 5/8/95

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	23.90
Static W/L-Depth (ft.):	11.20
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	17.38
TOC Elevation (feet):	198.78
Intake/Soil Col. Diam. (feet):	0.83
Depth to Top of Pack (feet):	7.10
Intake/Soil Col. Length (ft.):	16.80
Saturat. Col. Thickness (ft.):	12.70
Casing Soil Length (if appl.):	NA
Casing Stickup (feet):	3.00
Slug Volume (ft3):	0.33
Thickness of Aquifer (feet):	30.00



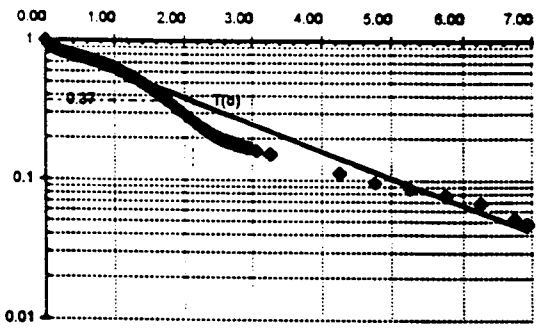
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.04	16.996	0.87	15.1115	1.7	13.498	2.54	12.358
0.07	16.666	0.9	15.0608	1.74	13.431	2.57	12.341
0.1	16.523	0.94	15.0102	1.77	13.371	2.6	12.315
0.14	16.371	0.97	14.9595	1.8	13.304	2.64	12.298
0.17	16.252	1	14.9003	1.84	13.245	2.67	12.29
0.2	16.142	1.04	14.8412	1.87	13.186	2.7	12.273
0.24	16.075	1.07	14.7651	1.9	13.126	2.74	12.256
0.27	15.990	1.1	14.6975	1.94	13.067	2.77	12.248
0.3	15.931	1.14	14.6299	1.97	13.017	2.8	12.231
0.34	15.880	1.17	14.5708	2	12.966	2.84	12.222
0.37	15.830	1.2	14.5116	2.04	12.915	2.87	12.214
0.4	15.779	1.24	14.444	2.07	12.864	2.9	12.205
0.44	15.720	1.27	14.3849	2.1	12.814	2.94	12.189
0.47	15.678	1.3	14.3258	2.14	12.772	2.97	12.18
0.5	15.627	1.34	14.2582	2.17	12.721	3	12.172
0.54	15.5847	1.37	14.1906	2.2	12.679	3.1	12.138
0.57	15.534	1.4	14.123	2.24	12.636	3.3	12.087
0.6	15.4833	1.44	14.0469	2.27	12.603	3	12.172
0.64	15.4411	1.47	13.9793	2.3	12.56	4.3	11.851
0.67	15.3904	1.5	13.9117	2.34	12.526	4.8	11.758
0.7	15.3481	1.54	13.836	2.37	12.493	5.3	11.707
0.74	15.3059	1.57	13.769	2.4	12.467	5.8	11.648
0.77	15.2636	1.6	13.701	2.44	12.434	6.3	11.597
0.8	15.2129	1.64	13.633	2.47	12.408	6.8	11.504
0.84	15.1622	1.67	13.566	2.5	12.383	6.97	11.479

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	Johnston Co. Landfill	Project No.:	1054-95-286
Client Name:	McKimm & Creed	Run Date:	5/10/95
User Name:	LEL	Identification:	C-13

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.83	feet
Intake Length:	16.80	feet
Water Table Depth:	11.20	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
K(h):	1.83E-04	cm./sec.
Basic Time Lag (min.):	2.12	
Correlation Coefficient:	0.9908	



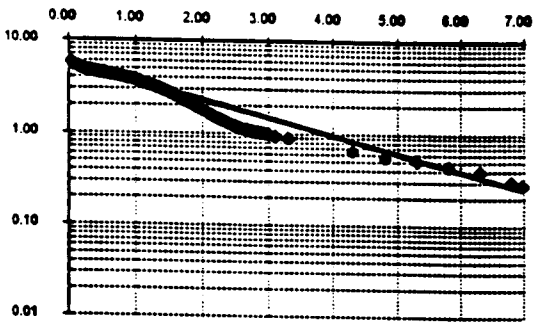
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.04	17.00	5.80	0.0000	-0.0542
2)	0.07	16.67	5.47	-0.0585	-0.0676
3)	0.10	16.52	5.32	-0.0852	-0.0810
4)	0.14	16.37	5.17	-0.1141	-0.0988
5)	0.17	16.25	5.05	-0.1373	-0.1122
6)	0.20	16.14	4.94	-0.1593	-0.1256
7)	0.24	16.07	4.87	-0.1730	-0.1434
8)	0.27	15.99	4.79	-0.1905	-0.1568
9)	0.30	15.93	4.73	-0.2030	-0.1702
10)	0.34	15.88	4.68	-0.2137	-0.1880
11)	0.37	15.83	4.63	-0.2246	-0.2014
12)	0.40	15.78	4.58	-0.2356	-0.2148
13)	0.44	15.72	4.52	-0.2486	-0.2327
14)	0.47	15.68	4.48	-0.2580	-0.2460
15)	0.50	15.63	4.43	-0.2694	-0.2594
16)	0.54	15.58	4.38	-0.2790	-0.2773
17)	0.57	15.53	4.33	-0.2906	-0.2907
18)	0.60	15.48	4.28	-0.3024	-0.3041
19)	0.64	15.44	4.24	-0.3123	-0.3219
20)	0.67	15.39	4.19	-0.3243	-0.3353
21)	0.70	15.35	4.15	-0.3345	-0.3487
22)	0.74	15.31	4.11	-0.3447	-0.3665
23)	0.77	15.26	4.06	-0.3550	-0.3799
24)	0.80	15.21	4.01	-0.3676	-0.3933
25)	0.84	15.16	3.96	-0.3803	-0.4111
26)	0.87	15.11	3.91	-0.3932	-0.4245
27)	0.90	15.06	3.86	-0.4062	-0.4379
28)	0.94	15.01	3.81	-0.4194	-0.4558
29)	0.97	14.96	3.76	-0.4328	-0.4691
30)	1.00	14.90	3.70	-0.4487	-0.4825
31)	1.04	14.84	3.64	-0.4648	-0.5004
32)	1.07	14.77	3.57	-0.4859	-0.5138
33)	1.10	14.70	3.50	-0.5051	-0.5271
34)	1.14	14.63	3.43	-0.5246	-0.5450
35)	1.17	14.57	3.37	-0.5420	-0.5584
36)	1.20	14.51	3.31	-0.5597	-0.5718
37)	1.24	14.44	3.24	-0.5803	-0.5896

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Johnston Co. Landfill
Client Name: McKimm & Creed
User Name: LEL
Run Date: 5/10/95

Project No.: 1054-95-286
Identification: C-13

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.83	feet
Intake Length:	16.80	feet
Saturated Column Length:	12.70	feet
Water Table Depth:	11.20	feet
Aquifer Thickness:	30	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Specify Output Units:	7	1 to 9
K(h):	1.09E-04	cm./sec.
Correlation Coefficient:	0.9908	

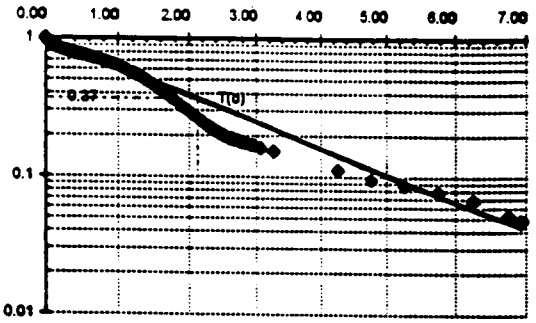


Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
41)	1.37	14.19	2.99	1.095	1.110
42)	1.40	14.12	2.92	1.073	1.096
43)	1.44	14.05	2.85	1.046	1.078
44)	1.47	13.98	2.78	1.022	1.065
45)	1.50	13.91	2.71	0.998	1.051
46)	1.54	13.84	2.64	0.969	1.034
47)	1.57	13.77	2.57	0.944	1.020
48)	1.60	13.70	2.50	0.917	1.007
49)	1.64	13.63	2.43	0.889	0.989
50)	1.67	13.57	2.37	0.861	0.976
51)	1.70	13.50	2.30	0.832	0.962
52)	1.74	13.43	2.23	0.802	0.944
53)	1.77	13.37	2.17	0.775	0.931
54)	1.80	13.30	2.10	0.744	0.918
55)	1.84	13.25	2.05	0.715	0.900
56)	1.87	13.19	1.99	0.686	0.886
57)	1.90	13.13	1.93	0.655	0.873
58)	1.94	13.07	1.87	0.624	0.855
59)	1.97	13.02	1.82	0.597	0.842
60)	2.00	12.97	1.77	0.569	0.828
61)	2.04	12.92	1.72	0.539	0.811
62)	2.07	12.86	1.66	0.509	0.797
63)	2.10	12.81	1.61	0.479	0.784
64)	2.14	12.77	1.57	0.452	0.766
65)	2.17	12.72	1.52	0.419	0.753
66)	2.20	12.68	1.48	0.391	0.739
67)	2.24	12.64	1.44	0.362	0.721
68)	2.27	12.60	1.40	0.339	0.708
69)	2.30	12.56	1.36	0.307	0.695
70)	2.34	12.53	1.33	0.282	0.677
71)	2.37	12.49	1.29	0.257	0.663
72)	2.40	12.47	1.27	0.237	0.650
73)	2.44	12.43	1.23	0.210	0.632
74)	2.47	12.41	1.21	0.189	0.619
75)	2.50	12.38	1.18	0.168	0.605
76)	2.54	12.36	1.16	0.147	0.587
77)	2.57	12.34	1.14	0.132	0.574
78)	2.60	12.32	1.12	0.109	0.561
79)	2.64	12.30	1.10	0.093	0.543
80)	2.67	12.29	1.09	0.086	0.529

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	Johnston Co. Landfill	Project No.:	1054-95-286
Client Name:	McKimm & Creed	Run Date:	5/10/95
User Name:	LEL	Identification:	C-13

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.83	feet
Intake Length:	16.80	feet
Water Table Depth:	11.20	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
K(h):	1.83E-04	cm./sec.
Basic Time Lag (min.):	2.12	
Correlation Coefficient:	0.9908	

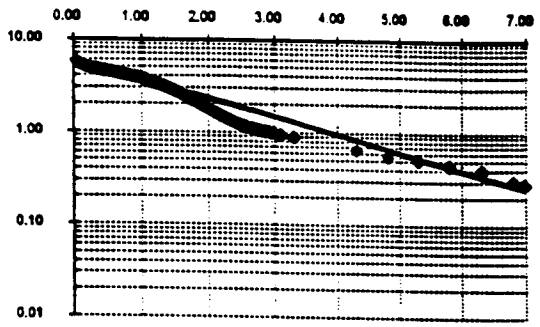


Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
75)	2.50	12.38	1.18	-1.5891	-1.1518
76)	2.54	12.36	1.16	-1.6104	-1.1697
77)	2.57	12.34	1.14	-1.6252	-1.1830
78)	2.60	12.32	1.12	-1.6483	-1.1964
79)	2.64	12.30	1.10	-1.6636	-1.2143
80)	2.67	12.29	1.09	-1.6709	-1.2277
81)	2.70	12.27	1.07	-1.6867	-1.2410
82)	2.74	12.26	1.06	-1.7026	-1.2589
83)	2.77	12.25	1.05	-1.7102	-1.2723
84)	2.80	12.23	1.03	-1.7266	-1.2857
85)	2.84	12.22	1.02	-1.7354	-1.3035
86)	2.87	12.21	1.01	-1.7432	-1.3169
87)	2.90	12.21	1.01	-1.7521	-1.3303
88)	2.94	12.19	0.99	-1.7682	-1.3481
89)	2.97	12.18	0.98	-1.7773	-1.3615
90)	3.00	12.17	0.97	-1.7855	-1.3749
91)	3.10	12.14	0.94	-1.8211	-1.4195
92)	3.30	12.09	0.89	-1.8770	-1.5088
93)	3.00	12.17	0.97	-1.7855	-1.3749
94)	4.30	11.85	0.65	-2.1864	-1.9549
95)	4.80	11.76	0.56	-2.3405	-2.1780
96)	5.30	11.71	0.51	-2.4364	-2.4011
97)	5.80	11.65	0.45	-2.5601	-2.6242
98)	6.30	11.60	0.40	-2.6809	-2.8473
99)	6.80	11.50	0.30	-2.9478	-3.0704
100)	6.97	11.48	0.28	-3.0337	-3.1463

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name:	Johnston Co. Landfill	Project No.:	1054-95-286
Client Name:	McKimm & Creed	Identification:	C-13
User Name:	LEL		
Run Date:	5/10/95		

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.83	feet
Intake Length:	16.80	feet
Saturated Column Length:	12.70	feet
Water Table Depth:	11.20	feet
Aquifer Thickness:	30	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Specify Output Units:	7	1 to 9
K(h):	1.09E-04	cm./sec.
Correlation Coefficient:	0.9908	

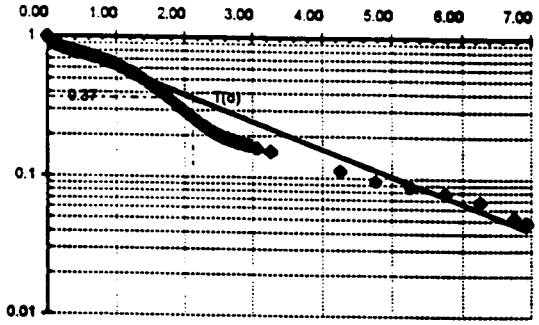


Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.04	17.00	5.80	1.757	1.703
2)	0.07	16.67	5.47	1.699	1.690
3)	0.10	16.52	5.32	1.672	1.676
4)	0.14	16.37	5.17	1.643	1.658
5)	0.17	16.25	5.05	1.620	1.645
6)	0.20	16.14	4.94	1.598	1.632
7)	0.24	16.07	4.87	1.584	1.614
8)	0.27	15.99	4.79	1.567	1.600
9)	0.30	15.93	4.73	1.554	1.587
10)	0.34	15.88	4.68	1.543	1.569
11)	0.37	15.83	4.63	1.532	1.556
12)	0.40	15.78	4.58	1.521	1.542
13)	0.44	15.72	4.52	1.508	1.524
14)	0.47	15.68	4.48	1.499	1.511
15)	0.50	15.63	4.43	1.488	1.498
16)	0.54	15.58	4.38	1.478	1.480
17)	0.57	15.53	4.33	1.466	1.466
18)	0.60	15.48	4.28	1.455	1.453
19)	0.64	15.44	4.24	1.445	1.435
20)	0.67	15.39	4.19	1.433	1.422
21)	0.70	15.35	4.15	1.423	1.408
22)	0.74	15.31	4.11	1.412	1.391
23)	0.77	15.26	4.06	1.402	1.377
24)	0.80	15.21	4.01	1.390	1.364
25)	0.84	15.16	3.96	1.377	1.346
26)	0.87	15.11	3.91	1.364	1.333
27)	0.90	15.06	3.86	1.351	1.319
28)	0.94	15.01	3.81	1.338	1.301
29)	0.97	14.96	3.76	1.324	1.288
30)	1.00	14.90	3.70	1.308	1.275
31)	1.04	14.84	3.64	1.292	1.257
32)	1.07	14.77	3.57	1.271	1.243
33)	1.10	14.70	3.50	1.252	1.230
34)	1.14	14.63	3.43	1.233	1.212
35)	1.17	14.57	3.37	1.215	1.199
36)	1.20	14.51	3.31	1.197	1.185
37)	1.24	14.44	3.24	1.177	1.168
38)	1.27	14.38	3.18	1.158	1.154
39)	1.30	14.33	3.13	1.140	1.141
40)	1.34	14.26	3.06	1.118	1.123

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	Johnston Co. Landfill	Project No.:	1054-95-286
Client Name:	McKimm & Creed	Run Date:	5/10/95
User Name:	LEL	Identification:	C-13

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.83	feet
Intake Length:	16.80	feet
Water Table Depth:	11.20	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
K(h):	1.83E-04	cm./sec.
Basic Time Lag (min.):	2.12	
Correlation Coefficient:	0.9908	



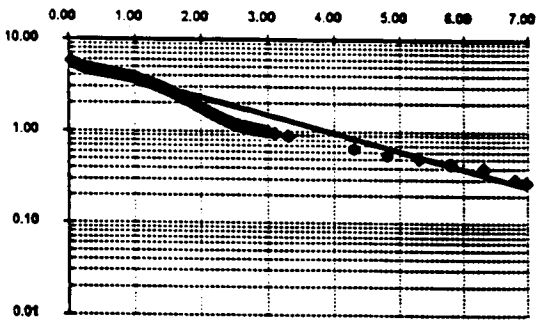
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
38)	1.27	14.38	3.18	-0.5987	-0.6030
39)	1.30	14.33	3.13	-0.6174	-0.6164
40)	1.34	14.26	3.06	-0.6393	-0.6342
41)	1.37	14.19	2.99	-0.6616	-0.6476
42)	1.40	14.12	2.92	-0.6845	-0.6610
43)	1.44	14.05	2.85	-0.7109	-0.6788
44)	1.47	13.98	2.78	-0.7349	-0.6922
45)	1.50	13.91	2.71	-0.7595	-0.7056
46)	1.54	13.84	2.64	-0.7879	-0.7235
47)	1.57	13.77	2.57	-0.8136	-0.7369
48)	1.60	13.70	2.50	-0.8404	-0.7502
49)	1.64	13.63	2.43	-0.8680	-0.7681
50)	1.67	13.57	2.37	-0.8959	-0.7815
51)	1.70	13.50	2.30	-0.9251	-0.7949
52)	1.74	13.43	2.23	-0.9547	-0.8127
53)	1.77	13.37	2.17	-0.9819	-0.8261
54)	1.80	13.30	2.10	-1.0133	-0.8395
55)	1.84	13.25	2.05	-1.0417	-0.8573
56)	1.87	13.19	1.99	-1.0710	-0.8707
57)	1.90	13.13	1.93	-1.1017	-0.8841
58)	1.94	13.07	1.87	-1.1328	-0.9019
59)	1.97	13.02	1.82	-1.1599	-0.9153
60)	2.00	12.97	1.77	-1.1884	-0.9287
61)	2.04	12.92	1.72	-1.2177	-0.9466
62)	2.07	12.86	1.66	-1.2479	-0.9599
63)	2.10	12.81	1.61	-1.2784	-0.9733
64)	2.14	12.77	1.57	-1.3048	-0.9912
65)	2.17	12.72	1.52	-1.3377	-1.0046
66)	2.20	12.68	1.48	-1.3658	-1.0179
67)	2.24	12.64	1.44	-1.3953	-1.0358
68)	2.27	12.60	1.40	-1.4185	-1.0492
69)	2.30	12.56	1.36	-1.4496	-1.0626
70)	2.34	12.53	1.33	-1.4749	-1.0804
71)	2.37	12.49	1.29	-1.5002	-1.0938
72)	2.40	12.47	1.27	-1.5205	-1.1072
73)	2.44	12.43	1.23	-1.5469	-1.1250
74)	2.47	12.41	1.21	-1.5682	-1.1384

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: Johnston Co. Landfill
Client Name: McKimm & Creed
User Name: LEL
Run Date: 5/10/95

Project No.: 1054-95-286
Identification: C-13

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.83	feet
Intake Length:	16.80	feet
Saturated Column Length:	12.70	feet
Water Table Depth:	11.20	feet
Aquifer Thickness:	30	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	46	Max 100
Specify Output Units:	7	1 to 9
K(h):	1.09E-04	cm./sec.
Correlation Coefficient:	0.9908	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
81)	2.70	12.27	1.07		0.070	0.516
82)	2.74	12.26	1.06		0.054	0.498
83)	2.77	12.25	1.05		0.047	0.485
84)	2.80	12.23	1.03		0.031	0.471
85)	2.84	12.22	1.02		0.022	0.454
86)	2.87	12.21	1.01		0.014	0.440
87)	2.90	12.21	1.01		0.005	0.427
88)	2.94	12.19	0.99		-0.011	0.409
89)	2.97	12.18	0.98		-0.020	0.396
90)	3.00	12.17	0.97		-0.028	0.382
91)	3.10	12.14	0.94		-0.064	0.338
92)	3.30	12.09	0.89		-0.120	0.248
93)	3.00	12.17	0.97		-0.028	0.382
94)	4.30	11.85	0.65		-0.429	-0.198
95)	4.80	11.76	0.56		-0.583	-0.421
96)	5.30	11.71	0.51		-0.679	-0.644
97)	5.80	11.65	0.45		-0.803	-0.867
98)	6.30	11.60	0.40		-0.924	-1.090
99)	6.80	11.50	0.30		-1.191	-1.313
100)	6.97	11.48	0.28		-1.277	-1.389

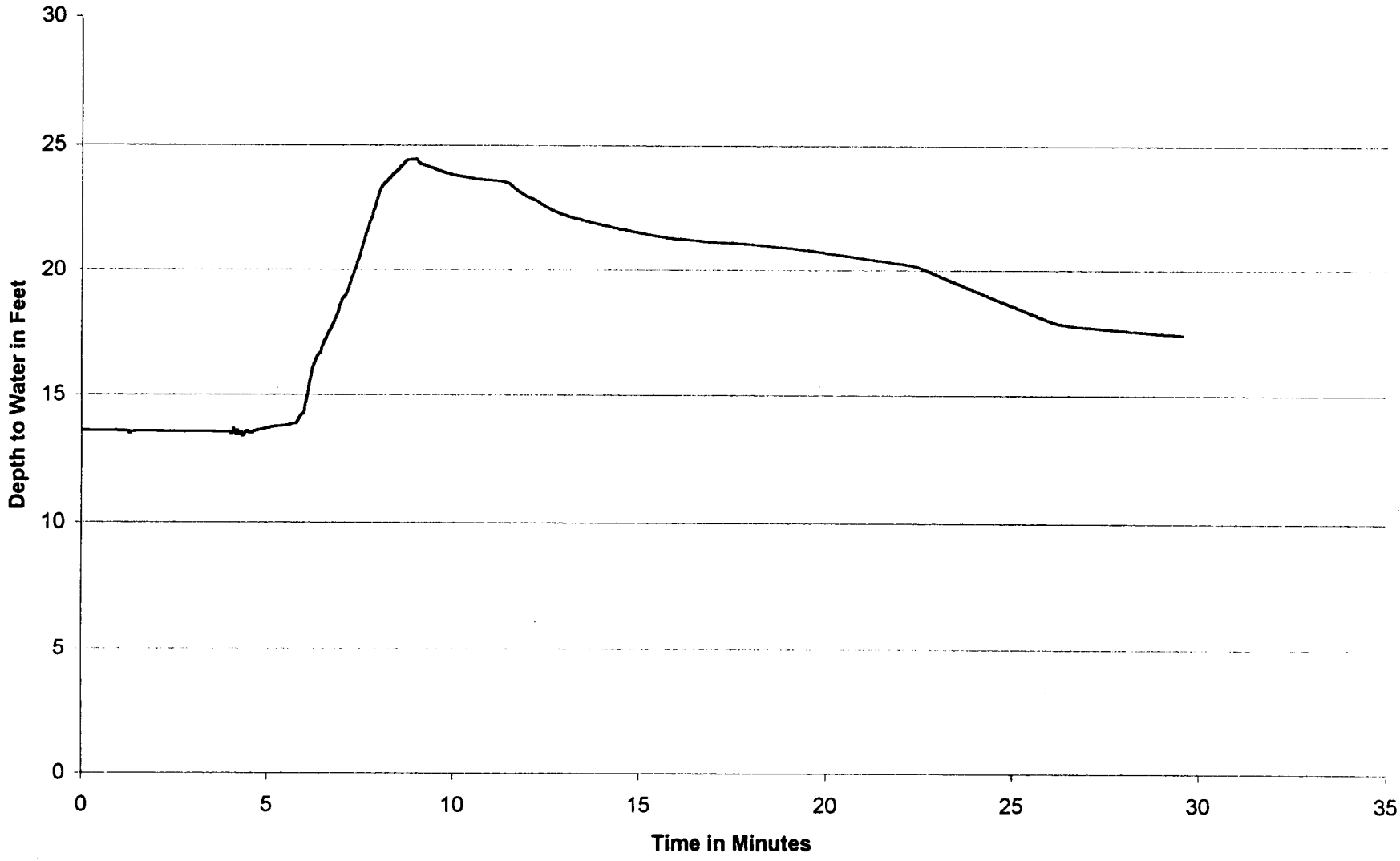
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW 5-10

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	2.02E-05	cm/sec	or	21	ft/year
By Bouwer and Rice,	K=	1.30E-05	cm/sec	or	13	ft/year

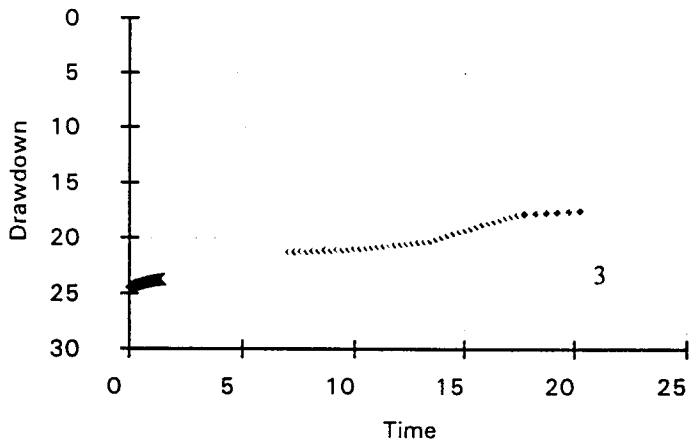
RECOVERY TEST FOR WELL DMW 5-10



SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-10** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started:

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	26.1
Static W/L-Depth (ft.):	13.6
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	24.5
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	10
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	12.5
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3
Slug Volume (ft^3):	1.1
Thickness of Aquifer (feet):	50



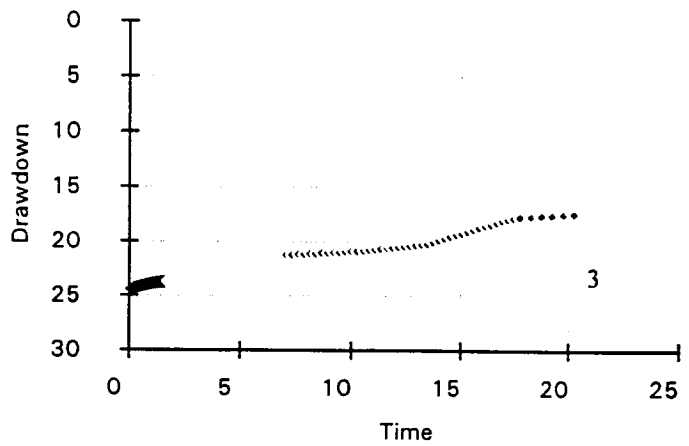
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	24.4571	1.76	23.6713	6.16	21.4745	18.23	17.6895
0.13	24.43175	1.8	23.66285	6.26	21.44915	18.73	17.622
0.16	24.34725	1.83	23.66285	6.36	21.4238	19.23	17.5625
0.2	24.305	1.86	23.65445	6.46	21.39	19.73	17.5035
0.23	24.2628	1.9	23.646	6.56	21.36465	20.23	17.4445
0.26	24.25435	1.93	23.646	6.66	21.3393		
0.3	24.23745	1.96	23.63755	6.76	21.3224		
0.33	24.229	2	23.6291	6.86	21.2886		
0.36	24.2121	2.03	23.6291	6.96	21.28015		
0.4	24.1952	2.06	23.62065	7.06	21.2548		
0.43	24.1783	2.16	23.6122	7.33	21.22945		
0.46	24.15295	2.26	23.5953	7.6	21.19565		
0.5	24.13605	2.36	23.5784	7.86	21.1534		
0.53	24.11915	2.46	23.5615	8.13	21.11965		
0.56	24.10225	2.56	23.5108	8.4	21.10275		
0.6	24.08535	2.66	23.4094	8.66	21.0774		
0.63	24.06845	2.76	23.28265	8.93	21.05205		
0.66	24.05155	2.86	23.1728	9.2	21.0267		
0.7	24.0262	2.96	23.06295	9.46	20.98445		
0.73	24.0093	3.06	22.97005	9.73	20.9422		
0.76	23.9924	3.16	22.90245	10	20.9084		
0.8	23.9755	3.26	22.83485	10.26	20.86615		
0.83	23.9586	3.36	22.7588	10.53	20.81545		
0.86	23.9417	3.46	22.66585	10.8	20.76475		
0.9	23.9248	3.56	22.56445	11.06	20.7056		
0.93	23.9079	3.66	22.4884	11.33	20.64645		
0.96	23.891	3.76	22.4039	11.6	20.5873		
1	23.88255	3.86	22.33635	11.86	20.5285		
1.03	23.86565	3.96	22.26875	12.13	20.4695		

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW 5-10** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started:

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	26.1
Static W/L-Depth (ft.):	13.6
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	24.5
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	10
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	12.5
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3
Slug Volume (ft^3):	1.1
Thickness of Aquifer (feet):	50



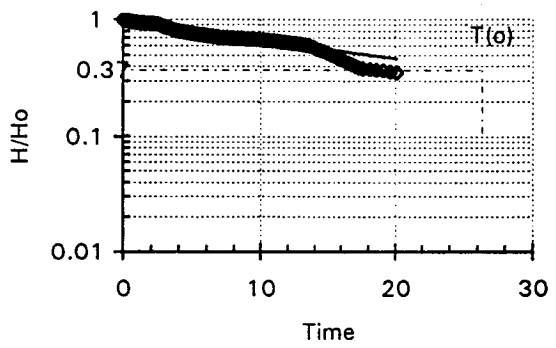
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.06	23.8572	4.06	22.21805	12.4	20.41		
1.1	23.8403	4.16	22.16735	12.66	20.351		
1.13	23.83185	4.26	22.1251	12.93	20.2835		
1.16	23.8234	4.36	22.0913	13.2	20.2325		
1.2	23.81495	4.46	22.04905	13.46	20.165		
1.23	23.79805	4.56	22.0068	13.73	20.03		
1.26	23.7896	4.66	21.973	14	19.8525		
1.3	23.78115	4.76	21.9223	14.26	19.6835		
1.33	23.7727	4.86	21.8885	14.53	19.5145		
1.36	23.76425	4.96	21.8547	14.8	19.3455		
1.4	23.7558	5.06	21.8209	15.06	19.185		
1.43	23.74735	5.16	21.7871	15.33	19.016		
1.46	23.7389	5.26	21.75335	15.6	18.8555		
1.5	23.73045	5.36	21.71955	15.86	18.695		
1.53	23.722	5.46	21.68575	16.13	18.526		
1.56	23.71355	5.56	21.6435	16.4	18.374		
1.6	23.7051	5.66	21.61815	16.66	18.2135		
1.63	23.69665	5.76	21.5928	16.93	18.0525		
1.66	23.6882	5.86	21.559	17.2	17.909		
1.7	23.6882	5.96	21.5252	17.46	17.8075		
1.73	23.67975	6.06	21.49985	17.73	17.757		

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	**Phase 5 Cell**	Project No.:	**1054-95-286A**
Client Name:	Johnston County	Run Date:	5/28/97 18:15
Analysis By:	WJB	Identification:	**DMW 5-10**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	13.6	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	60	Max 155
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**2.02E-05**	cm./sec.
Basic Time Lag:	26.33	min.
Error of Fit:	0.0014	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	24.46	10.86	0.0000	-0.0153
2)	0.13	24.43	10.83	-0.0023	-0.0164
3)	0.16	24.35	10.75	-0.0102	-0.0175
4)	0.20	24.31	10.71	-0.0141	-0.0190
5)	0.23	24.26	10.66	-0.0181	-0.0202
6)	0.26	24.25	10.65	-0.0189	-0.0213
7)	0.30	24.24	10.64	-0.0204	-0.0228
8)	0.33	24.23	10.63	-0.0212	-0.0239
9)	0.36	24.21	10.61	-0.0228	-0.0250
10)	0.40	24.20	10.60	-0.0244	-0.0265
11)	0.43	24.18	10.58	-0.0260	-0.0276
12)	0.46	24.15	10.55	-0.0284	-0.0288
13)	0.50	24.14	10.54	-0.0300	-0.0303
14)	0.53	24.12	10.52	-0.0316	-0.0314
15)	0.56	24.10	10.50	-0.0332	-0.0325
16)	0.60	24.09	10.49	-0.0348	-0.0340
17)	0.63	24.07	10.47	-0.0365	-0.0351
18)	0.66	24.05	10.45	-0.0381	-0.0362
19)	0.70	24.03	10.43	-0.0405	-0.0377
20)	0.73	24.01	10.41	-0.0421	-0.0389
21)	0.76	23.99	10.39	-0.0437	-0.0400
22)	0.80	23.98	10.38	-0.0454	-0.0415
23)	0.83	23.96	10.36	-0.0470	-0.0426
24)	0.86	23.94	10.34	-0.0486	-0.0437
25)	0.90	23.92	10.32	-0.0503	-0.0452

26)	0.93	23.91	10.31	-0.0519	-0.0463
27)	0.96	23.89	10.29	-0.0535	-0.0475
28)	1.00	23.88	10.28	-0.0544	-0.0490
29)	1.03	23.87	10.27	-0.0560	-0.0501
30)	1.06	23.86	10.26	-0.0568	-0.0512
31)	1.10	23.84	10.24	-0.0585	-0.0527
32)	1.13	23.83	10.23	-0.0593	-0.0538
33)	1.16	23.82	10.22	-0.0601	-0.0549
34)	1.20	23.81	10.21	-0.0610	-0.0564
35)	1.23	23.80	10.20	-0.0626	-0.0576
36)	1.26	23.79	10.19	-0.0635	-0.0587
37)	1.30	23.78	10.18	-0.0643	-0.0602
38)	1.33	23.77	10.17	-0.0651	-0.0613
39)	1.36	23.76	10.16	-0.0659	-0.0624
40)	1.40	23.76	10.16	-0.0668	-0.0639
41)	1.43	23.75	10.15	-0.0676	-0.0650
42)	1.46	23.74	10.14	-0.0684	-0.0662
43)	1.50	23.73	10.13	-0.0693	-0.0677
44)	1.53	23.72	10.12	-0.0701	-0.0688
45)	1.56	23.71	10.11	-0.0709	-0.0699
46)	1.60	23.71	10.11	-0.0718	-0.0714
47)	1.63	23.70	10.10	-0.0726	-0.0725
48)	1.66	23.69	10.09	-0.0735	-0.0736
49)	1.70	23.69	10.09	-0.0735	-0.0751
50)	1.73	23.68	10.08	-0.0743	-0.0763
51)	1.76	23.67	10.07	-0.0751	-0.0774
52)	1.80	23.66	10.06	-0.0760	-0.0789
53)	1.83	23.66	10.06	-0.0760	-0.0800
54)	1.86	23.65	10.05	-0.0768	-0.0811
55)	1.90	23.65	10.05	-0.0776	-0.0826
56)	1.93	23.65	10.05	-0.0776	-0.0837
57)	1.96	23.64	10.04	-0.0785	-0.0849
58)	2.00	23.63	10.03	-0.0793	-0.0864
59)	2.03	23.63	10.03	-0.0793	-0.0875
60)	2.06	23.62	10.02	-0.0802	-0.0886
61)	2.16	23.61	10.01	-0.0810	-0.0923
62)	2.26	23.60	10.00	-0.0827	-0.0961
63)	2.36	23.58	9.98	-0.0844	-0.0998
64)	2.46	23.56	9.96	-0.0861	-0.1036
65)	2.56	23.51	9.91	-0.0912	-0.1073
66)	2.66	23.41	9.81	-0.1015	-0.1110

67)	2.76	23.28	9.68	-0.1145	-0.1148
68)	2.86	23.17	9.57	-0.1259	-0.1185
69)	2.96	23.06	9.46	-0.1374	-0.1223
70)	3.06	22.97	9.37	-0.1473	-0.1260
71)	3.16	22.90	9.30	-0.1545	-0.1297
72)	3.26	22.83	9.23	-0.1618	-0.1335
73)	3.36	22.76	9.16	-0.1701	-0.1372
74)	3.46	22.67	9.07	-0.1803	-0.1410
75)	3.56	22.56	8.96	-0.1916	-0.1447
76)	3.66	22.49	8.89	-0.2001	-0.1484
77)	3.76	22.40	8.80	-0.2096	-0.1522
78)	3.86	22.34	8.74	-0.2173	-0.1559
79)	3.96	22.27	8.67	-0.2251	-0.1597
80)	4.06	22.22	8.62	-0.2310	-0.1634
81)	4.16	22.17	8.57	-0.2369	-0.1671
82)	4.26	22.13	8.53	-0.2418	-0.1709
83)	4.36	22.09	8.49	-0.2458	-0.1746
84)	4.46	22.05	8.45	-0.2508	-0.1784
85)	4.56	22.01	8.41	-0.2558	-0.1821
86)	4.66	21.97	8.37	-0.2598	-0.1858
87)	4.76	21.92	8.32	-0.2659	-0.1896
88)	4.86	21.89	8.29	-0.2700	-0.1933
89)	4.96	21.85	8.25	-0.2740	-0.1971
90)	5.06	21.82	8.22	-0.2781	-0.2008
91)	5.16	21.79	8.19	-0.2823	-0.2045
92)	5.26	21.75	8.15	-0.2864	-0.2083
93)	5.36	21.72	8.12	-0.2905	-0.2120
94)	5.46	21.69	8.09	-0.2947	-0.2158
95)	5.56	21.64	8.04	-0.3000	-0.2195
96)	5.66	21.62	8.02	-0.3031	-0.2232
97)	5.76	21.59	7.99	-0.3063	-0.2270
98)	5.86	21.56	7.96	-0.3105	-0.2307
99)	5.96	21.53	7.93	-0.3148	-0.2345
100)	6.06	21.50	7.90	-0.3180	-0.2382
101)	6.16	21.47	7.87	-0.3212	-0.2419
102)	6.26	21.45	7.85	-0.3244	-0.2457
103)	6.36	21.42	7.82	-0.3276	-0.2494
104)	6.46	21.39	7.79	-0.3320	-0.2532
105)	6.56	21.36	7.76	-0.3352	-0.2569
106)	6.66	21.34	7.74	-0.3385	-0.2606
107)	6.76	21.32	7.72	-0.3407	-0.2644

108)	6.86	21.29	7.69	-0.3451	-0.2681
109)	6.96	21.28	7.68	-0.3462	-0.2719
110)	7.06	21.25	7.65	-0.3495	-0.2756
111)	7.33	21.23	7.63	-0.3528	-0.2857
112)	7.60	21.20	7.60	-0.3572	-0.2958
113)	7.86	21.15	7.55	-0.3628	-0.3055
114)	8.13	21.12	7.52	-0.3673	-0.3156
115)	8.40	21.10	7.50	-0.3695	-0.3257
116)	8.66	21.08	7.48	-0.3729	-0.3354
117)	8.93	21.05	7.45	-0.3763	-0.3455
118)	9.20	21.03	7.43	-0.3797	-0.3556
119)	9.46	20.98	7.38	-0.3854	-0.3653
120)	9.73	20.94	7.34	-0.3912	-0.3754
121)	10.00	20.91	7.31	-0.3958	-0.3855
122)	10.26	20.87	7.27	-0.4016	-0.3953
123)	10.53	20.82	7.22	-0.4086	-0.4054
124)	10.80	20.76	7.16	-0.4156	-0.4155
125)	11.06	20.71	7.11	-0.4239	-0.4252
126)	11.33	20.65	7.05	-0.4323	-0.4353
127)	11.60	20.59	6.99	-0.4407	-0.4454
128)	11.86	20.53	6.93	-0.4492	-0.4551
129)	12.13	20.47	6.87	-0.4577	-0.4652
130)	12.40	20.41	6.81	-0.4664	-0.4753
131)	12.66	20.35	6.75	-0.4751	-0.4850
132)	12.93	20.28	6.68	-0.4852	-0.4951
133)	13.20	20.23	6.63	-0.4928	-0.5052
134)	13.46	20.17	6.57	-0.5031	-0.5149
135)	13.73	20.03	6.43	-0.5238	-0.5250
136)	14.00	19.85	6.25	-0.5518	-0.5351
137)	14.26	19.68	6.08	-0.5792	-0.5449
138)	14.53	19.51	5.91	-0.6074	-0.5550
139)	14.80	19.35	5.75	-0.6364	-0.5651
140)	15.06	19.19	5.59	-0.6647	-0.5748
141)	15.33	19.02	5.42	-0.6955	-0.5849
142)	15.60	18.86	5.26	-0.7255	-0.5950
143)	15.86	18.70	5.10	-0.7566	-0.6047
144)	16.13	18.53	4.93	-0.7903	-0.6148
145)	16.40	18.37	4.77	-0.8216	-0.6249
146)	16.66	18.21	4.61	-0.8558	-0.6346
147)	16.93	18.05	4.45	-0.8914	-0.6447
148)	17.20	17.91	4.31	-0.9241	-0.6548

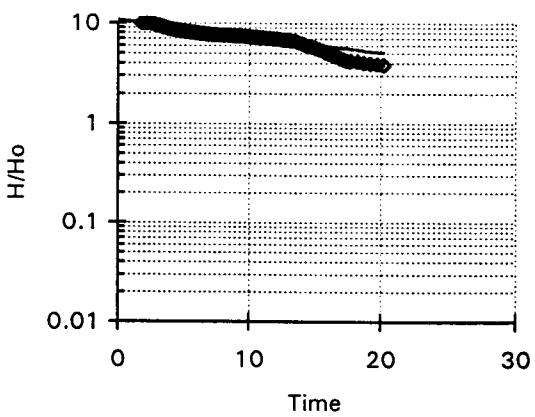
149)	17.46	17.81	4.21	-0.9480	-0.6645
150)	17.73	17.76	4.16	-0.9600	-0.6746
151)	18.23	17.69	4.09	-0.9764	-0.6933
152)	18.73	17.62	4.02	-0.9930	-0.7120
153)	19.23	17.56	3.96	-1.0079	-0.7307
154)	19.73	17.50	3.90	-1.0229	-0.7494
155)	20.23	17.44	3.84	-1.0382	-0.7681

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW 5-10**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	12.5	feet
Water Table Depth:	13.6	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	60	Max 155
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.30E-05**	cm./sec.
Error of Fit:	0.001	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	24.46	10.86		2.385	2.370
2)	0.13	24.43	10.83		2.382	2.368
3)	0.16	24.35	10.75		2.375	2.367
4)	0.20	24.31	10.71		2.371	2.366
5)	0.23	24.26	10.66		2.367	2.365
6)	0.26	24.25	10.65		2.366	2.364
7)	0.30	24.24	10.64		2.364	2.362
8)	0.33	24.23	10.63		2.364	2.361
9)	0.36	24.21	10.61		2.362	2.360
10)	0.40	24.20	10.60		2.360	2.358
11)	0.43	24.18	10.58		2.359	2.357
12)	0.46	24.15	10.55		2.356	2.356
13)	0.50	24.14	10.54		2.355	2.355
14)	0.53	24.12	10.52		2.353	2.353
15)	0.56	24.10	10.50		2.352	2.352
16)	0.60	24.09	10.49		2.350	2.351
17)	0.63	24.07	10.47		2.348	2.350
18)	0.66	24.05	10.45		2.347	2.349
19)	0.70	24.03	10.43		2.344	2.347
20)	0.73	24.01	10.41		2.343	2.346
21)	0.76	23.99	10.39		2.341	2.345
22)	0.80	23.98	10.38		2.339	2.343
23)	0.83	23.96	10.36		2.338	2.342
24)	0.86	23.94	10.34		2.336	2.341
25)	0.90	23.92	10.32		2.335	2.340

26)	0.93	23.91	10.31		2.333	2.338
27)	0.96	23.89	10.29		2.331	2.337
28)	1.00	23.88	10.28		2.330	2.336
29)	1.03	23.87	10.27		2.329	2.335
30)	1.06	23.86	10.26		2.328	2.334
31)	1.10	23.84	10.24		2.326	2.332
32)	1.13	23.83	10.23		2.326	2.331
33)	1.16	23.82	10.22		2.325	2.330
34)	1.20	23.81	10.21		2.324	2.328
35)	1.23	23.80	10.20		2.322	2.327
36)	1.26	23.79	10.19		2.321	2.326
37)	1.30	23.78	10.18		2.321	2.325
38)	1.33	23.77	10.17		2.320	2.324
39)	1.36	23.76	10.16		2.319	2.322
40)	1.40	23.76	10.16		2.318	2.321
41)	1.43	23.75	10.15		2.317	2.320
42)	1.46	23.74	10.14		2.316	2.319
43)	1.50	23.73	10.13		2.316	2.317
44)	1.53	23.72	10.12		2.315	2.316
45)	1.56	23.71	10.11		2.314	2.315
46)	1.60	23.71	10.11		2.313	2.313
47)	1.63	23.70	10.10		2.312	2.312
48)	1.66	23.69	10.09		2.311	2.311
49)	1.70	23.69	10.09		2.311	2.310
50)	1.73	23.68	10.08		2.311	2.309
51)	1.76	23.67	10.07		2.310	2.307
52)	1.80	23.66	10.06		2.309	2.306
53)	1.83	23.66	10.06		2.309	2.305
54)	1.86	23.65	10.05		2.308	2.304
55)	1.90	23.65	10.05		2.307	2.302
56)	1.93	23.65	10.05		2.307	2.301
57)	1.96	23.64	10.04		2.306	2.300
58)	2.00	23.63	10.03		2.305	2.298
59)	2.03	23.63	10.03		2.305	2.297
60)	2.06	23.62	10.02		2.305	2.296
61)	2.16	23.61	10.01		2.304	2.292
62)	2.26	23.60	10.00		2.302	2.289
63)	2.36	23.58	9.98		2.300	2.285
64)	2.46	23.56	9.96		2.299	2.281
65)	2.56	23.51	9.91		2.294	2.278
66)	2.66	23.41	9.81		2.283	2.274

67)	2.76	23.28	9.68		2.270	2.270
68)	2.86	23.17	9.57		2.259	2.266
69)	2.96	23.06	9.46		2.247	2.263
70)	3.06	22.97	9.37		2.238	2.259
71)	3.16	22.90	9.30		2.230	2.255
72)	3.26	22.83	9.23		2.223	2.251
73)	3.36	22.76	9.16		2.215	2.248
74)	3.46	22.67	9.07		2.205	2.244
75)	3.56	22.56	8.96		2.193	2.240
76)	3.66	22.49	8.89		2.185	2.236
77)	3.76	22.40	8.80		2.175	2.233
78)	3.86	22.34	8.74		2.167	2.229
79)	3.96	22.27	8.67		2.160	2.225
80)	4.06	22.22	8.62		2.154	2.221
81)	4.16	22.17	8.57		2.148	2.218
82)	4.26	22.13	8.53		2.143	2.214
83)	4.36	22.09	8.49		2.139	2.210
84)	4.46	22.05	8.45		2.134	2.206
85)	4.56	22.01	8.41		2.129	2.203
86)	4.66	21.97	8.37		2.125	2.199
87)	4.76	21.92	8.32		2.119	2.195
88)	4.86	21.89	8.29		2.115	2.192
89)	4.96	21.85	8.25		2.111	2.188
90)	5.06	21.82	8.22		2.107	2.184
91)	5.16	21.79	8.19		2.103	2.180
92)	5.26	21.75	8.15		2.098	2.177
93)	5.36	21.72	8.12		2.094	2.173
94)	5.46	21.69	8.09		2.090	2.169
95)	5.56	21.64	8.04		2.085	2.165
96)	5.66	21.62	8.02		2.082	2.162
97)	5.76	21.59	7.99		2.079	2.158
98)	5.86	21.56	7.96		2.074	2.154
99)	5.96	21.53	7.93		2.070	2.150
100)	6.06	21.50	7.90		2.067	2.147
101)	6.16	21.47	7.87		2.064	2.143
102)	6.26	21.45	7.85		2.060	2.139
103)	6.36	21.42	7.82		2.057	2.135
104)	6.46	21.39	7.79		2.053	2.132
105)	6.56	21.36	7.76		2.050	2.128
106)	6.66	21.34	7.74		2.046	2.124
107)	6.76	21.32	7.72		2.044	2.120

108)	6.86	21.29	7.69		2.040	2.117
109)	6.96	21.28	7.68		2.039	2.113
110)	7.06	21.25	7.65		2.035	2.109
111)	7.33	21.23	7.63		2.032	2.099
112)	7.60	21.20	7.60		2.028	2.089
113)	7.86	21.15	7.55		2.022	2.079
114)	8.13	21.12	7.52		2.018	2.069
115)	8.40	21.10	7.50		2.015	2.059
116)	8.66	21.08	7.48		2.012	2.049
117)	8.93	21.05	7.45		2.008	2.039
118)	9.20	21.03	7.43		2.005	2.029
119)	9.46	20.98	7.38		1.999	2.019
120)	9.73	20.94	7.34		1.994	2.009
121)	10.00	20.91	7.31		1.989	1.999
122)	10.26	20.87	7.27		1.983	1.990
123)	10.53	20.82	7.22		1.976	1.979
124)	10.80	20.76	7.16		1.969	1.969
125)	11.06	20.71	7.11		1.961	1.960
126)	11.33	20.65	7.05		1.953	1.950
127)	11.60	20.59	6.99		1.944	1.939
128)	11.86	20.53	6.93		1.936	1.930
129)	12.13	20.47	6.87		1.927	1.920
130)	12.40	20.41	6.81		1.918	1.910
131)	12.66	20.35	6.75		1.910	1.900
132)	12.93	20.28	6.68		1.900	1.890
133)	13.20	20.23	6.63		1.892	1.880
134)	13.46	20.17	6.57		1.882	1.870
135)	13.73	20.03	6.43		1.861	1.860
136)	14.00	19.85	6.25		1.833	1.850
137)	14.26	19.68	6.08		1.806	1.840
138)	14.53	19.51	5.91		1.777	1.830
139)	14.80	19.35	5.75		1.748	1.820
140)	15.06	19.19	5.59		1.720	1.810
141)	15.33	19.02	5.42		1.689	1.800
142)	15.60	18.86	5.26		1.659	1.790
143)	15.86	18.70	5.10		1.628	1.780
144)	16.13	18.53	4.93		1.595	1.770
145)	16.40	18.37	4.77		1.563	1.760
146)	16.66	18.21	4.61		1.529	1.750
147)	16.93	18.05	4.45		1.493	1.740
148)	17.20	17.91	4.31		1.461	1.730
149)	17.46	17.81	4.21		1.437	1.720
150)	17.73	17.76	4.16		1.425	1.710
151)	18.23	17.69	4.09		1.408	1.691
152)	18.73	17.62	4.02		1.392	1.673
153)	19.23	17.56	3.96		1.377	1.654
154)	19.73	17.50	3.90		1.362	1.635

155)	20.23	17.44	3.84		1.347	1.617

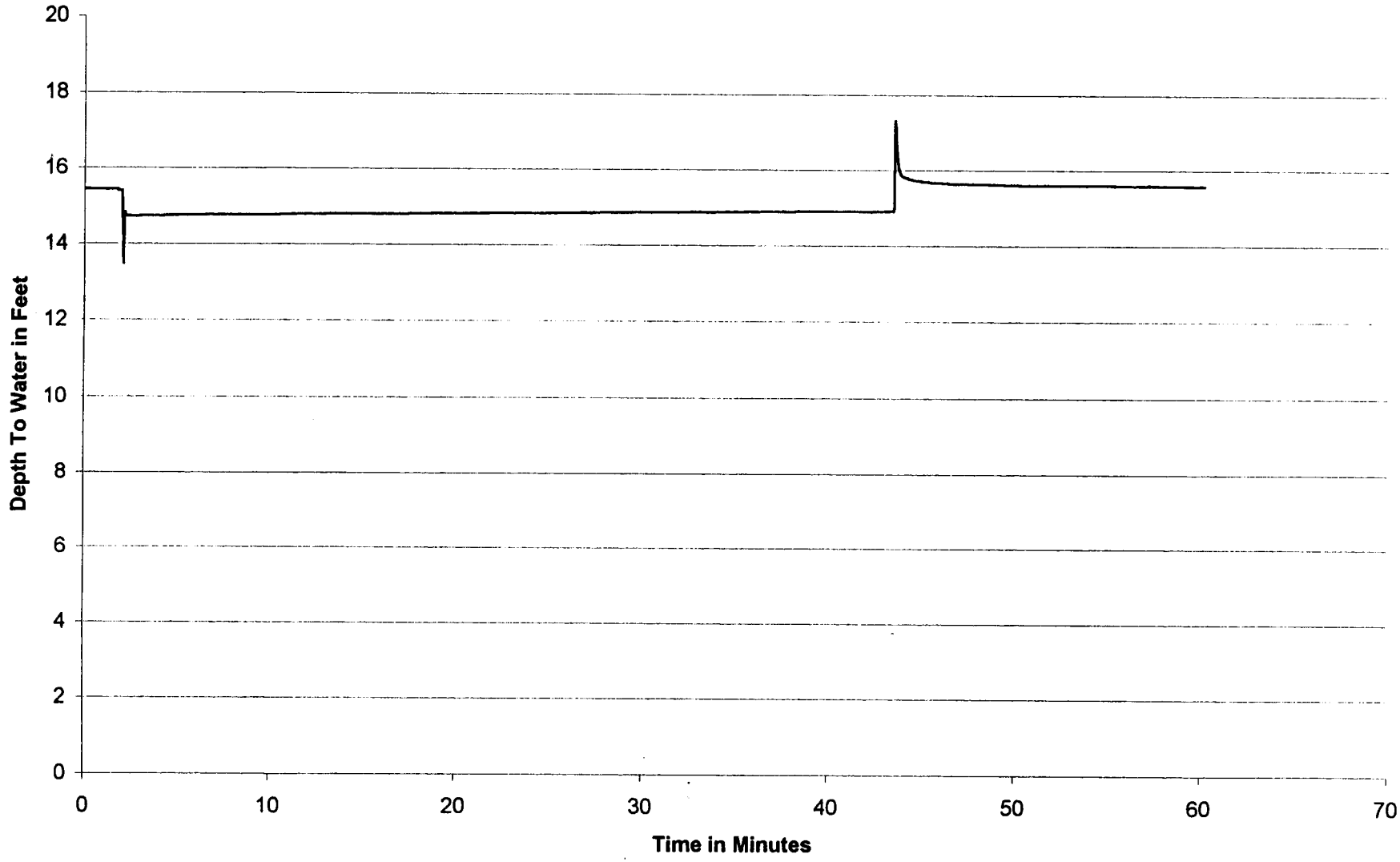
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW L-1

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	1.39E-04	cm/sec	or	144	ft/year
By Bouwer and Rice,	K=	7.92E-05	cm/sec	or	82	ft/year

AQUIFER TEST FOR WELL DMW L-1

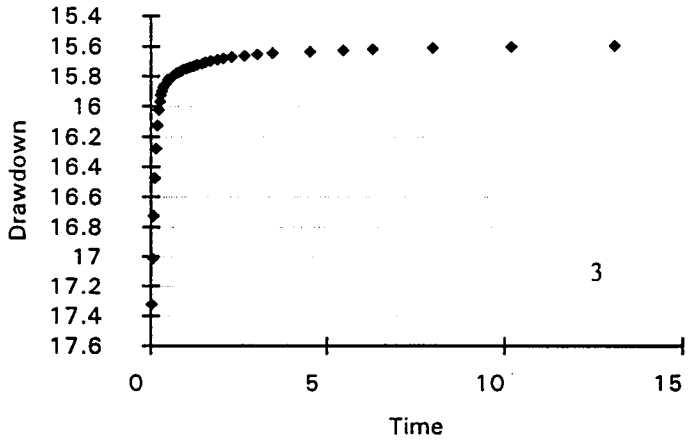


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-1** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/2/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	24.6
Static W/L-Depth (ft.):	15.44
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	17.35
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	8.6
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	9.16
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.6
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

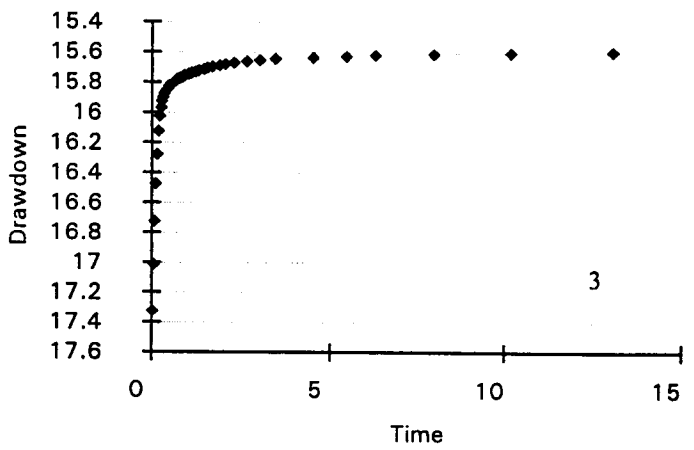
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.01	17.3242						
0.05	17.0116						
0.08	16.7243						
0.11	16.4709						
0.15	16.2765						
0.18	16.1244						
0.21	16.023						
0.25	15.9639						
0.28	15.9216						
0.31	15.8963						
0.35	15.8709						
0.38	15.854						
0.41	15.8456						
0.45	15.8372						
0.48	15.8203						
0.55	15.8118						
0.58	15.8034						
0.61	15.7949						
0.68	15.7865						
0.71	15.778						
0.78	15.7696						
0.85	15.7611						
0.91	15.7527						
1.01	15.7442						
1.11	15.7358						
1.21	15.7273						
1.31	15.7189						
1.45	15.7104						
1.55	15.702						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-1** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/2/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	24.6
Static W/L-Depth (ft.):	15.44
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	17.35
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	8.6
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	9.16
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.6
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



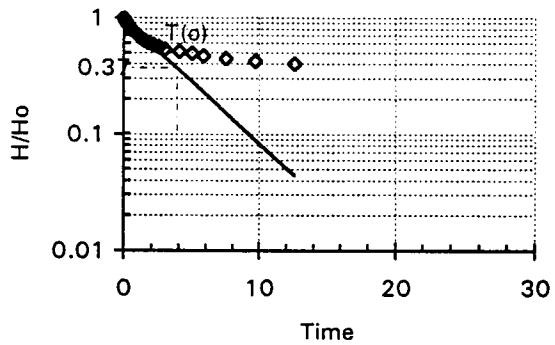
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.68	15.6935						
1.88	15.6851						
2.05	15.6766						
2.28	15.6682						
2.65	15.6597						
3.01	15.6513						
3.45	15.6428						
4.51	15.6344						
5.45	15.6259						
6.28	15.6175						
7.98	15.609						
10.18	15.6006						
13.08	15.5921						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	**Phase 5 Cell**	Project No.:	**1054-95-286A**
Client Name:	Johnston County	Run Date:	5/28/97 17:01
Analysis By:	WJB	Identification:	**DMW L-1**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	15.44	feet
Line Fit Starting No.:	15	Min 1 to
Line Fit Ending No.:	35	Max 42
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**1.39E-04**	cm./sec.
Basic Time Lag:	3.85	min.
Error of Fit:	0.0357	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.01	17.32	1.88	1.6003	0.0466
2)	0.05	17.01	1.57	1.4189	0.0369
3)	0.08	16.72	1.28	1.2170	0.0296
4)	0.11	16.47	1.03	0.9972	0.0223
5)	0.15	16.28	0.84	0.7883	0.0126
6)	0.18	16.12	0.68	0.5876	0.0053
7)	0.21	16.02	0.58	0.4272	-0.0019
8)	0.25	15.96	0.52	0.3203	-0.0116
9)	0.28	15.92	0.48	0.2362	-0.0189
10)	0.31	15.90	0.46	0.1822	-0.0262
11)	0.35	15.87	0.43	0.1249	-0.0359
12)	0.38	15.85	0.41	0.0849	-0.0432
13)	0.41	15.85	0.41	0.0644	-0.0504
14)	0.45	15.84	0.40	0.0435	-0.0602
15)	0.48	15.82	0.38	0.0000	-0.0674
16)	0.55	15.81	0.37	-0.0226	-0.0844
17)	0.58	15.80	0.36	-0.0455	-0.0917
18)	0.61	15.79	0.35	-0.0691	-0.0990
19)	0.68	15.79	0.35	-0.0931	-0.1159
20)	0.71	15.78	0.34	-0.1179	-0.1232
21)	0.78	15.77	0.33	-0.1431	-0.1402
22)	0.85	15.76	0.32	-0.1692	-0.1572
23)	0.91	15.75	0.31	-0.1957	-0.1717
24)	1.01	15.74	0.30	-0.2233	-0.1960
25)	1.11	15.74	0.30	-0.2513	-0.2202

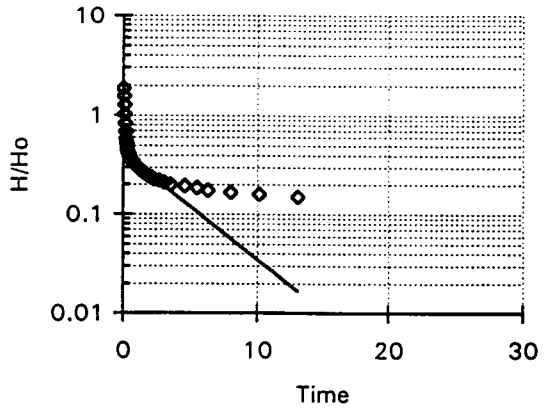
26)	1.21	15.73	0.29	-0.2804	-0.2445
27)	1.31	15.72	0.28	-0.3101	-0.2687
28)	1.45	15.71	0.27	-0.3411	-0.3027
29)	1.55	15.70	0.26	-0.3726	-0.3269
30)	1.68	15.69	0.25	-0.4056	-0.3584
31)	1.88	15.69	0.25	-0.4393	-0.4069
32)	2.05	15.68	0.24	-0.4746	-0.4482
33)	2.28	15.67	0.23	-0.5107	-0.5039
34)	2.65	15.66	0.22	-0.5487	-0.5937
35)	3.01	15.65	0.21	-0.5877	-0.6810
36)	3.45	15.64	0.20	-0.6287	-0.7877
37)	4.51	15.63	0.19	-0.6710	-1.0447
38)	5.45	15.63	0.19	-0.7158	-1.2727
39)	6.28	15.62	0.18	-0.7620	-1.4739
40)	7.98	15.61	0.17	-0.8111	-1.8862
41)	10.18	15.60	0.16	-0.8620	-2.4197
42)	13.08	15.59	0.15	-0.9164	-3.1230

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW L-1**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	9.16	feet
Water Table Depth:	15.44	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	15	Min 1 to
Line Fit Ending No.:	35	Max 42
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**7.92E-05**	cm./sec.
Error of Fit:	0.036	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.01	17.32	1.88		0.634	-0.920
2)	0.05	17.01	1.57		0.452	-0.930
3)	0.08	16.72	1.28		0.250	-0.937
4)	0.11	16.47	1.03		0.030	-0.944
5)	0.15	16.28	0.84		-0.179	-0.954
6)	0.18	16.12	0.68		-0.379	-0.961
7)	0.21	16.02	0.58		-0.540	-0.969
8)	0.25	15.96	0.52		-0.646	-0.978
9)	0.28	15.92	0.48		-0.731	-0.986
10)	0.31	15.90	0.46		-0.785	-0.993
11)	0.35	15.87	0.43		-0.842	-1.003
12)	0.38	15.85	0.41		-0.882	-1.010
13)	0.41	15.85	0.41		-0.902	-1.017
14)	0.45	15.84	0.40		-0.923	-1.027
15)	0.48	15.82	0.38		-0.967	-1.034
16)	0.55	15.81	0.37		-0.989	-1.051
17)	0.58	15.80	0.36		-1.012	-1.058
18)	0.61	15.79	0.35		-1.036	-1.066
19)	0.68	15.79	0.35		-1.060	-1.083
20)	0.71	15.78	0.34		-1.085	-1.090
21)	0.78	15.77	0.33		-1.110	-1.107
22)	0.85	15.76	0.32		-1.136	-1.124
23)	0.91	15.75	0.31		-1.163	-1.138
24)	1.01	15.74	0.30		-1.190	-1.163
25)	1.11	15.74	0.30		-1.218	-1.187

26)	1.21	15.73	0.29		-1.247	-1.211
27)	1.31	15.72	0.28		-1.277	-1.235
28)	1.45	15.71	0.27		-1.308	-1.269
29)	1.55	15.70	0.26		-1.339	-1.294
30)	1.68	15.69	0.25		-1.372	-1.325
31)	1.88	15.69	0.25		-1.406	-1.374
32)	2.05	15.68	0.24		-1.441	-1.415
33)	2.28	15.67	0.23		-1.478	-1.471
34)	2.65	15.66	0.22		-1.515	-1.560
35)	3.01	15.65	0.21		-1.554	-1.648
36)	3.45	15.64	0.20		-1.596	-1.754
37)	4.51	15.63	0.19		-1.638	-2.012
38)	5.45	15.63	0.19		-1.683	-2.239
39)	6.28	15.62	0.18		-1.729	-2.441
40)	7.98	15.61	0.17		-1.778	-2.853
41)	10.18	15.60	0.16		-1.829	-3.387
42)	13.08	15.59	0.15		-1.883	-4.090

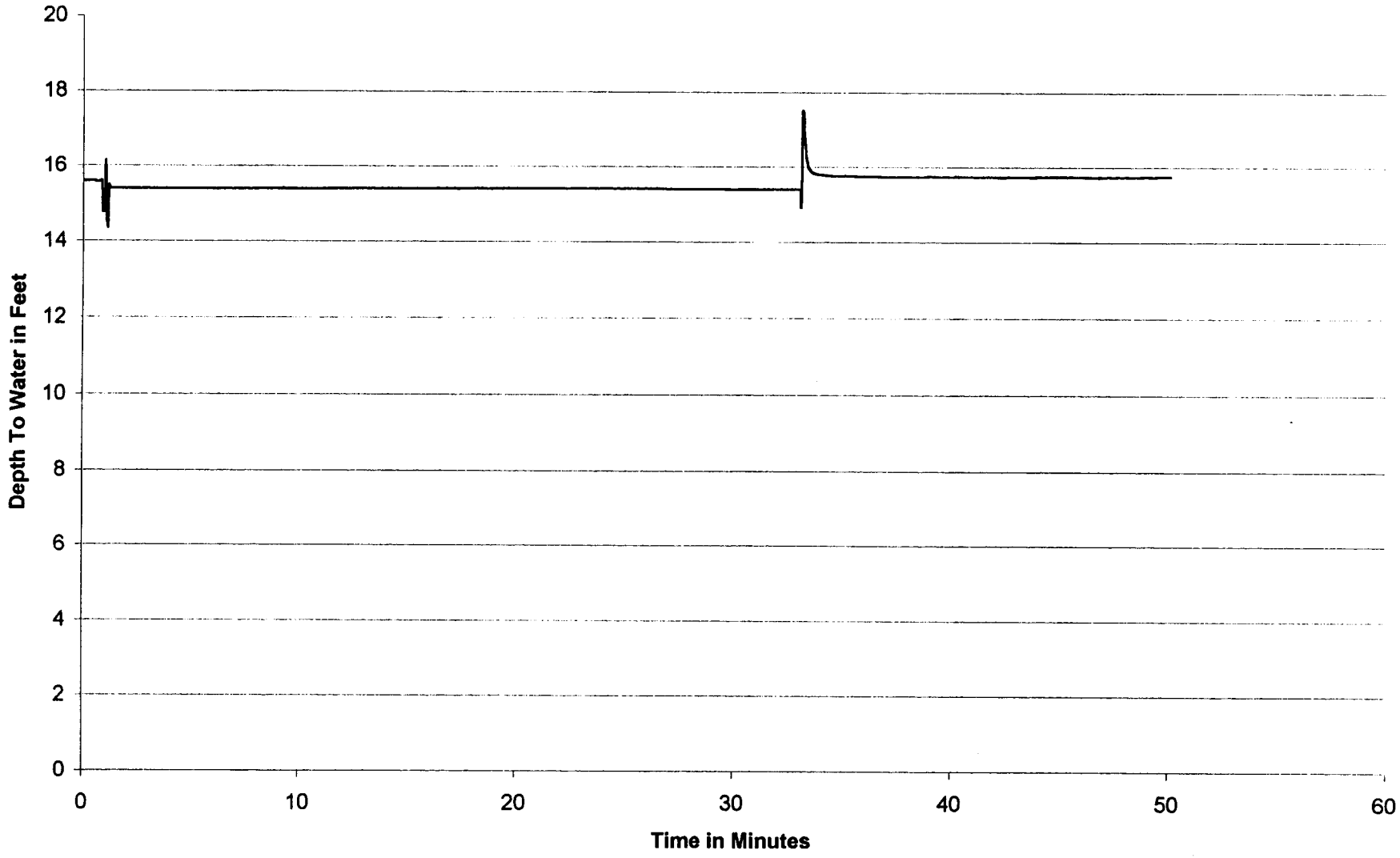
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW L-2

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	8.77E-04	cm/sec	or	908	ft/year
By Bouwer and Rice,	K=	5.02E-04	cm/sec	or	520	ft/year

AQUIFER TEST FOR WELL DMW L-2



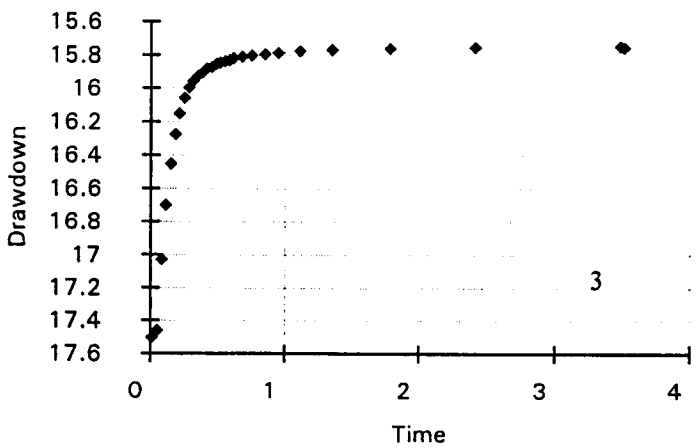
SLUG TEST DATA ENTRY FORM

Client Name: Johnston County
Project No.: 1054-95-286A
roject Name: Phase 5 Cell

Well Number: DMW L-2
Topo. Elev.:
Analysis By: WJB

Test Type: Slug Out
Weather:
ate Started: 5/2/97

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	26.1
Static W/L-Depth (ft.):	15.59
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	17.5
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	9.6
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10.5
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3.1
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

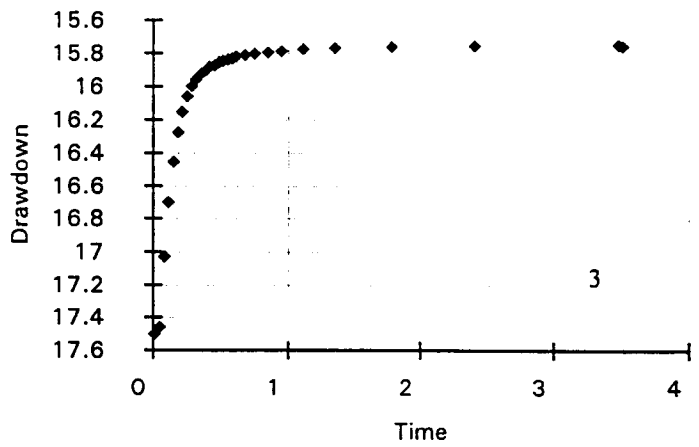
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.01	17.4995						
0.05	17.4572						
0.08	17.0263						
0.11	16.6968						
0.15	16.4517						
0.18	16.275						
0.21	16.148						
0.25	16.055						
0.28	15.996						
0.31	15.954						
0.35	15.92						
0.38	15.903						
0.41	15.878						
0.45	15.869						
0.48	15.852						
0.51	15.844						
0.55	15.835						
0.58	15.827						
0.61	15.818						
0.68	15.81						
0.75	15.802						
0.85	15.793						
0.95	15.785						
1.11	15.776						
1.35	15.768						
1.78	15.759						
2.41	15.751						
3.48	15.742						
3.51	15.751						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-2** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/2/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	26.1
Static W/L-Depth (ft.):	15.59
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	17.5
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	9.6
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10.5
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	3.1
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



AQUIFER RECOVERY DATA

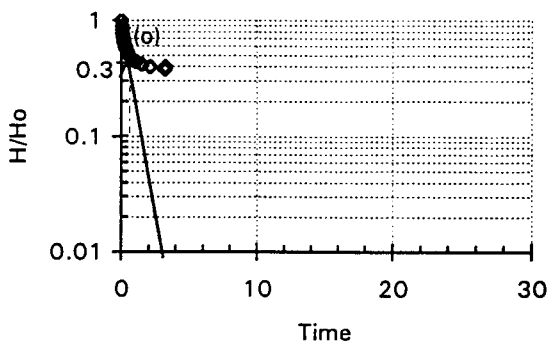
Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB

Project No.: **1054-95-286A**
Run Date: 5/28/97 17:12
Identification: **DMW L-2**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	15.59	feet
Line Fit Starting No.:	9	Min 1 to
Line Fit Ending No.:	20	Max 29
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**8.77E-04**	cm./sec.
Basic Time Lag:	0.61	min.
Error of Fit:	0.0232	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.01	17.50	1.91	1.5482	0.3115
2)	0.05	17.46	1.87	1.5258	0.2517
3)	0.08	17.03	1.44	1.2635	0.2069
4)	0.11	16.70	1.11	1.0029	0.1621
5)	0.15	16.45	0.86	0.7526	0.1023
6)	0.18	16.28	0.68	0.5231	0.0575
7)	0.21	16.15	0.56	0.3180	0.0126
8)	0.25	16.06	0.47	0.1357	-0.0471
9)	0.28	16.00	0.41	0.0000	-0.0919
10)	0.31	15.95	0.36	-0.1092	-0.1368
11)	0.35	15.92	0.33	-0.2073	-0.1965
12)	0.38	15.90	0.31	-0.2601	-0.2414
13)	0.41	15.88	0.29	-0.3434	-0.2862
14)	0.45	15.87	0.28	-0.3751	-0.3460
15)	0.48	15.85	0.26	-0.4380	-0.3908
16)	0.51	15.84	0.25	-0.4690	-0.4356
17)	0.55	15.84	0.25	-0.5051	-0.4954
18)	0.58	15.83	0.24	-0.5383	-0.5402
19)	0.61	15.82	0.23	-0.5770	-0.5850
20)	0.68	15.81	0.22	-0.6127	-0.6896
21)	0.75	15.80	0.21	-0.6498	-0.7942
22)	0.85	15.79	0.20	-0.6931	-0.9436
23)	0.95	15.79	0.20	-0.7334	-1.0930
24)	1.11	15.78	0.19	-0.7806	-1.3321
25)	1.35	15.77	0.18	-0.8246	-1.6907

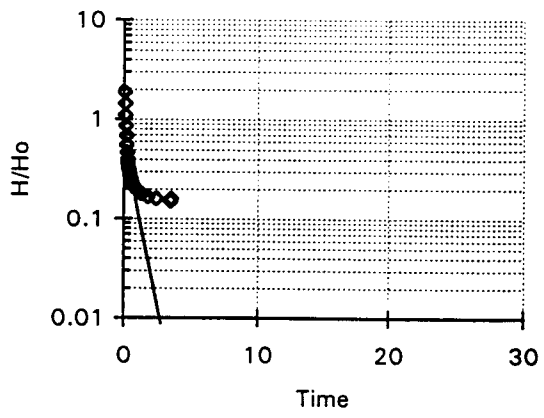
26)	1.78	15.76	0.17	-0.8765	-2.3332
27)	2.41	15.75	0.16	-0.9249	-3.2745
28)	3.48	15.74	0.15	-0.9825	-4.8732
29)	3.51	15.75	0.16	-0.9249	-4.9180

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Client Name: Johnston County
Analysis By: WJB
Run Date: 5/28/97

Project No.: **1054-95-286A**
Identification: **DMW L-2**

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	10.5	feet
Water Table Depth:	15.59	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	9	Min 1 to
Line Fit Ending No.:	20	Max 29
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**5.02E-04**	cm./sec.
Error of Fit:	0.023	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.01	17.50	1.91		0.647	-0.590
2)	0.05	17.46	1.87		0.624	-0.650
3)	0.08	17.03	1.44		0.362	-0.695
4)	0.11	16.70	1.11		0.101	-0.739
5)	0.15	16.45	0.86		-0.149	-0.799
6)	0.18	16.28	0.68		-0.378	-0.844
7)	0.21	16.15	0.56		-0.583	-0.889
8)	0.25	16.06	0.47		-0.766	-0.949
9)	0.28	16.00	0.41		-0.901	-0.993
10)	0.31	15.95	0.36		-1.011	-1.038
11)	0.35	15.92	0.33		-1.109	-1.098
12)	0.38	15.90	0.31		-1.162	-1.143
13)	0.41	15.88	0.29		-1.245	-1.188
14)	0.45	15.87	0.28		-1.277	-1.247
15)	0.48	15.85	0.26		-1.339	-1.292
16)	0.51	15.84	0.25		-1.370	-1.337
17)	0.55	15.84	0.25		-1.406	-1.397
18)	0.58	15.83	0.24		-1.440	-1.442
19)	0.61	15.82	0.23		-1.478	-1.486
20)	0.68	15.81	0.22		-1.514	-1.591
21)	0.75	15.80	0.21		-1.551	-1.696
22)	0.85	15.79	0.20		-1.595	-1.845
23)	0.95	15.79	0.20		-1.635	-1.994
24)	1.11	15.78	0.19		-1.682	-2.233
25)	1.35	15.77	0.18		-1.726	-2.592

26)	1.78	15.76	0.17		-1.778	-3.235
27)	2.41	15.75	0.16		-1.826	-4.176
28)	3.48	15.74	0.15		-1.884	-5.775
29)	3.51	15.75	0.16		-1.826	-5.819

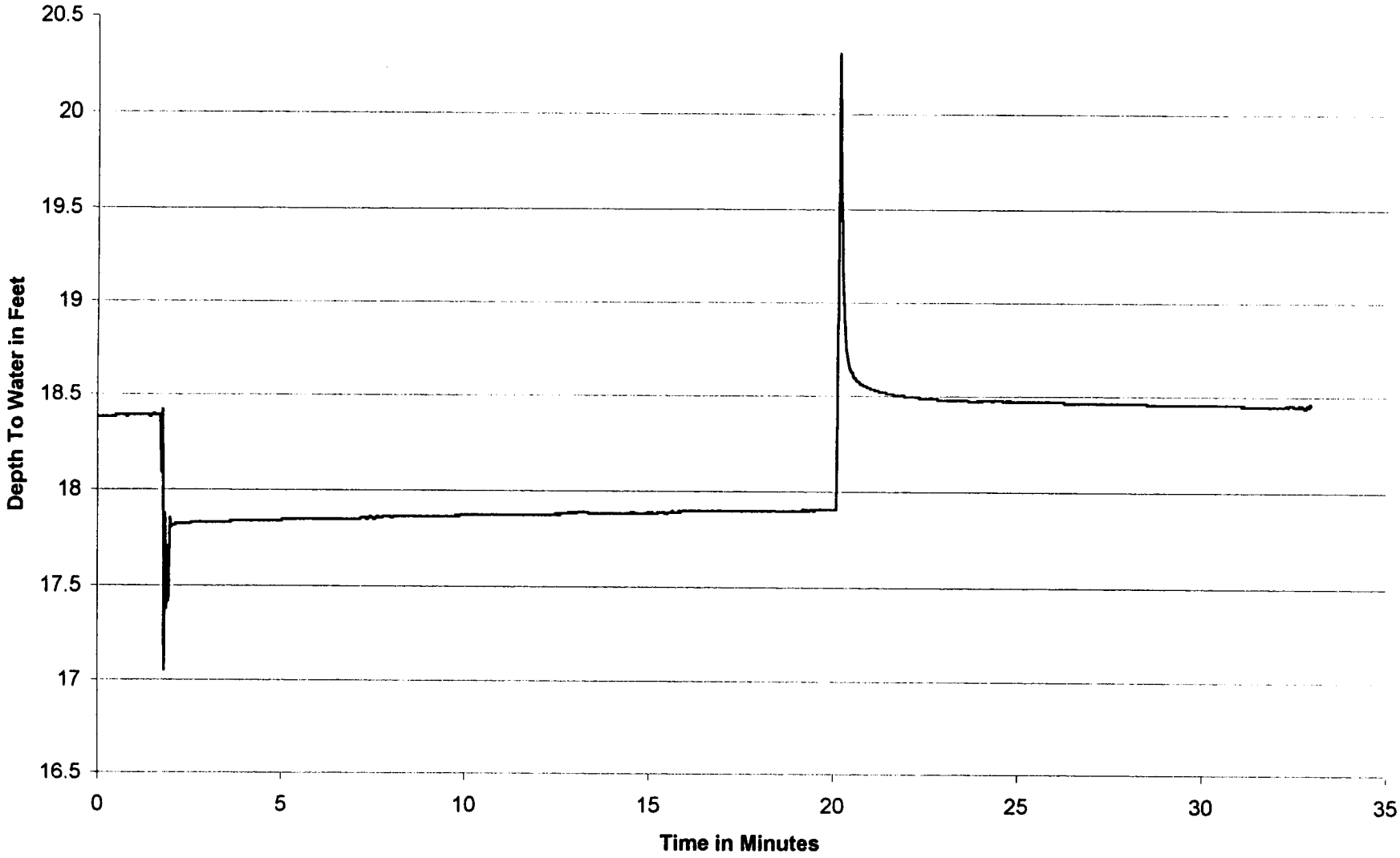
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW L-3

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	1.63E-04	cm/sec	or	169	ft/year
By Bouwer and Rice,	K=	7.06E-05	cm/sec	or	73	ft/year

AQUIFER TEST FOR WELL DMW L-3

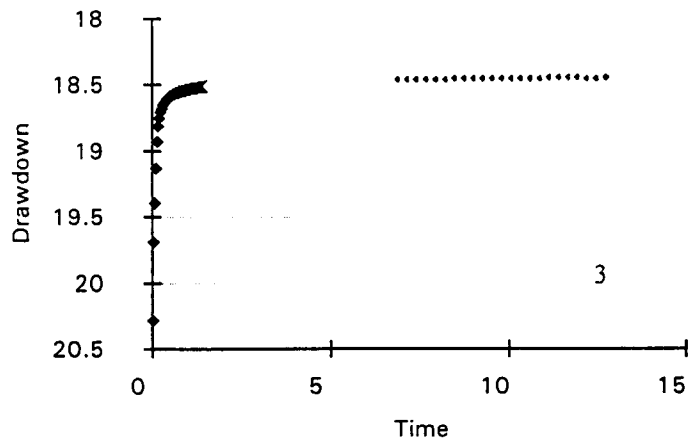


SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-3** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather: Sunny - cool
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/5/97

BASIC TEST DATA

Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	28.4
Static W/L-Depth (ft.):	18.38
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	20.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	13.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



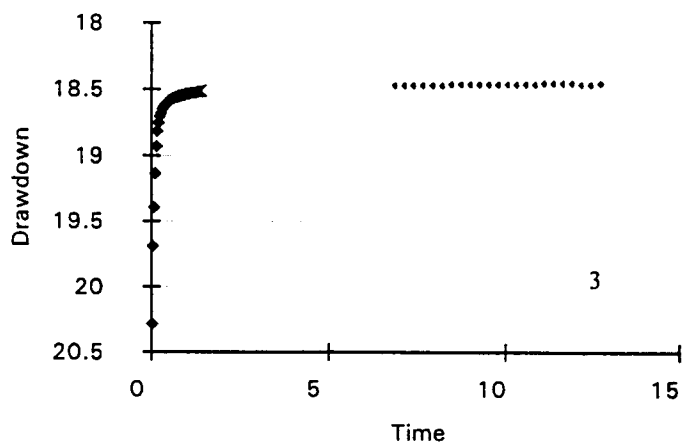
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.01	20.2802	1.67	18.5058	6.27	18.464		
0.04	19.6887	1.7	18.5058	6.37	18.464		
0.07	19.393	1.74	18.5058	6.47	18.464		
0.1	19.1311	1.77	18.5058	6.57	18.464		
0.14	18.9283	1.8	18.4974	6.67	18.464		
0.17	18.81	1.84	18.4974	6.77	18.464		
0.2	18.7509	1.87	18.4974	6.87	18.464		
0.24	18.7002	1.97	18.4974	7.14	18.464		
0.27	18.6748	2.07	18.4974	7.4	18.464		
0.3	18.6495	2.17	18.4974	7.67	18.464		
0.34	18.6326	2.27	18.4889	7.94	18.464		
0.37	18.6241	2.37	18.4889	8.2	18.464		
0.4	18.6072	2.47	18.4889	8.47	18.456		
0.44	18.5988	2.57	18.4889	8.74	18.456		
0.47	18.5903	2.67	18.4889	9	18.456		
0.5	18.5819	2.77	18.4805	9.27	18.456		
0.54	18.5819	2.87	18.4805	9.54	18.456		
0.57	18.5734	2.97	18.4805	9.8	18.456		
0.6	18.565	3.07	18.4805	10.07	18.456		
0.64	18.565	3.17	18.4805	10.34	18.456		
0.67	18.5565	3.27	18.4805	10.6	18.456		
0.7	18.5565	3.37	18.4805	10.87	18.456		
0.74	18.5565	3.47	18.4805	11.14	18.447		
0.77	18.5481	3.57	18.472	11.4	18.447		
0.8	18.5481	3.67	18.472	11.67	18.447		
0.84	18.5481	3.77	18.4805	11.94	18.447		
0.87	18.5396	3.87	18.472	12.2	18.456		
0.9	18.5396	3.97	18.4805	12.47	18.456		
0.94	18.5396	4.07	18.4805	12.74	18.447		

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-3** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather: Sunny - cool
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/5/97

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	28.4
Static W/L-Depth (ft.):	18.38
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	20.3
TOC Elevation (feet):	N/A
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	13.5
Intake/Soil Col. Length (ft.):	15
Saturat. Col. Thickness (ft.):	10
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.5
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



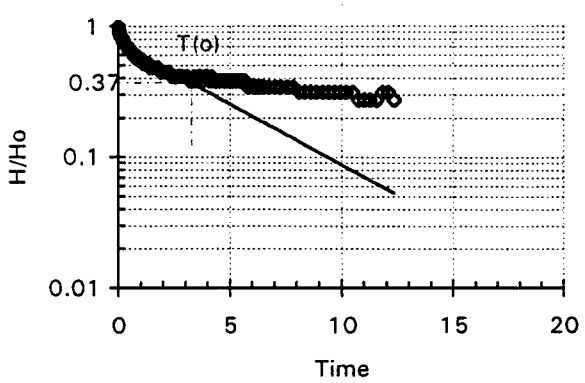
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.97	18.5312	4.17	18.472				
1	18.5312	4.27	18.4805				
1.04	18.5312	4.37	18.4805				
1.07	18.5312	4.47	18.472				
1.1	18.5227	4.57	18.4805				
1.14	18.5227	4.67	18.472				
1.17	18.5227	4.77	18.472				
1.2	18.5227	4.87	18.472				
1.24	18.5227	4.97	18.472				
1.27	18.5227	5.07	18.472				
1.3	18.5143	5.17	18.472				
1.34	18.5143	5.27	18.472				
1.37	18.5143	5.37	18.472				
1.4	18.5143	5.47	18.472				
1.44	18.5143	5.57	18.472				
1.47	18.5143	5.67	18.472				
1.5	18.5058	5.77	18.472				
1.54	18.5058	5.87	18.472				
1.57	18.5058	5.97	18.472				
1.6	18.5058	6.07	18.472				
1.64	18.5058	6.17	18.464				

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	**Phase 5 Cell**	Project No.:	**1054-95-286A**
Client Name:	Johnston County	Run Date:	5/29/97 7:12
Analysis By:	WJB	Identification:	**DMW L-3**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	15	feet
Water Table Depth:	18.38	feet
Line Fit Starting No.:	12	Min 1 to
Line Fit Ending No.:	80	Max 129
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**1.63E-04**	cm./sec.
Basic Time Lag:	3.27	min.
Error of Fit:	0.6549	



Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.01	20.28	1.90	2.0521	-0.2298
2)	0.04	19.69	1.31	1.6792	-0.2361
3)	0.07	19.39	1.01	1.4231	-0.2425
4)	0.10	19.13	0.75	1.1240	-0.2489
5)	0.14	18.93	0.55	0.8092	-0.2574
6)	0.17	18.81	0.43	0.5662	-0.2637
7)	0.20	18.75	0.37	0.4184	-0.2701
8)	0.24	18.70	0.32	0.2714	-0.2786
9)	0.27	18.67	0.29	0.1887	-0.2850
10)	0.30	18.65	0.27	0.0990	-0.2914
11)	0.34	18.63	0.25	0.0342	-0.2998
12)	0.37	18.62	0.24	0.0000	-0.3062
13)	0.40	18.61	0.23	-0.0717	-0.3126
14)	0.44	18.60	0.22	-0.1094	-0.3211
15)	0.47	18.59	0.21	-0.1490	-0.3275
16)	0.50	18.58	0.20	-0.1898	-0.3338
17)	0.54	18.58	0.20	-0.1898	-0.3423
18)	0.57	18.57	0.19	-0.2328	-0.3487
19)	0.60	18.57	0.19	-0.2772	-0.3551
20)	0.64	18.57	0.19	-0.2772	-0.3636
21)	0.67	18.56	0.18	-0.3243	-0.3699
22)	0.70	18.56	0.18	-0.3243	-0.3763
23)	0.74	18.56	0.18	-0.3243	-0.3848
24)	0.77	18.55	0.17	-0.3730	-0.3912
25)	0.80	18.55	0.17	-0.3730	-0.3975

26)	0.84	18.55	0.17	-0.3730	-0.4060
27)	0.87	18.54	0.16	-0.4249	-0.4124
28)	0.90	18.54	0.16	-0.4249	-0.4188
29)	0.94	18.54	0.16	-0.4249	-0.4273
30)	0.97	18.53	0.15	-0.4790	-0.4336
31)	1.00	18.53	0.15	-0.4790	-0.4400
32)	1.04	18.53	0.15	-0.4790	-0.4485
33)	1.07	18.53	0.15	-0.4790	-0.4549
34)	1.10	18.52	0.14	-0.5368	-0.4612
35)	1.14	18.52	0.14	-0.5368	-0.4697
36)	1.17	18.52	0.14	-0.5368	-0.4761
37)	1.20	18.52	0.14	-0.5368	-0.4825
38)	1.24	18.52	0.14	-0.5368	-0.4910
39)	1.27	18.52	0.14	-0.5368	-0.4974
40)	1.30	18.51	0.13	-0.5975	-0.5037
41)	1.34	18.51	0.13	-0.5975	-0.5122
42)	1.37	18.51	0.13	-0.5975	-0.5186
43)	1.40	18.51	0.13	-0.5975	-0.5250
44)	1.44	18.51	0.13	-0.5975	-0.5335
45)	1.47	18.51	0.13	-0.5975	-0.5398
46)	1.50	18.51	0.13	-0.6629	-0.5462
47)	1.54	18.51	0.13	-0.6629	-0.5547
48)	1.57	18.51	0.13	-0.6629	-0.5611
49)	1.60	18.51	0.13	-0.6629	-0.5674
50)	1.64	18.51	0.13	-0.6629	-0.5759
51)	1.67	18.51	0.13	-0.6629	-0.5823
52)	1.70	18.51	0.13	-0.6629	-0.5887
53)	1.74	18.51	0.13	-0.6629	-0.5972
54)	1.77	18.51	0.13	-0.6629	-0.6035
55)	1.80	18.50	0.12	-0.7320	-0.6099
56)	1.84	18.50	0.12	-0.7320	-0.6184
57)	1.87	18.50	0.12	-0.7320	-0.6248
58)	1.97	18.50	0.12	-0.7320	-0.6460
59)	2.07	18.50	0.12	-0.7320	-0.6672
60)	2.17	18.50	0.12	-0.7320	-0.6885
61)	2.27	18.49	0.11	-0.8071	-0.7097
62)	2.37	18.49	0.11	-0.8071	-0.7310
63)	2.47	18.49	0.11	-0.8071	-0.7522
64)	2.57	18.49	0.11	-0.8071	-0.7734
65)	2.67	18.49	0.11	-0.8071	-0.7947
66)	2.77	18.48	0.10	-0.8874	-0.8159

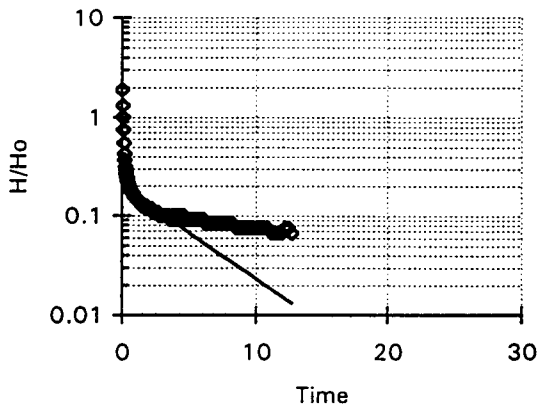
67)	2.87	18.48	0.10	-0.8874	-0.8371
68)	2.97	18.48	0.10	-0.8874	-0.8584
69)	3.07	18.48	0.10	-0.8874	-0.8796
70)	3.17	18.48	0.10	-0.8874	-0.9009
71)	3.27	18.48	0.10	-0.8874	-0.9221
72)	3.37	18.48	0.10	-0.8874	-0.9433
73)	3.47	18.48	0.10	-0.8874	-0.9646
74)	3.57	18.47	0.09	-0.9758	-0.9858
75)	3.67	18.47	0.09	-0.9758	-1.0070
76)	3.77	18.48	0.10	-0.8874	-1.0283
77)	3.87	18.47	0.09	-0.9758	-1.0495
78)	3.97	18.48	0.10	-0.8874	-1.0707
79)	4.07	18.48	0.10	-0.8874	-1.0920
80)	4.17	18.47	0.09	-0.9758	-1.1132
81)	4.27	18.48	0.10	-0.8874	-1.1345
82)	4.37	18.48	0.10	-0.8874	-1.1557
83)	4.47	18.47	0.09	-0.9758	-1.1769
84)	4.57	18.48	0.10	-0.8874	-1.1982
85)	4.67	18.47	0.09	-0.9758	-1.2194
86)	4.77	18.47	0.09	-0.9758	-1.2406
87)	4.87	18.47	0.09	-0.9758	-1.2619
88)	4.97	18.47	0.09	-0.9758	-1.2831
89)	5.07	18.47	0.09	-0.9758	-1.3044
90)	5.17	18.47	0.09	-0.9758	-1.3256
91)	5.27	18.47	0.09	-0.9758	-1.3468
92)	5.37	18.47	0.09	-0.9758	-1.3681
93)	5.47	18.47	0.09	-0.9758	-1.3893
94)	5.57	18.47	0.09	-0.9758	-1.4105
95)	5.67	18.47	0.09	-0.9758	-1.4318
96)	5.77	18.47	0.09	-0.9758	-1.4530
97)	5.87	18.47	0.09	-0.9758	-1.4743
98)	5.97	18.47	0.09	-0.9758	-1.4955
99)	6.07	18.47	0.09	-0.9758	-1.5167
100)	6.17	18.46	0.08	-1.0668	-1.5380
101)	6.27	18.46	0.08	-1.0668	-1.5592
102)	6.37	18.46	0.08	-1.0668	-1.5804
103)	6.47	18.46	0.08	-1.0668	-1.6017
104)	6.57	18.46	0.08	-1.0668	-1.6229
105)	6.67	18.46	0.08	-1.0668	-1.6441
106)	6.77	18.46	0.08	-1.0668	-1.6654
107)	6.87	18.46	0.08	-1.0668	-1.6866

108)	7.14	18.46	0.08	-1.0668	-1.7440
109)	7.40	18.46	0.08	-1.0668	-1.7992
110)	7.67	18.46	0.08	-1.0668	-1.8565
111)	7.94	18.46	0.08	-1.0668	-1.9139
112)	8.20	18.46	0.08	-1.0668	-1.9691
113)	8.47	18.46	0.08	-1.1668	-2.0264
114)	8.74	18.46	0.08	-1.1668	-2.0838
115)	9.00	18.46	0.08	-1.1668	-2.1390
116)	9.27	18.46	0.08	-1.1668	-2.1963
117)	9.54	18.46	0.08	-1.1668	-2.2536
118)	9.80	18.46	0.08	-1.1668	-2.3089
119)	10.07	18.46	0.08	-1.1668	-2.3662
120)	10.34	18.46	0.08	-1.1668	-2.4235
121)	10.60	18.46	0.08	-1.1668	-2.4788
122)	10.87	18.46	0.08	-1.1668	-2.5361
123)	11.14	18.45	0.07	-1.2929	-2.5934
124)	11.40	18.45	0.07	-1.2929	-2.6487
125)	11.67	18.45	0.07	-1.2929	-2.7060
126)	11.94	18.45	0.07	-1.2929	-2.7633
127)	12.20	18.46	0.08	-1.1668	-2.8186
128)	12.47	18.46	0.08	-1.1668	-2.8759
129)	12.74	18.45	0.07	-1.2929	-2.9332

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW L-3**
Analysis By: WJB
Run Date: 5/29/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	15	feet
Saturated Column Length:	10	feet
Water Table Depth:	18.38	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	12	Min 1 to
Line Fit Ending No.:	80	Max 129
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**7.06E-05**	cm./sec.
Error of Fit:	0.655	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.01	20.28	1.90		0.642	-1.640
2)	0.04	19.69	1.31		0.269	-1.646
3)	0.07	19.39	1.01		0.013	-1.653
4)	0.10	19.13	0.75		-0.286	-1.659
5)	0.14	18.93	0.55		-0.601	-1.668
6)	0.17	18.81	0.43		-0.844	-1.674
7)	0.20	18.75	0.37		-0.992	-1.680
8)	0.24	18.70	0.32		-1.139	-1.689
9)	0.27	18.67	0.29		-1.221	-1.695
10)	0.30	18.65	0.27		-1.311	-1.702
11)	0.34	18.63	0.25		-1.376	-1.710
12)	0.37	18.62	0.24		-1.410	-1.716
13)	0.40	18.61	0.23		-1.482	-1.723
14)	0.44	18.60	0.22		-1.520	-1.731
15)	0.47	18.59	0.21		-1.559	-1.738
16)	0.50	18.58	0.20		-1.600	-1.744
17)	0.54	18.58	0.20		-1.600	-1.752
18)	0.57	18.57	0.19		-1.643	-1.759
19)	0.60	18.57	0.19		-1.687	-1.765
20)	0.64	18.57	0.19		-1.687	-1.774
21)	0.67	18.56	0.18		-1.734	-1.780
22)	0.70	18.56	0.18		-1.734	-1.786
23)	0.74	18.56	0.18		-1.734	-1.795
24)	0.77	18.55	0.17		-1.783	-1.801
25)	0.80	18.55	0.17		-1.783	-1.808

26)	0.84	18.55	0.17		-1.783	-1.816
27)	0.87	18.54	0.16		-1.835	-1.823
28)	0.90	18.54	0.16		-1.835	-1.829
29)	0.94	18.54	0.16		-1.835	-1.837
30)	0.97	18.53	0.15		-1.889	-1.844
31)	1.00	18.53	0.15		-1.889	-1.850
32)	1.04	18.53	0.15		-1.889	-1.859
33)	1.07	18.53	0.15		-1.889	-1.865
34)	1.10	18.52	0.14		-1.947	-1.871
35)	1.14	18.52	0.14		-1.947	-1.880
36)	1.17	18.52	0.14		-1.947	-1.886
37)	1.20	18.52	0.14		-1.947	-1.893
38)	1.24	18.52	0.14		-1.947	-1.901
39)	1.27	18.52	0.14		-1.947	-1.908
40)	1.30	18.51	0.13		-2.008	-1.914
41)	1.34	18.51	0.13		-2.008	-1.922
42)	1.37	18.51	0.13		-2.008	-1.929
43)	1.40	18.51	0.13		-2.008	-1.935
44)	1.44	18.51	0.13		-2.008	-1.944
45)	1.47	18.51	0.13		-2.008	-1.950
46)	1.50	18.51	0.13		-2.073	-1.956
47)	1.54	18.51	0.13		-2.073	-1.965
48)	1.57	18.51	0.13		-2.073	-1.971
49)	1.60	18.51	0.13		-2.073	-1.978
50)	1.64	18.51	0.13		-2.073	-1.986
51)	1.67	18.51	0.13		-2.073	-1.992
52)	1.70	18.51	0.13		-2.073	-1.999
53)	1.74	18.51	0.13		-2.073	-2.007
54)	1.77	18.51	0.13		-2.073	-2.014
55)	1.80	18.50	0.12		-2.142	-2.020
56)	1.84	18.50	0.12		-2.142	-2.029
57)	1.87	18.50	0.12		-2.142	-2.035
58)	1.97	18.50	0.12		-2.142	-2.056
59)	2.07	18.50	0.12		-2.142	-2.077
60)	2.17	18.50	0.12		-2.142	-2.099
61)	2.27	18.49	0.11		-2.217	-2.120
62)	2.37	18.49	0.11		-2.217	-2.141
63)	2.47	18.49	0.11		-2.217	-2.162
64)	2.57	18.49	0.11		-2.217	-2.184
65)	2.67	18.49	0.11		-2.217	-2.205
66)	2.77	18.48	0.10		-2.298	-2.226

67)	2.87	18.48	0.10		-2.298	-2.247
68)	2.97	18.48	0.10		-2.298	-2.269
69)	3.07	18.48	0.10		-2.298	-2.290
70)	3.17	18.48	0.10		-2.298	-2.311
71)	3.27	18.48	0.10		-2.298	-2.332
72)	3.37	18.48	0.10		-2.298	-2.354
73)	3.47	18.48	0.10		-2.298	-2.375
74)	3.57	18.47	0.09		-2.386	-2.396
75)	3.67	18.47	0.09		-2.386	-2.417
76)	3.77	18.48	0.10		-2.298	-2.438
77)	3.87	18.47	0.09		-2.386	-2.460
78)	3.97	18.48	0.10		-2.298	-2.481
79)	4.07	18.48	0.10		-2.298	-2.502
80)	4.17	18.47	0.09		-2.386	-2.523
81)	4.27	18.48	0.10		-2.298	-2.545
82)	4.37	18.48	0.10		-2.298	-2.566
83)	4.47	18.47	0.09		-2.386	-2.587
84)	4.57	18.48	0.10		-2.298	-2.608
85)	4.67	18.47	0.09		-2.386	-2.630
86)	4.77	18.47	0.09		-2.386	-2.651
87)	4.87	18.47	0.09		-2.386	-2.672
88)	4.97	18.47	0.09		-2.386	-2.693
89)	5.07	18.47	0.09		-2.386	-2.715
90)	5.17	18.47	0.09		-2.386	-2.736
91)	5.27	18.47	0.09		-2.386	-2.757
92)	5.37	18.47	0.09		-2.386	-2.778
93)	5.47	18.47	0.09		-2.386	-2.799
94)	5.57	18.47	0.09		-2.386	-2.821
95)	5.67	18.47	0.09		-2.386	-2.842
96)	5.77	18.47	0.09		-2.386	-2.863
97)	5.87	18.47	0.09		-2.386	-2.884
98)	5.97	18.47	0.09		-2.386	-2.906
99)	6.07	18.47	0.09		-2.386	-2.927
100)	6.17	18.46	0.08		-2.477	-2.948
101)	6.27	18.46	0.08		-2.477	-2.969
102)	6.37	18.46	0.08		-2.477	-2.991
103)	6.47	18.46	0.08		-2.477	-3.012
104)	6.57	18.46	0.08		-2.477	-3.033
105)	6.67	18.46	0.08		-2.477	-3.054
106)	6.77	18.46	0.08		-2.477	-3.076
107)	6.87	18.46	0.08		-2.477	-3.097

108)	7.14	18.46	0.08		-2.477	-3.154
109)	7.40	18.46	0.08		-2.477	-3.209
110)	7.67	18.46	0.08		-2.477	-3.267
111)	7.94	18.46	0.08		-2.477	-3.324
112)	8.20	18.46	0.08		-2.477	-3.379
113)	8.47	18.46	0.08		-2.577	-3.437
114)	8.74	18.46	0.08		-2.577	-3.494
115)	9.00	18.46	0.08		-2.577	-3.549
116)	9.27	18.46	0.08		-2.577	-3.606
117)	9.54	18.46	0.08		-2.577	-3.664
118)	9.80	18.46	0.08		-2.577	-3.719
119)	10.07	18.46	0.08		-2.577	-3.776
120)	10.34	18.46	0.08		-2.577	-3.834
121)	10.60	18.46	0.08		-2.577	-3.889
122)	10.87	18.46	0.08		-2.577	-3.946
123)	11.14	18.45	0.07		-2.703	-4.004
124)	11.40	18.45	0.07		-2.703	-4.059
125)	11.67	18.45	0.07		-2.703	-4.116
126)	11.94	18.45	0.07		-2.703	-4.174
127)	12.20	18.46	0.08		-2.577	-4.229
128)	12.47	18.46	0.08		-2.577	-4.286
129)	12.74	18.45	0.07		-2.703	-4.343

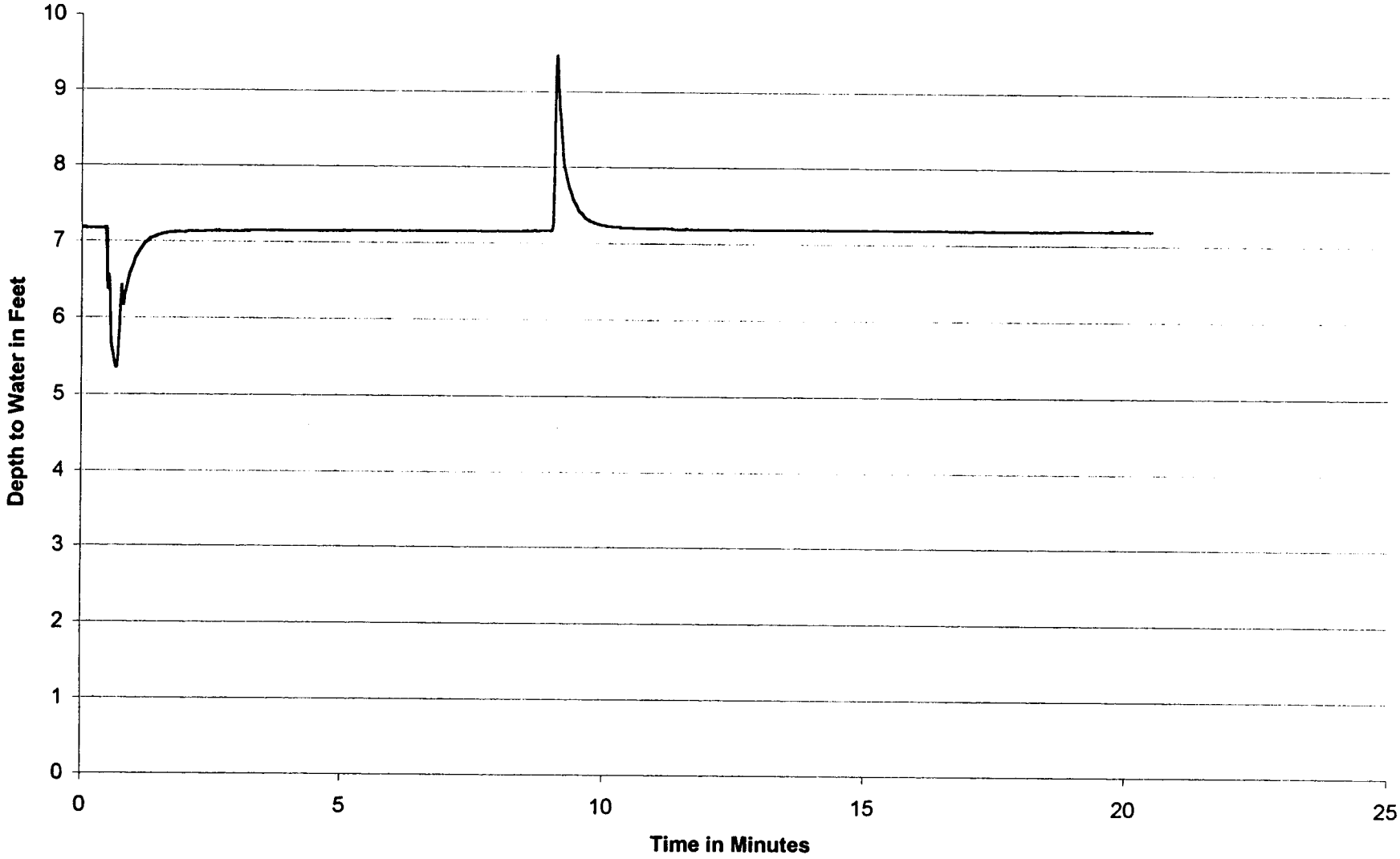
AQUIFER TEST DATA
Calculation of Hydraulic Conductivity
For Well DMW L-4

Johnston County Landfill
Phase 5 Construction

For "Slug Out" Test

By Hvorslev,	K=	7.19E-03	cm/sec	or	8,065	ft/year
By Bouwer and Rice,	K=	1.43E-03	cm/sec	or	1,481	ft/year

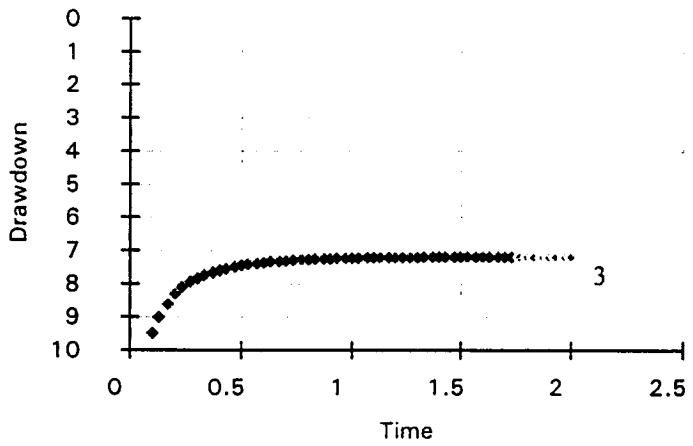
AQUIFER TEST FOR WELL DMW L-4



SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-4** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/5/97

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	16.9
Static W/L-Depth (ft.):	7.17
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	9.5
TOC Elevation (feet):	
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.3
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	8.73
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.75
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



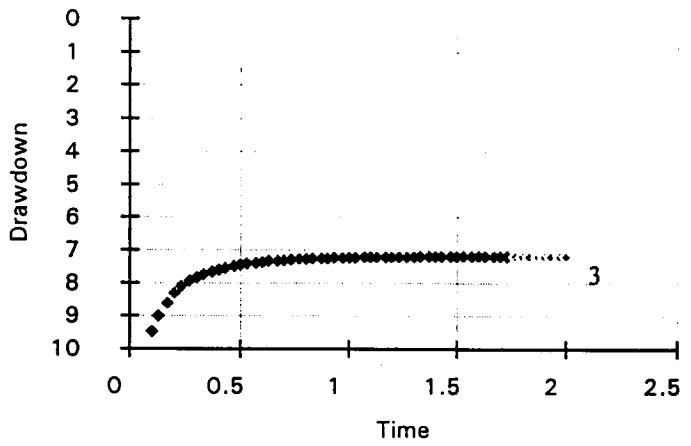
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
0.1	9.4766	1.77	7.196				
0.13	8.995	1.8	7.196				
0.17	8.5979	1.83	7.196				
0.2	8.2937	1.87	7.196				
0.23	8.0825	1.9	7.196				
0.27	7.9304	1.93	7.196				
0.3	7.829	1.97	7.196				
0.33	7.7361	2	7.196				
0.37	7.66						
0.4	7.593						
0.43	7.542						
0.47	7.492						
0.5	7.449						
0.53	7.415						
0.57	7.39						
0.6	7.365						
0.63	7.339						
0.67	7.323						
0.7	7.306						
0.73	7.289						
0.77	7.28						
0.8	7.272						
0.83	7.263						
0.87	7.255						
0.9	7.246						
0.93	7.238						
0.97	7.238						
1	7.23						
1.03	7.23						

SLUG TEST DATA ENTRY FORM

Client Name: **Johnston County** Well Number: **DMW L-4** Test Type: Slug Out
Project No.: **1054-95-286A** Topo. Elev.: Weather:
roject Name: **Phase 5 Cell** Analysis By: WJB ate Started: 5/5/97

BASIC TEST DATA	
Measurement Units (1-6):	2
Unconfined(1)/Confined(2):	1
Well Depth - TOC (feet):	16.9
Static W/L-Depth (ft.):	7.17
Riser Pipe Diameter (feet):	0.17
Initial Test Depth Value (ft.):	9.5
TOC Elevation (feet):	
Intake/Soil Col. Diam. (feet):	0.385
Depth to Top of Pack (feet):	6.3
Intake/Soil Col. Length (ft.):	10
Saturat. Col. Thickness (ft.):	8.73
Casing Soil Length (if appl.):	N/A
Casing Stickup (feet):	2.75
Slug Volume (ft^3):	0.068
Thickness of Aquifer (feet):	50



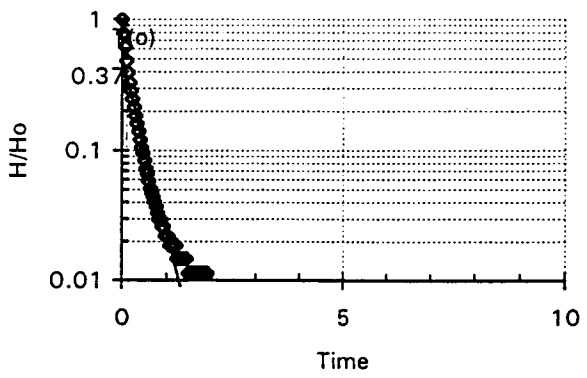
AQUIFER RECOVERY DATA

Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)	Time (min)	Depth (ft.)
1.07	7.221						
1.1	7.221						
1.13	7.221						
1.17	7.213						
1.2	7.213						
1.23	7.213						
1.27	7.213						
1.3	7.213						
1.33	7.204						
1.37	7.204						
1.4	7.204						
1.43	7.204						
1.47	7.204						
1.5	7.204						
1.53	7.204						
1.57	7.196						
1.6	7.196						
1.63	7.196						
1.67	7.196						
1.7	7.196						
1.73	7.196						

Hvorslev's Method for Calculating Hydraulic Conductivity

Project Name:	**Phase 5 Cell**	Project No.:	**1054-95-286A**
Client Name:	Johnston County	Run Date:	5/28/97 17:25
Analysis By:	WJB	Identification:	**DMW L-4**

Test Type:	7	1 to 7
Riser Pipe Diameter:	0.17	feet
Intake Diam.:	0.385	feet
Intake Length:	10	feet
Water Table Depth:	7.17	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	40	Max 58
Entrapped Air Correct.:	N	Y or N
Specify Output Units:	7	1 to 9
Hyd Cond, K(h):	**7.19E-03**	cm./sec.
Basic Time Lag:	0.10	min.
Error of Fit:	2.9316	



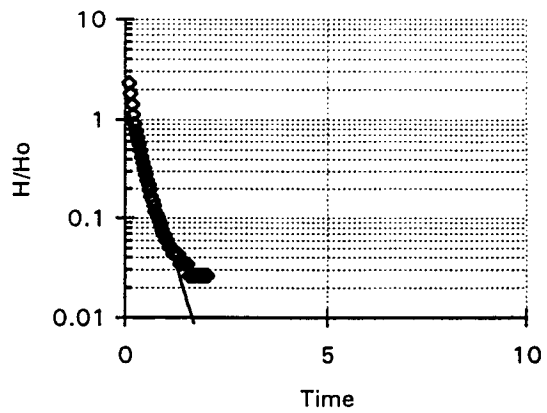
Meas. No.	Time minutes	Field Meas. feet	Drawdown/up feet	Line Fit To LN(Hi/H-HO)	Regression To LN(Hi/H-HO)
1)	0.10	9.48	2.31	0.0000	-0.6882
2)	0.13	9.00	1.83	-0.2342	-0.7810
3)	0.17	8.60	1.43	-0.4796	-0.9046
4)	0.20	8.29	1.12	-0.7191	-0.9973
5)	0.23	8.08	0.91	-0.9273	-1.0901
6)	0.27	7.93	0.76	-1.1097	-1.2137
7)	0.30	7.83	0.66	-1.2528	-1.3064
8)	0.33	7.74	0.57	-1.4048	-1.3992
9)	0.37	7.66	0.49	-1.5491	-1.5228
10)	0.40	7.59	0.42	-1.6962	-1.6155
11)	0.43	7.54	0.37	-1.8246	-1.7083
12)	0.47	7.49	0.32	-1.9690	-1.8319
13)	0.50	7.45	0.28	-2.1123	-1.9246
14)	0.53	7.42	0.25	-2.2423	-2.0173
15)	0.57	7.39	0.22	-2.3499	-2.1410
16)	0.60	7.37	0.20	-2.4705	-2.2337
17)	0.63	7.34	0.17	-2.6136	-2.3264
18)	0.67	7.32	0.15	-2.7131	-2.4501
19)	0.70	7.31	0.14	-2.8309	-2.5428
20)	0.73	7.29	0.12	-2.9644	-2.6355
21)	0.77	7.28	0.11	-3.0430	-2.7592
22)	0.80	7.27	0.10	-3.1186	-2.8519
23)	0.83	7.26	0.09	-3.2109	-2.9446
24)	0.87	7.26	0.09	-3.3009	-3.0683
25)	0.90	7.25	0.08	-3.4128	-3.1610

26)	0.93	7.24	0.07	-3.5240	-3.2537
27)	0.97	7.24	0.07	-3.5240	-3.3774
28)	1.00	7.23	0.06	-3.6492	-3.4701
29)	1.03	7.23	0.06	-3.6492	-3.5628
30)	1.07	7.22	0.05	-3.8117	-3.6865
31)	1.10	7.22	0.05	-3.8117	-3.7792
32)	1.13	7.22	0.05	-3.8117	-3.8719
33)	1.17	7.21	0.04	-3.9823	-3.9956
34)	1.20	7.21	0.04	-3.9823	-4.0883
35)	1.23	7.21	0.04	-3.9823	-4.1810
36)	1.27	7.21	0.04	-3.9823	-4.3047
37)	1.30	7.21	0.04	-3.9823	-4.3974
38)	1.33	7.20	0.03	-4.2172	-4.4901
39)	1.37	7.20	0.03	-4.2172	-4.6138
40)	1.40	7.20	0.03	-4.2172	-4.7065
41)	1.43	7.20	0.03	-4.2172	-4.7992
42)	1.47	7.20	0.03	-4.2172	-4.9228
43)	1.50	7.20	0.03	-4.2172	-5.0156
44)	1.53	7.20	0.03	-4.2172	-5.1083
45)	1.57	7.20	0.03	-4.4854	-5.2319
46)	1.60	7.20	0.03	-4.4854	-5.3247
47)	1.63	7.20	0.03	-4.4854	-5.4174
48)	1.67	7.20	0.03	-4.4854	-5.5410
49)	1.70	7.20	0.03	-4.4854	-5.6338
50)	1.73	7.20	0.03	-4.4854	-5.7265
51)	1.77	7.20	0.03	-4.4854	-5.8501
52)	1.80	7.20	0.03	-4.4854	-5.9429
53)	1.83	7.20	0.03	-4.4854	-6.0356
54)	1.87	7.20	0.03	-4.4854	-6.1592
55)	1.90	7.20	0.03	-4.4854	-6.2520
56)	1.93	7.20	0.03	-4.4854	-6.3447
57)	1.97	7.20	0.03	-4.4854	-6.4683
58)	2.00	7.20	0.03	-4.4854	-6.5611

Bouwer & Rice Method for Calculating Hydraulic Conductivity

Project Name: **Phase 5 Cell**
Project No.: **1054-95-286A**
Client Name: Johnston County
Identification: **DMW L-4**
Analysis By: WJB
Run Date: 5/28/97

Riser Pipe Diameter:	0.17	feet
Intake Diameter:	0.385	feet
Intake Length:	10	feet
Saturated Column Length:	8.73	feet
Water Table Depth:	7.17	feet
Aquifer Thickness:	50	feet
Line Fit Starting No.:	1	Min 1 to
Line Fit Ending No.:	40	Max 58
Specify Output Units:	7	1 to 9
Hyd. Cond., K(h):	**1.43E-03**	cm./sec.
Error of Fit:	2.932	



Meas. #	Time minutes	Field Meas. feet	Drawdown/up feet		Line Fit To LN(Yt)	Regression On LN(Yt)
1)	0.10	9.48	2.31		0.836	0.148
2)	0.13	9.00	1.83		0.602	0.055
3)	0.17	8.60	1.43		0.356	-0.069
4)	0.20	8.29	1.12		0.117	-0.162
5)	0.23	8.08	0.91		-0.092	-0.254
6)	0.27	7.93	0.76		-0.274	-0.378
7)	0.30	7.83	0.66		-0.417	-0.471
8)	0.33	7.74	0.57		-0.569	-0.563
9)	0.37	7.66	0.49		-0.713	-0.687
10)	0.40	7.59	0.42		-0.860	-0.780
11)	0.43	7.54	0.37		-0.989	-0.872
12)	0.47	7.49	0.32		-1.133	-0.996
13)	0.50	7.45	0.28		-1.277	-1.089
14)	0.53	7.42	0.25		-1.406	-1.182
15)	0.57	7.39	0.22		-1.514	-1.305
16)	0.60	7.37	0.20		-1.635	-1.398
17)	0.63	7.34	0.17		-1.778	-1.491
18)	0.67	7.32	0.15		-1.877	-1.614
19)	0.70	7.31	0.14		-1.995	-1.707
20)	0.73	7.29	0.12		-2.129	-1.800
21)	0.77	7.28	0.11		-2.207	-1.923
22)	0.80	7.27	0.10		-2.283	-2.016
23)	0.83	7.26	0.09		-2.375	-2.109
24)	0.87	7.26	0.09		-2.465	-2.232
25)	0.90	7.25	0.08		-2.577	-2.325

26)	0.93	7.24	0.07		-2.688	-2.418
27)	0.97	7.24	0.07		-2.688	-2.542
28)	1.00	7.23	0.06		-2.813	-2.634
29)	1.03	7.23	0.06		-2.813	-2.727
30)	1.07	7.22	0.05		-2.976	-2.851
31)	1.10	7.22	0.05		-2.976	-2.943
32)	1.13	7.22	0.05		-2.976	-3.036
33)	1.17	7.21	0.04		-3.147	-3.160
34)	1.20	7.21	0.04		-3.147	-3.253
35)	1.23	7.21	0.04		-3.147	-3.345
36)	1.27	7.21	0.04		-3.147	-3.469
37)	1.30	7.21	0.04		-3.147	-3.562
38)	1.33	7.20	0.03		-3.381	-3.654
39)	1.37	7.20	0.03		-3.381	-3.778
40)	1.40	7.20	0.03		-3.381	-3.871
41)	1.43	7.20	0.03		-3.381	-3.963
42)	1.47	7.20	0.03		-3.381	-4.087
43)	1.50	7.20	0.03		-3.381	-4.180
44)	1.53	7.20	0.03		-3.381	-4.273
45)	1.57	7.20	0.03		-3.650	-4.396
46)	1.60	7.20	0.03		-3.650	-4.489
47)	1.63	7.20	0.03		-3.650	-4.582
48)	1.67	7.20	0.03		-3.650	-4.705
49)	1.70	7.20	0.03		-3.650	-4.798
50)	1.73	7.20	0.03		-3.650	-4.891
51)	1.77	7.20	0.03		-3.650	-5.014
52)	1.80	7.20	0.03		-3.650	-5.107
53)	1.83	7.20	0.03		-3.650	-5.200
54)	1.87	7.20	0.03		-3.650	-5.323
55)	1.90	7.20	0.03		-3.650	-5.416
56)	1.93	7.20	0.03		-3.650	-5.509
57)	1.97	7.20	0.03		-3.650	-5.633
58)	2.00	7.20	0.03		-3.650	-5.725

Johnston Co. Slug Test
Analyses Summary

1054-95-286
May 11, 1995

Location	Hvorslev Analysis	Bouwer-Rice Analysis
C-1	1.17E-03	5.96E-04
C-2S	9.66E-04	2.40E-04
C-2D	2.80E-05	2.12E-05
C-3	1.88E-04	9.18E-05
C-4	3.29E-04	3.11E-04
C-5	NT	NT
C-6	3.81E-04	2.22E-04
C-7	5.26E-04	3.42E-04
C-8	5.29E-05	3.54E-05
C-9	6.68E-04	5.86E-04
C-10	1.36E-04	7.63E-05
C-11S	1.73E-03	4.42E-04
C-11D	4.38E-05	4.59E-05
C-12	2.64E-03	1.07E-03
C-13	1.83E-04	1.09E-04
C-14	1.29E-04	8.28E-05
C-15	4.31E-04	2.40E-04
C-16	1.35E-04	9.99E-05
C-17	8.67E-04	4.89E-04
C-18	5.53E-06	3.42E-06
C-19	NT	NT
C-20S *	3.30E-04	3.10E-04
C-20D	1.27E-05	1.42E-05
C-21	NT	NT
C-22	1.88E-05	1.05E-05
C-24	4.13E-04	2.65E-04
C-25	1.34E-03	5.25E-04
C-26	1.33E-04	7.31E-05
Artih Mean	*5.14E-04*	*2.52E-04*
Std. Dev.	*6.39E-04*	*2.55E-04*
Geom. Mean	*2.12E-04*	*1.27E-04*

NA = Not analyzed due to invalid test data.
NT = Not tested due to site conditions.
* = Data suspect of errors, not included in average.

TABLE 13
SUMMARY OF HYDRAULIC CONDUCTIVITY VALUES
JOHNSTON COUNTY SUBTITLE D LANDFILL
PHASE 5 DESIGN BORINGS

Well or Piezometer Number	Interval Tested Elevation (msl)	Material Tested (Unified Classif.)	Hydraulic Conductivity in cm/sec	
			Laboratory Test	Field test
Upper Sands				
C-1	209.5 - 199.5	SP		1.17×10^{-3}
C-2s	211.7 - 201.7	SM		9.66×10^{-4}
C-3	209.3 - 194.3	SC		1.88×10^{-4}
C-4	201.1 - 191.1	SM		3.29×10^{-4}
C-6	208.9 - 198.9	SC-SP		3.81×10^{-4}
C-7	207.4 - 192.4	SC-SP		5.26×10^{-4}
C-9	204.8 - 202.8	SC	4.5×10^{-4}	
C-12	204.5 - 194.5	SC-SP		2.64×10^{-3}
C-13	189.6 - 174.6	SC-SM		1.83×10^{-4}
C-15	194.1 - 179.1	SM		4.31×10^{-4}
C-16	188.2 - 173.2	SM		1.35×10^{-4}
C-22	180.9 - 165.9	SM-SC		1.88×10^{-5}
C-24	178.2 - 163.2	SM-SC		4.13×10^{-4}
C-25	175.8 - 160.8	SM-SP		1.34×10^{-3}
Geometric Mean of Values			4.5×10^{-4}	6.71×10^{-4}
Middle Clay				
C-5	196.9 - 186.9	CL	2.2×10^{-7}	
C-8	195.5 - 193.5 196.9 - 186.9	CL CL	1.8×10^{-6}	 5.29×10^{-5}
C-10	194.3 - 179.3	CL		1.36×10^{-4}
C-15	198.7 - 196.7	CL	3.5×10^{-5}	
B-20	195.6 - 193.6	CL	1.4×10^{-7}	
Geometric Mean of Values			9.29×10^{-6}	9.45×10^{-5}
Lower Sands				
C-18	181.1 - 171.1	SM		5.53×10^{-6}
C-26	135.2 - 125.2	SM		1.33×10^{-4}
Geometric Mean of Values				
Residual Soils				
C-2d	167.1 - 162.1	ML-CL		2.8×10^{-5}
Bedrock				
C-20d	143.9 - 138.9	Slate Bedrock		1.42×10^{-5}

51-01

APR 1997
Received
Solid Waste
Section

McKIM&CREED

March 28, 1997 M&C 03580060.0R(10)

ENGINEERS
SURVEYORS
ARCHITECTS
PLANNERS

Mr. Jim Coffey
Permitting Branch
Solid Waste Section
NCDEHNR, Division of Solid Waste Management
P.O. Box 27687
Raleigh, NC 27611-7687

RE: Johnston County Subtitle D Landfill
Submittal of CQA & As-Built Information

Dear Mr. Coffey:

McKim and Creed Engineers, on behalf of Johnston County,NC, hereby submits two (2) complete sets of CQA documentation for the Johnston County Subtitle D Landfill for your review. This information is submitted in accordance with the requirements of *NCDEHNR T15a:13B .1624 CONSTRUCTION REQUIREMENTS FOR MSWLF FACILITIES.*

This construction CQA report is submitted in three (3) volume sets, each entitled Construction Quality Assurance and As-Built Certification for Permit to Operate. In addition, two (2) map rolls containing the as-built design information and certified surveys are included.

VOLUME	DESCRIPTION
Vol. 1 of 3	(see Table of Contents, Vol. 1)
Vol. 2 of 3	Soils and Geosynthetics QAL Reports
Vol. 3 of 3	EFR and Law Eng. Daily Reports

MAPS	TITLE
Map Roll 1	As-Built & Revised Engineering Plans(M&C)
Map Roll 2	Survey and As-Built Plans (D. Lawrence)

Information regarding revised sediment and erosion control plans are being submitted separately to NCDEHNR, Division of Land Quality for their review.

SUITE 117
BUILDING I
5625 DILLARD ROAD
CARY, NC 27511
PHONE 919/233-8091
FAX 919/233-8031

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The final documentation required for the Permit-to-Operate will be submitted to the Solid Water Section in the near future. This information will include: a.) groundwater monitoring well installation completion records; b.) notice of initial groundwater sampling; c.) well abandonment records; and d.) financial assurance information.

Should you have any questions regarding the above information, please feel free to contact me.

Sincerely,

McKIM & CREED ENGINEERS, P.A.

Thomas J. Wainwright, P.E.
Project Engineer

/attachments

cc: C.T. Clayton,P.E.
Haywood Phthisic - JC
C.J. Poran, P.E. - ENSOL