APPENDIX C.2

SLUG TEST DATA

NORTH ANNA COL

DATA REPORT REV. 0
JANUARY 23, 2007

MACTEC PROJECT NO. 6468-06-1472

ABSENTEE PRINCIPAL REVIEW/PRINCIPAL PERMISSION TO SIGN

Purpose/Procedure - When a Principal is not reasonably available to sign a document (proposal, report, letter, etc.), file documentation of his/her review and authorization to sign in his/her behalf is required (Policy ES-4). This may occur if the document is reviewed remotely in another Office or if the Principal is not available at the time the report is issued. This form is to be used to document Principal review and permission to sign in his/her behalf. After authorization to sign is obtained, the Principal's name is to be signed, followed by the phrase "by _____with permission". The blank is to be initialed by the employee signing the absent Principal's name. (See below for documentation requirements of the initials of the person signing.)

The Project Manager is responsible for implementation of this procedure. If a document is being remotely reviewed, the Project Manager is responsible for submitting this form, with appropriate Oracle budgeting information if requested, at the time the document is submitted for review. The Project Manager is responsible for final incorporation of review comments, proofing of the document to be signed, including this form with the Principal signature in the file, and using the correct format for signing the absent Principal's name. A facsimile copy of the form in the file is acceptable documentation. The printed name of the person signing for the absentee person should appear beside his/her initials in the project file documentation to clearly indicate whose initials they are.

Project Manager: Steve Criscenzo Date: December 11, 2008

Project Name: North Anna COL

Document to be Reviewed: Slug test calculations

☐ Report ☐ Letter ☐ Proposal ☒ Other If Proposal, Proposal No. _____

If Review is Project Direct, Include:
Project Number: 6468-06-1472 Phase: N/A Task: 10

I have reviewed the above document and have the following instructions/comments:

☐ Revise and resubmit.

☐ Revise as shown, permission is granted for the document to be signed for me in my absence, after revisions/corrections, in accordance with MACTEC Policy ES-4.

☒ I have reviewed the above document and give my permission for it to be signed in my absence in accordance with MACTEC Policy ES-4. "by Jett Mann"

☐ Return a copy of the final report to me

Review Comments: No review comments

Principal Signature 12/12/08 Date

Return to: Will Grimes via email wsgrimes@mactec.com FAX: _____

MACTEC
engineering and constructing a better tomorrow

North Anna COL Project
Hydraulic Conductivity (K) Calculation Worksheet
MACTEC Job Number: 6468-06-1472

Well: OW-945
Test Date: 11/13/2006
Test Type: Recovery (slug in)
Test Name: OW-945-in

Conducted by: Grimes and Charles-Smith
Entered/date: ewsc/12-1-06
Checked/date: JCP by [signature] with permission 12/12/06 [signature]

WELL DATA

SWL =	12.40	(ft BTOC)
WD =	56.50	(ft BTOC)
WD =	54.50	(ft BGS)
DTSP =	37.33	(ft BGS)
rc =	0.08	(ft)
n =	0.30	
rw =	0.35	(ft)
rc (adjusted) =	0.08	(ft)
Le =	10	(ft)
Lw =	41.10	(ft)
Le/rw =	28.57	
H =	49.10	(ft)

H is depth from SWL to top of bedrock as listed on boring logs

CALCULATION OF K

K = [(rc^2 ln(Re/rw))/2Le]*(1/t)ln(yo/yt)

yo =	0.50	(ft) from plot
yt =	0.17	(ft) from plot
t =	0.49	(minutes) from plot
ln(Re/rw) =	2.86	
K =	2.8E+00	(ft/day)
K =	1.0E-03	(cm/sec)

Calculation of ln(Re/rw)

Where: Lw < H;

ln(Re/rw) = [(1.1/(ln(Lw/rw)))+(A+Bln((H-Lw)/rw))/(Le/rw)]^-1= 2.86

Where: Lw = H;

ln(Re/rw) = [(1.1/(ln(Lw/rw)))+(C/(Le/rw))]^-1 = 3.33

Calculation of Coefficients

Value range for Le/rw from Table of Coefficients

Le/rw	A	B	C
25	2.4	0.31	1.9
30	2.5	0.35	2.1

Interpolated values of A, B and C for Le/rw

28.57	2.47	0.34	2.04

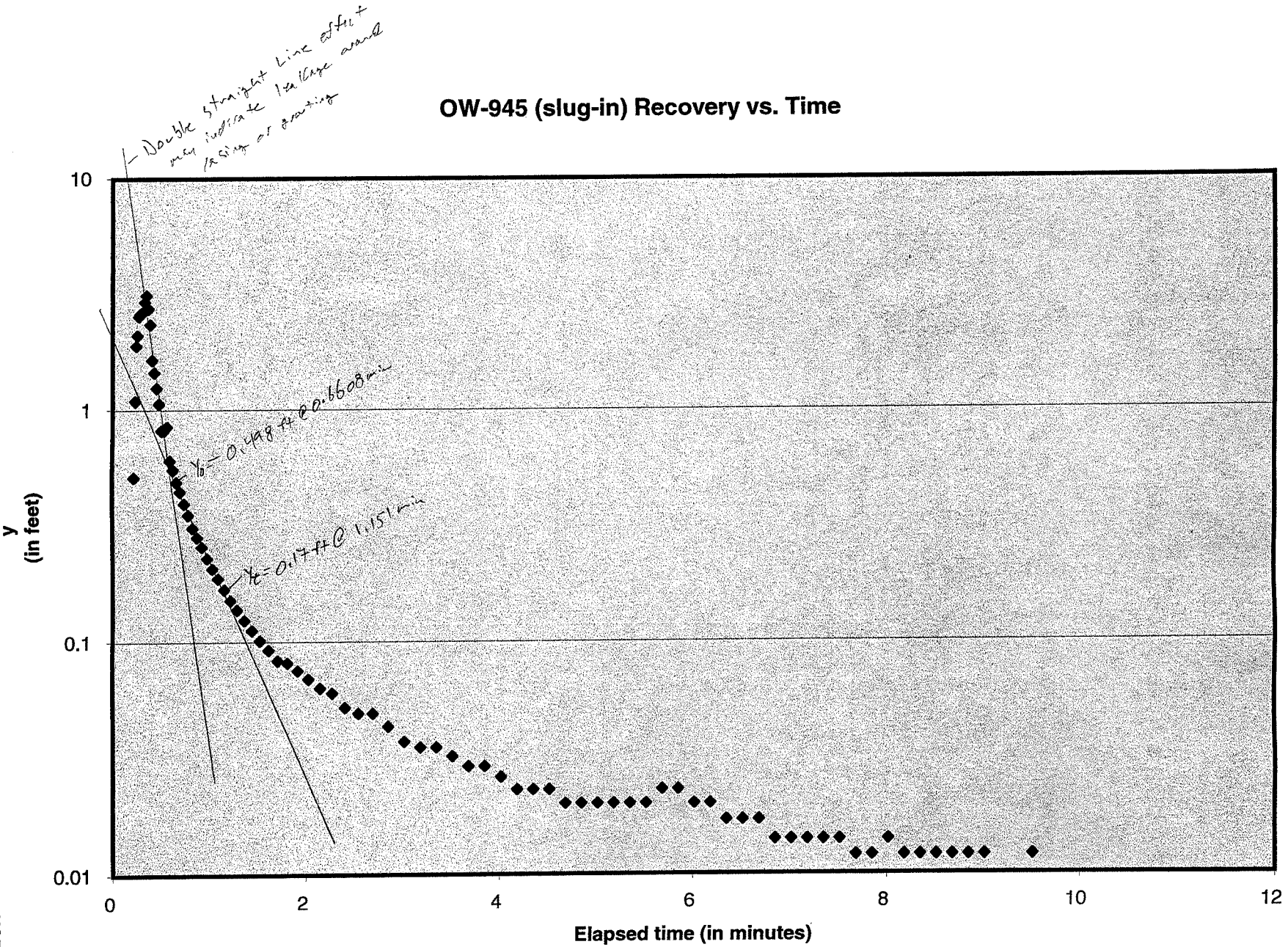
Coefficients Table

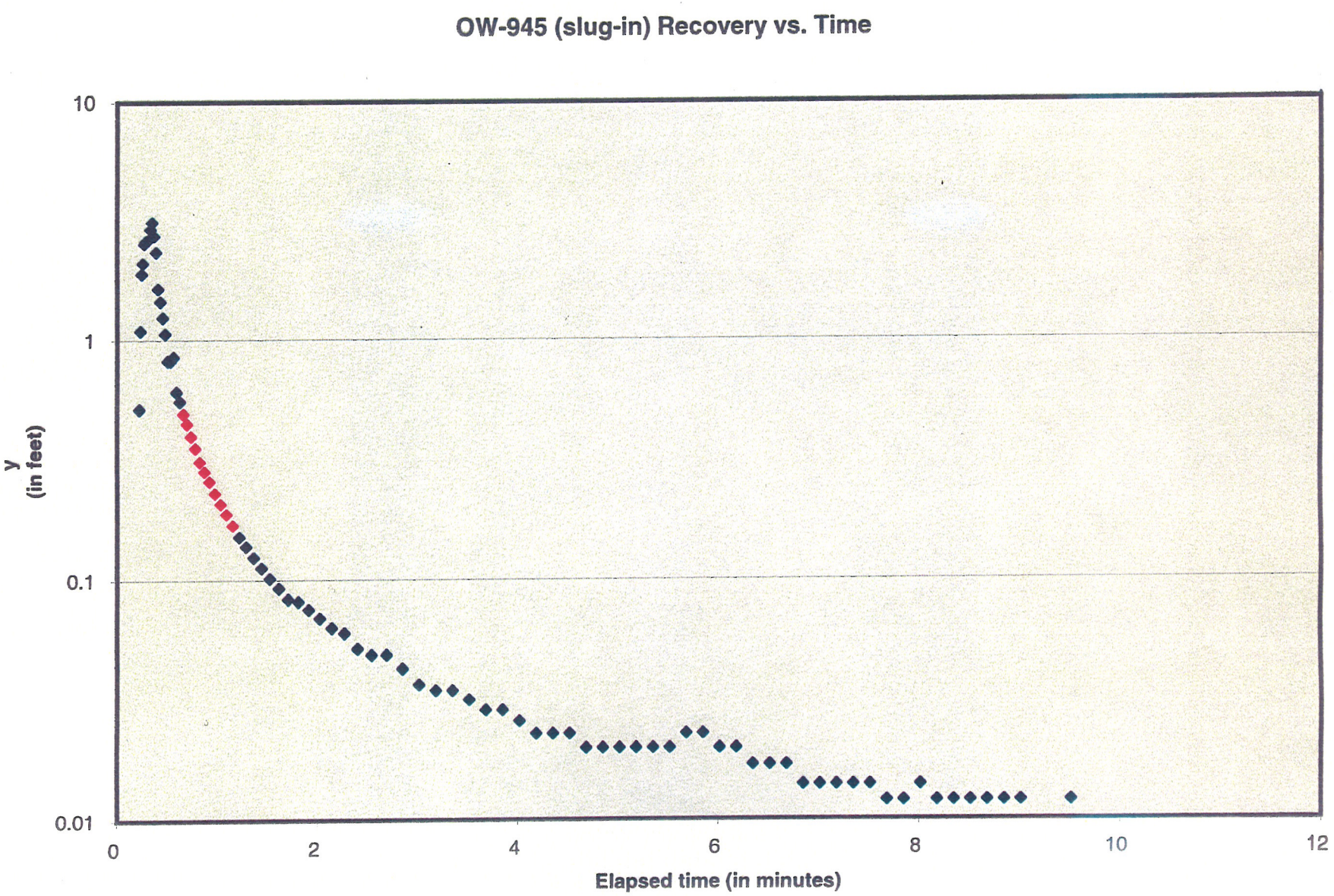
Le/rw	A	Le/rw	B	Le/rw	C
4	1.75	4	0.25	4	0.75
5	1.76	5	0.25	5	0.85
6	1.77	6	0.25	6	0.90
7	1.80	7	0.25	7	1.00
8	1.83	8	0.25	8	1.10
9	1.90	9	0.25	9	1.20
10	1.95	10	0.25	10	1.30
15	2.10	15	0.27	15	1.50
20	2.23	20	0.29	20	1.75
25	2.40	25	0.31	25	1.90
30	2.50	30	0.35	30	2.10
40	2.75	40	0.45	40	2.45
50	3.00	50	0.50	50	2.70
60	3.45	60	0.52	60	3.00
70	3.70	70	0.60	70	3.40
80	3.90	80	0.65	80	3.60
90	4.20	90	0.70	90	3.85
100	4.50	100	0.75	100	4.20
150	5.45	150	0.98	150	5.70
200	6.10	200	1.20	200	7.00
250	6.70	250	1.30	250	8.00
300	7.10	300	1.50	300	8.80
400	7.75	400	1.90	400	9.90
500	8.20	500	2.20	500	10.60
600	8.50	600	2.33	600	11.10
700	8.70	700	2.50	700	11.50
800	8.90	800	2.70	800	11.80
900	9.00	900	2.75	900	12.00
1000	9.20	1000	2.83	1000	12.40
1500	9.50	1500	3.18	1500	12.90

Reference: Bouwer(1989), Bouwer and Rice(1976)

TEST DATA

	Elapsed time (min)	Log y	y (ft)	WL (ft BTOC)
	0	#NUM!	0	12.40
	0.011	#NUM!	0	12.40
	0.022	#NUM!	0	12.40
	0.033	#NUM!	0	12.40
	0.044	#NUM!	0	12.40
	0.055	#NUM!	0	12.40
	0.066	#NUM!	0	12.40
	0.077	-2.52	0.003	12.40
	0.088	-2.52	0.003	12.40
	0.099	-2.52	0.003	12.40
	0.11	-2.05	0.009	12.39
	0.121	-2.22	0.006	12.39
	0.132	#NUM!	0	12.40
	0.143	-2.52	0.003	12.40
	0.154	-2.52	0.003	12.40
	0.165	-2.22	0.006	12.39
	0.176	-2.52	0.003	12.40
	0.187	-2.52	0.003	12.40
	0.198	-2.22	0.006	12.39
	0.209	-2.52	0.003	12.40
	0.22	-0.28	0.521	11.88
	0.231	0.04	1.09	11.31
	0.2427	0.28	1.884	10.52
	0.2552	0.32	2.091	10.31
	0.2683	0.40	2.531	9.87
	0.2823	0.41	2.592	9.81
	0.2972	0.42	2.626	9.77
	0.3128	0.42	2.649	9.75
	0.3295	0.47	2.923	9.48
	0.3472	0.50	3.127	9.27
	0.3658	0.44	2.733	9.67
	0.3857	0.37	2.333	10.07
	0.4067	0.21	1.634	10.77
	0.4288	0.16	1.444	10.96
	0.4523	0.09	1.24	11.16
	0.4772	0.03	1.061	11.34
	0.5035	-0.09	0.82	11.58
	0.5315	-0.09	0.82	11.58
	0.5612	-0.07	0.849	11.55
	0.5925	-0.21	0.613	11.79
	0.6257	-0.25	0.561	11.84
Test initialization	0.6608	-0.30	0.498	11.90
	0.6982	-0.34	0.454	11.95
	0.7377	-0.39	0.403	12.00
	0.7795	-0.44	0.36	12.04
90% recovery	0.8238	-0.50	0.316	12.08
	0.8708	-0.54	0.288	12.11
	0.9207	-0.58	0.262	12.14
	0.9733	-0.63	0.233	12.17
	1.0292	-0.68	0.21	12.19
	1.0883	-0.72	0.19	12.21
Test completion	1.151	-0.77	0.17	12.23
	1.2173	-0.82	0.152	12.25
	1.2877	-0.86	0.138	12.26
	1.3622	-0.91	0.124	12.28
	1.4412	-0.95	0.112	12.29
	1.5248	-1.00	0.101	12.30
	1.6133	-1.04	0.092	12.31
	1.7072	-1.08	0.083	12.32
	1.8065	-1.09	0.081	12.32
	1.9118	-1.12	0.075	12.33
	2.0233	-1.16	0.069	12.33
	2.1415	-1.20	0.063	12.34
	2.2667	-1.22	0.06	12.34
	2.3992	-1.28	0.052	12.35
	2.5397	-1.31	0.049	12.35
	2.6885	-1.31	0.049	12.35
	2.846	-1.37	0.043	12.36
	3.0127	-1.43	0.037	12.36
	3.1793	-1.46	0.035	12.37
	3.346	-1.46	0.035	12.37
	3.5127	-1.49	0.032	12.37
	3.6793	-1.54	0.029	12.37
	3.846	-1.54	0.029	12.37
	4.0127	-1.59	0.026	12.37
	4.1793	-1.64	0.023	12.38
	4.346	-1.64	0.023	12.38
	4.5127	-1.64	0.023	12.38
	4.6793	-1.70	0.02	12.38
	4.846	-1.70	0.02	12.38


OW-945 (slug-in) Recovery vs. Time
Double straight line effect may indicate leakage around casing or grouting
y = 0.148 ft @ 0.6608 min
y = 0.17 ft @ 1.151 min
y (in feet)
10
1
0.1
0.01
0
2
4
6
8
10
12
Elapsed time (in minutes)



NORTH ANNA COL
DATA REPORT REV 0
1/23/07
MACTEC E&C

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MACTEC Engineering and Consulting
3301 Atlantic Avenue
Raleigh, North Carolina

Slug Test Data Sheet

MACTEC Job Name:	North Anna COL	**MACTEC Job Number:**	6468-06-1472
Date:	11-13-06 **Time:** 1313	**Observation Well No.:**	OW945IN
Weather Conditions:	Cloudy Approx 50 °F		
Method of Slug Withdrawl (circle one):	water, (mechanical) or pressure	**Test Method:**	**Rising Head** or (**Falling Head**) (circle)
Diameter of Screen:	2 in.	**Diameter of Casing:**	2 in.
Total Well Depth:	54.5 ft below reference point	**Reference Point:**	Permanent mark on top of casing
Length of Screened Section:	10 ft	**Depth interval of screened portion:**	41.5-51.5 ft
Depth to Groundwater:	12.40 ft below reference point		

Groundwater Measurements Collected Prior to Slug Test

Depth to Groundwater	Date
12.43 (pre-development)	11-9-06
12.40 (post-development)	11-13-06

Comments/Remarks

USED Transducer SN D00513
Hermit 3000
Set Transducer 30' below TOC. Transducer read H2O Colum. 17.615 VS. 17.6
Inserted Slug @ 1313 Hermit read 3.127 feet displacement
Stopped Test @ 0.012. 99% recovery

In-Situ Inc. Hermit 3000

Report generated: 12/11/06 17:38:59
Report from file: P:\6468\2006 Projects\1472 North Anna COL\Slug Test Data\Raw data logger fil
DataMgr Version 3.71

ial number: 00045369
mware Version 7.08
Unit name: HERMIT 3000

Test name: OW945IN

Test defined on: 11/13/06 14:11:47
Test started on: 11/13/06 14:15:04
Test stopped on: 11/13/06 14:25:12
Test extracted on: 11/13/06 18:01:06

Data gathered using Logarithmic testing
Maximum time between data points: 0.1667 Minutes.
Number of data samples: 111

TOTAL DATA SAMPLES 111

Channel number [1]
Measurement type: Pressure
Channel name: D00513
Linearity: 0.0212000
Scale: 19.9368000
Offset: 0.1304000
Warmup: 50
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Feet H2O
eferenced on: test start
ressure head at reference: 17.628 Feet H2O

Channel number [0]
Measurement type: Barometric Pressure
Channel name: Barometric
Linearity: 0.0000000
Scale: 0.0000000
Offset: 0.0000000
Warmup: 50

Date	Time	ET (min)	Chan[1] Feet H2O	Chan[0] Inches Hg
11/13/06	14:15:04	0.0000	0.000	29.756
11/13/06	14:15:04	0.0110	0.000	29.758
11/13/06	14:15:05	0.0220	0.000	29.754
11/13/06	14:15:05	0.0330	0.000	29.754
11/13/06	14:15:06	0.0440	0.000	29.754
11/13/06	14:15:07	0.0550	0.000	29.756
11/13/06	14:15:07	0.0660	0.000	29.754
11/13/06	14:15:08	0.0770	0.003	29.756
11/13/06	14:15:09	0.0880	0.003	29.754
11/13/06	14:15:09	0.0990	0.003	29.756
11/13/06	14:15:10	0.1100	0.009	29.756
11/13/06	14:15:11	0.1210	0.006	29.756
11/13/06	14:15:11	0.1320	0.000	29.756
'13/06	14:15:12	0.1430	0.003	29.752
13/06	14:15:13	0.1540	0.003	29.754
11/13/06	14:15:13	0.1650	0.006	29.752
11/13/06	14:15:14	0.1760	0.003	29.756
11/13/06	14:15:15	0.1870	0.003	29.754
11/13/06	14:15:15	0.1980	0.006	29.752
11/13/06	14:15:16	0.2090	0.003	29.752
11/13/06	14:15:17	0.2200	-0.521	29.752

11/13/06	14:15:17	0.2310	-1.090	29.756
11/13/06	14:15:18	0.2427	-1.884	29.756
11/13/06	14:15:19	0.2552	-2.091	29.754
11/13/06	14:15:20	0.2683	-2.531	29.756
11/13/06	14:15:20	0.2823	-2.592	29.754
11/13/06	14:15:21	0.2972	-2.626	29.754
13/06	14:15:22	0.3128	-2.649	29.754
13/06	14:15:23	0.3295	-2.923	29.754
11/13/06	14:15:24	0.3472	-3.127	29.756
11/13/06	14:15:25	0.3658	-2.733	29.752
11/13/06	14:15:27	0.3857	-2.333	29.752
11/13/06	14:15:28	0.4067	-1.634	29.756
11/13/06	14:15:29	0.4288	-1.444	29.752
11/13/06	14:15:31	0.4523	-1.240	29.750
11/13/06	14:15:32	0.4772	-1.061	29.752
11/13/06	14:15:34	0.5035	-0.820	29.754
11/13/06	14:15:35	0.5315	-0.820	29.758
11/13/06	14:15:37	0.5612	-0.849	29.758
11/13/06	14:15:39	0.5925	-0.613	29.754
11/13/06	14:15:41	0.6257	-0.561	29.754
11/13/06	14:15:43	0.6608	-0.498	29.754
11/13/06	14:15:45	0.6982	-0.454	29.754
11/13/06	14:15:48	0.7377	-0.403	29.754
11/13/06	14:15:50	0.7795	-0.360	29.754
11/13/06	14:15:53	0.8238	-0.316	29.752
11/13/06	14:15:56	0.8708	-0.288	29.754
11/13/06	14:15:59	0.9207	-0.262	29.758
11/13/06	14:16:02	0.9733	-0.233	29.756
11/13/06	14:16:05	1.0292	-0.210	29.754
11/13/06	14:16:09	1.0883	-0.190	29.756
11/13/06	14:16:13	1.1510	-0.170	29.756
11/13/06	14:16:17	1.2173	-0.152	29.754
11/13/06	14:16:21	1.2877	-0.138	29.758
11/13/06	14:16:25	1.3622	-0.124	29.756
13/06	14:16:30	1.4412	-0.112	29.756
13/06	14:16:35	1.5248	-0.101	29.754
11/13/06	14:16:40	1.6133	-0.092	29.752
11/13/06	14:16:46	1.7072	-0.083	29.752
11/13/06	14:16:52	1.8065	-0.081	29.756
11/13/06	14:16:58	1.9118	-0.075	29.752
11/13/06	14:17:05	2.0233	-0.069	29.752
11/13/06	14:17:12	2.1415	-0.063	29.752
11/13/06	14:17:20	2.2667	-0.060	29.752
11/13/06	14:17:27	2.3992	-0.052	29.748
11/13/06	14:17:36	2.5397	-0.049	29.748
11/13/06	14:17:45	2.6885	-0.049	29.750
11/13/06	14:17:54	2.8460	-0.043	29.752
11/13/06	14:18:04	3.0127	-0.037	29.748
11/13/06	14:18:14	3.1793	-0.035	29.750
11/13/06	14:18:24	3.3460	-0.035	29.750
11/13/06	14:18:34	3.5127	-0.032	29.754
11/13/06	14:18:44	3.6793	-0.029	29.748
11/13/06	14:18:54	3.8460	-0.029	29.750
11/13/06	14:19:04	4.0127	-0.026	29.748
11/13/06	14:19:14	4.1793	-0.023	29.752
11/13/06	14:19:24	4.3460	-0.023	29.748
11/13/06	14:19:34	4.5127	-0.023	29.744
11/13/06	14:19:44	4.6793	-0.020	29.750
11/13/06	14:19:54	4.8460	-0.020	29.748
11/13/06	14:20:04	5.0127	-0.020	29.748
11/13/06	14:20:14	5.1793	-0.020	29.748
11/13/06	14:20:24	5.3460	-0.020	29.707
13/06	14:20:34	5.5127	-0.020	29.701
13/06	14:20:44	5.6793	-0.023	29.693
11/13/06	14:20:54	5.8460	-0.023	29.697
11/13/06	14:21:04	6.0127	-0.020	29.693
11/13/06	14:21:14	6.1793	-0.020	29.693
11/13/06	14:21:24	6.3460	-0.017	29.693
11/13/06	14:21:34	6.5127	-0.017	29.689
11/13/06	14:21:44	6.6793	-0.017	29.689

11/13/06	14:21:54	6.8460	-0.014	29.707
11/13/06	14:22:04	7.0127	-0.014	29.726
11/13/06	14:22:14	7.1793	-0.014	29.728
11/13/06	14:22:24	7.3460	-0.014	29.730
11/13/06	14:22:34	7.5127	-0.014	29.730
11/13/06	14:22:44	7.6793	-0.012	29.734
13/06	14:22:54	7.8460	-0.012	29.734
13/06	14:23:04	8.0127	-0.014	29.738
11/13/06	14:23:14	8.1793	-0.012	29.736
11/13/06	14:23:24	8.3460	-0.012	29.736
11/13/06	14:23:34	8.5127	-0.012	29.736
11/13/06	14:23:44	8.6793	-0.012	29.736
11/13/06	14:23:54	8.8460	-0.012	29.734
11/13/06	14:24:04	9.0127	-0.012	29.738
11/13/06	14:24:14	9.1793	-0.009	29.738
11/13/06	14:24:24	9.3460	-0.009	29.740
11/13/06	14:24:34	9.5127	-0.012	29.740
11/13/06	14:24:44	9.6793	-0.009	29.738
11/13/06	14:24:54	9.8460	-0.009	29.740
11/13/06	14:25:04	10.0127	-0.009	29.740

OW945 IN PAGE 3 OF 3

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North Anna COL Project
Hydraulic Conductivity (K) Calculation Worksheet
MACTEC Job Number: 6468-06-1472

Well: OW-945
Test Date: 11/13/2006
Test Type: Recovery (slug in)
Test Name: OW-945-in2

Conducted by: Grimes and Charles-Smith
Entered/date: WSB 11-7-06
Checked/date: JCP by [signature] with permission 12/12/06

TEST DATA

WELL DATA

SWL =	12.37	(ft BTOC)
WD =	56.50	(ft BTOC)
WD =	54.50	(ft BGS)
DTSP =	37.33	(ft BGS)
rc =	0.08	(ft)
n =	0.30	
rw =	0.35	(ft)
rc (adjusted) =	0.08	(ft)
Le =	10	(ft)
Lw =	41.13	(ft)
Le/rw =	28.57	
H =	49.13	(ft)

H is depth from SWL to top of bedrock as listed on boring logs

CALCULATION OF K

K = [(rc^2 ln(Re/rw))/2Le]*(1/t)ln(yo/yt)

yo =	0.92	(ft) from plot
yt =	0.27	(ft) from plot
t =	0.49	(minutes) from plot
ln(Re/rw) =	2.86	
K =	3.3E+00	(ft/day)
K =	1.2E-03	(cm/sec)

Calculation of ln(Re/rw)

Where: Lw < H;

ln(Re/rw) = [(1.1/(ln(Lw/rw)))+(A+Bln((H-Lw)/rw))/(Le/rw)]^-1= 2.86

Where: Lw = H;

ln(Re/rw) = [(1.1/(ln(Lw/rw)))+(C/(Le/rw))]^-1 = 3.33

Calculation of Coefficients

Value range for Le/rw from Table of Coefficients

Le/rw	A	B	C
25	2.4	0.31	1.9
30	2.5	0.35	2.1

Interpolated values of A, B and C for Le/rw

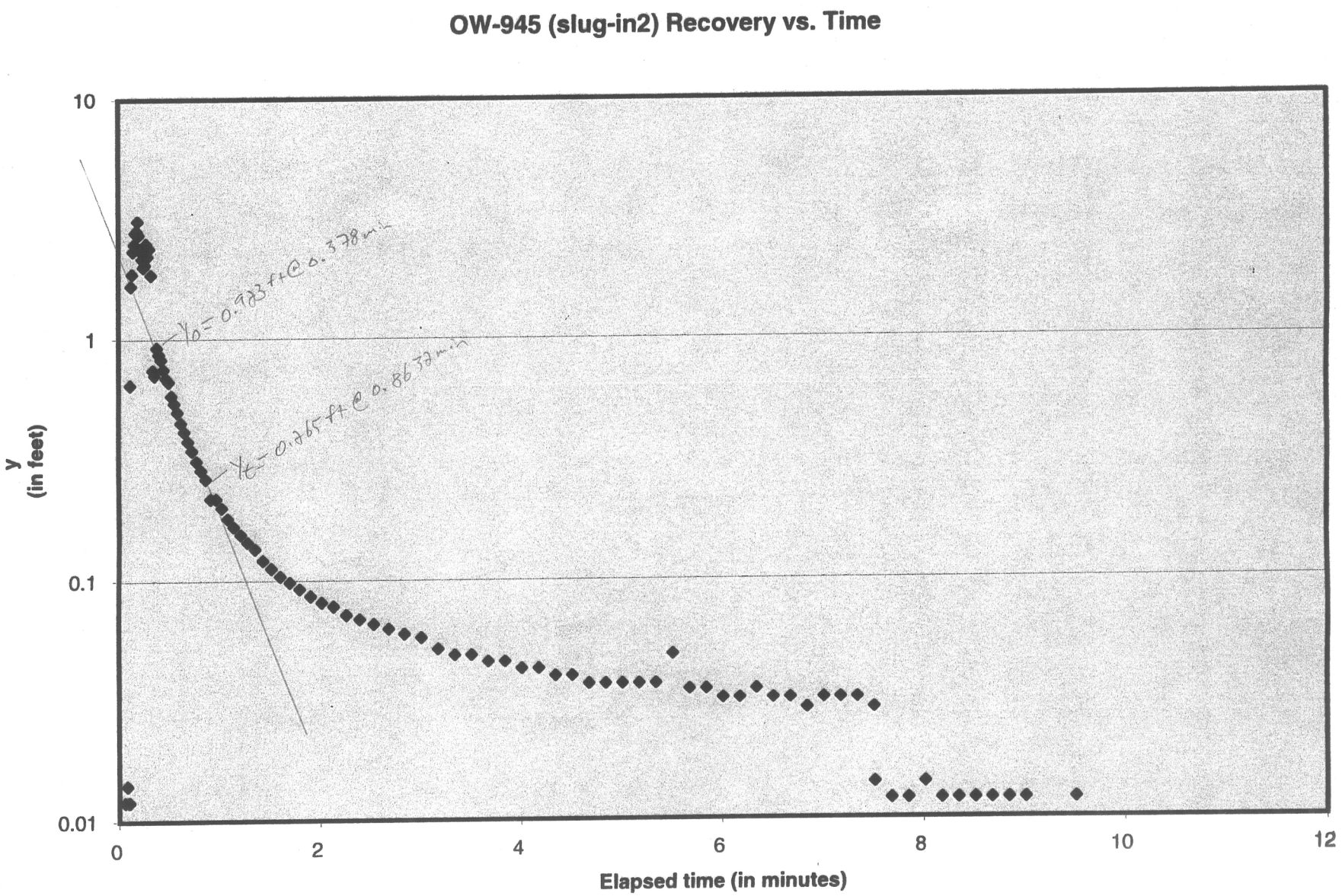
28.57	2.47	0.34	2.04

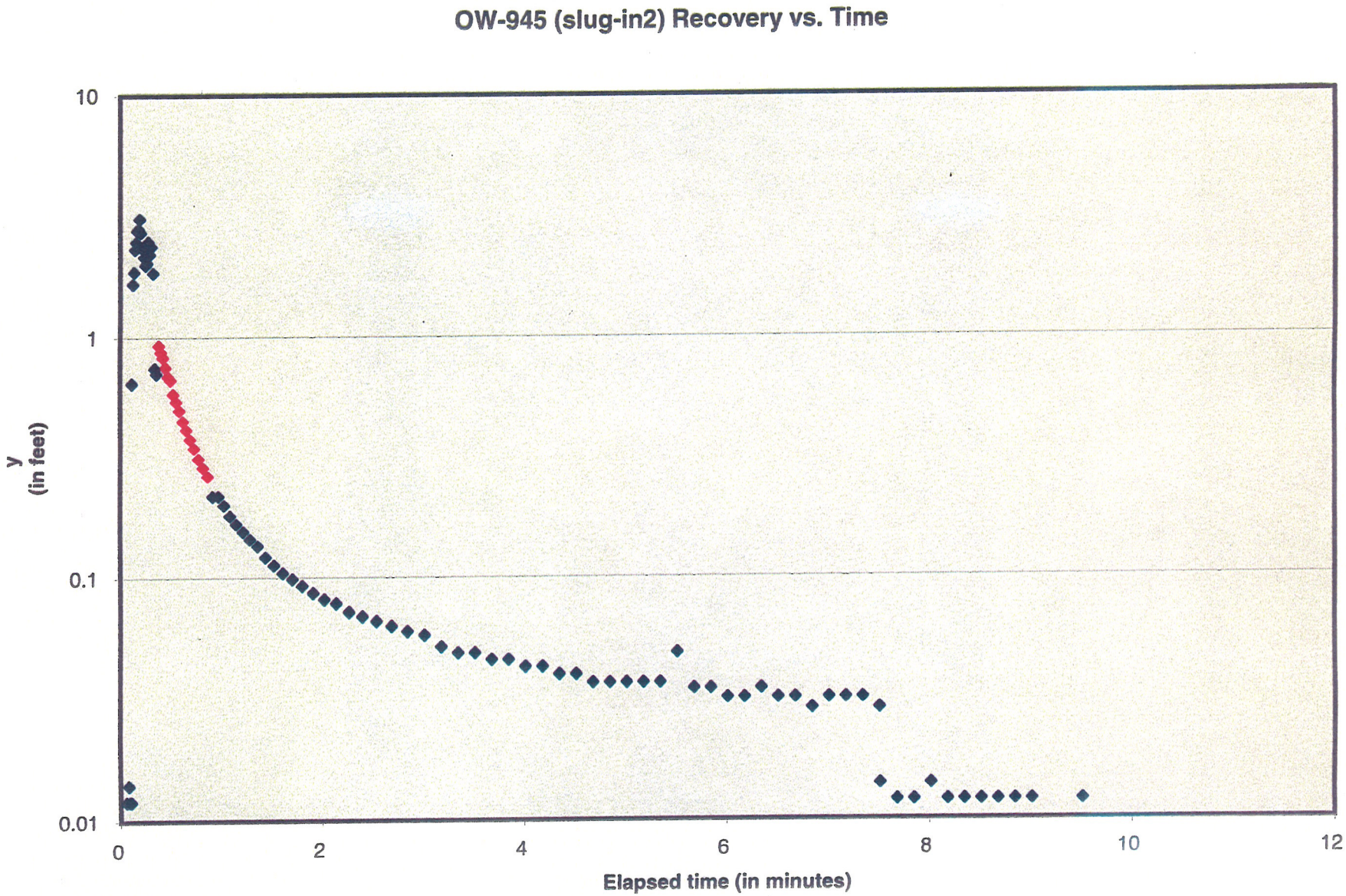
Coefficients Table

Le/rw	A	Le/rw	B	Le/rw	C
4	1.75	4	0.25	4	0.75
5	1.76	5	0.25	5	0.85
6	1.77	6	0.25	6	0.90
7	1.80	7	0.25	7	1.00
8	1.83	8	0.25	8	1.10
9	1.90	9	0.25	9	1.20
10	1.95	10	0.25	10	1.30
15	2.10	15	0.27	15	1.50
20	2.23	20	0.29	20	1.75
25	2.40	25	0.31	25	1.90
30	2.50	30	0.35	30	2.10
40	2.75	40	0.45	40	2.45
50	3.00	50	0.50	50	2.70
60	3.45	60	0.52	60	3.00
70	3.70	70	0.60	70	3.40
80	3.90	80	0.65	80	3.60
90	4.20	90	0.70	90	3.85
100	4.50	100	0.75	100	4.20
150	5.45	150	0.98	150	5.70
200	6.10	200	1.20	200	7.00
250	6.70	250	1.30	250	8.00
300	7.10	300	1.50	300	8.80
400	7.75	400	1.90	400	9.90
500	8.20	500	2.20	500	10.60
600	8.50	600	2.33	600	11.10
700	8.70	700	2.50	700	11.50
800	8.90	800	2.70	800	11.80
900	9.00	900	2.75	900	12.00
1000	9.20	1000	2.83	1000	12.40
1500	9.50	1500	3.18	1500	12.90

Reference: Bouwer(1989), Bouwer and Rice(1976)

	Elapsed time (min)	Log y	y (ft)	WL (ft BTOC)
	0	#NUM!	0	12.37
	0.0112	-2.05	0.009	12.36
	0.0223	-2.05	0.009	12.36
	0.0335	-2.05	0.009	12.36
	0.0447	-2.05	0.009	12.36
	0.0558	-1.92	0.012	12.36
	0.067	-2.05	0.009	12.36
	0.0782	-1.85	0.014	12.36
	0.0893	-1.92	0.012	12.36
	0.1005	-1.92	0.012	12.36
	0.1117	-0.19	0.65	11.72
	0.1228	0.22	1.651	10.72
	0.134	0.27	1.85	10.52
	0.1452	0.36	2.298	10.07
	0.1563	0.39	2.457	9.91
	0.1675	0.44	2.744	9.63
	0.1787	0.45	2.796	9.57
	0.1898	0.49	3.069	9.30
	0.201	0.43	2.693	9.68
	0.2122	0.37	2.353	10.02
	0.2233	0.36	2.301	10.07
	0.235	0.33	2.137	10.23
	0.2475	0.30	1.976	10.39
	0.2607	0.30	2.017	10.35
	0.2747	0.39	2.468	9.90
	0.2895	0.34	2.186	10.18
	0.3052	0.37	2.356	10.01
	0.3218	0.26	1.832	10.54
	0.3395	-0.13	0.748	11.62
	0.3582	-0.15	0.713	11.66
Test initialization	0.378	-0.03	0.923	11.45
	0.399	-0.06	0.869	11.50
	0.4212	-0.08	0.826	11.54
	0.4447	-0.12	0.754	11.62
	0.4695	-0.16	0.693	11.68
	0.4958	-0.17	0.67	11.70
	0.5238	-0.23	0.587	11.78
	0.5535	-0.26	0.547	11.82
	0.5848	-0.30	0.503	11.87
	0.618	-0.34	0.454	11.92
	0.6532	-0.38	0.417	11.95
	0.6905	-0.42	0.38	11.99
	0.73	-0.46	0.348	12.02
	0.7718	-0.50	0.314	12.06
90% recovery	0.8162	-0.54	0.288	12.08
Test completion	0.8632	-0.58	0.265	12.11
	0.913	-0.66	0.219	12.15
	0.9657	-0.66	0.219	12.15
	1.0215	-0.70	0.201	12.17
	1.0807	-0.74	0.181	12.19
	1.1433	-0.78	0.167	12.20
	1.2097	-0.81	0.155	12.22
	1.28	-0.84	0.144	12.23
	1.3545	-0.87	0.135	12.24
	1.4335	-0.92	0.121	12.25
	1.5172	-0.95	0.112	12.26
	1.6057	-0.98	0.104	12.27
	1.6995	-1.01	0.098	12.27
	1.7988	-1.04	0.092	12.28
	1.9042	-1.07	0.086	12.28
	2.0157	-1.09	0.081	12.29
	2.1338	-1.11	0.078	12.29
	2.259	-1.14	0.072	12.30
	2.3915	-1.16	0.069	12.30
	2.532	-1.18	0.066	12.30
	2.6808	-1.20	0.063	12.31
	2.8383	-1.22	0.06	12.31
	3.005	-1.24	0.058	12.31
	3.1717	-1.28	0.052	12.32
	3.3383	-1.31	0.049	12.32
	3.505	-1.31	0.049	12.32
	3.6717	-1.34	0.046	12.32
	3.8383	-1.34	0.046	12.32
	4.005	-1.37	0.043	12.33
	4.1717	-1.37	0.043	12.33
	4.3383	-1.40	0.04	12.33
	4.505	-1.40	0.04	12.33
	4.6717	-1.43	0.037	12.33
	4.8383	-1.43	0.037	12.33
	5.005	-1.43	0.037	12.33


OW-945 (slug-in2) Recovery vs. Time
y (in feet)
10
1
0.1
0.01
0
2
4
6
8
10
12
Elapsed time (in minutes)
y_0= 0.933 ft @ 0.378 min
y_t = 0.365 ft @ 0.8637 min


OW-945 (slug-in2) Recovery vs. Time
10
1
0.1
0.01
y
(in feet)
0
2
4
6
8
10
12
Elapsed time (in minutes)

MACTEC

MACTEC Engineering and Consulting
3301 Atlantic Avenue
Raleigh, North Carolina

Slug Test Data Sheet

MACTEC Job Name:	North Anna COL	**MACTEC Job Number:**	6468-06-1472
Date:	11-13-06 **Time:** 1420	**Observation Well No.:**	OW945IN2
Weather Conditions:	Cloudy Approx 40°F		
Method of Slug Withdrawl (circle one):	water, (mechanical), or pressure	**Test Method:**	**Rising Head** or (**Falling Head**) (circle)
Diameter of Screen:	2 in.	**Diameter of Casing:**	2 in.
Total Well Depth:	54.5 ft below reference point	**Reference Point:**	Permanent mark on top of casing
Length of Screened Section:	10 ft	**Depth interval of screened portion:**	41.5-51.5 ft
Depth to Groundwater:	12.37 ft below reference point		

Groundwater Measurements Collected Prior to Slug Test

Depth to Groundwater	Date
12.43	11-9-06
12.40	11-13-06
12.37	11-13-06
12.37	11-13-06

OW945IN
OW945OUT
OW945IN2

Comments/Remarks

USED Transducer SN00513
Hermit 3000
Set Transducer 30' below TOC
Transducer read 17.6008 vs. 17.63
Final Hermit readg = .032 = 98% recovery.

In-Situ Inc. Hermit 3000

Report generated: 12/11/06 17:39:22
Report from file: P:\6468\2006 Projects\1472 North Anna COL\Slug Test Data\Raw data logger fil
DataMgr Version 3.71

Serial number: 00045369
Firmware Version 7.08
Unit name: HERMIT 3000

Test name: OW945IN2 PAGE 1 OF 3

Test defined on: 11/13/06 15:19:50
Test started on: 11/13/06 15:23:02
Test stopped on: 11/13/06 15:30:35
Test extracted on: 11/13/06 18:02:07

Data gathered using Logarithmic testing
Maximum time between data points: 0.1667 Minutes.
Number of data samples: 95

TOTAL DATA SAMPLES 95

Channel number [1]
Measurement type: Pressure
Channel name: D00513
Linearity: 0.0212000
Scale: 19.9368000
Offset: 0.1304000
Warmup: 50
Specific gravity: 1.000
Mode: TOC
User-defined reference: 0.000 Feet H2O
Referenced on: test start
Pressure head at reference: 17.605 Feet H2O

Channel number [0]
Measurement type: Barometric Pressure
Channel name: Barometric
Linearity: 0.0000000
Scale: 0.0000000
Offset: 0.0000000
Warmup: 50

Date	Time	ET (min)	Chan[1] Feet H2O	Chan[0] Inches Hg
11/13/06	15:23:02	0.0000	0.000	29.746
11/13/06	15:23:02	0.0112	-0.009	29.746
11/13/06	15:23:03	0.0223	-0.009	29.744
11/13/06	15:23:04	0.0335	-0.009	29.742
11/13/06	15:23:04	0.0447	-0.009	29.742
11/13/06	15:23:05	0.0558	-0.012	29.746
11/13/06	15:23:06	0.0670	-0.009	29.744
11/13/06	15:23:06	0.0782	-0.014	29.746
11/13/06	15:23:07	0.0893	-0.012	29.746
11/13/06	15:23:08	0.1005	-0.012	29.744
11/13/06	15:23:08	0.1117	-0.650	29.744
11/13/06	15:23:09	0.1228	-1.651	29.744
11/13/06	15:23:10	0.1340	-1.850	29.746
11/13/06	15:23:10	0.1452	-2.298	29.746
11/13/06	15:23:11	0.1563	-2.457	29.746
11/13/06	15:23:12	0.1675	-2.744	29.746
11/13/06	15:23:12	0.1787	-2.796	29.744
11/13/06	15:23:13	0.1898	-3.069	29.746
11/13/06	15:23:14	0.2010	-2.693	29.744
11/13/06	15:23:14	0.2122	-2.353	29.744
11/13/06	15:23:15	0.2233	-2.301	29.746

11/13/06	15:23:16	0.2350	-2.137	29.744
11/13/06	15:23:16	0.2475	-1.976	29.744
11/13/06	15:23:17	0.2607	-2.017	29.744
11/13/06	15:23:18	0.2747	-2.468	29.744
11/13/06	15:23:19	0.2895	-2.186	29.744
11/13/06	15:23:20	0.3052	-2.356	29.746
[illegible]13/06	15:23:21	0.3218	-1.832	29.744
[illegible]3/06	15:23:22	0.3395	-0.748	29.744
11/13/06	15:23:23	0.3582	-0.713	29.744
11/13/06	15:23:24	0.3780	-0.923	29.746
11/13/06	15:23:25	0.3990	-0.869	29.742
11/13/06	15:23:27	0.4212	-0.826	29.740
11/13/06	15:23:28	0.4447	-0.754	29.744
11/13/06	15:23:30	0.4695	-0.693	29.744
11/13/06	15:23:31	0.4958	-0.670	29.744
11/13/06	15:23:33	0.5238	-0.587	29.746
11/13/06	15:23:35	0.5535	-0.547	29.746
11/13/06	15:23:37	0.5848	-0.503	29.744
11/13/06	15:23:39	0.6180	-0.454	29.744
11/13/06	15:23:41	0.6532	-0.417	29.746
11/13/06	15:23:43	0.6905	-0.380	29.744
11/13/06	15:23:45	0.7300	-0.348	29.742
11/13/06	15:23:48	0.7718	-0.314	29.744
11/13/06	15:23:50	0.8162	-0.288	29.746
11/13/06	15:23:53	0.8632	-0.265	29.744
11/13/06	15:23:56	0.9130	-0.219	29.744
11/13/06	15:23:59	0.9657	-0.219	29.742
11/13/06	15:24:03	1.0215	-0.201	29.746
11/13/06	15:24:06	1.0807	-0.181	29.744
11/13/06	15:24:10	1.1433	-0.167	29.746
11/13/06	15:24:14	1.2097	-0.155	29.744
11/13/06	15:24:18	1.2800	-0.144	29.744
11/13/06	15:24:23	1.3545	-0.135	29.744
11/13/06	15:24:28	1.4335	-0.121	29.746
[illegible]'13/06	15:24:33	1.5172	-0.112	29.738
[illegible]13/06	15:24:38	1.6057	-0.104	29.744
11/13/06	15:24:43	1.6995	-0.098	29.742
11/13/06	15:24:49	1.7988	-0.092	29.740
11/13/06	15:24:56	1.9042	-0.086	29.742
11/13/06	15:25:02	2.0157	-0.081	29.742
11/13/06	15:25:10	2.1338	-0.078	29.740
11/13/06	15:25:17	2.2590	-0.072	29.744
11/13/06	15:25:25	2.3915	-0.069	29.742
11/13/06	15:25:33	2.5320	-0.066	29.740
11/13/06	15:25:42	2.6808	-0.063	29.744
11/13/06	15:25:52	2.8383	-0.060	29.742
11/13/06	15:26:02	3.0050	-0.058	29.740
11/13/06	15:26:12	3.1717	-0.052	29.742
11/13/06	15:26:22	3.3383	-0.049	29.742
11/13/06	15:26:32	3.5050	-0.049	29.742
11/13/06	15:26:42	3.6717	-0.046	29.742
11/13/06	15:26:52	3.8383	-0.046	29.740
11/13/06	15:27:02	4.0050	-0.043	29.742
11/13/06	15:27:12	4.1717	-0.043	29.740
11/13/06	15:27:22	4.3383	-0.040	29.742
11/13/06	15:27:32	4.5050	-0.040	29.742
11/13/06	15:27:42	4.6717	-0.037	29.740
11/13/06	15:27:52	4.8383	-0.037	29.738
11/13/06	15:28:02	5.0050	-0.037	29.740
11/13/06	15:28:12	5.1717	-0.037	29.738
11/13/06	15:28:22	5.3383	-0.037	29.738
11/13/06	15:28:32	5.5050	-0.049	29.740
[illegible]'/13/06	15:28:42	5.6717	-0.035	29.740
[illegible]13/06	15:28:52	5.8383	-0.035	29.738
[illegible]/13/06	15:29:02	6.0050	-0.032	29.738
11/13/06	15:29:12	6.1717	-0.032	29.740
11/13/06	15:29:22	6.3383	-0.035	29.740
11/13/06	15:29:32	6.5050	-0.032	29.736
11/13/06	15:29:42	6.6717	-0.032	29.738
11/13/06	15:29:52	6.8383	-0.029	29.736

ON 945 IN 2 PAGE 2 OF 3

11/13/06	15:30:02	7.0050	-0.032	29.740
11/13/06	15:30:12	7.1717	-0.032	29.738
11/13/06	15:30:22	7.3383	-0.032	29.738
11/13/06	15:30:32	7.5050	-0.029	29.734

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