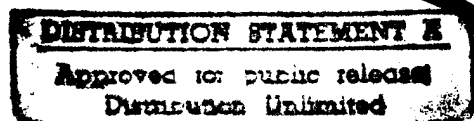

INSTALLATION RESTORATION PROGRAM

FINAL

SITE CHARACTERIZATION REPORT
VOLUME II
(Appendices A - F)

147TH FIGHTER INTERCEPTOR GROUP
TEXAS AIR NATIONAL GUARD
ELLINGTON FIELD
HOUSTON, TEXAS

MAY 1995



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HAZWRAP SUPPORT CONTRACTOR OFFICE
Oak Ridge, Tennessee 37831
Operated by MARTIN MARIETTA ENERGY SYSTEM, INC.
For the U.S. DEPARTMENT OF ENERGY under contract DE-AC05-84OR21400

19960508 191

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1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE May 1995		3. REPORT TYPE AND DATES COVERED Final Site Characterization Report
4. TITLE AND SUBTITLE Installation Restoration Program Site Characterization Report Vol. II 147th Fighter Interceptor Group Ellington Field, Houston, Texas			5. FUNDING NUMBERS 92-30-168	
6. AUTHOR(S) N/A				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Halliburton NUS Corporation Post Office Box 4574 Houston, TX 77210-4574			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) Hazardous Waste Remedial Actions Program Martin Marietta Energy Systems, Inc. Oak Ridge, TN 37831			10. SPONSORING/MONITORING AGENCY REPORT NUMBER RG-07-315-0432	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION / AVAILABILITY STATEMENT Approved for public release; distribution is unlimited			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) Site Characterization Report, Volume II A Site Characterization was performed at one site at the 147th Fighter Interceptor Group. The site was the Base Petroleum, Oils, and Lubricants Storage Area. All contamination identified at the site was below the Texas Natural Resource Conservation Commission action limits. The report recommended that the risk assessment performed as part of the Site Investigation be up-dated with the additional information from this report. If the risk assessment show that no significant risks to human health exist then performed no further action for the site is recommended. Volume II of this report consist of the following Appendices: Field GC Data (A), Soil Boring Logs/Well Construction Diagrams (B), Soil Sample Log Sheets/Groundwater Sample Log Sheets (C), Monitoring Well Development Forms (D), Chain of Custody Forms (E), and Aquifer Test Data (F)				
14. SUBJECT TERMS Installation Restoration Program, Air National Guard, Site Characterization, Houston, Texas			15. NUMBER OF PAGES Approx 400	
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G - Grant	TA - Task
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FINAL

**INSTALLATION RESTORATION PROGRAM
SITE CHARACTERIZATION REPORT**

**VOLUME II
APPENDICES A - F**

**147TH FIGHTER INTERCEPTOR GROUP
TEXAS AIR NATIONAL GUARD
ELLINGTON FIELD
HOUSTON, TEXAS**

**PREPARED BY
HALLIBURTON NUS CORPORATION
PROJECT NUMBER 1K94**

MAY 1995

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Appendix A
Field GC Data

BTEX FIELD GC ANALYTICAL METHOD

Using a Photovac 10S Plus portable GC set up as shown in figure 1-1. A headspace sampling device was constructed using a 145 cc septum bottle with two 1/8 inch teflon tubing mounted through the septum to form a leak free connection. One of the tubing was connected to the (SAMPLE IN) port of the GC and the other was connected to the (PUMP OUT) port. 50 grams of soil or 40 ml of liquid sample is place in the septum bottle and the cap with the teflon lines attached is sealed on the bottle. The bottle is place in a sonic bath with the water maintained at 28 Deg. C. The run cycle is started on the GC and the sample pump pumps the air in though the 1ml sample loop and returns it to the bottle for 2 minutes. At the end of the 2 minutes the sample is injected into the GC column. The GC was calibrated daily with 1.0 PPM Benzene, 1.0 PPM Toluene, 1.0 PPM Ethylbenzene and 1.0 PPM O-Xylene (BETX) gas standard in nitrogen balance. A soil actual calibration standard was prepared by injecting a known amount of a BETX liquid standard on to 50 grams of clean soil then sealing it in a 145 cc septum bottle. A liquid actual calibration standard was prepared by injecting a known amount of a BETX liquid standard in to 40 mL of water then sealing it in a 40 mL septum bottle. Using the calibration standard a ratio is made between headspace concentration and the actual soil or liquid concentration. Using this ratio the actual concentration is calculated from the headspace concentration the GC prints out.

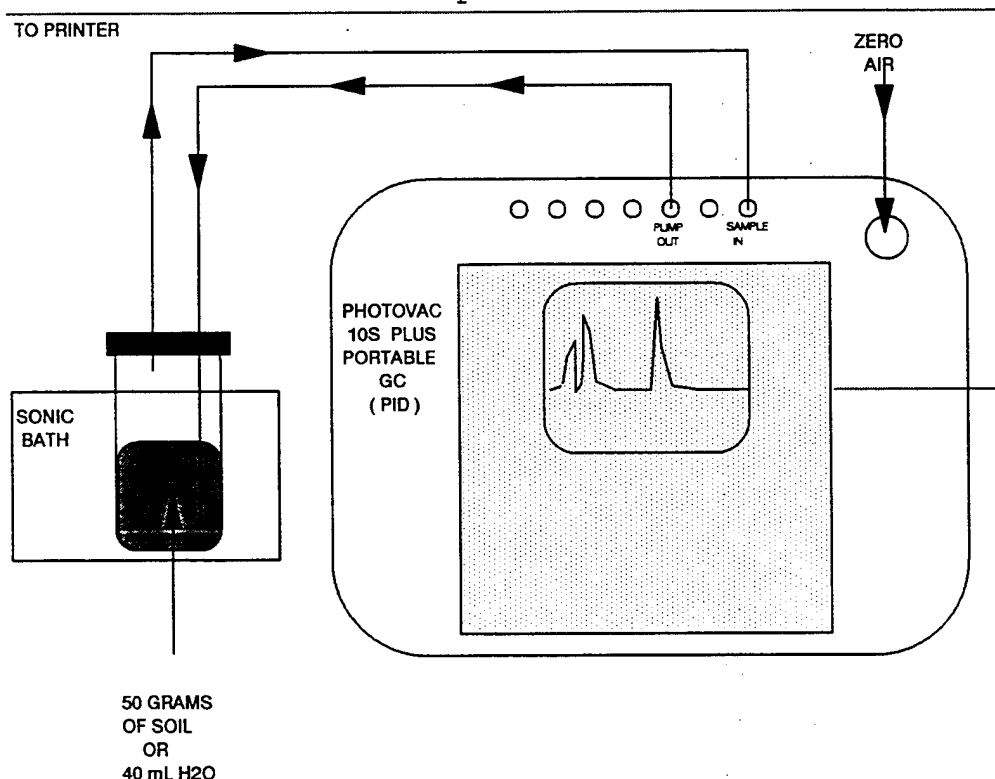


FIGURE 1-1

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.25 ug/ml	BENZENE,	2.86 PPM	0.0874
0.25 ug/ml	TOLUENE,	3.25 PPM	0.0769
0.25 ug/ml	ETHYLBENZENE,	2.55 PPM	0.0980
0.50 ug/ml	M&P-XYLENE	7.00 PPM	0.0714
0.25 ug/ml	O-XYLENE	3.71 PPM	0.0674
SOIL STANDARD			
0.01 ug/g	BENZENE,	0.597 PPM	0.0168
0.01 ug/g	TOLUENE,	7.190 PPM	0.0014
0.01 ug/g	ETHYLBENZENE,	0.429 PPM	0.0233
0.02 ug/g	M&P-XYLENE	1.110 PPM	0.0180
0.01 ug/g	O-XYLENE	1.060 PPM	0.0094

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 16 DEPTH 4 TO 6 ft TYPE SOIL SAMPLE		BENZENE	0.082	1.4 ug/kg
		TOLUENE	16	22.3 ug/kg
		ETHYLBENZENE	4.44	103.5 ug/kg
		M&P-XYLENE	1.45	26.1 ug/kg
		O-XYLENE	1.84	17.4 ug/kg
BORING # 16 DEPTH 8 TO 10 ft TYPE SOIL SAMPLE		BENZENE	27.74	464.7 ug/kg
		TOLUENE	332.9	463.0 ug/kg
		ETHYLBENZENE	77.97	1817.5 ug/kg
		M&P-XYLENE	25.14	453.0 ug/kg
		O-XYLENE	114.8	1083.0 ug/kg
BORING # 16 DEPTH 20 TO 22 FT TYPE SOIL SAMPLE		BENZENE	0.052	0.9 ug/kg
		TOLUENE	3.49	4.9 ug/kg
		ETHYLBENZENE	0.624	14.5 ug/kg
		M&P-XYLENE	0.253	4.6 ug/kg
		O-XYLENE	1.528	14.4 ug/kg
BORING # 16 DEPTH TYPE WATER SAMPLE		BENZENE	0.447	39.1 ug/L
		TOLUENE	5.153	396.4 ug/L
		ETHYLBENZENE	0.422	41.4 ug/L
		M&P-XYLENE	0.454	32.4 ug/L
		O-XYLENE	1.056	71.2 ug/L
BORING # 16 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	2.3	38.5 ug/kg
		TOLUENE	25.92	36.1 ug/kg
		ETHYLBENZENE	1.99	46.4 ug/kg
		M&P-XYLENE	2.367	42.6 ug/kg
		O-XYLENE	1.873	17.7 ug/kg
BORING # 16 DEPTH 18 TO 20 FT TYPE SOIL SAMPLE		BENZENE	0.012	< 0.8 ug/kg
		TOLUENE	1.269	1.8 ug/kg
		ETHYLBENZENE	0.092	2.1 ug/kg
		M&P-XYLENE	0.101	1.8 ug/kg
		O-XYLENE	0.31	2.9 ug/kg

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 20 DEPTH 2 TO 4 FT TYPE SOIL SAMPLE		BENZENE	0.142	2.4 ug/kg
		TOLUENE	3.538	4.9 ug/kg
		ETHYLBENZENE	0.197	5.0 (1) ug/kg
		M&P-XYLENE	0.018	< 0.9 ug/kg
		O-XYLENE	0.011	< 0.5 ug/kg
BORING # 20 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	0.965	16.2 ug/kg
		TOLUENE	13.5	18.8 ug/kg
		ETHYLBENZENE	5.5	128.2 ug/kg
		M&P-XYLENE	2.919	52.6 ug/kg
		O-XYLENE	3.388	32.0 ug/kg
BORING # 20 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	3.731	62.5 ug/kg
		TOLUENE	112.6	156.6 ug/kg
		ETHYLBENZENE	193.5	4510.5 ug/kg
		M&P-XYLENE	52.14	939.5 ug/kg
		O-XYLENE	58.01	547.3 ug/kg
BORING # 20 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.03	< 0.8 ug/kg
		TOLUENE	0.27	0.4 ug/kg
		ETHYLBENZENE	0.126	2.9 ug/kg
		M&P-XYLENE	0.176	3.2 ug/kg
		O-XYLENE	0.481	4.5 ug/kg
BORING # 20 DEPTH 16 TO 18 FT TYPE SOIL SAMPLE		BENZENE	0.561	9.4 ug/kg
		TOLUENE	5.096	7.1 ug/kg
		ETHYLBENZENE	0.938	21.9 ug/kg
		M&P-XYLENE	0.415	7.5 ug/kg
		O-XYLENE	0.522	4.9 ug/kg
BORING # 20 DEPTH TYPE WATER SAMPLE		BENZENE	0.454	39.7 ug/L
		TOLUENE	2.327	179.0 ug/L
		ETHYLBENZENE	0.489	47.9 ug/L
		M&P-XYLENE	0.219	15.6 ug/L
		O-XYLENE	0.293	19.7 ug/L
BORING # 20 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.069	1.2 ug/kg
		TOLUENE	9.299	12.9 ug/kg
		ETHYLBENZENE	8.934	208.3 ug/kg
		M&P-XYLENE	3.818	68.8 ug/kg
		O-XYLENE	4.824	45.5 ug/kg

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING #	21	BENZENE	0.033	< 0.8 ug/kg
DEPTH	2 TO 4 FT	TOLUENE	3.667	5.1 ug/kg
TYPE	SOIL SAMPLE	ETHYLBENZENE	0.194	4.5 ug/kg
		M&P-XYLENE	0.532	9.6 ug/kg
		O-XYLENE	0.385	3.6 ug/kg
BORING #	21	BENZENE	0.126	2.1 ug/kg
DEPTH	4 TO 6 FT	TOLUENE	14.03	19.5 ug/kg
TYPE	SOIL SAMPLE	ETHYLBENZENE	0.138	3.2 ug/kg
		M&P-XYLENE	0.317	5.7 ug/kg
		O-XYLENE	0.461	4.3 ug/kg
BORING #	21	BENZENE	0.064	1.1 ug/kg
DEPTH	10 TO 12 FT	TOLUENE	1.285	1.8 ug/kg
TYPE	SOIL SAMPLE	ETHYLBENZENE	0.071	1.7 ug/kg
		M&P-XYLENE	0.217	3.9 ug/kg
		O-XYLENE	0.151	1.4 ug/kg

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION	COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 21 DEPTH TYPE WATER SAMPLE	BENZENE	2.036	67.0 ug/L
	TOLUENE	9.445	28.1 ug/L
	ETHYLBENZENE	0.013	< 1.0 ug/L
	M&P-XYLENE	0.101	0.3 ug/L
	O-XYLENE	0.155	0.8 ug/L

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0025 ug/ml	BENZENE,	0.076 PPM	0.0329
0.0025 ug/ml	TOLUENE,	0.840 PPM	0.0030
0.0025 ug/ml	ETHYLBENZENE,	0.120 PPM	0.0208
0.0050 ug/ml	M&P-XYLENE	1.475 PPM	0.0034
0.0025 ug/ml	O-XYLENE	0.509 PPM	0.0049
SOIL STANDARD			
0.002 ug/g	BENZENE,	0.096 PPM	0.0208
0.002 ug/g	TOLUENE,	2.567 PPM	0.0008
0.002 ug/g	ETHYLBENZENE,	0.124 PPM	0.0161
0.004 ug/g	M&P-XYLENE	1.219 PPM	0.0033
0.002 ug/g	O-XYLENE	0.590 PPM	0.0034

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 15 DEPTH 4 TO 6 ft TYPE SOIL SAMPLE		BENZENE	0.007	<	1.0 ug/kg
		TOLUENE	0.162		0.1 ug/kg
		ETHYLBENZENE	0.01	<	0.8 ug/kg
		M&P-XYLENE	0.142		0.5 ug/kg
		O-XYLENE	0.042	<	0.2 ug/kg
BORING # 15 DEPTH 0 TO 2 FT TYPE SOIL SAMPLE		BENZENE	0.007	<	1.0 ug/kg
		TOLUENE	0.133		0.1 ug/kg
		ETHYLBENZENE	0.015	<	0.8 ug/kg
		M&P-XYLENE	0.196		0.6 ug/kg
		O-XYLENE	0.044	<	0.2 ug/kg
BORING # 15 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	0.009	<	1.0 ug/kg
		TOLUENE	0.773		0.6 ug/kg
		ETHYLBENZENE	0.016	<	0.8 ug/kg
		M&P-XYLENE	0.294		1.0 ug/kg
		O-XYLENE	0.000	<	0.2 ug/kg
BORING # 15 DEPTH TYPE WATER SAMPLE		BENZENE	0.017	<	1.6 ug/L
		TOLUENE	17.690		52.6 ug/L
		ETHYLBENZENE	0.036	<	1.0 ug/L
		M&P-XYLENE	0.000	<	0.2 ug/L
		O-XYLENE	0.120		0.6 ug/L

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8/6/93

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 17 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	0.010	< 1.0 ug/kg
		TOLUENE	0.185	0.1 ug/kg
		ETHYLBENZENE	0.055	0.9 (1) ug/kg
		M&P-XYLENE	0.000	< 0.2 ug/kg
		O-XYLENE	0.018	< 0.2 ug/kg
BORING # 17 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.062	1.3 ug/kg
		TOLUENE	10.020	7.8 ug/kg
		ETHYLBENZENE	0.151	2.4 ug/kg
		M&P-XYLENE	1.198	3.9 ug/kg
		O-XYLENE	0.699	2.4 ug/kg
BORING # 17 DEPTH TYPE WATER SAMPLE		BENZENE	0.046	< 1.6 ug/L
		TOLUENE	3.307	9.8 ug/L
		ETHYLBENZENE	0.020	< 1.0 ug/L
		M&P-XYLENE	0.134	0.5 ug/L
		O-XYLENE	0.091	0.4 ug/L
BORING # 17 DEPTH 18 TO 20 FT TYPE SOIL SAMPLE		BENZENE	0.019	< 1.0 ug/kg
		TOLUENE	0.892	0.7 ug/kg
		ETHYLBENZENE	0.061	1.1 (1) ug/kg
		M&P-XYLENE	0.057	0.2 ug/kg
		O-XYLENE	0.030	< 0.2 ug/kg

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled 'S' as suspect

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8/6/93

PAGE ____ of ____

SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 18 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.036	< 1.0 ug/kg
		TOLUENE	0.091	0.1 ug/kg
		ETHYLBENZENE	0.013	< 0.8 ug/kg
		M&P-XYLENE	0.000	< 0.2 ug/kg
		O-XYLENE	0.028	< 0.2 ug/kg
BORING # 18 DEPTH 0 TO 2 FT TYPE SOIL SAMPLE		BENZENE	0.020	< 1.0 ug/kg
		TOLUENE	0.108	0.1 ug/kg
		ETHYLBENZENE	0.063	1.0 (1) ug/kg
		M&P-XYLENE	0.000	< 0.2 ug/kg
		O-XYLENE	0.030	< 0.2 ug/kg
BORING # 18 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	4.331	90.2 (1) ug/kg
		TOLUENE	19.130	14.9 ug/kg
		ETHYLBENZENE	27.850	449.2 ug/kg
		M&P-XYLENE	326.300	1070.7 ug/kg
		O-XYLENE	46.010	156.0 ug/kg
BORING # 18 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.404	8.4 ug/kg
		TOLUENE	130.600	101.8 ug/kg
		ETHYLBENZENE	2.069	33.4 ug/kg
		M&P-XYLENE	33.130	108.7 ug/kg
		O-XYLENE	14.200	48.1 ug/kg
BORING # 18 DEPTH TYPE WATER SAMPLE		BENZENE	0.199	6.5 ug/L
		TOLUENE	9.011	26.8 ug/L
		ETHYLBENZENE	0.351	7.3 ug/L
		M&P-XYLENE	4.647	15.8 ug/L
		O-XYLENE	0.667	3.3 ug/L

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0025 ug/ml	BENZENE,	0.058 PPM	0.0431
0.0025 ug/ml	TOLUENE,	0.145 PPM	0.0172
0.0025 ug/ml	ETHYLBENZENE,	0.050 PPM	0.0500
0.0050 ug/ml	M&P-XYLENE	0.695 PPM	0.0072
0.0025 ug/ml	O-XYLENE	0.073 PPM	0.0342
SOIL STANDARD			
0.002 ug/g	BENZENE,	0.073 PPM	0.0274
0.002 ug/g	TOLUENE,	0.212 PPM	0.0094
0.002 ug/g	ETHYLBENZENE,	0.028 PPM	0.0714
0.004 ug/g	M&P-XYLENE	0.317 PPM	0.0126
0.002 ug/g	O-XYLENE	0.072 PPM	0.0278

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 22 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.014	< 1.4	ug/kg
		TOLUENE	0.090	0.8	ug/kg
		ETHYLBENZENE	0.000	< 3.6	ug/kg
		M&P-XYLENE	0.000	< 0.6	ug/kg
		O-XYLENE	0.000	< 1.4	ug/kg
BORING # 22 DEPTH 15 TO 16 ft TYPE SOIL SAMPLE		BENZENE	0.047	< 1.4	ug/kg
		TOLUENE	0.030	< 0.5	ug/kg
		ETHYLBENZENE	0.000	< 3.6	ug/kg
		M&P-XYLENE	0.000	< 0.6	ug/kg
		O-XYLENE	0.000	< 1.4	ug/kg
BORING # 22 DEPTH TYPE WATER SAMPLE		BENZENE	0.039	< 2.2	ug/L
		TOLUENE	0.524	9.0	ug/L
		ETHYLBENZENE	0.000	< 2.5	ug/L
		M&P-XYLENE	0.000	< 0.4	ug/L
		O-XYLENE	0.000	< 1.7	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 23 DEPTH 2 TO 4 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 1.4 ug/kg
		TOLUENE	0.046	< 0.5 ug/kg
		ETHYLBENZENE	0.000	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 23 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.018	< 1.4 ug/kg
		TOLUENE	0.136	1.3 ug/kg
		ETHYLBENZENE	0.400	28.6 ug/kg
		M&P-XYLENE	4.844	61.1 ug/kg
		O-XYLENE	0.423	11.8 ug/kg
BORING # 23 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.024	< 1.4 ug/kg
		TOLUENE	0.007	< 0.5 ug/kg
		ETHYLBENZENE	0.141	10.1 ug/kg
		M&P-XYLENE	2.296	29.0 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 23 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	0.011	< 1.4 ug/kg
		TOLUENE	0.066	0.6 ug/kg
		ETHYLBENZENE	0.036	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.029	< 1.4 ug/kg
BORING # 23 DEPTH TYPE WATER SAMPLE		BENZENE	0.008	< 2.2 ug/L
		TOLUENE	0.076	1.3 ug/L
		ETHYLBENZENE	0.031	< 2.5 ug/L
		M&P-XYLENE	0.000	< 0.4 ug/L
		O-XYLENE	0.000	< 1.7 ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 19 DEPTH 2 TO 4 FT TYPE SOIL SAMPLE		BENZENE	0.006	< 1.4 ug/kg
		TOLUENE	0.193	1.8 ug/kg
		ETHYLBENZENE	0.167	11.9 (1) ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.141	3.9 ug/kg
BORING # 19 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 1.4 ug/kg
		TOLUENE	0.115	1.1 ug/kg
		ETHYLBENZENE	0.042	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 19 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 1.4 ug/kg
		TOLUENE	0.043	< 0.5 ug/kg
		ETHYLBENZENE	0.020	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 19 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 1.4 ug/kg
		TOLUENE	0.077	0.7 ug/kg
		ETHYLBENZENE	0.028	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 19 DEPTH 14 TO 16 FT TYPE SOIL SAMPLE		BENZENE	0.005	< 1.4 ug/kg
		TOLUENE	0.022	< 0.5 ug/kg
		ETHYLBENZENE	0.014	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 19 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 1.4 ug/kg
		TOLUENE	0.033	< 0.5 ug/kg
		ETHYLBENZENE	0.033	< 3.6 ug/kg
		M&P-XYLENE	0.000	< 0.6 ug/kg
		O-XYLENE	0.000	< 1.4 ug/kg
BORING # 19 DEPTH TYPE WATER SAMPLE		BENZENE	0.025	< 2.2 ug/L
		TOLUENE	0.039	< 0.9 ug/L
		ETHYLBENZENE	0.017	< 2.5 ug/L
		M&P-XYLENE	0.000	< 0.4 ug/L
		O-XYLENE	0.000	< 1.7 ug/L

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0025 ug/ml	BENZENE,	0.082 PPM	0.0305
0.0025 ug/ml	TOLUENE,	0.193 PPM	0.0130
0.0025 ug/ml	ETHYLBENZENE,	0.070 PPM	0.0357
0.0050 ug/ml	M&P-XYLENE	0.187 PPM	0.0267
0.0025 ug/ml	O-XYLENE	0.129 PPM	0.0194
SOIL STANDARD			
0.002 ug/g	BENZENE,	0.144 PPM	0.0139
0.002 ug/g	TOLUENE,	0.143 PPM	0.0140
0.002 ug/g	ETHYLBENZENE,	0.054 PPM	0.0370
0.004 ug/g	M&P-XYLENE	0.160 PPM	0.0250
0.002 ug/g	O-XYLENE	0.079 PPM	0.0253

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 11 DEPTH 18 TO 20 FT TYPE SOIL SAMPLE		BENZENE	0.309	4.3 ug/kg
		TOLUENE	3.207	44.9 ug/kg
		ETHYLBENZENE	0.000	< 1.9 ug/kg
		M&P-XYLENE	0.000	< 1.3 ug/kg
		O-XYLENE	0.115	2.9 ug/kg
BORING # 11 DEPTH 16 TO 18 ft TYPE SOIL SAMPLE		BENZENE	0.039	< 0.7 ug/kg
		TOLUENE	3.687	51.6 ug/kg
		ETHYLBENZENE	0.000	< 1.9 ug/kg
		M&P-XYLENE	0.000	< 1.3 ug/kg
		O-XYLENE	0.000	< 1.3 ug/kg
BORING # 11 DEPTH 14 TO 16 FT TYPE SOIL SAMPLE		BENZENE	0.836	11.6 ug/kg
		TOLUENE	5.188	72.6 ug/kg
		ETHYLBENZENE	0.160	5.9 ug/kg
		M&P-XYLENE	0.461	11.5 ug/kg
		O-XYLENE	0.371	9.4 ug/kg
BORING # 11 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 0.7 ug/kg
		TOLUENE	0.330	4.6 ug/kg
		ETHYLBENZENE	0.000	< 1.9 ug/kg
		M&P-XYLENE	0.000	< 1.3 ug/kg
		O-XYLENE	0.000	< 1.3 ug/kg
BORING # 11 DEPTH TYPE WATER SAMPLE		BENZENE	0.029	< 1.5 ug/L
		TOLUENE	2.148	27.8 ug/L
		ETHYLBENZENE	0.000	< 1.8 ug/L
		M&P-XYLENE	0.000	< 1.3 ug/L
		O-XYLENE	0.000	< 1.0 ug/L

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0025 ug/ml	BENZENE,	0.083 PPM	0.0301
0.0025 ug/ml	TOLUENE,	0.201 PPM	0.0124
0.0025 ug/ml	ETHYLBENZENE,	0.203 PPM	0.0123
0.0050 ug/ml	M&P-XYLENE	0.300 PPM	0.0167
0.0025 ug/ml	O-XYLENE	0.130 PPM	0.0192
SOIL STANDARD			
0.002 ug/g	BENZENE,	0.141 PPM	0.0142
0.002 ug/g	TOLUENE,	0.244 PPM	0.0082
0.002 ug/g	ETHYLBENZENE,	0.203 PPM	0.0099
0.004 ug/g	M&P-XYLENE	0.190 PPM	0.0211
0.002 ug/g	O-XYLENE	0.114 PPM	0.0175

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LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 24 DEPTH 1 TO 3 FT TYPE SOIL SAMPLE		BENZENE	0.000	<	0.7 ug/kg
		TOLUENE	0.050		0.4 ug/kg
		ETHYLBENZENE	0.000	<	0.5 ug/kg
		M&P-XYLENE	0.000	<	1.1 ug/kg
		O-XYLENE	0.000	<	0.9 ug/kg
BORING # 24 DEPTH 3 TO 5 ft TYPE SOIL SAMPLE		BENZENE	0.000	<	0.7 ug/kg
		TOLUENE	0.000	<	0.4 ug/kg
		ETHYLBENZENE	0.000	<	0.5 ug/kg
		M&P-XYLENE	0.000	<	1.1 ug/kg
		O-XYLENE	0.000	<	0.9 ug/kg
BORING # 24 DEPTH 5 TO 7 FT TYPE SOIL SAMPLE		BENZENE	0.062		0.9 ug/kg
		TOLUENE	0.147		1.2 ug/kg
		ETHYLBENZENE	1.062		10.5 (1) ug/kg
		M&P-XYLENE	0.638		13.4 ug/kg
		O-XYLENE	0.191		3.4 ug/kg
BORING # 24 DEPTH 7 TO 9 FT TYPE SOIL SAMPLE		BENZENE	0.117		1.7 ug/kg
		TOLUENE	1.181		9.7 ug/kg
		ETHYLBENZENE	0.963		9.5 ug/kg
		M&P-XYLENE	1.683		35.4 ug/kg
		O-XYLENE	0.427		7.5 ug/kg
BORING # 24 DEPTH 9 TO 11 FT TYPE SOIL SAMPLE		BENZENE	0.079		1.1 ug/kg
		TOLUENE	0.384		3.1 ug/kg
		ETHYLBENZENE	5.254		51.8 ug/kg
		M&P-XYLENE	4.153		87.4 ug/kg
		O-XYLENE	1.068		18.7 ug/kg
BORING # 24 DEPTH 11 TO 13 FT TYPE SOIL SAMPLE		BENZENE	0.452		6.4 ug/kg
		TOLUENE	2.729		22.4 ug/kg
		ETHYLBENZENE	40.260		396.7 ug/kg
		M&P-XYLENE	32.850		691.6 ug/kg
		O-XYLENE	14.350		251.8 ug/kg
BORING # 24 DEPTH TYPE WATER SAMPLE		BENZENE	0.059		1.8 ug/L
		TOLUENE	0.254		3.2 ug/L
		ETHYLBENZENE	0.311		3.8 ug/L
		M&P-XYLENE	0.000	<	0.8 ug/L
		O-XYLENE	0.000	<	1.0 ug/L

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 25 DEPTH 1 TO 3 FT TYPE SOIL SAMPLE		BENZENE	0.061	0.9	ug/kg
		TOLUENE	0.105	0.9	ug/kg
		ETHYLBENZENE	1.049	10.3	ug/kg
		M&P-XYLENE	0.764	16.1	ug/kg
		O-XYLENE	0.345	6.1	ug/kg
BORING # 25 DEPTH 3 TO 5 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 0.7	ug/kg
		TOLUENE	0.113	0.9	ug/kg
		ETHYLBENZENE	0.000	< 0.5	ug/kg
		M&P-XYLENE	0.000	< 1.1	ug/kg
		O-XYLENE	0.000	< 0.9	ug/kg
BORING # 25 DEPTH 5 TO 7 FT TYPE SOIL SAMPLE		BENZENE	1.136	16.1	ug/kg
		TOLUENE	5.516	45.2	ug/kg
		ETHYLBENZENE	40.430	398.3	ug/kg
		M&P-XYLENE	35.620	749.9	ug/kg
		O-XYLENE	13.900	243.9	ug/kg
BORING # 25 DEPTH 7 TO 9 FT TYPE SOIL SAMPLE		BENZENE	1.368	19.4	ug/kg
		TOLUENE	8.761	71.8	ug/kg
		ETHYLBENZENE	32.380	319.0	ug/kg
		M&P-XYLENE	28.070	590.9	ug/kg
		O-XYLENE	9.866	173.1	ug/kg
BORING # 25 DEPTH 9 TO 11 FT TYPE SOIL SAMPLE		BENZENE	0.196	2.8	ug/kg
		TOLUENE	2.862	23.5	ug/kg
		ETHYLBENZENE	9.246	91.1	ug/kg
		M&P-XYLENE	8.222	173.1	ug/kg
		O-XYLENE	2.250	39.5	ug/kg
BORING # 25 DEPTH 15 TO 17 FT TYPE SOIL SAMPLE		BENZENE	0.033	< 0.7	ug/kg
		TOLUENE	0.263	2.2	ug/kg
		ETHYLBENZENE	0.290	2.9	ug/kg
		M&P-XYLENE	0.852	17.9	ug/kg
		O-XYLENE	0.206	3.6	ug/kg
BORING # 25 DEPTH TYPE WATER SAMPLE		BENZENE	0.134	4.0	ug/L
		TOLUENE	5.769	71.8	ug/L
		ETHYLBENZENE	0.247	3.0	ug/L
		M&P-XYLENE	0.000	< 0.8	ug/L
		O-XYLENE	0.000	< 1.0	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 26 DEPTH 2 TO 4 FT TYPE SOIL SAMPLE		BENZENE	1.377	19.5 ug/kg
		TOLUENE	4.535	37.2 ug/kg
		ETHYLBENZENE	0.222	2.2 ug/kg
		M&P-XYLENE	0.000	< 1.1 ug/kg
		O-XYLENE	0.000	< 0.9 ug/kg
BORING # 26 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	23.100	327.7 ug/kg
		TOLUENE	201.800	1654.1 ug/kg
		ETHYLBENZENE	42.660	420.3 ug/kg
		M&P-XYLENE	48.780	1026.9 ug/kg
		O-XYLENE	43.430	761.9 ug/kg
BORING # 26 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	40.070	568.4 ug/kg
		TOLUENE	2902.000	23786.9 ug/kg
		ETHYLBENZENE	108.200	1066.0 ug/kg
		M&P-XYLENE	147.400	3103.2 ug/kg
		O-XYLENE	126.300	2215.8 ug/kg
BORING # 26 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	7.138	101.2 ug/kg
		TOLUENE	39.580	324.4 ug/kg
		ETHYLBENZENE	8.017	79.0 ug/kg
		M&P-XYLENE	21.210	446.5 ug/kg
		O-XYLENE	8.507	149.2 ug/kg
BORING # 26 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	2.636	37.4 ug/kg
		TOLUENE	27.100	222.1 ug/kg
		ETHYLBENZENE	3.000	29.6 ug/kg
		M&P-XYLENE	5.708	120.2 ug/kg
		O-XYLENE	9.356	164.1 ug/kg
BORING # 26 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	3.756	53.3 ug/kg
		TOLUENE	5.177	42.4 ug/kg
		ETHYLBENZENE	4.906	48.3 ug/kg
		M&P-XYLENE	5.954	125.3 ug/kg
		O-XYLENE	2.232	39.2 ug/kg
BORING # 26 DEPTH 14 TO 16 FT TYPE SOIL SAMPLE		BENZENE	5.389	76.4 ug/kg
		TOLUENE	19.570	160.4 ug/kg
		ETHYLBENZENE	6.256	61.6 ug/kg
		M&P-XYLENE	12.110	254.9 ug/kg
		O-XYLENE	3.732	65.5 ug/kg

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 26 DEPTH 16 TO 18 FT TYPE SOIL SAMPLE		BENZENE	3.179	45.1 ug/kg
		TOLUENE	16.690	136.8 ug/kg
		ETHYLBENZENE	4.789	47.2 ug/kg
		M&P-XYLENE	10.280	216.4 ug/kg
		O-XYLENE	3.324	58.3 ug/kg
BORING # 26 DEPTH 18 TO 20 FT TYPE SOIL SAMPLE		BENZENE	2.589	36.7 ug/kg
		TOLUENE	43.040	352.8 ug/kg
		ETHYLBENZENE	1.352	13.3 ug/kg
		M&P-XYLENE	57.930	1219.6 ug/kg
		O-XYLENE	3.164	55.5 ug/kg
BORING # 26 DEPTH TYPE WATER SAMPLE		BENZENE	1.407	42.4 ug/L
		TOLUENE	76.670	953.6 ug/L
		ETHYLBENZENE	0.100	1.2 ug/L
		M&P-XYLENE	45.360	756.0 ug/L
		O-XYLENE	2.859	55.0 ug/L

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0050 ug/ml	BENZENE,	0.251 PPM	0.0199
0.0050 ug/ml	TOLUENE,	0.394 PPM	0.0127
0.0050 ug/ml	ETHYLBENZENE,	0.198 PPM	0.0253
0.0100 ug/ml	M&P-XYLENE	0.365 PPM	0.0274
0.0050 ug/ml	O-XYLENE	0.245 PPM	0.0204
SOIL STANDARD			
0.004 ug/g	BENZENE,	0.244 PPM	0.0164
0.004 ug/g	TOLUENE,	0.256 PPM	0.0156
0.004 ug/g	ETHYLBENZENE,	0.230 PPM	0.0174
0.008 ug/g	M&P-XYLENE	0.500 PPM	0.0160
0.004 ug/g	O-XYLENE	0.231 PPM	0.0173

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 27 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.013	< 1	ug/kg
		TOLUENE	0.184	3	ug/kg
		ETHYLBENZENE	0.049	< 1	ug/kg
		M&P-XYLENE	0.000	< 1	ug/kg
		O-XYLENE	0.071	1	ug/kg
BORING # 27 DEPTH 8 TO 10 ft TYPE SOIL SAMPLE		BENZENE	0.040	< 1	ug/kg
		TOLUENE	3.709	58	ug/kg
		ETHYLBENZENE	0.352	6	ug/kg
		M&P-XYLENE	0.564	9	ug/kg
		O-XYLENE	0.380	7	ug/kg
BORING # 27 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	4.721	77	ug/kg
		TOLUENE	180.000	2813	ug/kg
		ETHYLBENZENE	36.890	642	ug/kg
		M&P-XYLENE	164.800	2637	ug/kg
		O-XYLENE	32.840	569	ug/kg
BORING # 27 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	27.090	444	ug/kg
		TOLUENE	124.000	1938	ug/kg
		ETHYLBENZENE	37.850	658	ug/kg
		M&P-XYLENE	62.540	1001	ug/kg
		O-XYLENE	15.590	270	ug/kg
BORING # 27 DEPTH 14 TO 16 FT TYPE SOIL SAMPLE		BENZENE	30.210	495	ug/kg
		TOLUENE	67.320	1052	ug/kg
		ETHYLBENZENE	24.780	431	ug/kg
		M&P-XYLENE	58.900	942	ug/kg
		O-XYLENE	9.450	164	ug/kg
BORING # 27 DEPTH 16 TO 18 FT TYPE SOIL SAMPLE		BENZENE	2.859	47	ug/kg
		TOLUENE	95.190	1487	ug/kg
		ETHYLBENZENE	18.280	318	ug/kg
		M&P-XYLENE	37.380	598	ug/kg
		O-XYLENE	18.310	317	ug/kg
BORING # 27 DEPTH 18 TO 20 FT TYPE SOIL SAMPLE		BENZENE	1.002	16	ug/kg
		TOLUENE	29.500	461	ug/kg
		ETHYLBENZENE	10.470	182	ug/kg
		M&P-XYLENE	19.630	314	ug/kg
		O-XYLENE	4.998	87	ug/kg

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 27 DEPTH 20 TO 22 FT TYPE SOIL SAMPLE		BENZENE	0.120	2	ug/kg
		TOLUENE	2.198	34	ug/kg
		ETHYLBENZENE	0.912	16	ug/kg
		M&P-XYLENE	2.741	44	ug/kg
		O-XYLENE	0.582	10	ug/kg
BORING # 27 DEPTH 22 TO 24 FT TYPE SOIL SAMPLE		BENZENE	0.061	1	ug/kg
		TOLUENE	1.051	16	ug/kg
		ETHYLBENZENE	0.319	6	ug/kg
		M&P-XYLENE	1.214	19	ug/kg
		O-XYLENE	0.000	< 1	ug/kg
BORING # 27 DEPTH TYPE WATER SAMPLE		BENZENE	5.711	114	ug/L
		TOLUENE	5.753	73	ug/L
		ETHYLBENZENE	8.632	218	ug/L
		M&P-XYLENE	22.910	628	ug/L
		O-XYLENE	0.041	< 1	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 28 DEPTH 1 TO 3 FT TYPE SOIL SAMPLE		BENZENE	0.042	< 1	ug/kg
		TOLUENE	0.292	5	ug/kg
		ETHYLBENZENE	0.175	3	ug/kg
		M&P-XYLENE	0.691	11	ug/kg
		O-XYLENE	0.000	< 1	ug/kg
BORING # 28 DEPTH 3 TO 5 FT TYPE SOIL SAMPLE		BENZENE	0.128	2	ug/kg
		TOLUENE	2.069	32	ug/kg
		ETHYLBENZENE	0.339	6	ug/kg
		M&P-XYLENE	1.081	17	ug/kg
		O-XYLENE	0.292	5	ug/kg
BORING # 28 DEPTH 5 TO 7 FT TYPE SOIL SAMPLE		BENZENE	0.107	2	ug/kg
		TOLUENE	1.803	28	ug/kg
		ETHYLBENZENE	0.224	4	ug/kg
		M&P-XYLENE	0.511	8	ug/kg
		O-XYLENE	0.082	1	ug/kg
BORING # 28 DEPTH 7 TO 9 FT TYPE SOIL SAMPLE		BENZENE	0.151	2	ug/kg
		TOLUENE	2.650	41	ug/kg
		ETHYLBENZENE	5.861	102	ug/kg
		M&P-XYLENE	0.000	< 1	ug/kg
		O-XYLENE	0.284	S (1)	ug/kg
BORING # 28 DEPTH 9 TO 11 FT TYPE SOIL SAMPLE		BENZENE	0.077	1	ug/kg
		TOLUENE	1.363	21	ug/kg
		ETHYLBENZENE	0.130	2	ug/kg
		M&P-XYLENE	0.345	6	ug/kg
		O-XYLENE	0.000	< 1	ug/kg
BORING # 28 DEPTH 11 TO 13 FT TYPE SOIL SAMPLE		BENZENE	0.033	< 1	ug/kg
		TOLUENE	0.652	10	ug/kg
		ETHYLBENZENE	0.064	1	ug/kg
		M&P-XYLENE	0.249	4	ug/kg
		O-XYLENE	0.000	< 1	ug/kg
BORING # 28 DEPTH 13 TO 15 FT TYPE SOIL SAMPLE		BENZENE	0.027	< 1	ug/kg
		TOLUENE	0.639	10	ug/kg
		ETHYLBENZENE	0.060	1	ug/kg
		M&P-XYLENE	0.232	4	ug/kg
		O-XYLENE	0.000	< 1	ug/kg

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled 'S' as suspect

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 28 DEPTH TYPE WATER SAMPLE		BENZENE	0.086	2	ug/L
		TOLUENE	0.494	6	ug/L
		ETHYLBENZENE	0.325	8	ug/L
		M&P-XYLENE	1.108	30	ug/L
		O-XYLENE	0.000	< 1	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 29 DEPTH 1 TO 3 FT TYPE SOIL SAMPLE		BENZENE	3.359	55	ug/kg
		TOLUENE	4.500	70	ug/kg
		ETHYLBENZENE	10.670	186	ug/kg
		M&P-XYLENE	12.950	207	ug/kg
		O-XYLENE	5.485	95	ug/kg
BORING # 29 DEPTH 3 TO 5 FT TYPE SOIL SAMPLE		BENZENE	0.525	9	ug/kg
		TOLUENE	0.699	11	ug/kg
		ETHYLBENZENE	6.122	106	ug/kg
		M&P-XYLENE	3.817	61	ug/kg
		O-XYLENE	1.975	34	ug/kg
BORING # 29 DEPTH 5 TO 7 FT TYPE SOIL SAMPLE		BENZENE	0.803	13	ug/kg
		TOLUENE	1.608	25	ug/kg
		ETHYLBENZENE	1.478	26	ug/kg
		M&P-XYLENE	1.509	24	ug/kg
		O-XYLENE	0.663	11	ug/kg
BORING # 29 DEPTH 11 TO 13 FT TYPE SOIL SAMPLE		BENZENE	0.025	< 1	ug/kg
		TOLUENE	0.186	3	ug/kg
		ETHYLBENZENE	0.112	2	ug/kg
		M&P-XYLENE	0.148	2	ug/kg
		O-XYLENE	0.000	< 1	ug/kg
BORING # 29 DEPTH TYPE WATER SAMPLE		BENZENE	0.055	1	ug/L
		TOLUENE	1.925	24	ug/L
		ETHYLBENZENE	0.029	< 1	ug/L
		M&P-XYLENE	0.140	4	ug/L
		O-XYLENE	0.000	< 1	ug/L

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0050 ug/ml	BENZENE,	0.345 PPM	0.0145
0.0050 ug/ml	TOLUENE,	0.988 PPM	0.0051
0.0050 ug/ml	ETHYLBENZENE,	0.164 PPM	0.0305
0.0100 ug/ml	M&P-XYLENE	0.381 PPM	0.0262
0.0050 ug/ml	O-XYLENE	0.450 PPM	0.0111
SOIL STANDARD			
0.004 ug/g	BENZENE,	0.346 PPM	0.0116
0.004 ug/g	TOLUENE,	0.389 PPM	0.0103
0.004 ug/g	ETHYLBENZENE,	0.169 PPM	0.0237
0.008 ug/g	M&P-XYLENE	0.500 PPM	0.0160
0.004 ug/g	O-XYLENE	0.329 PPM	0.0122

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION	COMPOUND	HEAD SPACE PPM	ACTUAL CONC.
BORING # 11	BENZENE	3.173	46.0 (1) ug/L
DEPTH	TOLUENE	15.250	77.2 ug/L
TYPE WATER SAMPLE	ETHYLBENZENE	0.085	2.6 (1) ug/L
	M&P-XYLENE	0.000	< 1.3 ug/L
	O-XYLENE	0.000	< 0.6 ug/L

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 30 DEPTH 8 TO 10 ft TYPE SOIL SAMPLE		BENZENE	0.014	< 0.6	ug/kg
		TOLUENE	0.148	1.5	ug/kg
		ETHYLBENZENE	0.104	2.5	ug/kg
		M&P-XYLENE	0.048	< 0.8	ug/kg
		O-XYLENE	0.000	< 0.6	ug/kg
BORING # 30 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 0.6	ug/kg
		TOLUENE	0.118	1.2	ug/kg
		ETHYLBENZENE	0.000	< 1.2	ug/kg
		M&P-XYLENE	0.036	< 0.8	ug/kg
		O-XYLENE	0.000	< 0.6	ug/kg
BORING # 30 DEPTH 16 TO 18 FT TYPE SOIL SAMPLE		BENZENE	0.011	< 0.6	ug/kg
		TOLUENE	0.086	0.9	ug/kg
		ETHYLBENZENE	0.000	< 1.2	ug/kg
		M&P-XYLENE	0.032	< 0.8	ug/kg
		O-XYLENE	0.000	< 0.6	ug/kg
BORING # 30 DEPTH TYPE WATER SAMPLE		BENZENE	0.014	< 0.7	ug/L
		TOLUENE	0.162	0.8	ug/L
		ETHYLBENZENE	0.000	< 1.5	ug/L
		M&P-XYLENE	0.000	< 1.3	ug/L
		O-XYLENE	0.000	< 0.6	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 31 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.009	< 0.6	ug/kg
		TOLUENE	0.085	0.9	ug/kg
		ETHYLBENZENE	0.102	2.4	ug/kg
		M&P-XYLENE	0.000	< 0.8	ug/kg
		O-XYLENE	0.000	< 0.6	ug/kg
BORING # 31 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 0.6	ug/kg
		TOLUENE	0.063	0.6	ug/kg
		ETHYLBENZENE	0.018	< 1.2	ug/kg
		M&P-XYLENE	0.000	< 0.8	ug/kg
		O-XYLENE	0.000	< 0.6	ug/kg
BORING # 31 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.143	1.7 (1)	ug/kg
		TOLUENE	13.660	140.5	ug/kg
		ETHYLBENZENE	48.110	1138.7	ug/kg
		M&P-XYLENE	12.570	201.1	ug/kg
		O-XYLENE	14.310	174.0	ug/kg
BORING # 31 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	0.023	< 0.6	ug/kg
		TOLUENE	2.907	29.9	ug/kg
		ETHYLBENZENE	7.311	173.0	ug/kg
		M&P-XYLENE	1.585	25.4	ug/kg
		O-XYLENE	3.263	39.7	ug/kg
BORING # 31 DEPTH 16 TO 18 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 0.6	ug/kg
		TOLUENE	0.035	< 0.5	ug/kg
		ETHYLBENZENE	0.441	10.4	ug/kg
		M&P-XYLENE	0.303	4.8	ug/kg
		O-XYLENE	0.161	2.0	ug/kg
BORING # 31 DEPTH TYPE WATER SAMPLE BEFORE PURGE		BENZENE	0.028	< 0.7	ug/L
		TOLUENE	0.030	< 0.3	ug/L
		ETHYLBENZENE	0.157	4.8	ug/L
		M&P-XYLENE	0.044	< 1.3	ug/L
		O-XYLENE	0.000	< 0.6	ug/L
BORING # 31 DEPTH TYPE WATER SAMPLE AFTER PURGE		BENZENE	0.018	< 0.7	ug/L
		TOLUENE	0.044	< 0.3	ug/L
		ETHYLBENZENE	0.151	4.6	ug/L
		M&P-XYLENE	0.041	< 1.3	ug/L
		O-XYLENE	0.000	< 0.6	ug/L

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0050 ug/ml	BENZENE,	0.254 PPM	0.0197
0.0050 ug/ml	TOLUENE,	0.368 PPM	0.0136
0.0050 ug/ml	ETHYLBENZENE,	0.078 PPM	0.0641
0.0100 ug/ml	M&P-XYLENE	0.355 PPM	0.0282
0.0050 ug/ml	O-XYLENE	0.255 PPM	0.0196
SOIL STANDARD			
0.004 ug/g	BENZENE,	0.246 PPM	0.0163
0.004 ug/g	TOLUENE,	0.253 PPM	0.0158
0.004 ug/g	ETHYLBENZENE,	0.108 PPM	0.0370
0.008 ug/g	M&P-XYLENE	0.570 PPM	0.0140
0.004 ug/g	O-XYLENE	0.268 PPM	0.0149

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 32 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.012	< 0.8	ug/kg
		TOLUENE	0.049	< 0.8	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 32 DEPTH 16 TO 18 ft TYPE SOIL SAMPLE		BENZENE	0.018	< 0.8	ug/kg
		TOLUENE	0.045	< 0.8	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 32 DEPTH TYPE WATER SAMPLE BEFORE PURGE		BENZENE	0.013	< 1.0	ug/L
		TOLUENE	0.085	1.2	ug/L
		ETHYLBENZENE	0.000	< 3.2	ug/L
		M&P-XYLENE	0.000	< 1.4	ug/L
		O-XYLENE	0.000	< 1.0	ug/L
BORING # 32 DEPTH TYPE WATER SAMPLE AFTER PURGE		BENZENE	0.008	< 1.0	ug/L
		TOLUENE	0.041	< 0.7	ug/L
		ETHYLBENZENE	0.000	< 3.2	ug/L
		M&P-XYLENE	0.000	< 1.4	ug/L
		O-XYLENE	0.000	< 1.0	ug/L

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 33 DEPTH 0 TO 2 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 0.8	ug/kg
		TOLUENE	0.033	< 0.8	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 2 TO 4 FT TYPE SOIL SAMPLE		BENZENE	0.007	< 0.8	ug/kg
		TOLUENE	0.015	< 0.8	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 4 TO 6 FT TYPE SOIL SAMPLE		BENZENE	0.000	< 0.8	ug/kg
		TOLUENE	0.036	< 0.8	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 6 TO 8 FT TYPE SOIL SAMPLE		BENZENE	0.019	< 0.8	ug/kg
		TOLUENE	0.083	1.3	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.012	< 0.8	ug/kg
		TOLUENE	0.186	2.9	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 10 TO 12 FT TYPE SOIL SAMPLE		BENZENE	0.057	0.9 (1)	ug/kg
		TOLUENE	0.124	2.0	ug/kg
		ETHYLBENZENE	0.000	< 1.9	ug/kg
		M&P-XYLENE	0.000	< 0.7	ug/kg
		O-XYLENE	0.000	< 0.7	ug/kg
BORING # 33 DEPTH 12 TO 14 FT TYPE SOIL SAMPLE		BENZENE	26.100	424.4	ug/kg
		TOLUENE	283.500	4482.2	ug/kg
		ETHYLBENZENE	9.446	349.9	ug/kg
		M&P-XYLENE	32.410	454.9	ug/kg
		O-XYLENE	41.900	625.4	ug/kg

(1) If the retention time of the analyte was out of the 15% tolerance range the analyses is labeled "S" as suspect

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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING #	33	BENZENE	3.775	61.4	ug/kg
DEPTH	14 TO 16 FT	TOLUENE	24.650	389.7	ug/kg
TYPE	SOIL SAMPLE	ETHYLBENZENE	0.705	26.1	ug/kg
		M&P-XYLENE	0.483	6.8	ug/kg
		O-XYLENE	3.176	47.4	ug/kg
BORING #	33	BENZENE	0.041	< 0.8	ug/kg
DEPTH	16 TO 18 FT	TOLUENE	7.308	115.5	ug/kg
TYPE	SOIL SAMPLE	ETHYLBENZENE	0.116	4.3	ug/kg
		M&P-XYLENE	0.224	3.1	ug/kg
		O-XYLENE	0.616	9.2	ug/kg
BORING #	33	BENZENE	0.192	3.8	ug/L
DEPTH		TOLUENE	25.270	343.3	ug/L
TYPE	WATER SAMPLE BEFORE PURGE	ETHYLBENZENE	0.888	56.9	ug/L
		M&P-XYLENE	2.946	83.0	ug/L
		O-XYLENE	0.868	17.0	ug/L
BORING #	33	BENZENE	0.241	4.7	ug/L
DEPTH		TOLUENE	27.040	367.4	ug/L
TYPE	WATER SAMPLE AFTER PURGE	ETHYLBENZENE	0.197	12.6	ug/L
		M&P-XYLENE	0.664	18.7	ug/L
		O-XYLENE	0.532	10.4	ug/L

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CALIBRATION

GAS STANDARD		GC RESPONSE	HEAD SPACE TO ACTUAL CONC.FACTOR
1.00 PPM	BENZENE,	1.00 PPM	NA
1.00 PPM	TOLUENE,	1.00 PPM	NA
1.00 PPM	ETHYLBENZENE,	1.00 PPM	NA
1.00 PPM	O-XYLENE	1.00 PPM	NA
LIQUID STANDARD			
0.0050 ug/ml	BENZENE,	0.377 PPM	0.0133
0.0050 ug/ml	TOLUENE,	1.139 PPM	0.0044
0.0050 ug/ml	ETHYLBENZENE,	0.107 PPM	0.0467
0.0100 ug/ml	M&P-XYLENE	0.473 PPM	0.0211
0.0050 ug/ml	O-XYLENE	0.331 PPM	0.0151
SOIL STANDARD			
0.004 ug/g	BENZENE,	0.377 PPM	0.0106
0.004 ug/g	TOLUENE,	0.866 PPM	0.0046
0.004 ug/g	ETHYLBENZENE,	0.181 PPM	0.0221
0.008 ug/g	M&P-XYLENE	0.900 PPM	0.0089
0.004 ug/g	O-XYLENE	0.458 PPM	0.0087

GAS STANDARD IS A SCOTTY IV MIX # 6677 FROM SCOTT SPECIALTY GASES.
 SOIL AND LIQUID STANDARDS WERE MADE FROM BTX-100 (100 ug/mL in METHANOL)
 LOT NO. G-0433 FROM ULTRA SCIENTIFIC.

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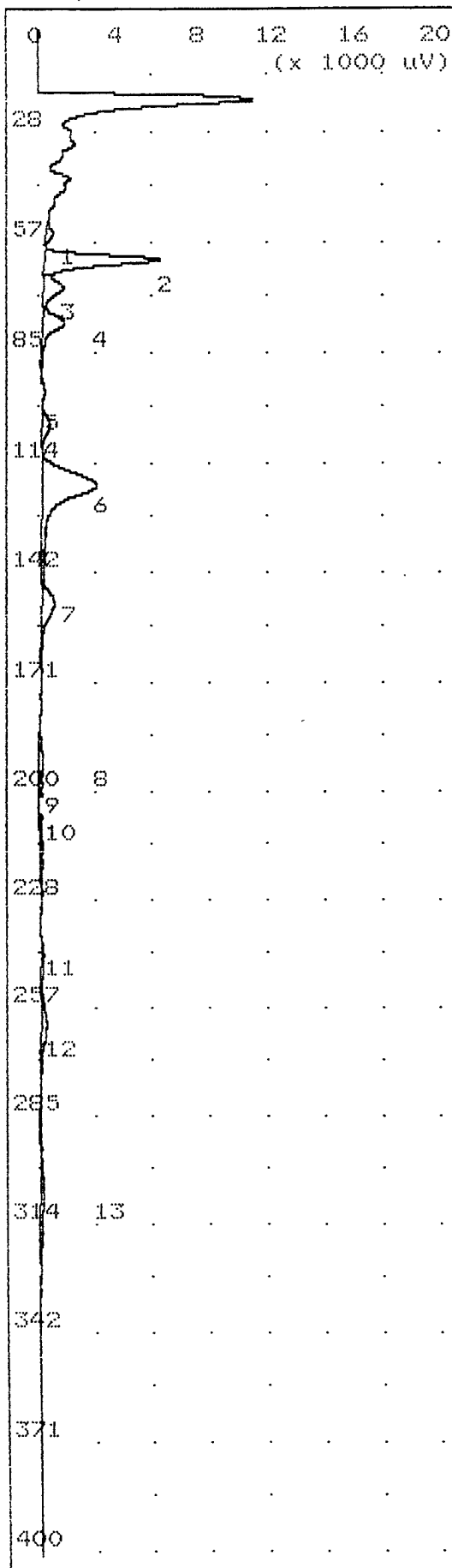
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SAMPLE ANALYSIS

SAMPLE DESCRIPTION		COMPOUND	HEAD SPACE PPM	ACTUAL CONC.	
BORING # 34 DEPTH 8 TO 10 FT TYPE SOIL SAMPLE		BENZENE	0.029	< 0.5	ug/kg
		TOLUENE	0.187	0.9	ug/kg
		ETHYLBENZENE	0.000	< 1.1	ug/kg
		M&P-XYLENE	0.066	0.6	ug/kg
		O-XYLENE	0.000	< 0.4	ug/kg
BORING # 34 DEPTH 14 TO 16 ft TYPE SOIL SAMPLE		BENZENE	0.082	0.9	ug/kg
		TOLUENE	0.300	1.4	ug/kg
		ETHYLBENZENE	0.000	< 1.1	ug/kg
		M&P-XYLENE	0.000	< 0.4	ug/kg
		O-XYLENE	0.000	< 0.4	ug/kg
BORING # 34 DEPTH 16 TO 18 ft TYPE SOIL SAMPLE		BENZENE	0.014	< 0.5	ug/kg
		TOLUENE	0.145	0.7	ug/kg
		ETHYLBENZENE	0.000	< 1.1	ug/kg
		M&P-XYLENE	0.000	< 0.4	ug/kg
		O-XYLENE	0.000	< 0.4	ug/kg
BORING # 34 DEPTH TYPE WATER SAMPLE BEFORE PURGE		BENZENE	0.019	< 0.7	ug/L
		TOLUENE	0.343	1.5	ug/L
		ETHYLBENZENE	0.000	< 2.3	ug/L
		M&P-XYLENE	0.000	< 1.1	ug/L
		O-XYLENE	0.000	< 0.8	ug/L
BORING # 34 DEPTH TYPE WATER SAMPLE AFTER PURGE		BENZENE	0.018	< 0.7	ug/L
		TOLUENE	0.257	1.1	ug/L
		ETHYLBENZENE	0.000	< 2.3	ug/L
		M&P-XYLENE	0.000	< 1.1	ug/L
		O-XYLENE	0.000	< 0.8	ug/L

Analysis #8

10S+ GC Function Analysis Report



Time Printed: Aug 5, 93 08:57

Sample Time: Aug 5, 93 08:48

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

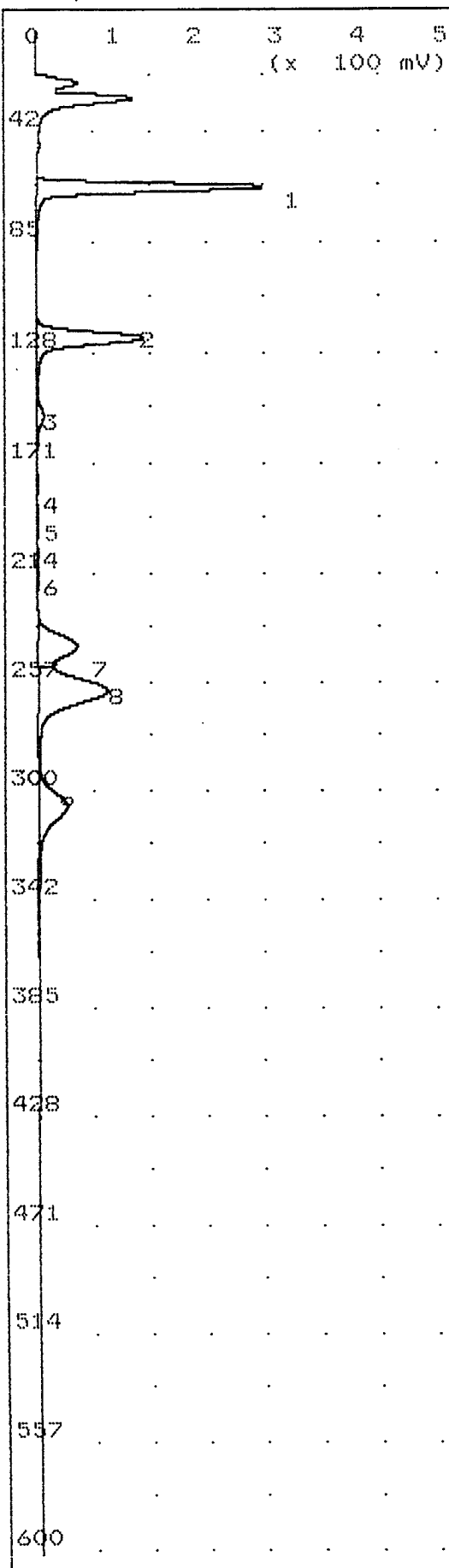
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.947 mVS	52.9
2	Benzene	53.04 ppb	59.7
3	Unknown	4.413 mVS	66.8
4	Unknown	5.355 mVS	76.0
5	Unknown	2.039 mVS	102.1
6	Toluene	113.6 ppb	118.5
7	Unknown	4.655 mVS	149.0
8	Unknown	9.560 mVS	191.2
9	Unknown	7.884 mVS	196.2
10	Ethylbenzene	149.2 ppb	205.0
11	m&p-xylene	8.059 ppb	241.3
12	Unknown	2.825 mVS	260.5
13	O-xylene	19.88 ppb	306.6

Notes

soil bottle headspace vol.=145cc
 50g of soil temp 28 c
 blank zero check
 benzene
 ethlyb
 tol.
 o-xy.
 m-xy.
 p-xy.

Analysis #3

10S+ GC Function Analysis Report



Time Printed: Aug 5, 93 08:08
 Sample Time: Aug 5, 93 08:50
 Method

Slope Up 2.000 mV/Sec
 Slope Down 6.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 37 C
 Max Gain 1000
 Analysis Time 600.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	2.860 ppm	61.6
2	Toluene	3.252 ppm	119.7
3	Unknown	69.91 mVS	150.6
4	Unknown	1.438 mVS	176.6
5	Unknown	6.441 mVS	191.6
6	Unknown	5.198 mVS	208.2
7	Ethylbenzene	2.546 ppm	239.8
8	m&p-xylene	7.000 ppm	257.6
9	O-xylene	3.706 ppm	303.4

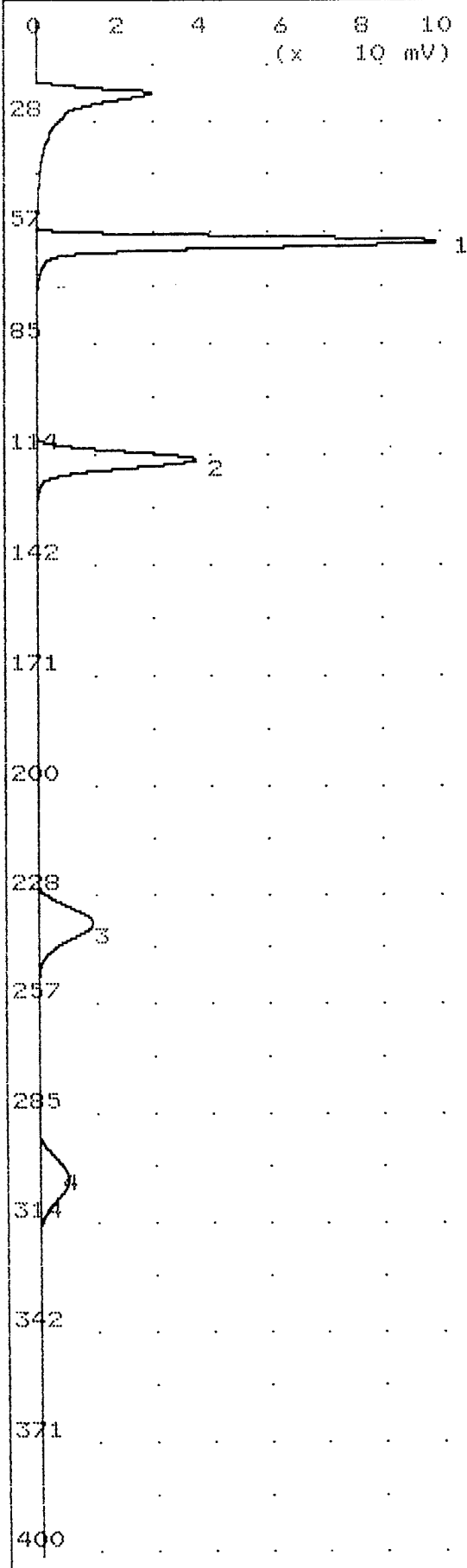
USE this
 Data

Benz 11
 Tol 13
 EB 17
 xylene 14

Notes

soil bottle headspace vol.=145cc
 100g of soil will be analyzed
 cal check 40cc of .25 ug/ml of
 Benzene
 ethlyb
 tol.
 o-xy.
 m-xy.
 p-xy.

Analysis #2 10S+ GC Function Calibrant Report



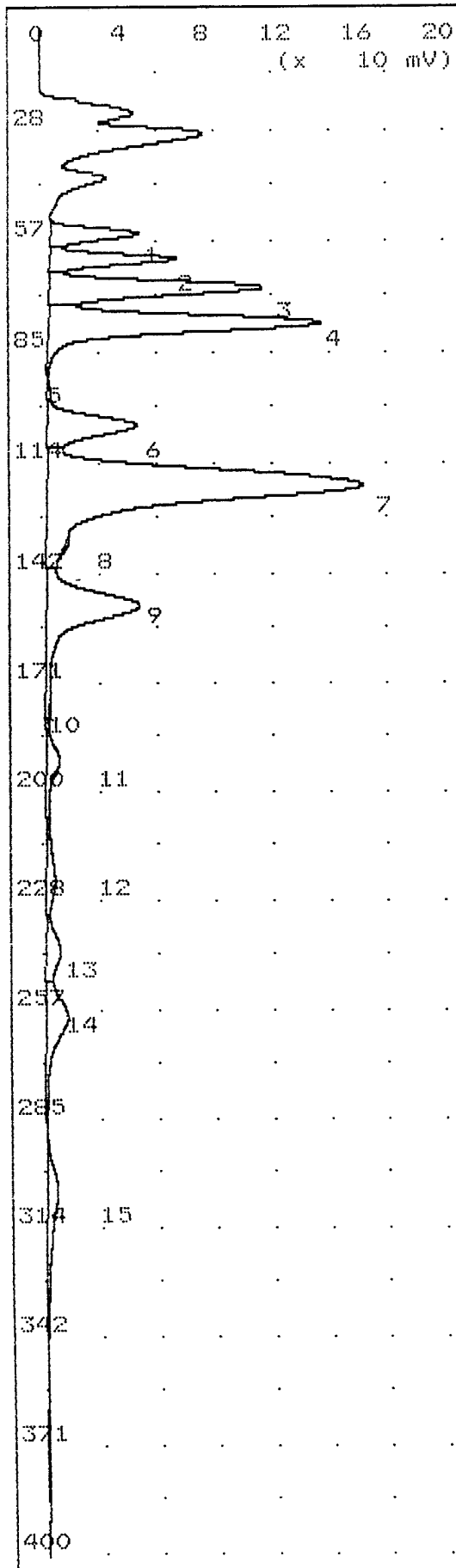
Time Printed: Aug 5,93 07:24
 Sample Time: Aug 5,93 07:13
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 29 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	57.7
2	Toluene	999.9 ppb	113.6
3	Ethylbenzene	1.000 ppm	233.8
4	O-xylene	1.000 ppm	300.8

Notes

soil bottle headspace vol.=145cc
 50g of soil will be analyzed
 cal.
 Benzene
 ethlyb
 tol.
 o-xy.
 m-xy.
 p-xy.



Time Printed: Aug 5, 93 08:36

Sample Time: Aug 5, 93 08:26

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

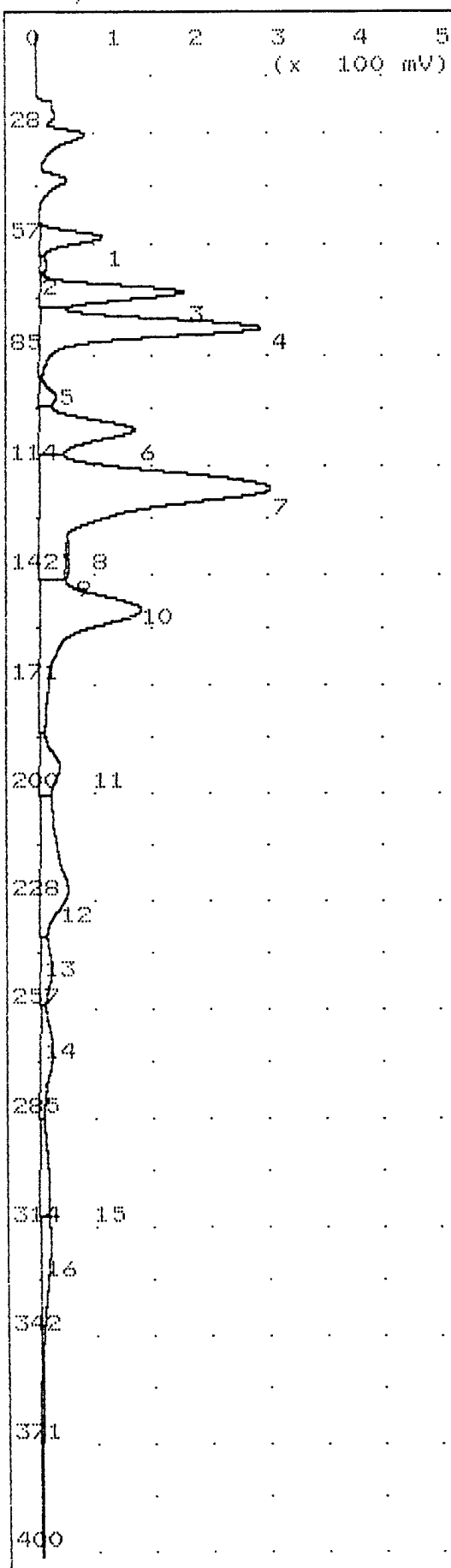
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	156.3 mVS	53.2
2	Benzene	597.4 ppb	59.8
3	Unknown	457.8 mVS	67.2
4	Unknown	696.2 mVS	76.2
5	Unknown	4.558 mVS	95.0
6	Unknown	265.9 mVS	102.5
7	Toluene	7.185 ppm	118.1
8	Unknown	4.495 mVS	131.8
9	Unknown	439.2 mVS	149.2
10	Unknown	1.740 mVS	176.0
11	Unknown	67.00 mVS	189.8
12	Unknown	67.16 mVS	221.8
13	Ethylbenzene	428.9 ppb	239.4
14	m&p-xylene	1.110 ppm	256.8
15	O-xylene	1.062 ppm	303.2

60 = 1 ppb Benzene
 700 = 1 ppb Tol
 50 = 1 ppb Eth.
 70 = 1 xylenes

Notes

soil bottle headspace vol.=145cc
 50g of soil temp 28 c
 soil sample spiked .5ml 1ppm of
 benzene
 ethylb
 tol.
 o-xy.
 m-xy.
 p-xy.



Time Printed: Aug 5, 93 09:08

Sample Time: Aug 5, 93 08:59

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 E/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

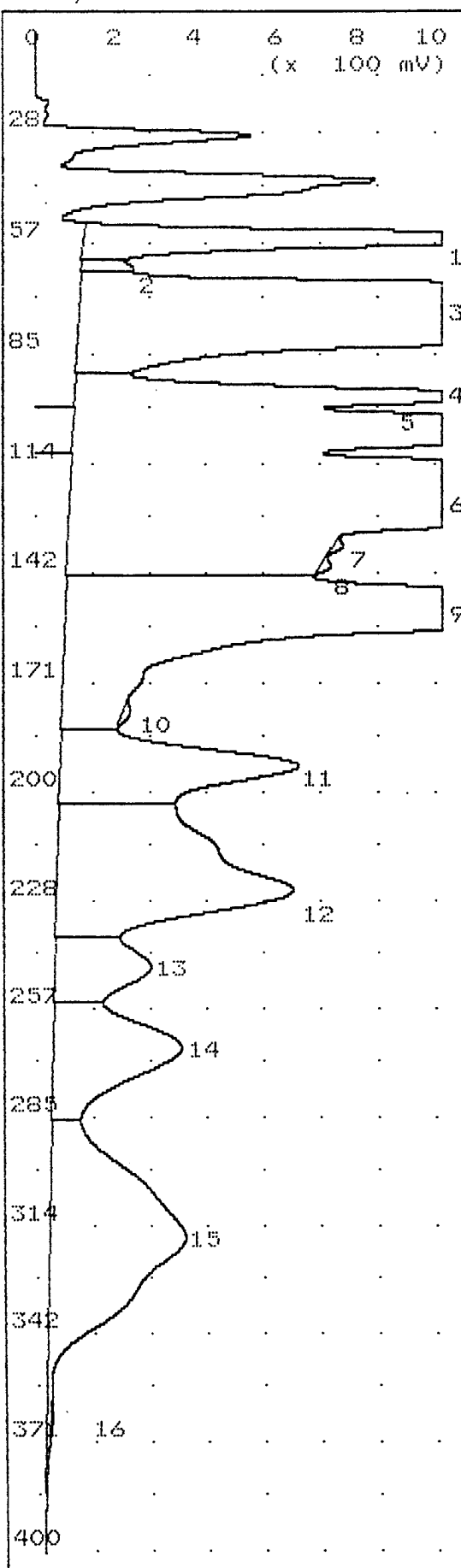
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	295.4 mVS	53.4
2	Benzene	82.40 ppb	60.6
3	Unknown	799.0 mVS	67.4
4	Unknown	1.529 VSec	76.6
5	Unknown	95.61 mVS	94.6
6	Unknown	806.7 mVS	103.0
7	Toluene	16.04 PPM1	118.2
8	Unknown	9.341 mVS	133.7
9	Unknown	15.05 mVS	139.0
10	Unknown	1.469 VSec	150.0
11	Unknown	275.0 mVS	191.2
12	Ethylbenzene	4.440 ppm	223.8
13	m&p-xylene	1.451 ppm	244.5
14	Unknown	282.8 mVS	265.6
15	O-xylene	1.835 ppm	304.5
16	Unknown	276.7 mVS	317.0

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil bottle headspace vol.=145cc
 50g of soil temp 28 c
 sample # 4 to 6 ft SB 16

Analysis #11 10S+ GC Function Analysis Report



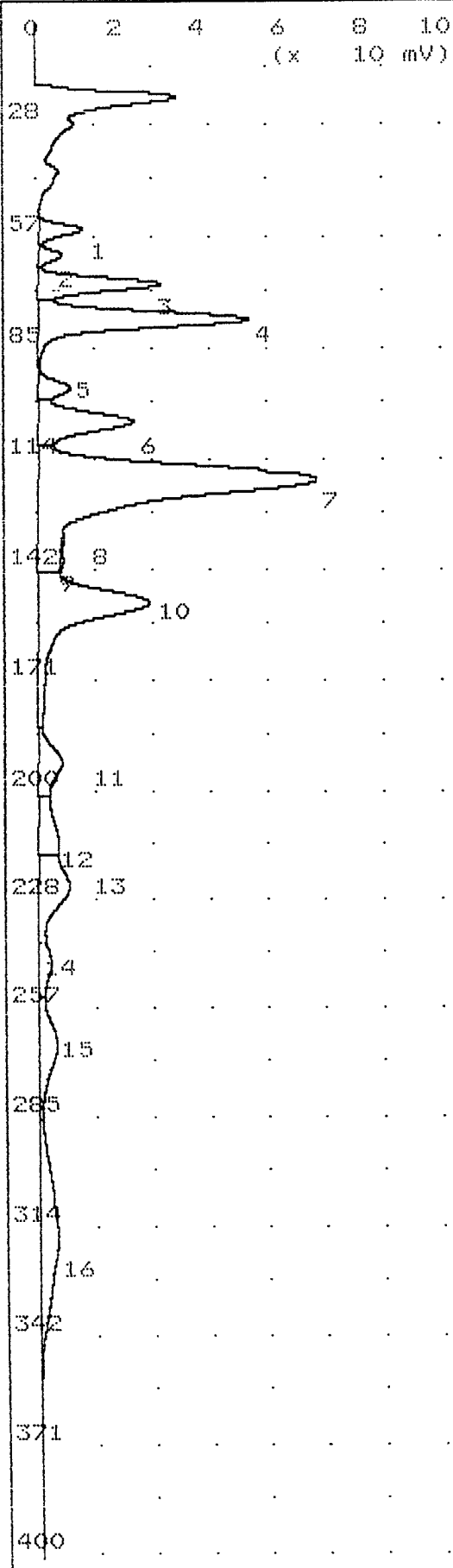
Time Printed: Aug 5,93 09:35
Sample Time: Aug 5,93 09:24

Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	27.74 PPM2	54.0
2	Unknown	334.0 mVS	61.6
3	Unknown	61.83 VSec	73.3
4	Unknown	7.325 VSec	94.8
5	Unknown	21.92 VSec	99.0
6	Toluene	332.9 PPM2	120.1
7	Unknown	72.43 mVS	133.4
8	Unknown	80.83 mVS	139.0
9	Unknown	28.65 VSec	150.4
10	Unknown	70.52 mVS	176.6
11	Unknown	7.671 VSec	191.4
12	Ethylbenzene	77.97 PPM2	224.0
13	m&p-xylene	25.14 PPM2	244.2
14	Unknown	6.217 VSec	265.3
15	O-xylene	114.8 PPM2	315.4
16	Unknown	20.84 mVS	360.6

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
soil bottle headspace vol.=145cc
50g of soil temp 28 c
sample # 8 to 10 ft sb 16



Time Printed: Aug 5, 93 10:02

Sample Time: Aug 5, 93 09:52

Method

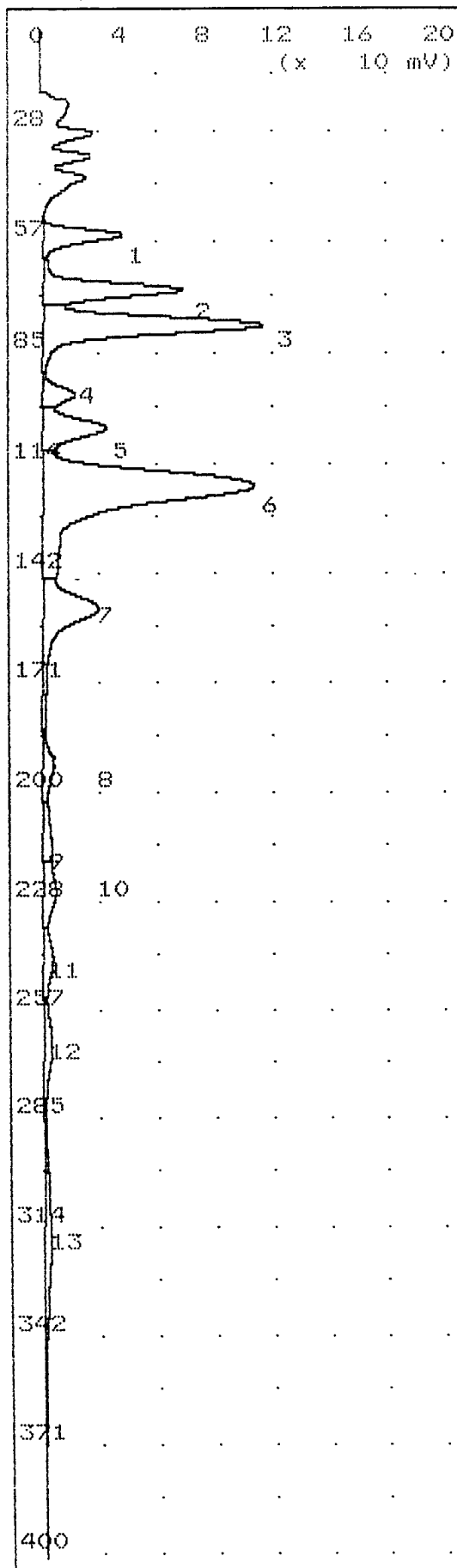
Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 E/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	36.86 mVS	53.1
2	Benzene	52.58 ppb	59.9
3	Unknown	120.6 mVS	67.3
4	Unknown	254.8 mVS	76.4
5	Unknown	36.20 mVS	94.1
6	Unknown	140.4 mVS	102.8
7	Toluene	3.491 ppm	117.7
8	Unknown	1.184 mVS	132.4
9	Unknown	2.207 mVS	138.9
10	Unknown	281.0 mVS	149.6
11	Unknown	65.00 mVS	191.0
12	Unknown	60.51 mVS	210.8
13	Ethylbenzene	623.9 ppb	223.2
14	m&p-xylene	252.7 ppb	243.7
15	Unknown	81.49 mVS	264.2
16	O-xylene	1.528 ppm	317.0

Notes

soil bottle headspace vol.=145cc
 50g of soil temp 28 c
 sample # 20 to 22 sb 16



Time Printed: Aug 5, 93 10:24

Sample Time: Aug 5, 93 10:14

Method

Slope Up	1.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
E/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	34	C
Max Gain	1000	
Analysis Time	400.0	sec

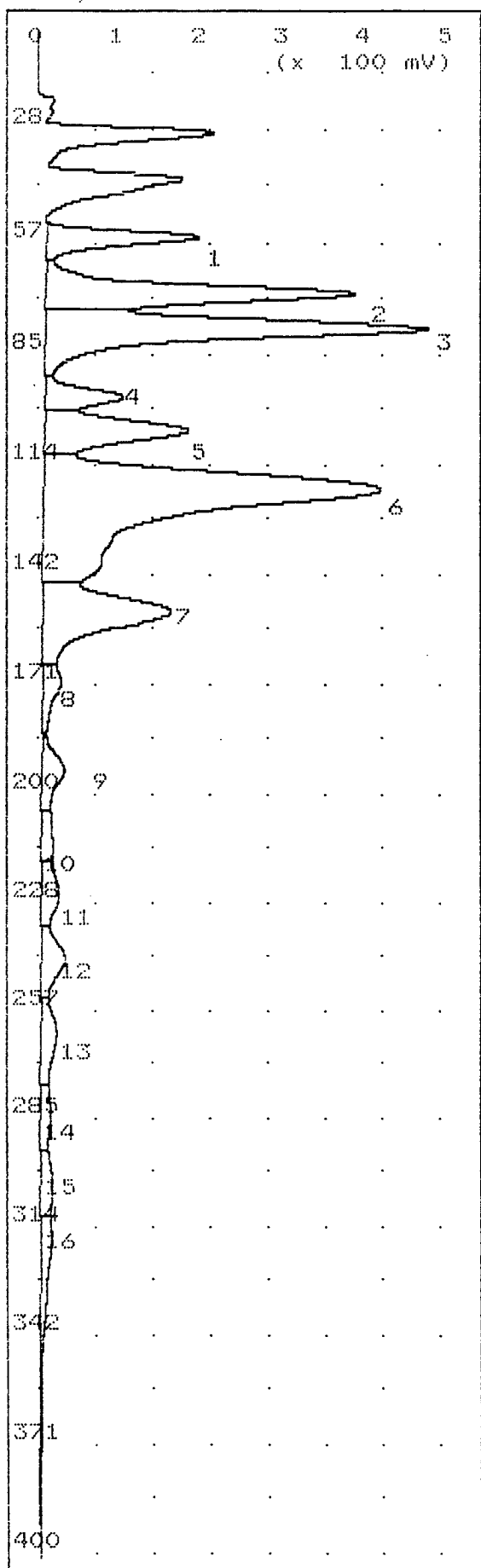
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	446.5 ppb	53.5
2	Unknown	300.4 mVS	67.4
3	Unknown	560.4 mVS	76.6
4	Unknown	75.18 mVS	94.4
5	Unknown	188.3 mVS	103.0
6	Toluene	5.153 ppm	118.2
7	Unknown	277.5 mVS	150.0
8	Unknown	54.58 mVS	188.8
9	Unknown	48.76 mVS	211.8
10	Ethylbenzene	422.3 ppb	223.6
11	m&p-xylene	453.5 ppb	241.6
12	Unknown	73.74 mVS	264.0
13	O-xylene	1.056 ppm	316.5

Notes

soil bottle headspace vol.=145cc
43.3ml H2O temp 28 c
sample sb 16 water sample

Analysis #17 10S+ GC Function Analysis Report

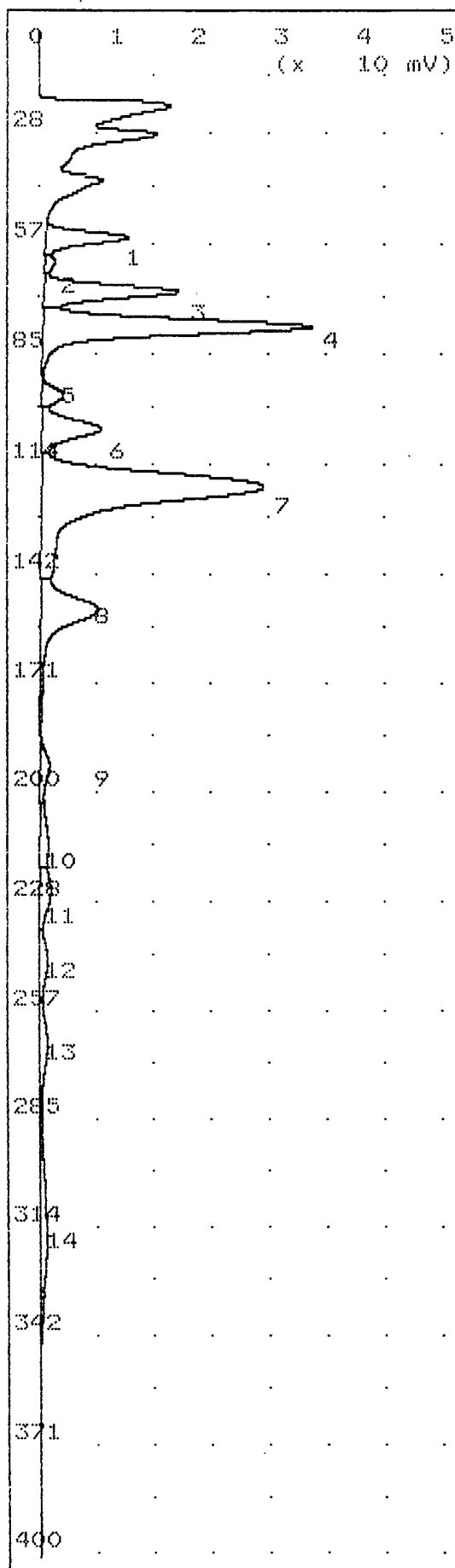


Time Printed: Aug 5, 93 10:45
 Sample Time: Aug 5, 93 10:36
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	2.300 ppm	53.6
2	Unknown	2.076 VSec	68.0
3	Unknown	2.877 VSec	77.0
4	Unknown	505.0 mVS	94.6
5	Unknown	1.214 VSec	103.3
6	Toluene	25.92 PPM2	118.8
7	Unknown	1.613 VSec	150.4
8	Unknown	238.8 mVS	169.2
9	Unknown	308.4 mVS	191.6
10	Unknown	157.0 mVS	212.8
11	Unknown	271.5 mVS	224.2
12	Ethylbenzene	1.990 ppm	241.0
13	m&p-xylene	2.367 ppm	261.0
14	Unknown	171.8 mVS	282.6
15	O-xylene	1.873 ppm	302.1
16	Unknown	297.2 mVS	315.4

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 sample # sb 16 12 to 14 ft 845



Time Printed: Aug 5, 93 11:07

Sample Time: Aug 5, 93 10:58

Method

Slope Up	1.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
E/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	34	C
Max Gain	1000	
Analysis Time	400.0	sec

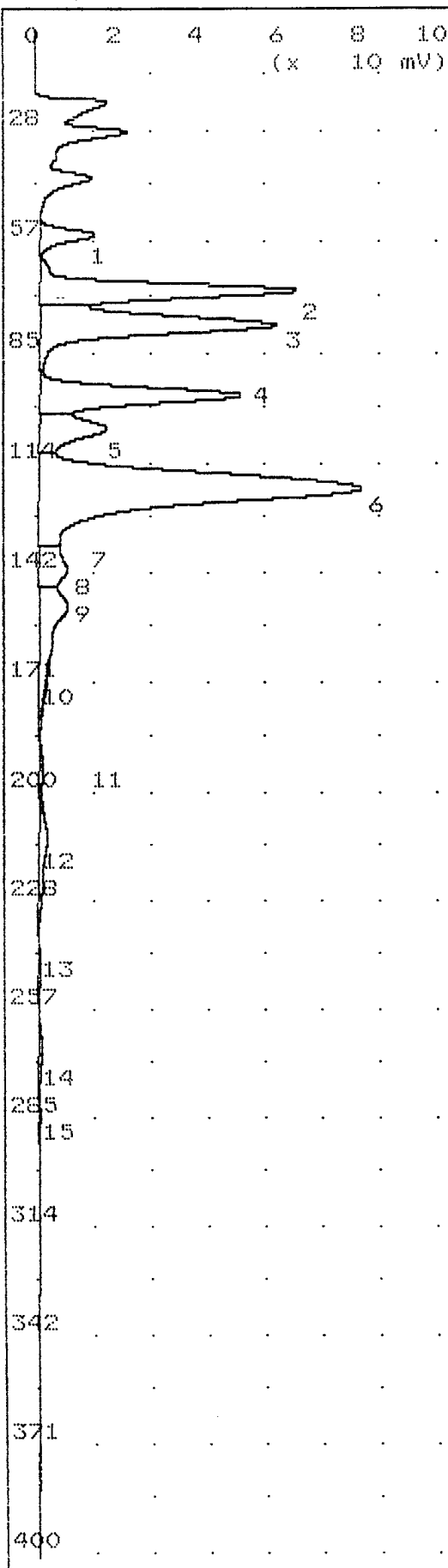
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	37.36 mVS	53.6
2	Benzene	12.37 ppb	59.8
3	Unknown	68.59 mVS	67.7
4	Unknown	157.9 mVS	76.8
5	Unknown	11.88 mVS	94.5
6	Unknown	41.84 mVS	103.2
7	Toluene	1.269 ppm	118.5
8	Unknown	66.27 mVS	150.0
9	Unknown	11.69 mVS	191.6
10	Unknown	14.41 mVS	211.8
11	Ethylbenzene	91.70 ppb	224.0
12	m&p-xylene	101.2 ppb	242.1
13	Unknown	20.45 mVS	264.5
14	O-xylene	310.4 ppb	316.0

Notes

soil bottle headspace vol.=145cc
temp 28 c
50g soil
sample #16 18 to 20 ft 902

Analysis #21 10S+ GC Function Analysis Report

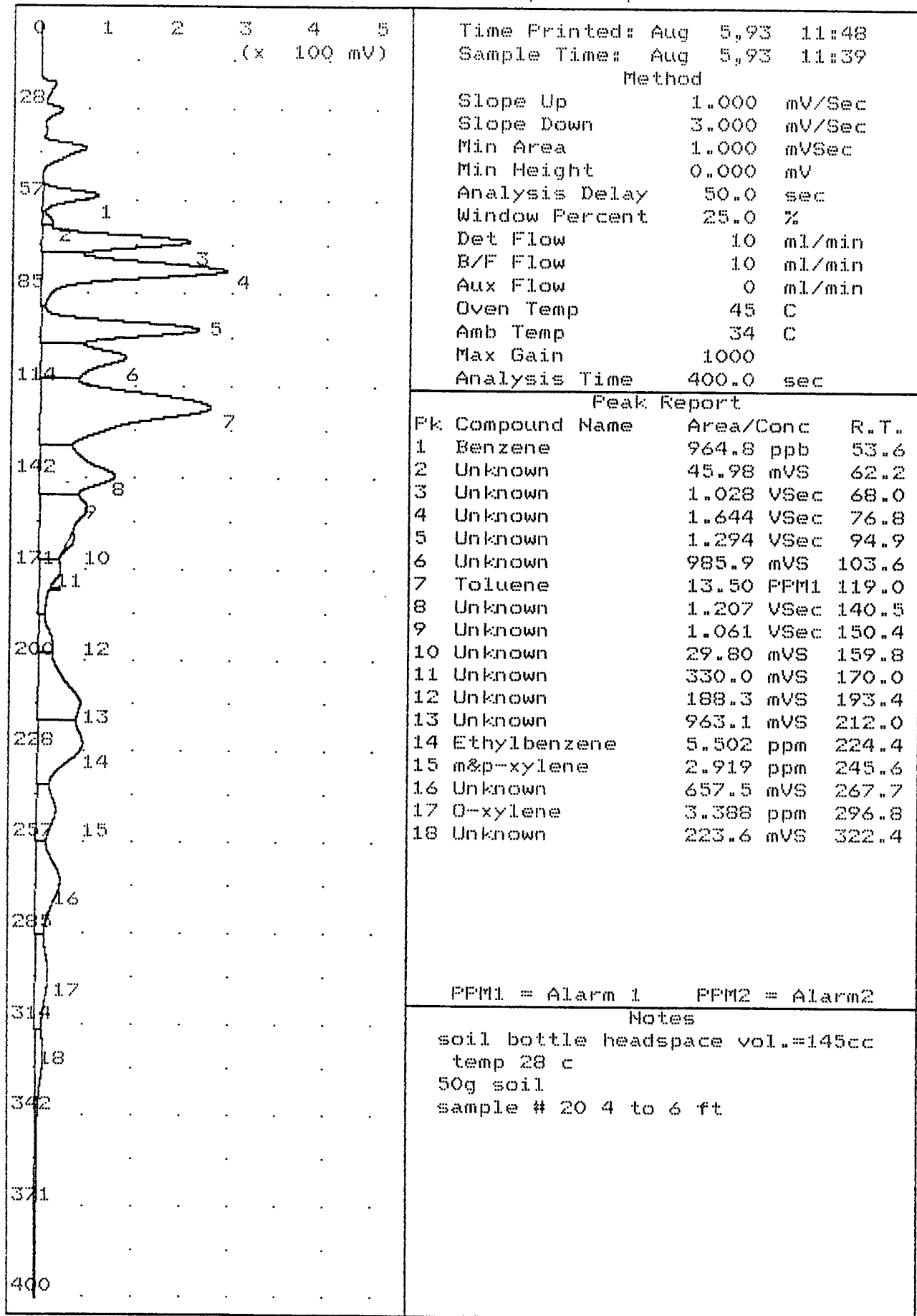


Time Printed: Aug 5,93 11:27
 Sample Time: Aug 5,93 11:18
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report				
Pk	Compound Name	Area/Conc		R.T.
1	Benzene	142.3 ppb		53.5
2	Unknown	280.1 mVS		67.7
3	Unknown	317.7 mVS		76.4
4	Unknown	251.1 mVS		94.6
5	Unknown	104.5 mVS		103.2
6	Toluene	3.538 ppm		118.9
7	Unknown	0.055 mVS		133.6
8	Unknown	60.44 mVS		140.2
9	Unknown	103.6 mVS		149.8
10	Unknown	1.735 mVS		170.4
11	Unknown	9.346 mVS		191.8
12	Ethylbenzene	196.5 ppb		210.8
13	m&p-xylene	18.31 ppb		243.7
14	Unknown	7.311 mVS		267.7
15	O-xylene	10.76 ppb		284.5

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 sample # 20 2 to 4 ft

Analysis #23 10S+ GC Function Analysis Report



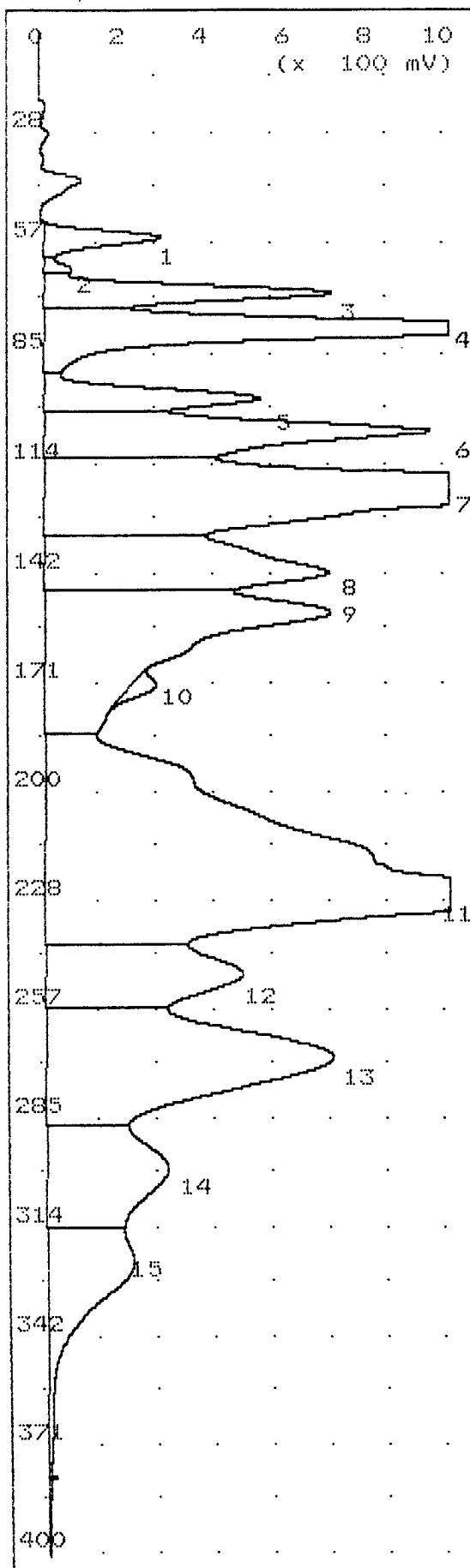
Time Printed: Aug 5, 93 11:48
Sample Time: Aug 5, 93 11:39
Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
E/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	964.8 ppb	53.6
2	Unknown	45.98 mVS	62.2
3	Unknown	1.028 VSec	68.0
4	Unknown	1.644 VSec	76.8
5	Unknown	1.294 VSec	94.9
6	Unknown	985.9 mVS	103.6
7	Toluene	13.50 PPM1	119.0
8	Unknown	1.207 VSec	140.5
9	Unknown	1.061 VSec	150.4
10	Unknown	29.80 mVS	159.8
11	Unknown	330.0 mVS	170.0
12	Unknown	188.3 mVS	193.4
13	Unknown	963.1 mVS	212.0
14	Ethylbenzene	5.502 ppm	224.4
15	m&p-xylene	2.919 ppm	245.6
16	Unknown	657.5 mVS	267.7
17	O-xylene	3.388 ppm	296.8
18	Unknown	223.6 mVS	322.4

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
soil bottle headspace vol.=145cc
temp 28 c
50g soil
sample # 20 4 to 6 ft

Analysis #25 10S+ GC Function Analysis Report



Time Printed: Aug 5,93 12:49
 Sample Time: Aug 5,93 12:40
 Method

Slope Up	1.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	34	C
Max Gain	1000	
Analysis Time	400.0	sec

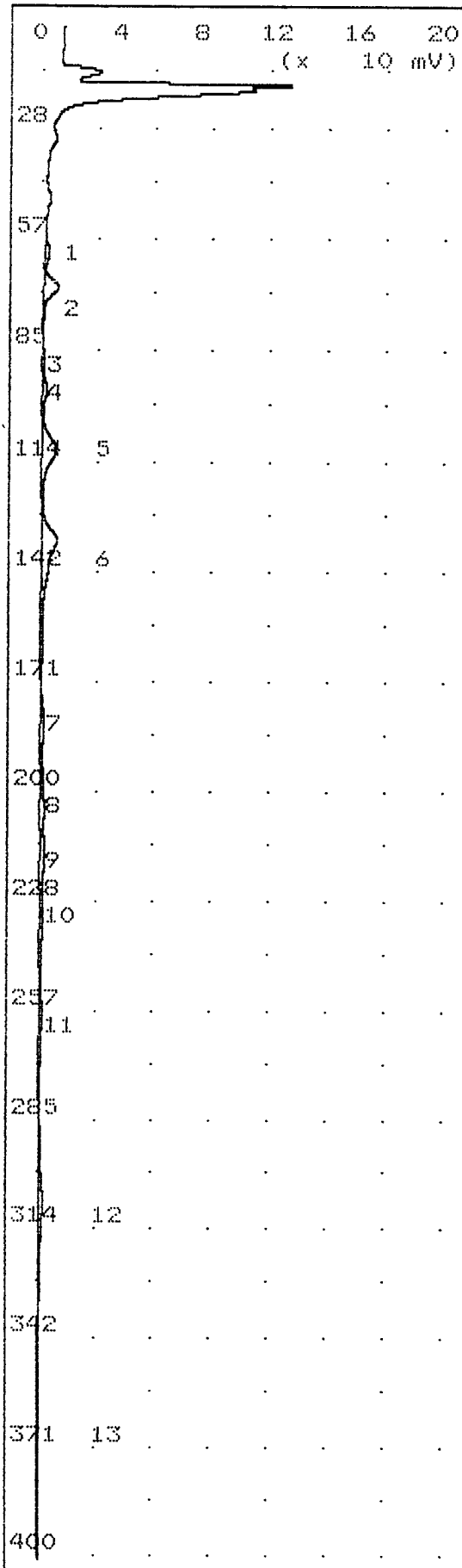
Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	3.731 ppm	53.8
2	Unknown	218.5 mVS	62.2
3	Unknown	3.438 VSec	68.1
4	Unknown	9.851 VSec	77.3
5	Unknown	3.060 VSec	95.4
6	Unknown	7.536 VSec	104.0
7	Toluene	112.6 PPM2	119.2
8	Unknown	8.170 VSec	140.6
9	Unknown	12.82 VSec	151.0
10	Unknown	315.2 mVS	170.0
11	Ethylbenzene	193.5 PPM2	225.2
12	m&p-xylene	52.14 PPM2	245.8
13	Unknown	14.72 VSec	267.7
14	O-xylene	58.09 PPM2	296.8
15	Unknown	5.088 VSec	321.0

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 sample # 20 8 to 10 ft

Analysis #27 10S+ GC Function Analysis Report



Time Printed: Aug 5,93 13:11
 Sample Time: Aug 5,93 13:02
 Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

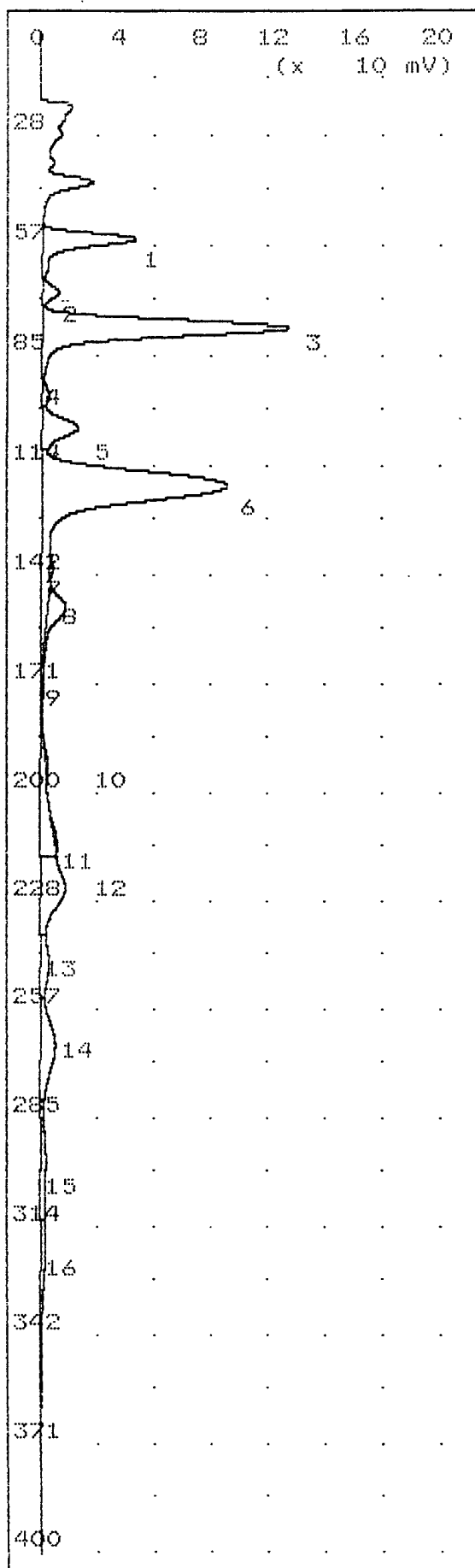
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	30.17 ppb	57.4
2	Unknown	34.17 mVS	67.7
3	Unknown	2.304 mVS	85.2
4	Unknown	12.47 mVS	93.6
5	Toluene	270.4 ppb	109.2
6	Unknown	92.32 mVS	132.8
7	Unknown	19.68 mVS	179.8
8	Unknown	25.73 mVS	201.0
9	Unknown	27.13 mVS	214.2
10	Ethylbenzene	126.4 ppb	228.4
11	m&p-xylene	176.0 ppb	258.1
12	O-xylene	480.7 ppb	306.4
13	Unknown	4.269 mVS	361.6

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 sample # 20 10 to 12 ft

Analysis #29 10S+ GC Function Analysis Report



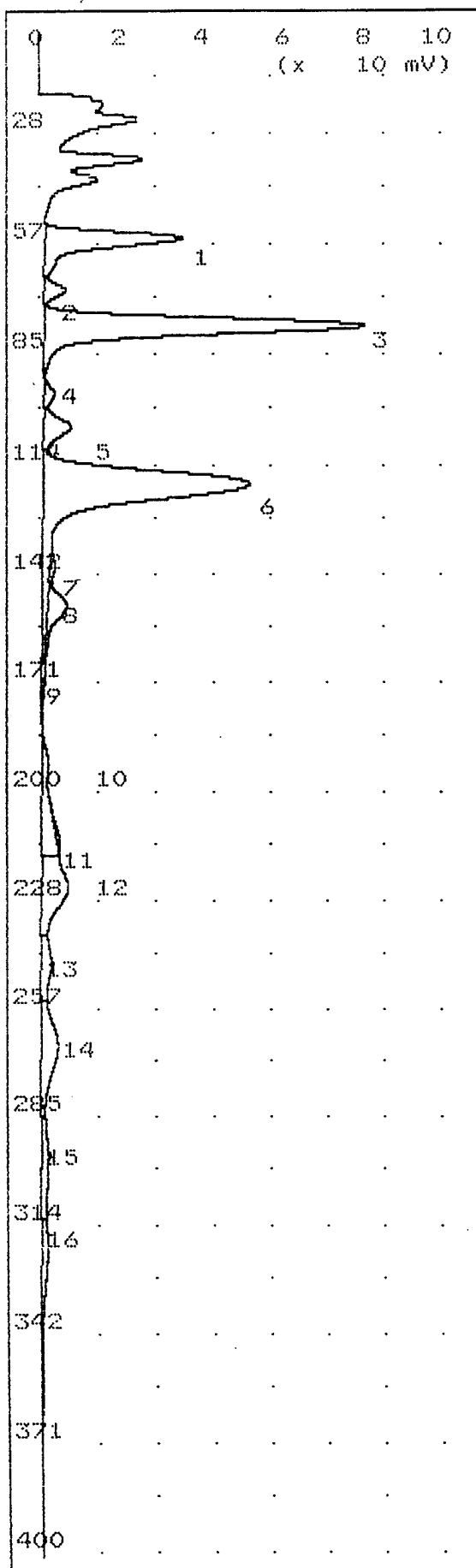
Time Printed: Aug 5, 93 13:33
 Sample Time: Aug 5, 93 13:24
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	560.9 ppb	53.4
2	Unknown	30.66 mVS	67.4
3	Unknown	620.6 mVS	76.5
4	Unknown	16.69 mVS	94.1
5	Unknown	106.6 mVS	102.5
6	Toluene	5.096 ppm	117.7
7	Unknown	5.004 mVS	138.9
8	Unknown	62.49 mVS	149.4
9	Unknown	0.926 mVS	168.2
10	Unknown	10.46 mVS	190.8
11	Unknown	9.660 mVS	211.2
12	Ethylbenzene	937.7 ppb	223.4
13	m&p-xylene	415.1 ppb	243.4
14	Unknown	132.2 mVS	264.2
15	O-xylene	522.1 ppb	295.2
16	Unknown	47.43 mVS	319.2

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 sample # 20 16 to 18 ft

Analysis #31 105+ GC Function Analysis Report

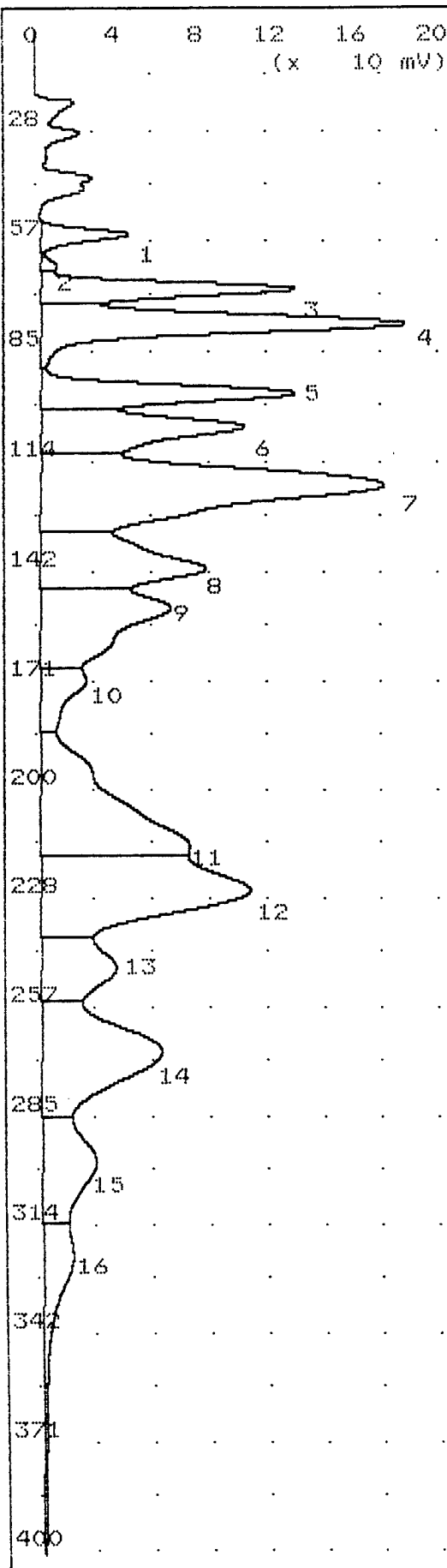


Time Printed: Aug 5,93 13:54
 Sample Time: Aug 5,93 13:45
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report				
Pk	Compound Name	Area/Conc		R.T.
1	Benzene	453.9 ppb		53.7
2	Unknown	18.75 mVS		67.3
3	Unknown	385.8 mVS		76.5
4	Unknown	11.00 mVS		94.1
5	Unknown	37.90 mVS		102.5
6	Toluene	2.327 ppm		117.3
7	Unknown	5.129 mVS		138.9
8	Unknown	35.08 mVS		149.4
9	Unknown	0.792 mVS		168.6
10	Unknown	61.95 mVS		190.4
11	Unknown	6.318 mVS		211.6
12	Ethylbenzene	489.2 ppb		222.6
13	m&p-xylene	219.0 ppb		243.7
14	Unknown	70.45 mVS		264.5
15	O-xylene	293.2 ppb		294.4
16	Unknown	27.73 mVS		316.5

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 43.1 ml
 sample # 20 water sample

Analysis #33 10S+ GC Function Analysis Report



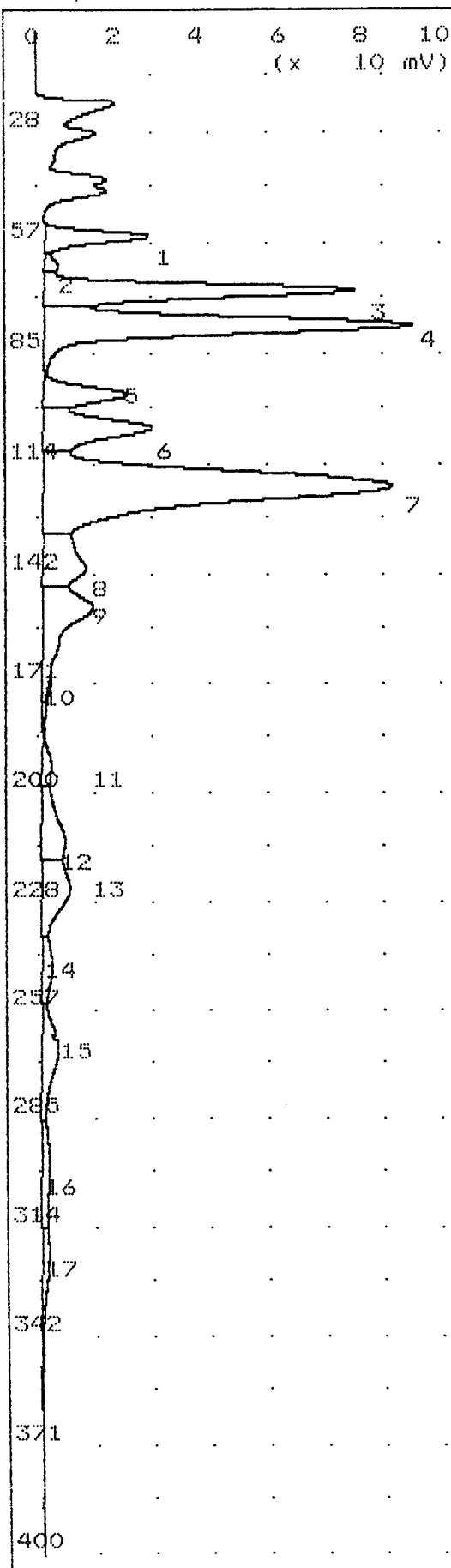
Time Printed: Aug 5,93 14:15
Sample Time: Aug 5,93 14:06

Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 35 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	163.7 mVS	53.5
2	Benzene	69.14 ppb	61.8
3	Unknown	551.0 mVS	67.7
4	Unknown	1.035 VSec	76.5
5	Unknown	672.1 mVS	94.6
6	Unknown	769.6 mVS	103.3
7	Toluene	9.299 ppm	118.4
8	Unknown	872.1 mVS	140.0
9	Unknown	883.2 mVS	150.4
10	Unknown	238.4 mVS	169.4
11	Unknown	1.276 VSec	213.0
12	Ethylbenzene	8.934 ppm	224.6
13	m&p-xylene	3.818 ppm	244.5
14	Unknown	1.138 VSec	266.9
15	O-xylene	4.824 ppm	295.4
16	Unknown	347.8 mVS	320.2

Notes
soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
sample # 20 6 to 8 ft

Analysis #36 10S+ GC Function Analysis Report



Time Printed: Aug 5,93 14:52
Sample Time: Aug 5,93 14:43
Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 35 C
Max Gain 1000
Analysis Time 400.0 sec

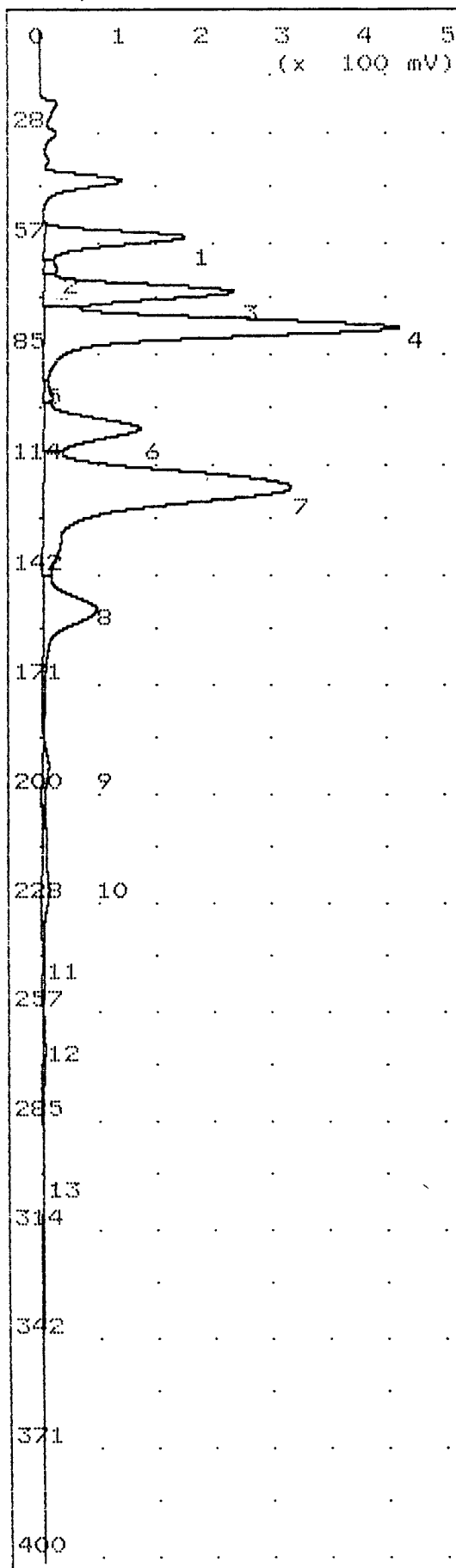
Peak Report				
Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	94.06 mVS	53.4	
2	Benzene	33.35 ppb	61.1	
3	Unknown	324.6 mVS	67.4	
4	Unknown	470.0 mVS	76.4	
5	Unknown	102.5 mVS	94.2	
6	Unknown	172.8 mVS	102.8	
7	Toluene	3.667 ppm	118.1	
8	Unknown	114.4 mVS	139.0	
9	Unknown	158.0 mVS	149.6	
10	Unknown	2.211 mVS	168.8	
11	Unknown	21.72 mVS	191.0	
12	Unknown	78.42 mVS	211.2	
13	Unknown	94.36 mVS	223.2	
14	Ethylbenzene	194.4 ppb	244.0	
15	m&p-xylene	532.2 ppb	265.3	
16	O-xylene	384.9 ppb	295.7	
17	Unknown	31.75 mVS	320.8	

Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
sample # 21 2 to 4 ft

Analysis #38

105+ GC Function Analysis Report



Time Printed: Aug 5, 93 15:13

Sample Time: Aug 5, 93 15:04

Method

Slope Up 1.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 50.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 35 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	731.7 mVS	53.5
2	Benzene	126.0 ppb	61.6
3	Unknown	1.076 VSec	67.6
4	Unknown	2.488 VSec	76.9
5	Unknown	46.01 mVS	94.8
6	Unknown	782.1 mVS	103.0
7	Toluene	14.03 PPM1	118.2
8	Unknown	639.8 mVS	149.8
9	Unknown	74.13 mVS	191.0
10	Unknown	150.7 mVS	222.8
11	Ethylbenzene	137.7 ppb	243.4
12	m&p-xylene	317.2 ppb	265.6
13	O-xylene	460.6 ppb	298.1

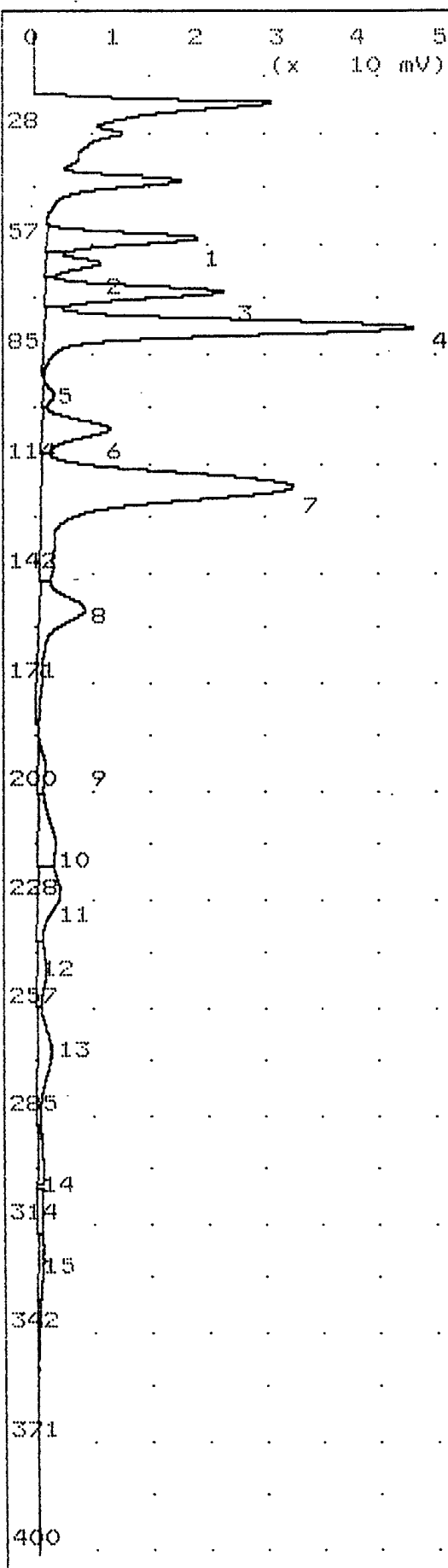
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
sample # 21 4 to 6 ft

Analysis #40

10S+ GC Function Analysis Report



Time Printed: Aug 5, 93 15:35

Sample Time: Aug 5, 93 15:25

Method

Slope Up 1.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 50.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 35 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	68.73 mVS	53.4
2	Benzene	64.26 ppb	59.9
3	Unknown	86.80 mVS	67.4
4	Unknown	219.5 mVS	76.6
5	Unknown	5.234 mVS	94.2
6	Unknown	47.42 mVS	103.0
7	Toluene	1.285 ppm	118.2
8	Unknown	63.82 mVS	150.6
9	Unknown	9.210 mVS	192.4
10	Unknown	30.33 mVS	211.8
11	Unknown	35.11 mVS	224.8
12	Ethylbenzene	70.96 ppb	244.8
13	m&p-xylene	217.1 ppb	266.4
14	O-xylene	150.6 ppb	298.6
15	Unknown	12.68 mVS	319.7

Notes

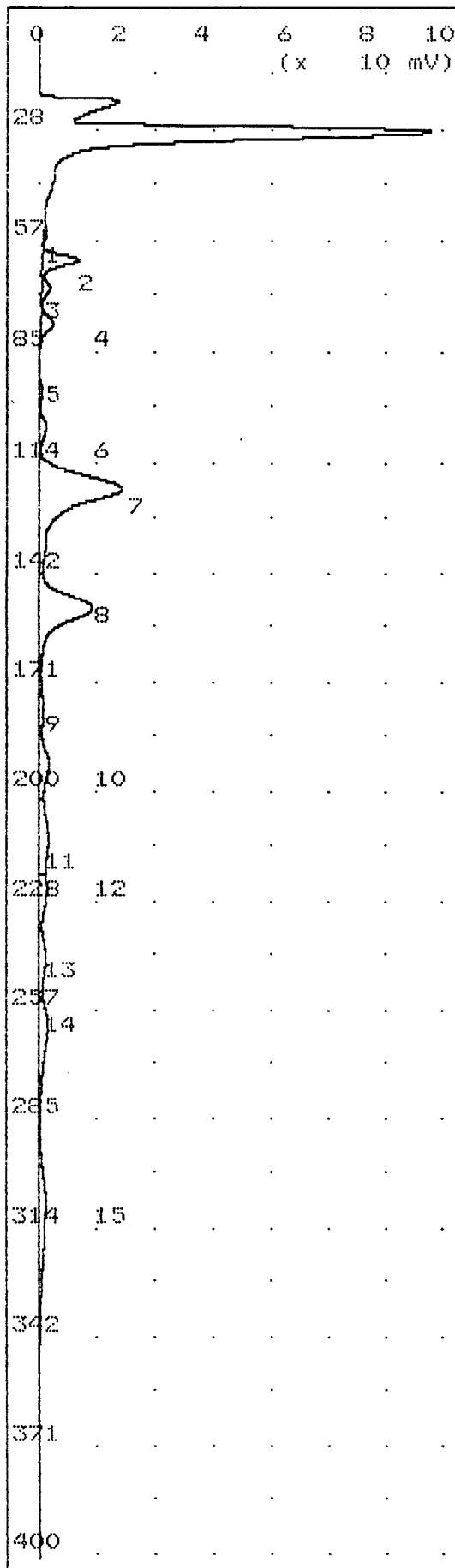
soil bottle headspace vol.=145cc

temp 28 c

soil sample 50 g

sample #21 10 to 12 ft

Analysis #9 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 09:38
 Sample Time: Aug 6,93 09:24
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

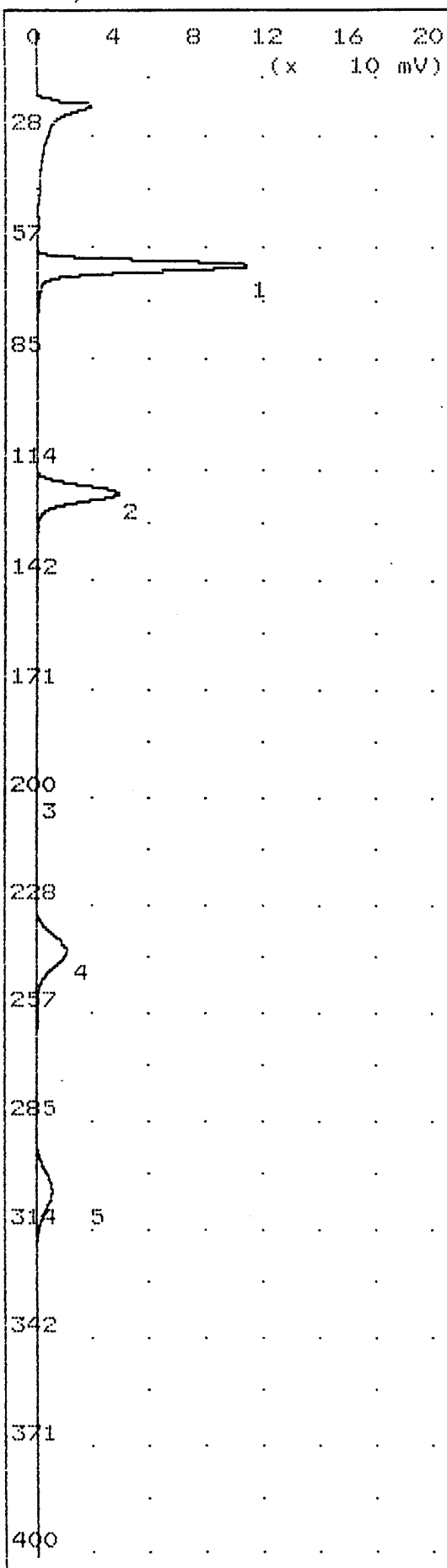
Peak Report				
Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	2.464 mVS	53.5	
2	Benzene	75.69 ppb	60.1	
3	Unknown	7.614 mVS	67.4	
4	Unknown	13.27 mVS	76.5	
5	Unknown	3.823 mVS	94.1	
6	Unknown	10.74 mVS	103.3	
7	Toluene	840.1 ppb	118.9	
8	Unknown	119.4 mVS	150.0	
9	Unknown	13.02 mVS	176.8	
10	Unknown	28.41 mVS	191.2	
11	Unknown	38.01 mVS	210.0	
12	Unknown	21.58 mVS	223.4	
13	Ethylbenzene	120.3 ppb	241.0	
14	m&p-xylene	1.475 ppm	259.2	
15	O-xylene	509.3 ppb	305.3	

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 soil sample 50 g
 calibration .0025 ug/ml of each
 liquid sample

ben. 30ppb = 1ug/l
 tol. 336ppb = 1ug/l
 etb 48ppb = 1ug/l
 m-x 260
 p-x 260ppb = 1ug/l
 o-x 260

Analysis #3

10S+ GC Function Calibrant Report



Time Printed: Aug 6,93 07:56

Sample Time: Aug 6,93 07:47

Method

Slope Up 1.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 50.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 31 C

Max Gain 1000

Analysis Time 400.0 sec

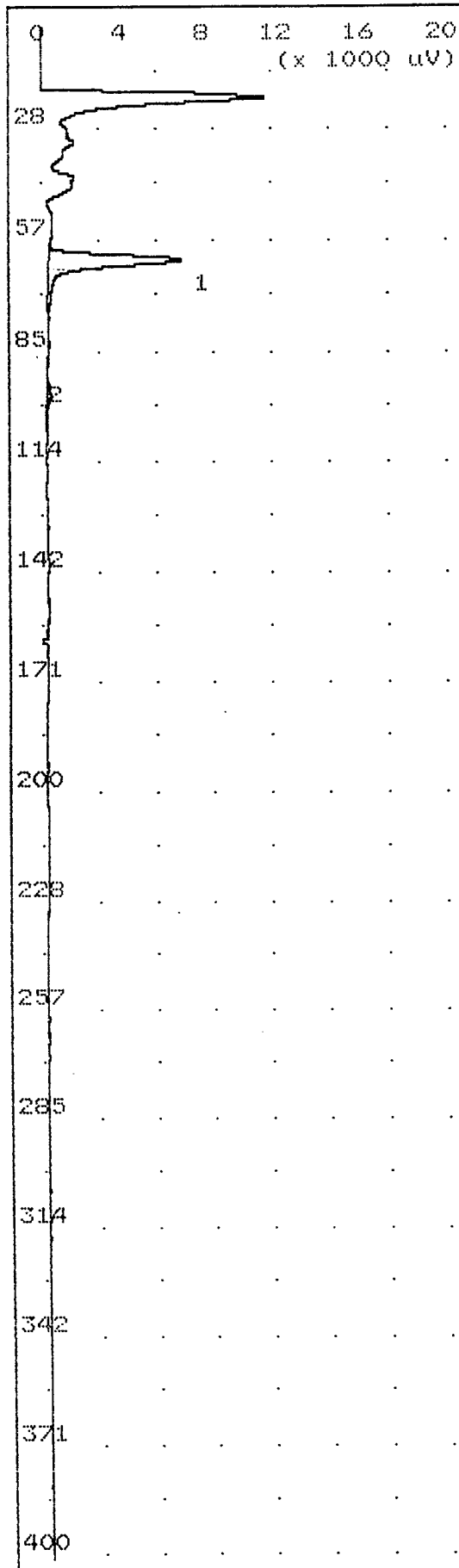
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	60.0
2	Toluene	1.000 ppm	118.5
3	m&p-xylene	18.30 ppb	199.6
4	Ethylbenzene	999.9 ppb	239.0
5	O-xylene	1.000 ppm	302.4

Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
calibration

Analysis #10 10S+ GC Function Analysis Report



Time Printed: Aug 6, 93 09:48
 Sample Time: Aug 6, 93 09:39
 Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

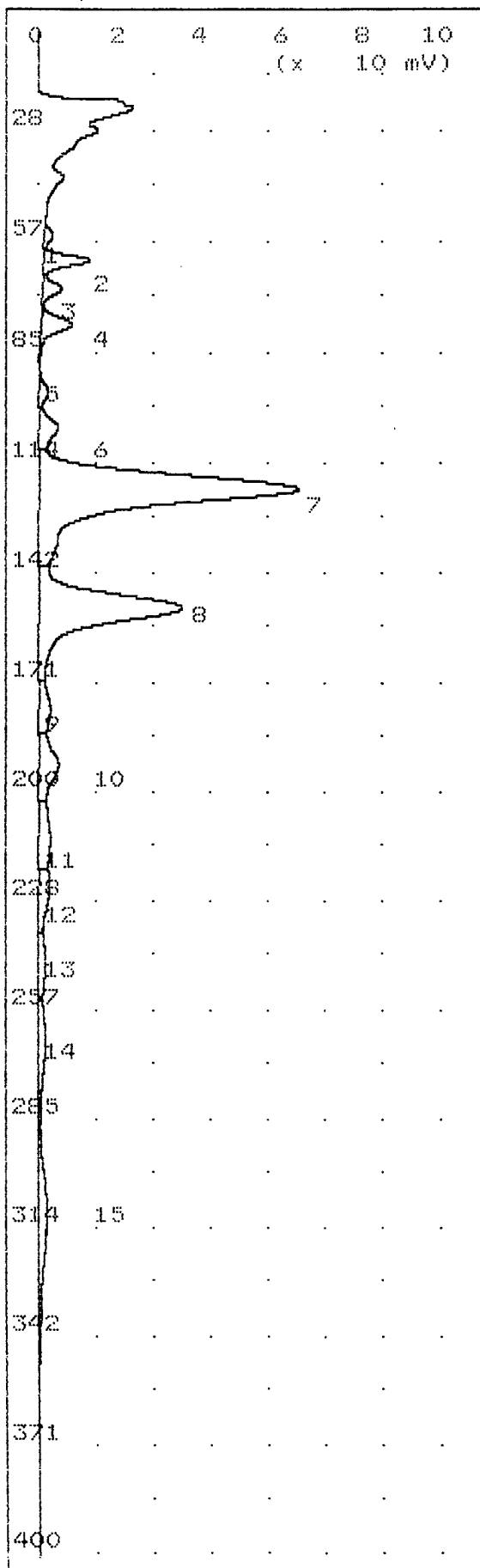
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	59.97 ppb	60.3
2	Unknown	0.921 mVS	94.2

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 soil sample 50 g
 calibration
 zero check

Analysis #6 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 08:52
Sample Time: Aug 6,93 08:37
Method

Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

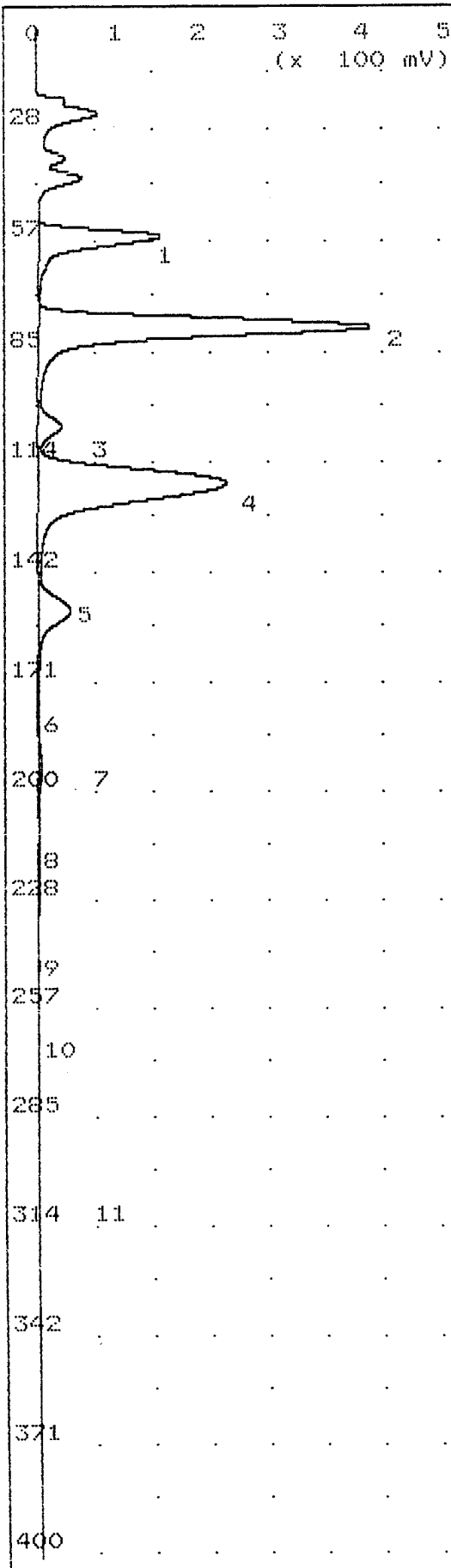
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.116 mVS	53.4
2	Benzene	96.18 ppb	60.2
3	Unknown	17.01 mVS	67.3
4	Unknown	32.40 mVS	76.5
5	Unknown	10.06 mVS	94.2
6	Unknown	29.83 mVS	103.2
7	Toluene	2.567 ppm	119.2
8	Unknown	322.6 mVS	150.0
9	Unknown	30.64 mVS	176.4
10	Unknown	55.65 mVS	191.2
11	Unknown	43.78 mVS	209.8
12	Unknown	34.01 mVS	223.8
13	Ethylbenzene	123.8 ppb	243.4
14	m&p-xylene	1.219 ppm	262.4
15	O-xylene	589.7 ppb	305.3

Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
calibration
• Q1 ug of each on 50 g clean
soil 0.0002 ug/g
ben. 500ppb = 1ug/kg
tol. 1200ppb = 1ug/kg
etb 625ppb = 1ug/kg
m-x 3000
p-x 3000ppb = 1ug/kg
o-x 3000

Analysis #11 10S+ GC Function Analysis Report



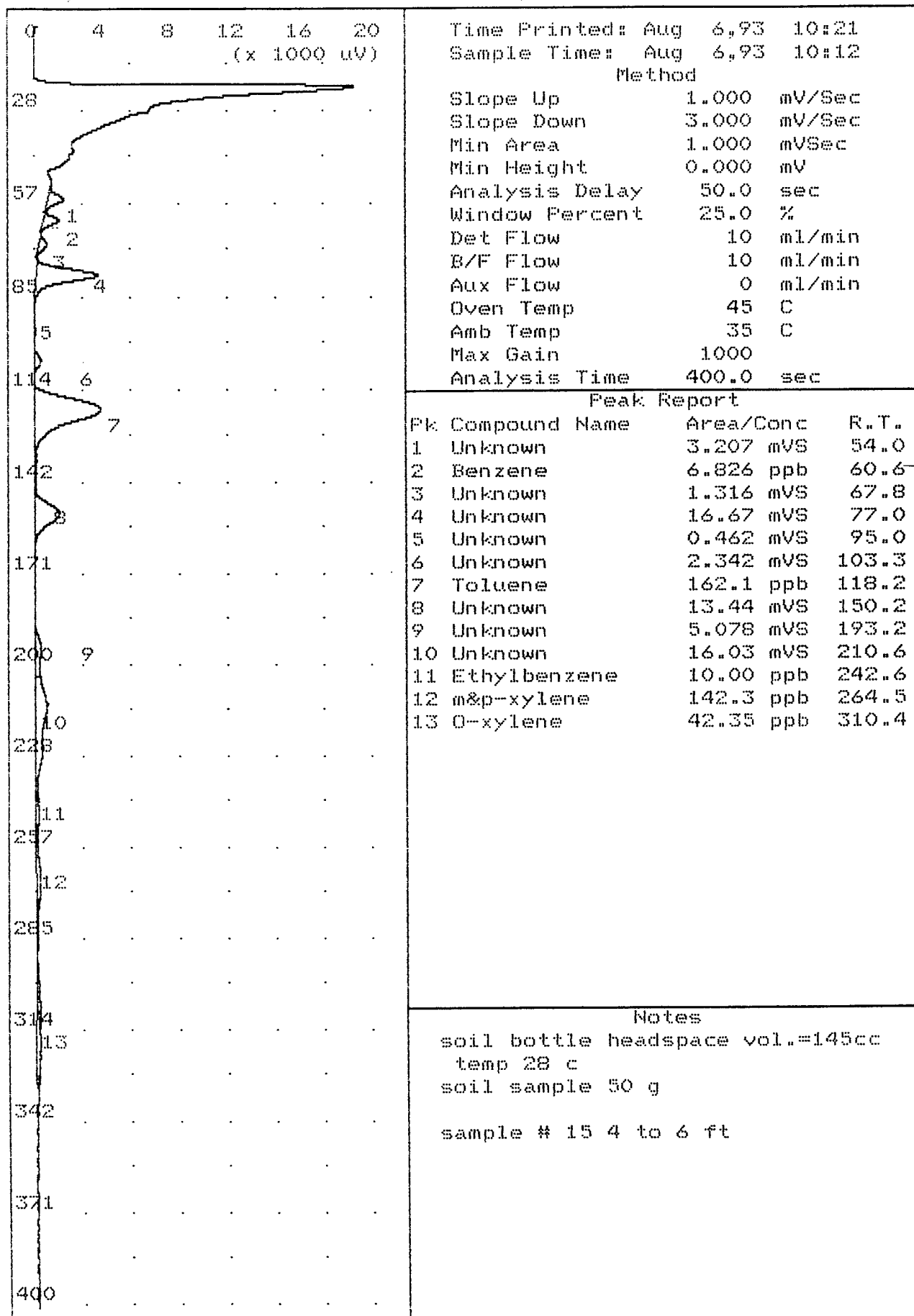
Time Printed: Aug 6,93 09:59
 Sample Time: Aug 6,93 09:49
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	2.036 ppm	54.0
2	Unknown	2.315 VSec	77.3
3	Unknown	164.1 mVS	102.8
4	Toluene	9.445 ppm	118.0
5	Unknown	358.6 mVS	150.6
6	Unknown	1.477 mVS	176.8
7	Unknown	49.24 mVS	192.0
8	Unknown	18.12 mVS	210.0
9	Ethylbenzene	13.51 ppb	244.5
10	m&p-xylene	101.8 ppb	264.5
11	O-xylene	155.5 ppb	303.7

Notes

soil bottle headspace vol.=145cc
 temp 28 c
~~soil sample 50 g~~ 43.1 mL
~~calibration~~
 sample # sb 21 water

Analysis #13 10S+ GC Function Analysis Report

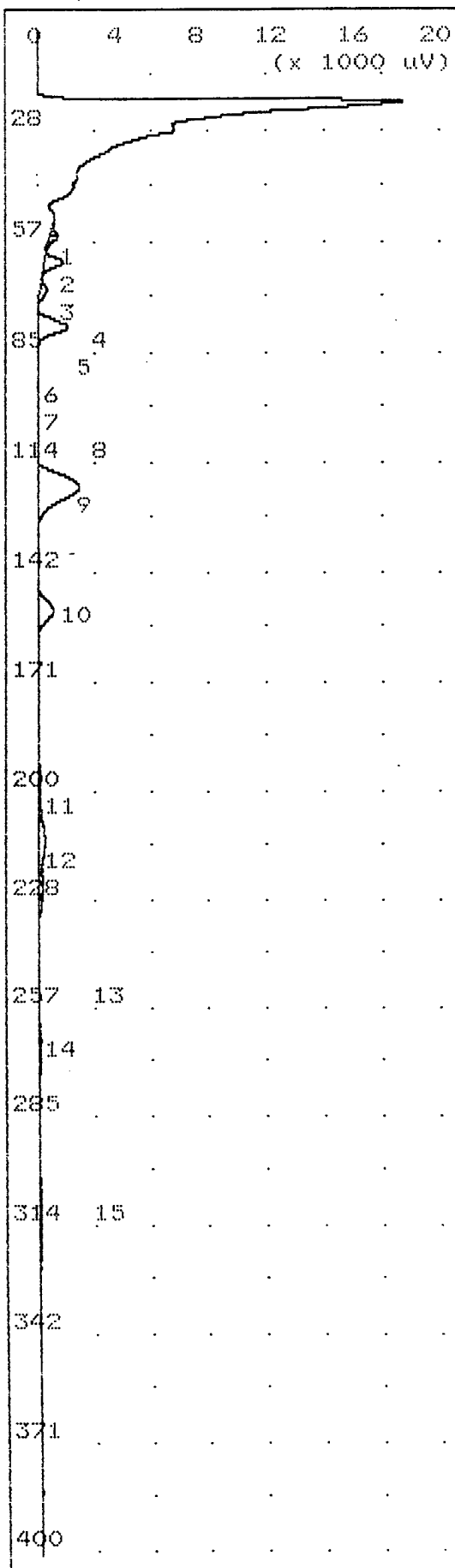


Time Printed: Aug 6,93 10:21
Sample Time: Aug 6,93 10:12
Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 35 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	3.207 mVS	54.0
2	Benzene	6.826 ppb	60.6
3	Unknown	1.316 mVS	67.8
4	Unknown	16.67 mVS	77.0
5	Unknown	0.462 mVS	95.0
6	Unknown	2.342 mVS	103.3
7	Toluene	162.1 ppb	118.2
8	Unknown	13.44 mVS	150.2
9	Unknown	5.078 mVS	193.2
10	Unknown	16.03 mVS	210.6
11	Ethylbenzene	10.00 ppb	242.6
12	m&p-xylene	142.3 ppb	264.5
13	O-xylene	42.35 ppb	310.4

Notes
soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g
sample # 15 4 to 6 ft

Analysis #15 105+ GC Function Analysis Report



Time Printed: Aug 6,93 10:41
Sample Time: Aug 6,93 10:33
Method
Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 35 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report				
Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	0.506 mVS	53.6	
2	Unknown	0.705 mVS	54.4	
3	Benzene	7.022 ppb	60.2	
4	Unknown	1.078 mVS	68.0	
5	Unknown	10.49 mVS	76.6	
6	Unknown	2.245 mVS	86.6	
7	Unknown	3.614 mVS	92.9	
8	Unknown	5.169 mVS	103.8	
9	Toluene	133.6 ppb	118.8	
10	Unknown	15.76 mVS	151.2	
11	Unknown	6.153 mVS	195.4	
12	Unknown	16.29 mVS	211.0	
13	Ethylbenzene	14.72 ppb	249.6	
14	m&p-xylene	196.2 ppb	263.4	
15	O-xylene	43.63 ppb	307.2	

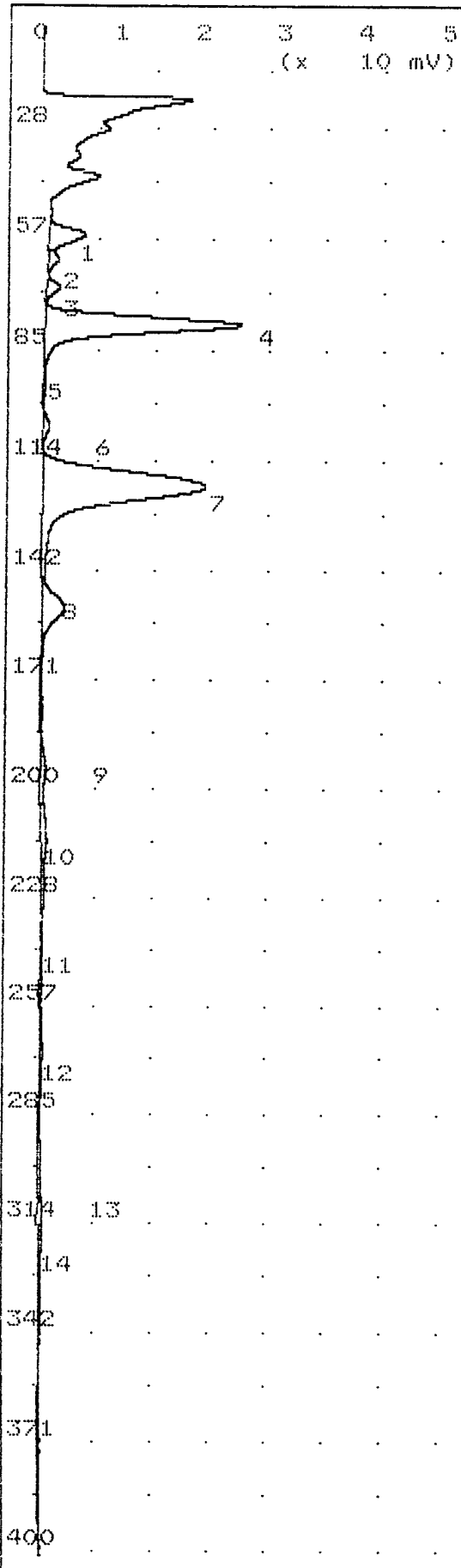
Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g

sample # 15 0 to 2 ft

Analysis #17

10S+ GC Function Analysis Report



Time Printed: Aug 6,93 11:02

Sample Time: Aug 6,93 10:53

Method

Slope Up	1.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	35	C
Max Gain	1000	
Analysis Time	400.0	sec

Peak Report

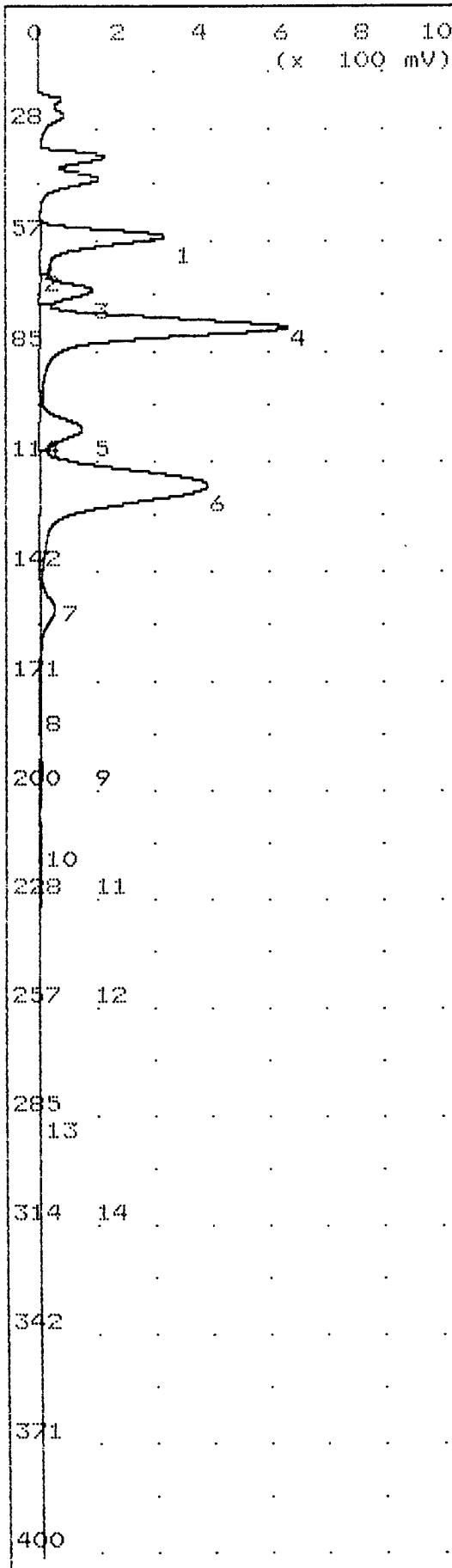
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	18.56 mVS	54.4
2	Benzene	9.942 ppb	60.2
3	Unknown	5.037 mVS	67.6
4	Unknown	114.7 mVS	77.2
5	Unknown	0.198 mVS	95.0
6	Unknown	3.689 mVS	103.3
7	Toluene	773.0 ppb	118.9
8	Unknown	24.23 mVS	150.6
9	Unknown	5.945 mVS	193.0
10	Unknown	16.02 mVS	211.8
11	Ethylbenzene	15.79 ppb	244.5
12	m&p-xylene	294.3 ppb	268.8
13	Unknown	0.754 mVS	308.8
14	Unknown	7.743 mVS	318.9

Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50 g

sample # 15 12 to 14 ft

Analysis #19 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 11:25
 Sample Time: Aug 6,93 11:13
 Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.505 VSec	54.0
2	Benzene	17.26 ppb	61.6
3	Unknown	568.7 mVS	67.8
4	Unknown	3.514 VSec	77.4
5	Unknown	666.8 mVS	103.7
6	Toluene	17.69 PPM1	118.4
7	Unknown	314.0 mVS	150.6
8	Unknown	1.271 mVS	176.4
9	Unknown	33.24 mVS	191.8
10	Unknown	6.633 mVS	211.4
11	Unknown	12.58 mVS	222.6
12	Ethylbenzene	35.84 ppb	246.1
13	Unknown	0.271 mVS	285.6
14	O-xylene	120.7 ppb	304.5

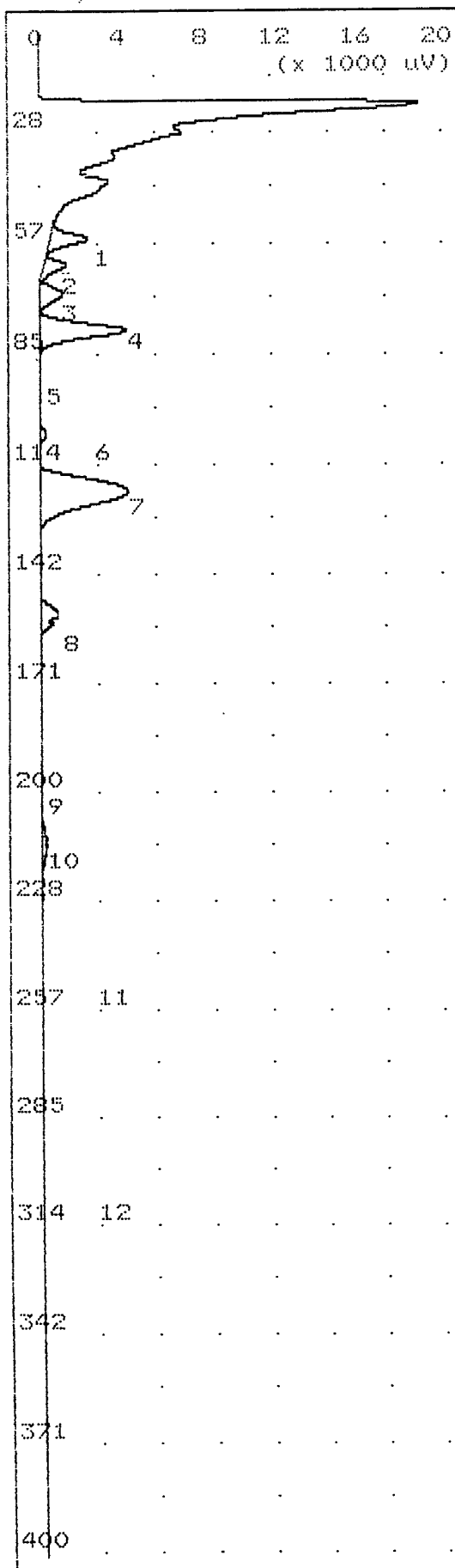
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil bottle headspace vol.=145cc
 temp 28 c

sample # 15 water 43.0 ml

Analysis #21 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 11:46
 Sample Time: Aug 6,93 11:37
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

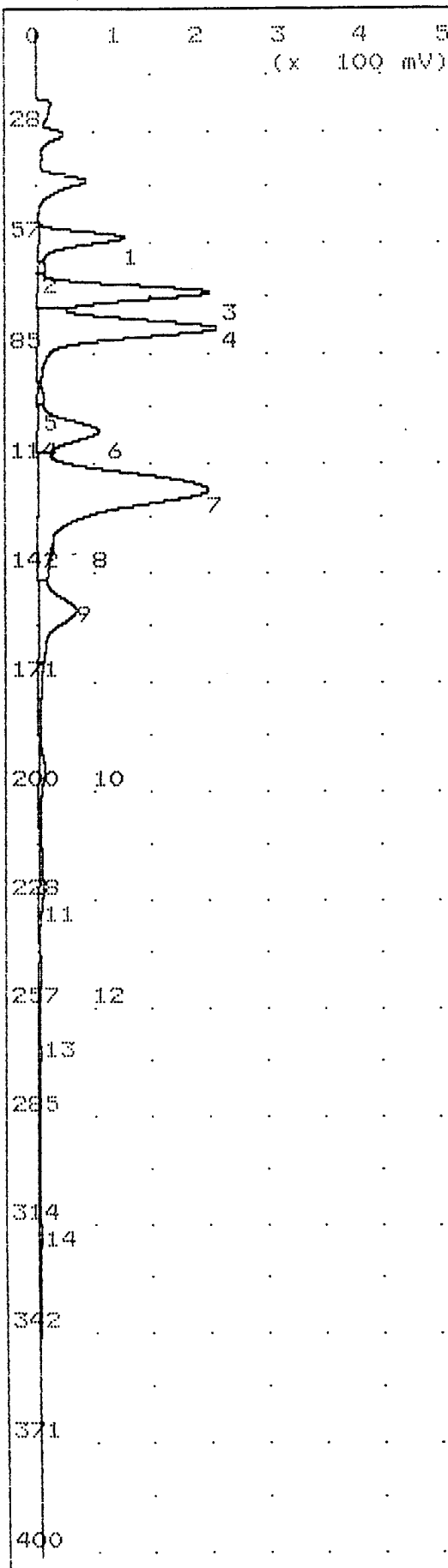
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.319 mVS	53.7
2	Benzene	9.698 ppb	60.7
3	Unknown	5.245 mVS	68.0
4	Unknown	21.28 mVS	77.4
5	Unknown	0.365 mVS	94.9
6	Unknown	3.478 mVS	104.0
7	Toluene	184.5 ppb	118.9
8	Unknown	10.20 mVS	152.6
9	Unknown	3.263 mVS	195.8
10	Ethylbenzene	54.75 ppb	210.0
11	Unknown	0.123 mVS	247.4
12	O-xylene	18.27 ppb	308.5

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50 g soil
 sample # 17 4 to 6 ft

Analysis #23 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 13:12
 Sample Time: Aug 6,93 11:57
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

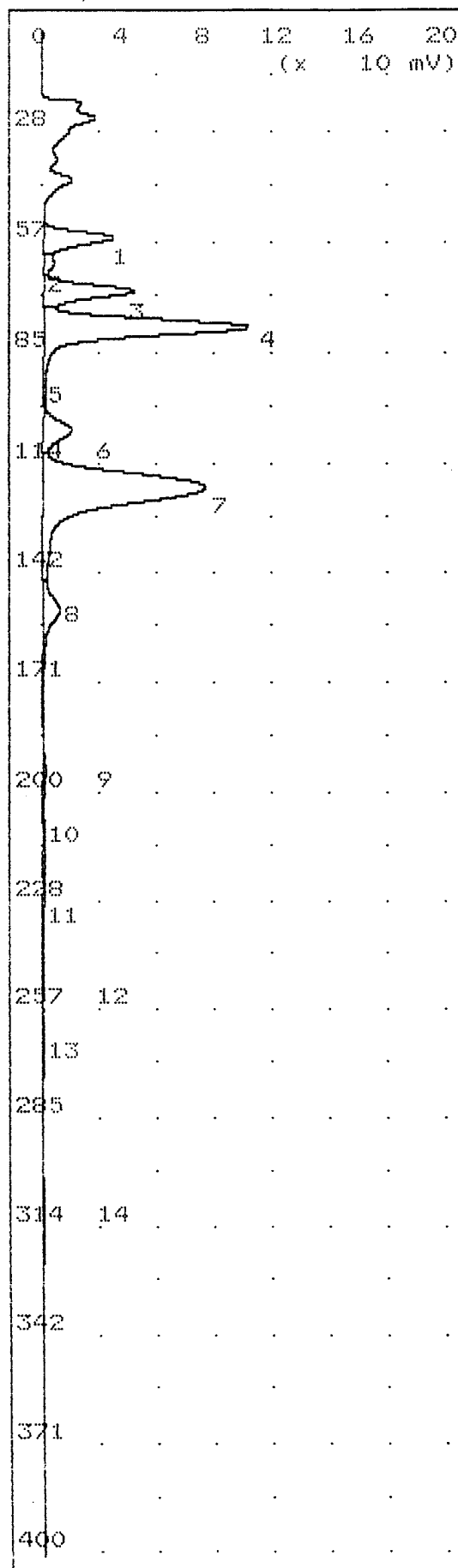
Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	436.1 mVS	53.8
2	Benzene	61.89 ppb	61.8
3	Unknown	981.6 mVS	68.1
4	Unknown	1.266 VSec	77.2
5	Unknown	31.73 mVS	95.8
6	Unknown	497.1 mVS	103.7
7	Toluene	10.02 PPM1	119.2
8	Unknown	5.053 mVS	133.4
9	Unknown	525.1 mVS	150.8
10	Unknown	100.6 mVS	192.2
11	Unknown	102.7 mVS	224.0
12	Ethylbenzene	150.6 ppb	245.3
13	m&p-xylene	1.198 ppm	265.8
14	O-xylene	699.4 ppb	316.5

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50 g soil
 sample # 17 8 to 10 ft

Analysis #27 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 13:51
Sample Time: Aug 6,93 13:40

Method

Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	140.1 mVS	53.9
2	Benzene	46.15 ppb	60.4
3	Unknown	183.5 mVS	68.0
4	Unknown	525.9 mVS	77.2
5	Unknown	0.638 mVS	95.0
6	Unknown	83.91 mVS	103.6
7	Toluene	3.307 ppm	118.6
8	Unknown	75.99 mVS	150.8
9	Unknown	14.84 mVS	193.4
10	Unknown	9.367 mVS	209.0
11	Unknown	8.412 mVS	224.4
12	Ethylbenzene	20.82 ppb	246.1
13	m&p-xylene	134.0 ppb	266.1
14	O-xylene	90.70 ppb	306.9

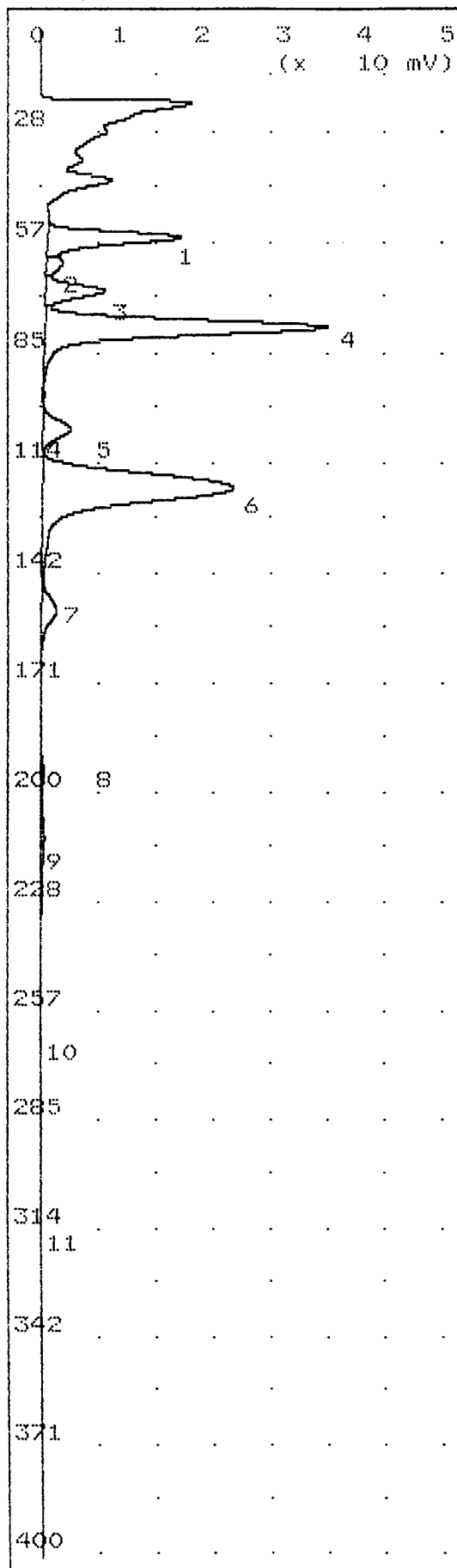
Notes

soil bottle headspace vol.=145cc
temp 28 c
41.5 ml

sample # 17 water sample

Analysis #29

10S+ GC Function Analysis Report



Time Printed: Aug 6, 93 14:14

Sample Time: Aug 6, 93 14:06

Method

Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

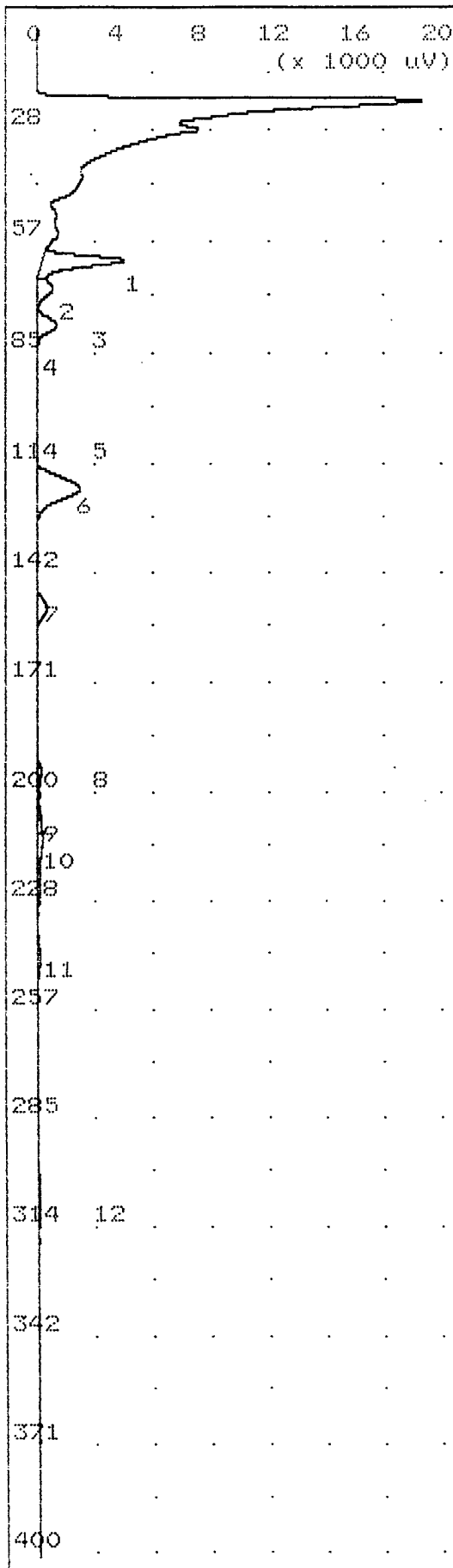
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	63.05 mVS	53.7
2	Benzene	18.75 ppb	60.7
3	Unknown	28.48 mVS	67.8
4	Unknown	164.6 mVS	76.9
5	Unknown	17.72 mVS	103.3
6	Toluene	891.7 ppb	118.6
7	Unknown	15.57 mVS	150.6
8	Unknown	5.447 mVS	194.0
9	Ethylbenzene	60.63 ppb	210.0
10	m&p-xylene	57.12 ppb	263.2
11	O-xylene	30.35 ppb	314.6

Notes

soil bottle headspace vol.=145cc
temp 28 c
41.5 ml

sample # 17 18 to 20 feet

Analysis #33 10S+ GC Function Analysis Report



Time Printed: Aug 6, 93 15:06
 Sample Time: Aug 6, 93 14:56
 Method

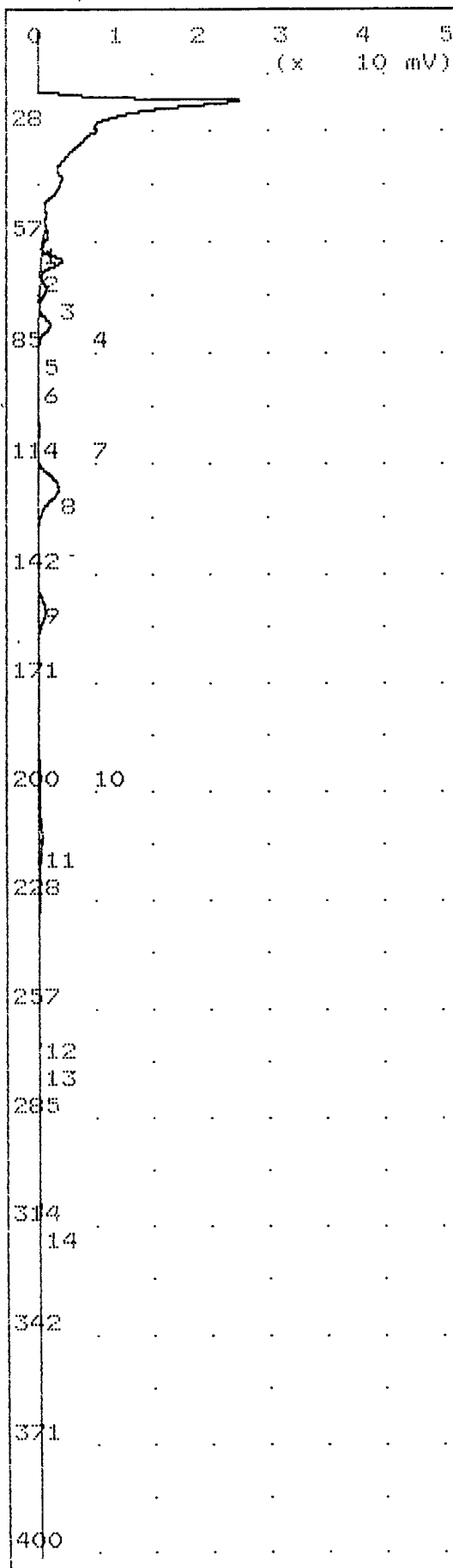
Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	35.75 ppb	60.2
2	Unknown	4.216 mVS	66.9
3	Unknown	7.312 mVS	76.8
4	Unknown	1.134 mVS	82.8
5	Unknown	1.686 mVS	102.8
6	Toluene	91.46 ppb	119.3
7	Unknown	6.158 mVS	150.0
8	Unknown	4.374 mVS	193.0
9	Unknown	2.816 mVS	209.4
10	Unknown	6.498 mVS	212.0
11	Ethylbenzene	13.38 ppb	240.2
12	O-xylene	28.03 ppb	303.2

Notes

soil bottle headspace vol.=145cc
 temp 28 c
~~41.5 ml~~ soil sample 50g
 sample # 18 6 to 8 feet



Time Printed: Aug 6,93 15:31

Sample Time: Aug 6,93 15:19

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

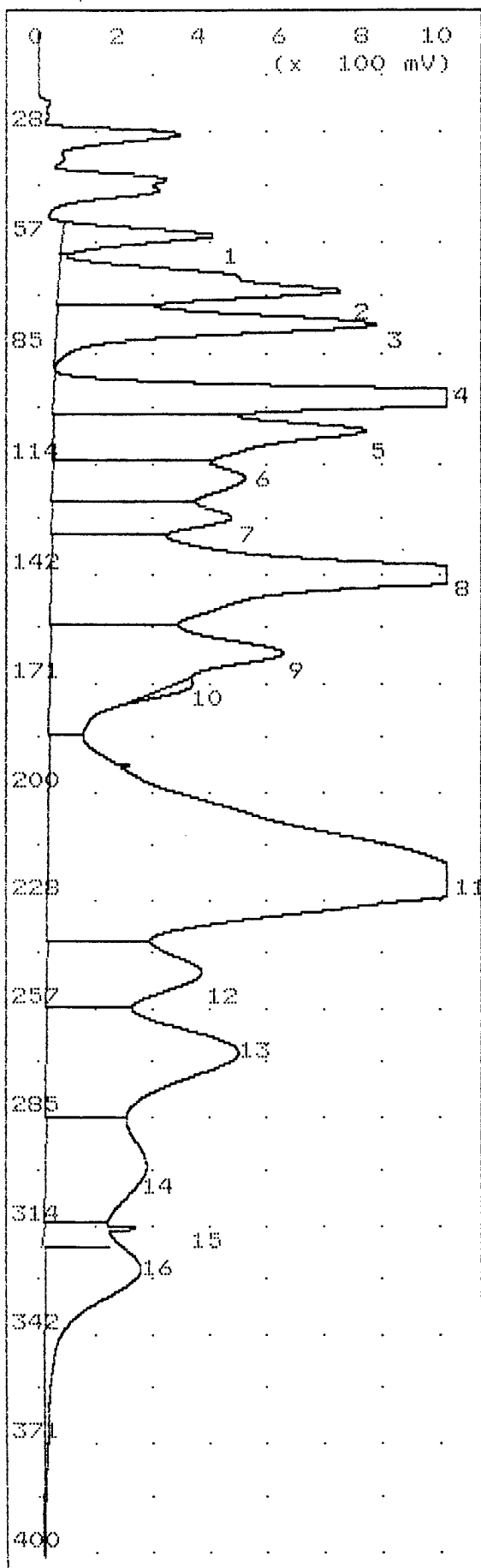
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	0.143 mVS	52.9
2	Unknown	0.894 mVS	53.6
3	Benzene	19.99 ppb	60.3
4	Unknown	2.744 mVS	67.6
5	Unknown	7.144 mVS	76.6
6	Unknown	0.770 mVS	95.0
7	Unknown	2.217 mVS	103.0
8	Toluene	108.4 ppb	118.1
9	Unknown	9.782 mVS	150.8
10	Unknown	4.742 mVS	194.0
11	Ethylbenzene	63.16 ppb	212.6
12	Unknown	0.160 mVS	264.2
13	Unknown	1.264 mVS	264.2
14	O-xylene	30.05 ppb	311.4

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 soil sample 50g

 sample # 18 0 to 2

Analysis #38 10S+ GC Function Analysis Report



Time Printed: Aug 6,93 15:52
Sample Time: Aug 6,93 15:43
Method

Slope Up 1.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 36 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	4.331 ppm	53.4
2	Unknown	5.013 VSec	67.8
3	Unknown	4.839 VSec	76.4
4	Unknown	11.02 VSec	95.2
5	Unknown	6.870 VSec	103.6
6	Toluene	19.13 PPM1	115.8
7	Unknown	3.337 VSec	126.0
8	Unknown	16.24 VSec	141.0
9	Unknown	8.984 VSec	161.6
10	Unknown	294.2 mVS	169.4
11	Unknown	31.86 VSec	221.2
12	Ethylbenzene	27.85 PPM2	245.6
13	m&p-xylene	326.3 PPM2	266.4
14	O-xylene	46.01 PPM2	296.5
15	Unknown	347.1 mVS	312.8
16	Unknown	4.969 VSec	323.2

PPM1 = Alarm 1 PPM2 = Alarm2

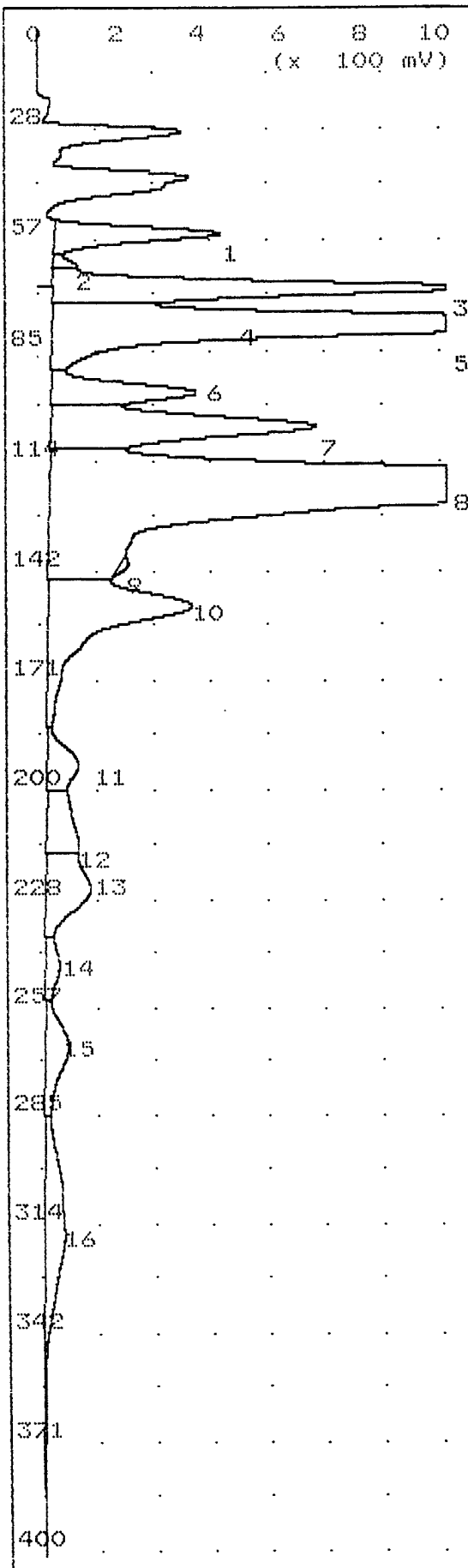
Notes

soil bottle headspace vol.=145cc
temp 28 c
soil sample 50g

sample # 18 8 to 10 ft

Analysis #40

10S+ GC Function Analysis Report



Time Printed: Aug 6,93 16:13

Sample Time: Aug 6,93 16:04

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.792 VSec	53.6
2	Benzene	403.5 ppb	62.2
3	Unknown	2.462 VSec	67.8
4	Unknown	2.466 VSec	70.2
5	Unknown	13.11 VSec	76.9
6	Unknown	1.953 VSec	94.5
7	Unknown	4.604 VSec	103.2
8	Toluene	130.6 PPM2	118.5
9	Unknown	81.93 mVS	138.8
10	Unknown	4.357 VSec	150.0
11	Unknown	833.1 mVS	191.2
12	Unknown	1.078 VSec	212.0
13	Unknown	1.616 VSec	223.4
14	Ethylbenzene	2.069 ppm	243.7
15	m&p-xylene	33.13 PPM2	265.3
16	O-xylene	14.20 PPM1	314.9

PPM1 = Alarm 1 PPM2 = Alarm2

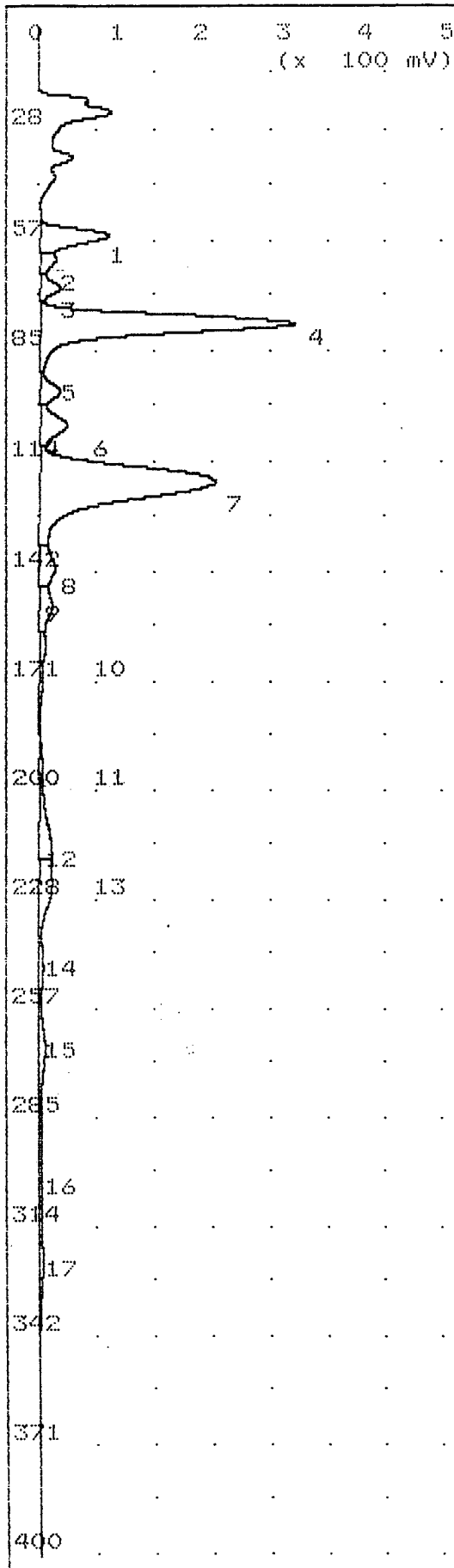
Notes

soil bottle headspace vol.=145cc
 temp 28 c
 soil sample 50g

 sample # 18 10 to 12 ft

Analysis #42

10S+ GC Function Analysis Report



Time Printed: Aug 6,93 16:34

Sample Time: Aug 6,93 16:25

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 E/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

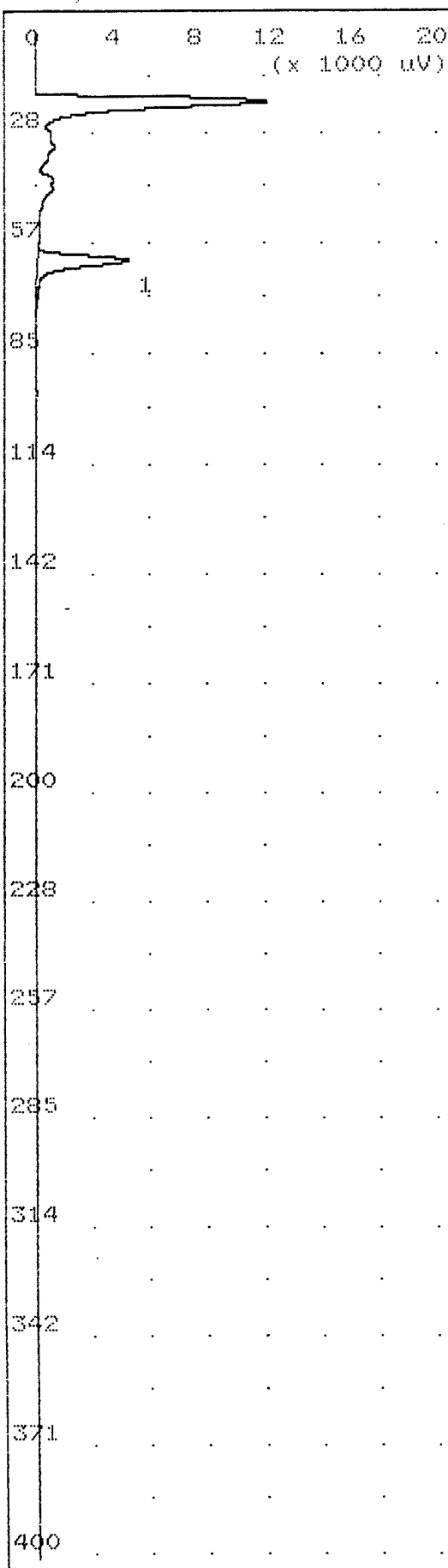
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	381.0 mVS	53.8
2	Benzene	198.6 ppb	59.8
3	Unknown	96.75 mVS	67.3
4	Unknown	1.699 VSec	76.8
5	Unknown	123.7 mVS	94.2
6	Unknown	203.5 mVS	102.9
7	Toluene	9.011 ppm	117.2
8	Unknown	154.3 mVS	139.7
9	Unknown	126.7 mVS	149.6
10	Unknown	81.51 mVS	160.4
11	Unknown	27.67 mVS	192.0
12	Unknown	190.0 mVS	212.6
13	Unknown	210.1 mVS	222.4
14	Ethylbenzene	351.0 ppb	244.5
15	m&p-xylene	4.647 ppm	265.6
16	O-xylene	667.1 ppb	298.1
17	Unknown	99.07 mVS	321.3

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 H2O sample 41.9 ml
 sample # 18 water sample

Analysis #6 105+ GC Function Analysis Report

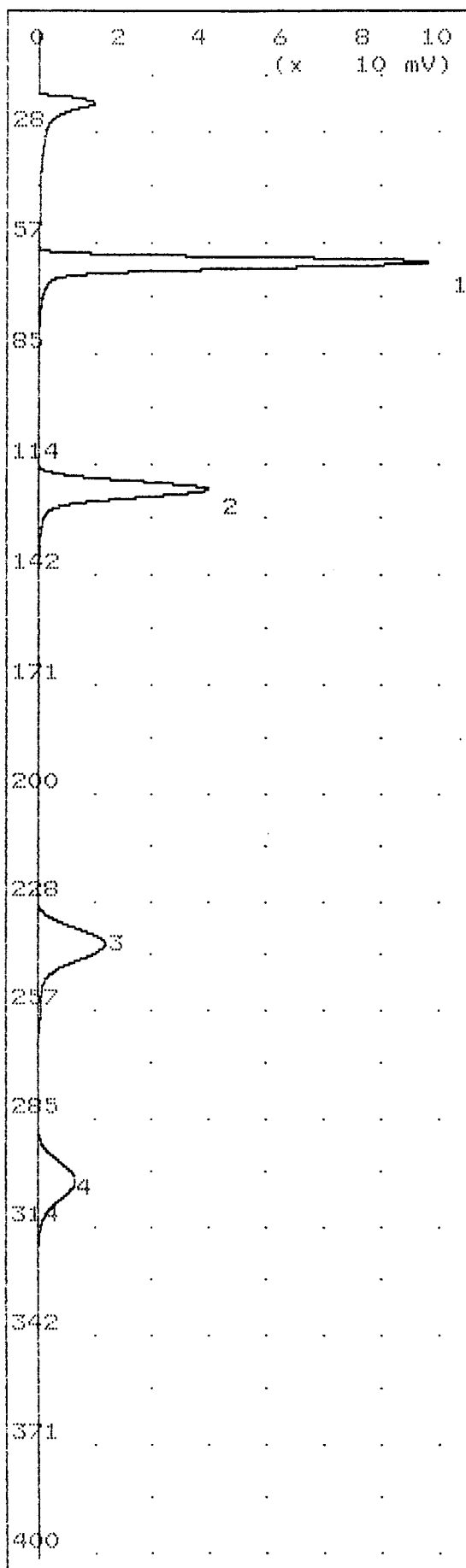


Time Printed: Aug 11,93 08:25
 Sample Time: Aug 11,93 08:09
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 28 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	46.05 ppb	59.8

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 H2O sample 41.9 ml
 Calibration zero check
 Sample #



Time Printed: Aug 11, 93 07:52

Sample Time: Aug 11, 93 07:45

Method

Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 24 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

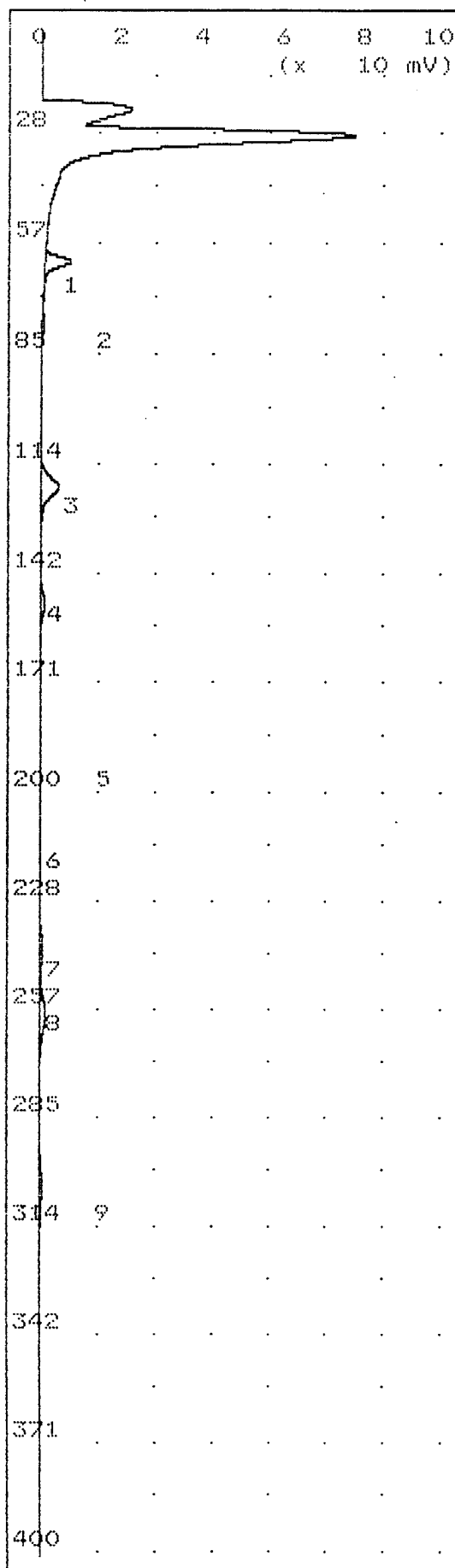
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	60.2
2	Toluene	1.000 ppm	118.8
3	Ethylbenzene	1.000 ppm	237.8
4	O-xylene	1.000 ppm	300.0

*1 ppm of Each of the
 Above
 Gas standard
 nitrogen Balance*

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 H2O sample 41.9 ml
calibration
 sample # 18 water sample

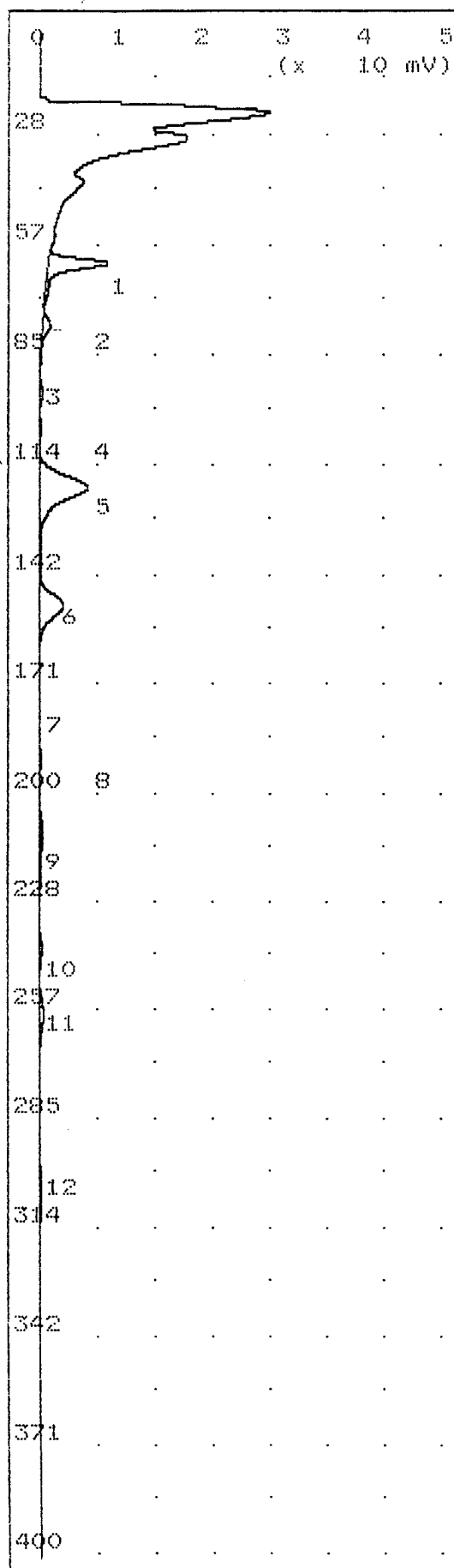
Analysis #10 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 09:24
 Sample Time: Aug 11,93 09:12
 Method
 Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	58.88 ppb	60.1
2	Unknown	2.278 mVS	76.0
3	Toluene	145.2 ppb	118.4
4	Unknown	11.31 mVS	149.0
5	Unknown	0.867 mVS	189.4
6	Unknown	5.373 mVS	209.8
7	Ethylbenzene	50.09 ppb	240.0
8	m&p-xylene	695.1 ppb	256.5
9	O-xylene	73.87 ppb	302.4

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50 g soil spiked
 Calibration
 Sample # .1ml of 1ug/ml of below
 x 0.1ug/40ml H2O=~~0~~25ug/l (ppb)
 benzene 235 = 1ug/l (ppb)
 toluene 580 = ^
 ethylben. 200 = ^
 tot.xylene 1000 = ^



Time Printed: Aug 11,93 09:06

Sample Time: Aug 11,93 08:51

Method

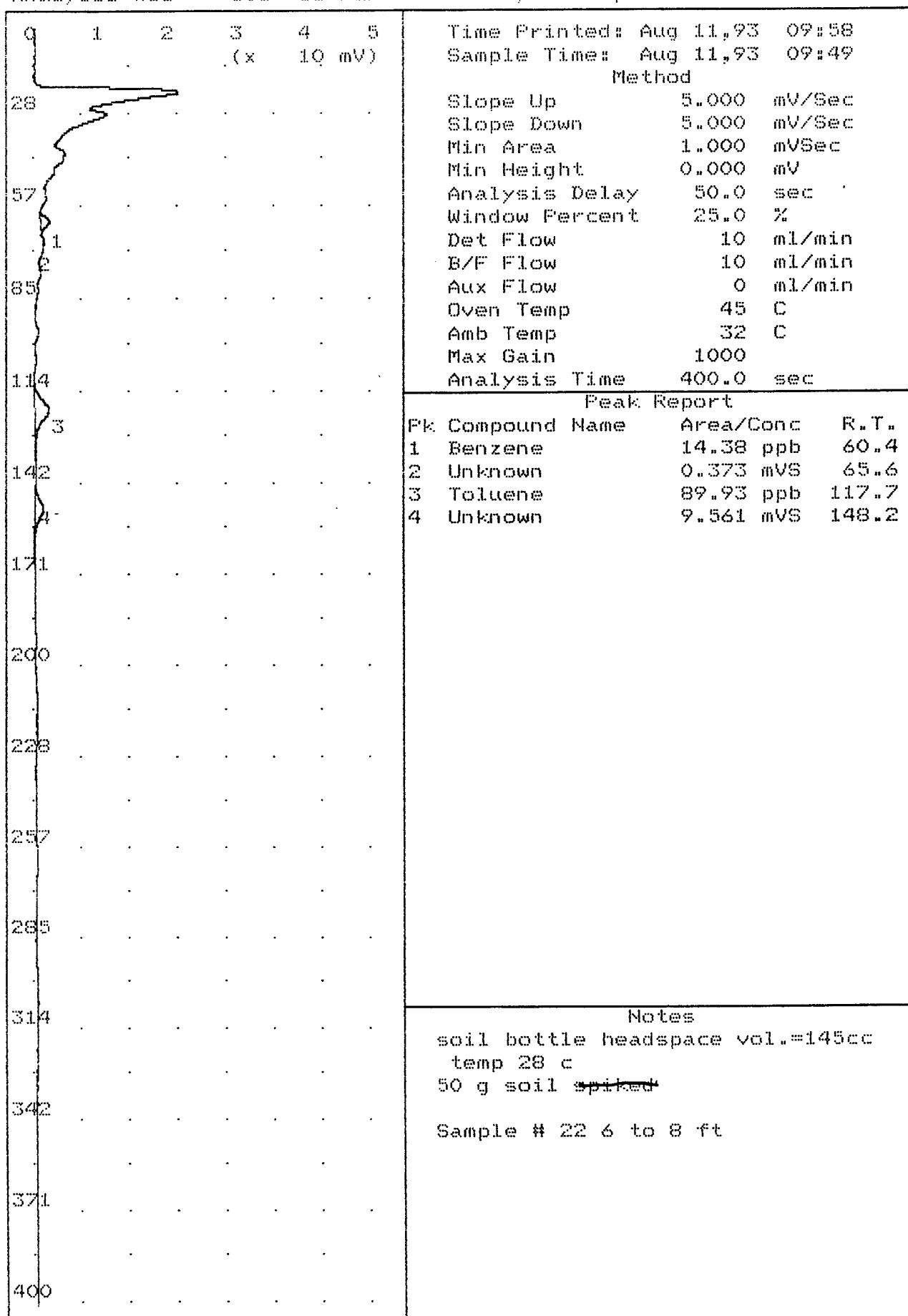
Slope Up 1.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

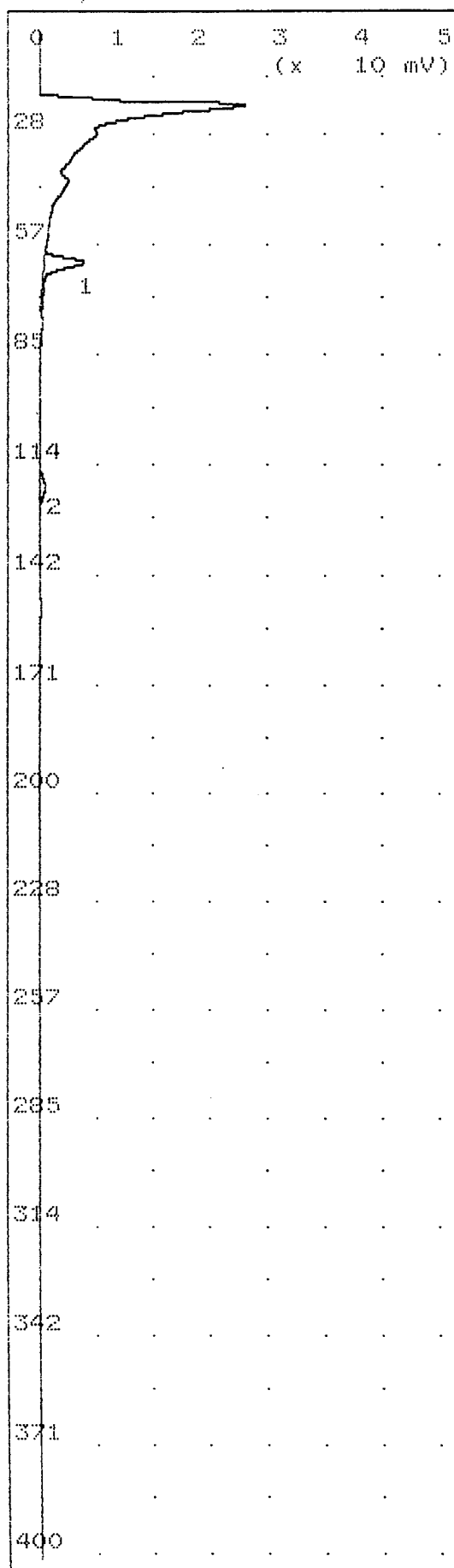
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	73.33 ppb	60.0
2	Unknown	3.695 mVS	76.0
3	Unknown	1.791 mVS	93.6
4	Unknown	1.393 mVS	102.9
5	Toluene	211.7 ppb	118.5
6	Unknown	25.07 mVS	149.2
7	Unknown	0.538 mVS	174.4
8	Unknown	2.354 mVS	189.6
9	Unknown	9.873 mVS	210.2
10	Ethylbenzene	28.97 ppb	239.2
11	m&p-xylene	316.7 ppb	256.2
12	O-xylene	72.22 ppb	301.6

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 50 g soil spiked
 Calibration
 Sample # .1ml of 1ug/ml of below
 X 0.1ug/50g soil = 0.2ug/kg (ppb)
 benzene 365 = 1ug/kg (ppb)
 toluene 1000 = ^
 ethylben. 140 = ^
 tot.xylene 650 = ^





Time Printed: Aug 11,93 10:19

Sample Time: Aug 11,93 10:10

Method

Slope Up	5.000	mV/Sec
Slope Down	5.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	32	C
Max Gain	1000	
Analysis Time	400.0	sec

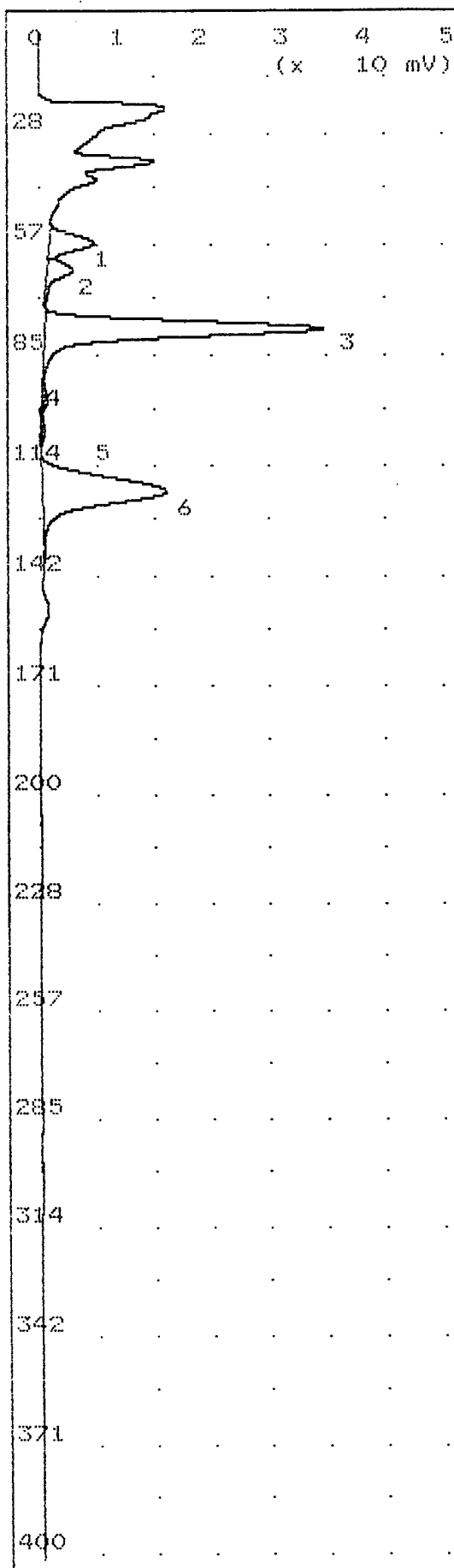
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	47.99 ppb	59.9
2	Toluene	30.28 ppb	118.2

Notes

soil bottle headspace vol.=145cc
temp 28 c
50 g soil ~~spiked~~

Sample # 22 15 to 16 ft



Time Printed: Aug 11,93 10:46

Sample Time: Aug 11,93 10:31

Method

Slope Up	5.000	mV/Sec
Slope Down	5.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	50.0	sec
Window Percent	25.0	%
Det Flow	10	ml/min
E/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	32	C
Max Gain	1000	
Analysis Time	400.0	sec

Peak Report

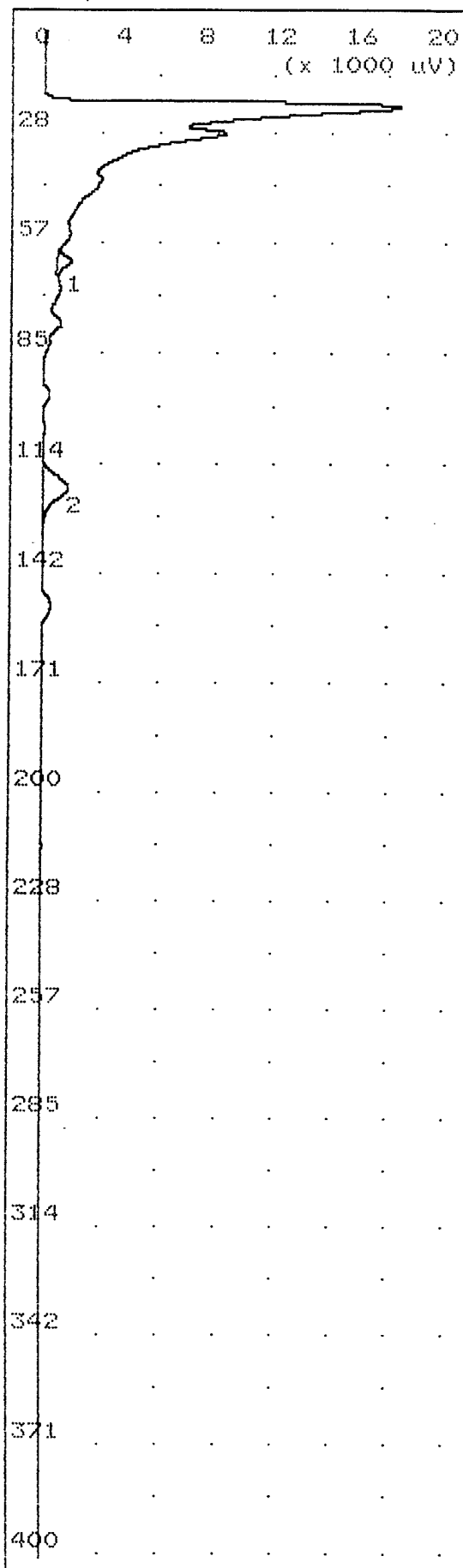
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	25.40 mVS	54.7
2	Benzene	39.60 ppb	61.6
3	Unknown	161.4 mVS	76.9
4	Unknown	0.168 mVS	94.6
5	Unknown	1.506 mVS	103.4
6	Toluene	523.6 ppb	118.9

Notes

soil bottle headspace vol.=145cc
temp 28 c
43 ml water sample

Sample # 22 water sample

Analysis #19 10S+ GC Function Analysis Report



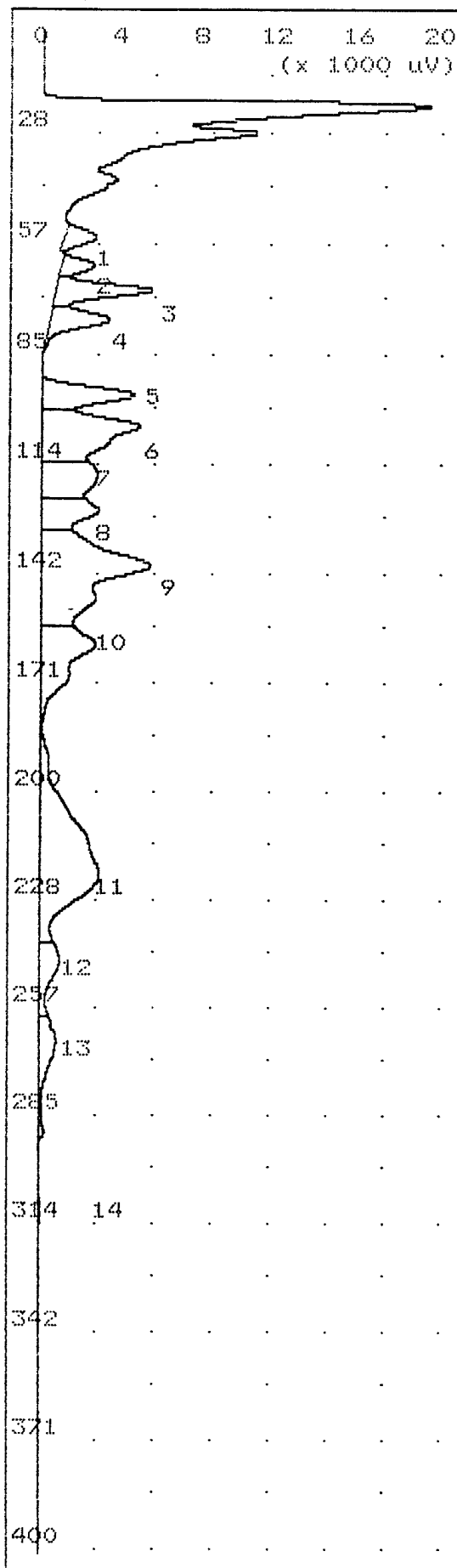
Time Printed: Aug 11, 93 11:18
 Sample Time: Aug 11, 93 11:08
 Method
 Slope Up 4.000 mV/Sec
 Slope Down 4.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	6.649 ppb	60.1
2	Toluene	45.54 ppb	117.8

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
~~45 ml water sample~~
 5g soil sample
~~Sample # 23 2 to 4 ft~~
 23 2 to 4 ft

Analysis #21 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 11:45
Sample Time: Aug 11,93 11:35
Method

Slope Up 4.000 mV/Sec
Slope Down 4.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 32 C
Max Gain 1000
Analysis Time 400.0 sec

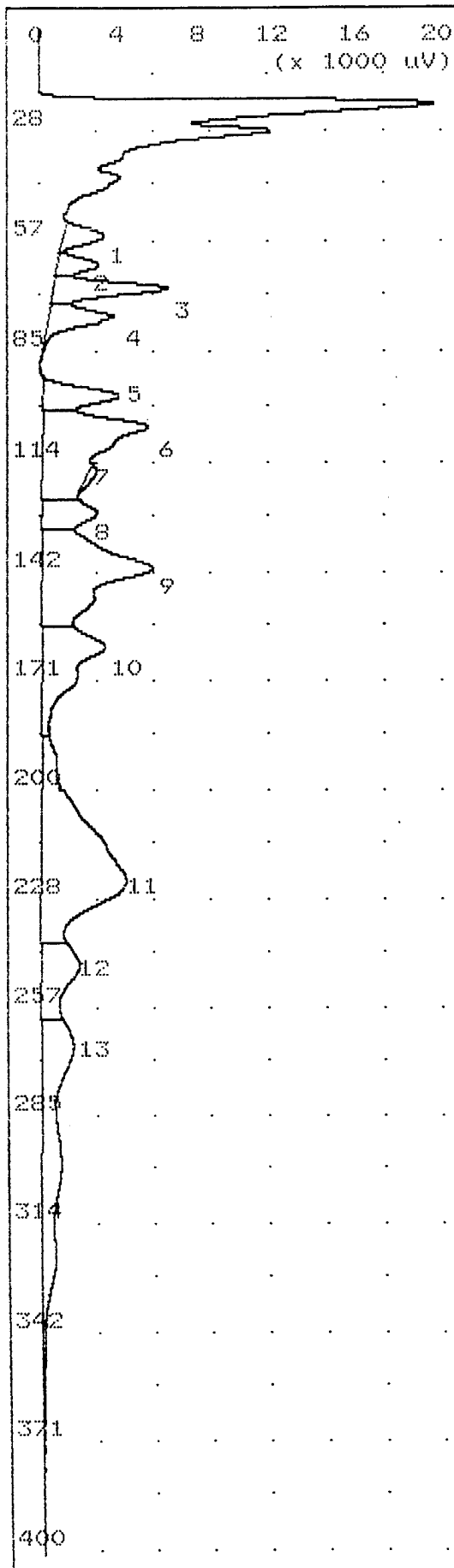
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.785 mVS	53.6
2	Benzene	18.37 ppb	61.1
3	Unknown	19.51 mVS	67.0
4	Unknown	13.98 mVS	74.4
5	Unknown	25.13 mVS	94.5
6	Unknown	51.96 mVS	102.5
7	Toluene	136.0 ppb	114.4
8	Unknown	27.07 mVS	124.4
9	Unknown	111.2 mVS	138.8
10	Unknown	90.00 mVS	159.2
11	Unknown	226.0 mVS	220.4
12	Ethylbenzene	400.0 ppb	242.4
13	m&p-xylene	4.844 ppm	264.5
14	O-xylene	423.0 ppb	307.7

Notes

soil bottle headspace vol.=145cc
temp 28 c
~~43 ml water sample~~
50g soil sample
Sample # 23 6 to 8 ft

Analysis #23 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 13:07
Sample Time: Aug 11,93 11:56
Method

Slope Up 4.000 mV/Sec
Slope Down 4.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 32 C
Max Gain 1000
Analysis Time 400.0 sec

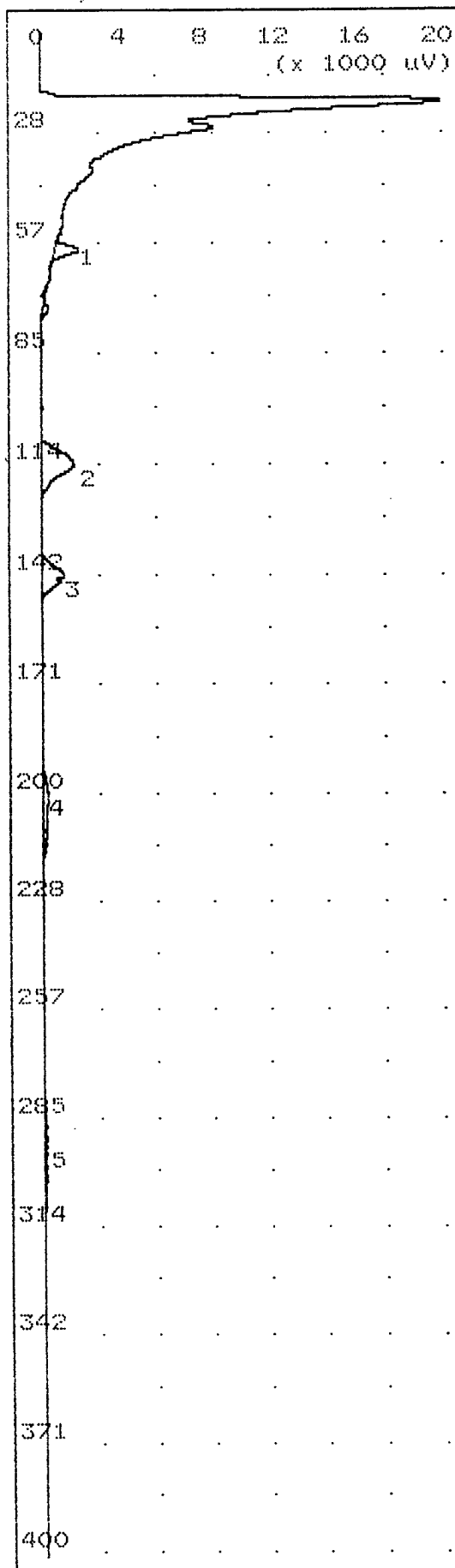
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	9.222 mVS	53.4
2	Benzene	24.29 ppb	61.1
3	Unknown	23.53 mVS	67.6
4	Unknown	14.99 mVS	75.3
5	Unknown	19.18 mVS	95.0
6	Unknown	68.45 mVS	102.9
7	Toluene	7.054 ppb	114.6
8	Unknown	17.20 mVS	125.3
9	Unknown	76.69 mVS	140.1
10	Unknown	42.56 mVS	160.2
11	Unknown	114.3 mVS	221.8
12	Ethylbenzene	140.8 ppb	244.0
13	m&p-xylene	2.296 ppm	265.6

Notes

soil bottle headspace vol.=145cc
temp 28 c
~~143 ml water sample~~
50g soil sample
Sample # 23 8 to 10 ft

Analysis #27 105+ GC Function Analysis Report

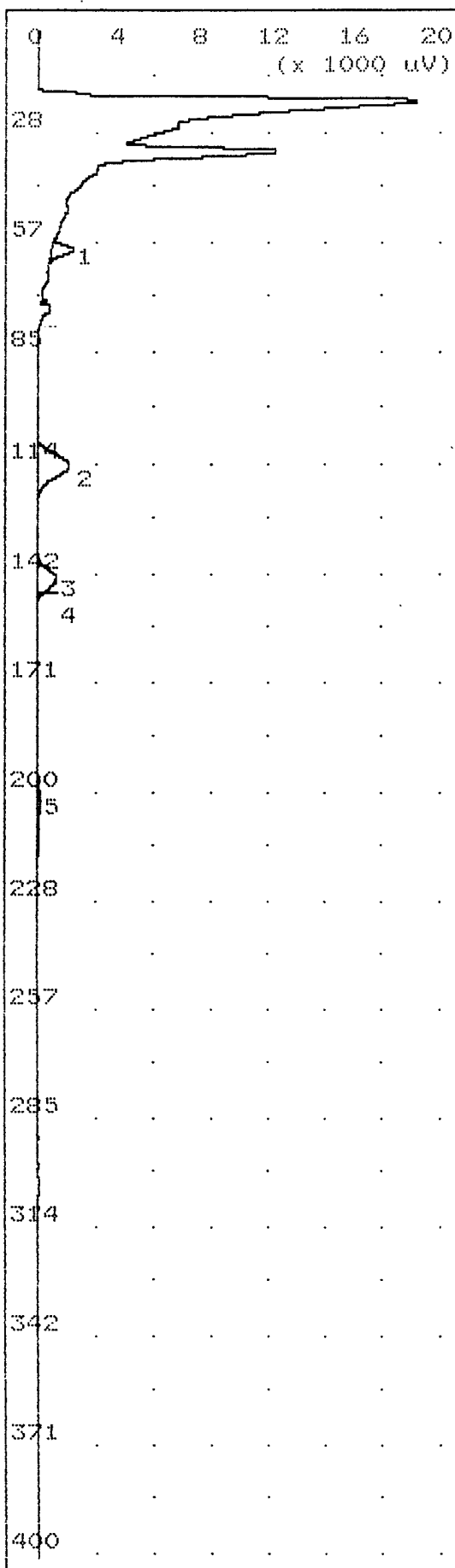


Time Printed: Aug 11, 93 13:43
 Sample Time: Aug 11, 93 13:34
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	10.80 ppb	57.1
2	Toluene	66.38 ppb	111.6
3	Unknown	9.923 mVS	140.9
4	Ethylbenzene	36.34 ppb	197.8
5	O-xylene	29.25 ppb	289.0

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
~~43 ml water sample~~
 50 g soil sample
 Sample # 23 4 to 6 ft

Analysis #29 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 14:03
 Sample Time: Aug 11,93 13:54
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

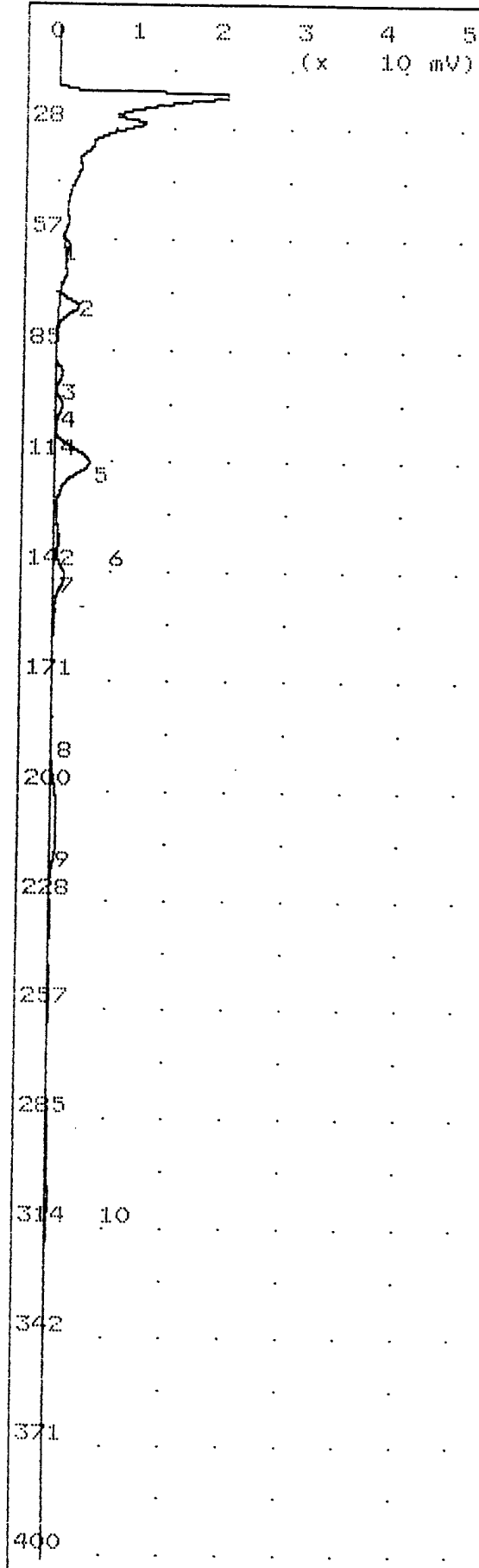
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	8.090 ppb	56.9
2	Toluene	75.70 ppb	112.5
3	Unknown	1.787 mVS	141.2
4	Unknown	6.267 mVS	142.8
5	Ethylbenzene	30.63 ppb	198.4

Notes

soil bottle headspace vol.=145cc
 temp 28 c
 42 ml water sample
 Sample # 23 water sample

Analysis #32

10S+ GC Function Analysis Report



Time Printed: Aug 11,93 14:47
Sample Time: Aug 11,93 14:39
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

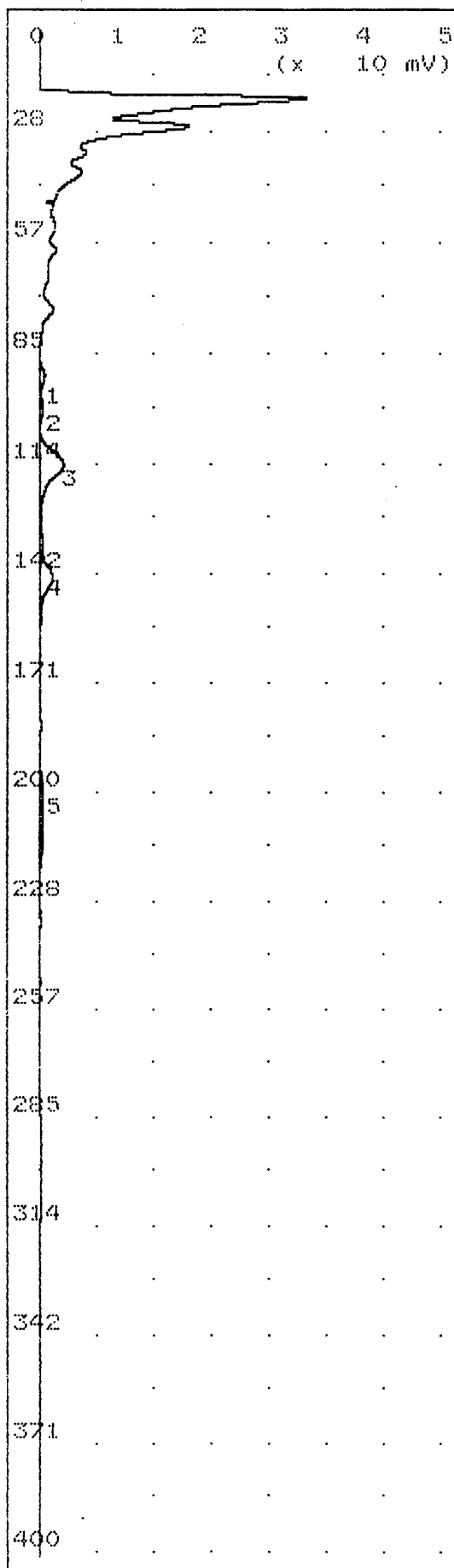
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	6.156 ppb	57.3
2	Unknown	10.05 mVS	72.6
3	Unknown	4.104 mVS	89.8
4	Unknown	4.739 mVS	98.1
5	Toluene	193.2 ppb	112.9
6	Unknown	0.356 mVS	133.0
7	Unknown	14.34 mVS	142.1
8	Unknown	1.476 mVS	183.6
9	Ethylbenzene	167.0 ppb	211.6
10	O-xylene	141.0 ppb	305.3

Notes

soil bottle headspace vol.=145cc
temp 28 c
50g soil

Sample # 19 2 to 4 ft

Analysis #34 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 15:10
Sample Time: Aug 11,93 15:01
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

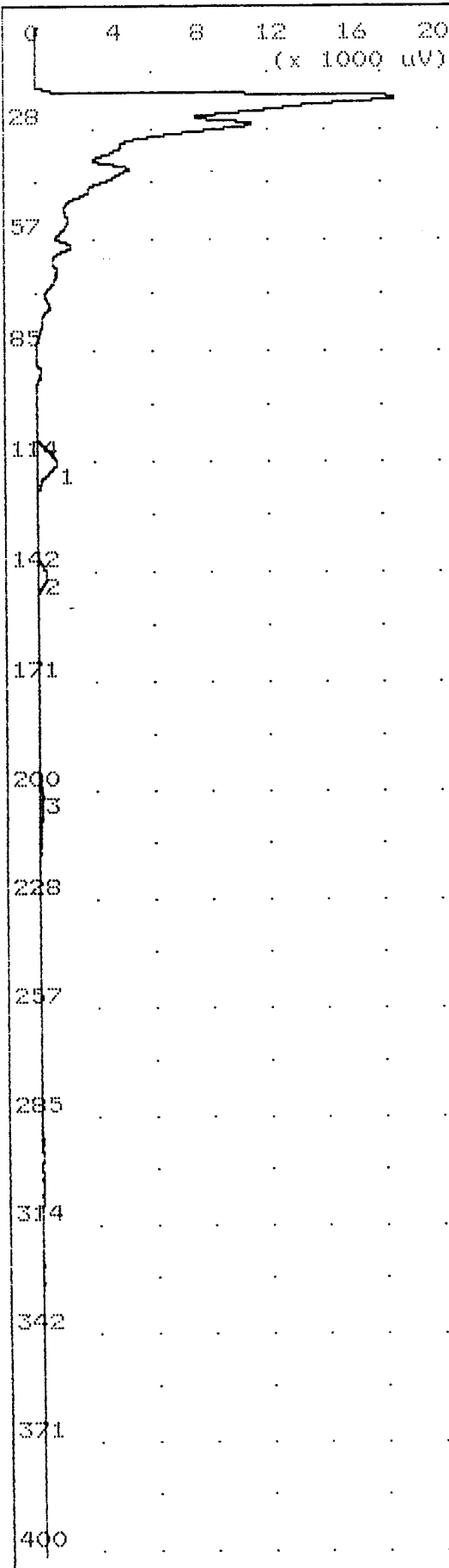
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	3.550 mVS	89.6
2	Unknown	1.559 mVS	98.2
3	Toluene	114.6 ppb	112.1
4	Unknown	13.61 mVS	142.1
5	Ethylbenzene	41.87 ppb	200.6

Notes

soil bottle headspace vol.=145cc
temp 28 c
50g soil

Sample # 19 4 to 6 ft

Analysis #36 106+ GC Function Analysis Report



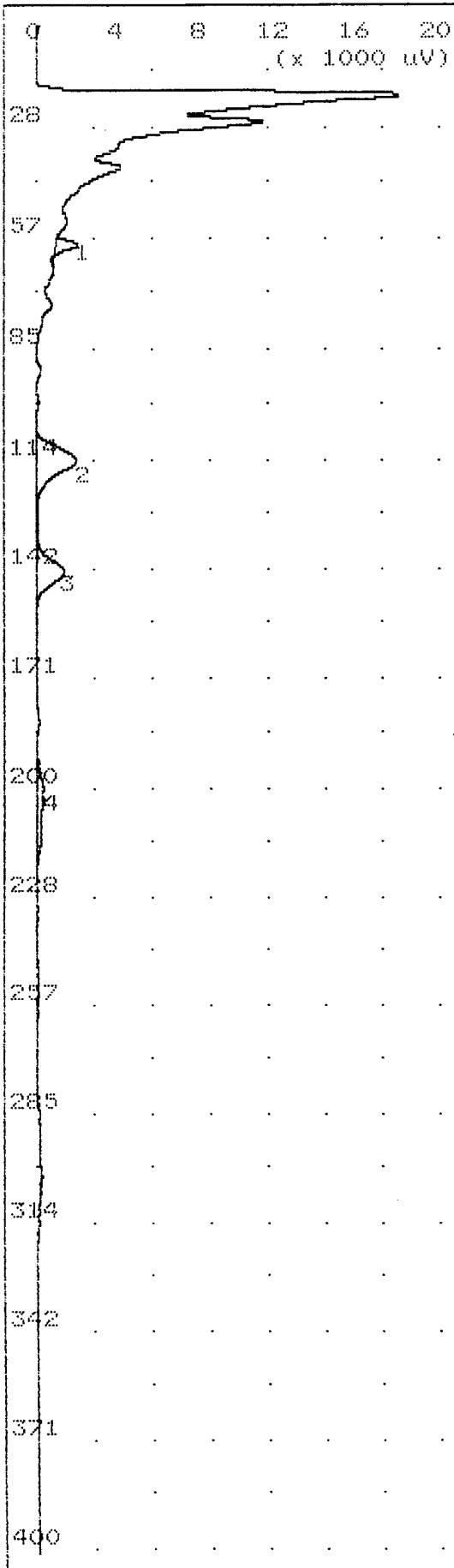
Time Printed: Aug 11,93 15:30
 Sample Time: Aug 11,93 15:21
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Toluene	43.39 ppb	113.2
2	Unknown	4.636 mVS	142.4
3	Ethylbenzene	20.39 ppb	197.6

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 Sample # 19 8 to 10 ft

Analysis #38 105+ GC Function Analysis Report

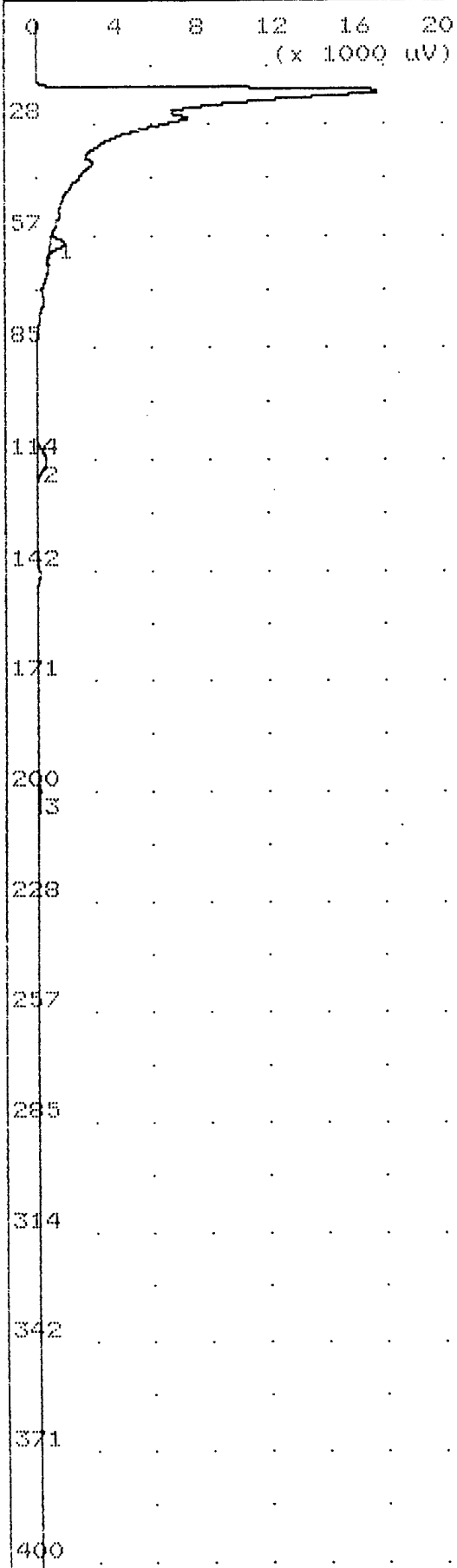


Time Printed: Aug 11, 93 15:51
 Sample Time: Aug 11, 93 15:41
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.375 ppb	56.6
2	Toluene	77.22 ppb	112.1
3	Unknown	11.30 mVS	141.7
4	Ethylbenzene	28.45 ppb	201.0

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 Sample # 19 10 to 12 ft

Analysis #40 10S+ GC Function Analysis Report



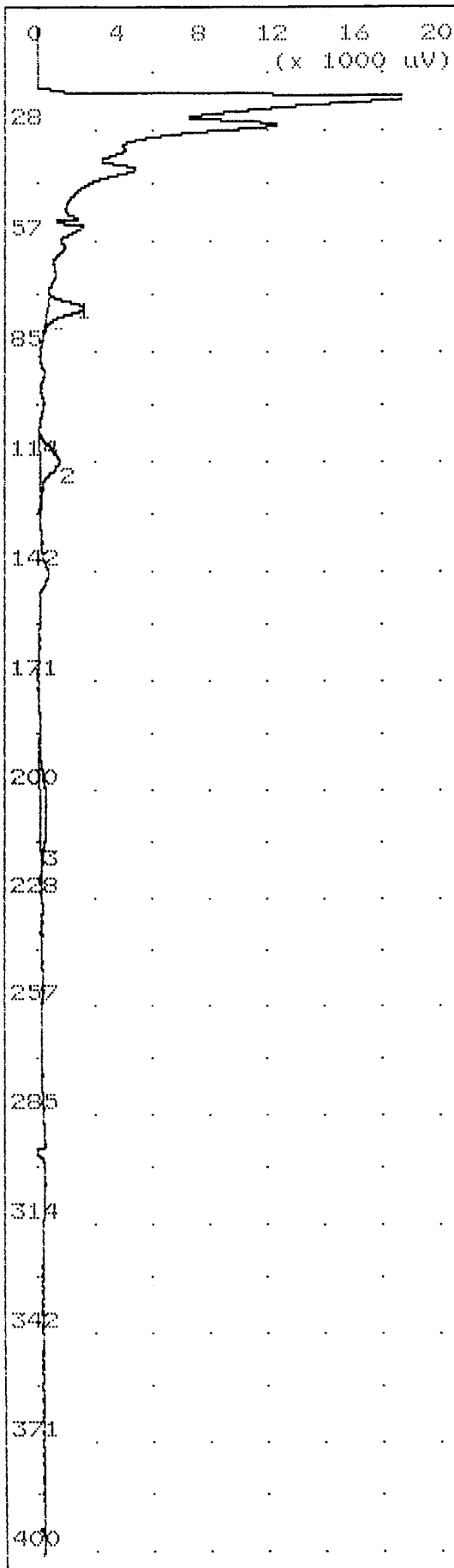
Time Printed: Aug 11,93 16:09
 Sample Time: Aug 11,93 16:00
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 50.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	4.686 ppb	56.9
2	Toluene	22.02 ppb	112.4
3	Ethylbenzene	14.18 ppb	198.0

Notes
 soil bottle headspace vol.=145cc
 temp 28 c
 50g soil
 Sample # 19 14 to 16 ft

Analysis #41 10S+ GC Function Analysis Report



Time Printed: Aug 11,93 16:19
Sample Time: Aug 11,93 16:10
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 50.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

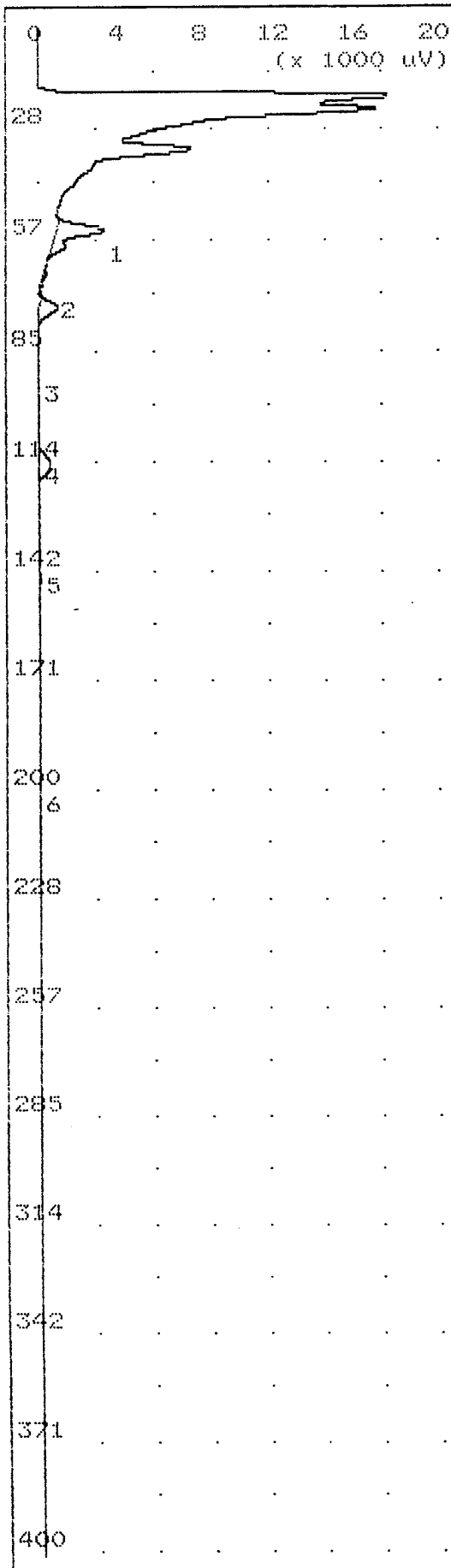
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.023 mVS	72.6
2	Toluene	33.05 ppb	112.1
3	Ethylbenzene	33.44 ppb	209.8

Notes

soil bottle headspace vol.=145cc
temp 28 c
50g soil

Sample # 19 6 to 8 ft



Time Printed: Aug 11, 93 16:36

Sample Time: Aug 11, 93 16:27

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 50.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 35 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	25.37 ppb	52.8
2	Unknown	10.01 mVS	72.6
3	Unknown	4.400 mVS	89.7
4	Toluene	39.31 ppb	113.4
5	Unknown	4.364 mVS	142.5
6	Ethylbenzene	17.28 ppb	201.4

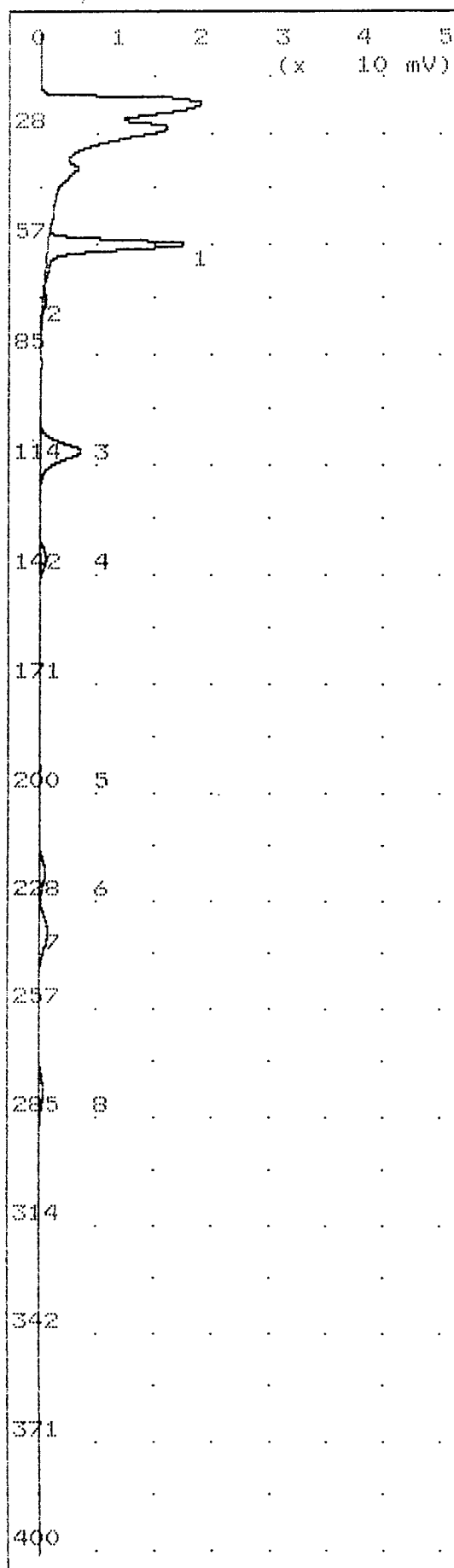
Notes

soil bottle headspace vol.=145cc

temp 28 c

42ml water sample

Sample # 19 water sample



Time Printed: Jan 1, 90 01:05
 Sample Time: Jan 1, 90 00:52
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

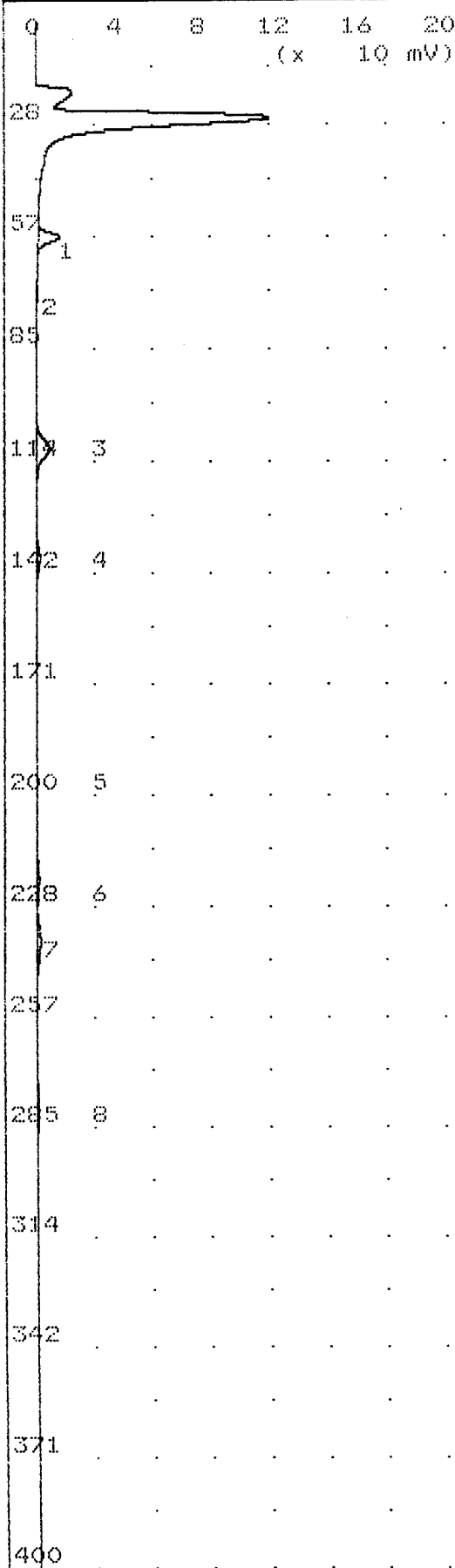
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	143.8 ppb	55.2
2	Unknown	0.617 mVS	70.0
3	Toluene	142.9 ppb	108.9
4	Unknown	8.863 mVS	136.5
5	Unknown	5.721 mVS	191.4
6	Ethylbenzene	54.07 ppb	219.6
7	M&P-Xylene	160.0 ppb	235.6
8	O-Xylene	79.58 ppb	277.6

Notes

spike sample cal. check
 sample #
 soil volume 50g
 water sample volume 43.0ml
 temp. of sample 28 c
 .1ml of 1ug/ml BTEX on 50g soil
 0.2ug/kg (ppb)
 benzene 700 = 1ug/kg
 toluene 700 = 1ug/kg
 ethylben. 270 = 1ug/kg
 m,p&o-xylene 400 = 1ug/kg

45-12-93



Time Printed: Jan 1, 90 01:49

Sample Time: Jan 1, 90 01:39

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

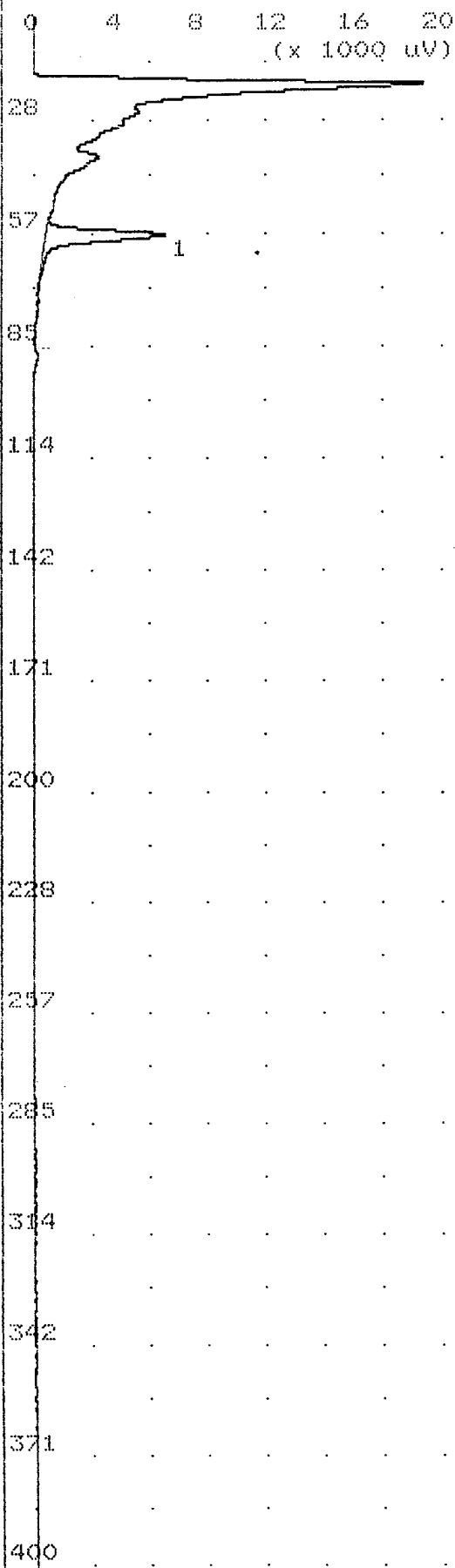
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	82.21 ppb	55.4
2	Unknown	0.854 mVS	69.6
3	Toluene	193.3 ppb	109.2
4	Unknown	17.38 mVS	137.6
5	Unknown	4.844 mVS	192.2
6	Ethylbenzene	69.51 ppb	219.6
7	m&p-Xylene	186.7 ppb	236.0
8	O-Xylene	128.6 ppb	278.1

Notes

spike sample cal. check
 sample #
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c
 .1ml of 1ug/ml BTEX on 40ml H2O
 .25ug/l (ppb)
 benzene 330 = 1ug/l
 toluene 760 = 1ug/l
 ethylben. 280 = 1ug/l
 m,p&o-xylene 400 = 1ug/l

Analysis #12 10S+ GC Function Analysis Report



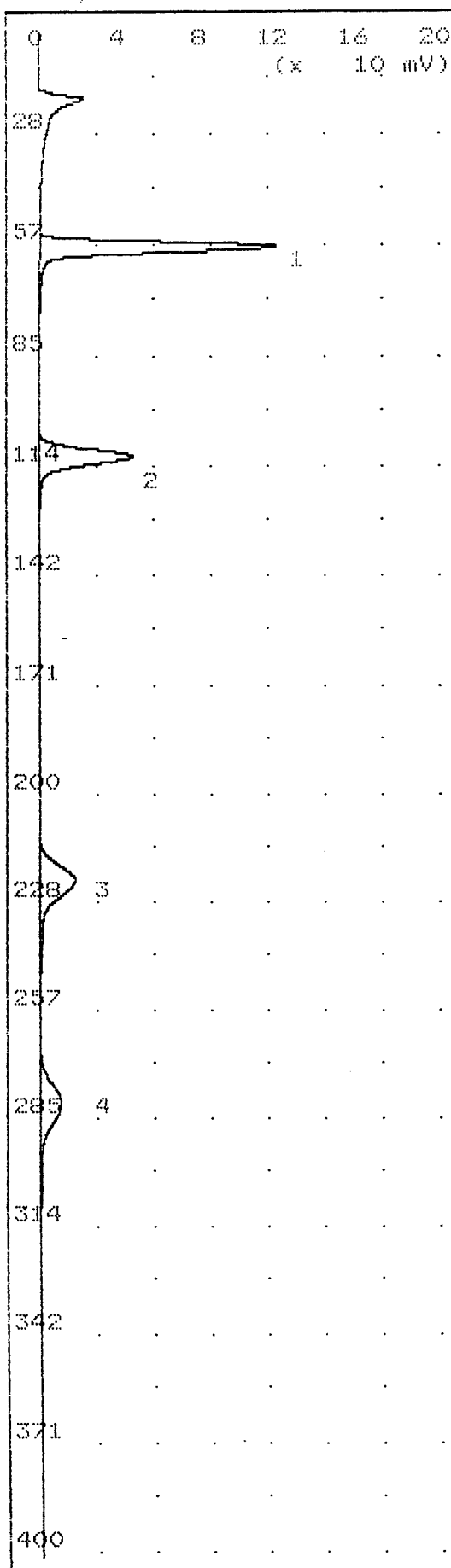
Time Printed: Aug 12, 93 02:12
 Sample Time: ~~Jan 1, 98~~ 02:02
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	48.85 ppb	55.6

Notes
 zero check
 sample #
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c

Analysis #23 105+ GC Function Calibrant Report



Time Printed: Aug 12,93 07:54
 Sample Time: Aug 12,93 05:27
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

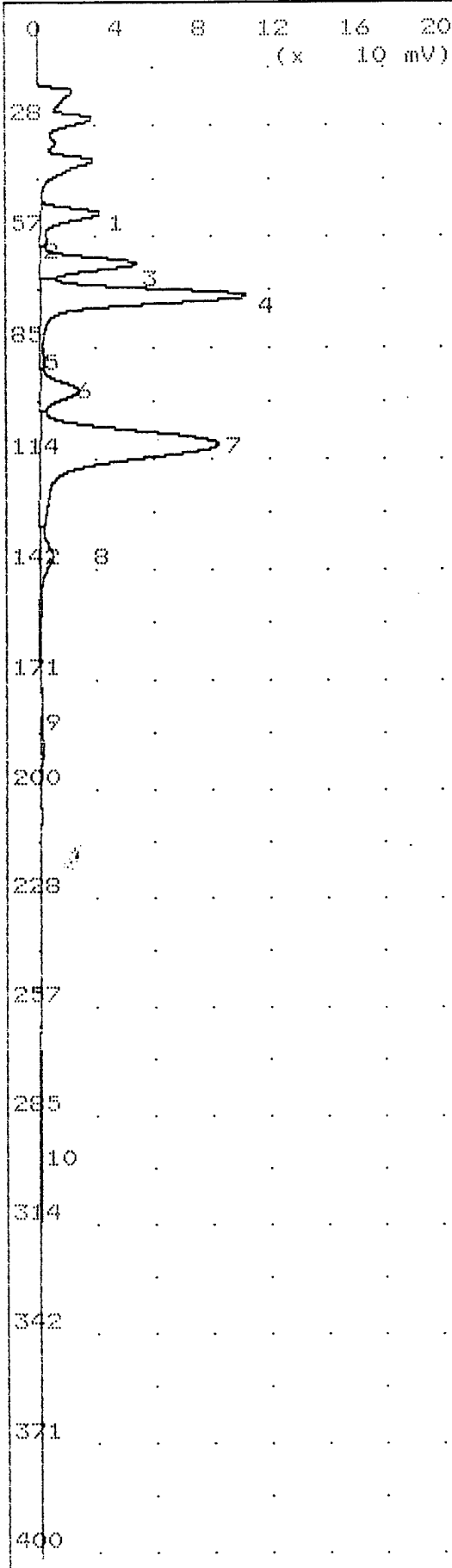
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	55.6
2	Toluene	1.000 ppm	109.7
3	Ethylbenzene	1.000 ppm	221.0
4	O-Xylene	1.000 ppm	280.0

Notes

zero check
 sample #
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c

Analysis #21 10S+ GC Function Analysis Report



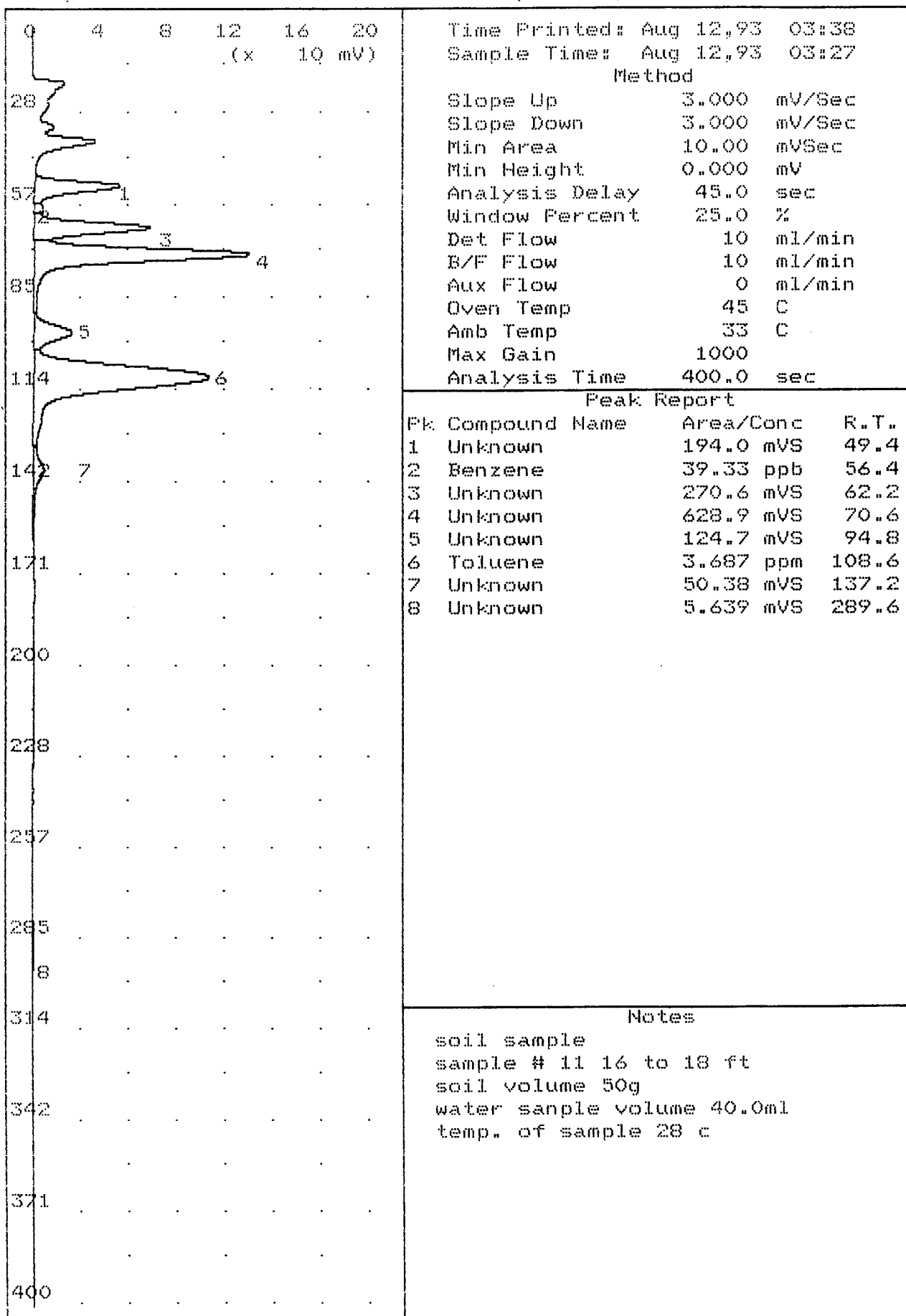
Time Printed: Aug 12,93 04:02
 Sample Time: Aug 12,93 03:51
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	308.6 ppb	49.4
2	Unknown	0.758 mVS	56.1
3	Unknown	186.2 mVS	62.2
4	Unknown	489.4 mVS	70.6
5	Unknown	1.821 mVS	86.5
6	Unknown	104.1 mVS	94.8
7	Toluene	3.207 ppm	108.5
8	Unknown	55.95 mVS	137.6
9	Unknown	3.528 mVS	174.8
10	O-Xylene	115.1 ppb	289.8

Notes

soil sample
 sample # 11 18 to 20 ft
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c

Analysis #19 10S+ GC Function Analysis Report



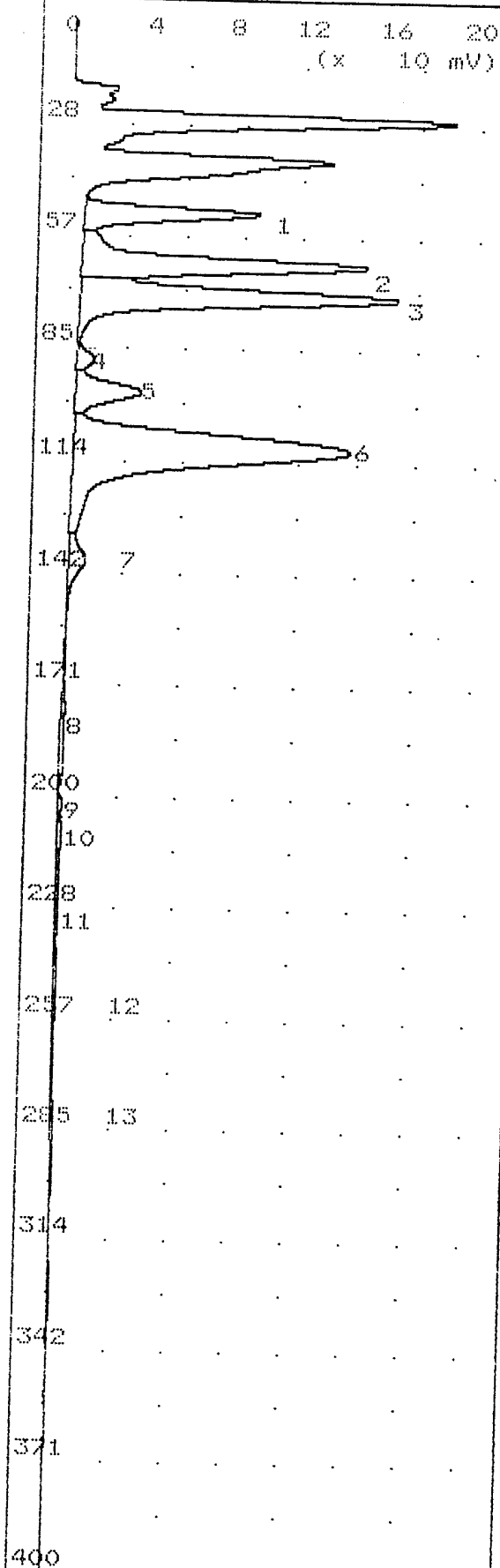
Time Printed: Aug 12,93 03:38
Sample Time: Aug 12,93 03:27
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
E/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 33 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	194.0 mVS	49.4
2	Benzene	39.33 ppb	56.4
3	Unknown	270.6 mVS	62.2
4	Unknown	628.9 mVS	70.6
5	Unknown	124.7 mVS	94.8
6	Toluene	3.687 ppm	108.6
7	Unknown	50.38 mVS	137.2
8	Unknown	5.639 mVS	289.6

Notes

soil sample
sample # 11 16 to 18 ft
soil volume 50g
water sample volume 40.0ml
temp. of sample 28 c

Analysis #17 10S+ GC Function Analysis Report



Time Printed: Aug 12,93 03:11
Sample Time: Aug 12,93 03:02
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 25.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 33 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

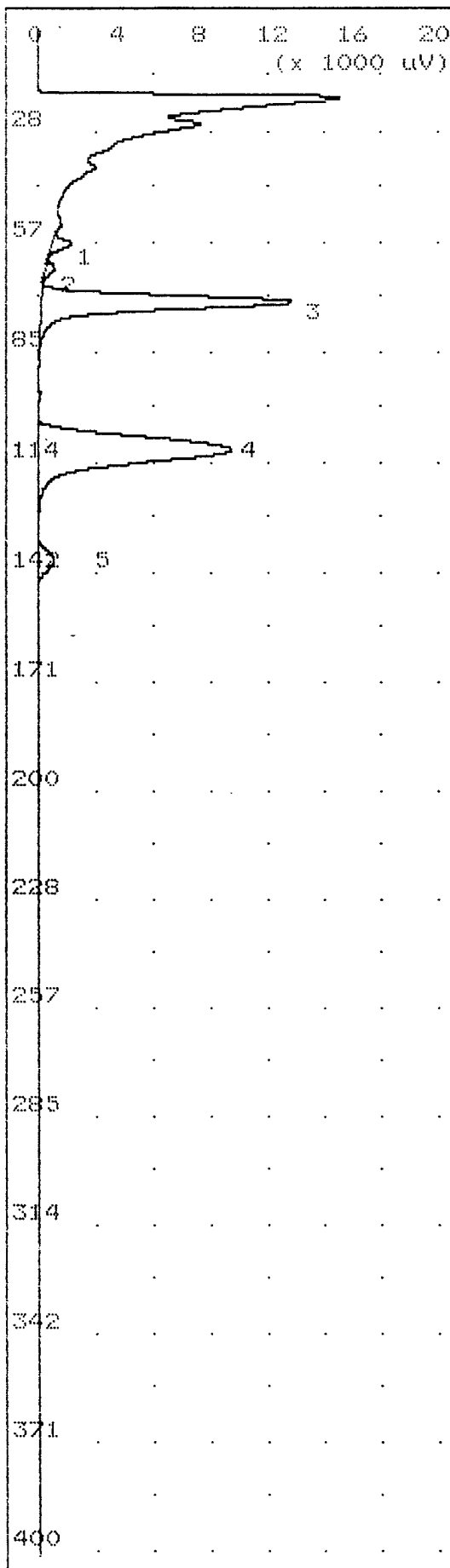
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	835.5 ppb	49.2
2	Unknown	649.0 mVS	62.4
3	Unknown	795.5 mVS	70.6
4	Unknown	36.08 mVS	87.0
5	Unknown	174.2 mVS	94.9
6	Toluene	5.188 ppm	109.0
7	Unknown	69.56 mVS	137.6
8	Ethylbenzene	241.8 ppb	175.0
9	Unknown	5.105 mVS	199.4
10	Unknown	64.11 mVS	208.0
11	Ethylbenzene	160.4 ppb	224.2
12	M&P-Xylene	460.7 ppb	247.4
13	O-Xylene	371.1 ppb	280.5

ERR
5 162

Notes

soil sample
sample # 11 14 to 16 ft
soil volume 50g
water sample volume 40.0ml
temp. of sample 28 c

Analysis #15 10S+ GC Function Analysis Report



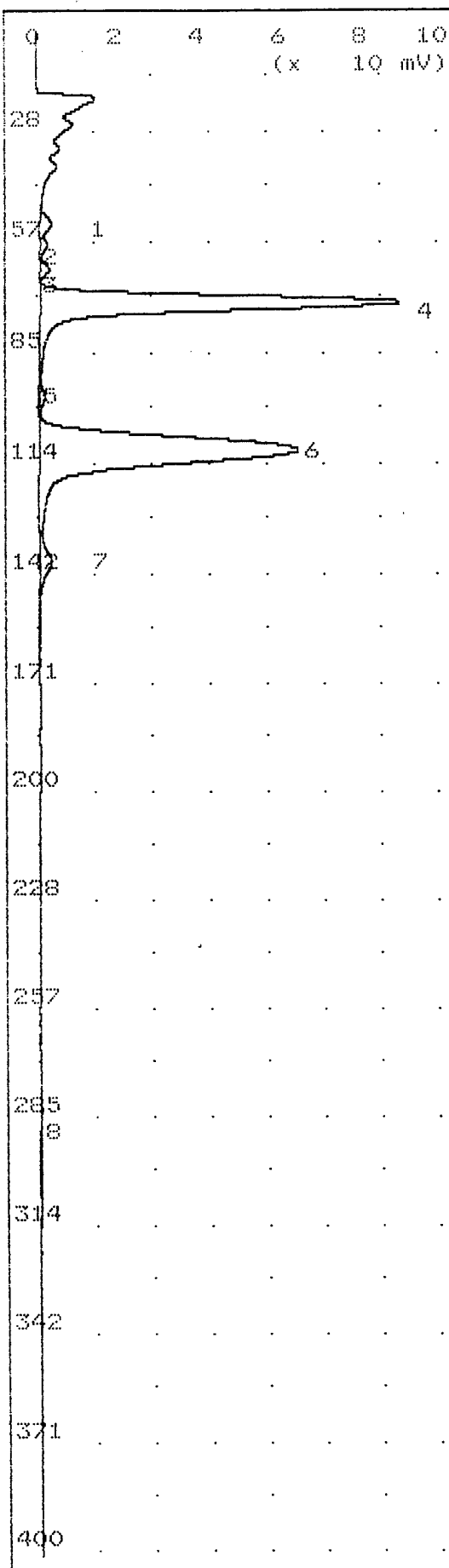
Time Printed: Aug 12,93 02:47
 Sample Time: Aug 12,93 02:37
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.811 mVS	55.8
2	Unknown	1.055 mVS	62.1
3	Unknown	53.32 mVS	70.6
4	Toluene	329.8 ppb	109.0
5	Unknown	8.255 mVS	137.8

Notes

soil sample
 sample # 11 10 to 12 ft
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c

Analysis #13 10S+ GC Function Analysis Report

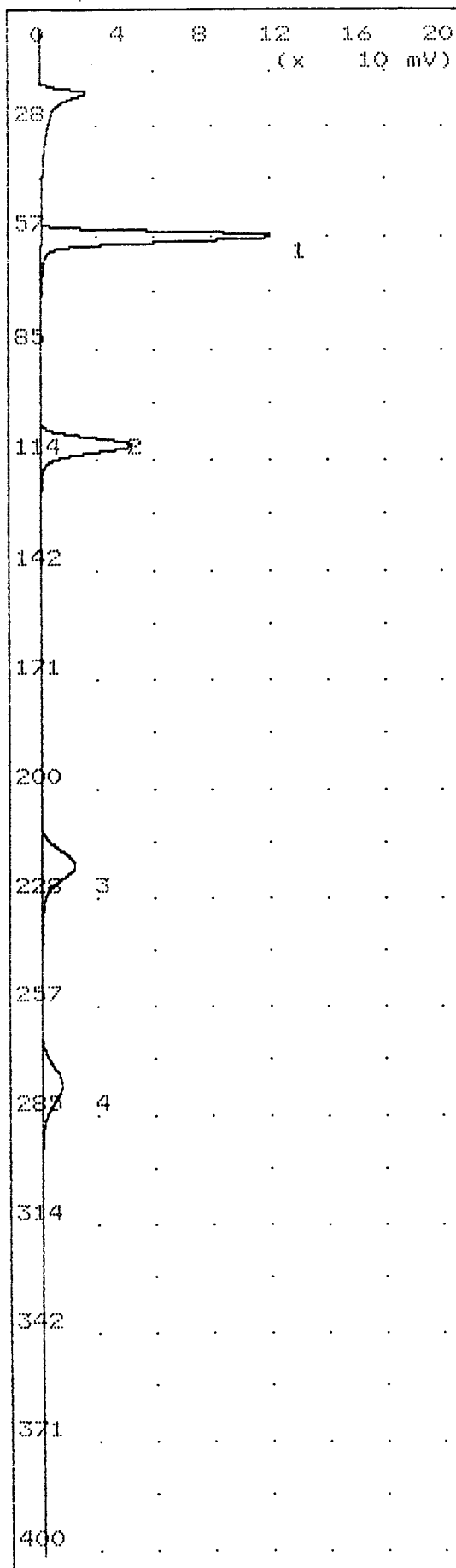


Time Printed: Aug 12,93 02:25
 Sample Time: Aug 12,93 02:15
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 25.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	29.17 ppb	50.2
2	Unknown	5.139 mVS	56.0
3	Unknown	6.727 mVS	62.2
4	Unknown	414.6 mVS	70.8
5	Unknown	3.721 mVS	94.9
6	Toluene	2.148 ppm	108.8
7	Unknown	24.65 mVS	138.0
8	Unknown	6.576 mVS	281.6

Notes

sample soil
 sample # 11 8to10 ft
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c



Time Printed: Aug 13,93 00:56

Sample Time: Aug 13,93 00:47

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 28 C

Max Gain 1000

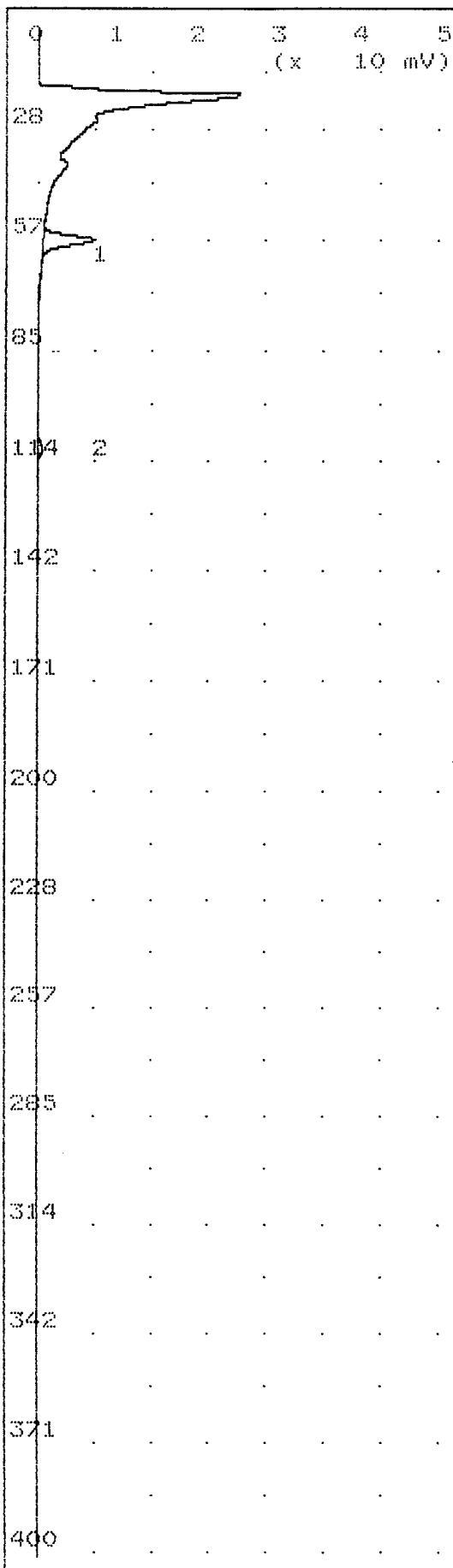
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	55.2
2	Toluene	1.000 ppm	108.5
3	Ethylbenzene	999.9 ppb	217.8
4	O-Xylene	1.000 ppm	275.7

Notes

cal. check
sample # 1 ppm BTEX gas standard
soil volume 50g
water sample volume 40.0ml
temp. of sample 28 c



Time Printed: Aug 13, 93 08:25

Sample Time: Aug 13, 93 00:58

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 25.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 29 C

Max Gain 1000

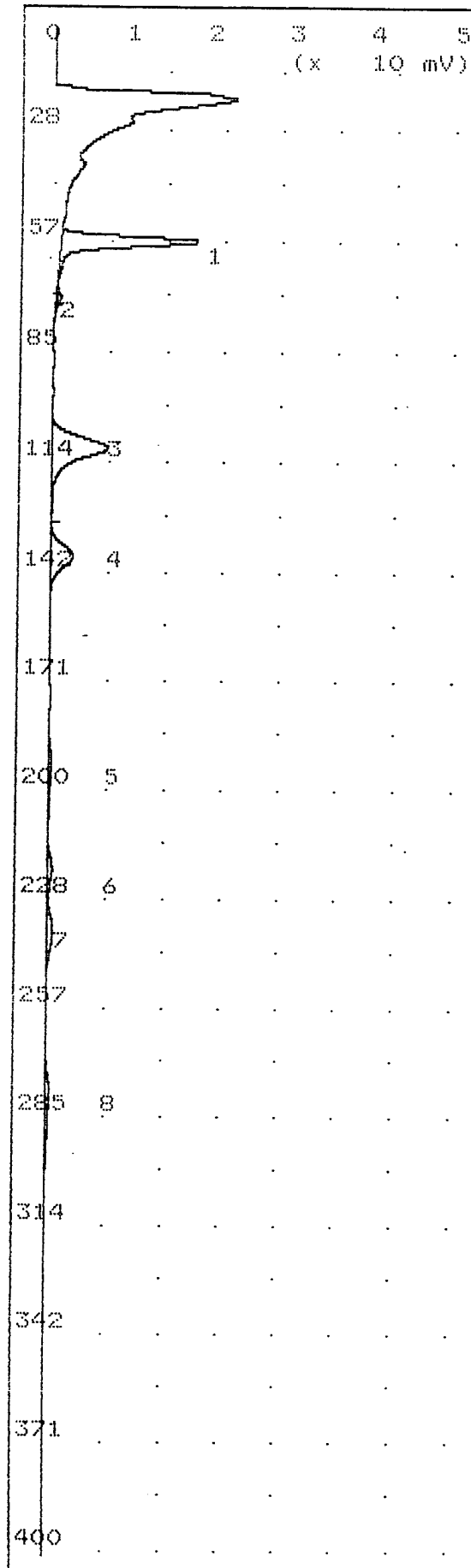
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	48.06 ppb	55.3
2	Unknown	6.280 mVS	109.4

Notes

zero check
 sample # clean soil
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 09:02

Sample Time: Aug 13, 93 08:48

Method

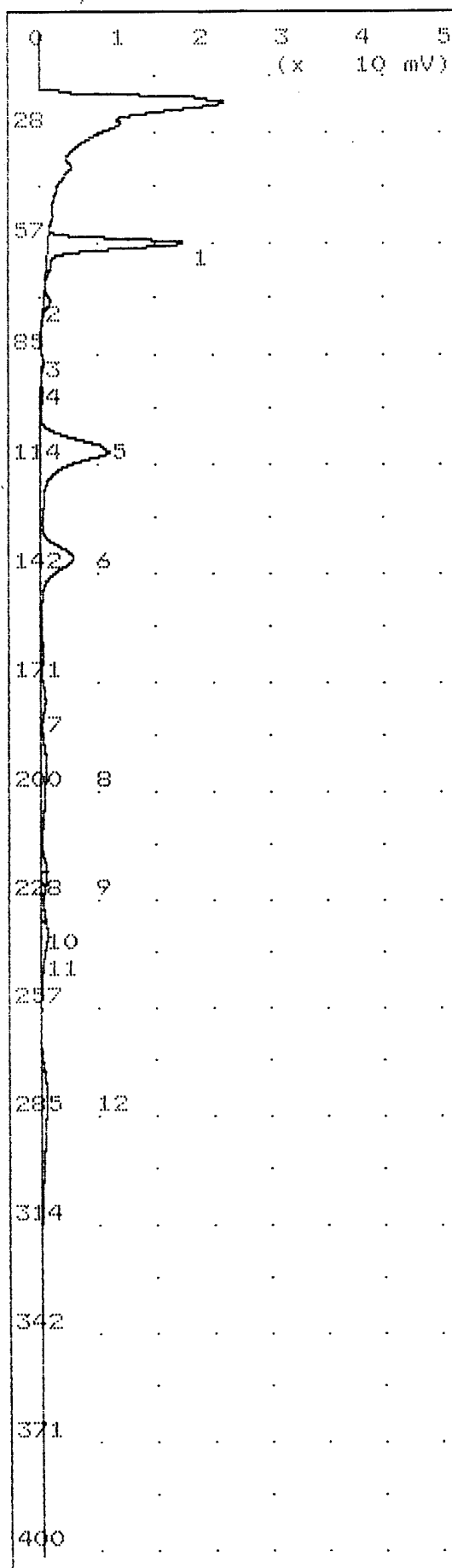
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	145.4 ppb	55.1
2	Unknown	1.424 mVS	70.0
3	Toluene	212.4 ppb	108.9
4	Unknown	21.41 mVS	136.8
5	Unknown	5.433 mVS	192.4
6	Unknown	6.371 mVS	218.6
7	M&P-Xylene	190.0 ppb	235.2
8	O-Xylene	94.92 ppb	278.6

Notes

zero check
 sample#clean soil .1ml of 1ug/ml
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c
 .1ug/50g=.002ug/g=2ug/kg
 72 ppb benzene = 1ug/kg
 100 ppb toluene = 1ug/kg
~~50 ppb ethylbenzene = 1ug/kg~~
 50 ppb m,p&o-xyle.= 1ug/kg



Time Printed: Aug 13,93 09:16
 Sample Time: Aug 13,93 09:04
 Method

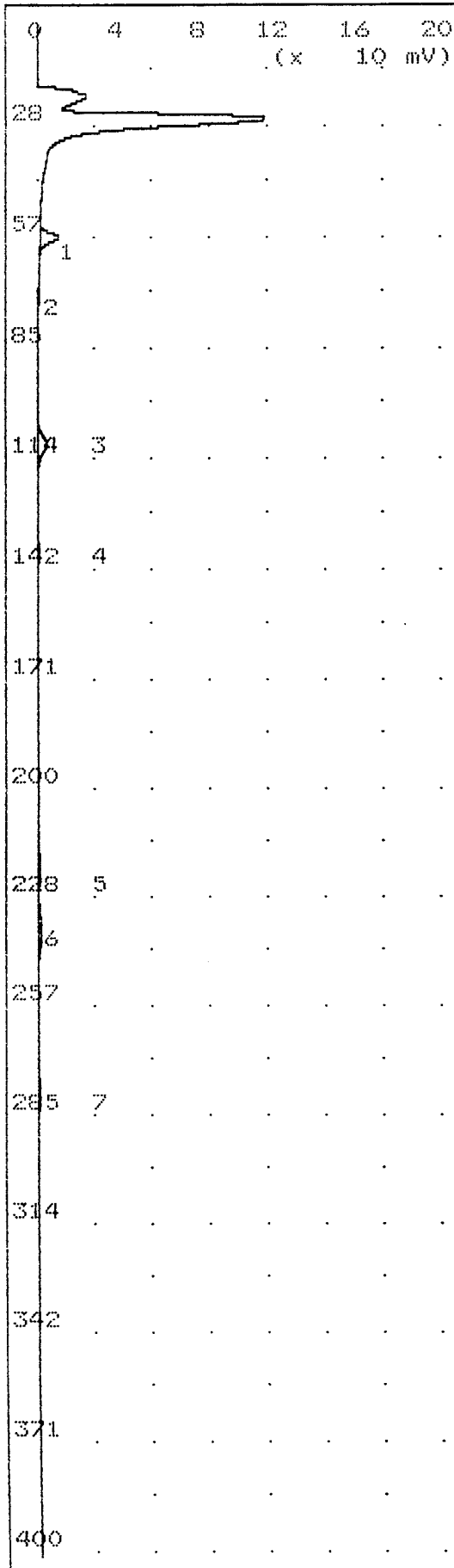
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	137.1 ppb	55.2
2	Unknown	1.931 mVS	70.0
3	Unknown	0.489 mVS	85.4
4	Unknown	0.483 mVS	94.2
5	Toluene	276.9 ppb	108.4
6	Unknown	34.74 mVS	136.8
7	Unknown	5.407 mVS	174.6
8	Ethylbenzene	203.9 ppb	192.2
9	Unknown	2.429 mVS	219.2
10	Unknown	6.620 mVS	232.0
11	Unknown	8.534 mVS	235.8
12	O-Xylene	133.8 ppb	278.4

Notes

zero check
 sample#clean soil .1ml of 1ug/ml
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c
 $.1\text{ug}/50\text{g} = .002\text{ug}/\text{g} = 2\text{ug}/\text{kg}$
 72 ppb benzene = 1ug/kg
 135 ppb toluene = 1ug/kg
 100 ppb ethylbenz. = 1ug/kg
 65 ppb m,p&o-xyle. = 1ug/kg



Time Printed: Aug 13, 93 09:35
 Sample Time: Aug 13, 93 09:19
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

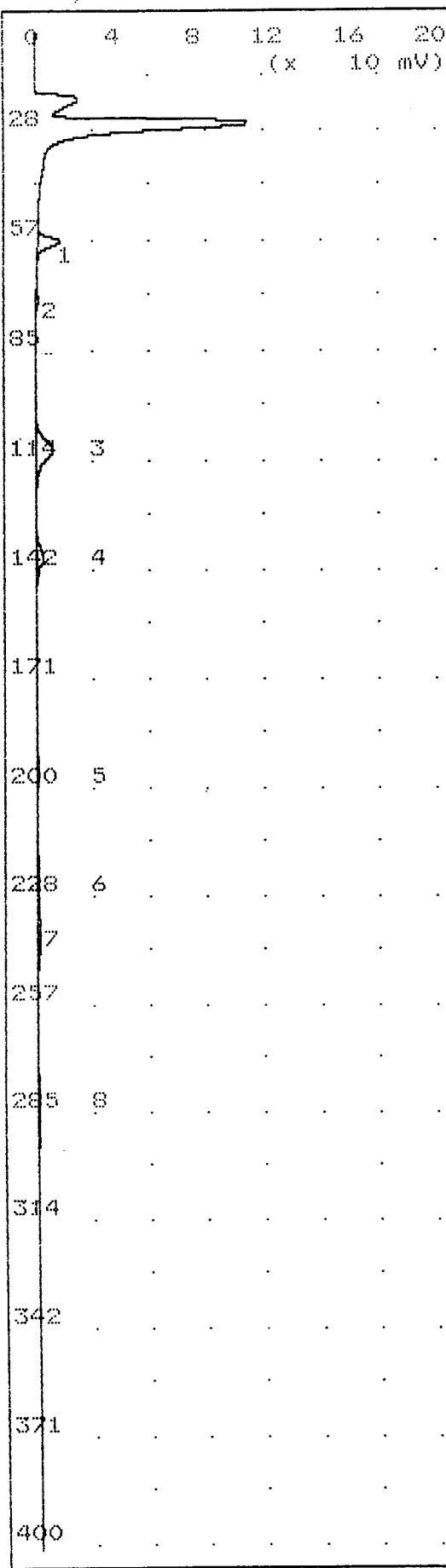
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	75.49 ppb	55.2
2	Unknown	1.262 mVS	70.5
3	Toluene	135.5 ppb	108.8
4	Unknown	8.290 mVS	136.9
5	Unknown	9.348 mVS	219.4
6	Unknown	21.72 mVS	235.6
7	O-Xylene	96.69 ppb	277.6

Notes

zero check
 sample#clean soil .1ml of 1ug/ml
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c
 $.1\text{ug}/40\text{ml} = .0025\text{ug/ml} = 2.5\text{ug/l}$
 30 ppb benzene = 1ug/l
 50 ppb toluene = 1ug/l
 30 ppb ethylbenz. = 1ug/l
 40 ppb m,p&o-xyle. = 1ug/l

Analysis #10 10S+ GC Function Analysis Report



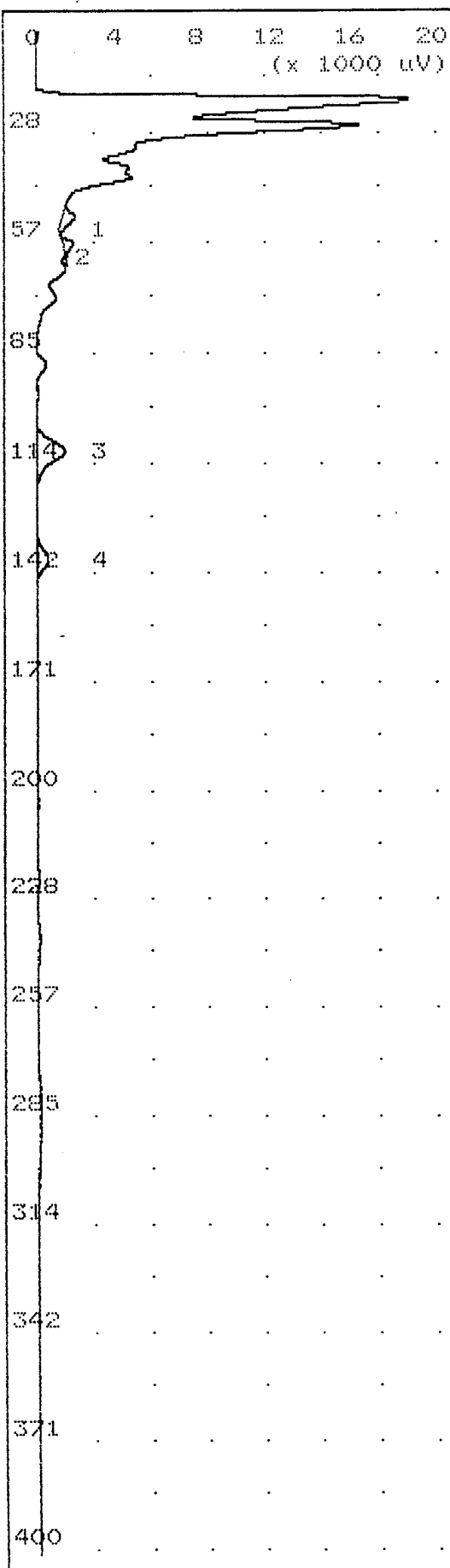
Time Printed: Aug 13,93 09:51
 Sample Time: Aug 13,93 09:37
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	90.44 ppb	55.5
2	Unknown	2.335 mVS	70.5
3	Toluene	266.3 ppb	109.3
4	Unknown	25.20 mVS	137.8
5	Unknown	8.546 mVS	194.6
6	m,p-Xylene	300.0 ppb	220.0
7	Unknown	20.86 mVS	236.6
8	O-Xylene	177.7 ppb	279.7

Notes

zero check
 sample#clean soil .1ml of 1ug/ml
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c
 $.1\text{ug}/40\text{ml} = .0025\text{ug/ml} = 2.5\text{ug/l}$
 35 ppb benzene = 1ug/l
 100ppb toluene = 1ug/l
 30 ppb ethylbenz. = 1ug/l
 60 ppb m,p&o-xyle. = 1ug/l

Analysis #11 10S+ GC Function Analysis Report



Time Printed: Aug 13,93 10:09
 Sample Time: Aug 13,93 09:58
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

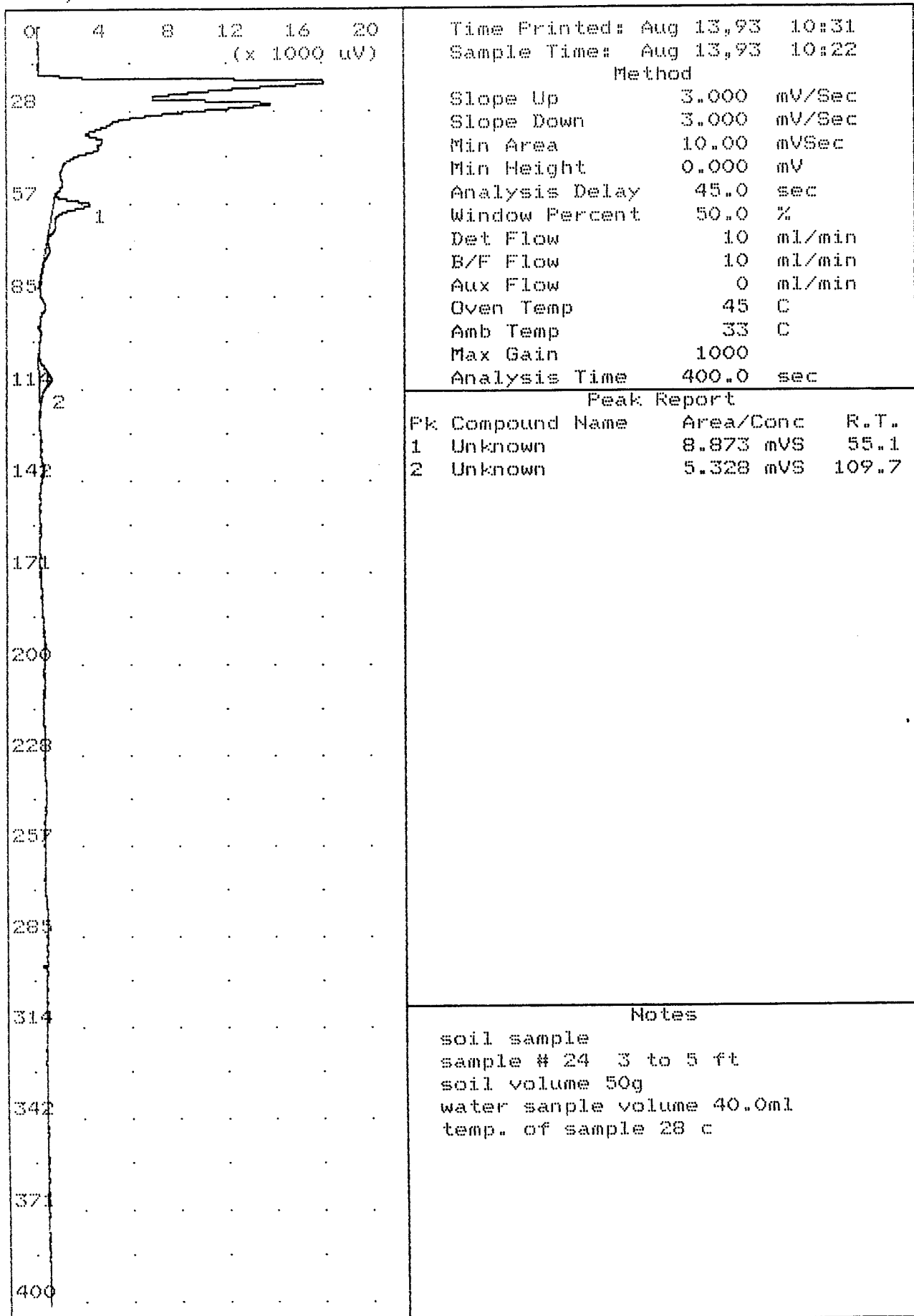
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.604 mVS	49.0
2	Unknown	1.359 mVS	55.2
3	Toluene	50.42 ppb	109.3
4	Unknown	5.912 mVS	136.9

Notes

soil sample
 sample# 24 1 to 3 ft
 soil volume 50g
 water sample volume 40.0ml
 temp. of sample 28 c

Analysis #16 10S+ GC Function Analysis Report



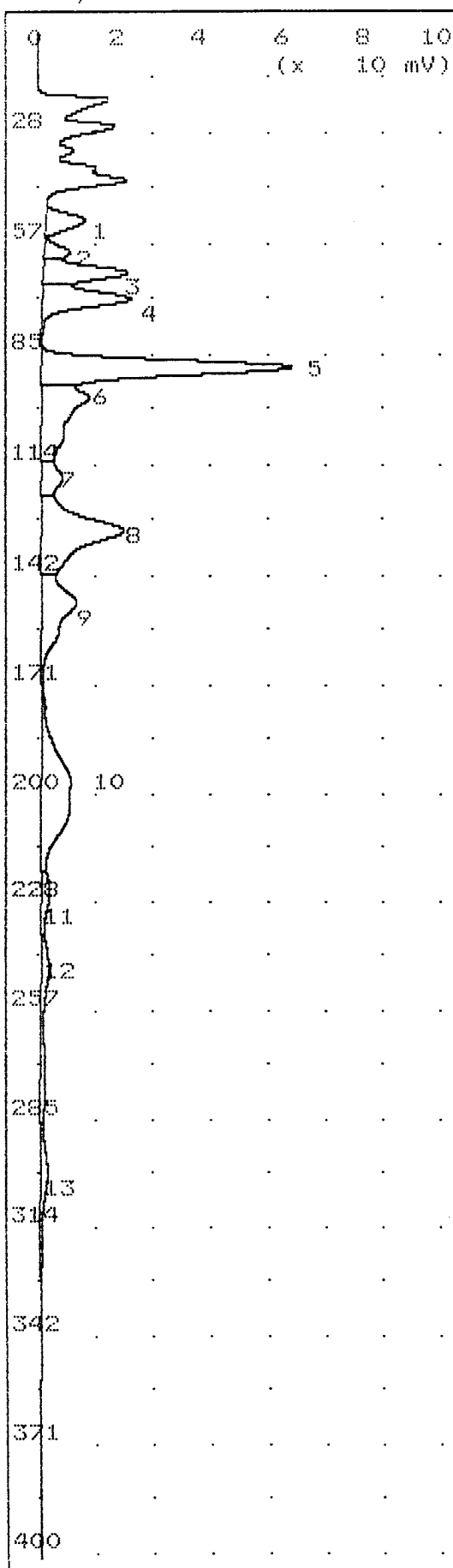
Time Printed: Aug 13,93 10:31
Sample Time: Aug 13,93 10:22
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 50.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 33 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	8.873 mVS	55.1
2	Unknown	5.328 mVS	109.7

Notes

soil sample
sample # 24 3 to 5 ft
soil volume 50g
water sample volume 40.0ml
temp. of sample 28 c



Time Printed: Aug 13,93 10:43

Sample Time: Aug 13,93 10:35

Method

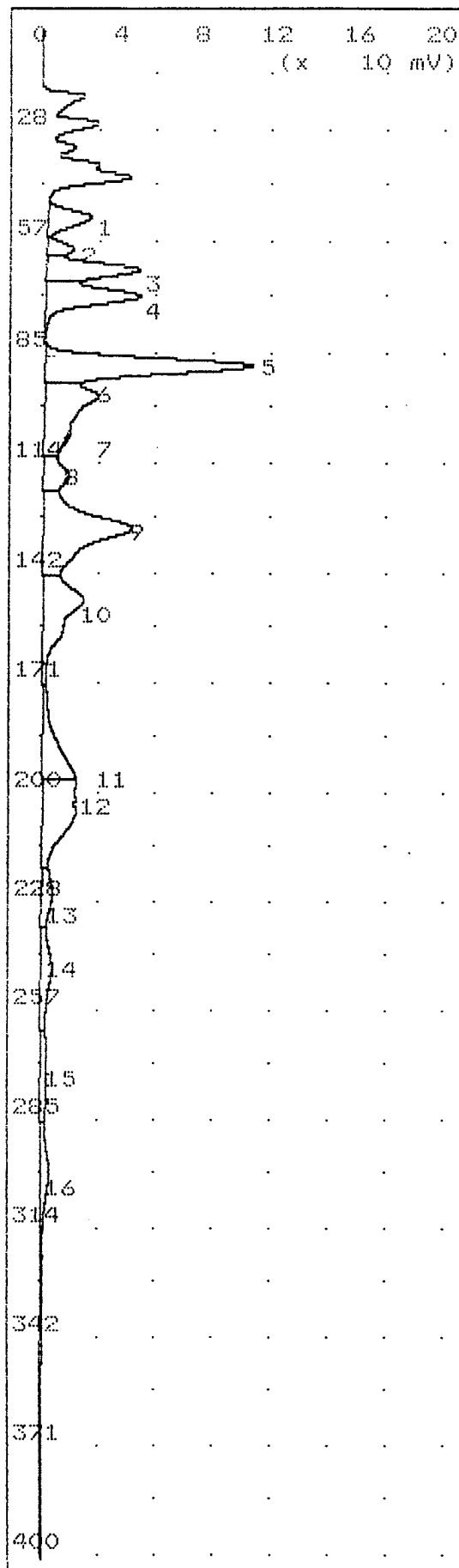
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 50.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 33 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	41.56 mVS	48.9
2	Benzene	62.01 ppb	57.1
3	Unknown	87.23 mVS	62.4
4	Unknown	105.7 mVS	69.3
5	Unknown	292.8 mVS	87.0
6	Unknown	129.5 mVS	95.0
7	Toluene	147.1 ppb	115.7
8	Unknown	200.3 mVS	129.0
9	Unknown	108.9 mVS	148.0
10	Ethylbenzene	1.062 ppm	194.2
11	M&P-Xylene	638.4 ppb	224.4
12	Unknown	48.69 mVS	243.4
13	O-Xylene	190.8 ppb	298.1

Notes

soil sample
sample # 24 5 to 7 ft
soil volume 50g
water sample volume 40.0ml
temp. of sample 28 c



Time Printed: Aug 13,93 11:02

Sample Time: Aug 13,93 10:54

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 50.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 33 C

Max Gain 1000

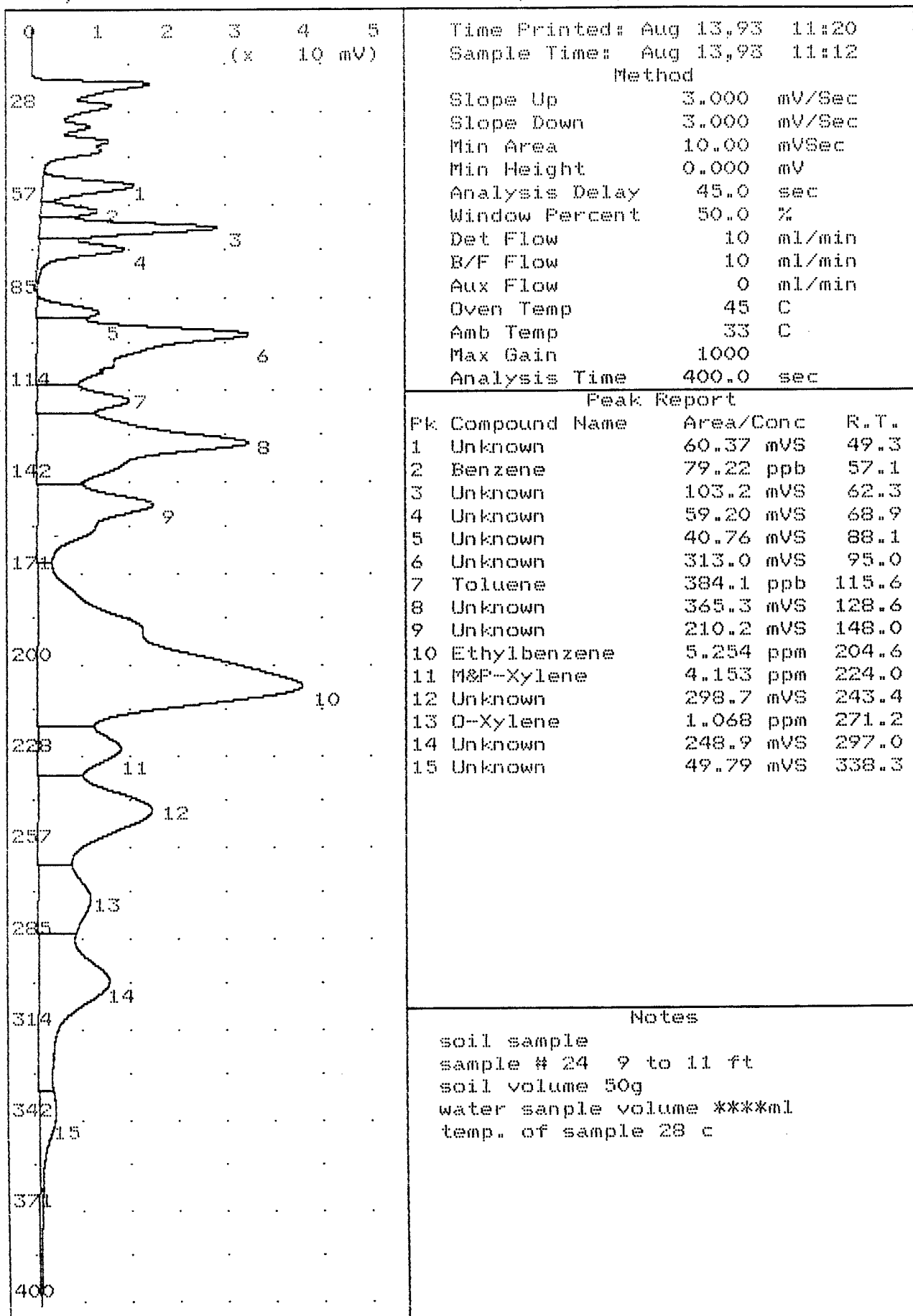
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	95.69 mVS	49.2
2	Benzene	116.9 ppb	57.3
3	Unknown	192.3 mVS	62.4
4	Unknown	227.9 mVS	69.3
5	Unknown	505.2 mVS	87.0
6	Toluene	1.181 ppm	95.0
7	Unknown	4.515 mVS	104.5
8	Unknown	82.00 mVS	115.7
9	Unknown	450.7 mVS	129.0
10	Unknown	247.9 mVS	148.0
11	Ethylbenzene	962.7 ppb	194.8
12	Unknown	267.5 mVS	201.2
13	M&F-Xylene	1.683 ppm	224.6
14	Unknown	91.97 mVS	244.5
15	O-Xylene	427.0 ppb	272.2
16	Unknown	108.5 mVS	297.3

Notes

soil sample
sample # 24 7 to 9 ft
soil volume 50g
water sample volume ***ml
temp. of sample 28 c



Time Printed: Aug 13,93 11:20
 Sample Time: Aug 13,93 11:12
 Method

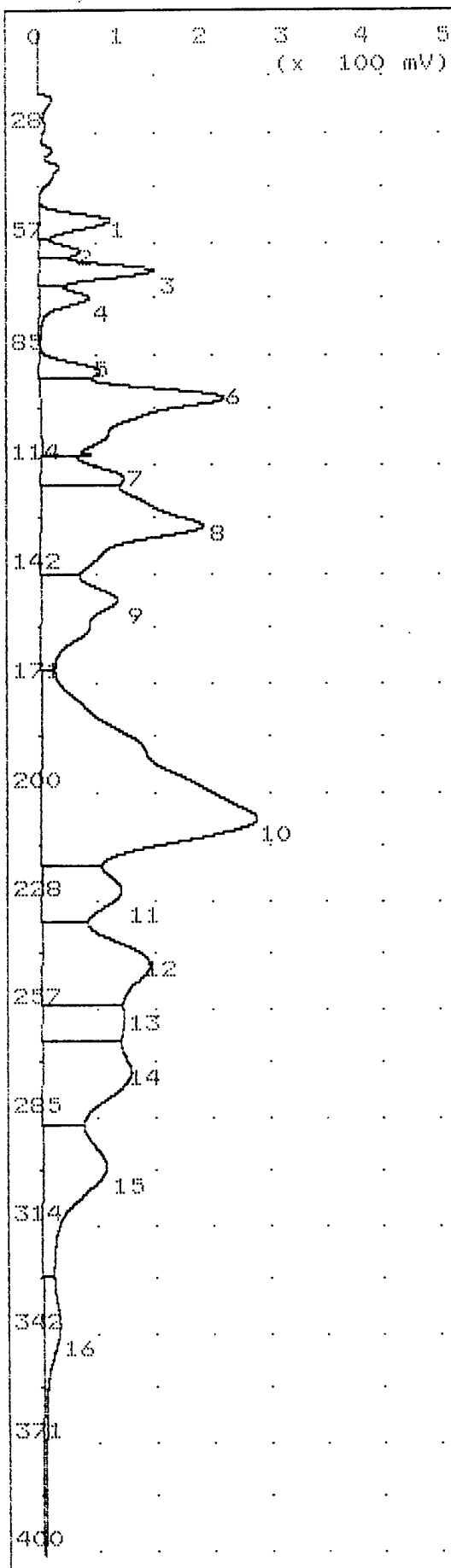
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 50.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	60.37 mVS	49.3
2	Benzene	79.22 ppb	57.1
3	Unknown	103.2 mVS	62.3
4	Unknown	59.20 mVS	68.9
5	Unknown	40.76 mVS	88.1
6	Unknown	313.0 mVS	95.0
7	Toluene	384.1 ppb	115.6
8	Unknown	365.3 mVS	128.6
9	Unknown	210.2 mVS	148.0
10	Ethylbenzene	5.254 ppm	204.6
11	M&P-Xylene	4.153 ppm	224.0
12	Unknown	298.7 mVS	243.4
13	O-Xylene	1.068 ppm	271.2
14	Unknown	248.9 mVS	297.0
15	Unknown	49.79 mVS	338.3

Notes

soil sample
 sample # 24 9 to 11 ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 11:39

Sample Time: Aug 13, 93 11:30

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 50.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 33 C

Max Gain 1000

Analysis Time 400.0 sec

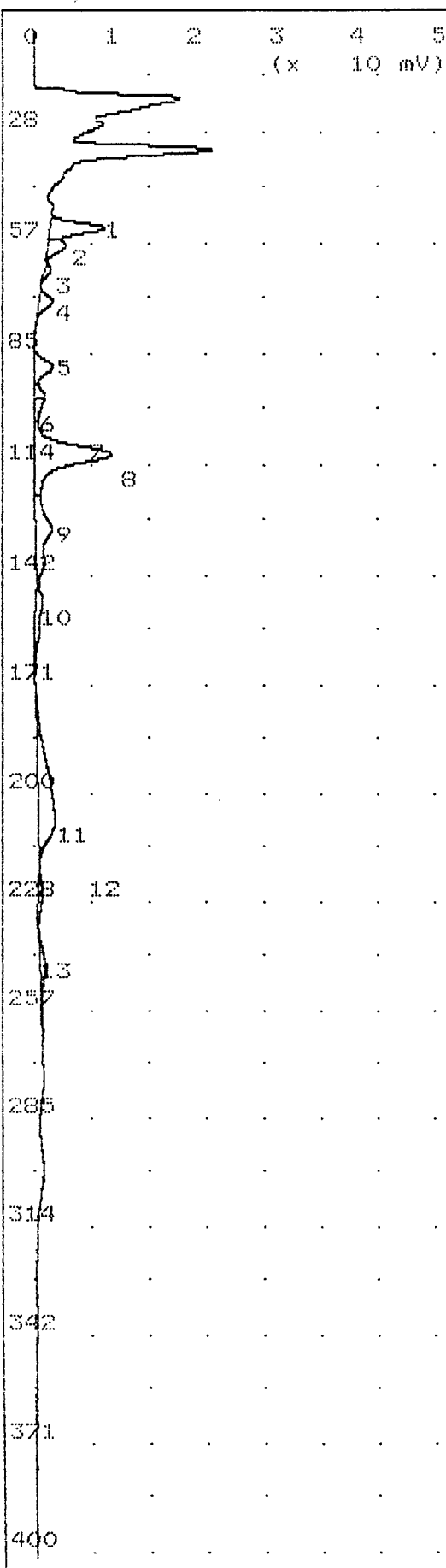
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	398.5 mVS	49.4
2	Benzene	451.9 ppb	57.3
3	Unknown	603.1 mVS	62.2
4	Unknown	292.1 mVS	69.0
5	Unknown	321.3 mVS	88.0
6	Unknown	2.410 VSec	94.9
7	Toluene	2.729 ppm	115.8
8	Unknown	2.748 VSec	128.2
9	Unknown	1.337 VSec	147.8
10	Ethylbenzene	40.26 PPM2	204.6
11	M&P-Xylene	32.85 PPM2	223.8
12	Unknown	2.315 VSec	243.4
13	Unknown	982.8 mVS	257.8
14	O-Xylene	14.35 PPM1	271.7
15	Unknown	1.660 VSec	296.8
16	Unknown	450.8 mVS	338.3

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 24 11 to 13 ft
 soil volume 50g
 water sample volume ***ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 13:22

Sample Time: Aug 13, 93 13:13

Method

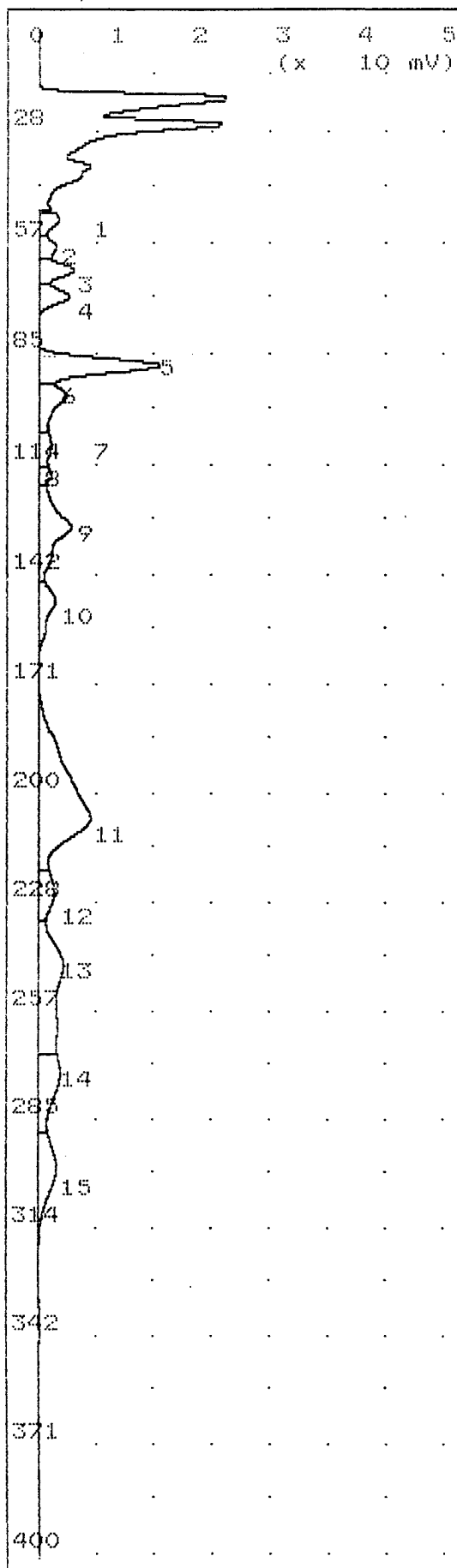
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	59.48 ppb	51.2
2	Unknown	6.432 mVS	55.8
3	Unknown	1.845 mVS	61.9
4	Unknown	6.183 mVS	70.0
5	~~Toluene~~	~~45.44 ppb~~	~~87.2~~
6	Unknown	3.440 mVS	95.4
7	Unknown	4.565 mVS	98.5
8	Toluene	253.8 ppb	109.6
9	Unknown	29.37 mVS	128.5
10	Unknown	10.76 mVS	148.2
11	Ethylbenzene	310.7 ppb	204.2
12	Unknown	4.262 mVS	223.6
13	Unknown	7.885 mVS	244.2

Notes

water sample
 sample # 24
 soil volume 50g 43.0 mL
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13,93 13:03

Sample Time: Aug 13,93 11:49

Method

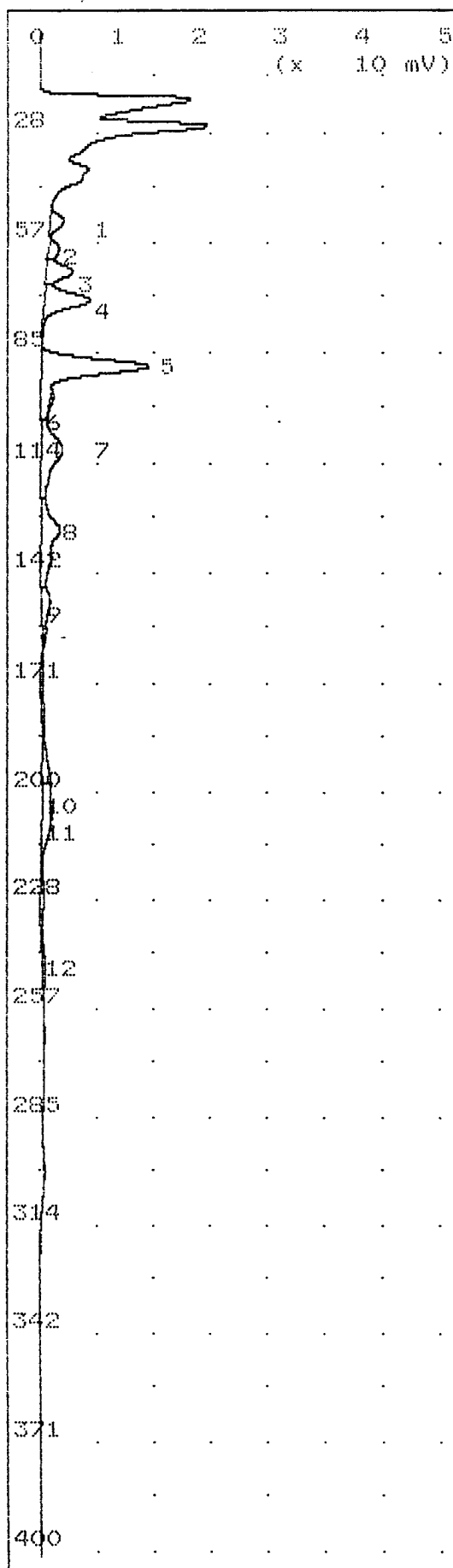
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 50.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	26.50 mVS	48.9
2	Benzene	60.90 ppb	56.2
3	Unknown	31.93 mVS	62.2
4	Unknown	40.96 mVS	69.0
5	Unknown	91.54 mVS	86.9
6	Unknown	45.76 mVS	94.9
7	Toluene	105.3 ppb	106.9
8	Unknown	14.03 mVS	115.4
9	Unknown	81.02 mVS	128.4
10	Unknown	45.35 mVS	148.4
11	Ethylbenzene	1.049 ppm	204.2
12	M&P-Xylene	764.3 ppb	224.2
13	Unknown	95.47 mVS	242.9
14	O-Xylene	345.2 ppb	271.7
15	Unknown	40.84 mVS	297.0

Notes

soil sample
 sample # 25 1to3ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 14:01

Sample Time: Aug 13, 93 13:52

Method

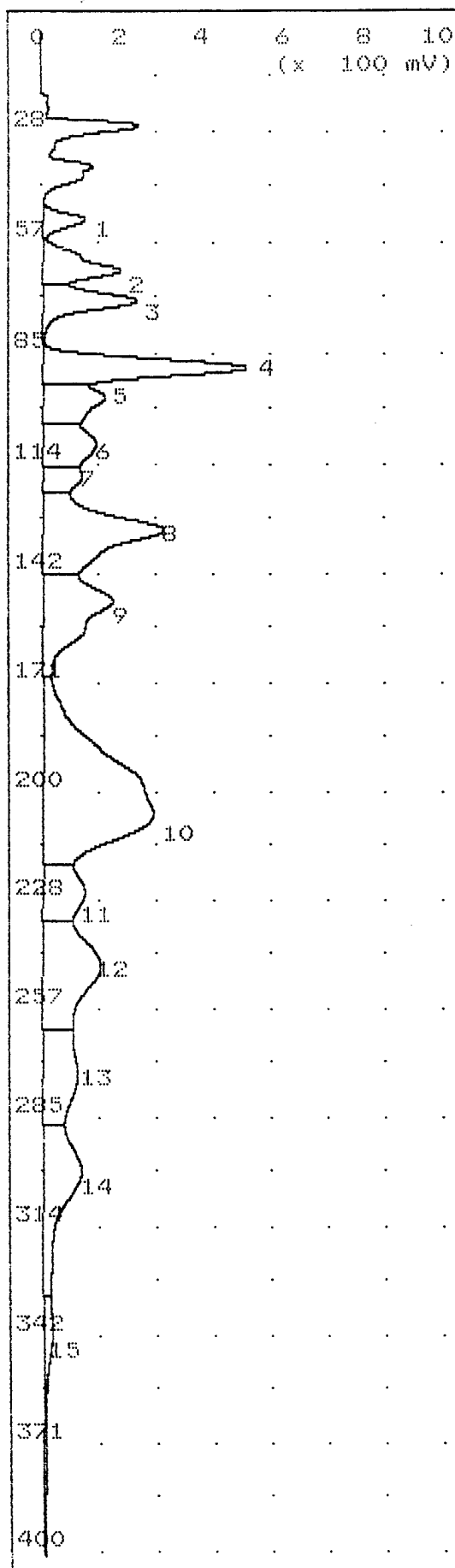
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	5.922 mVS	49.7
2	Unknown	5.249 mVS	56.5
3	Unknown	13.53 mVS	62.5
4	Unknown	27.74 mVS	70.1
5	Toluene	223.0 ppb	87.3
6	Unknown	0.784 mVS	95.3
7	Toluene	112.8 ppb	108.6
8	Unknown	26.15 mVS	129.8
9	Unknown	7.902 mVS	148.6
10	Unknown	8.559 mVS	196.0
11	Unknown	20.34 mVS	204.0
12	Unknown	4.736 mVS	244.0

Notes

soil sample
 sample # 25 3 to 5 ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 14:22

Sample Time: Aug 13, 93 14:14

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

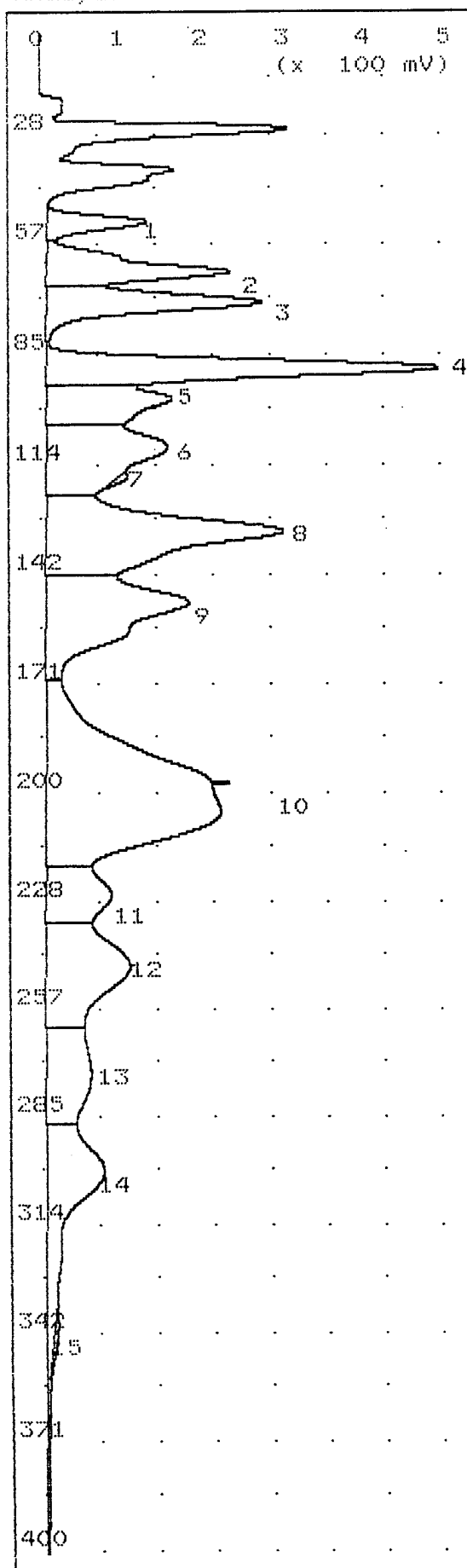
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.136 ppm	49.4
2	Unknown	1.156 VSec	62.4
3	Unknown	1.274 VSec	70.2
4	Unknown	2.723 VSec	87.4
5	Unknown	1.229 VSec	95.0
6	Toluene	5.516 ppm	106.9
7	Unknown	598.6 mVS	115.3
8	Unknown	3.514 VSec	129.3
9	Unknown	2.473 VSec	148.0
10	Ethylbenzene	40.43 PPM2	203.4
11	M&P-Xylene	35.62 PPM2	224.6
12	Unknown	3.011 VSec	243.7
13	O-Xylene	13.90 PPM1	272.2
14	Unknown	2.098 VSec	297.6
15	Unknown	421.1 mVS	339.3

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 25 5 to 7 ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 14:42

Sample Time: Aug 13, 93 14:33

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 30.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 34 C

Max Gain 1000

Analysis Time 400.0 sec

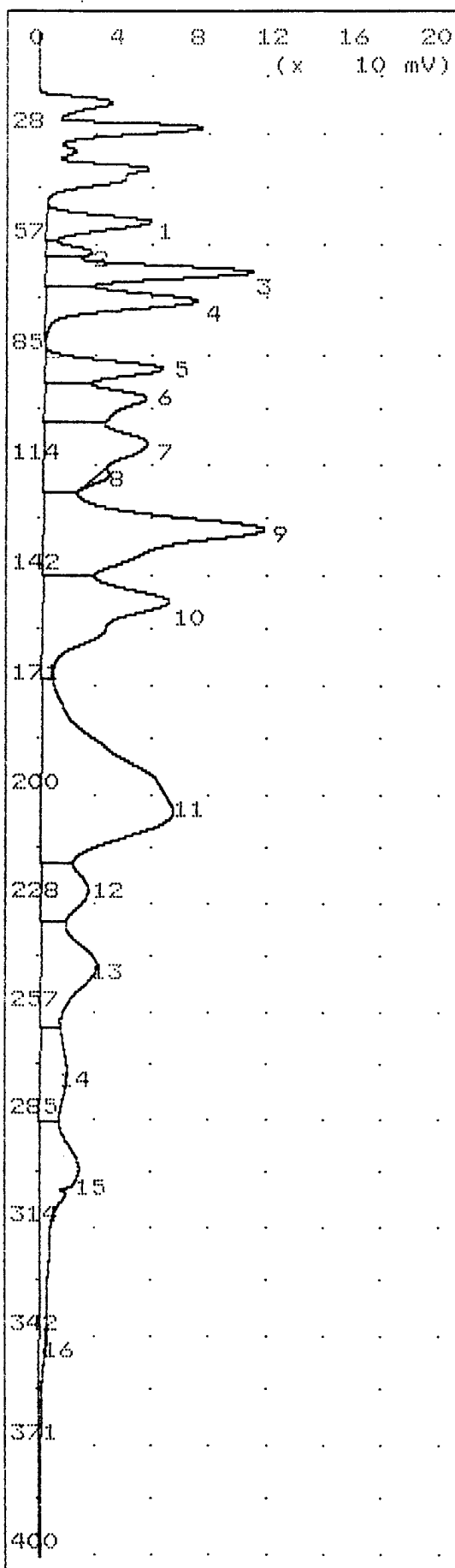
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.368 ppm	49.4
2	Unknown	1.313 VSec	62.4
3	Unknown	1.490 VSec	70.4
4	Unknown	2.616 VSec	87.4
5	Unknown	1.238 VSec	95.2
6	Toluene	8.761 ppm	107.3
7	Unknown	36.18 mVS	115.4
8	Unknown	3.421 VSec	129.4
9	Unknown	2.499 VSec	148.2
10	Ethylbenzene	32.38 PPM2	195.6
11	M&P-Xylene	28.07 PPM2	224.8
12	Unknown	2.098 VSec	243.7
13	O-Xylene	9.866 ppm	272.5
14	Unknown	1.836 VSec	297.8
15	Unknown	52.60 mVS	339.0

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 25 7 to 9 ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 15:21

Sample Time: Aug 13, 93 15:13

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

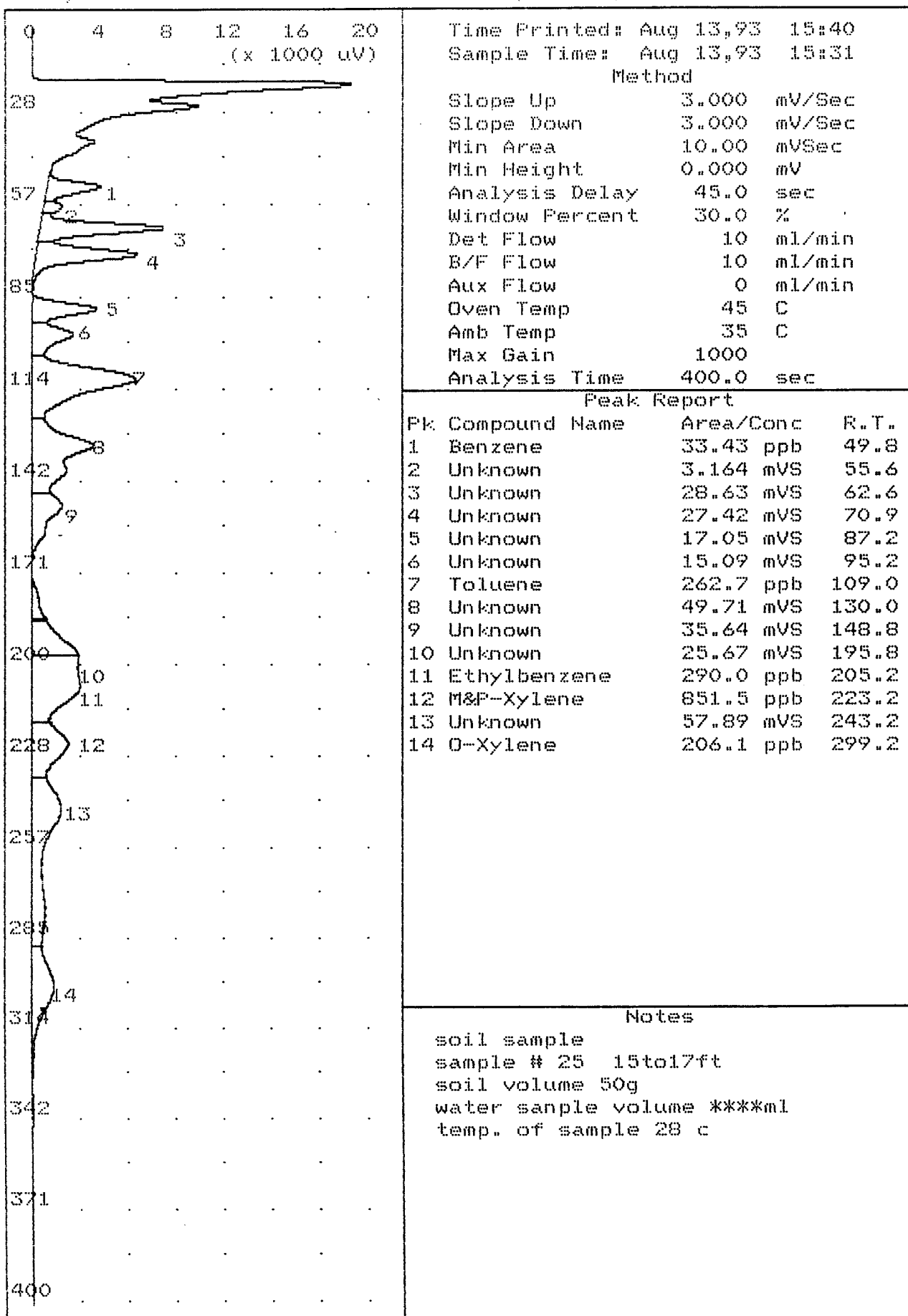
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	226.2 mVS	49.3
2	Benzene	195.5 ppb	57.1
3	Unknown	439.2 mVS	62.2
4	Unknown	400.1 mVS	69.8
5	Unknown	296.5 mVS	87.2
6	Unknown	401.3 mVS	94.9
7	Toluene	2.862 ppm	106.6
8	Unknown	18.93 mVS	114.8
9	Unknown	1.198 VSec	128.9
10	Unknown	793.0 mVS	147.8
11	Ethylbenzene	9.246 ppm	202.2
12	M&P-Xylene	8.222 ppm	223.0
13	Unknown	505.5 mVS	243.2
14	O-Xylene	2.250 ppm	271.4
15	Unknown	498.8 mVS	297.0
16	Unknown	10.34 mVS	338.3

Notes

soil sample
 sample # 25 9to11ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c

Analysis #45 10S+ GC Function Analysis Report

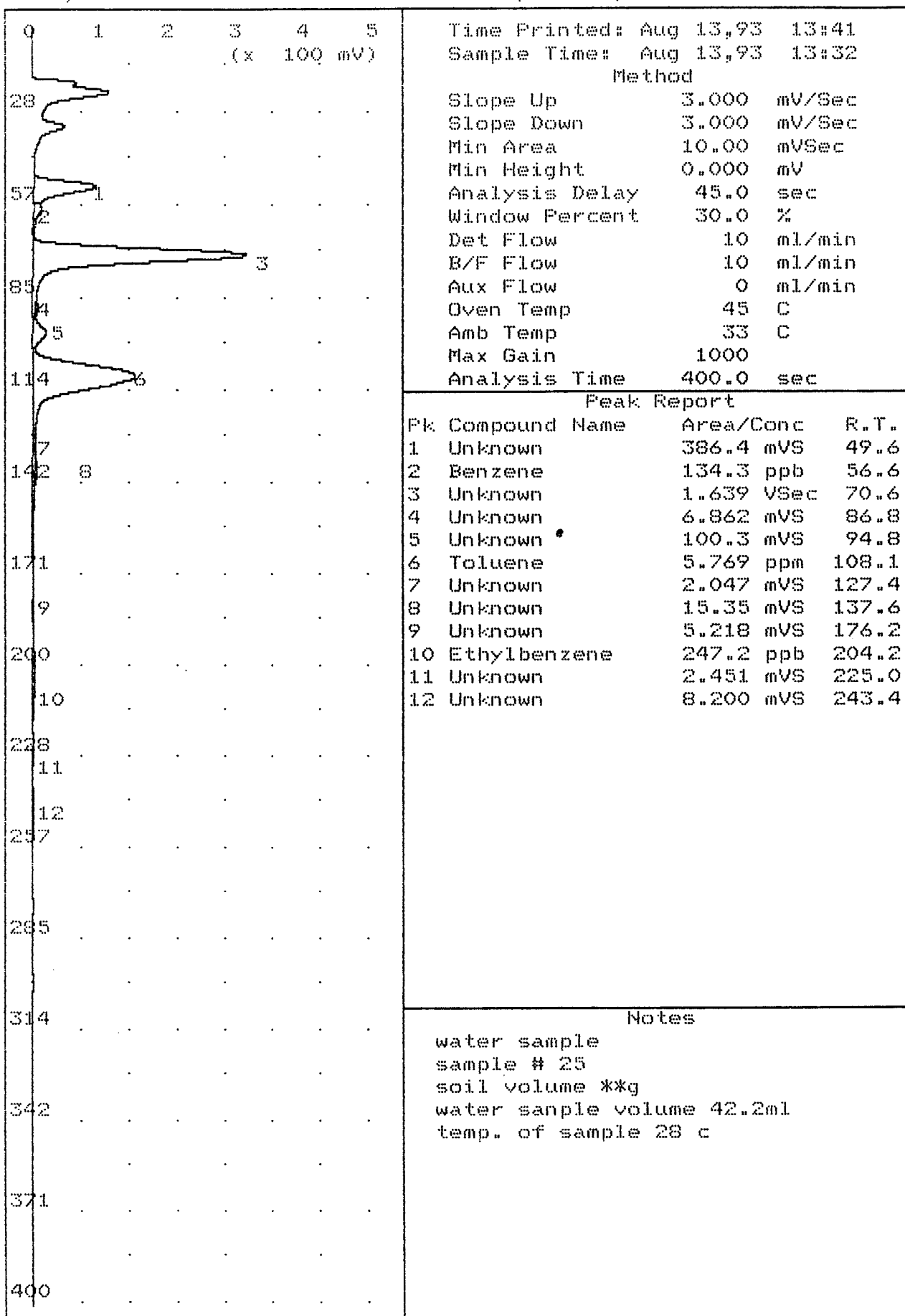


Time Printed: Aug 13,93 15:40
Sample Time: Aug 13,93 15:31
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 30.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 35 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	33.43 ppb	49.8
2	Unknown	3.164 mVS	55.6
3	Unknown	28.63 mVS	62.6
4	Unknown	27.42 mVS	70.9
5	Unknown	17.05 mVS	87.2
6	Unknown	15.09 mVS	95.2
7	Toluene	262.7 ppb	109.0
8	Unknown	49.71 mVS	130.0
9	Unknown	35.64 mVS	148.8
10	Unknown	25.67 mVS	195.8
11	Ethylbenzene	290.0 ppb	205.2
12	M&P-Xylene	851.5 ppb	223.2
13	Unknown	57.89 mVS	243.2
14	O-Xylene	206.1 ppb	299.2

Notes
soil sample
sample # 25 15to17ft
soil volume 50g
water sample volume ****ml
temp. of sample 28 c

Analysis #31 10S+ GC Function Analysis Report

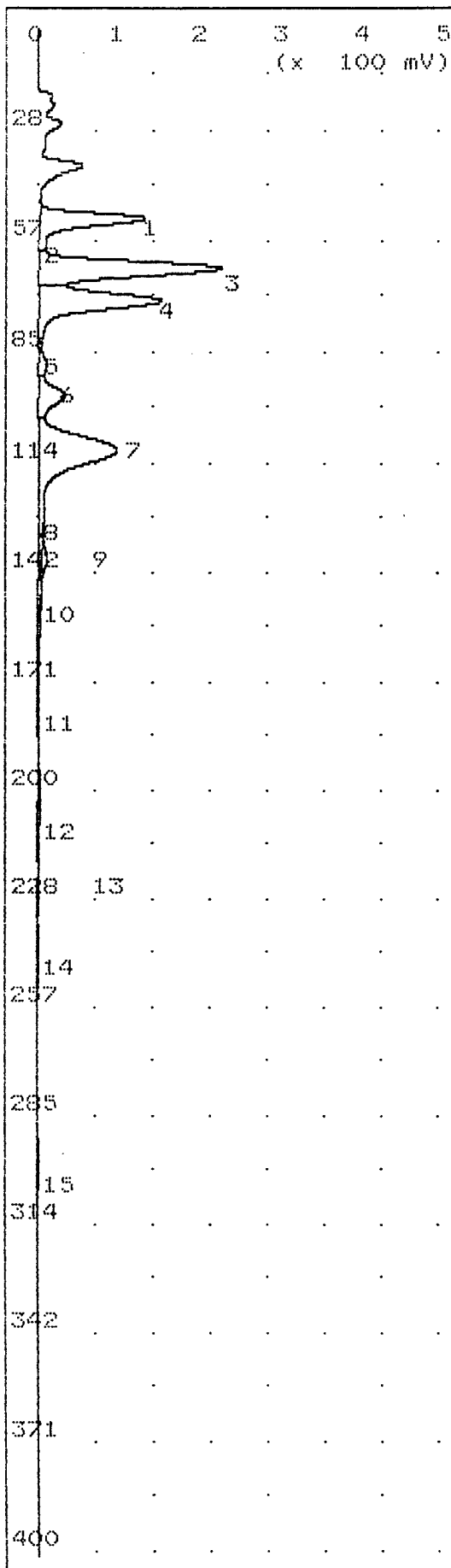


Time Printed: Aug 13,93 13:41
Sample Time: Aug 13,93 13:32
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 30.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 33 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	386.4 mVS	49.6
2	Benzene	134.3 ppb	56.6
3	Unknown	1.639 VSec	70.6
4	Unknown	6.862 mVS	86.8
5	Unknown	100.3 mVS	94.8
6	Toluene	5.769 ppm	108.1
7	Unknown	2.047 mVS	127.4
8	Unknown	15.35 mVS	137.6
9	Unknown	5.218 mVS	176.2
10	Ethylbenzene	247.2 ppb	204.2
11	Unknown	2.451 mVS	225.0
12	Unknown	8.200 mVS	243.4

Notes

water sample
sample # 25
soil volume **g
water sample volume 42.2ml
temp. of sample 28 c



Time Printed: Aug 13, 93 15:57

Sample Time: Aug 13, 93 15:47

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 30.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 35 C

Max Gain 1000

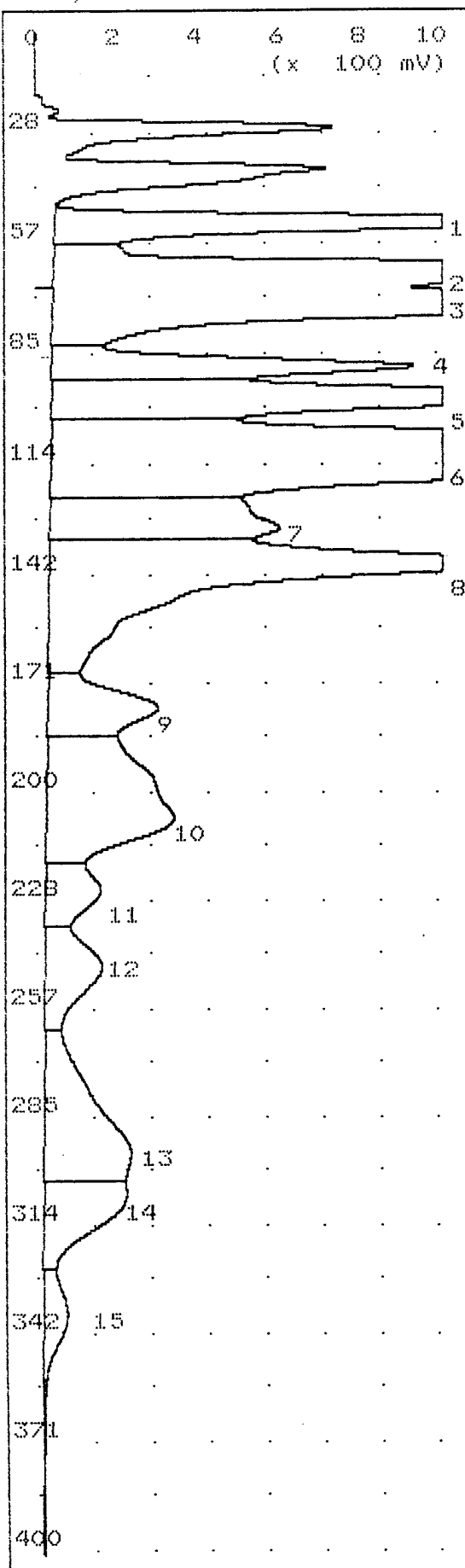
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.377 ppm	49.4
2	Unknown	0.888 mVS	56.6
3	Unknown	979.4 mVS	62.2
4	Unknown	781.3 mVS	70.6
5	Unknown	48.82 mVS	87.0
6	Unknown	188.3 mVS	94.9
7	Toluene	4.535 ppm	109.0
8	Unknown	1.748 mVS	128.4
9	Unknown	38.08 mVS	137.0
10	Unknown	4.445 mVS	147.2
11	Unknown	3.105 mVS	176.0
12	Ethylbenzene	222.1 ppb	203.8
13	Unknown	8.173 mVS	221.6
14	Unknown	7.942 mVS	241.3
15	Unknown	7.504 mVS	297.8

Notes

soil sample
 sample # 26 2to4ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 16:14

Sample Time: Aug 13, 93 16:05

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 30.0 %

Det Flow 10 ml/min

E/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 36 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

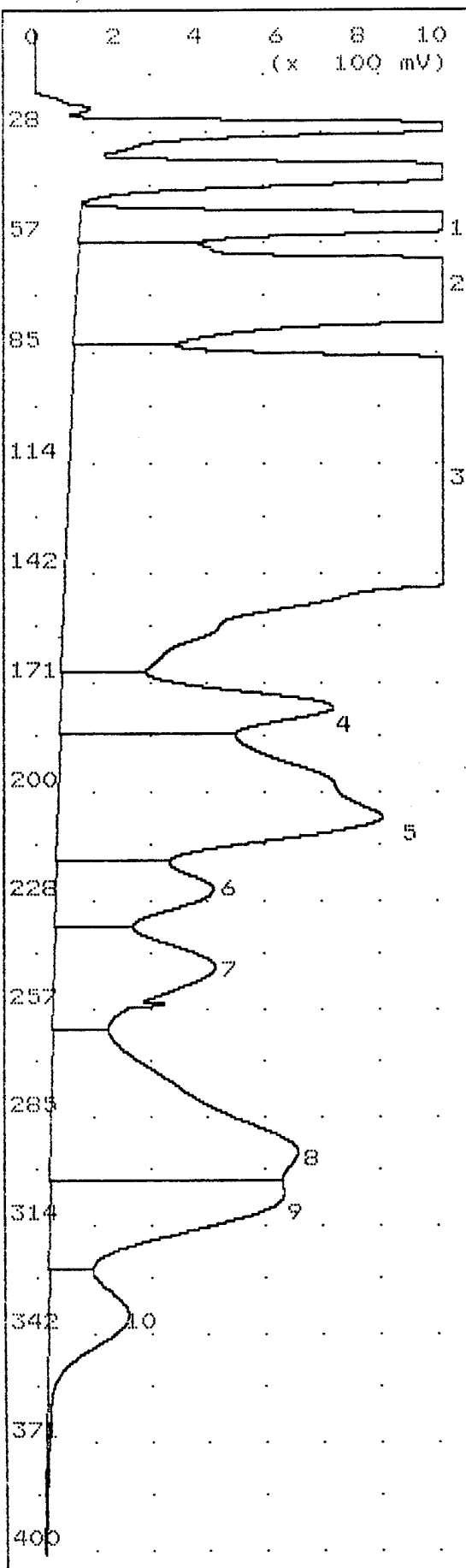
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	23.10 PPM2	49.9
2	Unknown	13.33 VSec	62.5
3	Unknown	15.63 VSec	70.9
4	Unknown	4.700 VSec	87.3
5	Unknown	12.21 VSec	95.3
6	Toluene	201.8 PPM2	110.1
7	Unknown	5.609 VSec	128.5
8	Unknown	15.64 VSec	138.1
9	Unknown	3.220 VSec	175.8
10	Ethylbenzene	42.66 PPM2	204.6
11	M&P-Xylene	48.78 PPM2	223.8
12	Unknown	2.564 VSec	244.0
13	O-Xylene	43.43 PPM2	293.0
14	Unknown	2.992 VSec	303.2
15	Unknown	1.173 VSec	335.4

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 26 4to6ft
 soil volume 50g
 water sample volume ***ml
 temp. of sample 28 c

Analysis #51 10S+ GC Function Analysis Report



Time Printed: Aug 13,93 16:30
 Sample Time: Aug 13,93 16:21
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

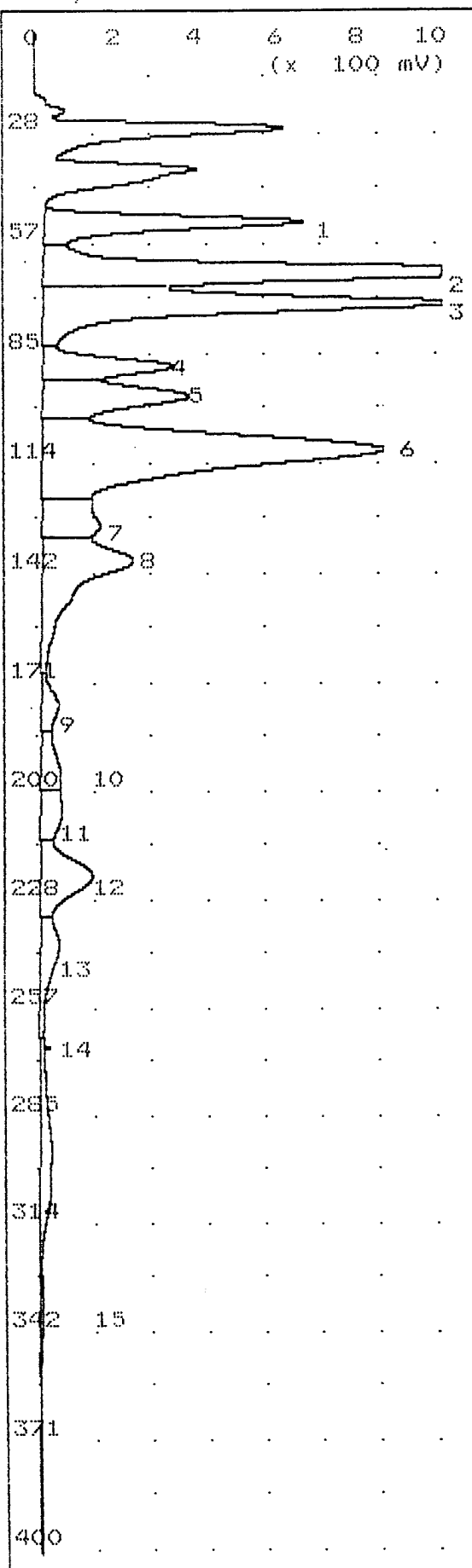
Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	40.07 PPM2	50.1
2	Unknown	42.85 VSec	65.2
3	Toluene	2902. PPM2	114.5
4	Unknown	7.974 VSec	176.0
5	Ethylbenzene	108.2 PPM2	204.6
6	M&P-Xylene	147.4 PPM2	223.6
7	Unknown	7.613 VSec	244.0
8	O-Xylene	126.3 PPM2	293.0
9	Unknown	8.698 VSec	303.2
10	Unknown	4.073 VSec	335.7

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 26 6to8ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c

Analysis #41 10S+ GC Function Analysis Report

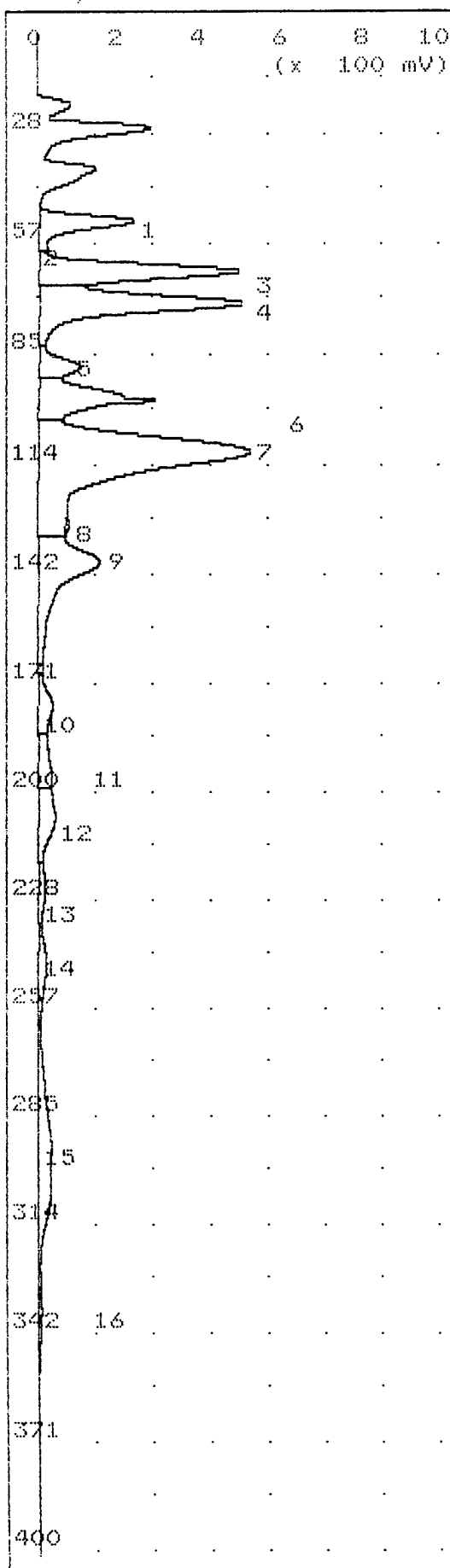


Time Printed: Aug 13,93 15:02
 Sample Time: Aug 13,93 14:54
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.138 ppm	49.5
2	Unknown	7.124 VSec	62.5
3	Unknown	6.080 VSec	70.8
4	Unknown	1.716 VSec	87.0
5	Unknown	2.435 VSec	94.8
6	Toluene	39.58 PPM2	108.9
7	Unknown	1.287 VSec	128.2
8	Unknown	2.919 VSec	137.6
9	Unknown	428.0 mVS	175.4
10	Unknown	596.4 mVS	194.0
11	Unknown	582.5 mVS	203.4
12	Ethylbenzene	8.017 ppm	220.4
13	M&P-Xylene	21.21 PPM2	238.2
14	O-Xylene	8.507 ppm	265.6
15	Unknown	59.35 mVS	334.9

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
~~zero check~~ soil sample
 sample # 26 8 to 10
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13,93 16:49

Sample Time: Aug 13,93 16:40

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

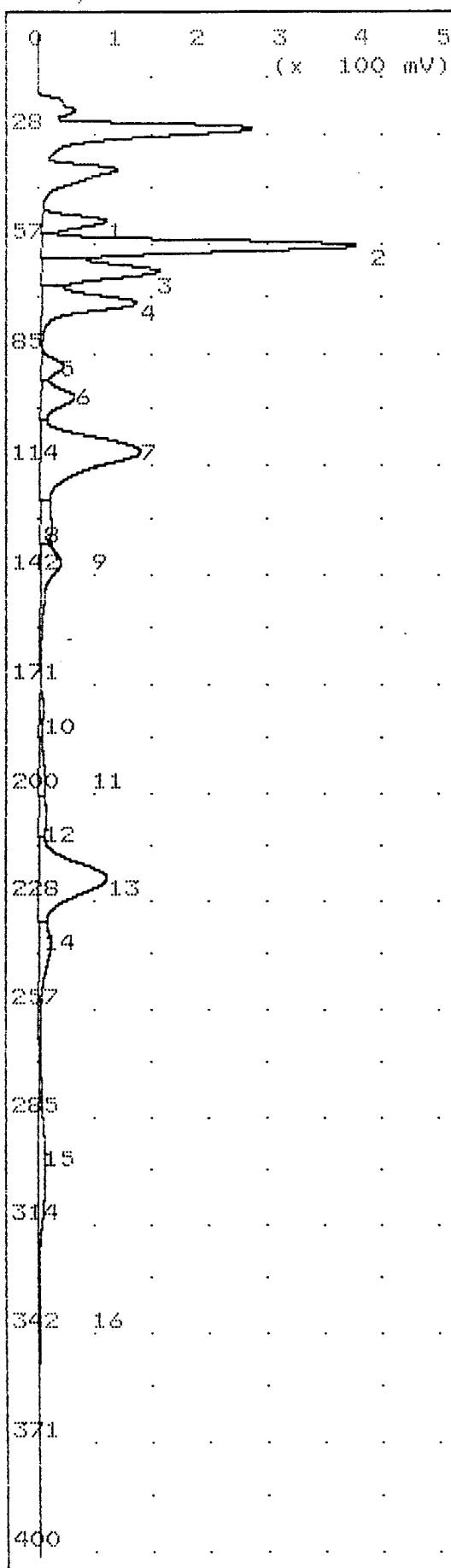
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	2.636 ppm	49.4
2	Unknown	1.267 mVS	56.6
3	Unknown	2.253 VSec	62.4
4	Unknown	2.803 VSec	70.8
5	Unknown	511.7 mVS	87.0
6	Unknown	1.427 VSec	95.7
7	Toluene	27.10 PPM2	108.8
8	Unknown	24.41 mVS	128.1
9	Unknown	1.814 VSec	137.7
10	Unknown	372.3 mVS	175.6
11	Unknown	391.1 mVS	195.0
12	Ethylbenzene	3.000 ppm	204.8
13	M&P-Xylene	5.708 ppm	223.8
14	Unknown	346.2 mVS	243.7
15	O-Xylene	9.356 ppm	292.2
16	Unknown	179.3 mVS	334.9

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 26 10to12ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13, 93 17:06

Sample Time: Aug 13, 93 16:57

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 30.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 36 C

Max Gain 1000

Analysis Time 400.0 sec

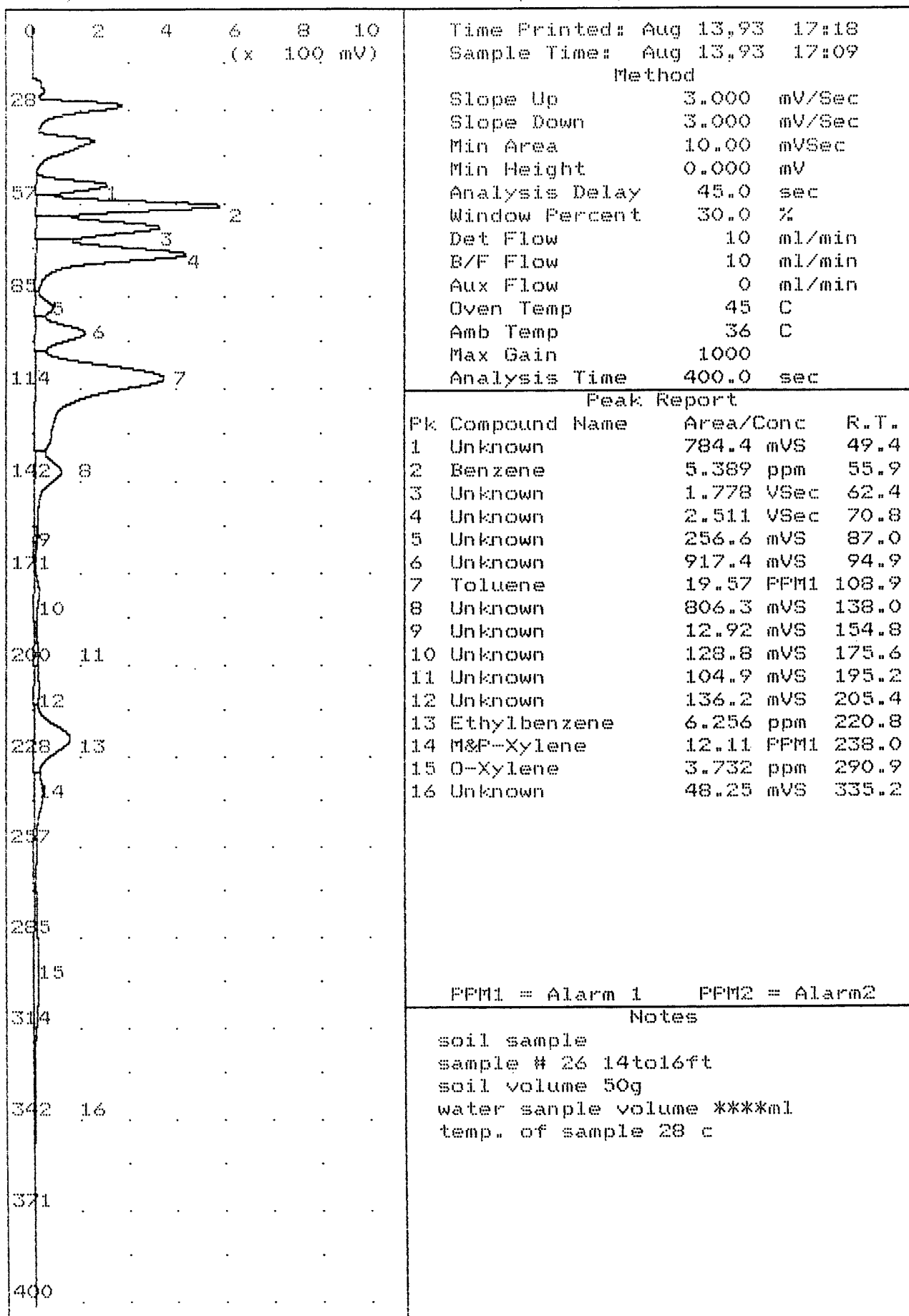
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	275.9 mVS	49.2
2	Benzene	3.756 ppm	55.8
3	Unknown	657.9 mVS	62.2
4	Unknown	603.3 mVS	70.5
5	Unknown	126.3 mVS	86.8
6	Unknown	237.4 mVS	94.8
7	Toluene	5.177 ppm	108.6
8	Unknown	137.2 mVS	128.4
9	Unknown	255.6 mVS	137.4
10	Unknown	41.85 mVS	175.4
11	Unknown	82.65 mVS	194.8
12	Unknown	79.32 mVS	204.2
13	Ethylbenzene	4.906 ppm	220.6
14	M&P-Xylene	5.954 ppm	238.0
15	O-Xylene	2.232 ppm	293.8
16	Unknown	36.92 mVS	336.3

Notes

soil sample
 sample # 26 12to14ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c

Analysis #58 10S+ GC Function Analysis Report

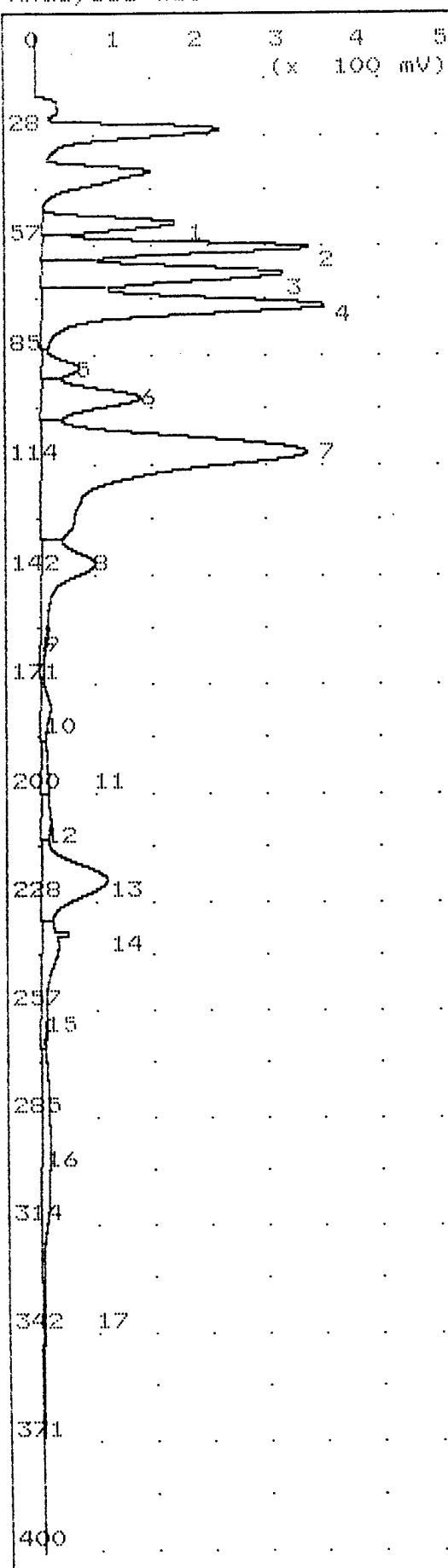


Time Printed: Aug 13, 93 17:18
Sample Time: Aug 13, 93 17:09
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 10.00 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 30.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 36 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	784.4 mVS	49.4
2	Benzene	5.389 ppm	55.9
3	Unknown	1.778 VSec	62.4
4	Unknown	2.511 VSec	70.8
5	Unknown	256.6 mVS	87.0
6	Unknown	917.4 mVS	94.9
7	Toluene	19.57 PPM1	108.9
8	Unknown	806.3 mVS	138.0
9	Unknown	12.92 mVS	154.8
10	Unknown	128.8 mVS	175.6
11	Unknown	104.9 mVS	195.2
12	Unknown	136.2 mVS	205.4
13	Ethylbenzene	6.256 ppm	220.8
14	M&P-Xylene	12.11 PPM1	238.0
15	O-Xylene	3.732 ppm	290.9
16	Unknown	48.25 mVS	335.2

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
soil sample
sample # 26 14to16ft
soil volume 50g
water sample volume ****ml
temp. of sample 28 c



Time Printed: Aug 13, 93 17:30

Sample Time: Aug 13, 93 17:21

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 10.00 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 30.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 36 C

Max Gain 1000

Analysis Time 400.0 sec

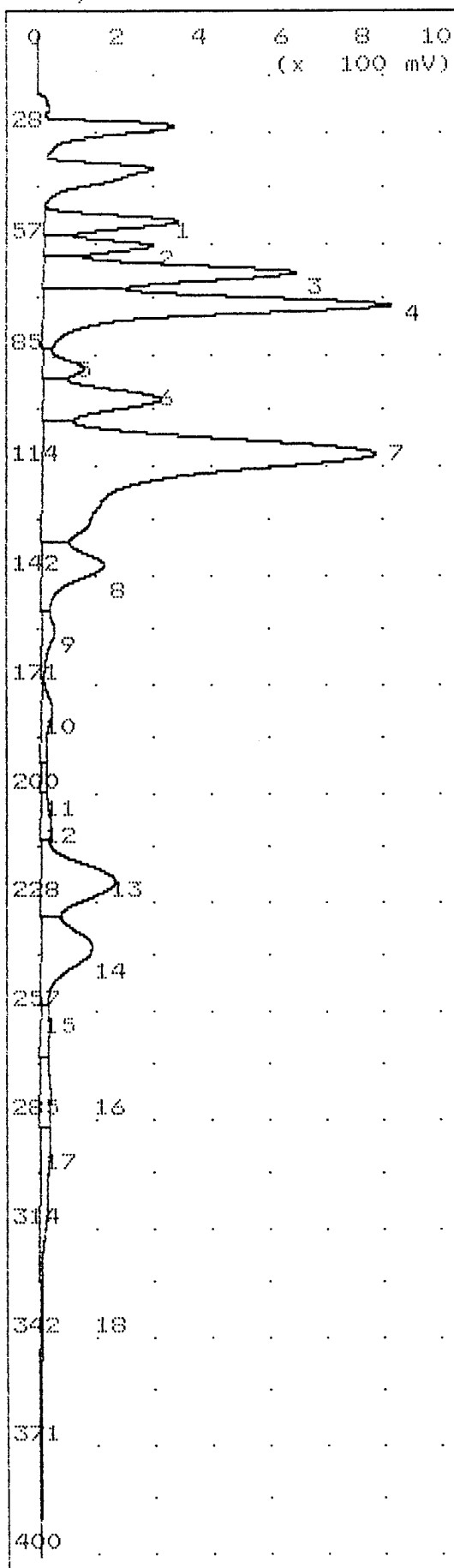
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	606.8 mVS	49.4
2	Benzene	3.179 ppm	55.7
3	Unknown	1.434 VSec	62.4
4	Unknown	1.945 VSec	70.8
5	Unknown	225.3 mVS	87.0
6	Unknown	754.3 mVS	94.9
7	Toluene	16.69 PPM1	109.0
8	Unknown	701.2 mVS	138.0
9	Unknown	9.296 mVS	154.8
10	Unknown	115.7 mVS	175.8
11	Unknown	94.61 mVS	195.0
12	Unknown	116.3 mVS	205.6
13	Ethylbenzene	4.789 ppm	220.8
14	M&P-Xylene	10.28 PPM1	235.0
15	Unknown	1.836 mVS	258.4
16	O-Xylene	3.324 ppm	291.2
17	Unknown	45.12 mVS	331.2

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 26 16to18ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c



Time Printed: Aug 13,93 17:41

Sample Time: Aug 13,93 17:32

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 10.00 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 30.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 36 C
 Max Gain 1000
 Analysis Time 400.0 sec

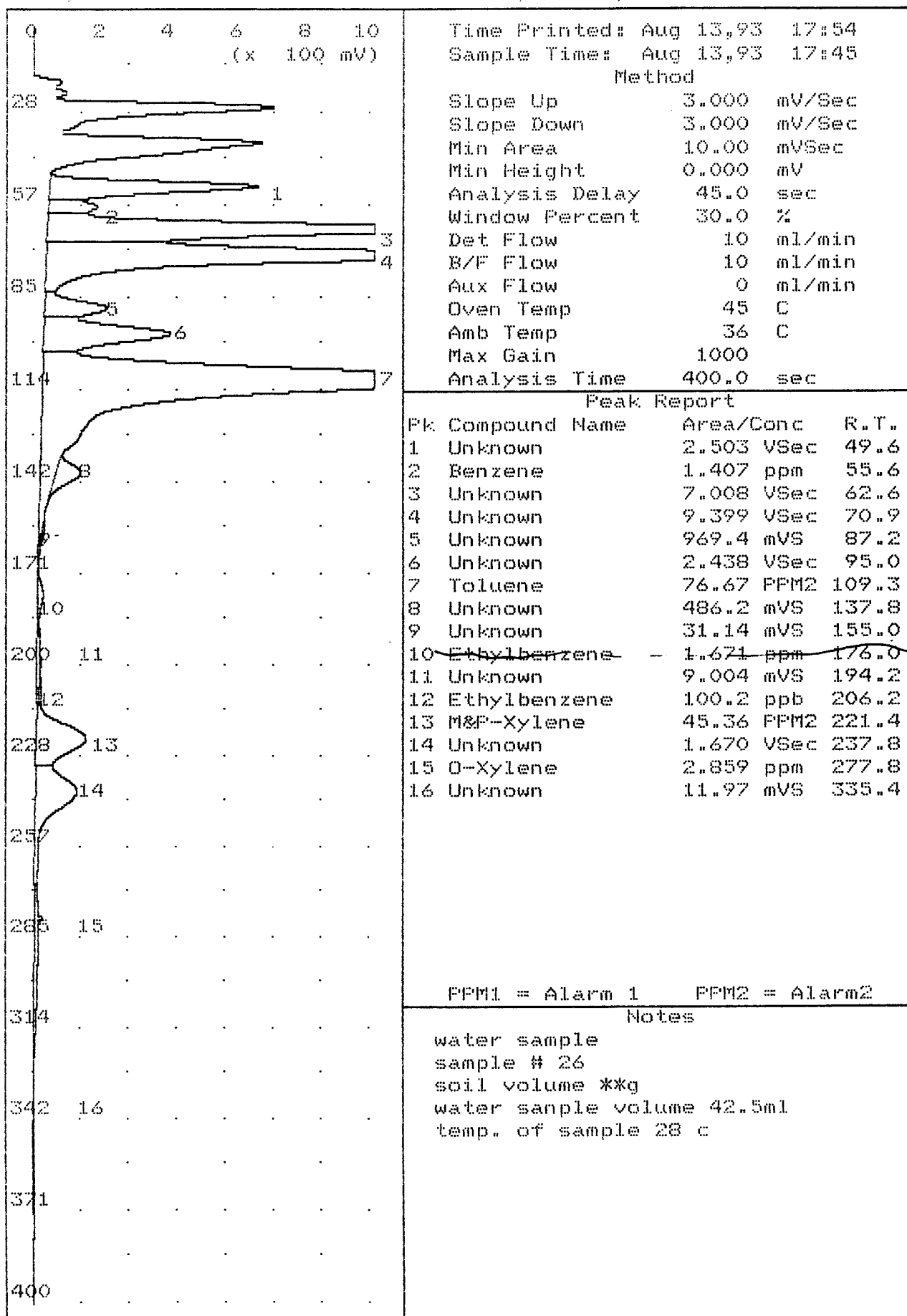
Peak Report

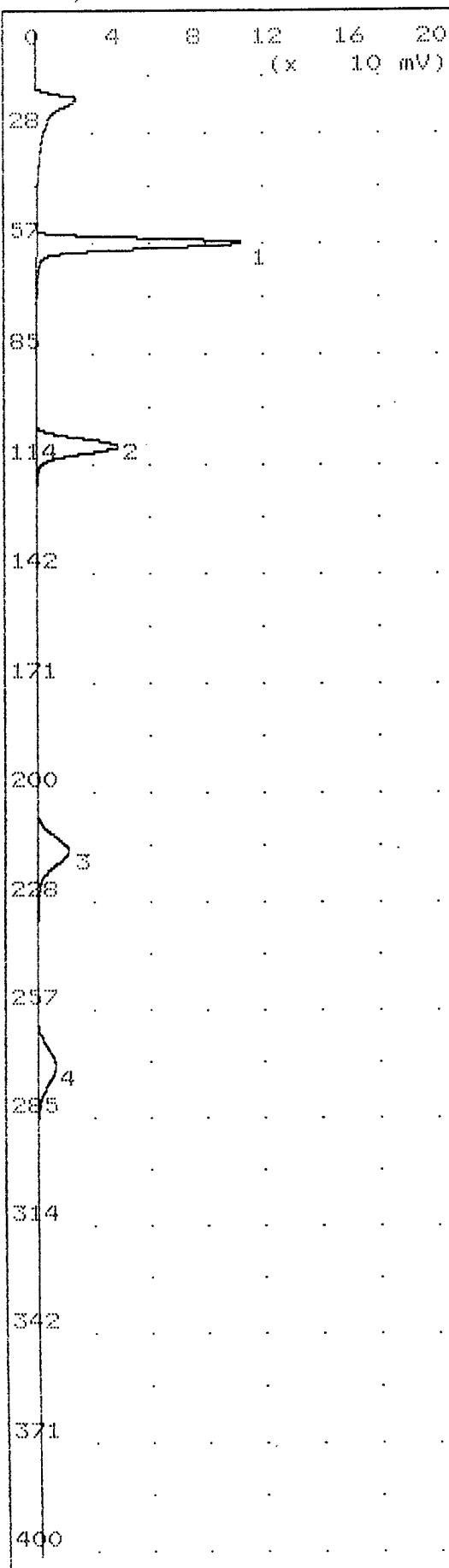
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.276 VSec	49.5
2	Benzene	2.589 ppm	55.6
3	Unknown	3.090 VSec	62.5
4	Unknown	4.850 VSec	71.0
5	Unknown	501.9 mV	87.0
6	Unknown	1.896 VSec	95.0
7	Toluene	43.04 PPM2	109.2
8	Unknown	1.467 VSec	138.1
9	Unknown	330.5 mV	155.2
10	Unknown	355.7 mV	176.0
11	Unknown	98.52 mV	195.4
12	Ethylbenzene	1.352 ppm	206.2
13	M&P-Xylene	57.93 PPM2	221.2
14	Unknown	1.655 VSec	238.4
15	Unknown	270.2 mV	259.4
16	O-Xylene	3.164 ppm	276.8
17	Unknown	571.2 mV	289.3
18	Unknown	90.49 mV	337.3

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 26 18to20ft
 soil volume 50g
 water sample volume ****ml
 temp. of sample 28 c





Time Printed: Aug 17,93 07:20

Sample Time: Aug 17,93 07:13

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 23 C
 Max Gain 1000
 Analysis Time 400.0 sec

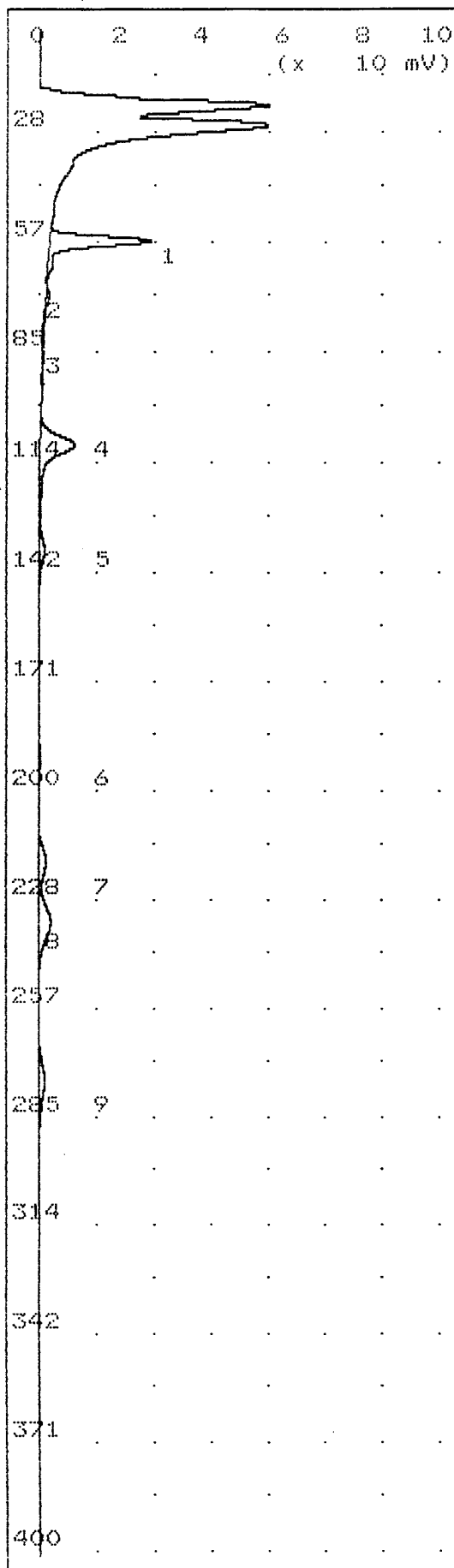
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	55.1
2	Toluene	1.000 ppm	107.4
3	Ethylbenzene	1.000 ppm	213.4
4	O-Xylene	1.000 ppm	270.1

Notes

calibration
 sample 0.1ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c
~~2ug/50g = 4ug/kg~~
 85 benzene = 1ug/kg
 180 toluene = 1ug/kg
 40 ethylbenzene = 1ug/kg
 100 m,p&o-xylene = 1ug/kg

Analysis #3 10S+ GC Function Analysis Report

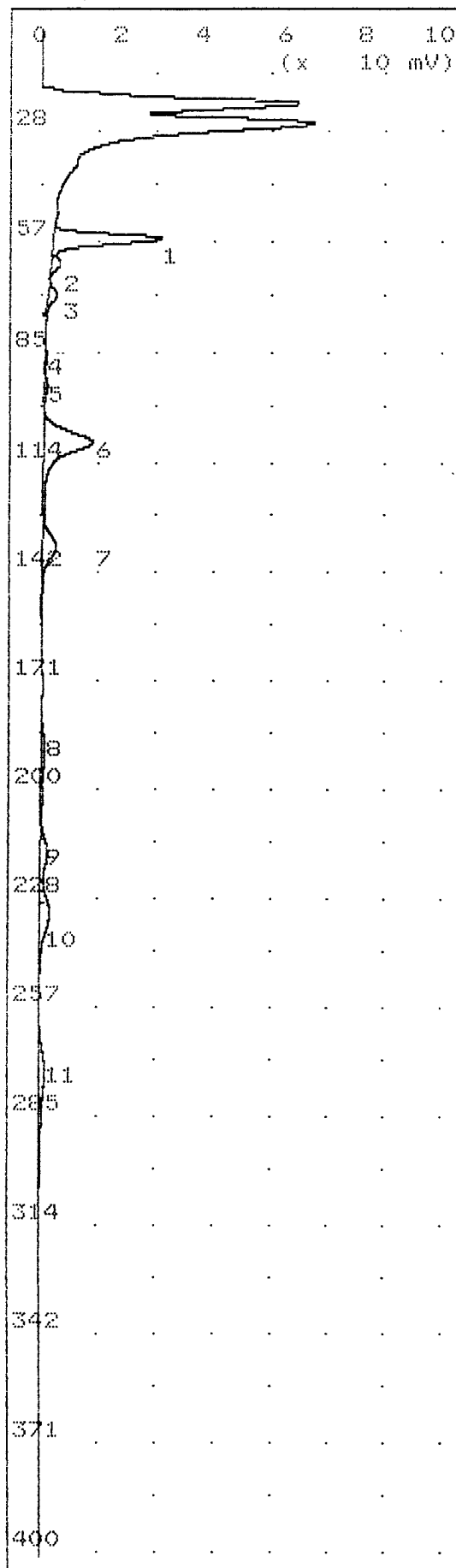


Time Printed: Aug 17,93 07:39
 Sample Time: Aug 17,93 07:23
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 25 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	244.1 ppb	55.0
2	Unknown	-5.76 mVS	69.3
3	Unknown	0.269 mVS	85.6
4	Toluene	256.0 ppb	107.8
5	Unknown	10.35 mVS	136.1
6	Unknown	5.472 mVS	188.2
7	Ethylbenzene	230.0 ppb	217.2
8	m,p-Xylene	500.0 ppb	232.6
9	O-Xylene	231.4 ppb	273.8

Notes

calibration
 sample 0.2ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c
 .2ug/50g = 4ug/kg
 60 benzene = 1ug/kg
 60 toluene = 1ug/kg
 60 ethylbenzene = 1ug/kg
 60 m,p&o-xylene = 1ug/kg



Time Printed: Aug 17,93 07:51
 Sample Time: Aug 17,93 07:40
 Method

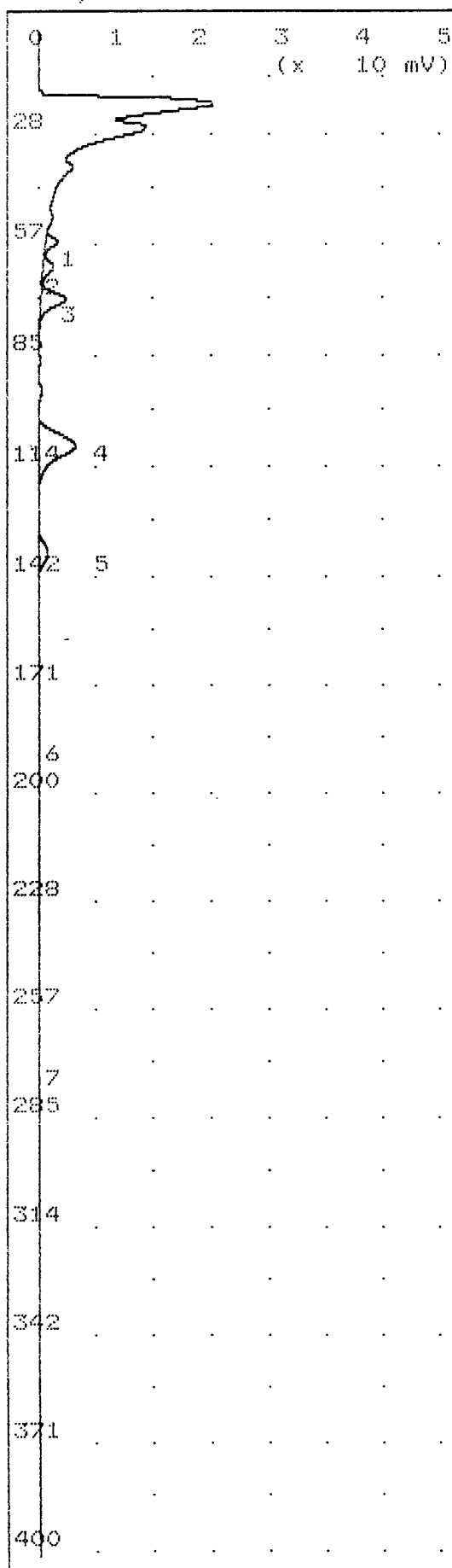
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 27 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	251.2 ppb	54.4
2	Unknown	7.053 mVS	60.7
3	Unknown	7.408 mVS	69.0
4	Unknown	1.521 mVS	84.8
5	Unknown	2.796 mVS	92.2
6	Toluene	394.5 ppb	106.9
7	Unknown	25.53 mVS	134.2
8	Unknown	12.32 mVS	187.8
9	Ethylbenzene	197.6 ppb	215.6
10	M&P-Xylene	364.5 ppb	231.0
11	O-Xylene	244.8 ppb	272.2

Notes

calibration
 sample 0.2ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. 40.0ml
 temp. of sample 28 c
 .2ug/40ml = 5ug/kg
 60 benzene = 1ug/kg
 100 toluene = 1ug/kg
 50 ethylbenzene = 1ug/kg
 60 m,p-o-xylene = 1ug/kg



Time Printed: Aug 17,93 08:11

Sample Time: Aug 17,93 08:02

Method

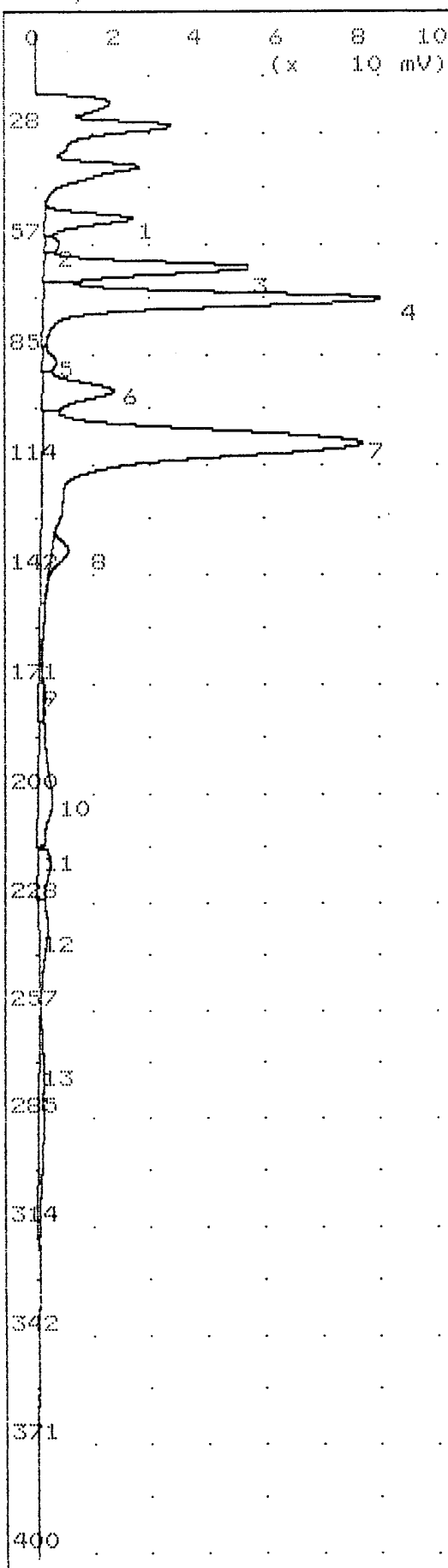
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 29 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	12.50 ppb	54.4
2	Unknown	3.822 mVS	60.7
3	Unknown	12.35 mVS	69.2
4	Toluene	183.7 ppb	107.0
5	Unknown	10.72 mVS	134.8
6	Ethylbenzene	49.29 ppb	187.8
7	O-Xylene	71.34 ppb	273.6

Notes

soil sample
 sample # 27 6 to 8 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 08:23

Sample Time: Aug 17,93 08:13

Method

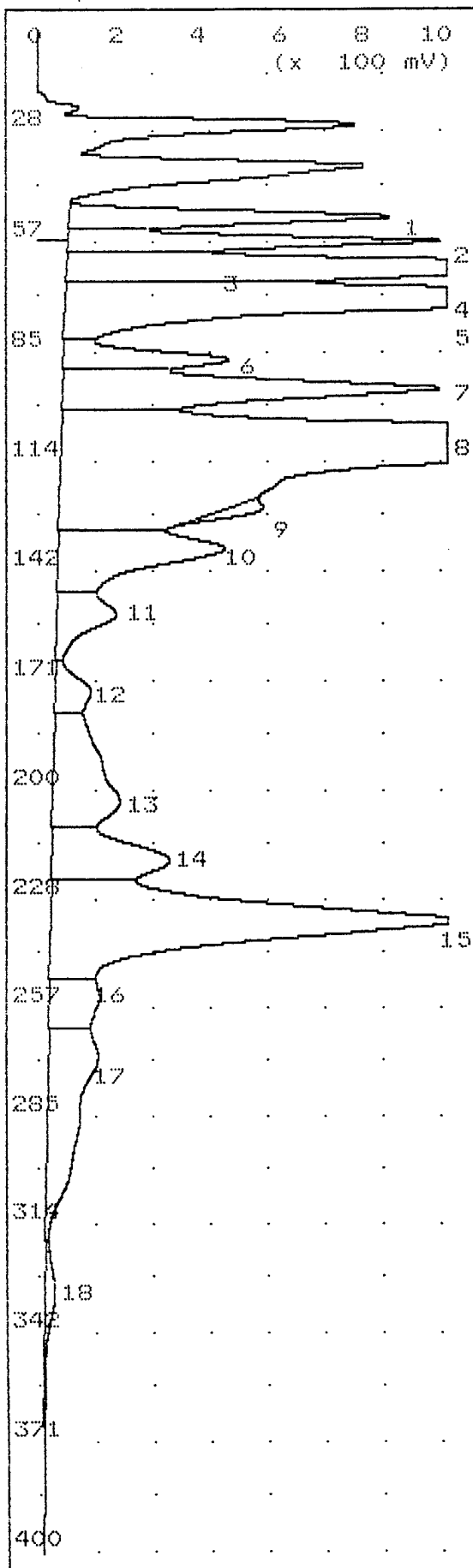
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 29 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	77.13 mVS	48.5
2	Benzene	40.39 ppb	55.2
3	Unknown	199.1 mVS	61.2
4	Unknown	391.5 mVS	69.4
5	Unknown	15.07 mVS	85.6
6	Unknown	102.4 mVS	93.0
7	Toluene	3.709 ppm	106.6
8	Unknown	24.11 mVS	134.4
9	Unknown	2.986 mVS	171.4
10	Unknown	66.65 mVS	199.0
11	Ethylbenzene	352.1 ppb	216.6
12	M&P-Xylene	564.3 ppb	232.6
13	O-Xylene	379.8 ppb	272.0

Notes

soil sample
 sample # 27 8 to 10ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 08:39

Sample Time: Aug 17,93 08:30

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

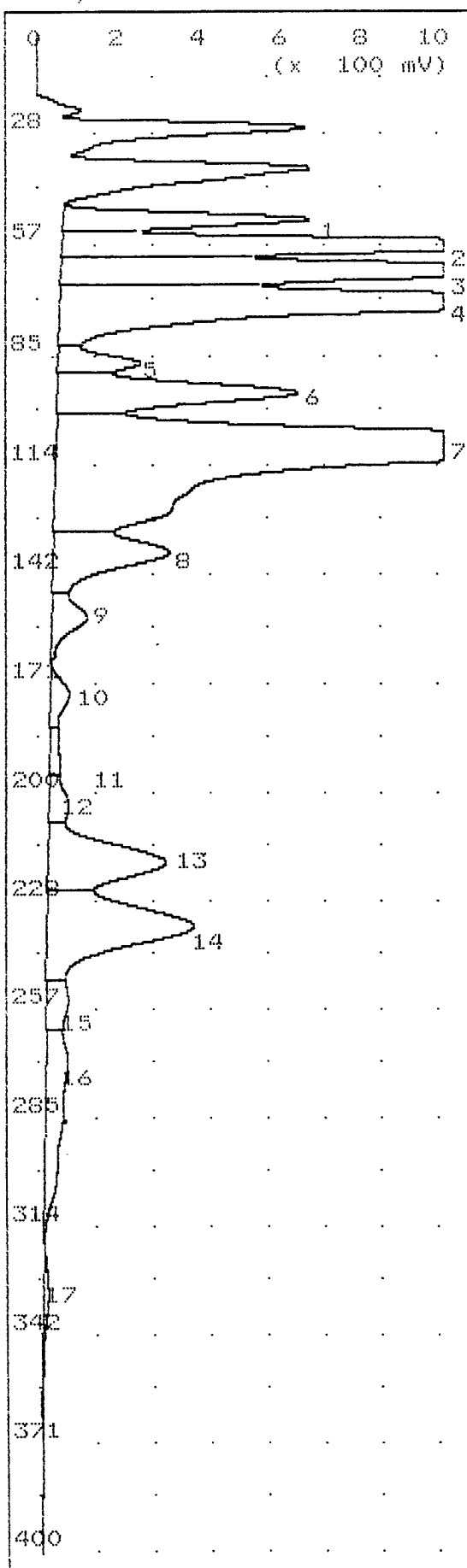
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	3.042 VSec	48.8
2	Benzene	4.721 ppm	55.1
3	Unknown	1.691 VSec	57.3
4	Unknown	11.23 VSec	61.8
5	Unknown	17.21 VSec	70.0
6	Unknown	2.108 VSec	85.8
7	Unknown	5.867 VSec	93.4
8	Toluene	180.0 PPM2	107.6
9	Unknown	382.1 mVS	124.5
10	Unknown	4.183 VSec	135.3
11	Unknown	1.457 VSec	152.0
12	Unknown	852.9 mVS	172.6
13	Unknown	3.579 VSec	200.8
14	Ethylbenzene	36.89 PPM2	216.4
15	M&P-Xylene	164.8 PPM2	232.2
16	Unknown	1.522 VSec	252.2
17	O-Xylene	32.84 PPM2	267.7
18	Unknown	406.2 mVS	330.1

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 27 10 to 12 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #11 10S+ GC Function Analysis Report



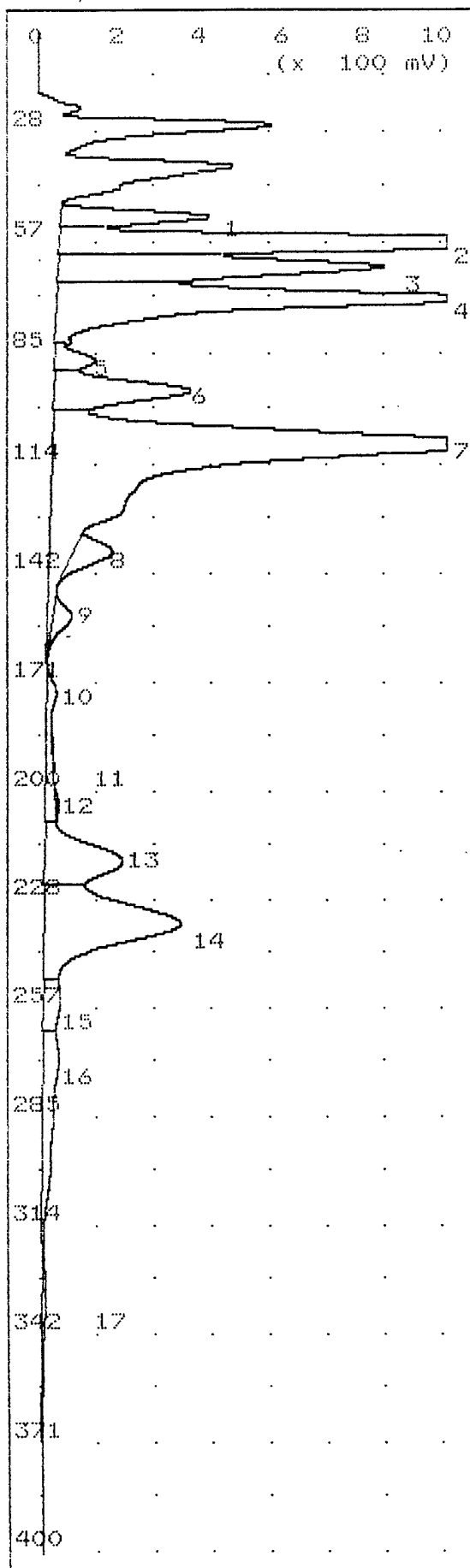
Time Printed: Aug 17,93 08:57
Sample Time: Aug 17,93 08:49
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
E/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 31 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.304 VSec	48.8
2	Benzene	27.09 PPM2	55.3
3	Unknown	8.862 VSec	61.8
4	Unknown	13.63 VSec	70.0
5	Unknown	1.003 VSec	85.7
6	Unknown	3.860 VSec	93.4
7	Toluene	124.0 PPM2	107.3
8	Unknown	2.694 VSec	135.3
9	Unknown	753.1 mVS	152.0
10	Unknown	422.6 mVS	172.4
11	Unknown	269.4 mVS	190.6
12	Unknown	479.9 mVS	201.8
13	Ethylbenzene	37.85 PPM2	216.6
14	M&P-Xylene	62.54 PPM2	233.2
15	Unknown	650.3 mVS	252.8
16	O-Xylene	15.59 PPM1	269.6
17	Unknown	189.6 mVS	329.8

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
sample # 27 12 to 14 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28 c



Time Printed: Aug 17,93 09:15
 Sample Time: Aug 17,93 09:06
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

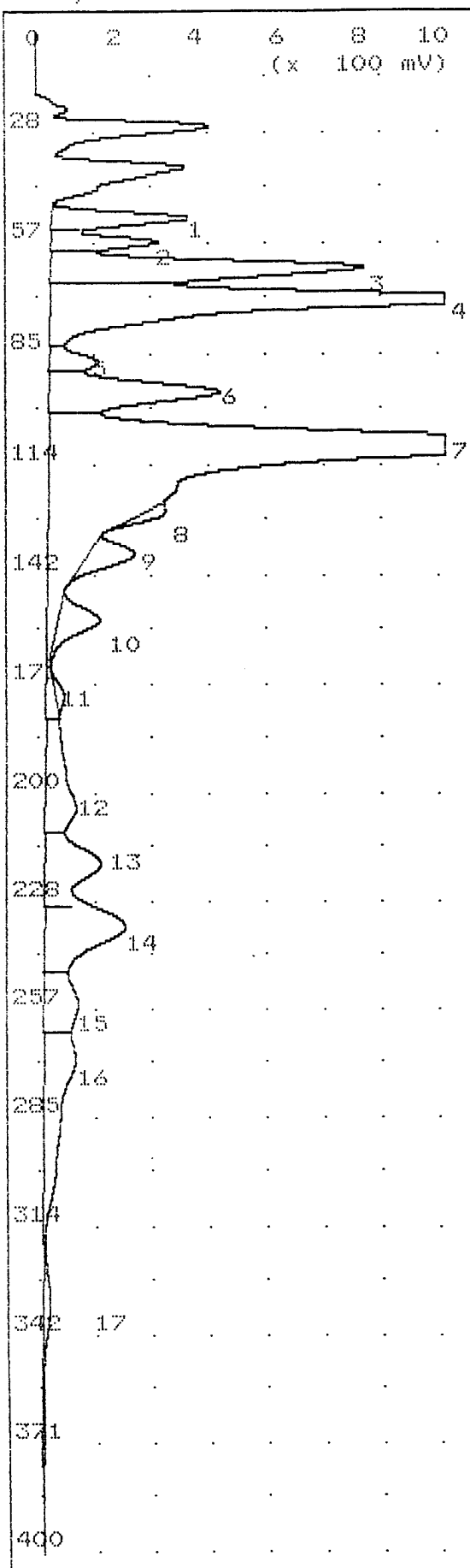
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.355 VSec	48.6
2	Benzene	30.21 PPM2	55.4
3	Unknown	4.061 VSec	61.6
4	Unknown	7.335 VSec	69.8
5	Unknown	471.2 mVS	85.6
6	Unknown	2.141 VSec	93.3
7	Toluene	67.32 PPM2	107.2
8	Unknown	649.9 mVS	135.0
9	Unknown	335.6 mVS	152.2
10	Unknown	646.9 mVS	172.2
11	Unknown	2.838 mVS	190.8
12	Unknown	59.83 mVS	201.6
13	Ethylbenzene	24.78 PPM2	216.4
14	M&P-Xylene	58.90 PPM2	233.0
15	Unknown	489.9 mVS	252.5
16	O-Xylene	9.450 ppm	268.8
17	Unknown	138.8 mVS	330.9

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 27 14 to 16 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #15 10S+ GC Function Analysis Report



Time Printed: Aug 17,93 09:32
Sample Time: Aug 17,93 09:23
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 32 C
Max Gain 1000
Analysis Time 400.0 sec

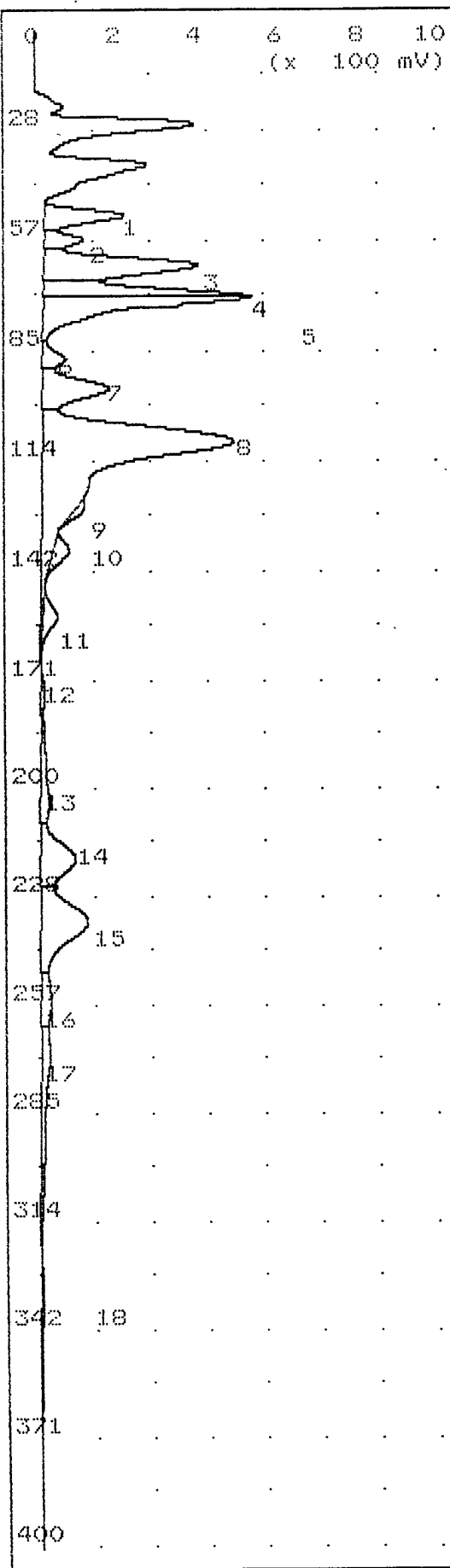
Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.302 VSec	48.8
2	Benzene	2.859 ppm	54.8
3	Unknown	3.988 VSec	61.6
4	Unknown	8.496 VSec	70.0
5	Unknown	585.6 mVS	85.7
6	Unknown	2.775 VSec	93.4
7	Toluene	95.19 PPM2	107.2
8	Unknown	207.3 mVS	124.0
9	Unknown	749.4 mVS	135.3
10	Unknown	757.8 mVS	152.4
11	Unknown	153.5 mVS	172.8
12	Unknown	1.505 VSec	201.8
13	Ethylbenzene	18.28 PPM1	216.6
14	M&P-Xylene	37.38 PPM2	233.0
15	Unknown	1.211 VSec	253.8
16	O-Xylene	18.31 PPM1	268.5
17	Unknown	327.2 mVS	332.2

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
sample # 27 16 to 18 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28 c

Analysis #17 10S+ GC Function Analysis Report



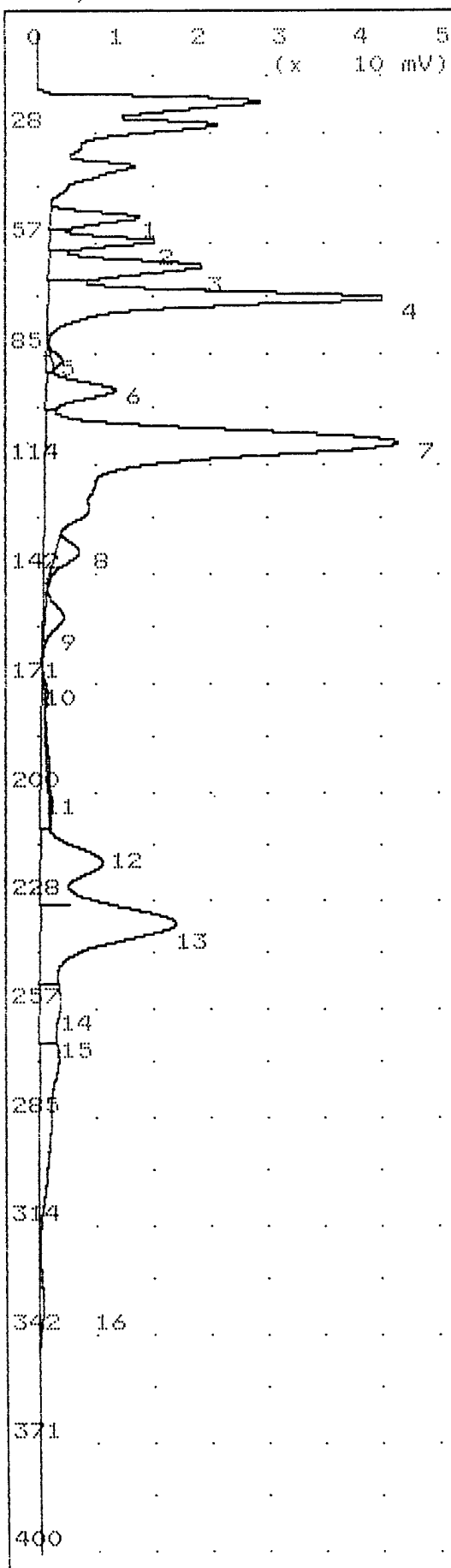
Time Printed: Aug 17,93 09:49
 Sample Time: Aug 17,93 09:40
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	746.9 mVS	48.6
2	Benzene	1.002 ppm	54.8
3	Unknown	1.969 VSec	61.5
4	Unknown	1.332 VSec	69.8
5	Unknown	1.821 VSec	72.1
6	Unknown	240.6 mVS	85.7
7	Unknown	1.016 VSec	93.3
8	Toluene	29.50 PPM2	107.2
9	Unknown	80.43 mVS	124.0
10	Unknown	237.2 mVS	135.2
11	Unknown	241.4 mVS	152.4
12	Unknown	75.99 mVS	173.0
13	Unknown	353.3 mVS	201.6
14	Ethylbenzene	10.47 PPM1	216.6
15	M&P-Xylene	19.63 PPM1	233.0
16	Unknown	318.8 mVS	253.8
17	O-Xylene	4.998 ppm	268.2
18	Unknown	101.0 mVS	331.4

PPM1 = Alarm 1 PPM2 = Alarm2

Notes
 soil sample
 sample # 27 18 to 20 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #19 10S+ GC Function Analysis Report

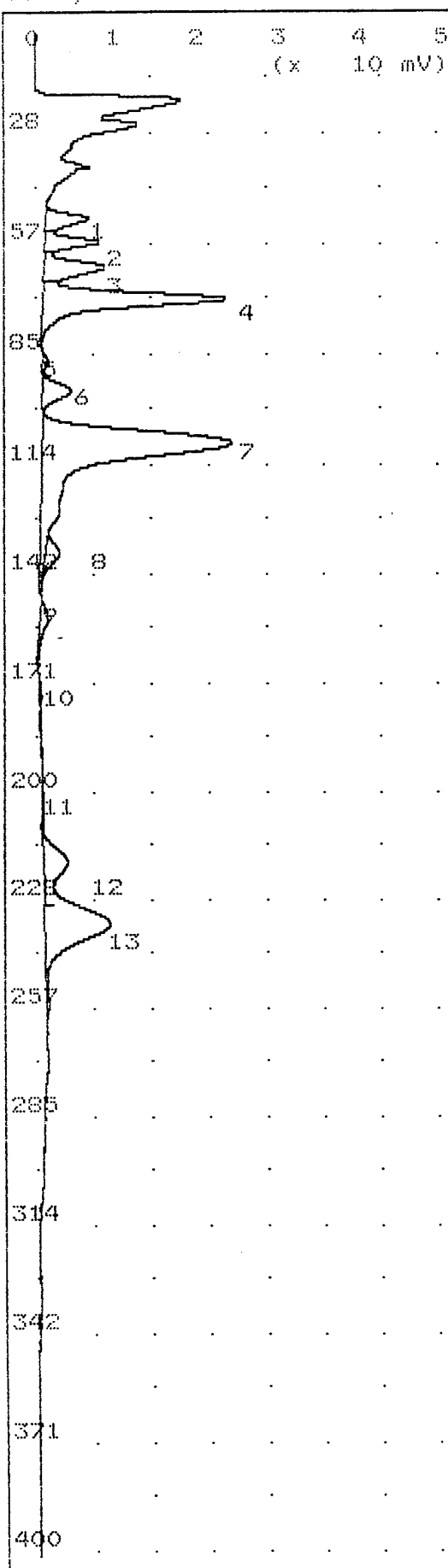


Time Printed: Aug 17,93 10:06
Sample Time: Aug 17,93 09:57
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 32 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report				
Pk	Compound Name	Area/Conc	R.T.	
1	Unknown	37.91 mVS	48.6	
2	Benzene	120.1 ppb	54.6	
3	Unknown	83.71 mVS	61.3	
4	Unknown	201.9 mVS	69.6	
5	Unknown	4.722 mVS	85.3	
6	Unknown	43.81 mVS	93.2	
7	Toluene	2.198 ppm	106.6	
8	Unknown	17.28 mVS	134.8	
9	Unknown	15.68 mVS	152.8	
10	Unknown	2.397 mVS	171.6	
11	Unknown	5.954 mVS	200.2	
12	Ethylbenzene	912.4 ppb	216.2	
13	M&P-Xylene	2.741 ppm	232.6	
14	Unknown	35.91 mVS	254.1	
15	O-Xylene	581.6 ppb	266.1	
16	Unknown	14.40 mVS	333.3	

Notes

soil sample
sample # 27 20 to 22 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28 c



Time Printed: Aug 17,93 10:21
 Sample Time: Aug 17,93 10:13
 Method

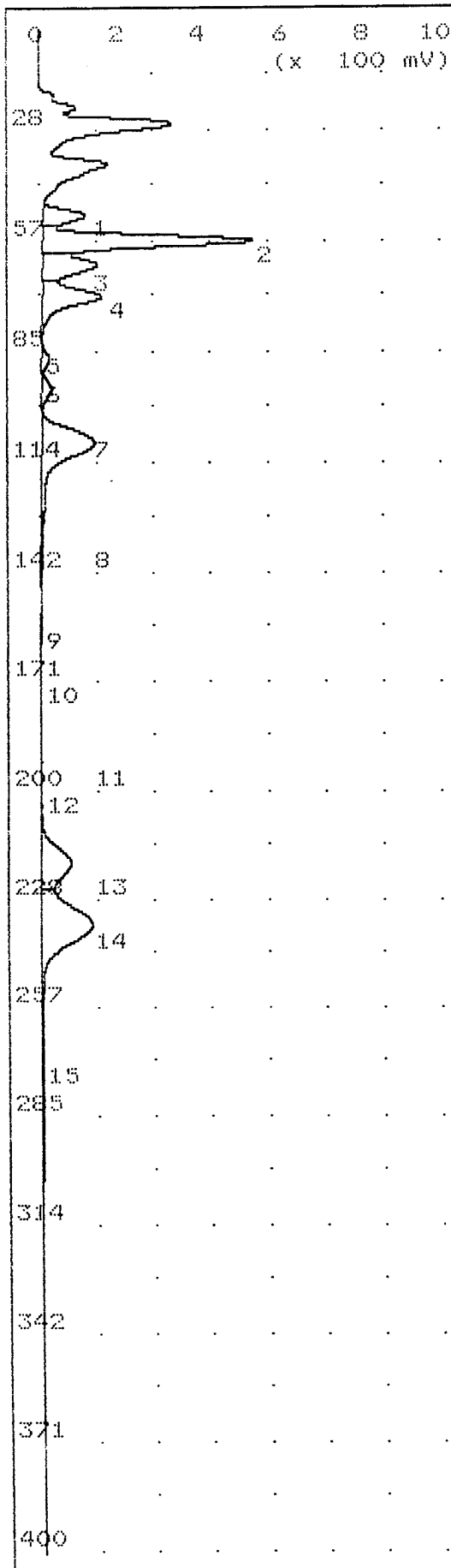
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	18.17 mVS	48.6
2	Benzene	60.53 ppb	54.7
3	Unknown	32.29 mVS	61.3
4	Unknown	103.2 mVS	69.4
5	Unknown	2.504 mVS	85.6
6	Unknown	17.60 mVS	92.9
7	Toluene	1.051 ppm	106.6
8	Unknown	10.55 mVS	135.3
9	Unknown	5.568 mVS	151.8
10	~~Ethylbenzene~~	~~16.76 ppb~~	~~173.0~~
11	Unknown	0.274 mVS	201.6
12	Ethylbenzene	318.8 ppb	216.8
13	M&P-Xylene	1.214 ppm	232.8

Notes

soil sample
 sample # 27 22 to 24 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 10:38

Sample Time: Aug 17,93 10:29

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	376.1 mVS	48.6
2	Benzene	5.711 ppm	55.1
3	Unknown	641.8 mVS	61.4
4	Unknown	775.7 mVS	69.6
5	Unknown	73.96 mVS	85.7
6	Unknown	116.8 mVS	93.3
7	Toluene	5.753 ppm	107.2
8	Unknown	17.77 mVS	135.4
9	Unknown	9.064 mVS	152.6
10	Ethylbenzene	161.8 ppb	173.4
11	Unknown	0.435 mVS	190.6
12	Unknown	0.083 mVS	193.0
13	Ethylbenzene	8.632 ppm	217.0
14	M&P-Xylene	22.91 PPM2	233.0
15	O-Xylene	40.97 ppb	270.4

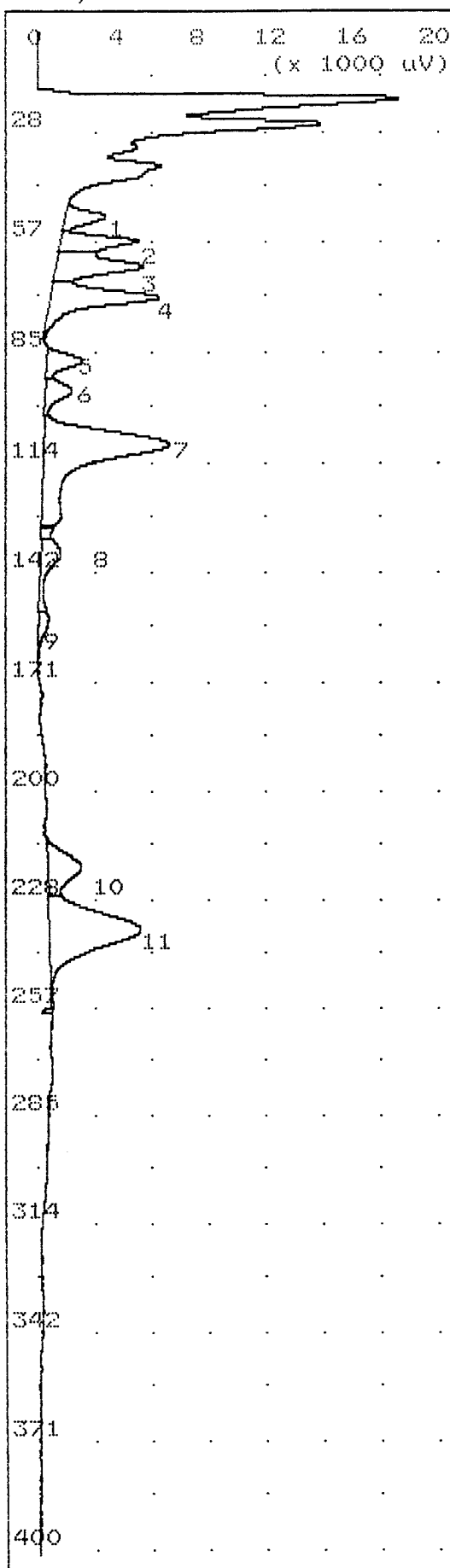
PPM1 = Alarm 1

PPM2 = Alarm2

Notes

water sample
 sample # 27
 soil volume **g
 water sample vol. 42.4ml
 temp. of sample 28 c

Analysis #27 10S+ GC Function Analysis Report



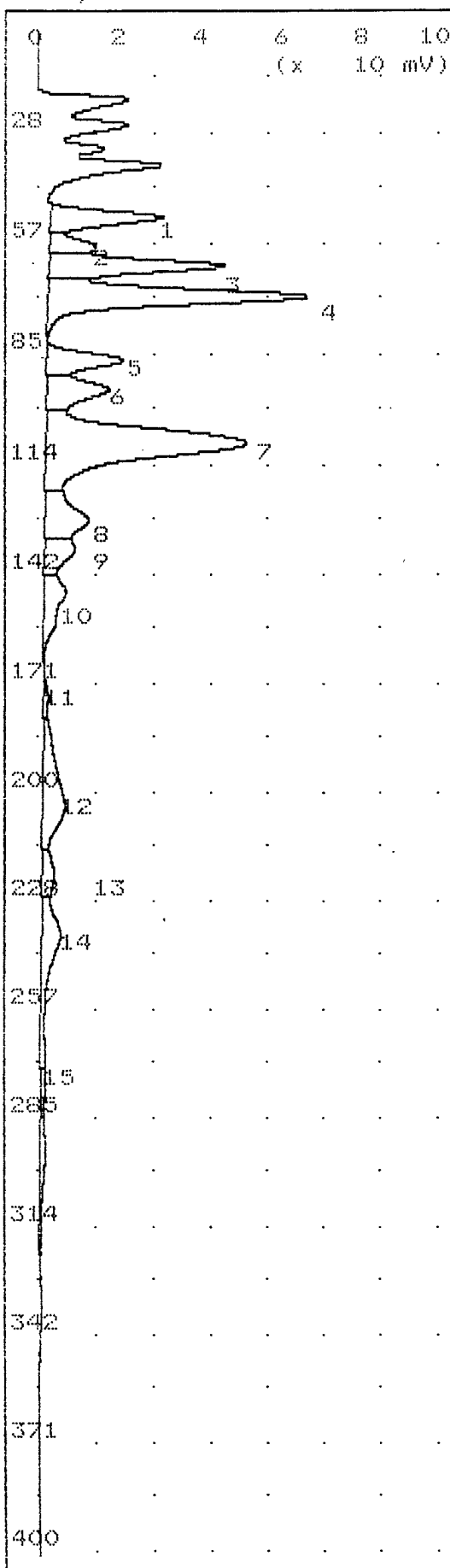
Time Printed: Aug 17,93 11:06
 Sample Time: Aug 17,93 10:57
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.409 mVS	48.7
2	Benzene	41.50 ppb	55.0
3	Unknown	20.29 mVS	61.5
4	Unknown	25.96 mVS	69.6
5	Unknown	7.439 mVS	86.0
6	Unknown	6.282 mVS	93.4
7	Toluene	292.2 ppb	107.2
8	Unknown	8.163 mVS	135.3
9	Unknown	2.632 mVS	153.0
10	Ethylbenzene	175.3 ppb	217.6
11	M&P-Xylene	690.6 ppb	234.6

Notes

soil sample
 sample # 28 1 to 3 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #29 10S+ GC Function Analysis Report

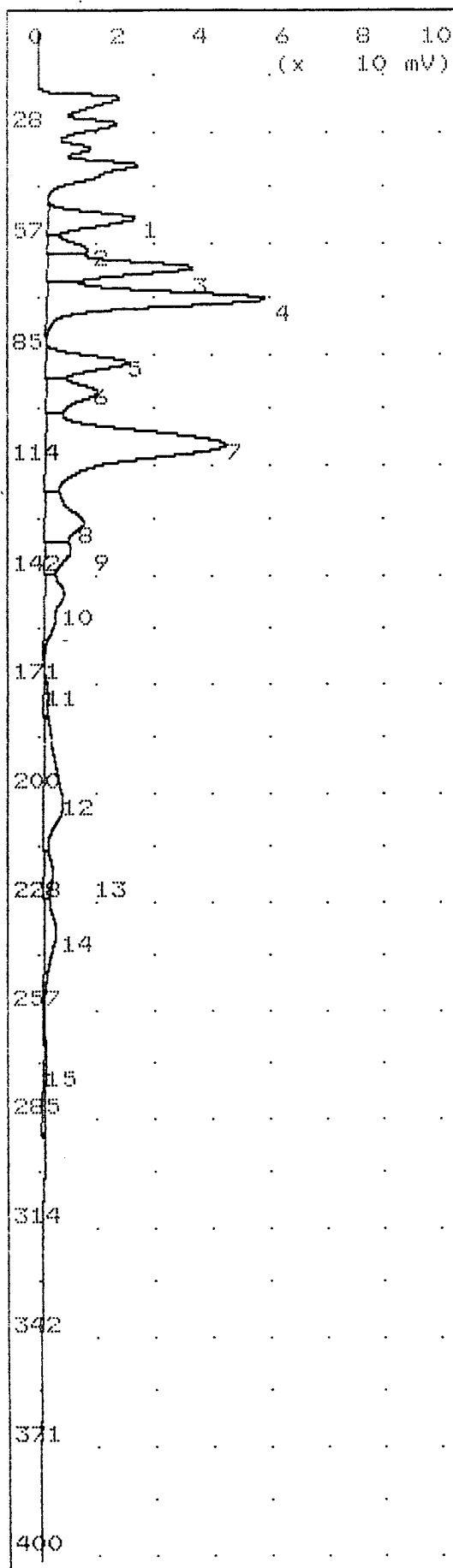


Time Printed: Aug 17,93 12:17
 Sample Time: Aug 17,93 12:09
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	108.3 mVS	48.4
2	Benzene	127.8 ppb	56.2
3	Unknown	175.9 mVS	61.0
4	Unknown	312.7 mVS	69.0
5	Unknown	86.72 mVS	85.3
6	Unknown	92.86 mVS	92.9
7	Toluene	2.069 ppm	106.6
8	Unknown	93.41 mVS	126.5
9	Unknown	50.82 mVS	134.1
10	Unknown	58.33 mVS	145.4
11	Unknown	7.586 mVS	173.6
12	Unknown	106.7 mVS	201.8
13	Ethylbenzene	339.1 ppb	219.6
14	M&P-Xylene	1.081 ppm	235.8
15	O-Xylene	292.4 ppb	268.8

Notes

soil sample
 sample # 28 3 to 5 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 12:33

Sample Time: Aug 17,93 12:24

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 32 C

Max Gain 1000

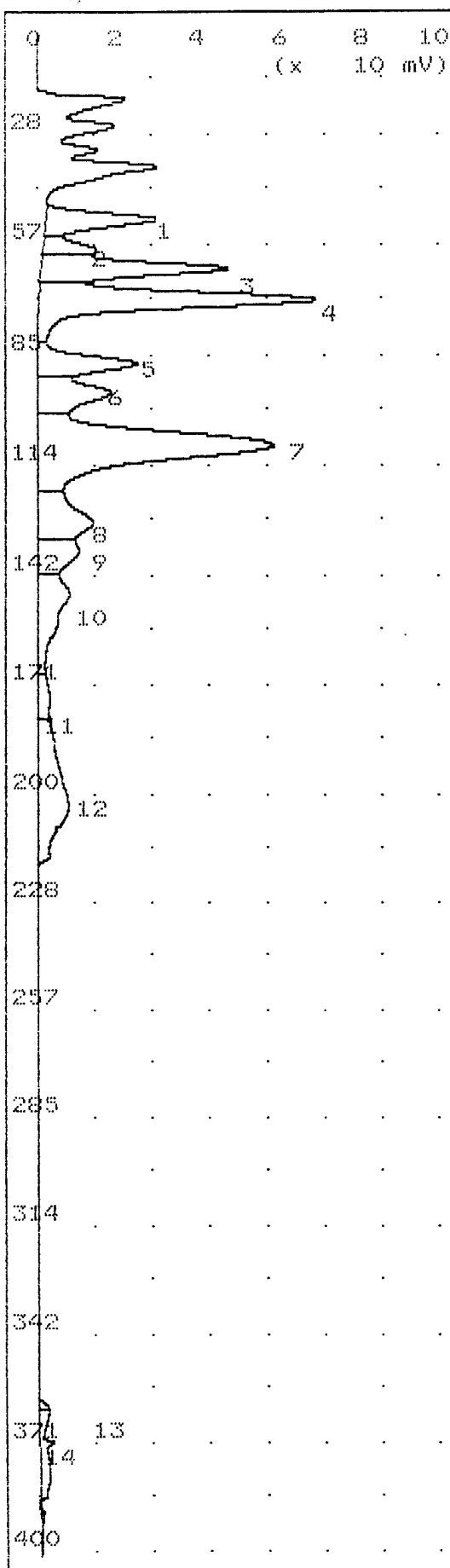
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	86.57 mVS	48.7
2	Benzene	106.6 ppb	56.8
3	Unknown	146.3 mVS	61.3
4	Unknown	256.5 mVS	69.4
5	Unknown	92.26 mVS	85.8
6	Unknown	77.30 mVS	93.3
7	Toluene	1.803 ppm	106.9
8	Unknown	84.00 mVS	126.9
9	Unknown	41.36 mVS	134.9
10	Unknown	51.92 mVS	145.4
11	Unknown	6.616 mVS	173.4
12	Unknown	85.82 mVS	201.0
13	Ethylbenzene	223.5 ppb	219.2
14	M&P-Xylene	510.7 ppb	234.2
15	O-Xylene	81.76 ppb	270.6

Notes

soil sample
 sample # 28 5 to 7 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 12:51

Sample Time: Aug 17,93 12:42

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 33 C

Max Gain 1000

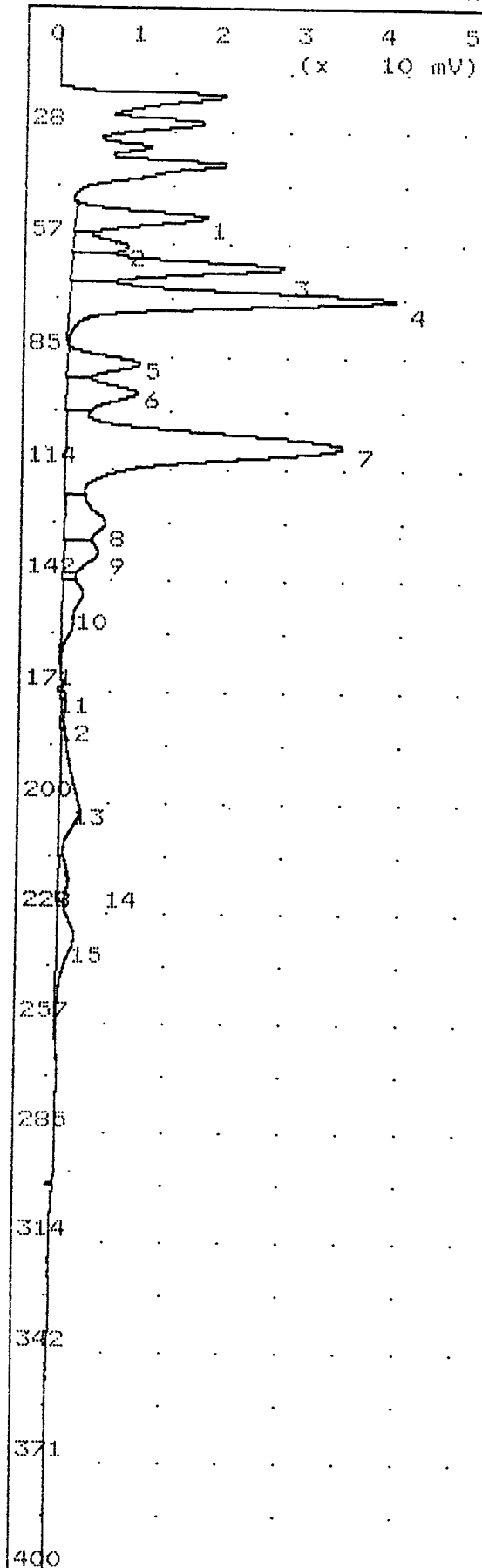
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	114.7 mVS	48.8
2	Benzene	150.6 ppb	56.7
3	Unknown	194.5 mVS	61.4
4	Unknown	356.8 mVS	69.4
5	Unknown	126.9 mVS	85.8
6	Unknown	128.5 mVS	93.4
7	Toluene	2.650 ppm	107.0
8	Unknown	161.8 mVS	127.2
9	Unknown	100.5 mVS	134.4
10	Unknown	207.9 mVS	145.8
11	Unknown	83.05 mVS	174.6
12	Ethylbenzene	5.861 ppm	201.0
13	O-Xylene	283.7 ppb	361.0
14	Unknown	212.9 mVS	369.0

Notes

soil sample
 sample # 28 7 to 9 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c



Time Printed: Aug 17,93 13:07

Sample Time: Aug 17,93 12:59

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

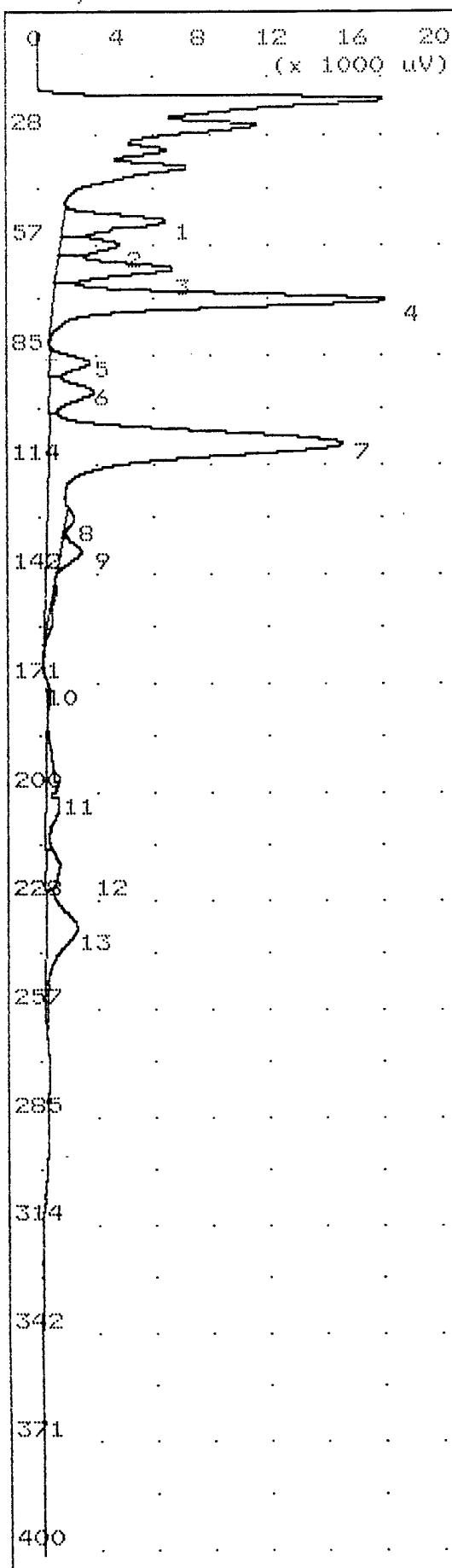
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	65.47 mVS	48.6
2	Benzene	76.76 ppb	56.1
3	Unknown	104.8 mVS	61.1
4	Unknown	187.8 mVS	69.2
5	Unknown	41.45 mVS	85.4
6	Unknown	49.43 mVS	92.9
7	Toluene	1.363 ppm	106.5
8	Unknown	44.62 mVS	126.1
9	Unknown	29.49 mVS	134.0
10	~~Ethylbenzene~~	~~310.7 ppb~~	~~145.2~~
11	Unknown	0.668 mVS	171.6
12	Unknown	2.679 mVS	173.8
13	Unknown	42.88 mVS	199.8
14	Ethylbenzene	130.3 ppb	217.8
15	M&P-Xylene	345.4 ppb	232.8

Notes

soil sample
 sample # 28 9 to 11 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #37 10S+ GC Function Analysis Report



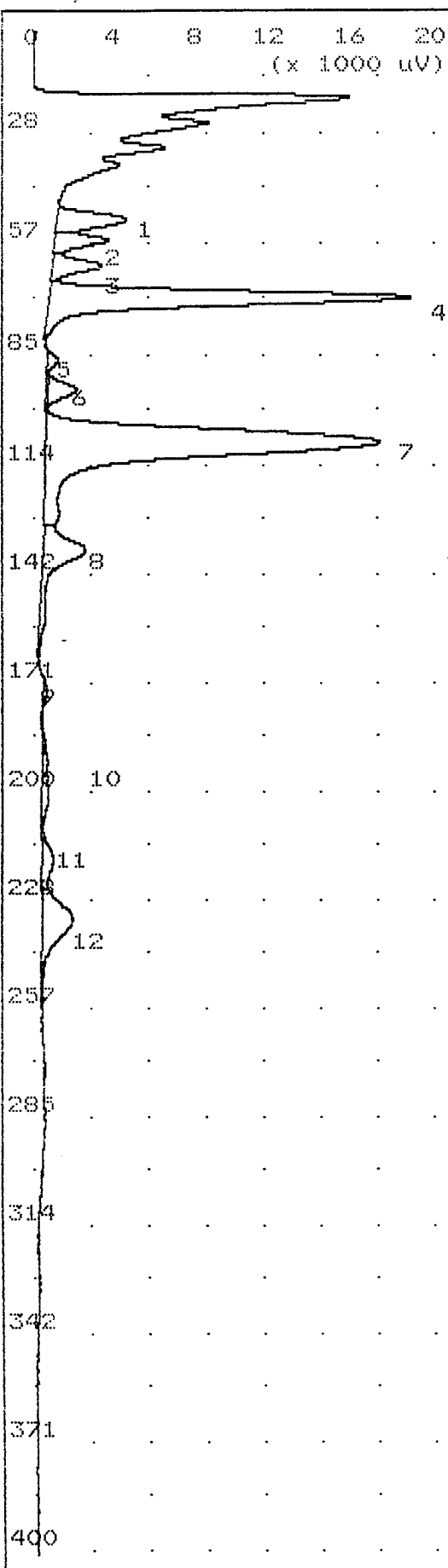
Time Printed: Aug 17,93 13:24
 Sample Time: Aug 17,93 13:14
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 34 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	20.76 mVS	48.5
2	Benzene	33.00 ppb	55.2
3	Unknown	22.47 mVS	61.2
4	Unknown	73.28 mVS	69.3
5	Unknown	8.608 mVS	85.6
6	Unknown	11.74 mVS	92.9
7	Toluene	651.9 ppb	106.5
8	Unknown	1.693 mVS	126.2
9	Unknown	7.050 mVS	135.2
10	Unknown	0.250 mVS	171.6
11	Unknown	10.56 mVS	195.8
12	Ethylbenzene	63.86 ppb	217.6
13	M&P-Xylene	248.7 ppb	234.0

Notes

soil sample
 sample # 28 11to 13 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28 c

Analysis #39 10S+ GC Function Analysis Report



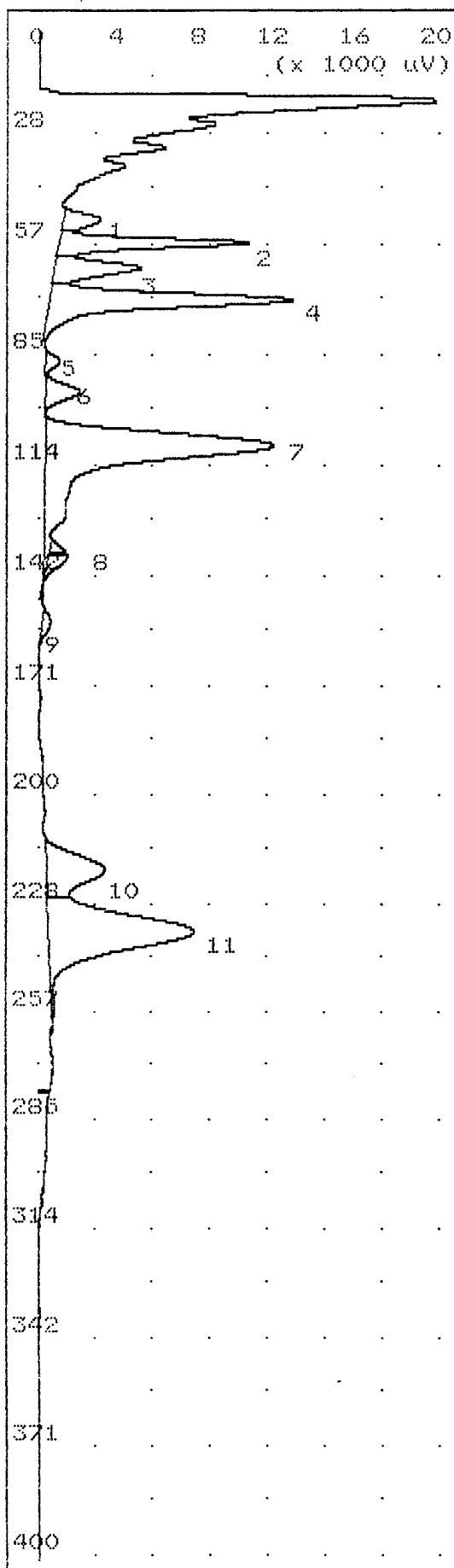
Time Printed: Aug 17,93 13:40
Sample Time: Aug 17,93 13:31
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
E/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 34 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	14.47 mVS	49.2
2	Benzene	26.50 ppb	54.6
3	Unknown	9.076 mVS	61.4
4	Unknown	77.79 mVS	69.2
5	Unknown	2.638 mVS	85.4
6	Unknown	6.032 mVS	92.6
7	Toluene	638.6 ppb	106.2
8	Unknown	19.08 mVS	133.7
9	Unknown	0.691 mVS	172.2
10	Unknown	4.298 mVS	193.2
11	Ethylbenzene	59.91 ppb	215.6
12	M&P-Xylene	231.5 ppb	231.6

Notes

soil sample
sample # 28 13 to 15 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28 c

Analysis #25 10S+ GC Function Analysis Report

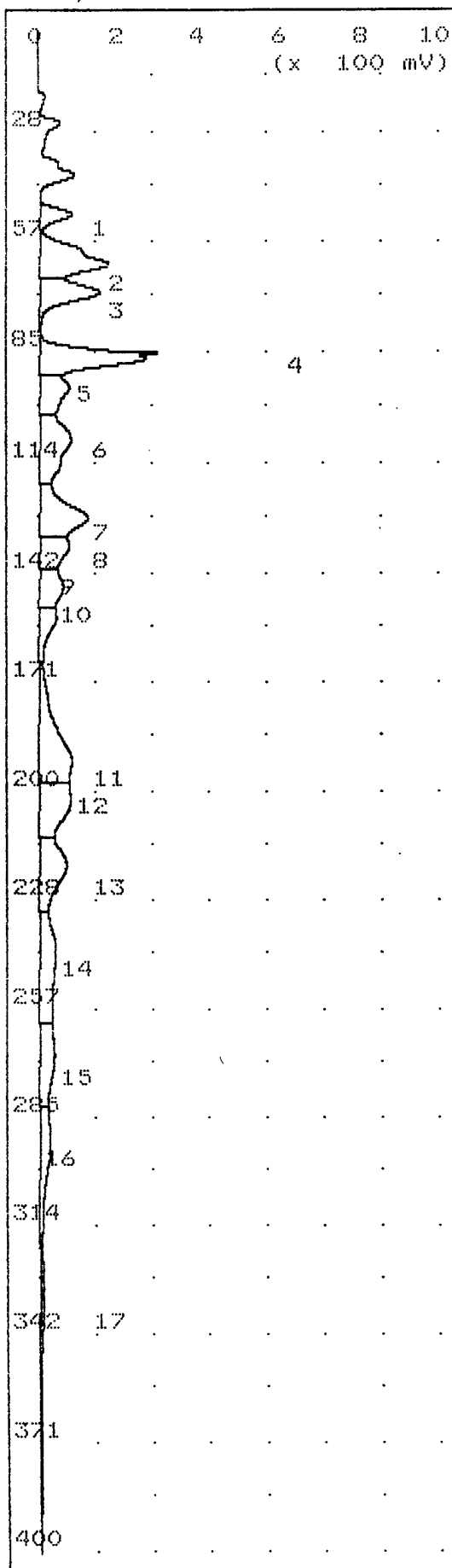


Time Printed: Aug 17,93 10:54
 Sample Time: Aug 17,93 10:45
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	7.150 mVS	49.2
2	Benzene	86.20 ppb	54.8
3	Unknown	18.05 mVS	61.4
4	Unknown	55.34 mVS	69.6
5	Unknown	2.492 mVS	85.8
6	Unknown	8.041 mVS	93.6
7	Toluene	494.4 ppb	107.0
8	Unknown	4.510 mVS	135.4
9	Unknown	2.419 mVS	153.2
10	Ethylbenzene	325.4 ppb	217.6
11	M&P-Xylene	1.108 ppm	233.6

Notes

water sample
 sample # 28
 soil volume **g
 water sample vol. 42.8ml
 temp. of sample 28 c



Time Printed: Aug 17,93 14:10

Sample Time: Aug 17,93 14:01

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

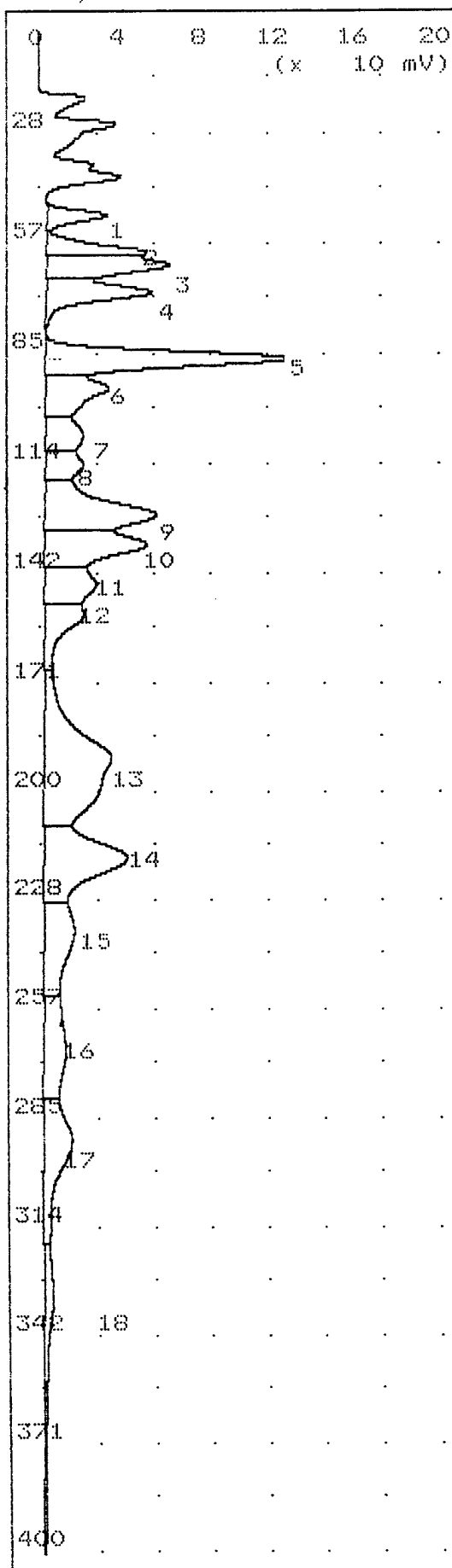
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	281.8 mVS	48.2
2	Benzene	3.359 ppm	61.1
3	Unknown	791.9 mVS	68.5
4	Unknown	1.416 VSec	84.2
5	Unknown	565.9 mVS	93.0
6	Toluene	4.500 ppm	106.2
7	Unknown	1.018 VSec	126.5
8	Unknown	520.4 mVS	134.0
9	Unknown	510.6 mVS	144.8
10	Unknown	333.7 mVS	152.2
11	Unknown	1.321 VSec	190.4
12	Unknown	882.2 mVS	200.2
13	Ethylbenzene	10.67 PPM1	217.4
14	M&P-Xylene	12.95 PPM1	240.0
15	O-Xylene	5.485 ppm	267.4
16	Unknown	570.1 mVS	290.9
17	Unknown	231.6 mVS	332.5

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 29 1 to 3 ft
 soil volume 50g
 water sample vol. 42.9ml
 temp. of sample 28 c



Time Printed: Aug 17,93 14:27

Sample Time: Aug 17,93 14:18

Method

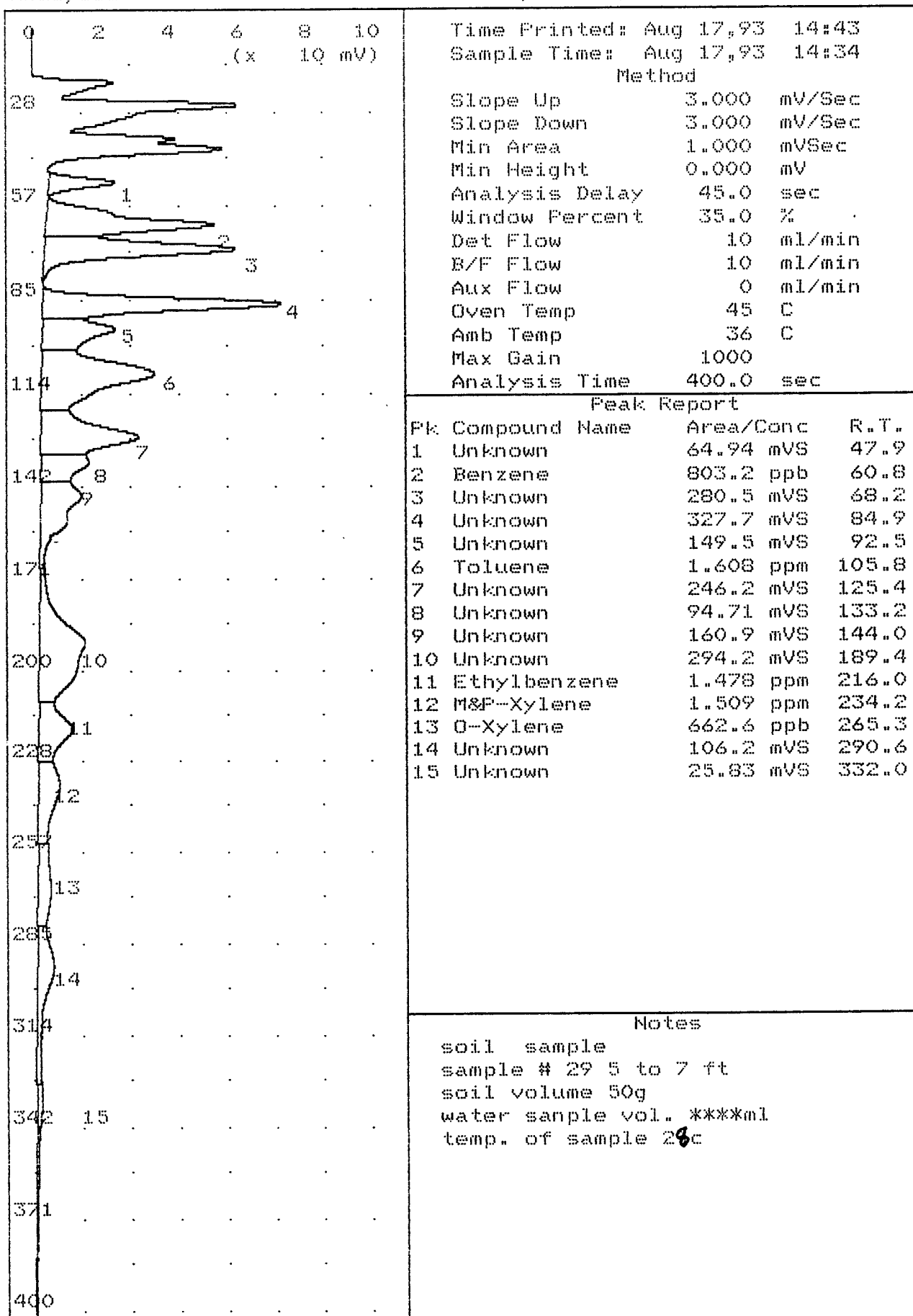
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	97.83 mVS	47.8
2	Benzene	524.9 ppb	57.5
3	Unknown	276.0 mVS	60.8
4	Unknown	258.6 mVS	68.0
5	Unknown	575.4 mVS	85.0
6	Unknown	234.8 mVS	92.4
7	Toluene	698.7 ppb	104.6
8	Unknown	121.8 mVS	112.6
9	Unknown	446.8 mVS	125.7
10	Unknown	370.0 mVS	133.2
11	Unknown	213.1 mVS	143.7
12	Unknown	160.9 mVS	151.4
13	Unknown	754.3 mVS	189.0
14	Ethylbenzene	6.122 ppm	215.8
15	m&P-Xylene	3.817 ppm	234.4
16	O-Xylene	1.975 ppm	265.8
17	Unknown	281.4 mVS	289.6
18	Unknown	116.7 mVS	331.2

Notes

soil sample
 sample # 29 3 to 5 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 2 c



Time Printed: Aug 17, 93 14:43

Sample Time: Aug 17, 93 14:34

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 36 C

Max Gain 1000

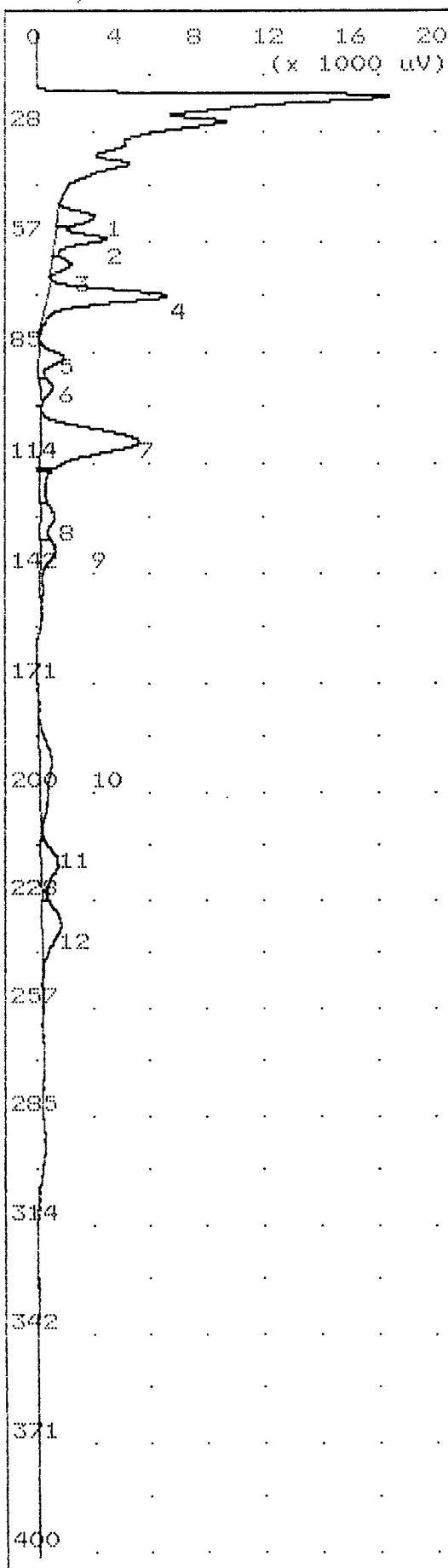
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	64.94 mVS	47.9
2	Benzene	803.2 ppb	60.8
3	Unknown	280.5 mVS	68.2
4	Unknown	327.7 mVS	84.9
5	Unknown	149.5 mVS	92.5
6	Toluene	1.608 ppm	105.8
7	Unknown	246.2 mVS	125.4
8	Unknown	94.71 mVS	133.2
9	Unknown	160.9 mVS	144.0
10	Unknown	294.2 mVS	189.4
11	Ethylbenzene	1.478 ppm	216.0
12	M&P-Xylene	1.509 ppm	234.2
13	O-Xylene	662.6 ppb	265.3
14	Unknown	106.2 mVS	290.6
15	Unknown	25.83 mVS	332.0

Notes

soil sample
sample # 29 5 to 7 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 26c



Time Printed: Aug 17,93 15:00

Sample Time: Aug 17,93 14:51

Method

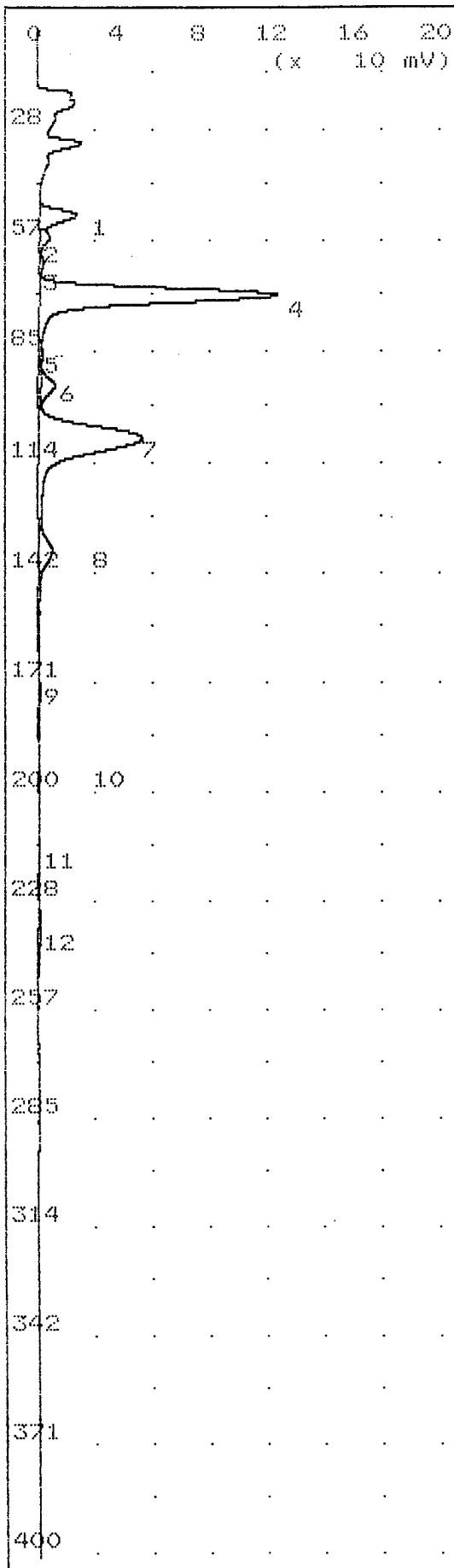
Slope Up	3.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	45.0	sec
Window Percent	35.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	36	C
Max Gain	1000	
Analysis Time	400.0	sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	6.858 mVS	48.8
2	Benzene	24.64 ppb	54.4
3	Unknown	2.963 mVS	61.0
4	Unknown	25.22 mVS	69.2
5	Unknown	5.515 mVS	84.8
6	Unknown	2.859 mVS	92.2
7	Toluene	185.8 ppb	107.0
8	Unknown	4.649 mVS	125.8
9	Unknown	4.707 mVS	133.6
10	Unknown	12.01 mVS	191.4
11	Ethylbenzene	111.5 ppb	215.0
12	M&P-Xylene	147.7 ppb	233.4

Notes

soil sample
sample # 29 11to 13ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28c



Time Printed: Aug 17,93 13:55
 Sample Time: Aug 17,93 13:46
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 35 C
 Max Gain 1000
 Analysis Time 400.0 sec

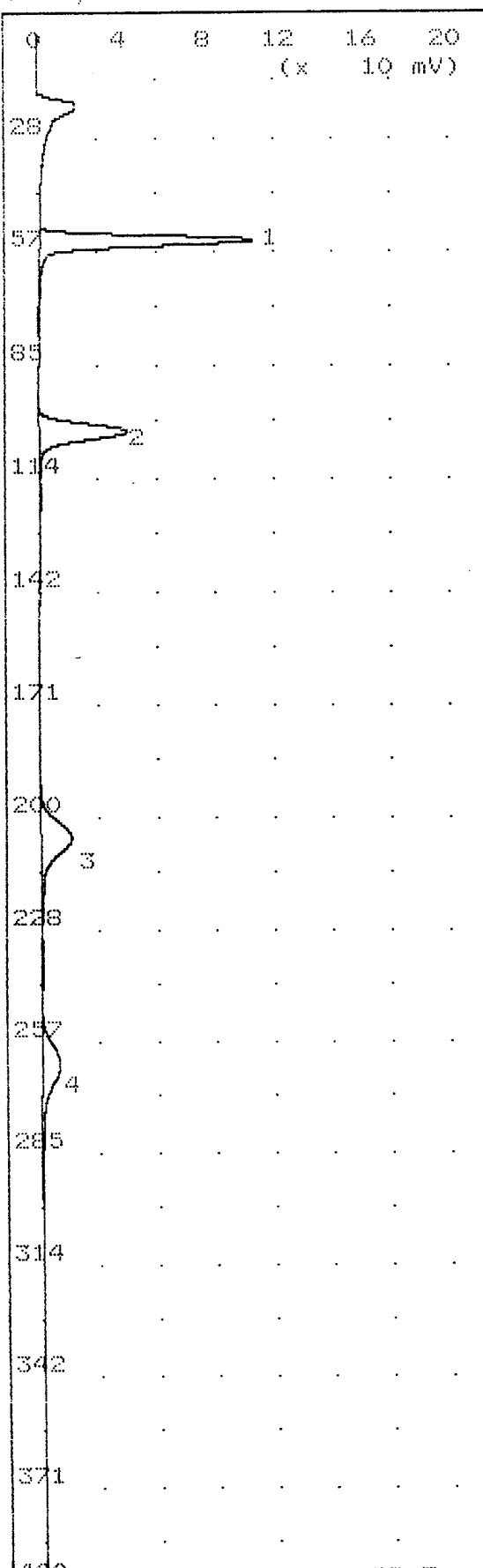
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	68.20 mVS	48.6
2	Benzene	54.65 ppb	54.5
3	Unknown	7.022 mVS	60.8
4	Unknown	564.9 mVS	69.3
5	Unknown	1.200 mVS	84.8
6	Unknown	30.28 mVS	92.6
7	Toluene	1.925 ppm	105.8
8	Unknown	59.28 mVS	134.6
9	Ethylbenzene	35.39 ppb	172.0
10	Unknown	0.324 mVS	191.2
11	Ethylbenzene	29.05 ppb	216.0
12	M&P-Xylene	139.8 ppb	233.6

Notes

water sample
 sample # 29
 soil volume **g
 water sample vol. 42.9ml
 temp. of sample 28 c

Analysis #4 10S+ GC Function Calibrant Report

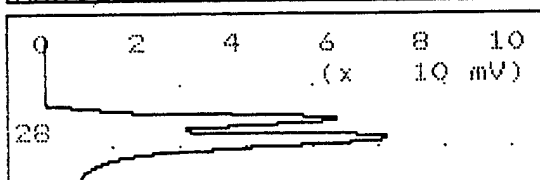


Time Printed: Aug 18,93 07:29
 Sample Time: Aug 18,93 07:20
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 22 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	999.9 ppb	52.3
2	Toluene	1.000 ppm	100.4
3	Ethylbenzene	999.9 ppb	203.2
4	O-Xylene	1.000 ppm	260.8

Notes
 calibration
 sample # 1 ppm BTEX gas standard
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

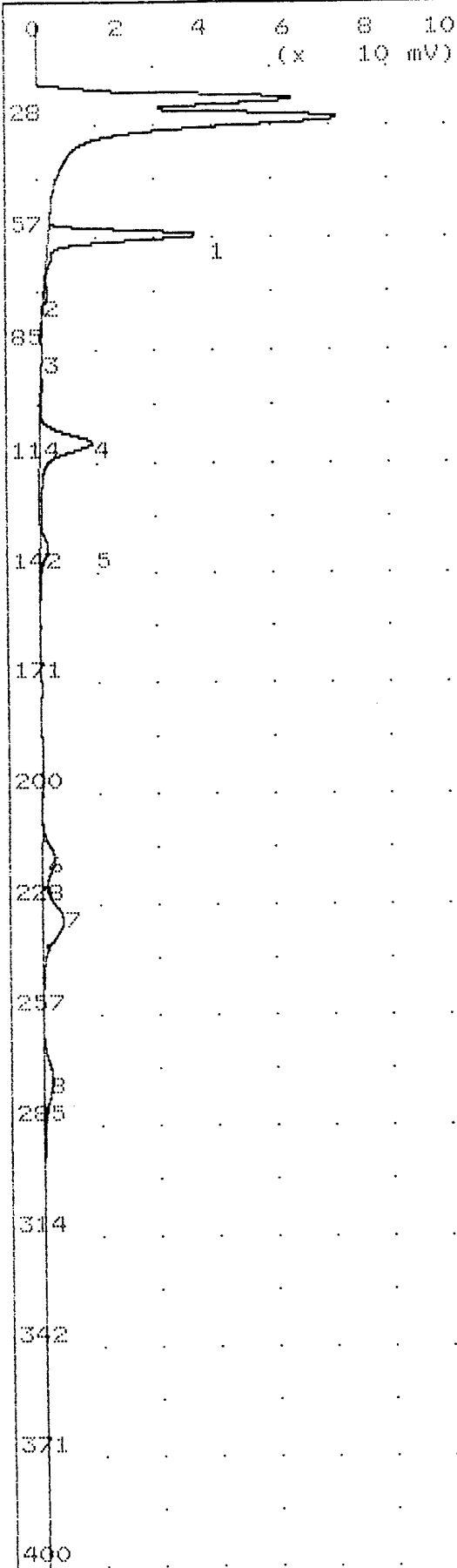
Analysis #4 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 07:50
 Sample Time: Aug 18,93 07:33
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec

Analysis #6

10S+ GC Function Analysis Report



Time Printed: Aug 18, 93 07:52

Sample Time: Aug 18, 93 07:33

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 26 C
 Max Gain 1000
 Analysis Time 400.0 sec

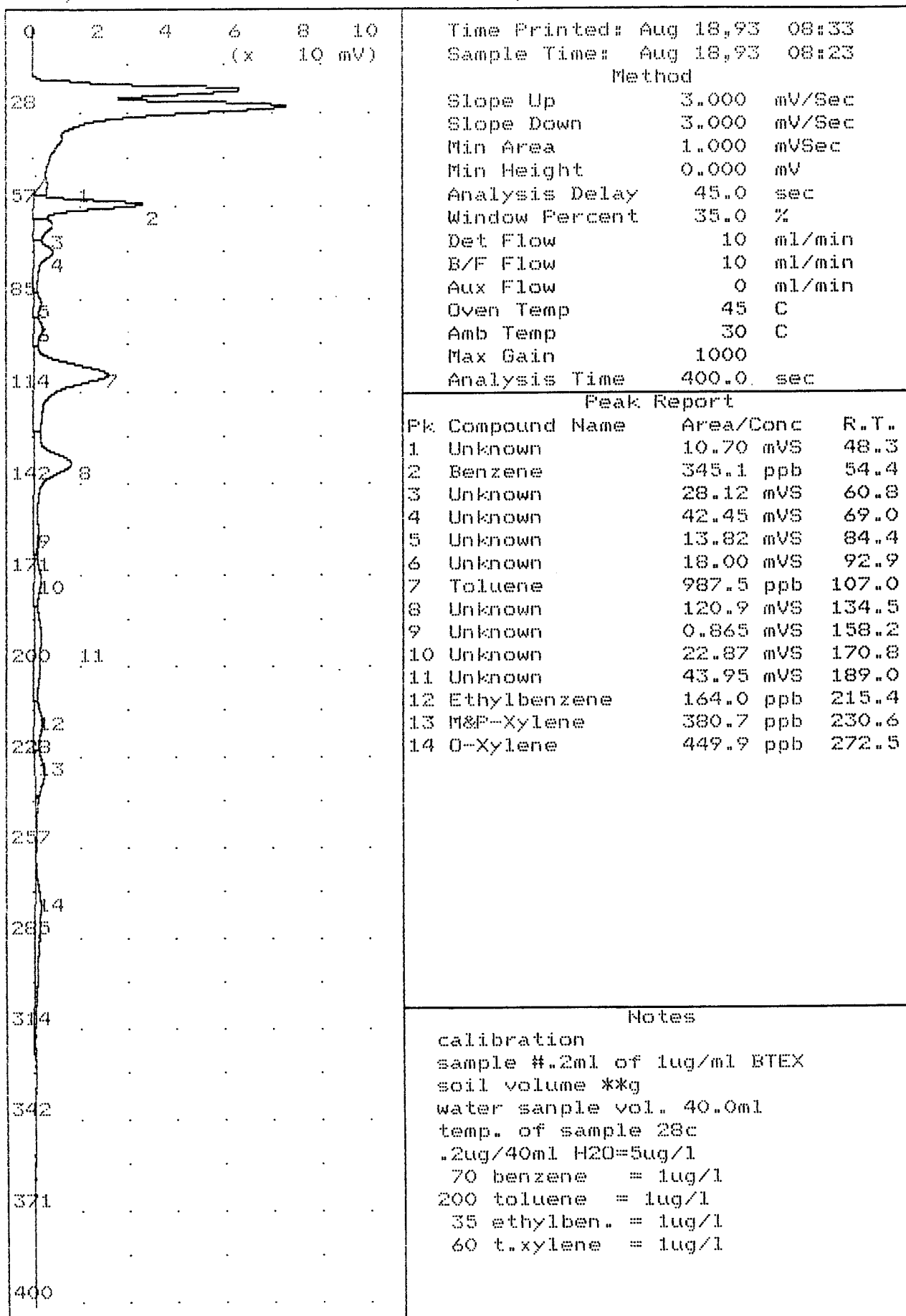
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	354.6 ppb	54.6
2	Unknown	2.641 mVS	68.5
3	Unknown	1.283 mVS	84.6
4	Toluene	389.7 ppb	107.2
5	Unknown	13.45 mVS	134.5
6	Ethylbenzene	169.0 ppb	215.0
7	M&P-Xylene	500.0 ppb	230.6
8	O-Xylene	329.1 ppb	272.0

Notes

calibration
 sample #.2ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c
 .2ug/50g soil=4ug/kg
 90 benzene = 1ug/kg
 100 toluene = 1ug/kg
 40 ethylben. = 1ug/kg
 70 t.xylene = 1ug/kg

Analysis #9 105+ GC Function Analysis Report



Time Printed: Aug 18,93 08:33
Sample Time: Aug 18,93 08:23
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 30 C
Max Gain 1000
Analysis Time 400.0 sec

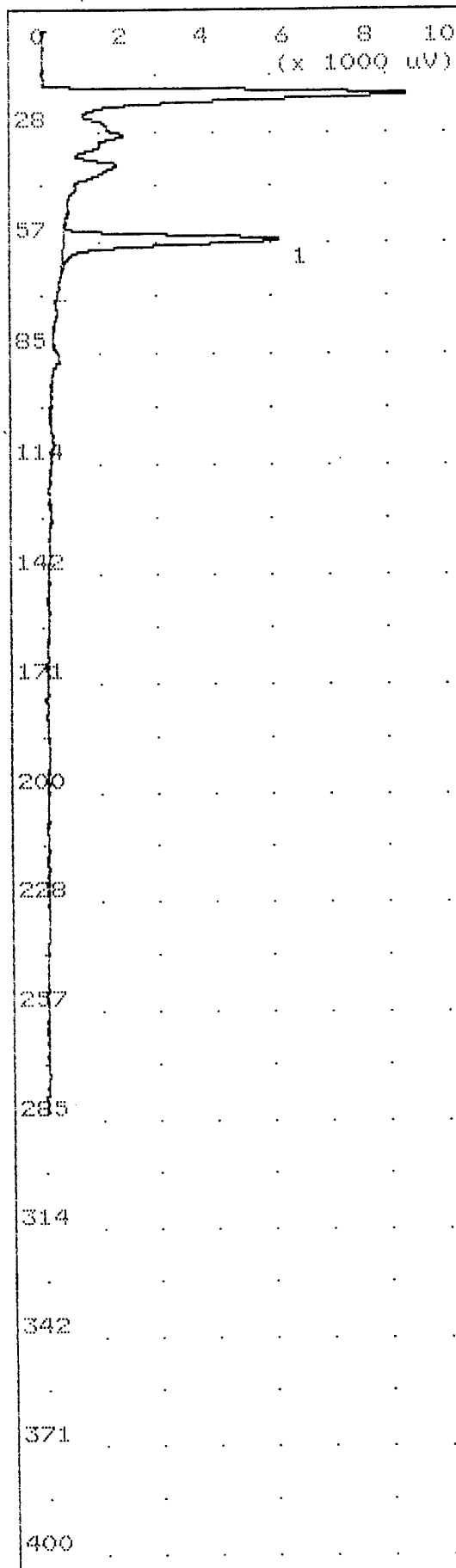
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	10.70 mVS	48.3
2	Benzene	345.1 ppb	54.4
3	Unknown	28.12 mVS	60.8
4	Unknown	42.45 mVS	69.0
5	Unknown	13.82 mVS	84.4
6	Unknown	18.00 mVS	92.9
7	Toluene	987.5 ppb	107.0
8	Unknown	120.9 mVS	134.5
9	Unknown	0.865 mVS	158.2
10	Unknown	22.87 mVS	170.8
11	Unknown	43.95 mVS	189.0
12	Ethylbenzene	164.0 ppb	215.4
13	M&P-Xylene	380.7 ppb	230.6
14	O-Xylene	449.9 ppb	272.5

Notes

calibration
sample #.2ml of 1ug/ml BTEX
soil volume **g
water sample vol. 40.0ml
temp. of sample 28c
.2ug/40ml H2O=5ug/l
70 benzene = 1ug/l
200 toluene = 1ug/l
35 ethylben. = 1ug/l
60 t.xylene = 1ug/l

Analysis #10 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 08:43
 Sample Time: Aug 18,93 08:36
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

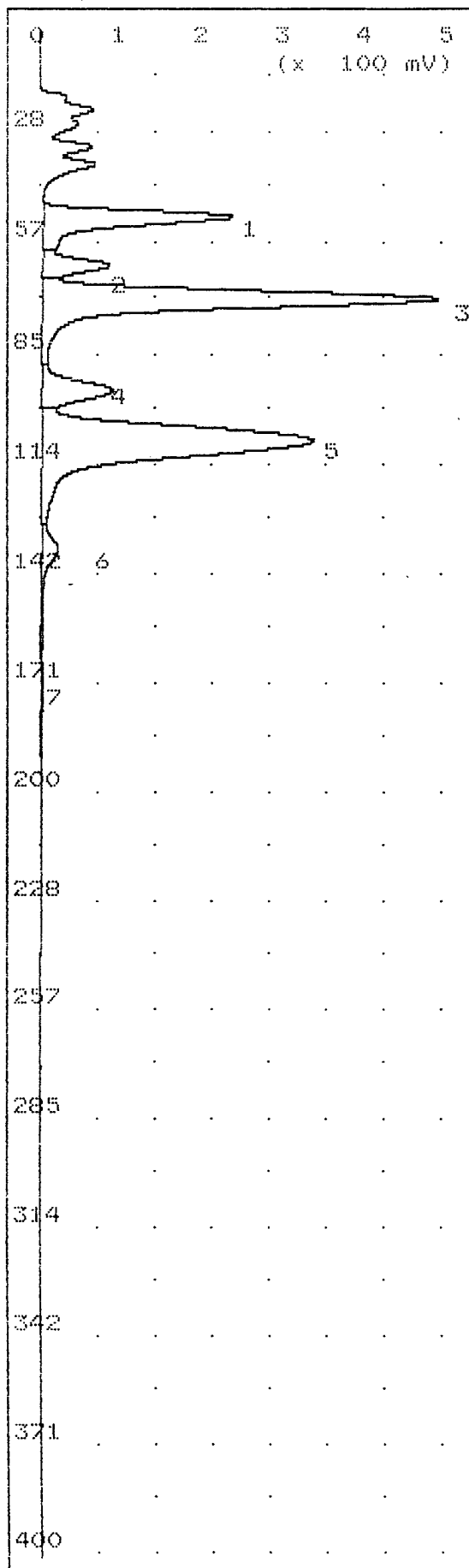
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	49.76 ppb	54.3

Notes

zero check
 sample #
 soil volume **g
 water sample vol. 40.0ml
 temp. of sample 28c

Analysis #11 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 08:54
 Sample Time: Aug 18,93 08:45
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 E/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

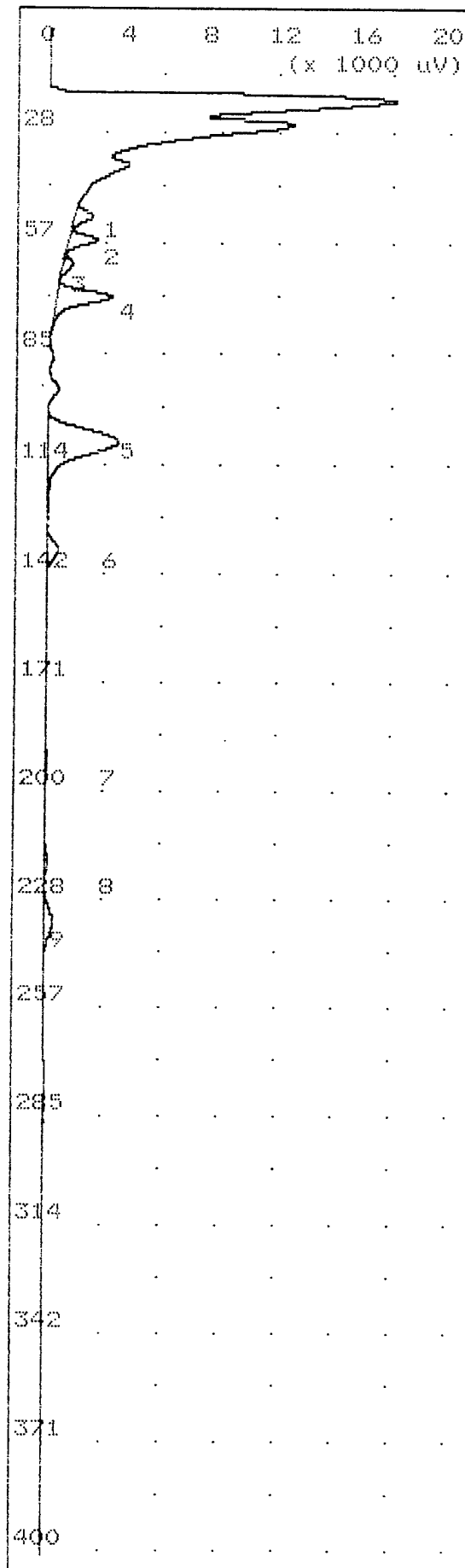
Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	3.173 ppm	48.7
2	Unknown	332.3 mVS	61.1
3	Unknown	2.633 VSec	69.6
4	Unknown	514.0 mVS	93.0
5	Toluene	15.25 PPM1	106.1
6	Unknown	179.4 mVS	134.5
7	Ethylbenzene	85.28 ppb	171.4

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

water sample
 sample # 11
 soil volume **g
 water sample vol. 41.9ml
 temp. of sample 28c

Analysis #14 10S+ GC Function Analysis Report



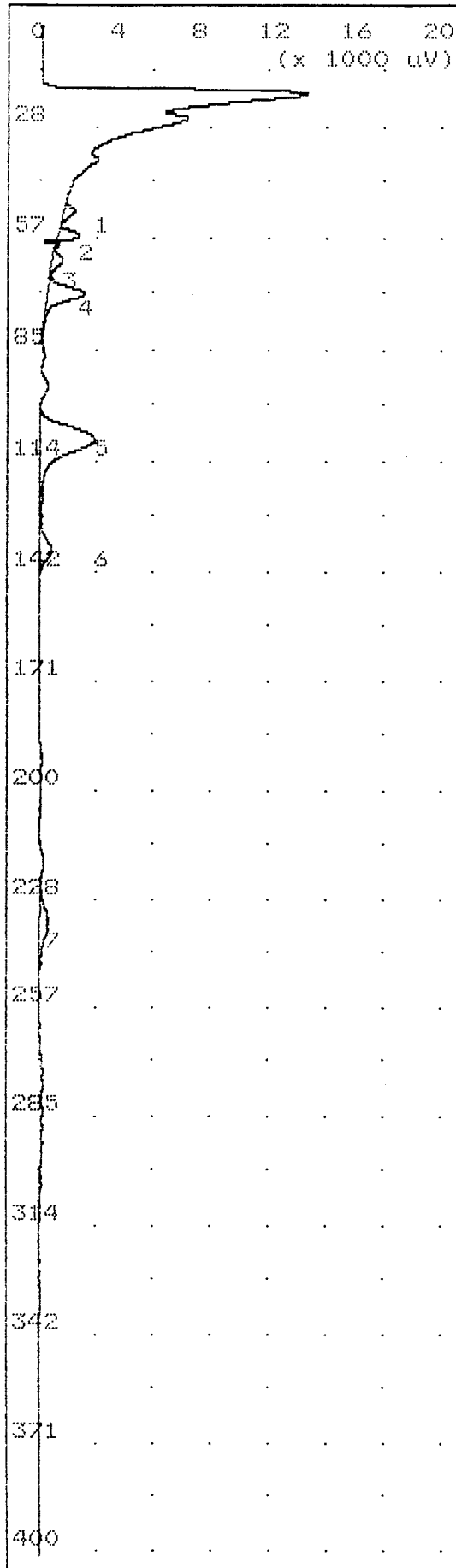
Time Printed: Aug 18,93 09:22
Sample Time: Aug 18,93 09:13
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 31 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.979 mVS	48.8
2	Benzene	13.99 ppb	54.3
3	Unknown	1.448 mVS	60.8
4	Unknown	11.38 mVS	69.4
5	Toluene	148.2 ppb	106.5
6	Unknown	4.610 mVS	134.2
7	Ethylbenzene	104.1 ppb	191.8
8	Unknown	2.733 mVS	218.4
9	M&P-Xylene	47.95 ppb	233.0

Notes

soil sample
sample # 30 8 to 10 ft
soil volume 50g
water sample vol. ***ml
temp. of sample 28c

Analysis #16 10S+ GC Function Analysis Report



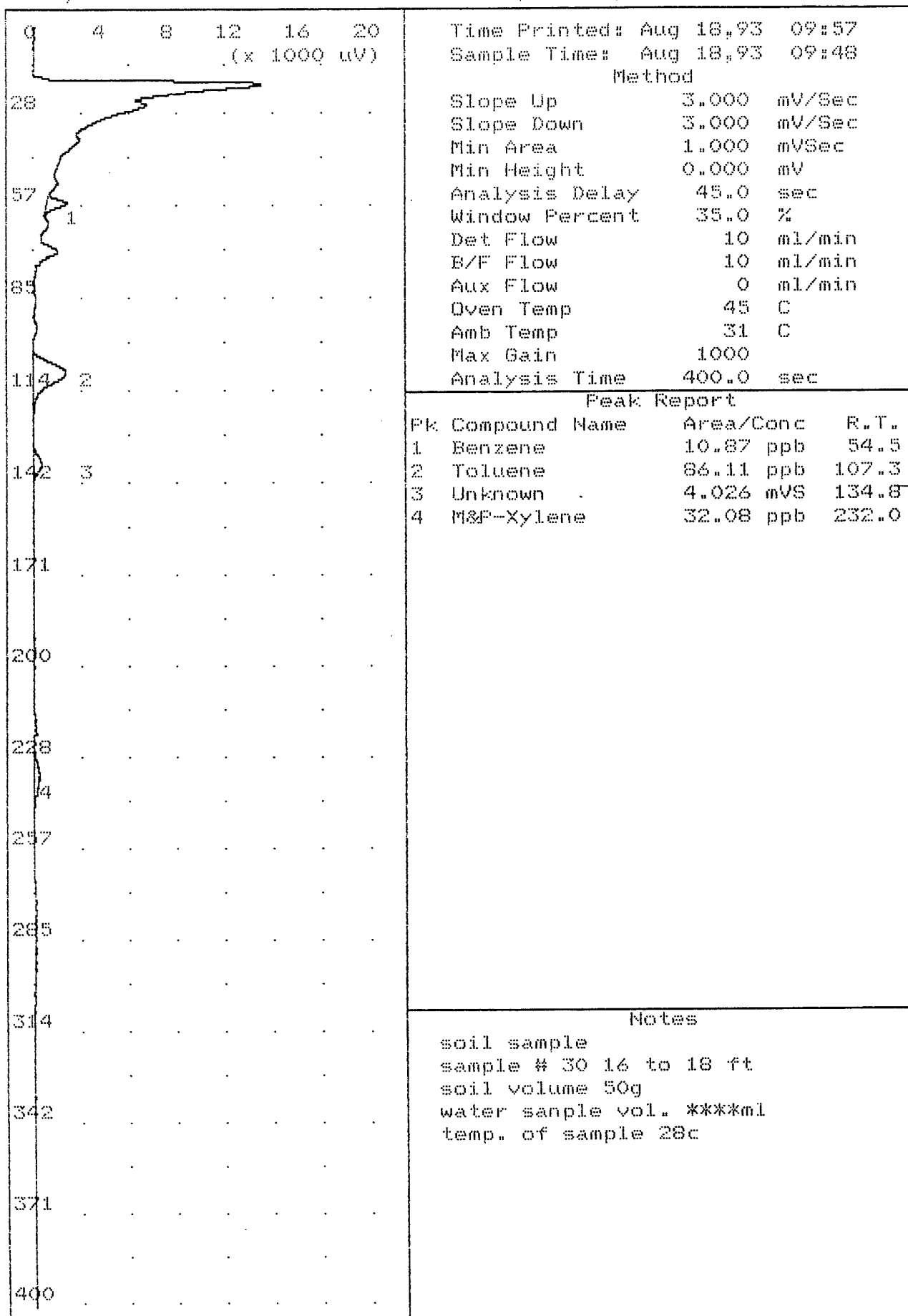
Time Printed: Aug 18,93 09:40
Sample Time: Aug 18,93 09:31
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 31 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	1.434 mVS	48.2
2	Benzene	7.223 ppb	54.4
3	Unknown	1.630 mVS	61.3
4	Unknown	7.329 mVS	69.2
5	Toluene	117.8 ppb	107.0
6	Unknown	5.089 mVS	134.4
7	M&P-Xylene	36.26 ppb	233.0

Notes

soil sample
sample # 30 10 to 12 ft
soil volume 50g
water sample vol. ***ml
temp. of sample 28c

Analysis #18 10S+ GC Function Analysis Report



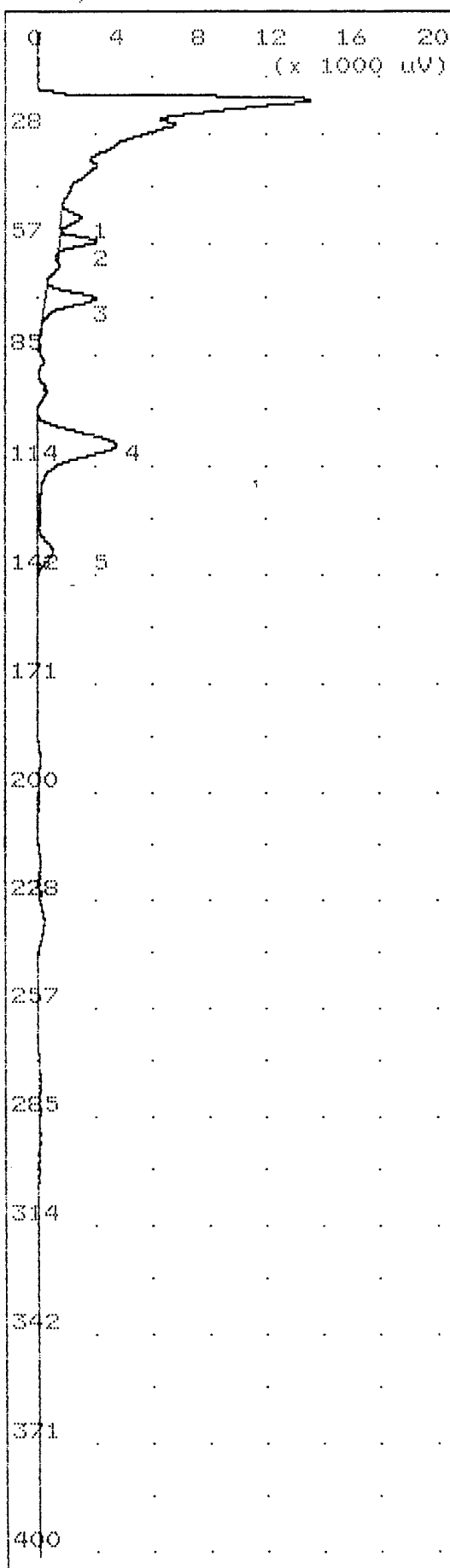
Time Printed: Aug 18,93 09:57
Sample Time: Aug 18,93 09:48
Method
Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 31 C
Max Gain 1000
Analysis Time 400.0 sec

Peak Report			
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	10.87 ppb	54.5
2	Toluene	86.11 ppb	107.3
3	Unknown	4.026 mVS	134.8
4	M&P-Xylene	32.08 ppb	232.0

Notes

soil sample
sample # 30 16 to 18 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28c

Analysis #20 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 10:14
Sample Time: Aug 18,93 10:05
Method

Slope Up 3.000 mV/Sec
Slope Down 3.000 mV/Sec
Min Area 1.000 mVSec
Min Height 0.000 mV
Analysis Delay 45.0 sec
Window Percent 35.0 %
Det Flow 10 ml/min
B/F Flow 10 ml/min
Aux Flow 0 ml/min
Oven Temp 45 C
Amb Temp 32 C
Max Gain 1000
Analysis Time 400.0 sec

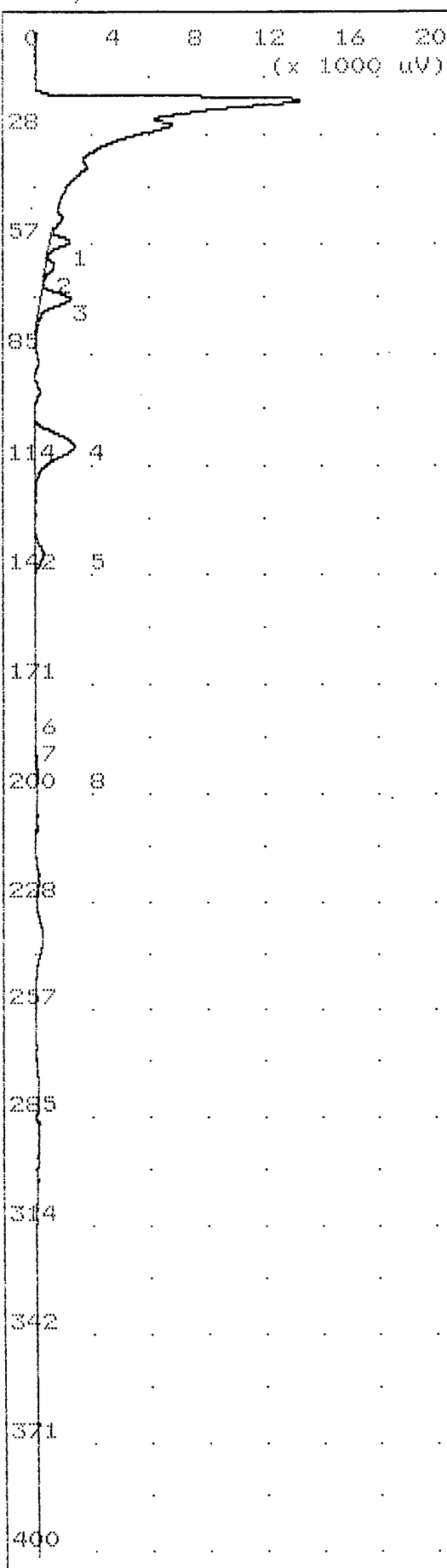
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.959 mVS	48.3
2	Benzene	14.42 ppb	54.5
3	Unknown	9.705 mVS	68.9
4	Toluene	161.7 ppb	107.0
5	Unknown	6.199 mVS	135.3

Notes

water sample
sample # 30
soil volume **g
water sample vol. 43.2ml
temp. of sample 28c

Analysis #22 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 10:33
 Sample Time: Aug 18,93 10:24
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

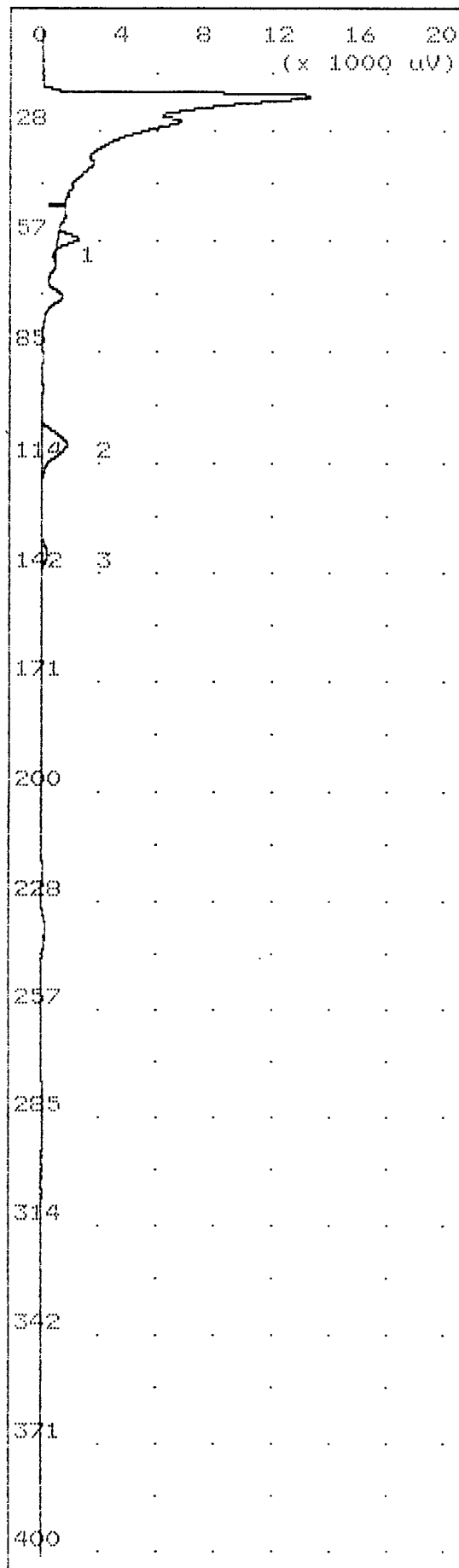
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	8.842 ppb	54.5
2	Unknown	1.402 mVS	60.8
3	Unknown	6.597 mVS	69.6
4	Toluene	85.15 ppb	107.4
5	Unknown	2.887 mVS	135.3
6	Unknown	7.016 mVS	175.2
7	Unknown	3.701 mVS	177.8
8	Ethylbenzene	102.4 ppb	193.6

Notes

soil sample
 sample # 31 6 to 8 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

Analysis #24 10S+ GC Function Analysis Report



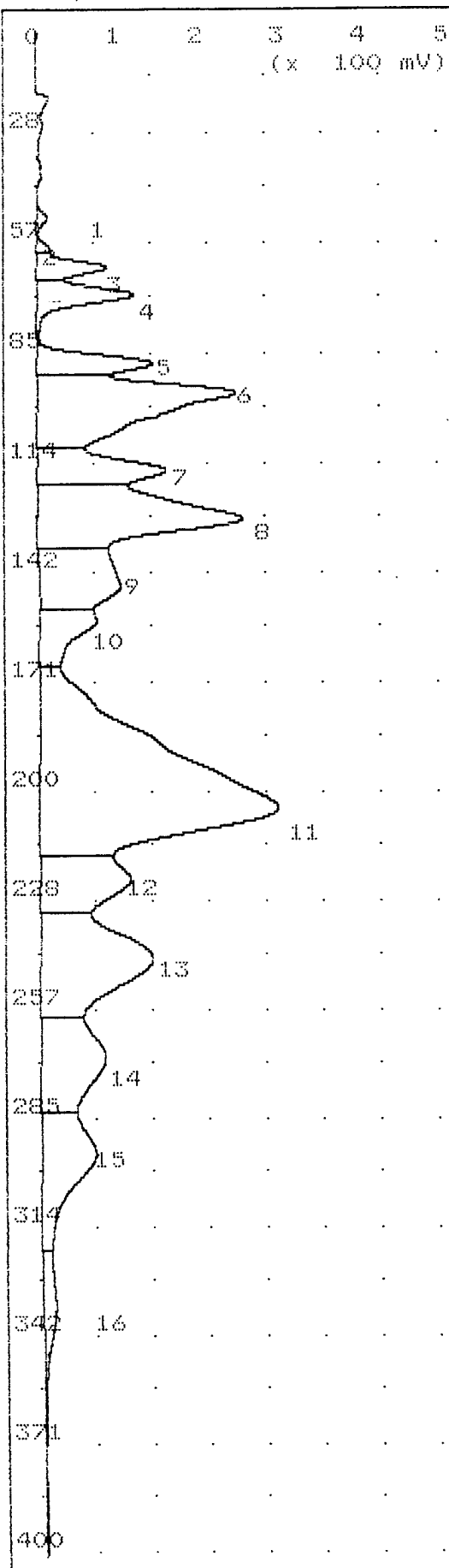
Time Printed: Aug 18,93 10:49
 Sample Time: Aug 18,93 10:40
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.345 ppb	54.8
2	Toluene	62.51 ppb	107.6
3	Ethylbenzene	17.84 ppb	136.5

Notes

soil sample
 sample # 31 8 to 10ft
 soil volume 50g
 water sample vol. ***ml
 temp. of sample 28c



Time Printed: Aug 18,93 11:09

Sample Times: Aug 18,93 11:00

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

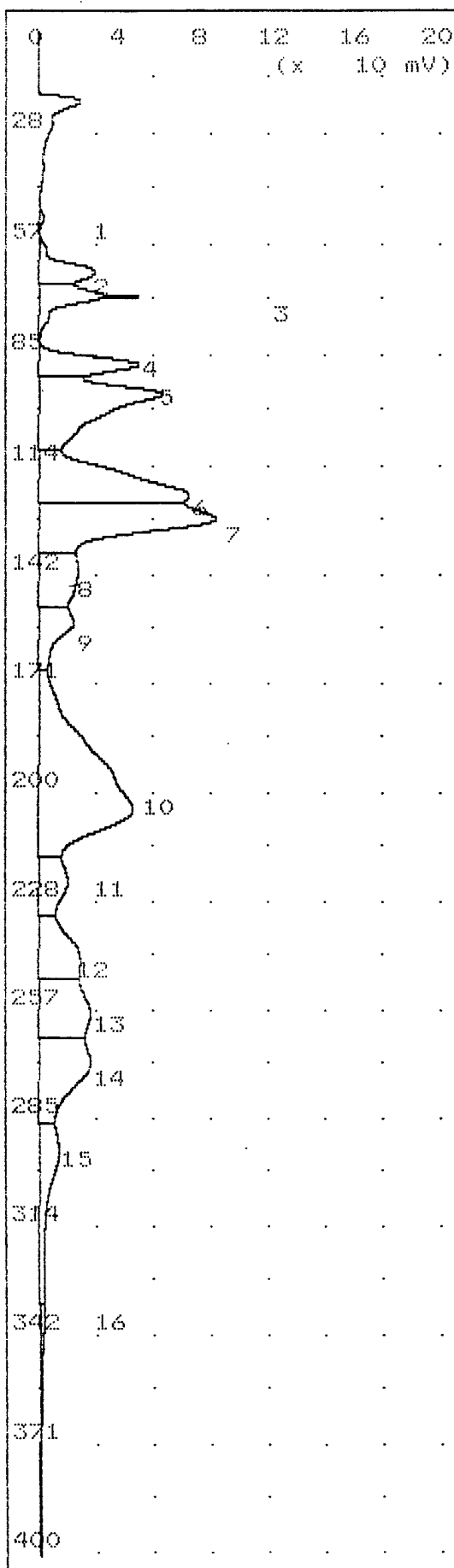
Pk	Compound Name	Area/Conc	R.T.
1	Benzene	143.0 ppb	48.5
2	Unknown	49.26 mVS	57.3
3	Unknown	369.8 mVS	61.7
4	Unknown	626.7 mVS	68.6
5	Unknown	728.4 mVS	86.4
6	Toluene	13.66 PPM1	94.0
7	Unknown	1.151 VSec	114.1
8	Unknown	2.789 VSec	126.8
9	Unknown	1.484 VSec	144.6
10	Unknown	700.3 mVS	153.4
11	Ethylbenzene	48.11 PPM2	202.4
12	M&P-Xylene	12.57 PPM1	221.0
13	Unknown	2.685 VSec	241.6
14	O-Xylene	14.31 PPM1	267.7
15	Unknown	1.408 VSec	292.8
16	Unknown	443.7 mVS	333.0

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample

sample #31 10 to 12 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c



Time Printed: Aug 18, 93 11:26

Sample Time: Aug 18, 93 11:16

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 32 C

Max Gain 1000

Analysis Time 400.0 sec

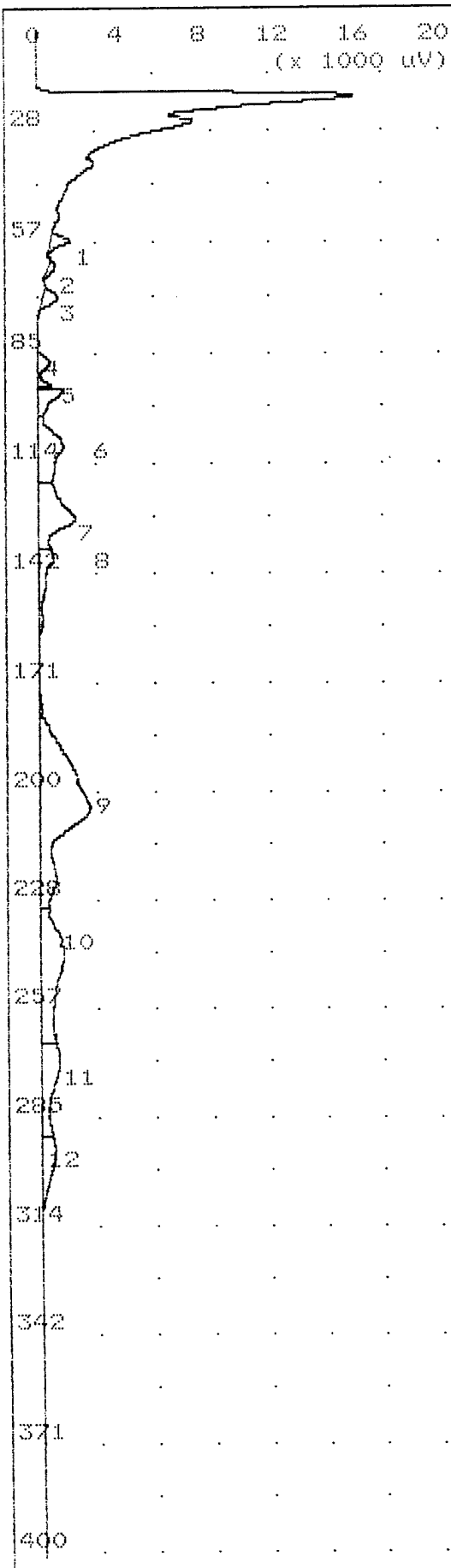
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	22.73 ppb	48.4
2	Unknown	154.7 mVS	62.2
3	Unknown	178.0 mVS	68.8
4	Unknown	236.8 mVS	86.2
5	Toluene	2.907 ppm	93.8
6	Unknown	640.6 mVS	119.8
7	Unknown	740.2 mVS	126.0
8	Unknown	249.6 mVS	139.7
9	Unknown	173.8 mVS	153.4
10	Ethylbenzene	7.311 ppm	202.2
11	M&P-Xylene	1.585 ppm	220.6
12	Unknown	275.2 mVS	241.8
13	O-Xylene	3.263 ppm	255.7
14	Unknown	399.1 mVS	269.0
15	Unknown	214.7 mVS	292.5
16	Unknown	56.21 mVS	332.0

Notes

soil sample
sample #31 12 to 14 ft
soil volume 50g
water sample vol. ****ml
temp. of sample 28c

Analysis #30 10S+ GC Function Analysis Report



Time Printed: Aug 18,93 11:44
 Sample Time: Aug 18,93 11:35
 Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

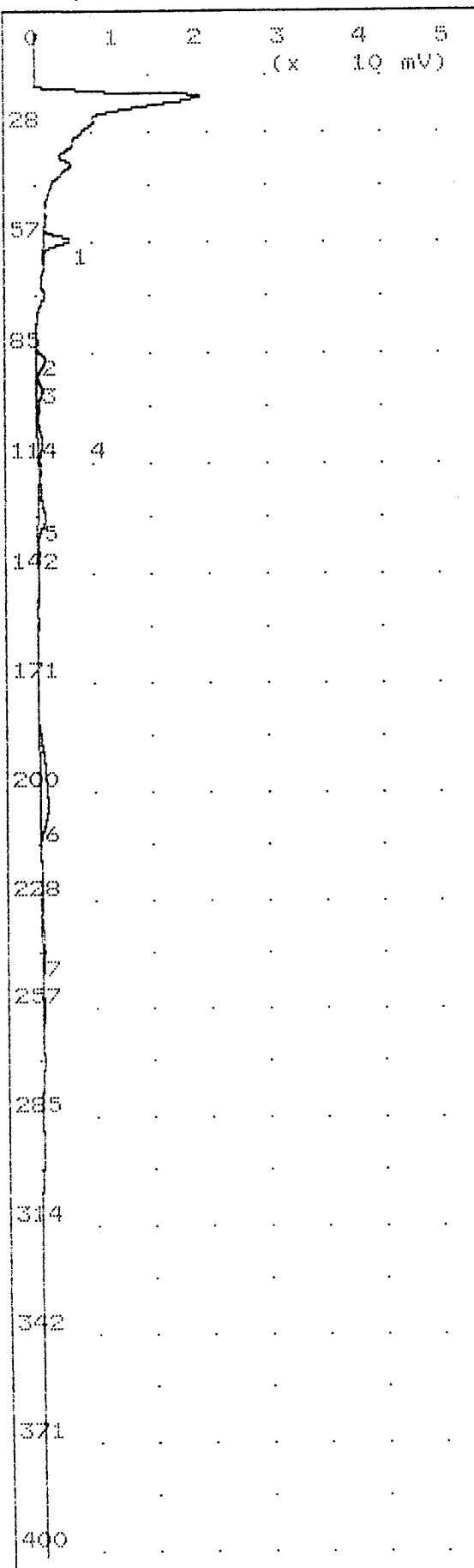
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.022 ppb	55.0
2	Unknown	0.907 mVS	61.0
3	Unknown	2.718 mVS	68.9
4	Unknown	3.271 mVS	85.7
5	Toluene	35.48 ppb	93.8
6	Unknown	16.71 mVS	107.2
7	Unknown	21.70 mVS	126.1
8	Unknown	12.75 mVS	136.0
9	Ethylbenzene	441.0 ppb	202.0
10	M&P-Xylene	302.7 ppb	237.8
11	O-Xylene	160.8 ppb	268.0
12	Unknown	10.13 mVS	292.8

Notes

soil sample
 sample #31 16 to 18 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

Analysis #32 10S+ GC Function Analysis Report

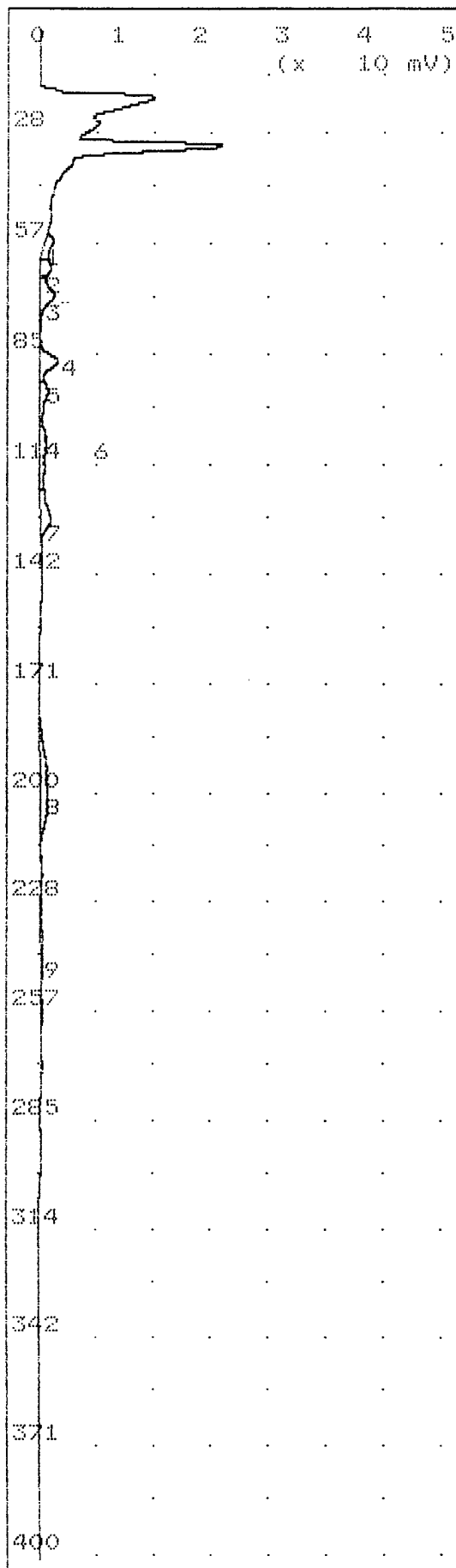


Time Printed: Aug 18,93 11:56
 Sample Time: Aug 18,93 11:47
 Method
 Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report		
Pk	Compound Name	Area/Conc R.T.
1	Benzene	27.60 ppb 54.6
2	Unknown	5.397 mVS 85.6
3	Unknown	4.234 mVS 92.9
4	Toluene	30.31 ppb 107.2
5	Unknown	6.972 mVS 125.8
6	Ethylbenzene	156.9 ppb 202.4
7	M&P-Xylene	43.78 ppb 240.0

Notes

water sample
 sample #31 before purge
 soil volume ~~50g~~
 water sample vol. 42.8ml
 temp. of sample 28c



Time Printed: Aug 18, 93 12:08

Sample Time: Aug 18, 93 11:59

Method

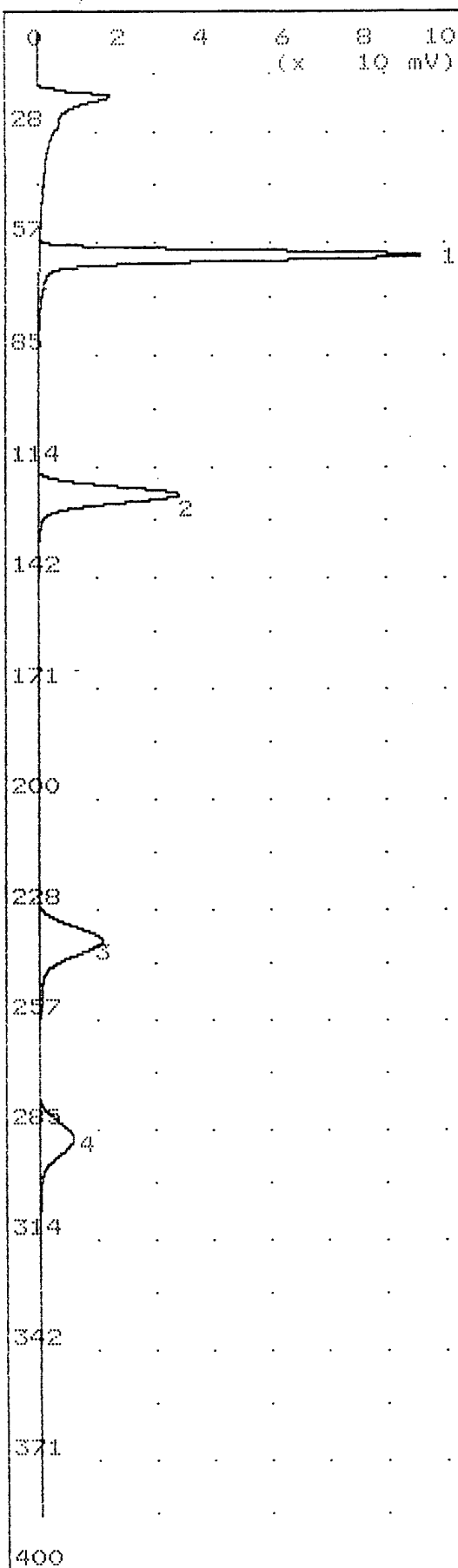
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	18.58 ppb	55.0
2	Unknown	5.933 mVS	61.3
3	Unknown	17.95 mVS	68.8
4	Unknown	14.77 mVS	85.6
5	Toluene	43.50 ppb	95.2
6	Unknown	12.49 mVS	106.8
7	Unknown	10.73 mVS	125.8
8	Ethylbenzene	151.3 ppb	199.8
9	M&P-Xylene	41.49 ppb	239.4

Notes

water sample
 sample #31 after purge
 soil volume 20g
 water sample vol. 100ml
 temp. of sample 28c



Time Printed: Aug 19,93 07:51

Sample Time: Aug 19,93 07:44

Method

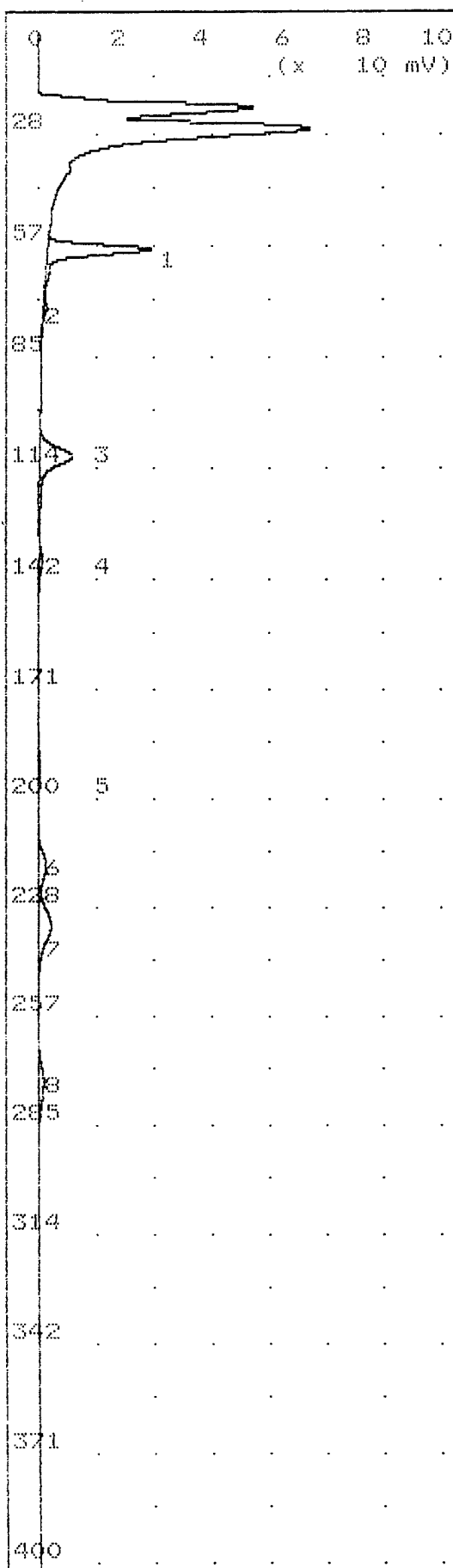
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 24 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	58.4
2	Toluene	1.000 ppm	119.6
3	M&P-Xylene	1.000 ppm	234.6
4	O-Xylene	1.000 ppm	285.8

Notes

calibration
 sample #1ppm BTEX gas standard
 soil volume 50g
 water sample vol. ***ml
 temp. of sample 28c



Time Printed: Aug 19,93 08:04

Sample Time: Aug 19,93 07:53

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

E/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 26 C

Max Gain 1000

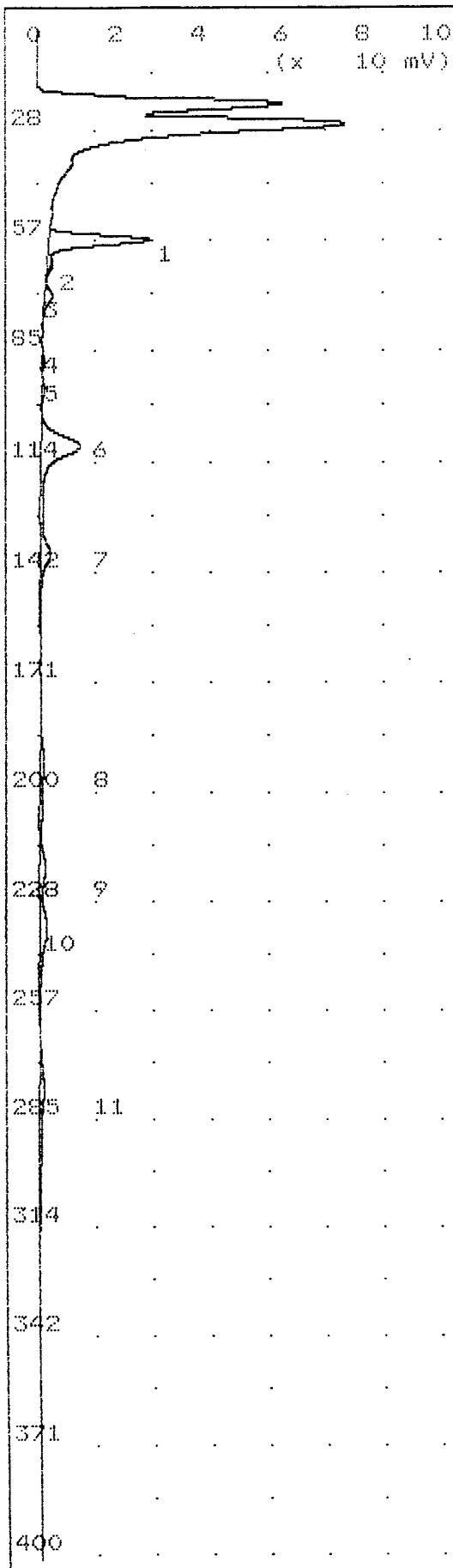
Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	245.6 ppb	56.0
2	Unknown	2.167 mVS	70.9
3	Toluene	253.2 ppb	109.3
4	Unknown	6.557 mVS	136.4
5	Unknown	5.561 mVS	190.2
6	Ethylbenzene	107.9 ppb	215.6
7	M&P-Xylene	570.0 ppb	231.6
8	O-Xylene	268.3 ppb	273.0

Notes

calibration
 sample #0.2ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c
 0.2ug/50g soil=4ug/kg
 60 benzene = 1 ug/kg
 65 toluene = 1 ug/kg
 30 ethylbenzene = 1 ug/kg
 70 total xylenes = 1 ug/kg



Time Printed: Aug 19,93 08:29

Sample Time: Aug 19,93 08:19

Method

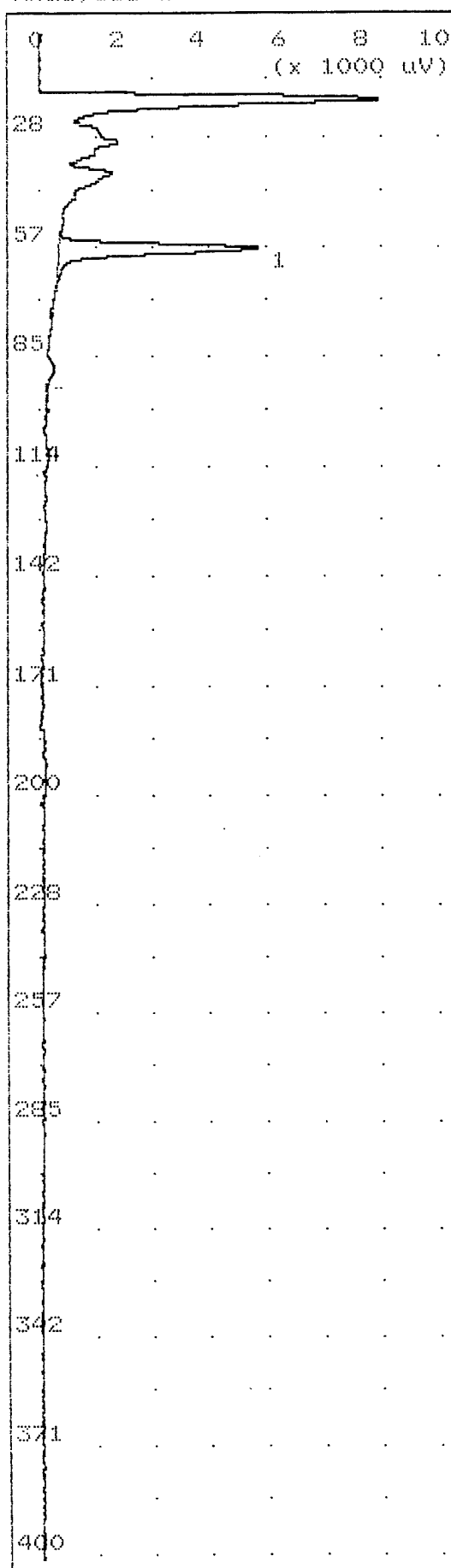
Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 29 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	254.4 ppb	55.0
2	Unknown	0.735 mVS	61.2
3	Unknown	6.685 mVS	69.7
4	Unknown	1.217 mVS	86.2
5	Unknown	2.279 mVS	94.0
6	Toluene	368.4 ppb	108.2
7	Unknown	18.71 mVS	136.0
8	Unknown	14.57 mVS	190.6
9	Ethylbenzene	77.87 ppb	217.6
10	M&P-Xylene	354.5 ppb	233.4
11	O-Xylene	254.8 ppb	275.4

Notes

calibration
 sample #0.2ml of 1ug/ml BTEX
 soil volume **g
 water sample vol. 40.0ml
 temp. of sample 28c
 0.2ug/40ml H2O=5ug/l
 50 benzene = 1 ug/l
 75 toluene = 1 ug/l
 15 ethylbenzene = 1 ug/l
 40 total xylenes = 1 ug/l



Time Printed: Aug 19,93 08:55

Sample Time: Aug 19,93 08:46

Method

Slope Up	3.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	45.0	sec
Window Percent	35.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	30	C
Max Gain	1000	
Analysis Time	400.0	sec

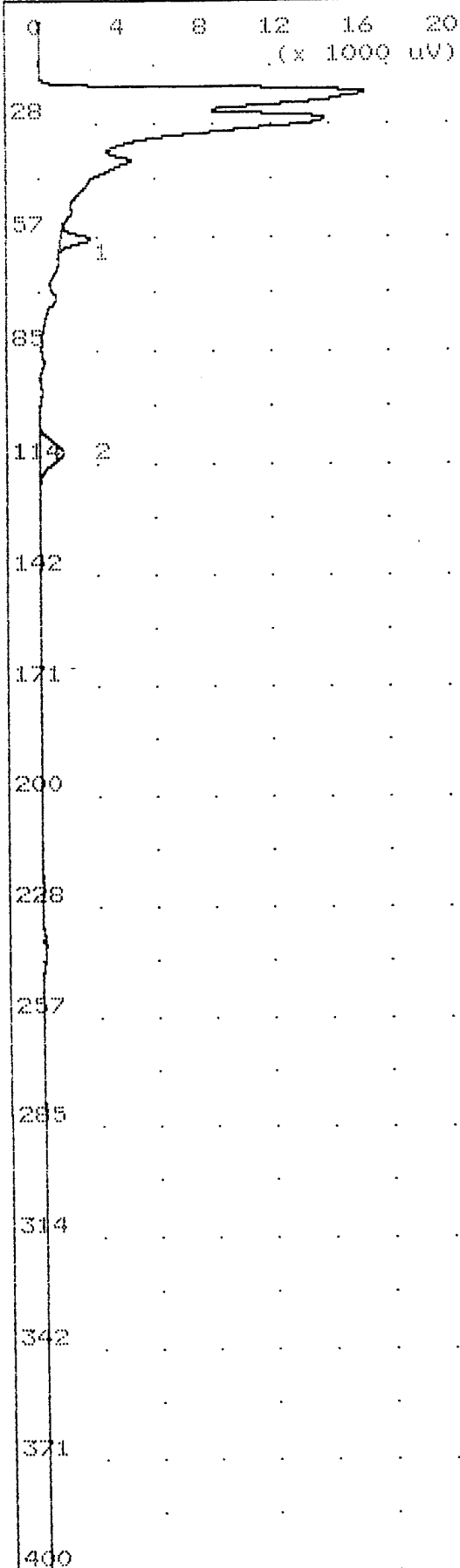
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	49.34 ppb	55.5

Notes

zero check
 sample #
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 09:07

Sample Time: Aug 19,93 08:58

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

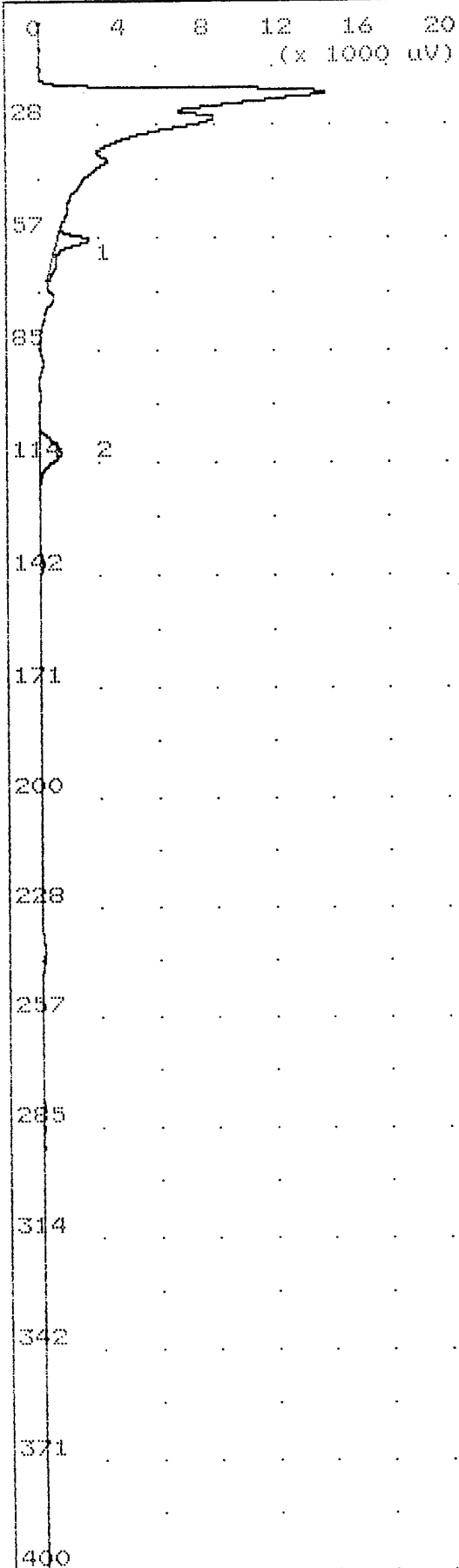
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	12.34 ppb	55.6
2	Toluene	49.10 ppb	109.2

Notes

soil sample
 sample # 32 8 to 10 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 09:24

Sample Time: Aug 19,93 09:15

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

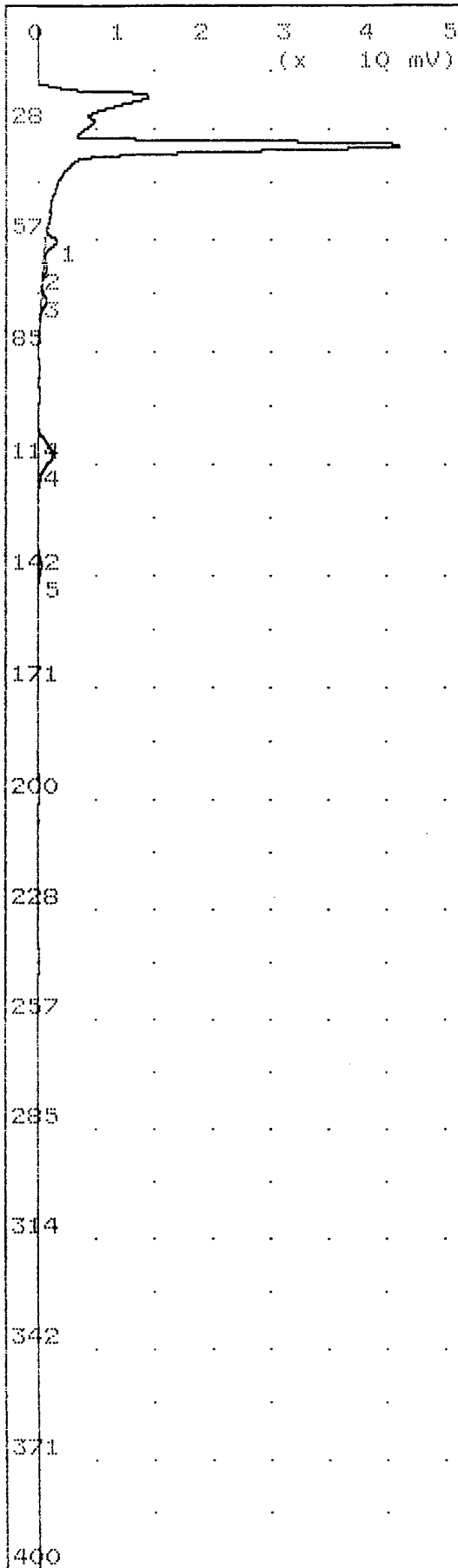
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	17.97 ppb	55.5
2	Toluene	45.15 ppb	109.0

Notes

soil sample
 sample # 32 16 to 18 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 09:59

Sample Time: Aug 19,93 09:50

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

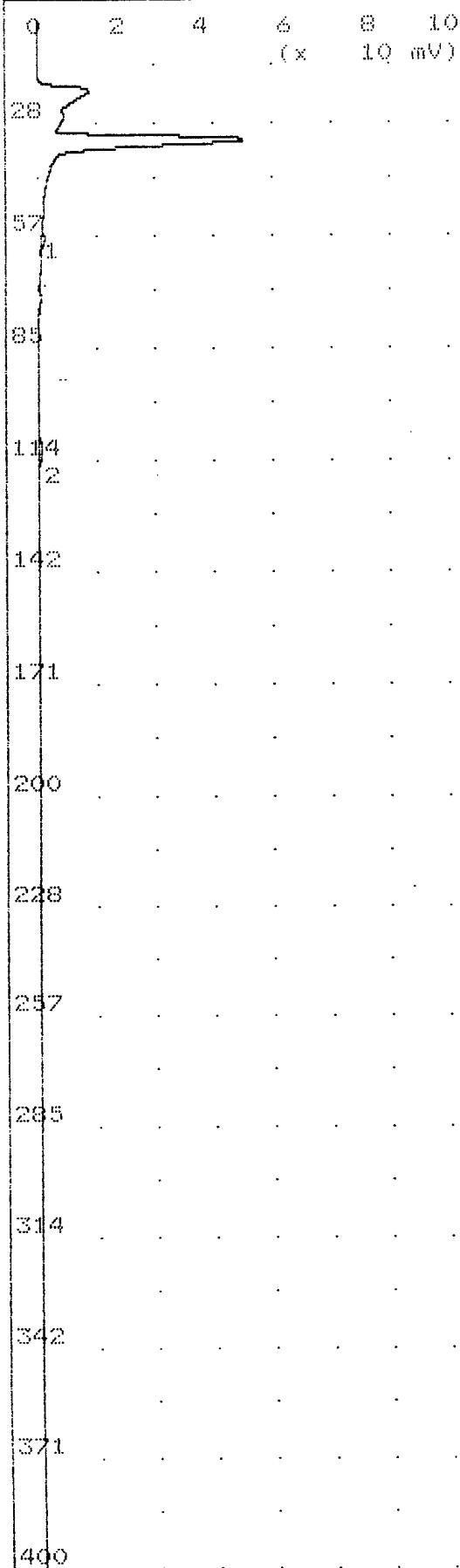
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	13.49 ppb	55.8
2	Unknown	1.025 mVS	62.3
3	Unknown	2.168 mVS	70.5
4	Toluene	84.66 ppb	109.7
5	Unknown	4.493 mVS	138.1

Notes

water sample
 sample # 32 before purge (0920)
 soil volume **g
 water sample vol. 41.9ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19, 93 10:17

Sample Time: Aug 19, 93 10:08

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

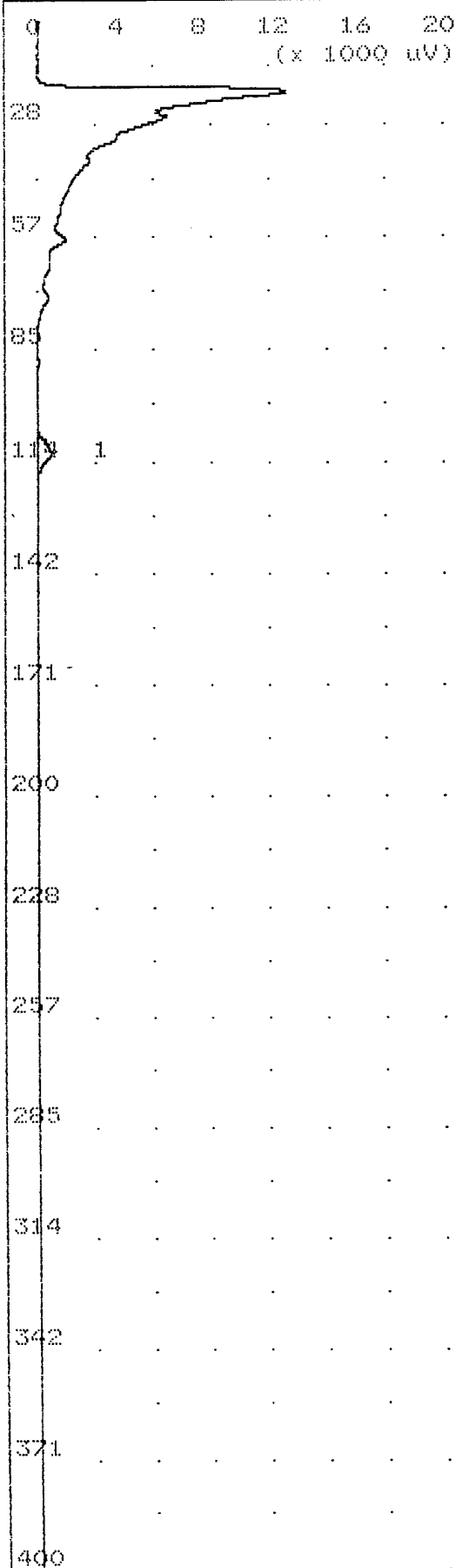
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.909 ppb	55.9
2	Toluene	41.09 ppb	110.2

Notes

water sample
 sample # 32 after purge (0944)
 soil volume **g
 water sample vol. 42.0ml
 temp. of sample 28c

	soil	liquid
R	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 10:35

Sample Time: Aug 19,93 10:26

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

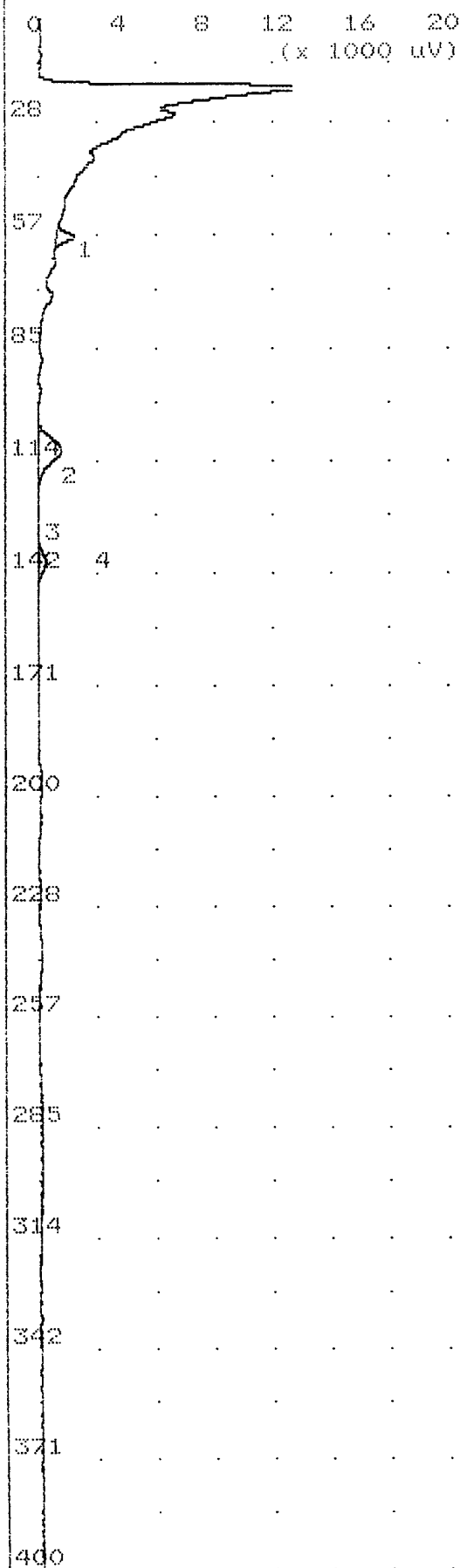
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Toluene	32.51 ppb	106.5

Notes

soil sample
 sample # 33 0 to 2 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 10:45

Sample Time: Aug 19,93 10:36

Method

Slope Up	3.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	45.0	sec
Window Percent	35.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	31	C
Max Gain	1000	
Analysis Time	400.0	sec

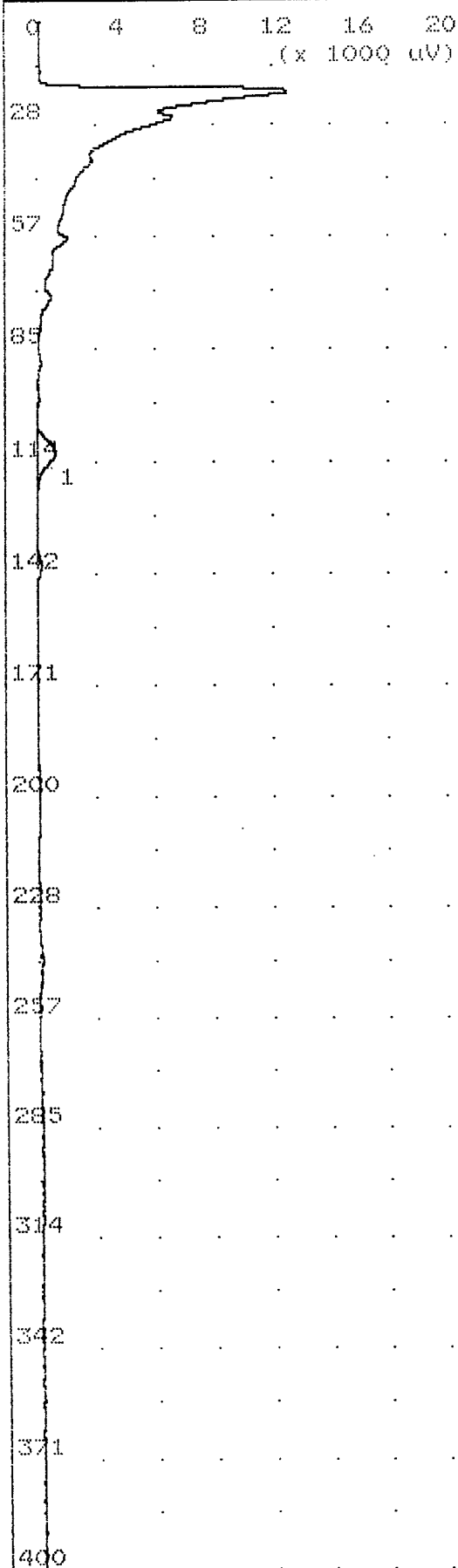
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	7.233 ppb	55.5
2	Unknown	15.47 mVS	110.1
3	Toluene	14.99 ppb	127.4
4	Unknown	7.023 mVS	138.0

Notes

soil sample
 sample # 33 2 to 4 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 10:55

Sample Time: Aug 19,93 10:47

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

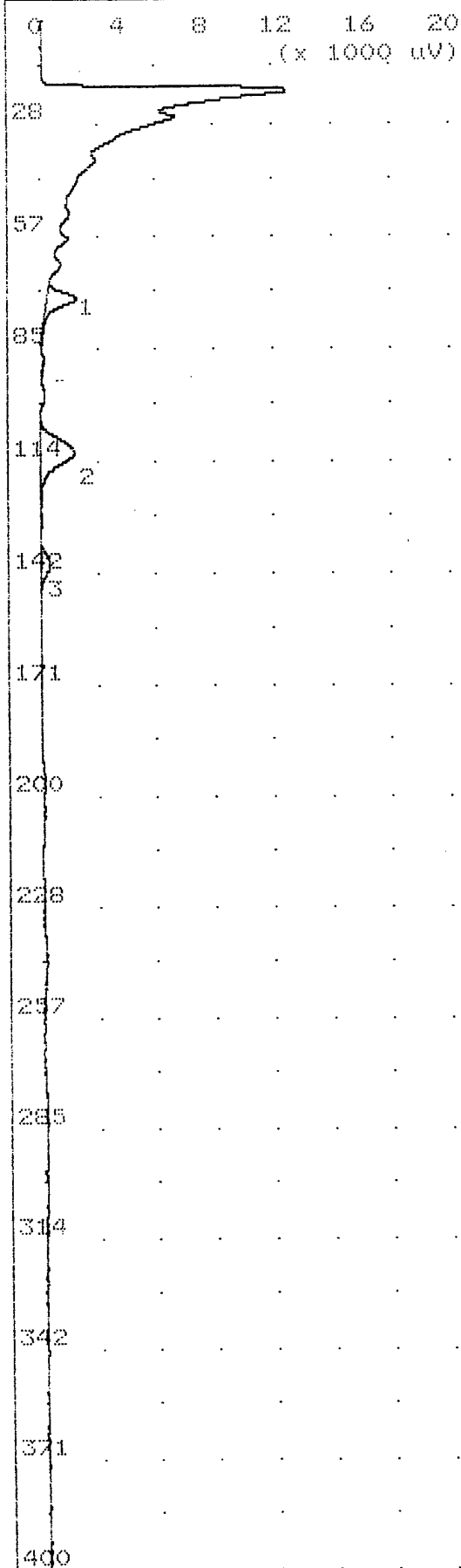
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Toluene	35.99 ppb	110.5

Notes

soil sample
 sample # 33 4 to 6 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 11:06

Sample Time: Aug 19,93 10:57

Method

Slope Up	3.000	mV/Sec
Slope Down	3.000	mV/Sec
Min Area	1.000	mVSec
Min Height	0.000	mV
Analysis Delay	45.0	sec
Window Percent	35.0	%
Det Flow	10	ml/min
B/F Flow	10	ml/min
Aux Flow	0	ml/min
Oven Temp	45	C
Amb Temp	32	C
Max Gain	1000	
Analysis Time	400.0	sec

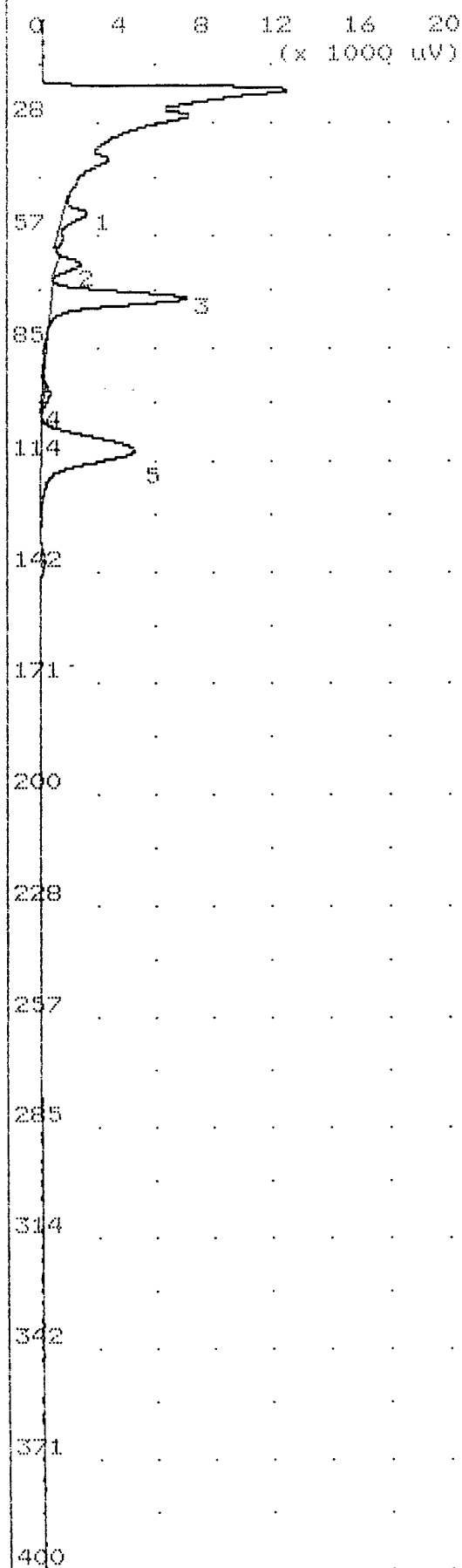
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	19.47 ppb	70.9
2	Toluene	82.66 ppb	110.6
3	Unknown	4.795 mVS	138.6

Notes

soil sample
 sample # 33 6 to 8 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 11:16

Sample Time: Aug 19,93 11:07

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

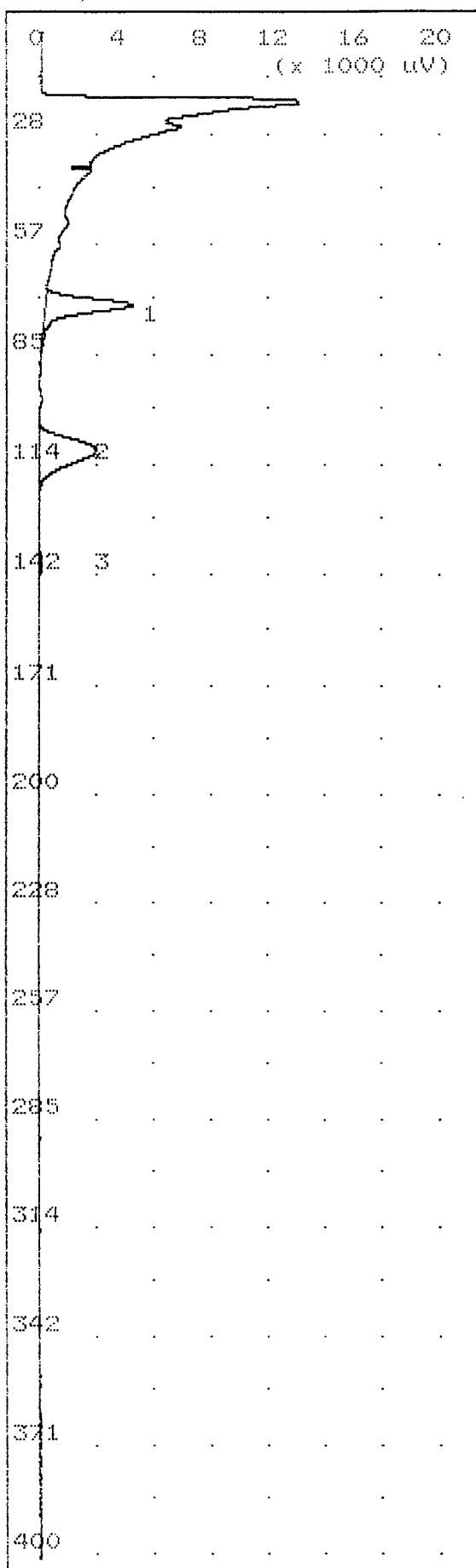
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	4.916 mVS	49.6
2	Benzene	11.55 ppb	62.7
3	Unknown	26.13 mVS	71.0
4	Unknown	1.241 mVS	95.4
5	Toluene	186.3 ppb	110.0

Notes

soil sample
 sample # 33 8 to 10 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 11:27

Sample Time: Aug 19,93 11:18

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

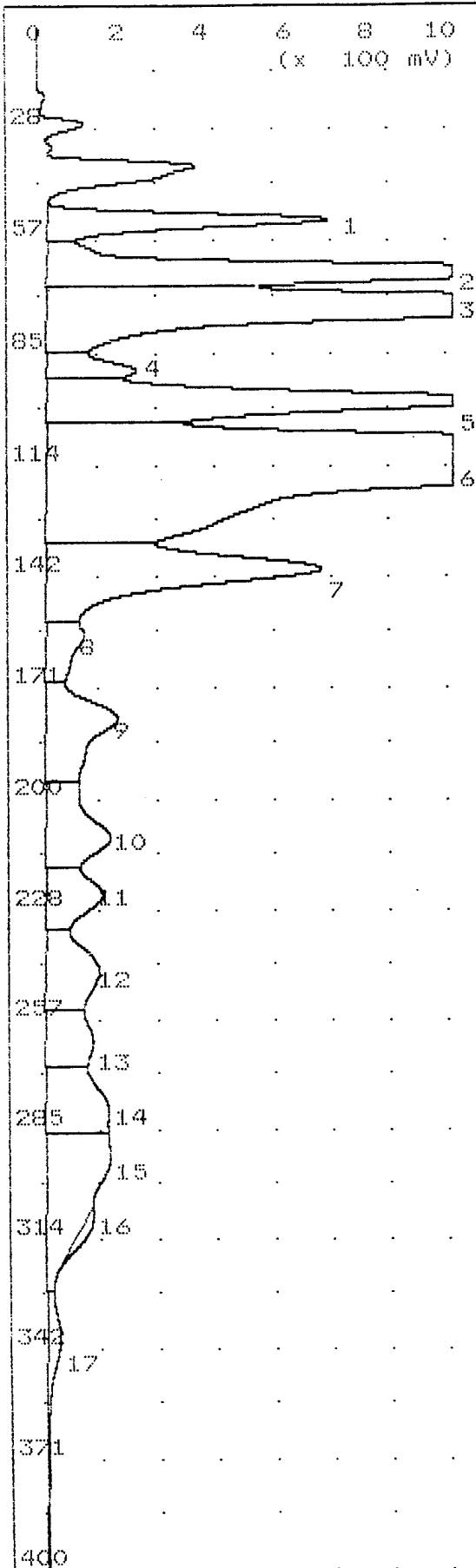
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	57.06 ppb	70.9
2	Toluene	124.0 ppb	108.5
3	Unknown	2.313 mVS	137.2

Notes

soil sample
 sample # 33 10 to 12 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 11:37

Sample Times: Aug 19,93 11:28

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 32 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

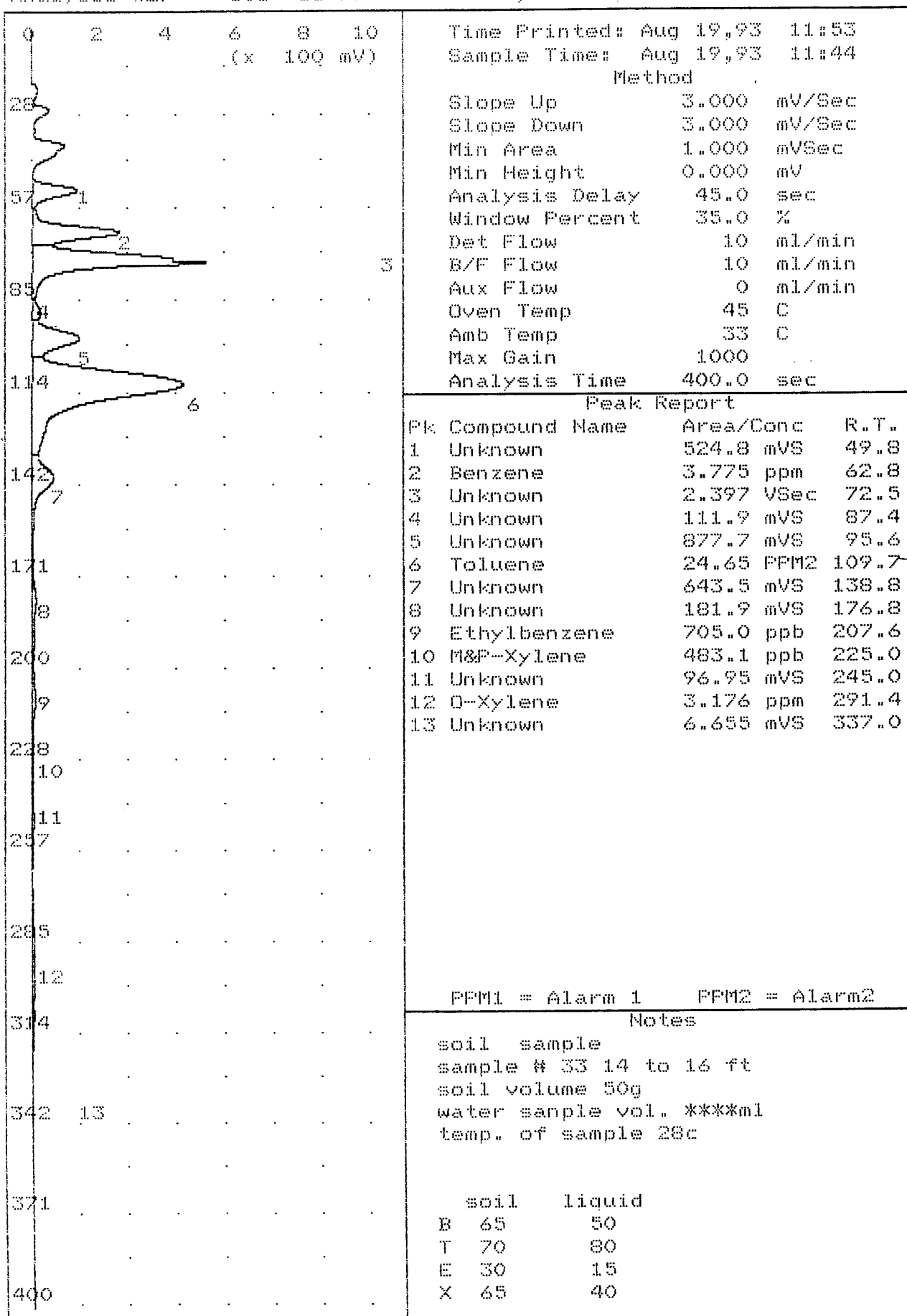
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.944 VSec	50.0
2	Benzene	26.10 PPM2	63.0
3	Unknown	18.91 VSec	71.7
4	Unknown	1.104 VSec	87.8
5	Unknown	8.652 VSec	96.0
6	Toluene	283.5 PPM2	111.0
7	Unknown	6.899 VSec	138.9
8	Unknown	1.133 VSec	155.8
9	Unknown	2.817 VSec	177.2
10	Unknown	2.433 VSec	207.6
11	Ethylbenzene	9.446 ppm	222.4
12	M&P-Xylene	32.41 PPM2	242.1
13	Unknown	1.599 VSec	260.8
14	Unknown	2.344 VSec	279.2
15	O-Xylene	41.90 PPM2	290.4
16	Unknown	232.2 mVS	306.4
17	Unknown	681.4 mVS	338.0

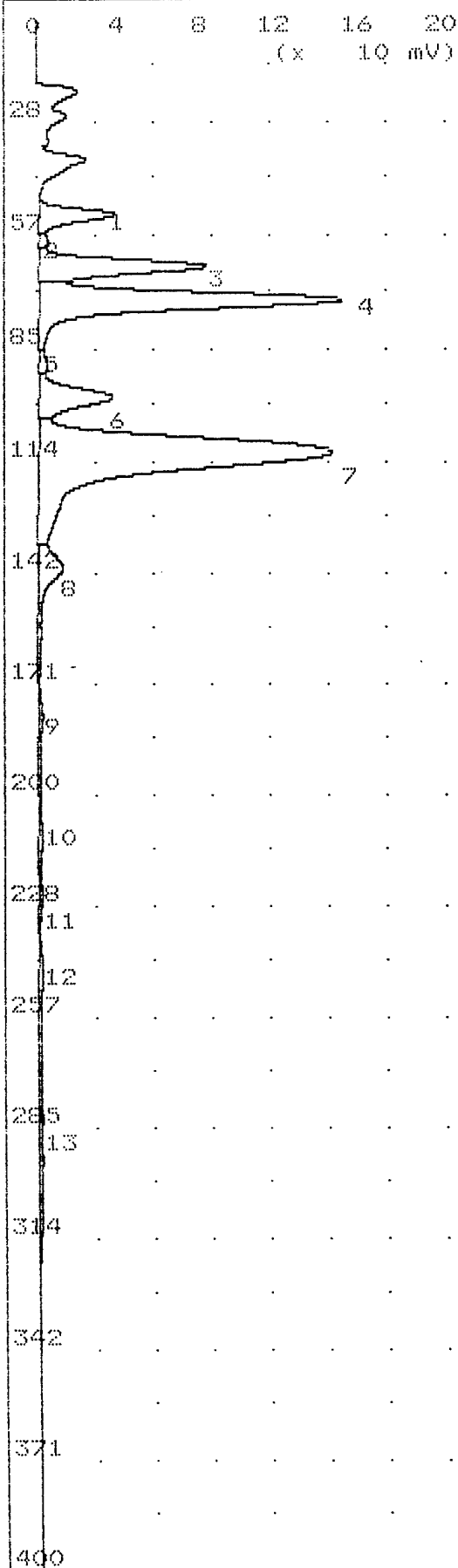
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

soil sample
 sample # 33 12 to 14 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40





Time Printed: Aug 19, 93 12:08

Sample Time: Aug 19, 93 11:59

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 33 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

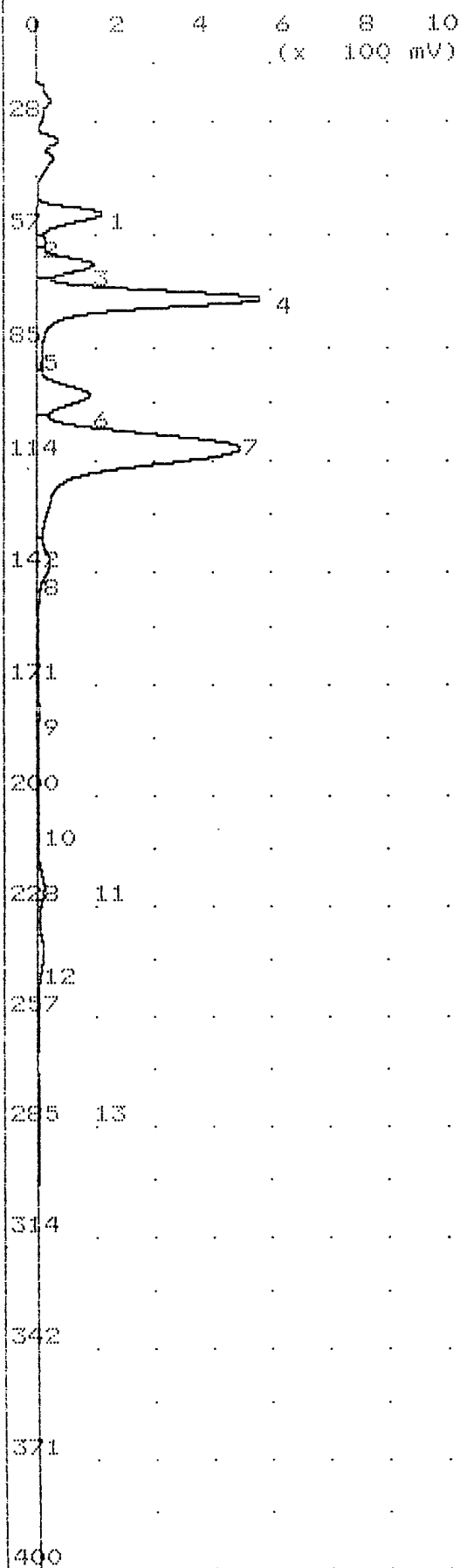
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	134.8 mVS	49.9
2	Benzene	40.57 ppb	57.0
3	Unknown	335.5 mVS	62.9
4	Unknown	750.2 mVS	71.4
5	Unknown	16.81 mVS	88.0
6	Unknown	201.3 mVS	95.8
7	Toluene	7.308 ppm	110.0
8	Unknown	112.2 mVS	139.2
9	Unknown	25.34 mVS	178.0
10	Ethylbenzene	116.1 ppb	209.0
11	M&P-Xylene	224.0 ppb	224.2
12	Unknown	38.45 mVS	243.4
13	O-Xylene	616.4 ppb	281.0

Notes

soil sample
 sample # 33 16 to 18 ft
 soil volume 50g
 water sample vol. ***ml
 temp. of sample 28c

	soil	liquid

B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 12:23

Sample Time: Aug 19,93 12:15

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

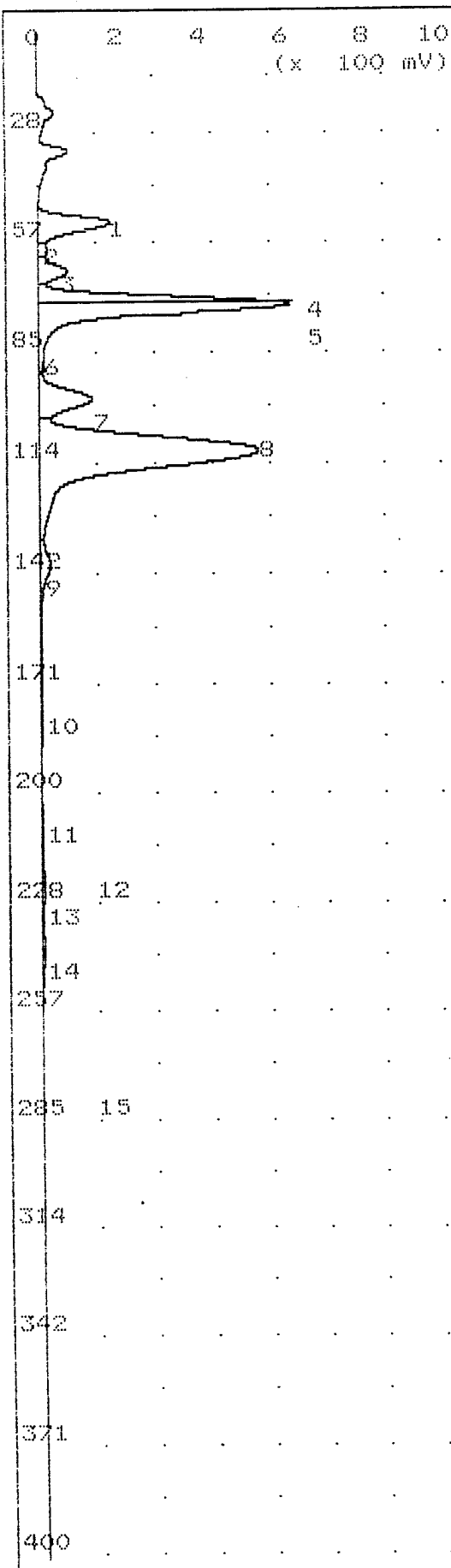
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	689.6 mVS	49.8
2	Benzene	191.5 ppb	57.4
3	Unknown	594.2 mVS	62.6
4	Unknown	3.033 VSec	71.3
5	Unknown	7.497 mVS	87.2
6	Unknown	769.4 mVS	95.6
7	Toluene	25.27 PPM2	109.2
8	Unknown	336.4 mVS	138.2
9	Unknown	77.39 mVS	176.0
10	Unknown	33.65 mVS	207.0
11	Ethylbenzene	887.6 ppb	221.6
12	M&F-Xylene	2.946 ppm	238.8
13	O-Xylene	867.8 ppb	279.7

PPM1 = Alarm 1 PPM2 = Alarm2

Notes

water sample
 sample # 33 before purge
 soil volume **g
 water sample vol. 43.3ml
 temp. of sample 28c

	soil	liquid
B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 19,93 12:39

Sample Time: Aug 19,93 12:30

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 33 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	814.3 mVS	50.0
2	Benzene	240.6 ppb	57.4
3	Unknown	310.3 mVS	62.7
4	Unknown	1.449 VSec	71.4
5	Unknown	2.026 VSec	74.2
6	Unknown	1.713 mVS	86.9
7	Unknown	807.0 mVS	95.7
8	Toluene	27.04 PPM2	109.2
9	Unknown	297.2 mVS	138.5
10	Unknown	70.79 mVS	176.4
11	Unknown	27.59 mVS	207.8
12	Ethylbenzene	197.4 ppb	222.0
13	M&P-Xylene	663.7 ppb	225.2
14	Unknown	101.9 mVS	238.8
15	O-Xylene	531.7 ppb	279.2

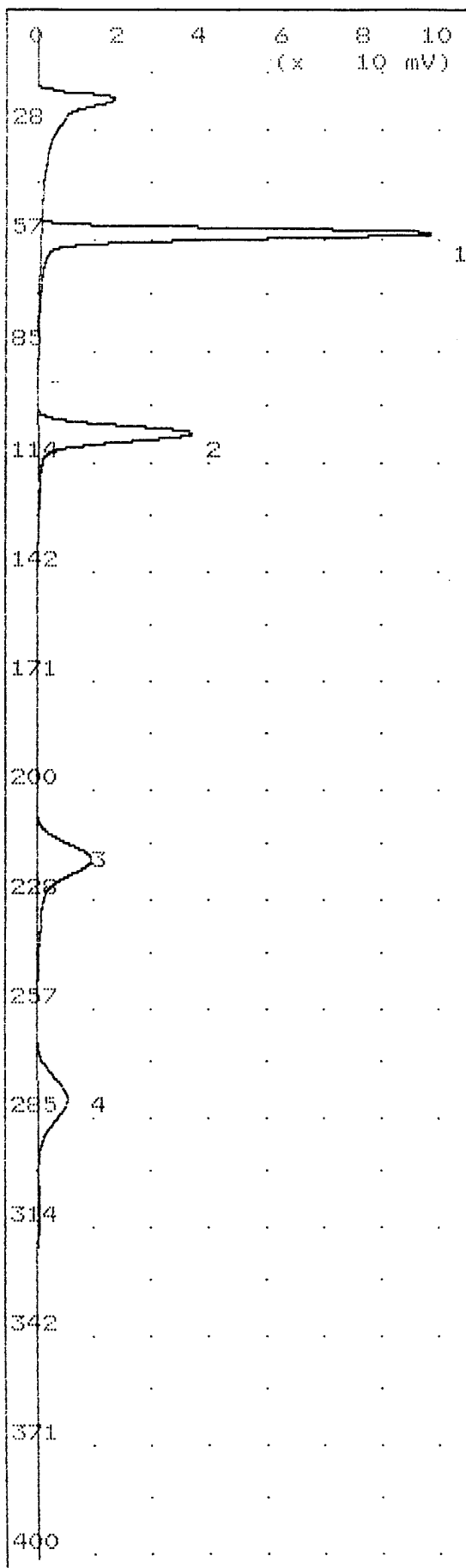
PPM1 = Alarm 1 PPM2 = Alarm2

Notes

water sample
 sample # 33 after purge
 soil volume **g
 water sample vol. 43.0ml
 temp. of sample 28c

soil liquid

B	65	50
T	70	80
E	30	15
X	65	40



Time Printed: Aug 20.93 07:42

Sample Time: Aug 20.93 07:32

Method

Slope Up 3.000 mV/Sec

Slope Down 3.000 mV/Sec

Min Area 1.000 mVSec

Min Height 0.000 mV

Analysis Delay 45.0 sec

Window Percent 35.0 %

Det Flow 10 ml/min

B/F Flow 10 ml/min

Aux Flow 0 ml/min

Oven Temp 45 C

Amb Temp 23 C

Max Gain 1000

Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	1.000 ppm	53.5
2	Toluene	1.000 ppm	104.6
3	Ethylbenzene	1.000 ppm	216.0
4	O-Xylene	1.000 ppm	278.6

Notes

calibration

sample # 1ppm BTEX gas standard

soil volume 50g

water sample vol. ****ml

temp. of sample 28c

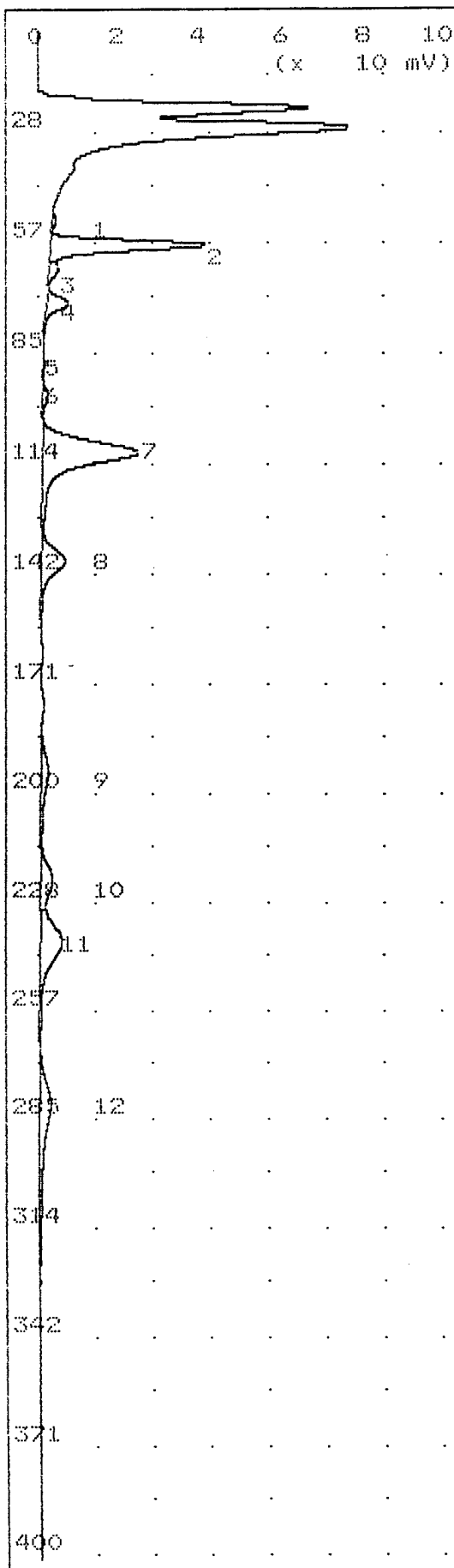
soil liquid

B

T

E

X



Time Printed: Aug 20,93 08:00

Sample Time: Aug 20,93 07:44

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 26 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

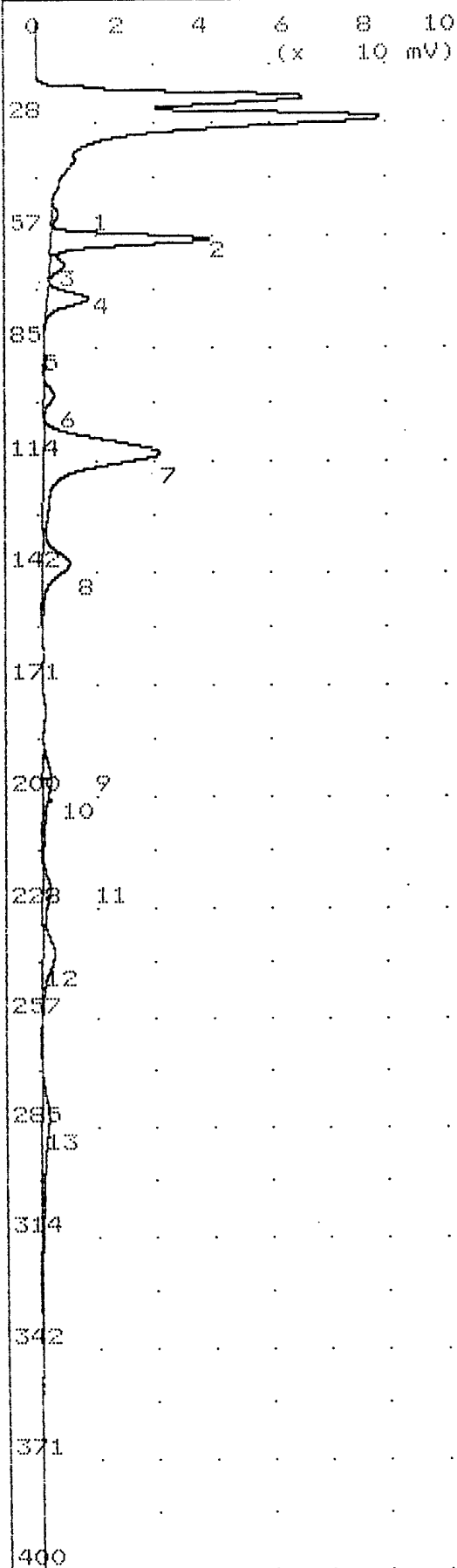
Pk	Compound Name	Area/Conc	R.T.
1	Unknown	2.007 mVS	49.3
2	Benzene	377.3 ppb	55.8
3	Unknown	7.218 mVS	62.0
4	Unknown	22.11 mVS	70.8
5	Unknown	0.693 mVS	86.2
6	Unknown	5.419 mVS	94.9
7	Toluene	865.5 ppb	109.3
8	Unknown	44.64 mVS	137.3
9	Unknown	21.44 mVS	192.0
10	Ethylbenzene	180.8 ppb	220.6
11	M&P-Xylene	900.0 ppb	236.8
12	O-Xylene	457.8 ppb	280.2

Notes

calibration
 sample # .2ml of 1ug/ml BTEX
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c
 0.2ug/50g soil=4ug/kg

soil	liquid

B 90	=1ug/kg orl
T 210	=
E 45	=
X 115	=



Time Printed: Aug 20, 93 08:27

Sample Time: Aug 20, 93 08:15

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 28 C
 Max Gain 1000
 Analysis Time 400.0 sec

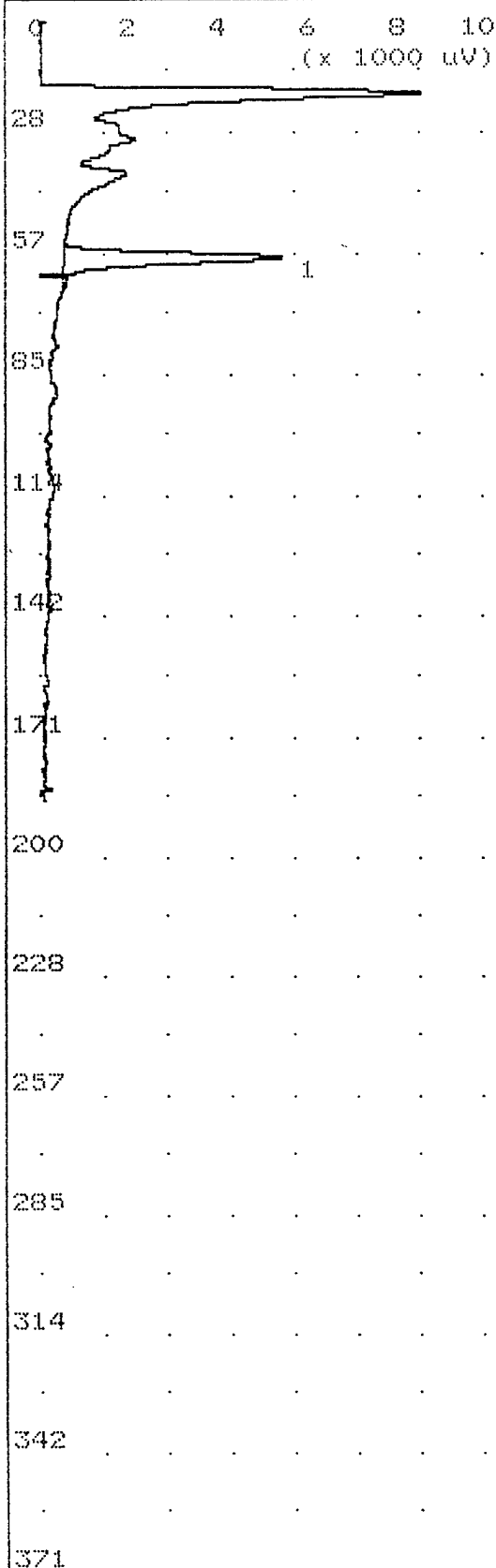
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	4.506 mVS	49.8
2	Benzene	377.0 ppb	56.0
3	Unknown	13.13 mVS	62.6
4	Unknown	41.26 mVS	71.3
5	Unknown	1.611 mVS	87.6
6	Unknown	11.38 mVS	95.6
7	Toluene	1.139 ppm	110.1
8	Unknown	50.30 mVS	138.6
9	Unknown	8.634 mVS	193.6
10	Unknown	15.34 mVS	199.0
11	Ethylbenzene	107.3 ppb	222.2
12	M&P-Xylene	473.1 ppb	238.2
13	O-Xylene	331.1 ppb	281.8

Notes

calibration
 sample # .2ml of 1ug/ml BTEX
 soil volume 30g
 water sample vol. *40*ml
 temp. of sample 28c
 0.2ug/40ml H2O=5ug/l

	soil	liquid	
B	95	90	=1ug/kg or l
T	230	220	=
E	40	20	=
X	105	55	=



Time Printed: Aug 20, 93 08:46

Sample Time: Aug 20, 93 08:41

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 29 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	44.30 ppb	56.1

Notes

~~calibration~~*zero check*~~sample # .2ml of 1ug/ml BTEX~~~~soil volume 50g~~

water sample vol. ****ml

temp. of sample 28c

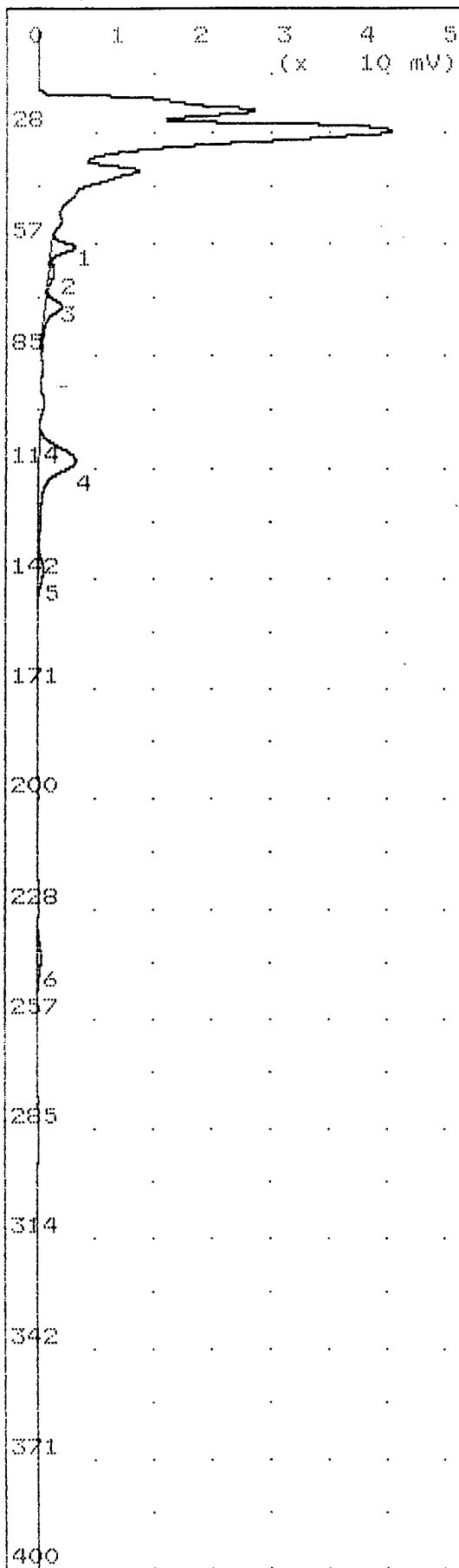
0.2ug/40ml H2O=5ug/l

soil liquid

B 95 70 =1ug/kg orl

T 230 240 =

E 40 20 =



Time Printed: Aug 20,93 08:57

Sample Time: Aug 20,93 08:48

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

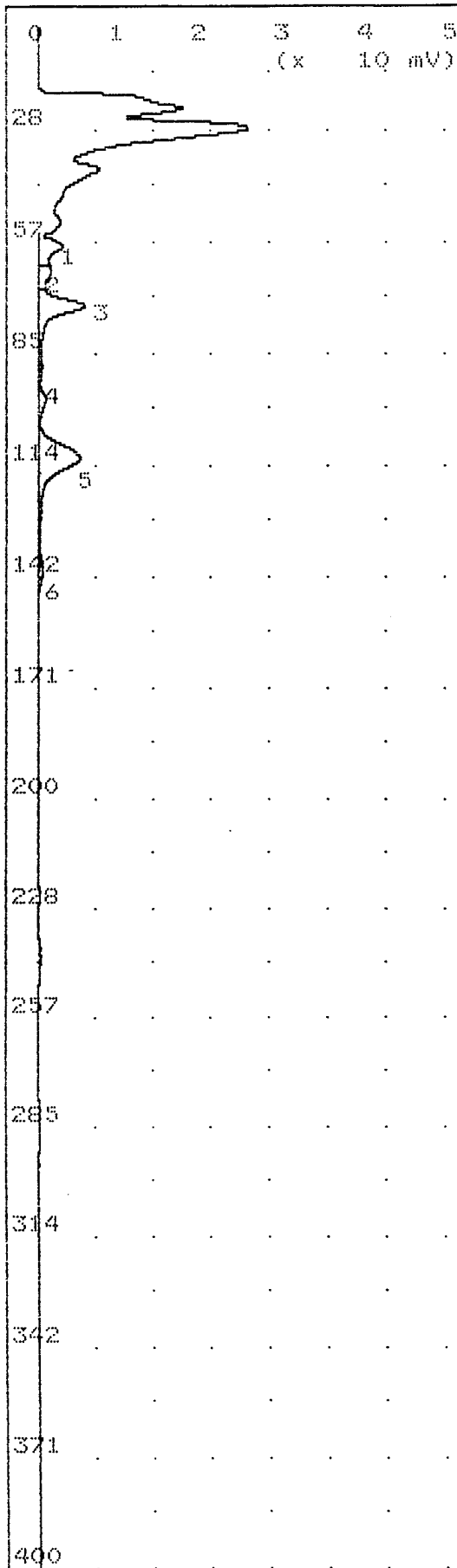
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	29.03 ppb	56.2
2	Unknown	2.240 mVS	62.2
3	Unknown	8.172 mVS	71.3
4	Toluene	186.8 ppb	110.2
5	Unknown	4.974 mVS	139.3
6	M&P-Xylene	66.21 ppb	238.8

Notes

soil sample
 sample # 34 8 to 10 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid	
B	95	80	=1ug/kg or l
T	230	230	=
E	40	20	=
X	105	50	=



Time Printed: Aug 20, 93 09:17

Sample Times: Aug 20, 93 09:08

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

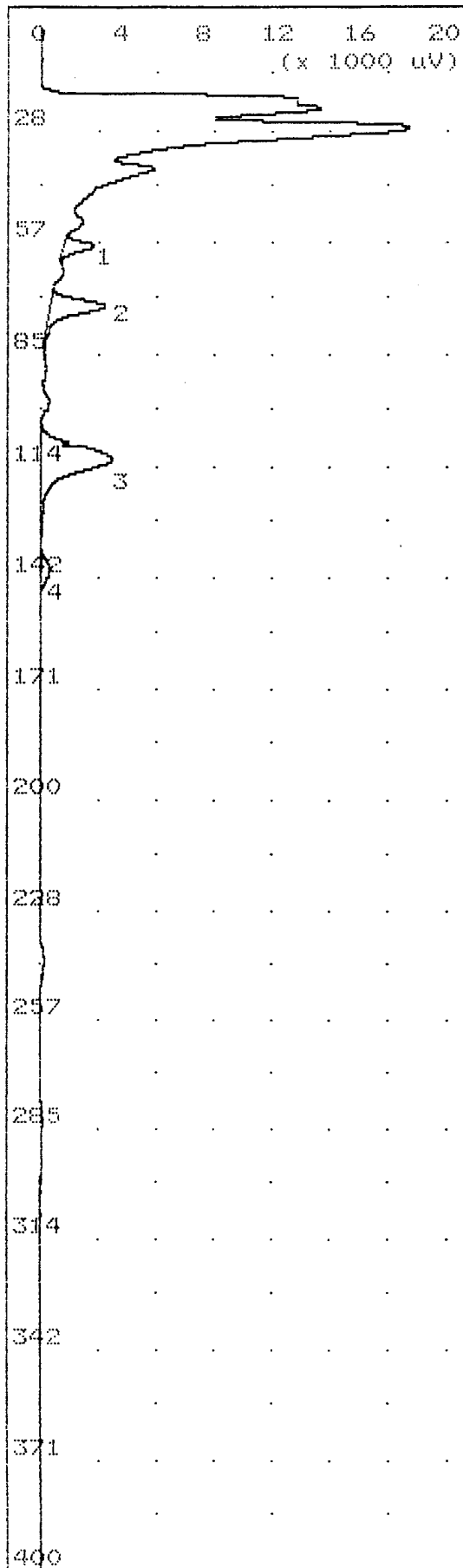
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	81.74 ppb	56.3
2	Unknown	13.38 mVS	63.5
3	Unknown	54.63 mVS	71.3
4	Unknown	12.90 mVS	95.0
5	Toluene	300.7 ppb	110.5
6	Unknown	7.018 mVS	138.6

Notes

soil sample
 sample # 34 14 to 16 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid	
B	95	80	=1ug/kg orl
T	230	230	=
E	40	20	=
X	105	50	=



Time Printed: Aug 20, 93 09:33

Sample Time: Aug 20, 93 09:24

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 30 C
 Max Gain 1000
 Analysis Time 400.0 sec

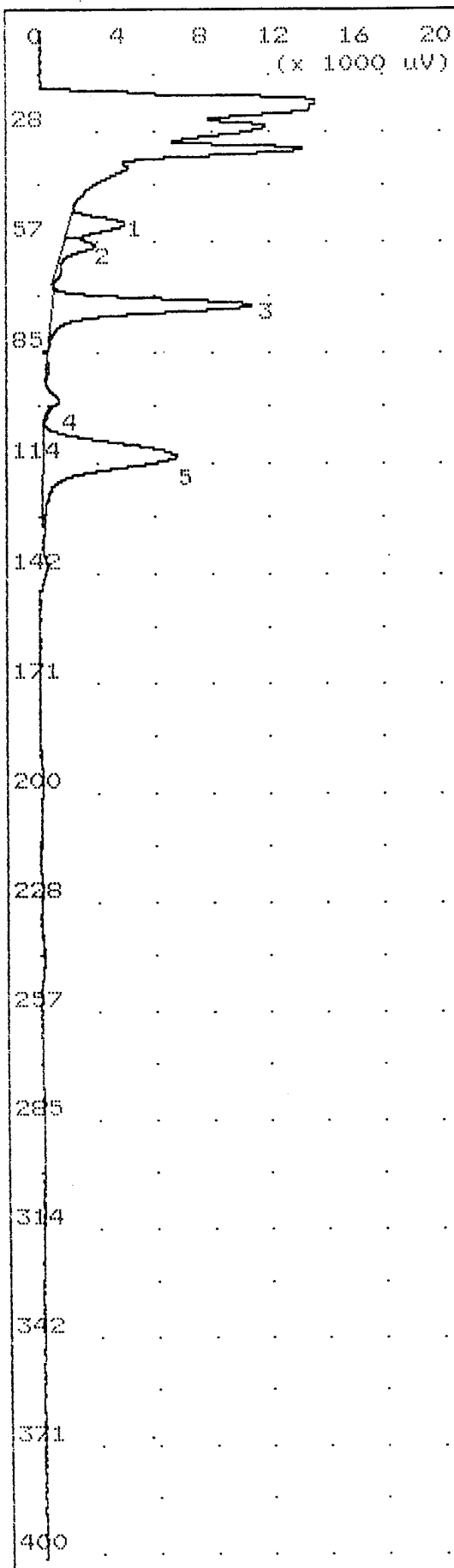
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Benzene	13.59 ppb	56.2
2	Unknown	11.58 mVS	71.0
3	Toluene	145.4 ppb	110.2
4	Unknown	3.921 mVS	139.0

Notes

soil sample
 sample # 34 16 to 18 ft
 soil volume 50g
 water sample vol. ****ml
 temp. of sample 28c

	soil	liquid	
B	95	80	=1ug/kg or 1
T	230	230	=
E	40	20	=
X	105	50	=



Time Printed: Aug 20, 93 09:56

Sample Time: Aug 20, 93 09:47

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

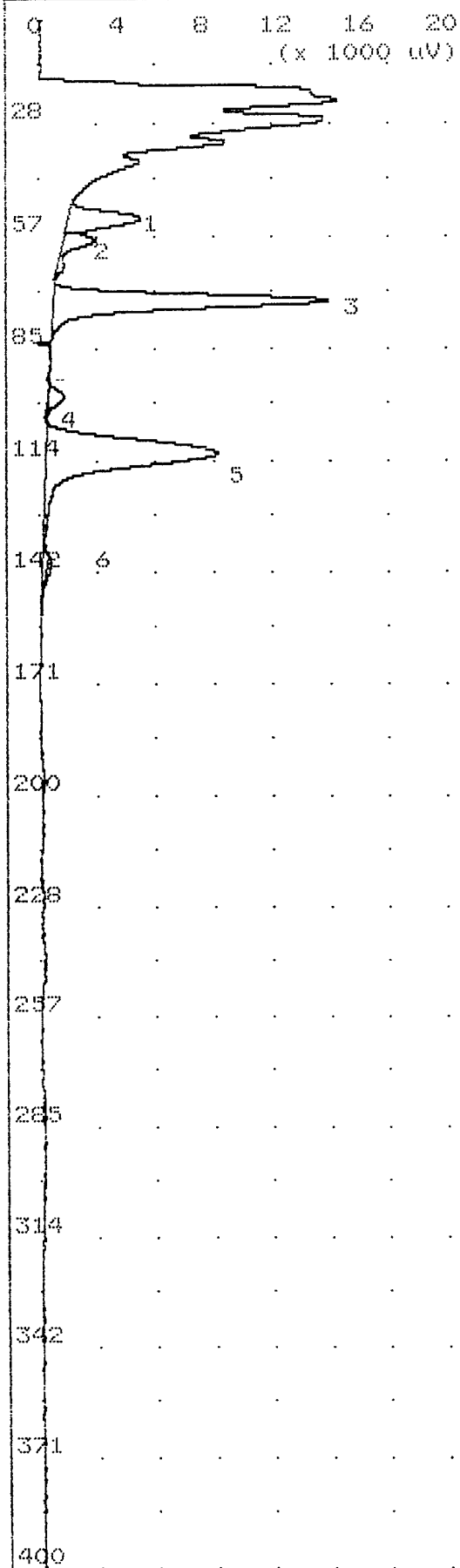
Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	11.53 mVS	50.2
2	Benzene	17.80 ppb	56.1
3	Unknown	42.77 mVS	71.6
4	Unknown	2.170 mVS	96.5
5	Toluene	256.7 ppb	110.4

Notes

water sample
 sample # 34 after purge
 soil volume **g
 water sample vol. 42.7ml
 temp. of sample 28c

	soil	liquid	
B	95	80	=1ug/kg orl
T	230	230	=
E	40	20	=
X	105	50	=



Time Printed: Aug 20,93 09:45

Sample Time: Aug 20,93 09:35

Method

Slope Up 3.000 mV/Sec
 Slope Down 3.000 mV/Sec
 Min Area 1.000 mVSec
 Min Height 0.000 mV
 Analysis Delay 45.0 sec
 Window Percent 35.0 %
 Det Flow 10 ml/min
 B/F Flow 10 ml/min
 Aux Flow 0 ml/min
 Oven Temp 45 C
 Amb Temp 31 C
 Max Gain 1000
 Analysis Time 400.0 sec

Peak Report

Pk	Compound Name	Area/Conc	R.T.
1	Unknown	15.12 mVS	50.5
2	Benzene	18.81 ppb	56.4
3	Unknown	55.18 mVS	71.6
4	Unknown	3.349 mVS	96.4
5	Toluene	343.1 ppb	110.4
6	Unknown	0.642 mVS	137.4

Notes

water sample
 sample # 34 before purge
 soil volume **g
 water sample vol. 43.0ml
 temp. of sample 28c

	soil	liquid	
B	95	80	=1ug/kg or l
T	230	230	=
E	40	20	=
X	105	50	=

Appendix B
Soil Boring Logs
Well Construction Diagrams



HALLIBURTON NUS

Environmental Corporation

BORING SB-15

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 659,070 E 3,218,195

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.6

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/6/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	CLAY (CH) - black (2.5 YR 0), stiff, rootlets			SPT	SB-15A	24 / 12		0/0	
	CLAY (CH) - black (5 YR 2.5/1), stiff to hard, rootlets, calcareous nodules, slightly silty			SPT		24 / 24		0/0	
20	CLAY (CH) - black (5 YR 2.5/1), with brown streaks, stiff, dry, rootlets, white to buff calcareous nodules		5	SPT		24 / 8		0/1	
	CLAY (CL) - very dark gray (7.5 YR 3/0), medium stiff, plastic, slightly silty, brown inclusions			SPT		24 / 8		0/14	
	CLAY (CL) - olive gray (5 YR 4/2), occasional yellow streaks, medium stiff, plastic, slightly silty			SPT		24 / 8		0/8	
15	CLAY (CL) - yellowish red (5 YR 4/6), mottled with gray, occasional black staining, stiff, slightly silty, dry, occasional < 1/8-inch calcareous nodules		10	SPT		24 / 18		0/3	Water level 10.7 feet BLS after 20 minutes
	CLAY (CL) - yellowish red (5 YR 4/6), occasional gray streaks, medium stiff, plastic, slightly silty, damp			SPT	SB-15B	24 / 15		0/10	
	CLAY (CL) - strong brown (7.5 YR 4/6), occasional gray and yellow streaks, medium stiff, plastic, slightly silty, damp		15	SPT		24 / 18		0/0	
10	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), variegated with gray, green and brown, medium stiff, slightly silty to very silty with depth, occasional < 1/8-inch calcareous nodules			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - A/A, very silty, damp at base			SPT		24 / 20		0/6	
5	SILT (ML) - brown (7.5 YR 5/4), clayey, slightly sandy in parts, saturated		20	SPT	SB-15C	24 / 20		0/3	
	Total depth = 22 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-16

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 659,077 E 3,218,131

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.5

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/4/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
25	GROUND SURFACE Concrete and road base								
	CLAY (CH) - very dark gray (2 YR 3/2), medium firm, plastic		5	SPT	SB-16A	24/18		36/20	
20	CLAY (CH) - gray brown (2.5 YR 5/2), yellow streaks, medium stiff, plastic			SPT		24/12		36/16	
	CLAY (CL) - gray brown (2.5 YR 5/2), more yellow, moderately soft to medium stiff, plastic, silty, occasional gravel			SPT	SB-16B	24/18		284/170	
15	CLAY (CL) - dark brown (7.5 YR 4/4), variegated with black and brown, stiff		10	SPT		24/18		116/70	Water level 9.95 feet BLS after 20 minutes
	CLAY (CL) - dark brown (7.5 YR 4/4), variegated with black and gray, stiff, dry, slightly silty			SPT		24/24		4/50	
	CLAY (CL) - A/A, medium stiff			SPT		24/24		252/100	
10	CLAY (CL) - dark brown (7.5 YR 4/4), stiff		15	SPT		24/24		4/15	
	CLAY (CL) - brown (7.5 YR 5/4), occasional gray, medium stiff, plastic			SPT		24/18		0/7	
5	SILT (ML) - dark brown (7.5 YR 5/4), with gray mottling, clayey to very sandy, saturated		20	SPT	SB-16C	24/18		0/0	
	Total depth = 22 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-17

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,988 E 3,218,203

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.4

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/6/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	CLAY (CH) - black, stiff, rootlets, gravelly			SPT		24 / 3		0/0	
				SPT	SB-17A	24 / 18		0/0	
20	CLAY (CH) - black (5 YR 2.5/1), stiff, occasional rootlets, plastic, occasional iron staining		5	SPT		24 / 12		0/0	
	CLAY (CH) - dark gray (10 YR 4/1), medium stiff, some yellow iron staining			SPT		24 / 12		0/1	
	CLAY (CH) - olive gray (5 YR 2.5/1), variegated with yellow, gray and brown, some iron staining, stiff			SPT	SB-17B	24 / 8		0/12	
15	CLAY (CH) - very dark gray (5 YR 3/1), some iron staining, medium stiff, plastic, occasional < 1/8-inch calcareous nodules		10	SPT		24 / 8		0/10	
	CLAY (CH) - olive gray (5 YR 5/2), variegated with brown and yellow, some iron staining, medium stiff			SPT		24 / 18		0/4	
10	CLAY (CL) - brown (7.5 YR 5/4), gray mottling, medium stiff, plastic, damp, silty in parts		15	SPT		24 / 24		0/4	
	CLAY (CL) - strong brown (7.5 YR 4/6), gray streaks, medium stiff, soft and damp in gray areas, slightly silty			SPT		24 / 22		0/3	
	CLAY (CL) - strong brown (7.5 YR 4/6), abundant gray mottling towards base, medium stiff to stiff, plastic, slightly silty, dry			SPT		24 / 22		0/0	
5	SILTY CLAY (CL) - A/A, silty to very silty in parts, damp at base		20	SPT		24 / 22		0/0	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), very silty, dry to damp at base			SPT		24 / 22		0/0	
	SILT (ML) - brown (7.5 YR 5/4), clayey, wet			SPT	SB-17C	24 / 24		0/2	
	SAND (SM) - brown (7.5 YR 5/4), fine grained, silty to clayey, saturated								
	Total depth = 24 feet BLS								

Water level 9.35 feet BLS after 70 minutes

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-18

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,919 E 3,218,254

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.6

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/6/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	CLAY (CH) - very dark gray (2.5 YR 3/0), stiff, rootlets, dry			SPT	SB-18A	24 / 12		0/0	
				SPT		24 / 6		0/0	
20	CLAY (CH) - dark gray (2.5 YR 4/0), rust colored iron staining, medium stiff		5	SPT		24 / 12		0/0	
	CLAY (CL) - dark gray (7.5 YR 4/0), yellowish brown streaks, medium stiff, plastic, slightly silty, occasional <1/8-inch calcareous nodules			SPT		24 / 12		0/14	
15	CLAY (CL) - yellowish brown (10 YR 5/4), mottled with gray, medium stiff to occasionally soft, plastic, slightly silty, slight petroleum odor		10	SPT		24 / 15		52/200	
	CLAY (CL) - yellowish brown (10 YR 5/6) to strong brown (7.5 YR 5/6) with depth, gray mottling, soft to medium stiff, very slight petroleum odor			SPT	SB-18B	24 / 18		52/150	
	CLAY (CL) - brown (7.5 YR 5/3), gray mottling, medium stiff to stiff, gray is soft, slightly silty, dry			SPT		24 / 24		0/3	
10	SILTY CLAY (CL) - brown, (7.5 YR 5/4), occasional gray and black streaks, iron staining in parts, silty, dry		15	SPT		24 / 18		0/0	
	SAND (SM) - dark brown (7.5 YR 4/4), moist to wet			SPT		24 / 24		0/1	
5	SILT (ML) - brown and gray, slightly clayey to slightly sandy, moist			SPT	SB-18C	24 / 24		0/0	
	SILT (ML) - strong brown (7.5 YR 4/4), clayey to very clayey at top, saturated		20						
	Total depth = 20 feet BLS								

Water level 9.80 feet BLS after 10 minutes

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-19

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,929 E 3,218,171

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.7 DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/11/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	Concrete and road base								
	CLAY (CH) - black (2.5 YR 2.5/0), occasional iron stains, soft to medium stiff, plastic			SPT	SB-19A	24 / 12		0/290	
	CLAY (CH) - A/A			SPT	SB-19B	24 / 9		0/30	
20	CLAY (CH) - very dark gray (10 YR 3/1), moderately soft, plastic			SPT		24 / 18		0/12	
				SPT		24 / 18		0/8	
15	SILTY CLAY (CL) - gray (10 YR 5/1), variegated with dark gray, black and brown, silty, damp, plastic			SPT		24 / 12		0/0	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), variegated with red and gray, medium stiff, slightly silty, plastic			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - reddish brown (5 YR 5/4), gray mottling, silty, stiff to medium stiff, plastic, occasional gray calcareous nodules > 1/4-inch			SPT		24 / 18		0/15	
10	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), occasional gray streaks, silty, stiff, black iron nodules > 1/4-inch			SPT		24 / 20		0/0	
	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional gray streaks, silty, stiff, occasional black iron nodules			SPT		24 / 18		0/0	
5	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), occasional gray, silty to very silty, grades to clayey silt, medium stiff			SPT	SB-19C	24 / 20		0/0	
	SILT (ML) - brown (7.5 YR 5/4), occasional gray, clayey to sandy at base, saturated at base			SPT					
	Total depth = 22 feet BLS								

Water level 11.45 feet BLS after 5 minutes

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-20

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,995 E 3,218,132

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.6

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/5/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	Concrete and road base								
	CLAY (CH) - black (2.5 YR), soft to stiff, plastic, occasional rootlets, very slight petroleum odor			SPT	SB-20A	24/12		4/150	
	CLAY (CL) - black (2.5 YR N2.5), soft, silty, occasional iron staining		5	SPT		24/24		12/450	
20	CLAY (CL) - dark gray (2.5 YR N4), iron staining, soft to medium stiff, slightly silty			SPT		24/12		0/15	
	CLAY (CL) - light gray with greenish tint, firm to stiff, silty, slight petroleum odor			SPT	SB-20B	24/24		878/1000+	
15	CLAY (CL) - reddish brown (5 YR 4/4), variegated with gray, pink and green, stiff, dry, silty		10	SPT		24/18		0/7	Water level 10.85 feet BLS after 70 minutes
	CLAY (CL) - reddish brown (5 YR 5/4), occasional black and gray staining, medium stiff, silty in parts			SPT		24/18		0/0	
10	CLAY (CL) - yellowish red (5 YR 5/6), abundant gray streaks, moderately soft, plastic, damp, slightly silty in parts		15	SPT		24/18		0/2	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), abundant gray streaks, occasional black, medium stiff, gray and black areas are soft, very silty			SPT		24/24		0/35	
	SILTY CLAY (CL) - dark brown (7.5 YR 4/4), occasional gray streaks, medium soft to medium stiff, silty			SPT		24/24		0/2	
5	SANDY SILT (ML) - dark brown (7.5 YR 4/4), soft, sandy, saturated		20	SPT	SB-20C	24/24		0/0	
	Total depth = 22 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-21

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,914 E 3,218,136

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.8

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/5/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE Concrete and road base								
25									
	CLAY (CH) - black (2.5 YR N2.5), stiff, rootlets			SPT	SB-21A	24 / 8		0/0	
	CLAY (CH) - black (2.5 YR N2.5), occasional gray and iron staining, moderately soft, plastic		5	SPT	SB-21B	24 / 24		0/110	
20	CLAY (CH) - black (2.5 YR N2.5), occasional yellow iron staining, medium stiff, plastic			SPT		24 / 12		0/40	
	CLAY (CH) - dark gray (5 YR 4/1), some yellow iron staining, stiff, plastic			SPT		24 / 8		0/10	
15	SILTY CLAY (CL) - dark yellowish brown (10 YR 4/6), variegated with gray, green and yellow, silty		10	SPT		24 / 10		0/10	
	SILTY CLAY (CL) - red brown (5 YR 4/4), stiff, silty, occasional calcareous nodules			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - yellowish red (5 YR 4/6), abundant gray streaks, silty to very silty in spots, damp		15	SPT		24 / 24		0/2	
10	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), abundant gray towards base, soft to firm, silty, damp, gray matter is soft and moist			SPT		24 / 18		0/1	
	SAND (SM) - brown (7.5 YR 5/4), silty to slightly clayey, moist			SPT		24 / 22		0/0	
5	SAND (SM) - A/A, saturated		20	SPT	SB-21C	24 / 24		0/0	
	Total depth = 22 feet BLS								

Water level 9.40 feet BLS after 16 hours

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-22

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,834 E 3,218,140

PROJECT NUMBER 1K94

SURFACE ELEVATION 26.4

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/11/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	SILT (OL) - tan with gravel, rootlets, fill material(?)			SPT		24 / 12		0/0	
				SPT		24 / 0			
	CLAY (CH) - dark gray (7.5 YR 4/0), soft to medium stiff, plastic, some gravel, occasional rootlets		5	SPT	SB-22A	24 / 12		0/0	
20	CLAY (CH) - very dark gray (5 YR 3/0), occasional brown streaks, soft to medium stiff, plastic, calcareous nodules			SPT	SB-22B	24 / 12		0/0	
	CLAY (CH) - dark gray (2.5 YR 4/0), soft to medium stiff, plastic, damp			SPT		24 / 8		0/0	
			10	SPT		24 / 20		0/0	
15	CLAY (CL) - reddish brown (5 YR 5/4), variegated with black and olive gray, medium stiff, plastic, slightly silty, occasional < 1/8-inch calcareous nodules			SPT		24 / 18		0/0	
	CLAY (CL) - yellowish red (5 YR 5/6), gray streaks, occasional black, medium stiff, occasional pebbles			SPT		24 / 24		0/0	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/8), occasional gray, silty, medium stiff		15	SPT		24 / 18		0/0	
10	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional gray streaks, medium stiff, plastic, silty in parts, black iron nodules (> 1/4-inch) at base			SPT		24 / 24		0/0	
	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional black and gray, medium stiff, plastic, silty, damp		20	SPT		24 / 24		0/0	
5	CLAYEY SILT (ML) - strong brown (7.5 YR 5/6), occasional gray streaks, clayey, less clay with depth, wet at base			SPT	SB-22C	24 / 24		0/0	
	SILT (ML) - A/A, saturated			SPT		24 / 24		0/0	
	Total depth = 24 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-23

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,770 E 3,218,132

PROJECT NUMBER 1K94

SURFACE ELEVATION 26.0

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/11/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
-25	CLAY (OL) - tan, dry, abundant gravel				SB-23A				
				SPT		24 / 9		0/0	
	CLAY (CH) - dark gray (7.5 YR 4/0), soft to medium stiff, plastic, iron staining			SPT		24 / 12		0/2	
	CLAY (CH) - very dark gray (7.5 YR 3/0), medium stiff, plastic, dark brown iron staining		5	SPT		24 / 14		0/1	
-20	CLAY (CH) - dark gray (2.5 YR 2.5/0), iron staining, medium stiff to stiff, plastic, white to tan calcareous gravel			SPT	SB-23B	24 / 9		0/3	
				SPT		24 / 12		0/4	
-15	SILTY CLAY (CL) - light gray (7.5 YR 6/0) and reddish yellow (7.5 YR 7/8), medium stiff, silty		10	SPT		24 / 18		0/0	
	CLAY (CL) - olive gray (5 Y 4/2), gray with depth, iron staining, medium stiff, occasional < 1/8-inch calcareous nodules			SPT		24 / 19		0/0	
	CLAY (CL) - brown (7.5 YR 5/4), mottled with gray, medium stiff, plastic, slightly silty		15	SPT		24 / 19		0/0	
-10	CLAY (CL) - A/A			SPT		24 / 20		0/0	
	SILTY CLAY (CL) - brown (7.5 YR 5/3), gray mottling, medium stiff, silty, plastic in parts			SPT		24 / 18		0/0	
-5	SILT (ML) - strong brown (7.5 YR 5/6), gray mottling, clayey, damp at base		20	SPT	SB-23C	24 / 24		0/0	
	SILT (ML) - strong brown (7.5 YR 4/6), clayey, sandy at base, saturated at base			SPT					
	Total depth = 22 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-24

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,846 E 3,218,085

PROJECT NUMBER 1K94

SURFACE ELEVATION 24.3

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/13/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	Concrete and road base								
20	CLAY (CH) - dark gray (2.5 YR 4/0), iron staining, medium stiff, plastic, gravelly (fill?), very slight petroleum odor			SPT	SB-24A	24 / 12		150	Photoionization detector not operational
	CLAY (CH) - dark gray (5 Y 4/1), medium stiff, plastic, iron staining			SPT		24 / 8		14	
	CLAY (CH) - gray (10 YR 5/1) medium stiff, plastic, iron staining		5	SPT		24 / 12		40	
	CLAY (CH) - light olive brown (2.5 Y 5/2), medium stiff, plastic, occasional iron staining, occasional calcareous nodules			SPT		24 / 9		15	
15	CLAY (CL) - strong brown (7.5 YR 5/6), mottled with gray and green, stiff, silty in parts, 1/4-inch calcareous nodules		10	SPT		24 / 12		100	
	SILTY CLAY (CL) - brown (7.5 YR 5/3), mottled with gray, stiff, moderately plastic, silty, dry to damp			SPT	SB-24B	24 / 18		30	
10	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), occasional gray, stiff, very silty in parts, iron staining, occasional black iron nodules (<1/8-inch)		15	SPT		24 / 18		0	
	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional gray, silty to very silty, grades to clayey silt, stiff			SPT		24 / 18		0	
	SILT (ML) - strong brown (7.5 YR 5/6), gray mottling, clayey in parts, moist to wet at base			SPT	SB-24C	24 / 24		0	
	Total depth = 19 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-25

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,922 E 3,218,065

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.8

DATUM MSL

LOGGED BY D. Gibson

DATE DRILLED 8/13/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE Concrete and road base								
	CLAY (CH) - dark brown (7.5 YR 3/0), minor iron staining, plastic			SPT	SB-25A	24 / 9		0/32	
20	CLAY (CH) - dark brown (7.5 YR 4/0), plastic			SPT		24 / 7		0/28	
	CLAY (CH) - dark brown (7.5 YR 4/0), occasional Fe/Mn stains, plastic, petroleum hydrocarbon odor		5	SPT		24 / 9		26/66	
	CLAY (CH) - olive (5 Y 4/2), pockets of dark gray mottling, Fe/Mn streaks, plastic, occasional calcareous nodules			SPT	SB-25B	24 / 12		19/50	
15	CLAY (CH) - light olive brown (2.5 Y 5/3), dark gray and reddish mottling, gravelly, slight petroleum hydrocarbon odor		10	SPT		24 / 15		10/100	
	CLAY (CH) - reddish brown (5 YR 5/4), gray mottling, occasional calcareous nodules			SPT		24 / 24		0/0	
10	CLAY (CH) - brown (7.5 YR 5/4), gray and black mottling,			SPT		24 / 24		0/0	
	CLAY (CH) - strong brown (7.5 YR 4/6), blue gray mottling		15	SPT		24 / 24		0/0	
	SILT (ML) - strong brown (7.5 YR 4/6), no odor			SPT	SB-25C	24 / 24		0/0	
5	No recovery. Sampler is wet.		20	SPT		24 / 0			
	Total depth = 21 feet BLS								

Water level 10.2 feet BLS after 10 minutes

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-26

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 659,010 E 3,218,168

PROJECT NUMBER 1K94

SURFACE ELEVATION 26.1

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/13/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	SILT (OL) - black (7.5 YR 2/0), pinkish gray mottling, dry, gravel, rootlets			SPT	SB-26A	24/12		0/2	
	SILT (OL) - black (10 YR 2/1), soft to medium stiff, slightly clayey, dry to damp			SPT		24/12		0/20	
	SILTY CLAY (CL) - dark reddish brown (5 YR 2.5/2), very silty, grades to clayey silt in parts, slight petroleum odor		5	SPT		24/18		97/420	
20	CLAY (CH) - dark gray (7.5 YR 4/0), iron staining, medium stiff, plastic			SPT	SB-26B	24/12		71/200	
	CLAY (CH) - light olive brown (2.5 Y 5/3), mottled with gray, black and brown, iron staining, medium stiff, white calcareous nodules (<1/4-inch), petroleum odor		10	SPT		24/12		68/1000+	
15	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), variegated with gray, red and black, medium stiff, silty, occasional calcareous nodules			SPT		24/18		80/150	Water level 10.7 feet BLS after 8 minutes
	CLAY (CL) - strong brown (7.5 YR 4/6), occasional gray, medium stiff to stiff, slightly silty, dry			SPT		24/18		0/20	
10	SILTY CLAY (CL) - brown (7.5 YR 5/3), occasional gray, silty, stiff		15	SPT		24/19		76/600	
	SILTY CLAY (CL) - A/A			SPT		24/18		87/1000+	
	SILT (ML) - strong brown (7.5 YR 4/6), occasional gray, clayey, soft to stiff, moist to wet at base			SPT	SB-26C	24/24		73/1000+	
5	SILT (ML) - strong brown (7.5 YR 4/6), clayey to sandy, saturated		20	SPT		24/18		32/150	
	Total depth = 22 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-27

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 659,020 E 3,218,217

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.9 DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/16/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
25	CLAY (OL) - dark reddish brown (5 YR 3/2), variegated with white, red and black, stiff to hard, dry, gravel, rootlets			SPT	SB-27A	24 / 12		0	PID not operational Water level 9.65 feet BLS after 14 hours
	CLAY (OL) - very dark gray (10 YR 3/1), stiff to hard, dry, iron stains, pebbles, rootlets			SPT		24 / 4		0	
	CLAY (CH) - very dark gray (5 Y 3/1), medium stiff, plastic, occasional iron staining		5	SPT		24 / 10		0	
20	CLAY (CH) - A/A, occasional calcareous nodules (< 1/4-inch)			SPT		24 / 12		2	
	CLAY (CH) - dark gray (7.5 YR 4/0), medium stiff, plastic, iron staining			SPT		24 / 12		15	
15	CLAY (CH) - dark gray (2.5 Y 4/0), brown streaks, medium stiff, iron staining, petroleum odor		10	SPT		24 / 10		90	
	CLAY (CH) - strong brown (7.5 YR 5/6), minor amounts of gray and black, medium stiff to stiff, occasional iron staining, slight petroleum odor			SPT		24 / 18		200	
10	CLAY (CH) - dark brown (7.5 YR 4/4), minor amounts of gray and black, medium stiff to stiff, plastic, slight petroleum odor		15	SPT	SB-27B	24 / 18		400	
	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), gray mottling, silty, stiff, plastic, < 1/8-inch calcareous nodules			SPT		24 / 18		380	
	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), gray streaks, iron staining, stiff, silty			SPT		24 / 20		30	
5	SILT (ML) - strong brown (7.5 YR 4/6), clayey, gravelly, damp		20	SPT		24 / 24		12	
	SILT (ML) - strong brown (7.5 YR 4/6), sandy to clayey, moist to wet at base			SPT	SB-27C	24 / 18		3	
	Total depth = 24 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-28

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,867 E 3,218,038

PROJECT NUMBER 1K94

SURFACE ELEVATION 24.0

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/17/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	Concrete								
	CLAY (CH) - very dark gray (7.5 YR 3/0), soft to medium stiff, plastic			SPT	SB-28A	24 / 8		12/130	
20	CLAY (CH) - very dark gray (2.5 Y 3/0), medium stiff, plastic, occasional iron staining			SPT		24 / 8		0/110	
	CLAY (CH) - dark gray (2.5 Y 4/0), occasional brown and green streaks, soft to medium stiff, plastic, minor iron staining		5	SPT		24 / 14		0/600	
	CLAY (CH) - dark gray (5 Y 4/1), medium stiff, plastic, iron staining, occasional <1/8-inch calcareous nodules			SPT	SB-28B	24 / 12		0/650	
15	CLAY (CH) - reddish brown (5 YR 5/4) to olive yellow (2.5 Y 6/6), mottled with gray and black, medium stiff, plastic, iron staining		10	SPT		24 / 13		0/150	
	CLAY (CL) - yellowish red (5 YR 5/6), occasional gray and black streaks, slightly silty, plastic			SPT		24 / 19		7/0	
10	CLAY (CL) - reddish brown (5 YR 5/4), minor gray which increase with depth, medium stiff, slightly silty, siltier with depth		15	SPT		24 / 22		0/0	
	SILTY CLAY (CL) - reddish brown (5 YR 5/3), occasional gray and black streaks, medium stiff, plastic, silty, iron staining, black iron nodules <1/8-inch			SPT		24 / 24		0/2	Water level 16.05 feet BLS after 5 minutes
	SILTY CLAY (CL) - light gray (7.5 YR 7/0) and reddish brown, silty, gray is very silty, plastic			SPT		24 / 24		0/1	
5	SILT (ML) - strong brown (7.5 YR 5/6), gray mottling, clayey, moist to wet at base		20	SPT	SB-28C	24 / 24		0/0	
	Total depth = 21 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING SB-29

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,946 E 3,218,025

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.7

DATUM MSL

LOGGED BY D. Gibson

DATE DRILLED 8/17/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	Concrete								
20	CLAY (CH) - very dark gray (10 YR 3/1), medium stiff, plastic			SPT	SB-29A	24/12		7/70	
	CLAY (CH) - very dark gray (10 YR 3/1), medium stiff, plastic, occasional Fe/Mn pockets			SPT		24/12		0/70	
	CLAY (CH) - very dark gray (10 YR 3/1), medium stiff, plastic, occasional gravel, limonite streaks		5	SPT		24/12		0/65	
15	CLAY (CH) - dark gray (10 YR 4/1), medium stiff, plastic			SPT	SB-29B	24/8		0/10	
	CLAY (CL) - light olive brown (2.5 YR 5/3), mottled blue gray and tan, medium stiff, plastic, slightly silty, scattered calcareous pockets		10	SPT		24/14		0/30	Water level 9.05 feet BLS after 13 minutes
10	CLAY (CL) - dark yellowish brown (10 YR 4/6), gray mottling, medium stiff, plastic, occasional gravel			SPT		24/24		0/7	
	CLAY (CL) - yellowish brown (10 YR 5/6), orange and gray mottling, stiff, plastic, slightly silty		15	SPT		24/18		0/9	
	SILTY CLAY (CL) - dark yellow brown (10 YR 4/4), stiff, plastic, silty			SPT		24/18		0/6	
5	SILT (ML) - strong brown (7.5 YR 5/6), sandy, saturated			SPT	SB-29C	24/24		0/7	
	Total depth = 19 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

COORDINATES N 659,016 E 3,218,335

SURFACE ELEVATION 23.2

DATUM MSL

BORING/WELL NUMBER SB-30

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

PROJECT NUMBER 1K94

LOGGED BY L. Basilio

DATE DRILLED 8/18/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						WELL CONSTRUCTION DETAIL & REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								T.O.C. Elev. 23.14
	CLAY (OL) - very dark gray (10 YR 3/1), stiff, moderately plastic, iron staining, rootlets			SPT	SB-30A	24 / 15		0/0	Monitor Well MW-12
20	CLAY (CH) - gray (10 YR 5/1), iron staining, medium stiff, plastic			SPT		24 / 6		0/0	
	CLAY (CH) - gray (10 YR 5/1), brown streaks, gold iron staining, medium stiff, plastic		5	SPT		24 / 7		0/0	Cement grout
	CLAY (CH) - yellow brown (10 YR 5/6), variegated with gray, red and black, medium stiff, plastic, occasional < 1/8-inch calcareous nodules			SPT		24 / 7		0/0	
15	SILTY CLAY (CL) - yellowish red (5 YR 4/6), occasional gray, medium stiff, moderately plastic, silty, hackly fracture in silty parts		10	SPT	SB-30B	24 / 9		0/5	Water level 7.86 feet TOC measured 8/27/93
	SILTY CLAY (CL) - reddish brown (5 YR 5/4), occasional gray laminae and streaks, medium stiff to stiff, moderately plastic, occasional iron staining, silty			SPT		24 / 12		0/3	Bentonite seal
10	SILTY CLAY (CL) - reddish brown (5 YR 5/4), occasional gray, stiff, moderately plastic, silty			SPT		24 / 16		0/0	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/8), occasional gray, medium stiff, silty to very silty, siltier with depth, occasional < 1/4-inch calcareous nodules in upper part		15	SPT		24 / 22		0/0	20/40 filter pack
	SILT (ML) - strong brown (7.5 YR 5/8), very slightly clayey at top, sandy at base, moist to wet at base			SPT	SB-30C	24 / 18		0/1	
5	SAND (SM) - strong brown (7.5 YR 5/8), fine grained, unconsolidated, silty, pebbles at 19 feet, saturated		20	SPT		24 / 22			
	SAND (SM) - A/A, no clay or pebbles, saturated			SPT		24 / 16			#10 slot screen
				SPT		24 / 18			
	SAND (SC) - strong brown (7.5 YR 5/8), saturated, gray clay laminae (< 1-inch) towards base, stiff, moist		25	SPT		24 / 16			
	SAND (SM) - strong brown, saturated, no clay			SPT		24 / 12			
	Total depth = 28 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61

DIAMETER, TYPE & INTERVAL OF CASING: 2-inch schedule 40 PVC
 WELL SCREEN/INTERVAL: #10 slot / 15.21-24.51 ft
 FILTER PACK-INTERVAL/QUANTITY: 12.0-28.0 ft / 4 bags 20/40 silica sand
 WELL SEAL-INTERVAL/QUANTITY: 10.0-12.0 ft / 1 bucket 1/2-inch bentonite



HALLIBURTON NUS

Environmental Corporation

BORING SB-31

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,920 E 3,218,290

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.3

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/18/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	CLAY (OL) - very dark gray (7.5 YR 3/0), stiff to hard, rootlets, iron staining and nodules (<1/8-inch)			SPT	SB-31A	24 / 6		0/0	
20	CLAY (CH) - dark gray (10 YR 4/1), brown streaks, medium stiff, plastic, occasional iron staining			SPT		24 / 6		0/0	
	CLAY (CH) - dark gray (10 YR 4/1), occasional iron stain, medium stiff, plastic		5	SPT		24 / 6		0/0	
	CLAY (CH) - grayish brown (10 YR 5/2), gray and brown mottling, soft to medium stiff, plastic			SPT		24 / 8		0/6	
15	CLAY (CH) - yellowish red (5 YR 4/6), minor gray and black, medium stiff, plastic, black iron nodules (<1/8-inch)		10	SPT		24 / 9		0/100	
	SILTY CLAY (CL) - light gray (7.5 YR 7/0) and red yellow (7.5 YR 6/6), mottled, medium stiff, plastic, silty, slight petroleum odor			SPT	SB-31B	24 / 15		5/90	
10	CLAY (CL) - strong brown (7.5 YR 5/6), gray mottling, medium stiff to stiff, moderately plastic, slightly silty			SPT		24 / 14		0/3	Water level 12.7 feet BLS after 13 minutes
	CLAY (CL) - strong brown (7.5 YR 5/6), variegated with gray, red, yellow, medium stiff to stiff, iron staining, tan calcareous nodules (<1/4-inch)		15	SPT		24 / 19		0/0	
	SILT (ML) - strong brown (7.5 YR 5/6), gray in clayey parts, clayey at top to sandy at base, moist to wet at base			SPT	SB-31C	24 / 20		0/0	
	Total depth = 18 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

BORING/WELL NUMBER SB-32

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,915 E 3,218,350

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.5

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/19/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						WELL CONSTRUCTION DETAIL & REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								T.O.C. Elev. 23.11
	CLAY (OL) - very dark gray (2.5 YR 3/0), stiff to hard, rootlets, dry, iron staining			SPT	SB-32A	24 / 13		0/0	Monitor Well MW-13
20	CLAY (CH) - dark gray (7.5 YR 4/0), soft, plastic, minor iron staining, rootlets			SPT		24 / 6		0/0	
	CLAY (CH) - gray (10 YR 5/1), soft to medium stiff, plastic, minor iron staining		5	SPT		24 / 9		0/0	Cement grout
15	CLAY (CL) - strong brown (5 YR 5/8), variegated with red gray and black, stiff to medium stiff, moderately plastic, slightly silty, iron staining, black iron nodules (< 1/8-inch), minor amount calcareous gravel			SPT		24 / 8		0/0	
	CLAY (CL) - yellowish red (5 YR 5/6) minor gray and black, medium stiff, plastic, very slightly silty, occasional gypsum crystals		10	SPT	SB-32B	24 / 12		0/0	Water level 7.75 feet TOC measured 8/27/93
	SILTY CLAY (CL) - reddish yellow (7.5 YR 6/8), mottled with gray and black, silty to very silty in parts, medium stiff, moderately plastic			SPT		24 / 18		0/0	Bentonite seal
10	SILTY CLAY (CL) - reddish brown (5 YR 5/4), minor gray and black, silty to very silty, medium stiff, moderately plastic			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - yellowish red (5 YR 4/6), mottled with gray, silty, medium stiff, moderately plastic		15	SPT		24 / 24		0/0	20/40 filter pack
5	SILT (ML) - strong brown (7.5 YR 4/6), clayey to sandy in parts, wet to saturated at base			SPT	SB-32C	24 / 24		1/1	
	SAND (SC) - gray (10 YR 6/1), fine grained, clayey, gray clay seams with iron staining, pebbles at top, saturated		20	SPT		24 / 18			#10 slot screen
	SAND (SC) - gray (10 YR 6/1), abundant brown mottling, clayey, no clay laminae, saturated			SPT		24 / 18			
0	SAND (SM) - strong brown (7.5 YR 5/6), fine grained, unconsolidated, slightly clayey to silty, saturated			SPT		24 / 12			
	SAND (SM) - A/A, occasional gray		25	SPT		24 / 18			
	SAND (SM) - A/A, occasional pebbles			SPT		24 / 12			
	Total depth = 28 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61

DIAMETER, TYPE & INTERVAL OF CASING:

WELL SCREEN/INTERVAL:

FILTER PACK-INTERVAL/QUANTITY:

WELL SEAL-INTERVAL/QUANTITY:

2-inch schedule 40 PVC

#10 slot / 15.53-24.50 ft

12.5-28.1 ft / 5 bags 20/40

silica sand

10.0-12.5 ft / 1 bucket

1/2-inch bentonite



HALLIBURTON NUS

Environmental Corporation

BORING/WELL NUMBER **SB-33**

SHEET 1 OF 1

PROJECT **Ellington Field - POL Storage Area**

LOCATION **Houston, Texas**

COORDINATES **N 659,054 E 3,218,288**

PROJECT NUMBER **1K94**

SURFACE ELEVATION **24.1**

DATUM **MSL**

LOGGED BY **L. Basilio**

DATE DRILLED **8/19/93**

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						WELL CONSTRUCTION DETAIL & REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								T.O.C. Elev. 23.99
	CLAY (OL) - dark reddish gray (5 YR 4/2), stiff, slightly plastic, dry, rootlets, platy gypsum crystals			SPT	SB-33A	24 / 8		12/0	Monitor Well MW-14
	CLAY (CH) - very dark gray (10 YR 3/1), stiff, moderately plastic			SPT		24 / 24		5/2	
20			5	SPT		24 / 8		16/0	Cement grout
	CLAY (CH) - dark gray (5 Y 4/1), minor iron staining, medium stiff, plastic, tan calcareous nodules (<1/8-inch)			SPT		24 / 12		4/0	
15	CLAY (CL) - olive (5 Y 5/3), variegated with gray, black, and tan, iron staining, very slightly silty, plastic			SPT		24 / 12		1/5	Water level 8.28 feet TOC measured 8/27/93
	CLAY (CL) - strong brown (7.5 YR 5/6), minor gray and black, iron stains, medium stiff to stiff, plastic		10	SPT		24 / 18		14/90	Bentonite seal
	CLAY (CL) - brown (7.5 YR 5/4), minor gray, medium stiff to stiff, plastic, iron staining			SPT	SB-32B	24 / 18		15/120	
10	SILTY CLAY (CL) - strong brown (7.5 YR 4/6), minor gray, iron staining, medium stiff to stiff, plastic, silty in parts, occasional calcareous nodules (<1/8-inch)		15	SPT		24 / 19		3/65	20/40 filter pack
				SPT	SB-33C	24 / 18		0/7	
5	SILT (ML) - strong brown (7.5 YR 4/6), minor gray and black, medium stiff, wet at bottom			SPT		24 / 18			
	SILT (ML) - brown (7.5 YR 5/4), clayey, saturated, clay laminae in lower part, clay is moist not saturated		20	SPT		24 / 15			#10 slot screen
	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional gray streaks, silty to very silty, silt laminae, silt is wet, clay is moist			SPT		24 / 20			
0	SILTY CLAY (CL) - A/A, grades to silt			SPT		24 / 20			
	SILT (ML) - reddish brown (5 YR 5/4), clayey at base, sandy at top, saturated to wet at base		25	SPT		24 / 20			
	SILT (ML) - A/A, wet			SPT		24 / 24			
	SAND (SM) - reddish brown (5 YR 5/4), fine grained, unconsolidated, saturated			SPT					
	SILTY CLAY (CL) - reddish brown (5 YR 5/4), iron staining, silty, moist to wet								
	SAND (SM) - strong brown (7.5 YR 5/6), fine grained, unconsolidated, silty, saturated								
	Total depth = 28 feet BLS								

DRILLING CONTRACTOR: **Custom Coring Inc.**

DRILLER: **H. Gompert**

DRILLING METHOD: **Hollow Stem Auger**

DRILLING EQUIPMENT: **Mobile B-61**

DIAMETER, TYPE & INTERVAL OF CASING: **2-inch schedule 40 PVC**

WELL SCREEN/INTERVAL: **#10 slot / 15.53-24.52 ft**

FILTER PACK-INTERVAL/QUANTITY: **12.5-28.2 ft / 5 bags 20/40 silica sand**

WELL SEAL-INTERVAL/QUANTITY: **10.0-12.5 ft / 1 bucket 1/2-inch bentonite**



HALLIBURTON NUS

Environmental Corporation

BORING SB-34

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 658,866 E 3,218,273

PROJECT NUMBER 1K94

SURFACE ELEVATION 23.5

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/20/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								
	CLAY (OL) - very dark gray (2.5 YR 3/0), stiff, rootlets, dry			SPT	SB-34A	24 / 15		0/0	
20				SPT		24 / 5		0/0	
	CLAY (CH) - gray (10 YR 5/1), soft to medium stiff, plastic, minor iron stains		5	SPT		24 / 12		0/0	
				SPT		24 / 6		0/0	
15				SPT		24 / 12		0/1	
	CLAY (CH) - yellowish red (5 YR 5/8), variegated with gray, black, brown and gold, medium stiff, plastic		10	SPT		24 / 12		0/0	
	CLAY (CH) - reddish yellow (5 YR 7/4), with gray, medium stiff, plastic			SPT		24 / 18		0/0	
10				SPT	SB-34B	24 / 24		0/0	
	CLAY (CL) - reddish yellow (5 YR 6/6), medium stiff, plastic, small calcareous nodules, slightly silty		15	SPT		24 / 24		0/0	
	SILTY CLAY (CL) - reddish yellow (5 YR 6/6), gray mottling, minor black, silty, medium stiff, moderately plastic, moist, occasional iron stain			SPT	SB-34C	24 / 24		0/0	
	SILT (ML) - light reddish brown (5 YR 6/4), some gray, slightly clayey to sandy in parts, wet to saturated			SPT					
	Total depth = 18 feet BLS								

Water level 11.3 feet BLS after 5 minutes

DRILLING CONTRACTOR: Custom Coring Inc.

COMMENTS:

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61



HALLIBURTON NUS

Environmental Corporation

COORDINATES N 659,057 E 3,218,347

SURFACE ELEVATION 23.9

DATUM MSL

BORING/WELL NUMBER SB-35

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

PROJECT NUMBER 1K94

LOGGED BY L. Basilio

DATE DRILLED 8/24/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						WELL CONSTRUCTION DETAIL & REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								T.O.C. Elev. 23.45
	CLAY (OL) - brown (7.5 YR 5/4), black streaks, stiff, rootlets, dry			SPT	SB-35A	24 / 12		0/0	Monitor Well MW-15
	CLAY (CH) - very dark gray (5 Y 3/1), stiff, moderately plastic, iron stains			SPT		24 / 6		0/0	
20	CLAY (CH) - dark gray (10 YR 4/1), minor brown iron stains, medium stiff, plastic		5	SPT		24 / 7		0/0	Cement grout
	CLAY (CH) - light brown (7.5 YR 6/4), variegated with black and gray, minor iron stains, medium stiff, plastic, pebbles			SPT		24 / 8		0/0	
15	CLAY (CH) - reddish brown (2.5 YR 4/6), variegated with brown, gray and black, medium stiff, plastic, dry		10	SPT		24 / 12		0/0	Water level 7.82 feet TOC measured 8/27/93
	CLAY (CL) - reddish yellow (7.5 YR 6/6), minor gray, medium stiff, moderately plastic, silty			SPT		24 / 18		0/0	Bentonite seal
10	CLAY (CL) - yellowish red (5 YR 5/6), minor gray and gray laminae, medium stiff, moderately plastic, silty, occasional white calcareous nodules (<1/8-inch)			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - yellowish red (5 YR 4/6), minor gray and black, some iron staining, medium stiff, moderately plastic, silty to very silty at base, gravels at base		15	SPT		24 / 18		0/0	20/40 filter pack
	SILT (ML) - brown (7.5 YR 5/4), minor gray, slightly clayey to sandy, wet			SPT	SB-35C	24 / 12		0/0	
5	SAND (SM) - brown (7.5 YR 5/4), minor gray, silty, some gravel, saturated			SPT		24 / 18			
	SAND (SM) - brown (7.5 YR 5/4), fine grain, silty, some pebbles, saturated		20	SPT		24 / 18			#10 slot screen
	SAND (SM) - brown (7.5 YR 5/4), pebbles at top, clayey towards base, saturated			SPT		24 / 18			
0	SAND (SM) - A/A, some pebbles			SPT		24 / 18			
	SAND (SM) - A/A, clayey at base		25	SPT		24 / 12			
	SAND (SM) - A/A			SPT		24 / 24			
	Total depth = 28 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

DRILLER: Z. Ruffin

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61

DIAMETER, TYPE & INTERVAL OF CASING: 2-inch schedule 40 PVC

WELL SCREEN/INTERVAL: #10 slot / 15.38-24.40 ft

FILTER PACK-INTERVAL/QUANTITY: 12.0-28.0 ft / 4 bags 20/40 silica sand

WELL SEAL-INTERVAL/QUANTITY: 10.0-12.0 ft / 1 bucket

1/2-inch bentonite



HALLIBURTON NUS

Environmental Corporation

BORING/WELL NUMBER MW-11

SHEET 1 OF 1

PROJECT Ellington Field - POL Storage Area

LOCATION Houston, Texas

COORDINATES N 659,050 E 3,218,215

PROJECT NUMBER 1K94

SURFACE ELEVATION 25.8

DATUM MSL

LOGGED BY L. Basilio

DATE DRILLED 8/12/93

ELEVATION FEET	SOIL DESCRIPTION	STRATA	SAMPLE INFORMATION						WELL CONSTRUCTION DETAIL & REMARKS
			Depth Feet	Sample Type	Sample ID	Inches Adv. / Inches Rec.	Penetr- ometer Blow Counts	PID/ FID (ppm)	
	GROUND SURFACE								T.O.C. Elev. 28.31
25	CLAY (CH) - black (2.5 YR 2.5/0), hard, dry, gravelly, rootlets			SPT	MW-11A	24 / 8		0/0	Monitor Well MW-11
	CLAY (CH) - dark gray (5 YR 4/1), occasional brown streaks, stiff, minor amount of pebbles, platy gypsum crystals present, dry			SPT		24 / 12		0/0	
	CLAY (CH) - very dark gray (10 YR 3/1), medium stiff, plastic, iron staining, occasional rootlets, damp		5	SPT		24 / 20		0/0	Cement grout
20	CLAY (CH) - dark gray (10 YR 4/1), occasional brown streaks, iron stains, medium stiff to stiff, plastic			SPT		24 / 18		0/0	
	SILTY CLAY (CL) - light olive brown (2.5 Y 5/2), mottled with brown and gray, iron stains, medium stiff, plastic, slightly silty to silty in parts		10	SPT		24 / 8		0/1	
15	CLAY (CL) - strong brown (7.5 YR 5/8), mottled with gray, medium stiff, plastic			SPT		24 / 10		17/20	Bentonite seal
	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), mottled with gray, stiff, dry to damp at base, slightly silty, silty at top			SPT		24 / 18		8/42	Water level 12.56 feet TOC measured 8/27/93
	SILTY CLAY (CL) - brown (7.5 YR 5/4), occasional 1/8-inch calcareous nodules		15	SPT	MW-11B	24 / 18		0/50	20/40 filter pack
10	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), gray streaks, stiff to medium stiff, moderately plastic, silty to very silty in parts			SPT		24 / 18		0/30	
	SILTY CLAY (CL) - strong brown (7.5 YR 5/6), occasional gray, stiff, silty, damp		20	SPT	MW-11C	24 / 15		208/20	
5				SPT		24 / 0			#10 slot screen
	SILT (ML) - strong brown (7.5 YR 5/6), clayey, loose, saturated			SPT		24 / 22		0/2	
	SILT (ML) - strong brown (7.5 YR 5/6), clayey, stiff, dry		25	SPT		24 / 20		0/1	
0	SAND (SM) - strong brown (7.5 YR 5/6), very fine grained, unconsolidated, silty, slightly clayey in parts with occasional 1-inch thick clay laminae, saturated			SPT		24 / 20		0/1	
	SAND (SM) - A/A, no clay, saturated			SPT		24 / 24		0/1	
	SAND (SM) - A/A		30						
	Total depth = 30 feet BLS								

DRILLING CONTRACTOR: Custom Coring Inc.

DRILLER: H. Gompert

DRILLING METHOD: Hollow Stem Auger

DRILLING EQUIPMENT: Mobile B-61

DIAMETER, TYPE & INTERVAL OF CASING: 2-inch schedule 40 PVC

WELL SCREEN/INTERVAL:

FILTER PACK-INTERVAL/QUANTITY:

WELL SEAL-INTERVAL/QUANTITY:

#10 slot / 16.92-25.90 ft

14.5-29.5 ft / 5 bags 20/40

silica sand

12.0-14.5 ft / 1 bucket

1/2-inch bentonite

Appendix C

Soil Sample Log Sheets

Groundwater Sample Log Sheets



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB15-A-A SOURCE Soil boring 15

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>858</u>			
SAMPLED BY: <u>BASILIO</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - black (2.5 YR 0), stiff</u>	
		<u>rootlets</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>P10 - 0 ppm</u> <u>F10 - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB15-B-A SOURCE Soil Boring 15

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>12-14</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>926</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS: <u>TPH</u>	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay(CL)-Yellowish red (5 yr. 4/c)</u>	
		<u>occasional gray streaks, medium stiff,</u>	
		<u>plastic, slightly silty, damp</u>	
	OBSERVATIONS/NOTES:		
PID - 0 ppm			
FID - 10 ppm			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB15-C-A SOURCE Soil Boring - 15

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>945</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS: <u>TPH</u>	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML)-brown (7.5 YR 5/4), clayey,</u> <u>slightly sandy in parts, saturated</u>	
	OBSERVATIONS/NOTES: <u>Collected duplicate sample</u> <u>02-FD15-C-A</u>		
PID - 0 ppm			
FID - 3 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB16-A-A

SOURCE Soil Boring 16

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>4-6</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>816</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - very dark gray (2YR 3/2),</u> <u>medium firm, plastic</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 36 ppm</u> <u>FID - 20 ppm</u>			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB16-B-A SOURCE Soil Boring - 16

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>8-10</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>834</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - gray brown (2.5 YR 5/2), more yellow, moderately soft to medium stiff, plastic, silty, occasional gravel</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>TCL</u> <u>VOA</u>			
<u>TCL</u> <u>BNA</u>			
<u>PID - 284 ppm</u> <u>FID - 170 ppm</u>			



☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NUMBER 1K94

SOURCE Soil Boring - 16

SAMPLE METHOD:		COMPOSITE SAMPLE DATA		
California Sampler		SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED:				
20-22				
SAMPLE DATE & TIME:				
8/5/93 907				
SAMPLED BY:				
Basilio				
SIGNATURE(S):				
				
TYPE OF SAMPLE				
☐ LOW CONCENTRATION				
☐ HIGH CONCENTRATION				
☒ GRAB				
☐ COMPOSITE				
☐ GRAB - COMPOSITE				
ANALYSIS:		SAMPLE DATA		
TPH		COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
BTEX			Silt(ML)-dark brown(7.5 YR 5/4), with	
			gray mottling, clayey to very sandy.	
			Saturated	
		OBSERVATIONS/NOTES:		
PID - 0 ppm				
FID - 0 ppm				



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB17-A-A SOURCE Soil Boring - 17

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>2-4</u>			
SAMPLE DATE & TIME: <u>8/6/93 1107</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - Black (5YR 2.5/1), stiff,</u>	
ANALYSIS:		<u>occasional rootlets, plastic, occasional</u>	
<u>- TPH</u>		<u>iron staining</u>	
<u>BTEX</u>	OBSERVATIONS/NOTES:		
<u>PID - 0 ppm</u>			
<u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB17-B-A SOURCE Soil Boring 17

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>8-10</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>1122</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - very dark gray (5YR 3/1), some iron staining, medium stiff, plastic</u> <u>occasional < 1/8-inch calcareous nodules</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 12 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB17-C-C SOURCE Soil Boring 17

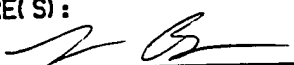
SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>22 - 24</u>			
SAMPLE DATE & TIME: <u>8/2/93</u> <u>1159</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Sand (SM) brown (7.5 YR 5/4), fine</u>	
ANALYSIS:		<u>grained, silty to clayey, saturated</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 2 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB18-A-A SOURCE Soil Boring 18

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/6/93 1440</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - very dark gray (2.5 YR 3/0)</u>	
		<u>stiff, rootlets, dry</u>	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB18-B-A SOURCE Soil Boring - 18

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>10-12</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>1502</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay(CL)-yellowish brown (10 YR 5/6) to strong</u>	
		<u>brown (7.5 YR 5/6) with depth gray mottling,</u>	
ANALYSIS: <u>-</u>		<u>soft to medium stiff, very slight petroleum odor</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>TCL VOA</u>			
<u>TCL BNA</u>			
<u>PID - 52 ppm</u> <u>FID - 150 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB18-C-A SOURCE Soil Boring 18

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>18-20</u>			
SAMPLE DATE & TIME: <u>8/6/93</u> <u>1520</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - Strong brown (1.5 yr. 4/4).</u> <u>clayey to very clayey at top</u> <u>saturated.</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB19-A-A SOURCE Soil Boring 19

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>2-4</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1435</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - black (2.5YR 2.5/0), occasional</u>	
ANALYSIS:		<u>iron stains, soft to medium stiff, plastic</u>	
	OBSERVATIONS/NOTES:		
TPH			
TCL VOA			
TCL BNA			
PID - 0 ppm FID - 290 ppm			



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB19-B-A

SOURCE Soil Boring 19

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>4-6</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1440</u>			
SAMPLED BY: <u>BASILIO</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - A/A black (2.5 YR 2.5/0)</u>	
		<u>occasional iron stains, soft to medium</u>	
		<u>stiff, plastic</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm FID - 30 ppm			



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB19-C-A SOURCE Soil Boring 19

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1525</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML)-brown (7.5 YR 5/4), occasional</u> <u>gray, clayey to sandy at base, saturated</u> <u>at base</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID- 0 ppm			
FID- 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB20-A-A SOURCE Soil Boring 20

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>2 - 4</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>1055</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - black (2.5YR), soft to stiff,</u>	
ANALYSIS:		<u>plastic occasional rootlets, very slight</u>	
		<u>petroleum odor</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 4 ppm			
FID - 150 ppm			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB20-B-A SOURCE Soil Boring-20

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>8-10</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>1110</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - light gray with greenish tint.</u>	
		<u>firm to stiff, silty, slight petroleum odor</u>	
TPH	OBSERVATIONS/NOTES:		
TCL VOA			
TCL BNA			
PID- 878 ppm FID- 1000+ ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB20-C-A

SOURCE Soil Boring - 20

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>1140</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - dark brown (7.5 YR 4/4),</u>	
		<u>Soft, sandy, saturated</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB21-A-A

SOURCE Soil Boring 21

SAMPLE METHOD:		COMPOSITE SAMPLE DATA		
California Sampler		SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED:				
2-4				
SAMPLE DATE & TIME:				
8/5/93 1415				
SAMPLED BY:				
Basilio				
SIGNATURE(S):				
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE				
ANALYSIS:		SAMPLE DATA		
		COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
			Clay (CH) - black (2.5 YR N 2.5), stiff, rootlets	
TPH		OBSERVATIONS/NOTES:		
BTEX				
PID - 0 ppm				
FID - 0 ppm				



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB21-B-A SOURCE Soil Boring 21

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>4-6</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>1420</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - black (2.5 YR N 2.5), occasional</u>	
ANALYSIS:		<u>gray and iron staining, moderately</u>	
		<u>soft, plastic</u>	
TPH	OBSERVATIONS/NOTES: <u>Collect duplicate sample</u> <u>02-F021-B-A</u>		
BTEX			
PID- <u>0 ppm</u> FID- <u>110 ppm.</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB21-C-A SOURCE Soil Boring 21

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/5/93</u> <u>1505</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Sand (SM) - A/A. saturated</u>	
		<u>brown (7.5 XR 5/4) silty to slightly clayey, moist</u>	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB22-A-A SOURCE Soil Boring - 22

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>4-6</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>815</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - dark gray (7.5 JR 4/6), soft to medium</u>	
		<u>stiff, plastic some gravel occasional rootlets</u>	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB22-B-A SOURCE Soil Boring - 22

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>6-8</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>820</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - very dark gray (5 YR 3/6), occasional</u>	
		<u>brown streaks, soft to medium stiff,</u>	
		<u>plastic, calcareous nodules</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1k94

HNUS SAMPLE NO. 02-SB22-C-A

SOURCE Soil Boring - 22

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>22 - 24</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>906</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (CL) - A/A, saturated</u>	
ANALYSIS:		<u>Strong brown (7.5 YR 5/6), occasional gray streaks, clayey.</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB23-A-A SOURCE Soil Boring - 23

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1100</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - tan, dry, abundant gravel</u>	
	OBSERVATIONS/NOTES:		
TPH			
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB23-B-A SOURCE Soil Boring - 23

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>6-8</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1116</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH)-dark gray (2.5 YR 2.5/0). iron</u>	
ANALYSIS:		<u>staining, medium stiff to stiff, plastic, white</u>	
		<u>to tan calcareous gravel</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 3 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB23-C-A SOURCE Soil Boring- 23

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/11/93</u> <u>1157</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 4/6),</u>	
		<u>clayey, sandy at base, saturated at</u>	
		<u>base</u>	
TPH	OBSERVATIONS/NOTES: <u>Collect duplicate sample</u> <u>02-FD23-C-A</u>		
BTEX			
PID- 0 ppm			
FID- 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB24-A-A SOURCE Soil Boring - 24

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>1-3</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>805</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - dark gray (2.5 YR 4/0), iron staining, medium stiff, plastic, gravelly (fill?), very slight petroleum odor</u>	
TPA	OBSERVATIONS/NOTES:		
BTEX			
FID - 150 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB24-B-A SOURCE Soil Boring- 24

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>11-13</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>830</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - Brown (7.5 YR 5/3) mottled</u>	
		<u>with gray, stiff, moderately plastic,</u>	
		<u>silty, dry to damp</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>FID - 30 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB24-C-A

SOURCE Soil Boring - 24

SAMPLE METHOD: California Sampler	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: 17-19			
SAMPLE DATE & TIME: 8/13/93 845			
SAMPLED BY: Basilio			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		Silt (ML) - strong brown (7.5 YR 5/6).	
		gray mottling, clayey in parts, moist to wet at base	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB25-A-A SOURCE Soil Boring - 25

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>1-3</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1019</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - dark brown (1.5 YR 3/0).</u>	
		<u>minor iron staining, plastic</u>	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 32 ppm			



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB25-B-A SOURCE Soil Boring- 25

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>5-7</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1039</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - olive (5Y 4/2), pockets of dark gray mottling, Fe/Mn streaks, plastic occasional calcareous nodules</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 19 ppm			
FID - 50 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1k94

HNUS SAMPLE NO. 02-SB25-CA

SOURCE Soil Boring- 25

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>17-19</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1108</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt CML - strong brown (7.5 JR 4/6)</u>	
ANALYSIS:		<u>no odor</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB26-A-A SOURCE Soil Boring - 26

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1340</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (CL)-black (1.5 YR 2/6); pinkish</u>	
ANALYSIS:		<u>gray mottling, dry, gravel, rootlets</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID- 0 ppm</u> <u>FID- 2 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB26-B-A SOURCE Soil Boring

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>6-8</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1355</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH)-dark gray (7.5 YR 4/0), iron staining, medium stiff, plastic</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>TCL VOA</u>			
<u>TCL BNA</u>			
<u>PID-71 ppm</u> <u>FID-200 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB26-C-A SOURCE Soil Boring - 26

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>18-20</u>			
SAMPLE DATE & TIME: <u>8/13/93</u> <u>1422</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - Strong brown (7.5 YR 4/6)</u>	
ANALYSIS:		<u>occasional gray, clayey, soft to stiff,</u>	
		<u>moist to wet at base</u>	
TPH	OBSERVATIONS/NOTES: <u>Collect duplicate sample</u> <u>02-FD26-C-A</u>		
BTEX			
PID-73 ppm FID-1000+ ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB27-A-A SOURCE Soil Boring - 27

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>02</u>			
SAMPLE DATE & TIME: <u>8/16/93</u> <u>1534</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - dark reddish brown (5 YR 3/2)</u>	
		<u>variegated with white, red and black, stiff to hard, dry, gravel, rootlets</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB27-B-A

SOURCE Soil Boring - 27

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>14-16</u>			
SAMPLE DATE & TIME: <u>8/16/93</u> <u>1602</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) dark brown (7.5 YR 4/4), minor amounts</u>	
		<u>of gray and black, medium stiff to stiff,</u>	
		<u>plastic, slight petroleum odor</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>FID- 400 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB27-C-A SOURCE Soil Boring - 27

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>22-24</u>			
SAMPLE DATE & TIME: <u>8/16/93</u> <u>1620</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - Strong brown (7.5 YR 4/6).</u>	
		<u>Sandy to clayey, moist to wet at base</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
FID - 3 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB28-A-A SOURCE Soil Boring - 28

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>1-3</u>			
SAMPLE DATE & TIME: <u>8/17/93</u> <u>0854</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) - very dark gray (7.5 YR 3/0).</u>	
		<u>soft to medium stiff, plastic</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID-12 ppm</u> <u>FID-130 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB28-B-A

SOURCE Soil Boring - 28

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>9-9</u>			
SAMPLE DATE & TIME: <u>8/17/93</u> <u>0917</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) dark gray (5 Y 4/1), medium stiff,</u>	
		<u>plastic, iron staining, occasional < 1/8 - inch</u>	
		<u>calcareous nodules</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 650 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB28-C-A

SOURCE Soil Boring - 28

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>20-22</u>			
SAMPLE DATE & TIME: <u>8/17/93</u> <u>0943</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) strong brown (7.5 YR 5/6), gray mottling, clayey moist to wet at base</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
- ☒ SUBSURFACE SOIL
- ☐ SEDIMENT
- ☐ POND/LAGOON
- ☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB29-A-A SOURCE Soil Boring 29

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>1-3</u> <u>1211</u>			
SAMPLE DATE & TIME: <u>8/17/93</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CH) very dark gray (10 GR 3/1)</u>	
ANALYSIS:		<u>medium stiff plastic</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 7 ppm</u> <u>FID - 70 ppm</u>			

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 11K94

HNUS SAMPLE NO. 02-SB29-B-A

SOURCE Soil Boring - 29

SAMPLE METHOD: California Sampler	COMPOSITE SAMPLE DATA		
DEPTH SAMPLED: 5-9	SAMPLE	TIME	COLOR/DESCRIPTION
SAMPLE DATE & TIME: 8/17/93 1222			
SAMPLED BY: Basilio			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		Clay (CH) - dark gray to yr 4/1), medium stiff, plastic	
ANALYSIS:			
TPH	OBSERVATIONS/NOTES:		
BTEX			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB29-C-A

SOURCE Soil Boring - 29

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>17-19</u>			
SAMPLE DATE & TIME: <u>8/17/93 1245</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☐ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 5/6)</u>	
ANALYSIS:		<u>Sandy, saturated</u>	
	OBSERVATIONS/NOTES:		
<u>TPH</u>			
<u>BTEX</u>			
PID - 0 ppm FID - 7 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB30-AA

SOURCE Soil Boring - 30

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>856</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - very dark gray (10 YR 3/1),</u>	
		<u>stiff moderately plastic, iron staining</u>	
		<u>rootlets</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1k94

HNUS SAMPLE NO. 02-SB30-B-A

SOURCE Soil Boring - 30

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>8-10</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>910</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - yellowish red (5 YR 4/6) - occasional</u>	
		<u>gray, medium stiff, moderately plastic</u>	
		<u>silty hackly fracture in silty parts</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 5 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB30-C-A

SOURCE Soil Boring - 30

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>929</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 5/8)</u>	
		<u>very slightly clayey at top, sandy at</u>	
		<u>base, moist to wet at base</u>	
ANALYSIS:			
<u>TAH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 1 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB31-A-A

SOURCE Soil Boring-31

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>1005</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL)-very dark gray (7.5 YR 3/0)</u>	
ANALYSIS:		<u>stiff to hard, rootlets, iron staining and</u>	
		<u>nodules < 1/8-inch</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-9831-B-A

SOURCE Soil Boring- 31

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>10-12</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>1025</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - light gray (7.5 YR 7/0) and red</u>	
		<u>yellow (7.5 YR 6/6) mottled, medium stiff,</u>	
		<u>plastic, silty, slight petroleum odor</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 5 ppm</u>			
<u>FID - 90 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB31-C-A

SOURCE Soil Boring- 31

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/18/93</u> <u>1037</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 5/6) gray</u>	
		<u>in clayey parts, clayey at top to sandy</u>	
		<u>at base, moist to wet at base</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES: <u>collect duplicate sample</u> <u>02-F031-C-A</u>		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB32-A-A

SOURCE Soil Boring-32

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>833</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - very dark gray (2.5 YR 3/0),</u> <u>stiff to hard, rootlets dry, iron staining</u>	
	OBSERVATIONS/NOTES:		
<u>TPH</u>			
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 0 ppm</u>			



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB32-B-A

SOURCE Soil Boring-32

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>8-10</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>846</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - yellowish red (5 YR 5/6) minor</u>	
		<u>gray and black, medium stiff, plastic, very</u>	
		<u>slightly silty, occasional gypsum crystals</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB32-C-A

SOURCE Soil Boring-32

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>0909</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 4/6),</u>	
		<u>clayey to sandy in parts, wet to</u>	
		<u>saturated at base</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES: <u>Collect duplicate sample</u> <u>02-FD32-C-A</u>		
<u>BTEX</u>			
<u>PID - 1 ppm</u>			
<u>FID - 1 ppm</u>			



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SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB33-A-A SOURCE Soil Boring-33

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>1006</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - dark reddish gray (5 YR 4/2),</u>	
		<u>stiff, slightly plastic, dry, rootlets, platy</u>	
		<u>gypsum crystals</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 12 ppm</u>			
<u>FID - 0 ppm</u>			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB33-B-A

SOURCE Soil Boring-33

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>12-14</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>1034</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - brown (7.5 YR 5/4), minor gray,</u>	
		<u>medium stiff to stiff, plastic, iron staining</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID-15 ppm</u>			
<u>FID-120 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB33-C-A

SOURCE Soil Boring - 33

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/19/93</u> <u>1042</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - strong brown (7.5 YR 4/6), minor</u>	
		<u>gray and black, medium stiff, wet at</u>	
		<u>bottom</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID - 0 ppm</u>			
<u>FID - 7 ppm</u>			



HALLIBURTON NUS
Environmental Corporation

SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB34-A-A

SOURCE Soil Boring-34

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/26/93</u> <u>735</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - very dark gray (2.5 YR 3/0),</u> <u>stiff, rootlets, dry</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 0 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington

PROJECT NUMBER 1K94

HNUS SAMPLE NO. 02-SB34-B-A

SOURCE Soil Boring-34

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>14-16</u>			
SAMPLE DATE & TIME: <u>8/20/93</u> <u>807</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - reddish yellow (5YR 6/6), gray mottling</u>	
		<u>minor black, silty, medium stiff, moderately plastic,</u>	
		<u>moist, occasional iron stain</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>PID-0 ppm</u>			
<u>FID-0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB34-C-A SOURCE Soil Boring-34

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/20/93</u> <u>811</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - light reddish brown (5YR 6/4),</u>	
		<u>some gray, slightly clayey to sandy in parts</u>	
		<u>wet to saturated</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES: <u>Collect duplicate sample</u> <u>02-FD34-C-A</u>		
<u>BTEX</u>			
<u>PID - 0 ppm</u> <u>FID - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-MW11 - A-A SOURCE Soil Boring - MW-11

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA	
	SAMPLE	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>		
SAMPLE DATE & TIME: <u>8/12/93</u> <u>0817</u>		
SAMPLED BY: <u>Basilio</u>		
SIGNATURE(S): <u>[Signature]</u>		
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE		
	SAMPLE DATA	
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)
		<u>Clay (CH) - black (2.5 YR 2.5/6) hard dry,</u>
		<u>gravelly, rootlets</u>
ANALYSIS:		
<u>TPH</u>	OBSERVATIONS/NOTES:	
<u>BTEX</u>		
<u>PID - 0 ppm</u> <u>FID - 0 ppm</u>		



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1k94
HNUS SAMPLE NO. 02-MW11-B-A SOURCE Soil Boring-MW11

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>14-16</u>			
SAMPLE DATE & TIME: <u>8/12/93</u> <u>0905</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): 			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - brown (7.5 YR 5/4) occasional</u>	
ANALYSIS:		<u>gray streaks, stiff, plastic, silty, occasional</u>	
		<u>1/8-inch calcareous nodules</u>	
TPH	OBSERVATIONS/NOTES:		
BTEX			
PID - 0 ppm			
FID - 50 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-MW11-C-A SOURCE Soil Boring - MW11

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>18-20</u>			
SAMPLE DATE & TIME: <u>8/12/93</u> <u>0921</u>			
SAMPLED BY: <u>Basilio</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (CL) - strong brown (7.5 YR 5/6),</u> <u>occasional gray, stiff, silty, damp</u>	
ANALYSIS:			
	OBSERVATIONS/NOTES:		
PID - 208 ppm			
FID - 20 ppm			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
HNUS SAMPLE NO. 02-SB35-A-A SOURCE Soil boring 35

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>0-2</u>			
SAMPLE DATE & TIME: <u>8/24/93</u> <u>8/35</u>			
SAMPLED BY: <u>BASILIO</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Clay (OL) - brown (7.5 x R 5/4), black streaks, stiff, rootlets, dry</u>	
ANALYSIS:			
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>P10 - 0 ppm</u>			
<u>F10 - 0 ppm</u>			



SOIL/SEDIMENT SAMPLE LOG SHEET

- ☐ SURFACE SOIL
☒ SUBSURFACE SOIL
☐ SEDIMENT
☐ POND/LAGOON
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1494
HNUS SAMPLE NO. 02-SB35-B-A SOURCE Soil boring 35

SAMPLE METHOD: <u>California Sampler</u>	COMPOSITE SAMPLE DATA		
	SAMPLE	TIME	COLOR/DESCRIPTION
DEPTH SAMPLED: <u>16-18</u>			
SAMPLE DATE & TIME: <u>8/24/93</u> <u>913</u>			
SAMPLED BY: <u>BASILIO</u>			
SIGNATURE(S): <u>[Signature]</u>			
TYPE OF SAMPLE ☐ LOW CONCENTRATION ☐ HIGH CONCENTRATION ☒ GRAB ☐ COMPOSITE ☐ GRAB - COMPOSITE			
ANALYSIS:	SAMPLE DATA		
	COLOR	DESCRIPTION: (SAND, CLAY, DRY, MOIST, WET, ETC.)	
		<u>Silt (ML) - brown (7.5 YR 5/4), minor</u> <u>gray, slightly clayey to sandy</u> <u>wet</u>	
<u>TPH</u>	OBSERVATIONS/NOTES:		
<u>BTEX</u>			
<u>P10 - 0 ppm</u>			
<u>F10 - 0 ppm</u>			

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-mw07-A-A SOURCE MW-7

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-MW08-A-A SOURCE MW-8

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-MW04-A-A SOURCE MW-9

[illegible]

GROUND WATER, SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-mw10-A-A SOURCE MW-10

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-mw11-A-A SOURCE MW-11

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-mw12-A-A SOURCE MW-12

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-mw13-A-A SOURCE MW-13

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-MW14-A-A SOURCE MW-14

[illegible]

GROUND WATER SAMPLE LOG SHEET

☒ MONITORING WELL DATA
☐ DOMESTIC WELL DATA
☐ OTHER

PROJECT NAME Ellington PROJECT NUMBER 1K94
NUS SAMPLE NO. 02-MW15-A-A SOURCE MW-15

[illegible]

Appendix D

Monitor Well Development Forms

[illegible]

WELL DEVELOPMENT FIELD SHEET

 DATE 8/24/93

 CLIENT Ellington JOB NUMBER 1K94 LOCATION _____ SITE NUMBER _____

WELL NUMBER: <u>MW-14</u>				LITHOLOGY OF SCREENED INTERVAL: <u>Silt, Silty clay</u>	
WELL CASING SIZE AND TYPE: <u>2" PVC</u>				COMMENTS	
WELL DEPTH:					
STATIC WATER LEVEL: <u>8.25 TOC</u>				Before development - <u>22.96 TOC</u>	
ONE CASING VOLUME: <u>3.11 gallons</u>				After development - <u>27.70 TOC</u>	
PURGE METHOD: <u>Surging / Submersible Pump</u>				27.70 - 8.25 = 19.45 X .16 = 3.11	
START PURGE: <u>1026</u>				Pump rate $\approx$ <u>1.3 gpm</u>	
END PURGE: <u>1225</u>					
TOTAL AMOUNT PURGED: (GALLONS) <u>160</u>				Final water - <u>clear, very sl turbid</u>	
TOTAL AMOUNT PURGED: (WELL VOLUMES)				trace sediment	
1	2	3	4	5	6
(51)					
VOLUME #	TEMPERATURE	pH	SPECIFIC CONDUCTIVITY	Turbidity (NTU)	Dissolved O ₂
60 gal	22.9	7.12	1220	999	2.35
70 gal	22.8	7.04	1230	736	2.55
80 gal	22.6	6.98	1220	746	2.19
90 gal	22.8	6.99	1230	375	2.18
100 gal	22.9	6.97	1210	329	2.03
110 gal	22.8	6.94	1220	530	2.13
120 gal	23.0	6.87	1210	325	2.16
130 gal	22.8	6.87	1220	245	2.24
140 gal	23.1	6.89	1210	149	2.18
150 gal	22.8	6.91	1210	240	2.50
160 gal	23.1	6.89	1190	118	2.68

Appendix E
Chain of Custody Forms

127934

**CHAIN-OF-CUSTODY RECORD
Analytical Request**

Client: B & N Environmental
Address: _____
Phone: _____

Report To: Linda Stebbins
Bill To: _____
P.O. # / Billing Reference: 1190
Project Name / No.: 127934
Requested Due Date: _____

Pace Client No.

Pace Project Manager

Pace Project No.

*Requested Due Date:

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	D2-SB20-A-A	1055	S						TPH PTEX TCL VOA TCL BNA	
2	D2-SB20-B-A	1110	S							
3	D2-SB20-C-A	1140	S							
4	D2-TB01-A-A	-	W							
5	D2-TB02-A-A	-	W							
6	D2-RB01-A-A	1600	W							
7	D2-FB01-A-A	1535	W							
8	D2-FB02-A-A	1545	W							

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					<i>[Signature]</i>	<i>[Signature]</i>	8/15/04	1645

Additional Comments

H245825-843

127935

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client B + R Environmental

Report To: Linda Steakley

Pace Client No.

Address

Bill To: BNE

Pace Project Manager

Phone

P.O. # / Billing Reference 1K94

Pace Project No.

Project Name / No. Ellington

*Requested Due Date:

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES				ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02 - SB21 - A - A	1415	S		1					TXL BTEX TCL VOA TCL BUA	
2	02 - SB21 - B - A	1420	S		1						
3	02 - FD21 - B - A	1420	S		1						
4	02 - SB21 - C - A	1405	S		1						
5	02 - SB16 - A - A	816	S		1						
6	02 - SB16 - B - A	834	S		1						
7	02 - SB16 - C - A	907	S		1						
8											

Additional Comments

[Signature] 8/15/93

H 245 825-843

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

128249

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: B + R Environmental Report To: Linda Steadley Pace Client No. _____

Address: _____ Bill To: BNE Pace Project Manager _____

Phone: _____ P.O. # / Billing Reference: 1694 Pace Project No. _____

Sampled By (PRINT): Larry Basilii Project Name / No.: Wellington *Requested Due Date: _____

Sampler Signature: [Signature] Date Sampled: 8/6/93

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	D2-SB18-A-A	1440	S						TPH BTEX TCL VOA TCL PNA	X
2	D2-SB18-B-A	1502	S							X
3	D2-SB18-C-A	1520	S							X
4	D2-SB15-A-A	858	S							X
5	D2-SB15-B-A	926	S							X
6	D2-SB15-C-A	945	S							X
7	D2-FD15-C-A	945	S							X
8										

COOLER NOS.	BAILERS	SHIPMENT METHOD	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					<u>[Signature]</u> 8/6/93 1800	<u>[Signature]</u> 8/6/93 1800	8/6/93	1800
Additional Comments								
<u>H246033-044</u>								

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL



127933

CHAIN-OF-CUSTODY RECORD

Analytical Request

Pace Client No. _____

Pace Project Manager _____

Pace Project No. _____

*Requested Due Date: _____

Report To: Linda Steahly
Bill To: BNC
P.O. # / Billing Reference 1494
Project Name / No. E/11/14/10

*Requested Due Date:

[illegible][illegible]

DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
		Trade/Bec 8/6/93 1800	Jim (Bec) / Bec	8/6/93	1800

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client B + R Environmental
Address _____

Report To: Mark Spencer

Pace Client No. _____

Bill To: BACE

Pace Project Manager _____

P.O. # / Billing Reference 1K94

Pace Project No. _____

Phone 575 4750

Project Name / No. Billington

*Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES				ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-SB22-A-A	815	S		1					X	Hold. Odors Analyze
2	02-SB22-B-A	820	S		1					X	
3	02-SB22-C-A	906	S		1					X	
4	02-RB03-A-A	1655	W		4					X	
5	SB22	959	W		1					X	
6	SB23	1305	W		1					X	
7	SB19	1600	W		1					X	
8											

Additional Comments

ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
	<i>[Signature]</i>	<i>[Signature]</i>	8/11	1715
<i>[Signature]</i> <i>[Signature]</i> <i>[Signature]</i>				

H246697-708

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Bruno & Rust Environmental

Report To: Mark Spencer

Pace Client No.

Address _____

Bill To: BZE

Pace Project Manager

Phone (713) 575-4750

P.O. # / Billing Reference 1K94

Pace Project No.

Project Name / No. Ellington

*Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-SBMW11-A-A	0817	Soil						TPH BTEX TCL VOA TCL BVA	
2	02-SBMW11-B-A	0905	Soil							
3	02-SBMW11-C-A	0921	Soil							
4	02-TB05-A	-	Water							
5	02-RB04-A-A	1305	Water							
6										
7										
8										

COOLER NOS.	BAILERS	SHIPMENT METHOD	OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
						<i>[Signature]</i>	<i>[Signature]</i>	8-12-93	1600

Additional Comments

1246772-776

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client B-1 R Environment

Address _____

Report To: Mark Spencer

Bill To: BRE

P.O. # / Billing Reference 1694

Project Name / No. 15/11/10/10

Pace Client No. _____

Pace Project Manager _____

Pace Project No. _____

*Requested Due Date: _____

Sampled By (PRINT): <u>L BASILIO</u>		Date Sampled <u>8/13/93</u>	
Sampler Signature <u>[Signature]</u>			

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	NO. OF CONTAINERS				ANALYSES REQUEST				REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA	TPH	BTEX	TCC VOA	TCC PNA	
1	02-SB24-A-A	805	S		1					X			
2	02-SB24-B-A	830	S		1					X			
3	02-SB24-C-A	845	S		1					X			
4	02-SB25-A-A	1009	S		1					X			
5	02-SB25-B-A	1029	S		1					X			
6	02-SB25-C-A	1108	S		1					X			
7	02-SB26-A-A	1340	S		1					X			
8	02-SB26-B-A	1355	S		1					X			

COOLER NOS.	BAILERS	SHIPMENT METHOD	OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME

[Signature] Genif Adams/ACE 8/14 1100
Stenmills

Additional Comments

1247040-051

127932

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client B + R Environmental

Report To: Mark Spencer

Address _____

Bill To: BRE

Pace Project Manager

Phone 575-4750

P.O. # / Billing Reference 1494

Pace Project No.

Project Name / No. Ellington

*Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PAGE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-KB05-A-A	1530	W						TPH BTEX TCL VOA TCL BUA	} Hold Do Not analyze
2	02-TB06-A-A	-	W							
3	SB-26	1505	W							
4	SB-25	1145	W							
5	SB-24	940	W							
6	02-SB26-C-A	1422	S							
7	02-FD26-C-A	1422	S							
8										

COOLER NOS.	BAILERS	SHIPMENT METHOD		ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
		OUT / DATE	RETURNED / DATE					
					<u>Mark Spencer</u> BRE	<u>Mark Spencer</u> BRE	<u>8/14</u>	<u>1100</u>

Additional Comments

4847040-051

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

CHAIN OF CUSTODY



16360 PARK 10 PLACE DRIVE, SUITE 300
HOUSTON, TEXAS 77084
(713) 492-1888

PROJECT NAME Ellington		REPORT TO:		INVOICE TO:	
PROJECT NUMBER 11594		COMPANY BRE		COMPANY Sam C	
PMS CODE		ADDRESS PO Box 4574		ADDRESS	
		CITY Houston		CITY	
		STATE TX		STATE	
		ZIP 77210		ZIP	
		PHONE # 575 4761		PHONE #	
		ATT. Mark Spencer		ATT.	

SAMPLE NUMBER	DATE (93)	TIME	COMPOSITE	GRA B	SAMPLE SOURCE & DESCRIPTION	CONTAINER NUMBERS	REQUESTED ANALYSIS										REMARKS
							TPH	BTX	TCL UOA	TCL BNA							
1 02-SB27-A-A	8/16	1534	X	X	0-2 SUBSURFACE SOIL	1	X	X									Note: Please
2 02-SB27-B-A	"	1607	X	X	14'-16' ↓	1	X	X									analyze sample
3 02-SB27-C-A	"	1620	X	X	22'-24' ↓	1	X	X									02-SB27-B-A
4																	on 24 hour
5																	turnaround
6																	
7																	
8																	
9																	
10																	
11																	
12																	
13																	
14																	
15																	

RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN	RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN
<i>[Signature]</i>	8/17/91 1200	<i>[Signature]</i>	8-17-93 1200
RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN	RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN
<i>[Signature]</i>	8-17-93 1200	<i>[Signature]</i>	8-17-93 1200
SAMPLE CONDITION		H247375-384	

CHAIN OF CUSTODY



16360 PARK 10 PLACE DRIVE, SUITE 300
HOUSTON, TEXAS 77084
(713) 492-1888

PROJECT NAME E. Livingston		REPORT TO:		INVOICE TO:	
PROJECT NUMBER 1194		COMPANY BAL		COMPANY SGM	
PMS CODE		ADDRESS PO Box 4574		ADDRESS	
		CITY Houston		CITY	
		STATE TX		STATE	
		ZIP 77216		ZIP	
		ATT. Mark Spencer		ATT.	
		PHONE # 575 4761		PHONE #	

SAMPLE NUMBER	DATE (93)	TIME	COMPOSITE	SAMPLE SOURCE & DESCRIPTION	CONTAINER NUMBERS	REQUESTED ANALYSIS										REMARKS
						TPH	BTEX	TCL	VOA	TCL	BVA					
1 02-SB28-A-A	8/17	0854	X	1'-3' SUBSURFACE SOIL	1	X	X									
2 02-SB28-B-A		0917	X	7'-9'	1	X	X									
3 02-SB28-C-A		0943	X	19'-21'	1	X	X									
4 02-SB29-A-A			X	1'-3'	1	X	X									
5 02-SB29-B-A			X	7'-9'	1	X	X									
6 02-SB29-C-A			X	17'-19'	1	X	X									
7 02-TB07-A-A			X	WATER	2	X	X									
8 02-RB06-A-A				"												
9																
10																
11																
12																
13																
14																
15																

RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN	RELINQUISHED BY: SIGN	DATE/TIME RECEIVED BY: SIGN
<i>[Signature]</i>	8/17/93 1700	<i>[Signature]</i>	8/17/93 1700
RELINQUISHED BY: SIGN	DATE/TIME	SAMPLE CONDITION	
<i>[Signature]</i>		H247375-384	

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client B&R Environmental

Report To: Mark Spencer

Pace Client No.

Address _____

Bill To: BRE

Pace Project Manager

Phone 575-4753

P.O. # / Billing Reference 1K94

Pace Project No.

Sampled By (PRINT): _____

Project Name / No. Ellington

*Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02 - RBOL-A-A	1333	water						TPH BTEX	
2										
3										
4										
5										
6										
7										
8										

Additional Comments

COOLER NOS.	BAILERS	SHIPMENT METHOD	OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
						<i>[Signature]</i>	<i>[Signature]</i>	8/18	1350

H247411-419-421

Instructions for completing Chain of Custody (COC)

1. Complete all Client Information at top of sheet: name, address, phone, contact (person to whom report will be sent and contact can be made if questions arise), billing information if different from client, PO#, Project Name and/or Project Number as it will appear on the report.
2. PACE Client No., Project Manager and Project No. will be completed by PACE.
3. A separate COC must be filled out for each day of sample collection.
4. Sampler should print their name in the space provided and sign their name followed by the date of the sampling event.
5. Complete Sample Description as it will appear on the laboratory report; include time of sampling, sample matrix, no. of containers and container types.
6. Analyses Requested: Complete analyses on the lines provided and place a check in the column for the samples requiring the analysis. It may be necessary to use the space provided for additional comments or include attachments for extended lists of parameters.
7. Indicate method of shipment used for return of samples and date sent.
8. Submission of samples to laboratory: Indicate Item Number of those samples being transferred; sign relinquished by, and include your affiliation.

***IMPORTANT NOTE:**

Standard Turnaround Time is 3-4 weeks. If this does not satisfy your requirements, arrangements must be made prior to samples being submitted to the laboratory. Contact your project manager.

Special Project Requirements such as Low Level Detection Limits or level of QC reported must be indicated on the chain of custody. (Use Additional Comments Section.)

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client: B&R Environmental Report To: BRE Pace Client No. _____
 Address: P.O. Box 4574 Bill To: Same Pace Project Manager _____
Houston TX 77210 P.O. # / Billing Reference: 1K9K Pace Project No. _____
 Phone: 575 4761 Project Name / No.: Ellington *Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACEN.	NO. OF CONTAINERS				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-SB34-A-A	735	Soil		1				X	
2	02-SB34-B-A	807			1				X	
3	02-SB34-C-A	811			1				X	
4	02-FD34-C-A	811			1				X	
5	02-TB09-A-A	-	Water		2				X	
6	02-RB07-A-A	1109			3				X	
7										
8										

COOLER NOS.	BAILERS	SHIPMENT METHOD	OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
						<u>B&R/BNE</u>	<u>8/20/93</u>	<u>11:45</u>	<u>8/20/93</u>
Additional Comments									
<u>#H248018-23, 50-51</u>									

SEE REVERSE SIDE FOR INSTRUCTIONS

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client Brown & Root Environmental
Address PO 4574
Helena TX 77210
Phone 575 4761

Report To: Mark Spencer
Bill To: BRE
P.O. # / Billing Reference 11694
Project Name / No. Ellington

Pace Client No. _____
Pace Project Manager _____
Pace Project No. _____
*Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	NO. OF CONTAINERS	PRESERVATIVES				ANALYSES REQUEST	REMARKS
						UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-SB35-A-A	855	SOIL		1					X	TPH BTEX
2	02-SB35-B-A	913	SOIL		1					X	
3	02-TB11-A-A	-	WATER		2					X	
4											
5											
6											
7											
8											

COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					<u>D. Gibson / BRE</u>	<u>Mark Spencer / PACE</u>	<u>8/24/93</u>	<u>1703</u>
Additional Comments <u>These are the last of the soil samples from Ellington.</u>								
<u>#H248156-LS8</u>								

SEE REVERSE SIDE FOR INSTRUCTIONS

CHAIN-OF-CUSTODY RECORD
Analytical Request

Client BCE Report To: Mark Spencer Pace Client No. _____
 Address _____ Bill To: BCE Pace Project Manager _____
 Phone 575-4750 P.O. # / Billing Reference 1494 Pace Project No. _____
 Project Name / No. Ellington *Requested Due Date: _____

ITEM NO.	SAMPLE DESCRIPTION	TIME	MATRIX	PACE NO.	PRESERVATIVES				ANALYSES REQUEST	REMARKS
					UNPRESERVED	H ₂ SO ₄	HNO ₃	VOA		
1	02-MW07-A-A	1330	W						X X X X	
2	02-MW08-A-A	1348	W						X X	
3	02-MW09-A-A	1505	W						X X	
4	02-MW10-A-A	1534	W						X X X X	
5	02-MW11-A-A	1600	W						X X X X	
6	02-FD10-A-A	1534	W						X X	
7	02-MW12-A-A	1428	W						X X X X	
8	02-MW13-A-A	1437	W						X X	

COOLER NOS. _____ BAILERS _____ SHIPMENT METHOD _____ RETURNED / DATE _____
 Additional Comments: Per Larry Basilio 8/30/93 - change analysis request to TPH and BTX only for 02-MW12-A-A and 02-MW13-A-A, 8/30/93 AM.
 RELINQUISHED BY / AFFILIATION: L. Basilio / BCE DATE: 8-27-93 TIME: 1730
 ACCEPTED BY / AFFILIATION: Jim (BCE) / BCE DATE: 8-27-93 TIME: 1730
 H248705-720,775,776

SEE REVERSE SIDE FOR INSTRUCTIONS

127938

CHAIN-OF-CUSTODY RECORD
Analytical Request

Report To: Mark Spencer

Pace Client No.

Bill To:

Pace Project Manager

P.O. # / Billing Reference

Pace Project No.

Project Name / No.

*Requested Due Date:

BNE

Client

Address

Phone

Sampled By (PRINT):

BASILIO

Sampler Signature

Date Sampled

8/27/93

ITEM NO. SAMPLE DESCRIPTION TIME MATRIX PAGE NO.

1

02-MW14-A-A

1408 W

2

02-MW15-A-A

1415 W

3

02-TB12-A-A

- W

4

02-RB08-A-A

1645 W

5

6

7

8

NO. OF CONTAINERS

PRESERVATIVES

ANALYSES REQUEST

REMARKS

UNPRESERVED
H₂SO₄
HNO₃
VOA
TOL
BTEX
TCL VOA
TCL BNA
TOS

3

3

2

4

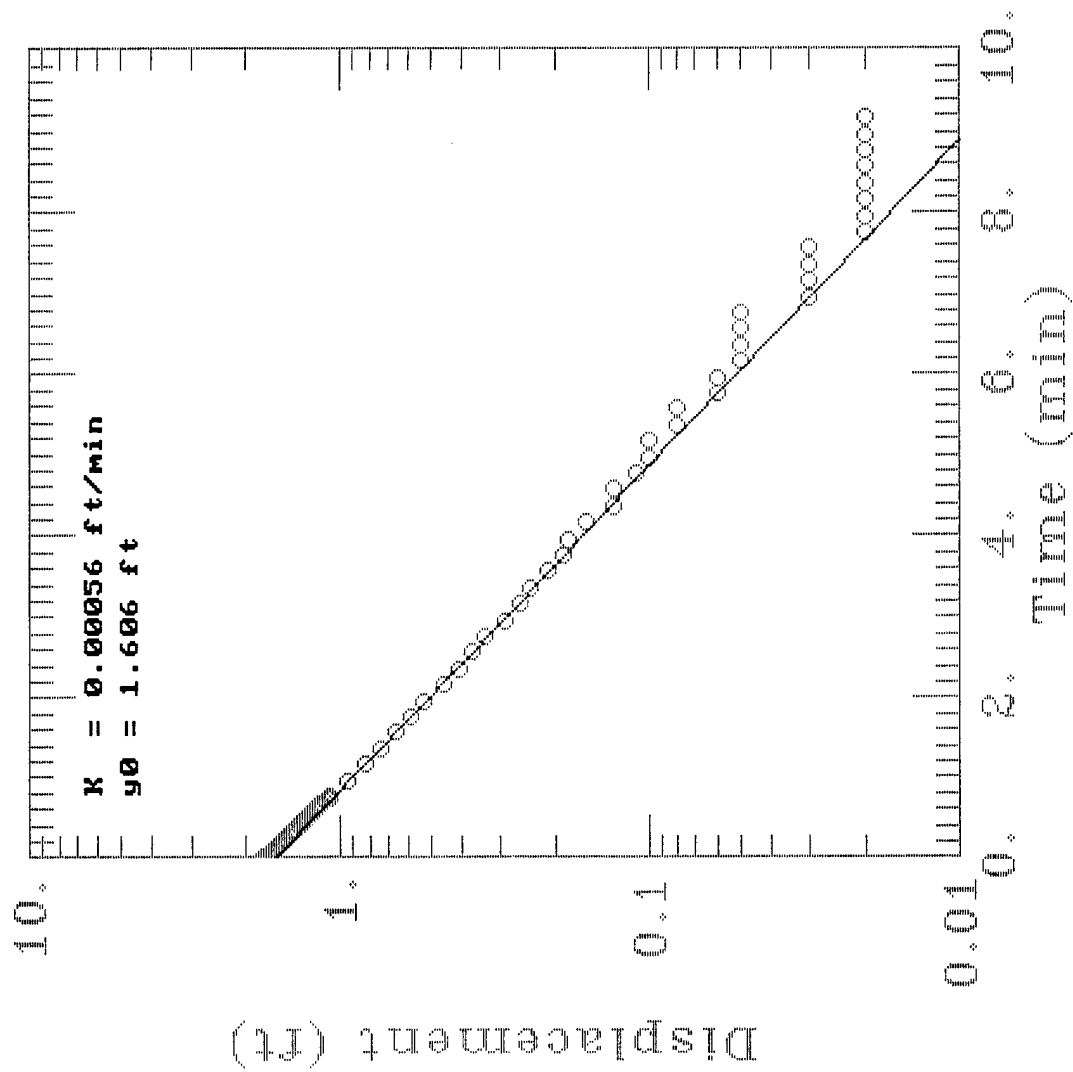
COOLER NOS.	BAILERS	SHIPMENT METHOD OUT / DATE	RETURNED / DATE	ITEM NUMBER	RELINQUISHED BY / AFFILIATION	ACCEPTED BY / AFFILIATION	DATE	TIME
					<u>2 Beaulieu / BNC</u>	<u>Kim (BNC) / PACE</u>	<u>8-27-93</u>	<u>1730</u>
Additional Comments								
<u>1248705-720,775,776</u>								

SEE REVERSE SIDE FOR INSTRUCTIONS

ORIGINAL

Appendix F
Aquifer Test Data

SLUG IN TEST MW-11



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 109
 Number of estimated parameters.... 2
 Degrees of freedom..... 107
 Residual mean..... 0.00326
 Residual standard deviation..... 0.01126
 Residual variance..... 0.0001268

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0067	1.74	1.7157	0.024332	1
0.01	1.72	1.7122	0.0077747	1
0.0134	1.72	1.7087	0.011315	1
0.0167	1.72	1.7053	0.014743	1
0.02	1.7	1.7018	-0.0018348	1
0.0234	1.7	1.6983	0.0016836	1
0.0267	1.7	1.6949	0.0050916	1
0.03	1.69	1.6915	-0.0015073	1
0.0334	1.69	1.688	0.0019898	1
0.0367	1.69	1.6846	0.0053771	1
0.04	1.69	1.6812	0.0087575	1
0.0434	1.69	1.6778	0.012233	1
0.0467	1.69	1.6744	0.0156	1
0.05	1.67	1.671	-0.0010399	1
0.0534	1.67	1.6676	0.0024148	1
0.0567	1.67	1.6642	0.0057611	1
0.06	1.67	1.6609	0.0091007	1
0.0634	1.66	1.6575	0.0025344	1
0.0667	1.66	1.6541	0.0058604	1
0.07	1.66	1.6508	0.0091797	1
0.0734	1.66	1.6474	0.012593	1
0.0767	1.66	1.6441	0.015898	1
0.08	1.64	1.6408	-0.00080235	1
0.0834	1.64	1.6374	0.0025899	1
0.0867	1.64	1.6341	0.0058756	1
0.09	1.62	1.6308	-0.010845	1
0.0934	1.62	1.6275	-0.0074736	1
0.1134	1.61	1.6078	0.0022189	1
0.1301	1.59	1.5915	-0.0015205	1
0.1467	1.58	1.5755	0.0044798	1
0.1634	1.56	1.5596	0.00041406	1
0.1801	1.54	1.5438	-0.0038128	1
0.1967	1.53	1.5283	0.0017078	1
0.2134	1.51	1.5128	-0.0028355	1
0.2301	1.5	1.4975	0.0024648	1
0.2467	1.48	1.4825	-0.0024798	1
0.2634	1.46	1.4675	-0.0074865	1
0.2801	1.45	1.4526	-0.0026448	1

insert

0.0967

166

0.2964	1.43	1.4383	-0.0083033	1
0.3134	1.42	1.4235	-0.0034968	1
0.3301	1.4	1.4091	-0.0091	1
0.3467	1.38	1.3949	-0.014934	1
0.3634	1.37	1.3808	-0.010826	1
0.3801	1.35	1.3669	-0.016861	1
0.3967	1.35	1.3531	-0.003119	1
0.4134	1.34	1.3394	0.00056605	1
0.4301	1.32	1.3259	-0.0058873	1
0.4467	1.31	1.3126	-0.0025576	1
0.4634	1.29	1.2993	-0.0092828	1
0.4801	1.29	1.2861	0.0038577	1
0.4967	1.27	1.2732	-0.0032122	1
0.5134	1.26	1.2603	-0.0003353	1
0.5301	1.24	1.2476	-0.0075887	1
0.5467	1.23	1.235	-0.0050461	1
0.5634	1.21	1.2226	-0.012555	1
0.5801	1.21	1.2102	-0.00019073	1
0.5967	1.19	1.198	-0.0080242	1
0.6134	1.18	1.1859	-0.0059077	1
0.6301	1.16	1.1739	-0.013914	1
0.6467	1.16	1.1621	-0.002112	1
0.6634	1.15	1.1504	-0.00035874	1
0.6801	1.13	1.1387	-0.0087244	1
0.6967	1.11	1.1273	-0.017276	1
0.7134	1.11	1.1159	-0.0058754	1
0.7301	1.1	1.1046	-0.0045898	1
0.7467	1.08	1.0935	-0.013485	1
0.7634	1.08	1.0824	-0.0024257	1
0.9634	0.94	0.95836	-0.018358	1
1.1634	0.83	0.84851	-0.018511	1
1.3634	0.73	0.75125	-0.021254	1
1.5634	0.65	0.66515	-0.015145	1
1.7634	0.59	0.58891	0.0010939	1
1.9634	0.53	0.52141	0.0085944	1
2.1634	0.46	0.46164	-0.0016419	1
2.3634	0.41	0.40873	0.0012716	1
2.5634	0.37	0.36188	0.0081201	1
2.7634	0.34	0.3204	0.019599	1
2.9634	0.29	0.28368	0.0063233	1
3.1634	0.26	0.25116	0.0088384	1
3.3634	0.24	0.22237	0.017627	1
3.5634	0.21	0.19688	0.013115	1
3.7634	0.19	0.17432	0.015682	1
3.9634	0.18	0.15434	0.025662	1
4.1634	0.16	0.13665	0.023353	1
4.3634	0.13	0.12098	0.0090152	1
4.5634	0.13	0.10712	0.022883	1
4.7634	0.11	0.09484	0.01516	1
4.9634	0.1	0.083969	0.016031	1
5.1634	0.1	0.074345	0.025655	1
5.3634	0.08	0.065823	0.014177	1
5.5634	0.08	0.058278	0.021722	1
5.7634	0.06	0.051599	0.0084014	1

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0.000E+000 1.606E+000 1.000E+001 5.323E-003

SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
0	0.0000	-0.2366	10.978	0.48	1.23	0.72	0.56
1	0.0033	-0.2333	9.067	-1.43	3.14	1.84	1.43
2	0.0067	-0.2299	9.290	-1.21	2.91	1.71	1.32
3	0.0100	-0.2266	9.402	-1.10	2.80	1.64	1.27
4	0.0133	-0.2233	10.978	0.48	1.23	0.72	0.56
5	0.0167	-0.2199	10.421	-0.08	1.78	1.05	0.81
6	0.0200	-0.2166	11.535	1.04	0.67	0.39	0.30
7	0.0233	-0.2133	9.020	-1.48	3.18	1.87	1.45
8	0.0267	-0.2099	8.988	-1.51	3.22	1.89	1.46
9	0.0300	-0.2066	9.641	-0.86	2.56	1.50	1.17
10	0.0333	-0.2033	10.214	-0.29	1.99	1.17	0.90
11	0.0366	-0.2000	11.885	1.39	0.32	0.19	0.15
12	0.0400	-0.1966	10.532	0.03	1.67	0.98	0.76
13	0.0433	-0.1933	9.052	-1.45	3.15	1.85	1.43
14	0.0466	-0.1900	10.596	0.10	1.61	0.94	0.73
15	0.0500	-0.1866	10.484	-0.02	1.72	1.01	0.78
16	0.0533	-0.1833	9.131	-1.37	3.07	1.80	1.40
17	0.0566	-0.1800	9.242	-1.26	2.96	1.74	1.35
18	0.0600	-0.1766	9.720	-0.78	2.48	1.46	1.13
19	0.0633	-0.1733	9.306	-1.19	2.90	1.70	1.32
20	0.0666	-0.1700	11.280	0.78	0.92	0.54	0.42
21	0.0700	-0.1666	11.360	0.86	0.84	0.50	0.38
22	0.0733	-0.1633	10.261	-0.24	1.94	1.14	0.88
23	0.0766	-0.1600	10.166	-0.33	2.04	1.20	0.93
24	0.0800	-0.1566	10.389	-0.11	1.82	1.07	0.83
25	0.0833	-0.1533	10.214	-0.29	1.99	1.17	0.90
26	0.0866	-0.1500	10.277	-0.22	1.93	1.13	0.88
27	0.0900	-0.1466	10.293	-0.21	1.91	1.12	0.87
28	0.0933	-0.1433	10.277	-0.22	1.93	1.13	0.88
29	0.0966	-0.1400	10.230	-0.27	1.97	1.16	0.90
30	0.1000	-0.1366	10.293	-0.21	1.91	1.12	0.87

SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
31	0.1033	-0.1333	10.437	-0.06	1.77	1.04	0.80
32	0.1066	-0.1300	10.214	-0.29	1.99	1.17	0.90
33	0.1100	-0.1266	10.325	-0.18	1.88	1.10	0.85
34	0.1133	-0.1233	10.325	-0.18	1.88	1.10	0.85
35	0.1166	-0.1200	10.309	-0.19	1.90	1.11	0.86
36	0.1200	-0.1166	10.341	-0.16	1.86	1.09	0.85
37	0.1233	-0.1133	10.325	-0.18	1.88	1.10	0.85
38	0.1266	-0.1100	10.309	-0.19	1.90	1.11	0.86
39	0.1300	-0.1066	10.357	-0.14	1.85	1.08	0.84
40	0.1333	-0.1033	10.293	-0.21	1.91	1.12	0.87
41	0.1366	-0.1000	10.421	-0.08	1.78	1.05	0.81
42	0.1400	-0.0966	10.341	-0.16	1.86	1.09	0.85
43	0.1433	-0.0933	10.309	-0.19	1.90	1.11	0.86
44	0.1466	-0.0900	10.437	-0.06	1.77	1.04	0.80
45	0.1500	-0.0866	10.341	-0.16	1.86	1.09	0.85
46	0.1533	-0.0833	10.325	-0.18	1.88	1.10	0.85
47	0.1566	-0.0800	10.468	-0.03	1.74	1.02	0.79
48	0.1600	-0.0766	10.341	-0.16	1.86	1.09	0.85
49	0.1633	-0.0733	10.389	-0.11	1.82	1.07	0.83
50	0.1666	-0.0700	10.389	-0.11	1.82	1.07	0.83
51	0.1700	-0.0666	10.389	-0.11	1.82	1.07	0.83
52	0.1733	-0.0633	10.421	-0.08	1.78	1.05	0.81
53	0.1766	-0.0600	10.389	-0.11	1.82	1.07	0.83
54	0.1800	-0.0566	10.405	-0.10	1.80	1.06	0.82
55	0.1833	-0.0533	10.421	-0.08	1.78	1.05	0.81
56	0.1866	-0.0500	10.405	-0.10	1.80	1.06	0.82
57	0.1900	-0.0466	10.421	-0.08	1.78	1.05	0.81
58	0.1933	-0.0433	10.421	-0.08	1.78	1.05	0.81
59	0.1966	-0.0400	10.421	-0.08	1.78	1.05	0.81
60	0.2000	-0.0366	10.437	-0.06	1.77	1.04	0.80
61	0.2033	-0.0333	10.437	-0.06	1.77	1.04	0.80

SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	-0.0300	10.437	-0.06	1.77	1.04	0.80
63	0.2100	-0.0266	10.437	-0.06	1.77	1.04	0.80
64	0.2133	-0.0233	10.437	-0.06	1.77	1.04	0.80
65	0.2166	-0.0200	10.405	-0.10	1.80	1.06	0.82
66	0.2200	-0.0166	10.484	-0.02	1.72	1.01	0.78
67	0.2233	-0.0133	10.437	-0.06	1.77	1.04	0.80
68	0.2266	-0.0100	10.452	-0.05	1.75	1.03	0.80
69	0.2300	-0.0066	10.468	-0.03	1.74	1.02	0.79
70	0.2333	-0.0033	10.421	-0.08	1.78	1.05	0.81
71	0.2366	0.0000	10.500	0.00	1.70	1.00	0.77
72	0.2400	0.0034	10.468	-0.03	1.74	1.02	0.79
73	0.2433	0.0067	10.468	-0.03	1.74	1.02	0.79
74	0.2466	0.0100	10.484	-0.02	1.72	1.01	0.78
75	0.2500	0.0134	10.484	-0.02	1.72	1.01	0.78
76	0.2533	0.0167	10.484	-0.02	1.72	1.01	0.78
77	0.2566	0.0200	10.500	0.00	1.70	1.00	0.77
78	0.2600	0.0234	10.500	0.00	1.70	1.00	0.77
79	0.2633	0.0267	10.500	0.00	1.70	1.00	0.77
80	0.2666	0.0300	10.516	0.02	1.69	0.99	0.77
81	0.2700	0.0334	10.516	0.02	1.69	0.99	0.77
82	0.2733	0.0367	10.516	0.02	1.69	0.99	0.77
83	0.2766	0.0400	10.516	0.02	1.69	0.99	0.77
84	0.2800	0.0434	10.516	0.02	1.69	0.99	0.77
85	0.2833	0.0467	10.516	0.02	1.69	0.99	0.77
86	0.2866	0.0500	10.532	0.03	1.67	0.98	0.76
87	0.2900	0.0534	10.532	0.03	1.67	0.98	0.76
88	0.2933	0.0567	10.532	0.03	1.67	0.98	0.76
89	0.2966	0.0600	10.532	0.03	1.67	0.98	0.76
90	0.3000	0.0634	10.548	0.05	1.66	0.97	0.75
91	0.3033	0.0667	10.548	0.05	1.66	0.97	0.75
92	0.3066	0.0700	10.548	0.05	1.66	0.97	0.75

SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
93	0.3100	0.0734	10.548	0.05	1.66	0.97	0.75
94	0.3133	0.0767	10.548	0.05	1.66	0.97	0.75
95	0.3166	0.0800	10.564	0.06	1.64	0.96	0.75
96	0.3200	0.0834	10.564	0.06	1.64	0.96	0.75
97	0.3233	0.0867	10.564	0.06	1.64	0.96	0.75
98	0.3266	0.0900	10.580	0.08	1.62	0.95	0.74
99	0.3300	0.0934	10.580	0.08	1.62	0.95	0.74
100	0.3333	0.0967	10.548	0.05	1.66	0.97	0.75
101	0.3500	0.1134	10.596	0.10	1.61	0.94	0.73
102	0.3667	0.1301	10.612	0.11	1.59	0.93	0.72
103	0.3833	0.1467	10.628	0.13	1.58	0.92	0.72
104	0.4000	0.1634	10.644	0.14	1.56	0.92	0.71
105	0.4167	0.1801	10.659	0.16	1.54	0.91	0.70
106	0.4333	0.1967	10.675	0.18	1.53	0.90	0.69
107	0.4500	0.2134	10.691	0.19	1.51	0.89	0.69
108	0.4667	0.2301	10.707	0.21	1.50	0.88	0.68
109	0.4833	0.2467	10.723	0.22	1.48	0.87	0.67
110	0.5000	0.2634	10.739	0.24	1.46	0.86	0.67
111	0.5167	0.2801	10.755	0.26	1.45	0.85	0.66
112	0.5333	0.2967	10.771	0.27	1.43	0.84	0.65
113	0.5500	0.3134	10.787	0.29	1.42	0.83	0.64
114	0.5667	0.3301	10.803	0.30	1.40	0.82	0.64
115	0.5833	0.3467	10.819	0.32	1.38	0.81	0.63
116	0.6000	0.3634	10.835	0.34	1.37	0.80	0.62
117	0.6167	0.3801	10.851	0.35	1.35	0.79	0.61
118	0.6333	0.3967	10.851	0.35	1.35	0.79	0.61
119	0.6500	0.4134	10.866	0.37	1.34	0.79	0.61
120	0.6667	0.4301	10.882	0.38	1.32	0.78	0.60
121	0.6833	0.4467	10.898	0.40	1.31	0.77	0.59
122	0.7000	0.4634	10.914	0.41	1.29	0.76	0.59
123	0.7167	0.4801	10.914	0.41	1.29	0.76	0.59

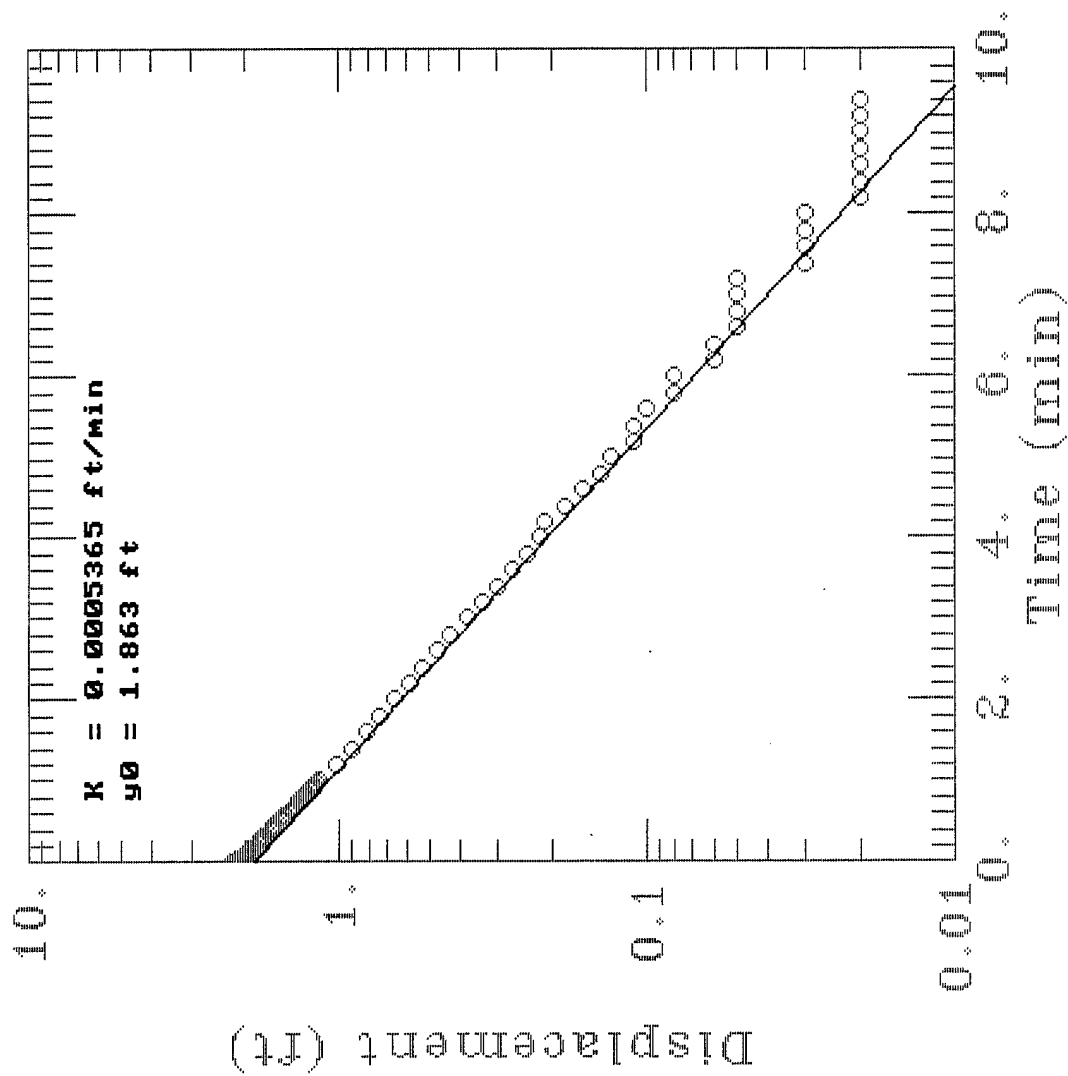
SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
124	0.7333	0.4967	10.930	0.43	1.27	0.75	0.58
125	0.7500	0.5134	10.946	0.45	1.26	0.74	0.57
126	0.7667	0.5301	10.962	0.46	1.24	0.73	0.56
127	0.7833	0.5467	10.978	0.48	1.23	0.72	0.56
128	0.8000	0.5634	10.994	0.49	1.21	0.71	0.55
129	0.8167	0.5801	10.994	0.49	1.21	0.71	0.55
130	0.8333	0.5967	11.010	0.51	1.19	0.70	0.54
131	0.8500	0.6134	11.026	0.53	1.18	0.69	0.54
132	0.8667	0.6301	11.041	0.54	1.16	0.68	0.53
133	0.8833	0.6467	11.041	0.54	1.16	0.68	0.53
134	0.9000	0.6634	11.057	0.56	1.15	0.67	0.52
135	0.9167	0.6801	11.073	0.57	1.13	0.66	0.51
136	0.9333	0.6967	11.089	0.59	1.11	0.65	0.51
137	0.9500	0.7134	11.089	0.59	1.11	0.65	0.51
138	0.9667	0.7301	11.105	0.61	1.10	0.64	0.50
139	0.9833	0.7467	11.121	0.62	1.08	0.64	0.49
140	1.0000	0.7634	11.121	0.62	1.08	0.64	0.49
141	1.2000	0.9634	11.264	0.76	0.94	0.55	0.43
142	1.4000	1.1634	11.376	0.88	0.83	0.49	0.38
143	1.6000	1.3634	11.471	0.97	0.73	0.43	0.33
144	1.8000	1.5634	11.551	1.05	0.65	0.38	0.30
145	2.0000	1.7634	11.615	1.12	0.59	0.35	0.27
146	2.2000	1.9634	11.678	1.18	0.53	0.31	0.24
147	2.4000	2.1634	11.742	1.24	0.46	0.27	0.21
148	2.6000	2.3634	11.790	1.29	0.41	0.24	0.19
149	2.8000	2.5634	11.838	1.34	0.37	0.21	0.17
150	3.0000	2.7634	11.869	1.37	0.34	0.20	0.15
151	3.2000	2.9634	11.917	1.42	0.29	0.17	0.13
152	3.4000	3.1634	11.949	1.45	0.26	0.15	0.12
153	3.6000	3.3634	11.965	1.47	0.24	0.14	0.11
154	3.8000	3.5634	11.997	1.50	0.21	0.12	0.09

SLUG IN TEST - MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
155	4.0000	3.7634	12.013	1.51	0.19	0.11	0.09
156	4.2000	3.9634	12.028	1.53	0.18	0.10	0.08
157	4.4000	4.1634	12.044	1.54	0.16	0.09	0.07
158	4.6000	4.3634	12.076	1.58	0.13	0.08	0.06
159	4.8000	4.5634	12.076	1.58	0.13	0.08	0.06
160	5.0000	4.7634	12.092	1.59	0.11	0.07	0.05
161	5.2000	4.9634	12.108	1.61	0.10	0.06	0.04
162	5.4000	5.1634	12.108	1.61	0.10	0.06	0.04
163	5.6000	5.3634	12.124	1.62	0.08	0.05	0.04
164	5.8000	5.5634	12.124	1.62	0.08	0.05	0.04
165	6.0000	5.7634	12.140	1.64	0.06	0.04	0.03
166	6.2000	5.9634	12.140	1.64	0.06	0.04	0.03
167	6.4000	6.1634	12.156	1.66	0.05	0.03	0.02
168	6.6000	6.3634	12.156	1.66	0.05	0.03	0.02
169	6.8000	6.5634	12.156	1.66	0.05	0.03	0.02
170	7.0000	6.7634	12.156	1.66	0.05	0.03	0.02
171	7.2000	6.9634	12.172	1.67	0.03	0.02	0.01
172	7.4000	7.1634	12.172	1.67	0.03	0.02	0.01
173	7.6000	7.3634	12.172	1.67	0.03	0.02	0.01
174	7.8000	7.5634	12.172	1.67	0.03	0.02	0.01
175	8.0000	7.7634	12.188	1.69	0.02	0.01	0.01
176	8.2000	7.9634	12.188	1.69	0.02	0.01	0.01
177	8.4000	8.1634	12.188	1.69	0.02	0.01	0.01
178	8.6000	8.3634	12.188	1.69	0.02	0.01	0.01
179	8.8000	8.5634	12.188	1.69	0.02	0.01	0.01
180	9.0000	8.7634	12.188	1.69	0.02	0.01	0.01
181	9.2000	8.9634	12.188	1.69	0.02	0.01	0.01
182	9.4000	9.1634	12.188	1.69	0.02	0.01	0.01
183	9.6000	9.3634	12.204	1.70	-0.00	-0.00	-0.00
184	9.8000	9.5634	12.204	1.70	-0.00	-0.00	-0.00
185	10.0000	9.7634	12.204	1.70	-0.00	-0.00	-0.00

SLUG OUT TEST MW-11



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 182
 Number of estimated parameters.... 2
 Degrees of freedom..... 180
 Residual mean..... 0.002655
 Residual standard deviation..... 0.01861
 Residual variance..... 0.0003462

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	2.17	2.1012	0.068805	1
0.0067	2.15	2.0969	0.05306	1
0.01	2.15	2.0928	0.057182	1
0.0133	2.13	2.0887	0.041295	1
0.0167	2.13	2.0845	0.045525	1
0.02	2.13	2.0804	0.049622	1
0.0233	2.12	2.0763	0.043711	1
0.0267	2.12	2.0721	0.047916	1
0.03	2.12	2.068	0.051989	1
0.0333	2.1	2.0639	0.036054	1
0.0366	2.09	2.0599	0.03011	1
0.04	2.09	2.0557	0.034282	1
0.0433	2.09	2.0517	0.038322	1
0.0466	2.07	2.0476	0.022355	1
0.05	2.07	2.0435	0.026502	1
0.0533	2.05	2.0395	0.010518	1
0.0566	2.05	2.0355	0.014527	1
0.06	2.04	2.0314	0.0086491	1
0.0633	2.04	2.0274	0.012642	1
0.0666	2.04	2.0234	0.016627	1
0.07	2.04	2.0193	0.020724	1
0.0733	2.02	2.0153	0.0046932	1
0.0766	2.02	2.0113	0.0086545	1
0.08	2.02	2.0073	0.012728	1
0.0833	2.01	2.0033	0.006673	1
0.0866	2.01	1.9994	0.010611	1
0.09	2.01	1.9953	0.01466	1
0.0933	1.99	1.9914	-0.0014184	1
0.0966	1.99	1.9875	0.0024958	1
0.1	1.99	1.9835	0.0065207	1
0.1033	1.97	1.9796	-0.0095807	1
0.1066	1.97	1.9757	-0.0056897	1
0.11	1.97	1.9717	-0.0016888	1
0.1133	1.96	1.9678	-0.0078133	1
0.1166	1.96	1.9639	-0.0039454	1
0.12	1.96	1.96	3.1716E-005	1
0.1233	1.94	1.9561	-0.016116	1
0.1266	1.94	1.9523	-0.012271	1

0.13	1.94	1.9483	-0.0083175	1
0.1333	1.94	1.9445	-0.0044879	1
0.1366	1.93	1.9407	-0.010666	1
0.14	1.93	1.9367	-0.0067359	1
0.1433	1.93	1.9329	-0.0029291	1
0.1466	1.91	1.9291	-0.01913	1
0.15	1.91	1.9252	-0.015223	1
0.1533	1.91	1.9214	-0.011439	1
0.1566	1.91	1.9177	-0.0076623	1
0.16	1.91	1.9138	-0.0037789	1
0.1633	1.9	1.91	-0.010017	1
0.1666	1.9	1.9063	-0.006263	1
0.17	1.9	1.9024	-0.0024027	1
0.1733	1.88	1.8987	-0.018663	1
0.1766	1.88	1.8949	-0.014931	1
0.18	1.88	1.8911	-0.011094	1
0.1833	1.88	1.8874	-0.007377	1
0.1866	1.86	1.8837	-0.023667	1
0.19	1.86	1.8799	-0.019853	1
0.1933	1.86	1.8762	-0.016158	1
0.1966	1.86	1.8725	-0.01247	1
0.2	1.85	1.8687	-0.018678	1
0.2033	1.85	1.865	-0.015005	1
0.2066	1.85	1.8613	-0.011339	1
0.21	1.85	1.8576	-0.00757	1
0.2133	1.85	1.8539	-0.0039188	1
0.2166	1.85	1.8503	-0.00027478	1
0.22	1.83	1.8465	-0.016528	1
0.2233	1.83	1.8429	-0.012898	1
0.2266	1.83	1.8393	-0.009276	1
0.23	1.82	1.8356	-0.015551	1
0.2333	1.82	1.8319	-0.011943	1
0.2366	1.82	1.8283	-0.0083427	1
0.24	1.82	1.8246	-0.0046401	1
0.2433	1.8	1.8211	-0.021054	1
0.2466	1.8	1.8175	-0.017474	1
0.25	1.8	1.8138	-0.013794	1
0.2533	1.8	1.8102	-0.010229	1
0.2566	1.8	1.8067	-0.0066705	1
0.26	1.78	1.803	-0.023012	1
0.2633	1.78	1.7995	-0.019468	1
0.2666	1.78	1.7959	-0.015931	1
0.27	1.78	1.7923	-0.012294	1
0.2733	1.78	1.7888	-0.0087712	1
0.2766	1.77	1.7853	-0.015255	1
0.28	1.77	1.7816	-0.01164	1
0.2833	1.77	1.7781	-0.0081381	1
0.2866	1.77	1.7746	-0.004643	1
0.29	1.77	1.771	-0.0010492	1
0.2933	1.75	1.7676	-0.017568	1
0.2966	1.75	1.7641	-0.014094	1
0.3	1.75	1.7605	-0.010521	1
0.3033	1.74	1.7571	-0.017061	1
0.3066	1.74	1.7536	-0.013607	1

0.31	1.74	1.7501	-0.010056	1
0.3133	1.74	1.7466	-0.0066163	1
0.3166	1.74	1.7432	-0.0031833	1
0.32	1.74	1.7397	0.00034681	1
0.3233	1.72	1.7362	-0.016234	1
0.3266	1.72	1.7328	-0.012821	1
0.33	1.72	1.7293	-0.009312	1
0.3333	1.72	1.7259	-0.0059129	1
0.35	1.7	1.7088	-0.0088137	1
0.3667	1.69	1.6919	-0.0018839	1
0.3833	1.66	1.6752	-0.015222	1
0.4	1.64	1.6586	-0.018625	1
0.4167	1.62	1.6422	-0.022192	1
0.4333	1.61	1.626	-0.016019	1
0.45	1.61	1.6099	9.0214E-005	1
0.4667	1.58	1.594	-0.01396	1
0.4833	1.56	1.5783	-0.018262	1
0.5	1.54	1.5626	-0.022626	1
0.5167	1.53	1.5471	-0.017144	1
0.533	1.53	1.5322	-0.0021814	1
0.55	1.51	1.5167	-0.0067303	1
0.5667	1.5	1.5017	-0.0017035	1
0.5833	1.48	1.4869	-0.0069143	1
0.6	1.46	1.4722	-0.012183	1
0.6167	1.45	1.4576	-0.0075975	1
0.6333	1.43	1.4432	-0.013243	1
0.65	1.42	1.4289	-0.0089439	1
0.6667	1.4	1.4148	-0.014787	1
0.6833	1.4	1.4009	-0.00085358	1
0.7	1.38	1.387	-0.0069748	1
0.7167	1.37	1.3732	-0.0032336	1
0.7333	1.35	1.3597	-0.0097096	1
0.75	1.35	1.3462	0.0037615	1
0.7667	1.32	1.3329	-0.012901	1
0.7833	1.32	1.3198	0.00022602	1
0.8	1.31	1.3067	0.0033015	1
0.8167	1.29	1.2938	-0.0037526	1
0.8333	1.27	1.281	-0.011011	1
0.85	1.27	1.2683	0.0016801	1
0.8667	1.26	1.2558	0.0042458	1
0.8833	1.24	1.2434	-0.0033872	1
0.9	1.23	1.2311	-0.0010685	1
0.9167	1.23	1.2189	0.011128	1
0.9333	1.21	1.2069	0.003132	1
0.95	1.19	1.1949	-0.0049112	1
0.9667	1.19	1.1831	0.0069272	1
0.9833	1.18	1.1714	0.0085785	1
1	1.16	1.1598	0.00018416	1
1.2	1.02	1.0294	-0.0094439	1
1.4	0.91	0.91373	-0.0037267	1
1.6	0.81	0.81102	-0.001017	1
1.8	0.73	0.71985	0.010147	1
2	0.65	0.63894	0.011064	1
2.2	0.59	0.56711	0.022885	1

2.4	0.53	0.50337	0.026633	1
2.6	0.48	0.44678	0.033215	1
2.8	0.43	0.39656	0.033437	1
3	0.38	0.35199	0.028014	1
3.2	0.34	0.31242	0.02758	1
3.4	0.3	0.2773	0.022698	1
3.6	0.27	0.24613	0.023869	1
3.8	0.24	0.21846	0.021536	1
4	0.22	0.19391	0.026093	1
4.2	0.21	0.17211	0.03789	1
4.4	0.18	0.15276	0.027236	1
4.6	0.16	0.13559	0.024408	1
4.8	0.14	0.12035	0.019649	1
5	0.13	0.10682	0.023178	1
5.2	0.11	0.094815	0.015185	1
5.4	0.11	0.084157	0.025843	1
5.6	0.1	0.074697	0.025303	1
5.8	0.08	0.0663	0.0137	1
6	0.08	0.058848	0.021152	1
6.2	0.06	0.052233	0.0077672	1
6.4	0.06	0.046361	0.013639	1
6.6	0.05	0.04115	0.0088499	1
6.8	0.05	0.036525	0.013475	1
7	0.05	0.032419	0.017581	1
7.2	0.05	0.028775	0.021225	1
7.4	0.03	0.02554	0.0044597	1
7.6	0.03	0.022669	0.0073307	1
7.8	0.03	0.020121	0.0098789	1
8	0.03	0.017859	0.012141	1
8.2	0.02	0.015852	0.0041482	1
8.4	0.02	0.01407	0.00593	1
8.6	0.02	0.012488	0.0075116	1
8.8	0.02	0.011085	0.0089154	1
9	0.02	0.0098386	0.010161	1
9.2	0.02	0.0087327	0.011267	1
9.4	0.02	0.0077511	0.012249	1

RESULTS FROM VISUAL CURVE MATCHING

VISUAL MATCH PARAMETER ESTIMATES

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      Estimate
K  =  5.8477E-004
y0 =  2.1053E+000

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[illegible]

TYPE CURVE DATA

K = 5.36463E-004
y0 = 1.86343E+000

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.863E+000	1.000E+001	7.850E-003		

SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
0	0.0000	0.0000	14.512	0.00	2.18	1.00	0.99
1	0.0033	0.0033	14.496	0.02	2.17	0.99	0.98
2	0.0067	0.0067	14.480	0.03	2.15	0.99	0.98
3	0.0100	0.0100	14.480	0.03	2.15	0.99	0.98
4	0.0133	0.0133	14.464	0.05	2.13	0.98	0.97
5	0.0167	0.0167	14.464	0.05	2.13	0.98	0.97
6	0.0200	0.0200	14.464	0.05	2.13	0.98	0.97
7	0.0233	0.0233	14.449	0.06	2.12	0.97	0.96
8	0.0267	0.0267	14.449	0.06	2.12	0.97	0.96
9	0.0300	0.0300	14.449	0.06	2.12	0.97	0.96
10	0.0333	0.0333	14.433	0.08	2.10	0.96	0.96
11	0.0366	0.0366	14.417	0.10	2.09	0.96	0.95
12	0.0400	0.0400	14.417	0.10	2.09	0.96	0.95
13	0.0433	0.0433	14.417	0.10	2.09	0.96	0.95
14	0.0466	0.0466	14.401	0.11	2.07	0.95	0.94
15	0.0500	0.0500	14.401	0.11	2.07	0.95	0.94
16	0.0533	0.0533	14.385	0.13	2.05	0.94	0.93
17	0.0566	0.0566	14.385	0.13	2.05	0.94	0.93
18	0.0600	0.0600	14.369	0.14	2.04	0.93	0.93
19	0.0633	0.0633	14.369	0.14	2.04	0.93	0.93
20	0.0666	0.0666	14.369	0.14	2.04	0.93	0.93
21	0.0700	0.0700	14.369	0.14	2.04	0.93	0.93
22	0.0733	0.0733	14.353	0.16	2.02	0.93	0.92
23	0.0766	0.0766	14.353	0.16	2.02	0.93	0.92
24	0.0800	0.0800	14.353	0.16	2.02	0.93	0.92
25	0.0833	0.0833	14.337	0.18	2.01	0.92	0.91
26	0.0866	0.0866	14.337	0.18	2.01	0.92	0.91
27	0.0900	0.0900	14.337	0.18	2.01	0.92	0.91
28	0.0933	0.0933	14.321	0.19	1.99	0.91	0.90
29	0.0966	0.0966	14.321	0.19	1.99	0.91	0.90
30	0.1000	0.1000	14.321	0.19	1.99	0.91	0.90

SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
31	0.1033	0.1033	14.305	0.21	1.97	0.91	0.90
32	0.1066	0.1066	14.305	0.21	1.97	0.91	0.90
33	0.1100	0.1100	14.305	0.21	1.97	0.91	0.90
34	0.1133	0.1133	14.289	0.22	1.96	0.90	0.89
35	0.1166	0.1166	14.289	0.22	1.96	0.90	0.89
36	0.1200	0.1200	14.289	0.22	1.96	0.90	0.89
37	0.1233	0.1233	14.274	0.24	1.94	0.89	0.88
38	0.1266	0.1266	14.274	0.24	1.94	0.89	0.88
39	0.1300	0.1300	14.274	0.24	1.94	0.89	0.88
40	0.1333	0.1333	14.274	0.24	1.94	0.89	0.88
41	0.1366	0.1366	14.258	0.25	1.93	0.88	0.88
42	0.1400	0.1400	14.258	0.25	1.93	0.88	0.88
43	0.1433	0.1433	14.258	0.25	1.93	0.88	0.88
44	0.1466	0.1466	14.242	0.27	1.91	0.88	0.87
45	0.1500	0.1500	14.242	0.27	1.91	0.88	0.87
46	0.1533	0.1533	14.242	0.27	1.91	0.88	0.87
47	0.1566	0.1566	14.242	0.27	1.91	0.88	0.87
48	0.1600	0.1600	14.242	0.27	1.91	0.88	0.87
49	0.1633	0.1633	14.226	0.29	1.90	0.87	0.86
50	0.1666	0.1666	14.226	0.29	1.90	0.87	0.86
51	0.1700	0.1700	14.226	0.29	1.90	0.87	0.86
52	0.1733	0.1733	14.210	0.30	1.88	0.86	0.85
53	0.1766	0.1766	14.210	0.30	1.88	0.86	0.85
54	0.1800	0.1800	14.210	0.30	1.88	0.86	0.85
55	0.1833	0.1833	14.210	0.30	1.88	0.86	0.85
56	0.1866	0.1866	14.194	0.32	1.86	0.85	0.85
57	0.1900	0.1900	14.194	0.32	1.86	0.85	0.85
58	0.1933	0.1933	14.194	0.32	1.86	0.85	0.85
59	0.1966	0.1966	14.194	0.32	1.86	0.85	0.85
60	0.2000	0.2000	14.178	0.33	1.85	0.85	0.84
61	0.2033	0.2033	14.178	0.33	1.85	0.85	0.84

SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B	DATUM TRANS.			
62	0.2066	0.2066	14.178	0.33		1.85	0.85	0.84
63	0.2100	0.2100	14.178	0.33		1.85	0.85	0.84
64	0.2133	0.2133	14.178	0.33		1.85	0.85	0.84
65	0.2166	0.2166	14.178	0.33		1.85	0.85	0.84
66	0.2200	0.2200	14.162	0.35		1.83	0.84	0.83
67	0.2233	0.2233	14.162	0.35		1.83	0.84	0.83
68	0.2266	0.2266	14.162	0.35		1.83	0.84	0.83
69	0.2300	0.2300	14.146	0.37		1.82	0.83	0.83
70	0.2333	0.2333	14.146	0.37		1.82	0.83	0.83
71	0.2366	0.2366	14.146	0.37		1.82	0.83	0.83
72	0.2400	0.2400	14.146	0.37		1.82	0.83	0.83
73	0.2433	0.2433	14.130	0.38		1.80	0.82	0.82
74	0.2466	0.2466	14.130	0.38		1.80	0.82	0.82
75	0.2500	0.2500	14.130	0.38		1.80	0.82	0.82
76	0.2533	0.2533	14.130	0.38		1.80	0.82	0.82
77	0.2566	0.2566	14.130	0.38		1.80	0.82	0.82
78	0.2600	0.2600	14.114	0.40		1.78	0.82	0.81
79	0.2633	0.2633	14.114	0.40		1.78	0.82	0.81
80	0.2666	0.2666	14.114	0.40		1.78	0.82	0.81
81	0.2700	0.2700	14.114	0.40		1.78	0.82	0.81
82	0.2733	0.2733	14.114	0.40		1.78	0.82	0.81
83	0.2766	0.2766	14.098	0.41		1.77	0.81	0.80
84	0.2800	0.2800	14.098	0.41		1.77	0.81	0.80
85	0.2833	0.2833	14.098	0.41		1.77	0.81	0.80
86	0.2866	0.2866	14.098	0.41		1.77	0.81	0.80
87	0.2900	0.2900	14.098	0.41		1.77	0.81	0.80
88	0.2933	0.2933	14.082	0.43		1.75	0.80	0.80
89	0.2966	0.2966	14.082	0.43		1.75	0.80	0.80
90	0.3000	0.3000	14.082	0.43		1.75	0.80	0.80
91	0.3033	0.3033	14.067	0.45		1.74	0.80	0.79
92	0.3066	0.3066	14.067	0.45		1.74	0.80	0.79

SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
93	0.3100	0.3100	14.067	0.45	1.74	0.80	0.79
94	0.3133	0.3133	14.067	0.45	1.74	0.80	0.79
95	0.3166	0.3166	14.067	0.45	1.74	0.80	0.79
96	0.3200	0.3200	14.067	0.45	1.74	0.80	0.79
97	0.3233	0.3233	14.051	0.46	1.72	0.79	0.78
98	0.3266	0.3266	14.051	0.46	1.72	0.79	0.78
99	0.3300	0.3300	14.051	0.46	1.72	0.79	0.78
100	0.3333	0.3333	14.051	0.46	1.72	0.79	0.78
101	0.3500	0.3500	14.035	0.48	1.70	0.78	0.77
102	0.3667	0.3667	14.019	0.49	1.69	0.77	0.77
103	0.3833	0.3833	13.987	0.53	1.66	0.76	0.75
104	0.4000	0.4000	13.971	0.54	1.64	0.75	0.75
105	0.4167	0.4167	13.955	0.56	1.62	0.74	0.74
106	0.4333	0.4333	13.939	0.57	1.61	0.74	0.73
107	0.4500	0.4500	13.939	0.57	1.61	0.74	0.73
108	0.4667	0.4667	13.907	0.61	1.58	0.72	0.72
109	0.4833	0.4833	13.891	0.62	1.56	0.72	0.71
110	0.5000	0.5000	13.875	0.64	1.54	0.71	0.70
111	0.5167	0.5167	13.860	0.65	1.53	0.70	0.69
112	0.5333	0.5333	13.860	0.65	1.53	0.70	0.69
113	0.5500	0.5500	13.844	0.67	1.51	0.69	0.69
114	0.5667	0.5667	13.828	0.68	1.50	0.69	0.68
115	0.5833	0.5833	13.812	0.70	1.48	0.68	0.67
116	0.6000	0.6000	13.796	0.72	1.46	0.67	0.67
117	0.6167	0.6167	13.780	0.73	1.45	0.66	0.66
118	0.6333	0.6333	13.764	0.75	1.43	0.66	0.65
119	0.6500	0.6500	13.748	0.76	1.42	0.65	0.64
120	0.6667	0.6667	13.732	0.78	1.40	0.64	0.64
121	0.6833	0.6833	13.732	0.78	1.40	0.64	0.64
122	0.7000	0.7000	13.716	0.80	1.38	0.64	0.63
123	0.7167	0.7167	13.700	0.81	1.37	0.63	0.62

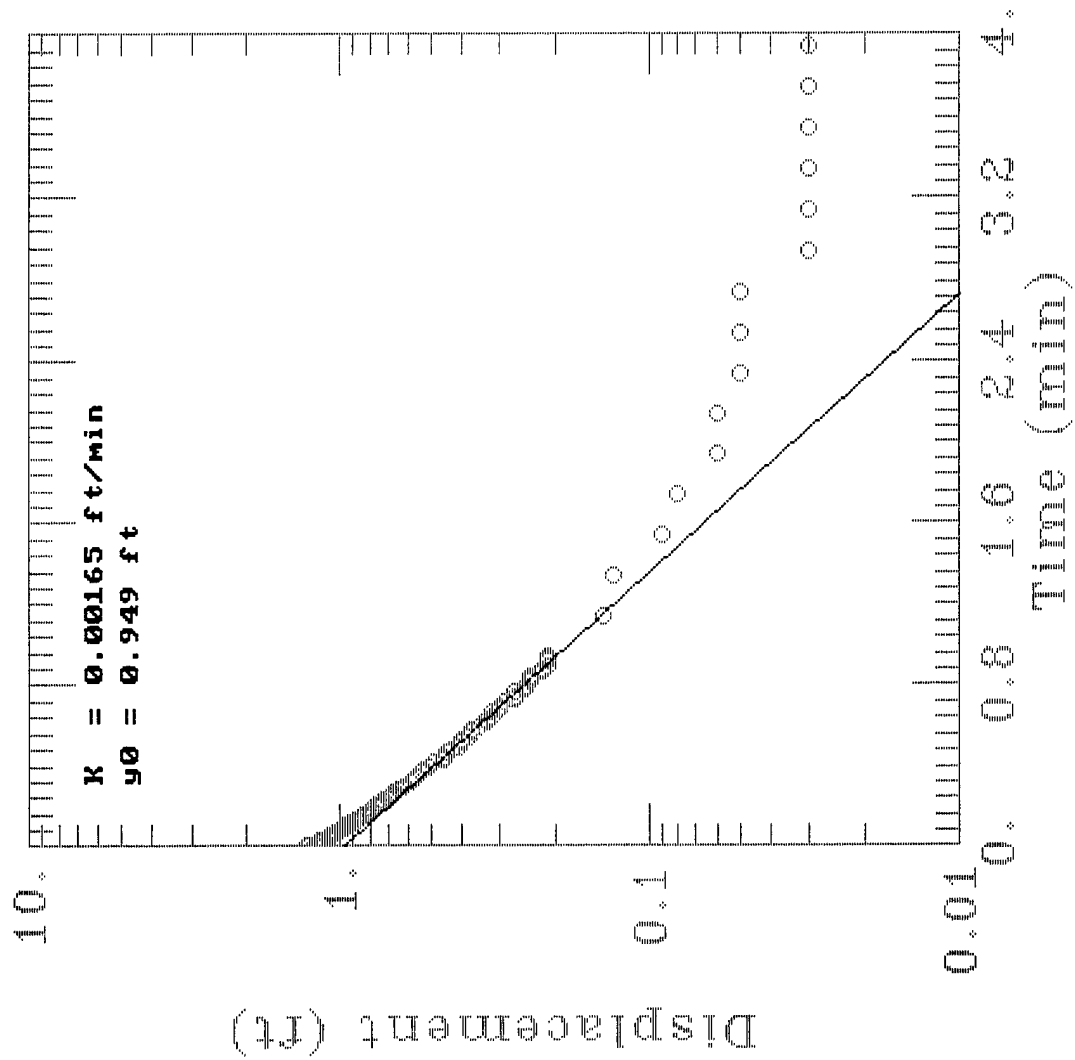
SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
124	0.7333	0.7333	13.684	0.83	1.35	0.62	0.61
125	0.7500	0.7500	13.684	0.83	1.35	0.62	0.61
126	0.7667	0.7667	13.653	0.86	1.32	0.61	0.60
127	0.7833	0.7833	13.653	0.86	1.32	0.61	0.60
128	0.8000	0.8000	13.637	0.88	1.31	0.60	0.59
129	0.8167	0.8167	13.621	0.89	1.29	0.59	0.59
130	0.8333	0.8333	13.605	0.91	1.27	0.58	0.58
131	0.8500	0.8500	13.605	0.91	1.27	0.58	0.58
132	0.8667	0.8667	13.589	0.92	1.26	0.58	0.57
133	0.8833	0.8833	13.573	0.94	1.24	0.57	0.56
134	0.9000	0.9000	13.557	0.96	1.23	0.56	0.56
135	0.9167	0.9167	13.557	0.96	1.23	0.56	0.56
136	0.9333	0.9333	13.541	0.97	1.21	0.55	0.55
137	0.9500	0.9500	13.525	0.99	1.19	0.55	0.54
138	0.9667	0.9667	13.525	0.99	1.19	0.55	0.54
139	0.9833	0.9833	13.509	1.00	1.18	0.54	0.54
140	1.0000	1.0000	13.493	1.02	1.16	0.53	0.53
141	1.2000	1.2000	13.350	1.16	1.02	0.47	0.46
142	1.4000	1.4000	13.239	1.27	0.91	0.42	0.41
143	1.6000	1.6000	13.143	1.37	0.81	0.37	0.37
144	1.8000	1.8000	13.064	1.45	0.73	0.34	0.33
145	2.0000	2.0000	12.984	1.53	0.65	0.30	0.30
146	2.2000	2.2000	12.920	1.59	0.59	0.27	0.27
147	2.4000	2.4000	12.857	1.66	0.53	0.24	0.24
148	2.6000	2.6000	12.809	1.70	0.48	0.22	0.22
149	2.8000	2.8000	12.761	1.75	0.43	0.20	0.20
150	3.0000	3.0000	12.713	1.80	0.38	0.18	0.17
151	3.2000	3.2000	12.666	1.85	0.34	0.15	0.15
152	3.4000	3.4000	12.634	1.88	0.30	0.14	0.14
153	3.6000	3.6000	12.602	1.91	0.27	0.12	0.12
154	3.8000	3.8000	12.570	1.94	0.24	0.11	0.11

SLUG OUT TEST MW-11

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
155	4.0000	4.0000	12.554	1.96	0.22	0.10	0.10
156	4.2000	4.2000	12.538	1.97	0.21	0.09	0.09
157	4.4000	4.4000	12.507	2.01	0.18	0.08	0.08
158	4.6000	4.6000	12.491	2.02	0.16	0.07	0.07
159	4.8000	4.8000	12.475	2.04	0.14	0.07	0.07
160	5.0000	5.0000	12.459	2.05	0.13	0.06	0.06
161	5.2000	5.2000	12.443	2.07	0.11	0.05	0.05
162	5.4000	5.4000	12.443	2.07	0.11	0.05	0.05
163	5.6000	5.6000	12.427	2.09	0.10	0.04	0.04
164	5.8000	5.8000	12.411	2.10	0.08	0.04	0.04
165	6.0000	6.0000	12.411	2.10	0.08	0.04	0.04
166	6.2000	6.2000	12.395	2.12	0.06	0.03	0.03
167	6.4000	6.4000	12.395	2.12	0.06	0.03	0.03
168	6.6000	6.6000	12.379	2.13	0.05	0.02	0.02
169	6.8000	6.8000	12.379	2.13	0.05	0.02	0.02
170	7.0000	7.0000	12.379	2.13	0.05	0.02	0.02
171	7.2000	7.2000	12.379	2.13	0.05	0.02	0.02
172	7.4000	7.4000	12.363	2.15	0.03	0.01	0.01
173	7.6000	7.6000	12.363	2.15	0.03	0.01	0.01
174	7.8000	7.8000	12.363	2.15	0.03	0.01	0.01
175	8.0000	8.0000	12.363	2.15	0.03	0.01	0.01
176	8.2000	8.2000	12.347	2.17	0.02	0.01	0.01
177	8.4000	8.4000	12.347	2.17	0.02	0.01	0.01
178	8.6000	8.6000	12.347	2.17	0.02	0.01	0.01
179	8.8000	8.8000	12.347	2.17	0.02	0.01	0.01
180	9.0000	9.0000	12.347	2.17	0.02	0.01	0.01
181	9.2000	9.2000	12.347	2.17	0.02	0.01	0.01
182	9.4000	9.4000	12.347	2.17	0.02	0.01	0.01
183	9.6000	9.6000	12.331	2.18	-0.00	-0.00	-0.00
184	9.8000	9.8000	12.331	2.18	-0.00	-0.00	-0.00
185	10.0000	10.0000	12.331	2.18	-0.00	-0.00	-0.00

SLUG IN TEST MW-12



AQTESOLV RESULTS
Version 1.10

11:20:09

Data set..... 12in
Data set title.... SLUG IN TEST MW-12
Company..... Halliburton NUS
Project..... 1K94
Client..... Ellington Field (ANG)
Location..... POL Storage Area
Test date..... 09/03/93
Obs. well..... MW-12

No. of data points.....	157
Radius of well casing.....	0.08333
Radius of well.....	0.3438
Aquifer saturated thickness.....	13.5
Well screen length.....	10
Static height of water in well.....	16.6
Log(R_e/R_w).....	2.854
A, B, C.....	0.000, 0.000, 1.940

Bouwer-Rice (Unconfined Aquifer Slug Test)

STATISTICAL MATCH PARAMETER ESTIMATES

ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 157
 Number of estimated parameters.... 2
 Degrees of freedom..... 155
 Residual mean..... 0.007112
 Residual standard deviation..... 0.0227
 Residual variance..... 0.0005154

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.24	1.1676	0.07236	1
0.0067	1.21	1.1594	0.050631	1
0.01	1.18	1.1514	0.028602	1
0.0133	1.16	1.1435	0.016518	1
0.0167	1.16	1.1354	0.024617	1
0.02	1.16	1.1276	0.032423	1
0.0233	1.15	1.1198	0.030175	1
0.0267	1.15	1.1119	0.038107	1
0.03	1.13	1.1042	0.025752	1
0.0333	1.11	1.0967	0.013344	1
0.0367	1.11	1.0889	0.021111	1
0.04	1.1	1.0814	0.018598	1
0.0433	1.08	1.074	0.0060325	1
0.0467	1.08	1.0664	0.013639	1
0.05	1.07	1.059	0.010971	1
0.0533	1.07	1.0517	0.018252	1
0.0567	1.05	1.0443	0.0057014	1
0.06	1.05	1.0371	0.012881	1
0.0633	1.04	1.03	0.010012	1
0.0667	1.02	1.0227	-0.002693	1
0.07	1.02	1.0157	0.0043383	1
0.0733	1.02	1.0087	0.011321	1
0.0767	1	1.0015	-0.0015343	1
0.08	0.99	0.99465	-0.0046485	1
0.0833	0.99	0.98781	0.00219	1
0.0867	0.99	0.98081	0.0091866	1
0.09	0.97	0.97407	-0.0040701	1
0.0933	0.97	0.96737	0.002627	1
0.0967	0.96	0.96052	-0.00052124	1
0.1	0.96	0.95392	0.0060826	1
0.1033	0.94	0.94736	-0.0073589	1
0.1067	0.94	0.94065	-0.00064887	1
0.11	0.92	0.93418	-0.014182	1
0.1133	0.92	0.92776	-0.0077589	1
0.1167	0.91	0.92119	-0.011188	1
0.12	0.91	0.91485	-0.0048542	1
0.1233	0.89	0.90856	-0.018564	1
0.1267	0.89	0.90213	-0.012129	1

0.13	0.89	0.89593	-0.0059267	1
0.1333	0.88	0.88977	-0.0097669	1
0.1367	0.88	0.88346	-0.0034648	1
0.14	0.86	0.87739	-0.017391	1
0.1433	0.86	0.87136	-0.011358	1
0.1467	0.86	0.86519	-0.0051866	1
0.15	0.84	0.85924	-0.019238	1
0.1533	0.84	0.85333	-0.013331	1
0.1567	0.83	0.84729	-0.017287	1
0.16	0.83	0.84146	-0.011461	1
0.1633	0.81	0.83568	-0.025676	1
0.1667	0.81	0.82976	-0.019757	1
0.17	0.81	0.82405	-0.014052	1
0.1733	0.8	0.81839	-0.018387	1
0.1767	0.8	0.81259	-0.01259	1
0.18	0.8	0.807	-0.0070033	1
0.1833	0.78	0.80145	-0.021455	1
0.1867	0.78	0.79578	-0.015778	1
0.19	0.76	0.79031	-0.030307	1
0.1933	0.76	0.78487	-0.024873	1
0.1967	0.76	0.77931	-0.019314	1
0.2	0.76	0.77396	-0.013956	1
0.2033	0.75	0.76864	-0.018635	1
0.2067	0.75	0.76319	-0.013191	1
0.21	0.75	0.75794	-0.0079438	1
0.2133	0.73	0.75273	-0.022733	1
0.2167	0.73	0.7474	-0.017401	1
0.22	0.73	0.74226	-0.012263	1
0.2233	0.72	0.73716	-0.017159	1
0.2267	0.72	0.73194	-0.011938	1
0.23	0.72	0.72691	-0.0069058	1
0.2333	0.7	0.72191	-0.021908	1
0.2367	0.7	0.71679	-0.016795	1
0.24	0.7	0.71187	-0.011867	1
0.2433	0.68	0.70697	-0.026972	1
0.2467	0.68	0.70197	-0.021965	1
0.25	0.68	0.69714	-0.017139	1
0.2533	0.68	0.69235	-0.012346	1
0.2567	0.67	0.68744	-0.017442	1
0.26	0.67	0.68272	-0.012716	1
0.2633	0.67	0.67802	-0.0080218	1
0.2667	0.65	0.67322	-0.023219	1
0.27	0.65	0.66859	-0.018591	1
0.2733	0.65	0.66399	-0.013994	1
0.2767	0.64	0.65929	-0.019291	1
0.28	0.64	0.65476	-0.014758	1
0.2967	0.62	0.63229	-0.012293	1
0.3134	0.59	0.6106	-0.020598	1
0.33	0.57	0.58977	-0.019772	1
0.3467	0.56	0.56954	-0.009536	1
0.3634	0.54	0.54999	-0.0099947	1
0.38	0.53	0.53123	-0.001235	1
0.3967	0.51	0.51301	-0.0030078	1
0.4134	0.49	0.49541	-0.0054061	1

0.43	0.46	0.47851	-0.018508	1
0.4467	0.46	0.46209	-0.0020903	1
0.4634	0.45	0.44624	0.0037644	1
0.4797	0.43	0.43129	-0.0012854	1
0.4967	0.41	0.41623	-0.0062264	1
0.5134	0.4	0.40195	-0.0019454	1
0.53	0.4	0.38824	0.011765	1
0.5467	0.38	0.37491	0.0050853	1
0.5634	0.37	0.36205	0.0079489	1
0.58	0.37	0.3497	0.020298	1
0.5967	0.35	0.3377	0.012297	1
0.6134	0.33	0.32612	0.0038836	1
0.63	0.33	0.31499	0.015007	1
0.6467	0.32	0.30419	0.015815	1
0.6634	0.32	0.29375	0.026252	1
0.68	0.3	0.28373	0.016271	1
0.6967	0.3	0.27399	0.026006	1
0.7134	0.29	0.26459	0.025407	1
0.73	0.27	0.25557	0.014432	1
0.7467	0.27	0.2468	0.023201	1
0.7634	0.27	0.23833	0.031669	1
0.78	0.25	0.2302	0.019798	1
0.7967	0.25	0.2223	0.027696	1
0.8134	0.24	0.21468	0.025324	1
0.83	0.24	0.20735	0.032646	1
0.8467	0.24	0.20024	0.039761	1
0.8634	0.22	0.19337	0.026631	1
0.88	0.22	0.18677	0.033227	1
0.8967	0.21	0.18037	0.029635	1
0.9134	0.21	0.17418	0.035823	1
0.93	0.21	0.16824	0.041764	1
0.9467	0.21	0.16246	0.047537	1
1.1467	0.14	0.10695	0.033054	1
1.3467	0.13	0.070401	0.059599	1
1.5467	0.09	0.046344	0.043656	1
1.7467	0.08	0.030507	0.049493	1
1.9467	0.06	0.020082	0.039918	1
2.1467	0.06	0.01322	0.04678	1
2.3467	0.05	0.0087023	0.041298	1
2.5467	0.05	0.0057286	0.044271	1
2.7467	0.05	0.003771	0.046229	1
2.9467	0.03	0.0024824	0.027518	1
3.1467	0.03	0.0016341	0.028366	1
3.3467	0.03	0.0010757	0.028924	1
3.5467	0.03	0.00070811	0.029292	1
3.7467	0.03	0.00046614	0.029534	1
3.9467	0.03	0.00030685	0.029693	1
4.1467	0.02	0.00020199	0.019798	1
4.3467	0.02	0.00013297	0.019867	1
4.5467	0.02	8.7531E-005	0.019912	1
4.7467	0.02	5.762E-005	0.019942	1
4.9467	0.02	3.793E-005	0.019962	1
5.1467	0.02	2.4969E-005	0.019975	1
5.3467	0.02	1.6436E-005	0.019984	1

=====

VISUAL MATCH PARAMETER ESTIMATES

```
K = 1.6504E-003
y0 = 9.4905E-001
```

[illegible]

```
K = 1.65044E-003
y0 = 9.49047E-001
```

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	9.490E-001	4.000E+000	1.213E-003		

SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
0	0.0000	-0.0533	5.369	-0.77	2.02	1.61	0.92
1	0.0033	-0.0500	5.767	-0.37	1.62	1.29	0.74
2	0.0067	-0.0466	6.150	0.02	1.24	0.99	0.56
3	0.0100	-0.0433	5.927	-0.21	1.46	1.16	0.67
4	0.0133	-0.0400	5.417	-0.72	1.97	1.57	0.90
5	0.0167	-0.0366	7.296	1.16	0.09	0.08	0.04
6	0.0200	-0.0333	6.532	0.40	0.86	0.68	0.39
7	0.0233	-0.0300	6.563	0.43	0.83	0.66	0.38
8	0.0267	-0.0266	6.054	-0.08	1.34	1.06	0.61
9	0.0300	-0.0233	5.974	-0.16	1.42	1.13	0.64
10	0.0333	-0.0200	5.847	-0.29	1.54	1.23	0.70
11	0.0366	-0.0167	5.911	-0.22	1.48	1.18	0.67
12	0.0400	-0.0133	6.086	-0.05	1.31	1.04	0.59
13	0.0433	-0.0100	6.229	0.09	1.16	0.92	0.53
14	0.0466	-0.0067	6.261	0.13	1.13	0.90	0.51
15	0.0500	-0.0033	6.197	0.06	1.19	0.95	0.54
16	0.0533	-0.0000	6.134	0.00	1.26	1.00	0.57
17	0.0566	0.0033	6.150	0.02	1.24	0.99	0.56
18	0.0600	0.0067	6.181	0.05	1.21	0.96	0.55
19	0.0633	0.0100	6.213	0.08	1.18	0.94	0.54
20	0.0666	0.0133	6.229	0.09	1.16	0.92	0.53
21	0.0700	0.0167	6.229	0.09	1.16	0.92	0.53
22	0.0733	0.0200	6.229	0.09	1.16	0.92	0.53
23	0.0766	0.0233	6.245	0.11	1.15	0.91	0.52
24	0.0800	0.0267	6.245	0.11	1.15	0.91	0.52
25	0.0833	0.0300	6.261	0.13	1.13	0.90	0.51
26	0.0866	0.0333	6.277	0.14	1.11	0.89	0.51
27	0.0900	0.0367	6.277	0.14	1.11	0.89	0.51
28	0.0933	0.0400	6.293	0.16	1.10	0.87	0.50
29	0.0966	0.0433	6.309	0.17	1.08	0.86	0.49
30	0.1000	0.0467	6.309	0.17	1.08	0.86	0.49

SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				TRANS.			
31	0.1033	0.0500	6.325	0.19	1.07	0.85	0.48
32	0.1066	0.0533	6.325	0.19	1.07	0.85	0.48
33	0.1100	0.0567	6.341	0.21	1.05	0.84	0.48
34	0.1133	0.0600	6.341	0.21	1.05	0.84	0.48
35	0.1166	0.0633	6.356	0.22	1.04	0.82	0.47
36	0.1200	0.0667	6.372	0.24	1.02	0.81	0.46
37	0.1233	0.0700	6.372	0.24	1.02	0.81	0.46
38	0.1266	0.0733	6.372	0.24	1.02	0.81	0.46
39	0.1300	0.0767	6.388	0.25	1.00	0.80	0.46
40	0.1333	0.0800	6.404	0.27	0.99	0.79	0.45
41	0.1366	0.0833	6.404	0.27	0.99	0.79	0.45
42	0.1400	0.0867	6.404	0.27	0.99	0.79	0.45
43	0.1433	0.0900	6.420	0.29	0.97	0.77	0.44
44	0.1466	0.0933	6.420	0.29	0.97	0.77	0.44
45	0.1500	0.0967	6.436	0.30	0.96	0.76	0.43
46	0.1533	0.1000	6.436	0.30	0.96	0.76	0.43
47	0.1566	0.1033	6.452	0.32	0.94	0.75	0.43
48	0.1600	0.1067	6.452	0.32	0.94	0.75	0.43
49	0.1633	0.1100	6.468	0.33	0.92	0.73	0.42
50	0.1666	0.1133	6.468	0.33	0.92	0.73	0.42
51	0.1700	0.1167	6.484	0.35	0.91	0.72	0.41
52	0.1733	0.1200	6.484	0.35	0.91	0.72	0.41
53	0.1766	0.1233	6.500	0.37	0.89	0.71	0.41
54	0.1800	0.1267	6.500	0.37	0.89	0.71	0.41
55	0.1833	0.1300	6.500	0.37	0.89	0.71	0.41
56	0.1866	0.1333	6.516	0.38	0.88	0.70	0.40
57	0.1900	0.1367	6.516	0.38	0.88	0.70	0.40
58	0.1933	0.1400	6.532	0.40	0.86	0.68	0.39
59	0.1966	0.1433	6.532	0.40	0.86	0.68	0.39
60	0.2000	0.1467	6.532	0.40	0.86	0.68	0.39
61	0.2033	0.1500	6.548	0.41	0.84	0.67	0.38

SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
62	0.2066	0.1533	6.548	0.41	0.84	0.67	0.38
63	0.2100	0.1567	6.563	0.43	0.83	0.66	0.38
64	0.2133	0.1600	6.563	0.43	0.83	0.66	0.38
65	0.2166	0.1633	6.579	0.44	0.81	0.65	0.37
66	0.2200	0.1667	6.579	0.44	0.81	0.65	0.37
67	0.2233	0.1700	6.579	0.44	0.81	0.65	0.37
68	0.2266	0.1733	6.595	0.46	0.80	0.63	0.36
69	0.2300	0.1767	6.595	0.46	0.80	0.63	0.36
70	0.2333	0.1800	6.595	0.46	0.80	0.63	0.36
71	0.2366	0.1833	6.611	0.48	0.78	0.62	0.35
72	0.2400	0.1867	6.611	0.48	0.78	0.62	0.35
73	0.2433	0.1900	6.627	0.49	0.76	0.61	0.35
74	0.2466	0.1933	6.627	0.49	0.76	0.61	0.35
75	0.2500	0.1967	6.627	0.49	0.76	0.61	0.35
76	0.2533	0.2000	6.627	0.49	0.76	0.61	0.35
77	0.2566	0.2033	6.643	0.51	0.75	0.60	0.34
78	0.2600	0.2067	6.643	0.51	0.75	0.60	0.34
79	0.2633	0.2100	6.643	0.51	0.75	0.60	0.34
80	0.2666	0.2133	6.659	0.52	0.73	0.58	0.33
81	0.2700	0.2167	6.659	0.52	0.73	0.58	0.33
82	0.2733	0.2200	6.659	0.52	0.73	0.58	0.33
83	0.2766	0.2233	6.675	0.54	0.72	0.57	0.33
84	0.2800	0.2267	6.675	0.54	0.72	0.57	0.33
85	0.2833	0.2300	6.675	0.54	0.72	0.57	0.33
86	0.2866	0.2333	6.691	0.56	0.70	0.56	0.32
87	0.2900	0.2367	6.691	0.56	0.70	0.56	0.32
88	0.2933	0.2400	6.691	0.56	0.70	0.56	0.32
89	0.2966	0.2433	6.707	0.57	0.68	0.54	0.31
90	0.3000	0.2467	6.707	0.57	0.68	0.54	0.31
91	0.3033	0.2500	6.707	0.57	0.68	0.54	0.31
92	0.3066	0.2533	6.707	0.57	0.68	0.54	0.31

SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
93	0.3100	0.2567	6.723	0.59	0.67	0.53	0.30
94	0.3133	0.2600	6.723	0.59	0.67	0.53	0.30
95	0.3166	0.2633	6.723	0.59	0.67	0.53	0.30
96	0.3200	0.2667	6.739	0.60	0.65	0.52	0.30
97	0.3233	0.2700	6.739	0.60	0.65	0.52	0.30
98	0.3266	0.2733	6.739	0.60	0.65	0.52	0.30
99	0.3300	0.2767	6.755	0.62	0.64	0.51	0.29
100	0.3333	0.2800	6.755	0.62	0.64	0.51	0.29
101	0.3500	0.2967	6.770	0.64	0.62	0.49	0.28
102	0.3667	0.3134	6.802	0.67	0.59	0.47	0.27
103	0.3833	0.3300	6.818	0.68	0.57	0.46	0.26
104	0.4000	0.3467	6.834	0.70	0.56	0.44	0.25
105	0.4167	0.3634	6.850	0.72	0.54	0.43	0.25
106	0.4333	0.3800	6.866	0.73	0.53	0.42	0.24
107	0.4500	0.3967	6.882	0.75	0.51	0.40	0.23
108	0.4667	0.4134	6.898	0.76	0.49	0.39	0.22
109	0.4833	0.4300	6.930	0.80	0.46	0.37	0.21
110	0.5000	0.4467	6.930	0.80	0.46	0.37	0.21
111	0.5167	0.4634	6.946	0.81	0.45	0.35	0.20
112	0.5333	0.4800	6.961	0.83	0.43	0.34	0.20
113	0.5500	0.4967	6.977	0.84	0.41	0.33	0.19
114	0.5667	0.5134	6.993	0.86	0.40	0.32	0.18
115	0.5833	0.5300	6.993	0.86	0.40	0.32	0.18
116	0.6000	0.5467	7.009	0.88	0.38	0.30	0.17
117	0.6167	0.5634	7.025	0.89	0.37	0.29	0.17
118	0.6333	0.5800	7.025	0.89	0.37	0.29	0.17
119	0.6500	0.5967	7.041	0.91	0.35	0.28	0.16
120	0.6667	0.6134	7.057	0.92	0.33	0.27	0.15
121	0.6833	0.6300	7.057	0.92	0.33	0.27	0.15
122	0.7000	0.6467	7.073	0.94	0.32	0.25	0.14
123	0.7167	0.6634	7.073	0.94	0.32	0.25	0.14

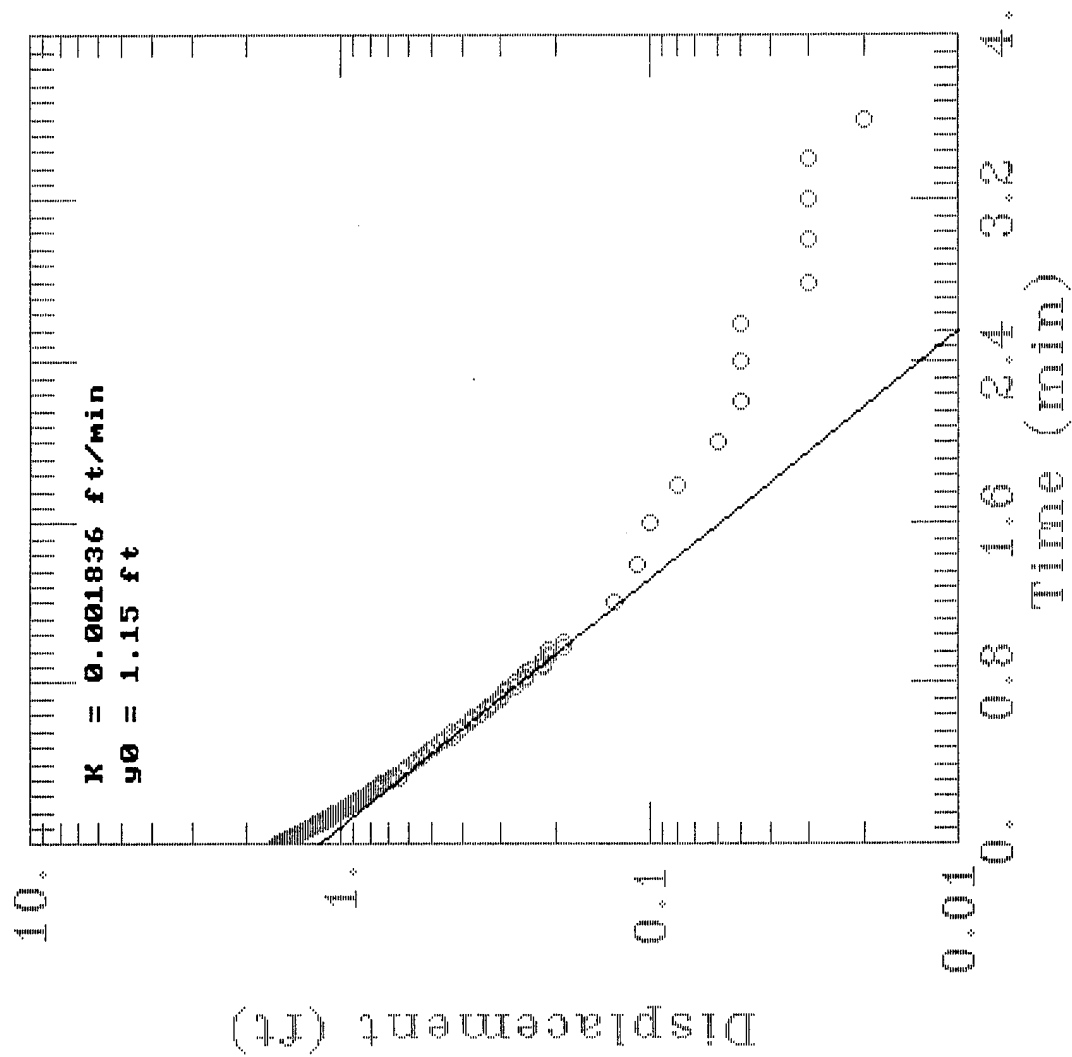
SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.			
124	0.7333	0.6800	7.089	0.96	0.30	0.24	0.14
125	0.7500	0.6967	7.089	0.96	0.30	0.24	0.14
126	0.7667	0.7134	7.105	0.97	0.29	0.23	0.13
127	0.7833	0.7300	7.121	0.99	0.27	0.21	0.12
128	0.8000	0.7467	7.121	0.99	0.27	0.21	0.12
129	0.8167	0.7634	7.121	0.99	0.27	0.21	0.12
130	0.8333	0.7800	7.137	1.00	0.25	0.20	0.12
131	0.8500	0.7967	7.137	1.00	0.25	0.20	0.12
132	0.8667	0.8134	7.153	1.02	0.24	0.19	0.11
133	0.8833	0.8300	7.153	1.02	0.24	0.19	0.11
134	0.9000	0.8467	7.153	1.02	0.24	0.19	0.11
135	0.9167	0.8634	7.168	1.03	0.22	0.18	0.10
136	0.9333	0.8800	7.168	1.03	0.22	0.18	0.10
137	0.9500	0.8967	7.184	1.05	0.21	0.16	0.09
138	0.9667	0.9134	7.184	1.05	0.21	0.16	0.09
139	0.9833	0.9300	7.184	1.05	0.21	0.16	0.09
140	1.0000	0.9467	7.184	1.05	0.21	0.16	0.09
141	1.2000	1.1467	7.248	1.11	0.14	0.11	0.07
142	1.4000	1.3467	7.264	1.13	0.13	0.10	0.06
143	1.6000	1.5467	7.296	1.16	0.09	0.08	0.04
144	1.8000	1.7467	7.312	1.18	0.08	0.06	0.04
145	2.0000	1.9467	7.328	1.19	0.06	0.05	0.03
146	2.2000	2.1467	7.328	1.19	0.06	0.05	0.03
147	2.4000	2.3467	7.344	1.21	0.05	0.04	0.02
148	2.6000	2.5467	7.344	1.21	0.05	0.04	0.02
149	2.8000	2.7467	7.344	1.21	0.05	0.04	0.02
150	3.0000	2.9467	7.360	1.23	0.03	0.02	0.01
151	3.2000	3.1467	7.360	1.23	0.03	0.02	0.01
152	3.4000	3.3467	7.360	1.23	0.03	0.02	0.01
153	3.6000	3.5467	7.360	1.23	0.03	0.02	0.01
154	3.8000	3.7467	7.360	1.23	0.03	0.02	0.01

SLUG IN TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
155	4.0000	3.9467	7.360	1.23	0.03	0.02	0.01
156	4.2000	4.1467	7.375	1.24	0.02	0.01	0.01
157	4.4000	4.3467	7.375	1.24	0.02	0.01	0.01
158	4.6000	4.5467	7.375	1.24	0.02	0.01	0.01
159	4.8000	4.7467	7.375	1.24	0.02	0.01	0.01
160	5.0000	4.9467	7.375	1.24	0.02	0.01	0.01
161	5.2000	5.1467	7.375	1.24	0.02	0.01	0.01
162	5.4000	5.3467	7.375	1.24	0.02	0.01	0.01
163	5.6000	5.5467	7.375	1.24	0.02	0.01	0.01
164	5.8000	5.7467	7.375	1.24	0.02	0.01	0.01
165	6.0000	5.9467	7.375	1.24	0.02	0.01	0.01
166	6.2000	6.1467	7.375	1.24	0.02	0.01	0.01
167	6.4000	6.3467	7.375	1.24	0.02	0.01	0.01
168	6.6000	6.5467	7.375	1.24	0.02	0.01	0.01
169	6.8000	6.7467	7.375	1.24	0.02	0.01	0.01
170	7.0000	6.9467	7.375	1.24	0.02	0.01	0.01
171	7.2000	7.1467	7.375	1.24	0.02	0.01	0.01
172	7.4000	7.3467	7.375	1.24	0.02	0.01	0.01
173	7.6000	7.5467	7.375	1.24	0.02	0.01	0.01
174	7.8000	7.7467	7.391	1.26	0.00	0.00	0.00
175	8.0000	7.9467	7.375	1.24	0.02	0.01	0.01
176	8.2000	8.1467	7.375	1.24	0.02	0.01	0.01
177	8.4000	8.3467	7.391	1.26	0.00	0.00	0.00
178	8.6000	8.5467	7.391	1.26	0.00	0.00	0.00
179	8.8000	8.7467	7.391	1.26	0.00	0.00	0.00
180	9.0000	8.9467	7.391	1.26	0.00	0.00	0.00
181	9.2000	9.1467	7.391	1.26	0.00	0.00	0.00
182	9.4000	9.3467	7.391	1.26	0.00	0.00	0.00
183	9.6000	9.5467	7.391	1.26	0.00	0.00	0.00
184	9.8000	9.7467	7.391	1.26	0.00	0.00	0.00
185	10.0000	9.9467	7.391	1.26	0.00	0.00	0.00

SLUG OUT TEST MW-12



residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 153
 Number of estimated parameters.... 2
 Degrees of freedom..... 151
 Residual mean..... 0.007141
 Residual standard deviation..... 0.03104
 Residual variance..... 0.0009634

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.59	1.5226	0.067448	1
0.0067	1.58	1.51	0.069971	1
0.01	1.56	1.498	0.062027	1
0.0133	1.54	1.486	0.053987	1
0.0167	1.53	1.4738	0.05621	1
0.02	1.51	1.462	0.047977	1
0.0233	1.5	1.4504	0.04965	1
0.0267	1.48	1.4384	0.041579	1
0.03	1.46	1.4269	0.033064	1
0.0333	1.45	1.4155	0.034457	1
0.0366	1.43	1.4042	0.025759	1
0.04	1.42	1.3927	0.027309	1
0.0433	1.4	1.3816	0.018428	1
0.0466	1.4	1.3705	0.029459	1
0.05	1.38	1.3593	0.020732	1
0.0533	1.37	1.3484	0.021584	1
0.0566	1.35	1.3376	0.01235	1
0.06	1.34	1.3266	0.013353	1
0.0633	1.32	1.3161	0.0039448	1
0.0666	1.3	1.3055	-0.0055475	1
0.07	1.3	1.2948	0.0051907	1
0.0733	1.29	1.2845	0.0055287	1
0.0766	1.27	1.2742	-0.0042158	1
0.08	1.26	1.2637	-0.0037353	1
0.0833	1.26	1.2536	0.0063546	1
0.0866	1.24	1.2436	-0.0036361	1
0.09	1.23	1.2334	-0.003407	1
0.0933	1.21	1.2236	-0.013559	1
0.0966	1.21	1.2138	-0.0037902	1
0.1	1.19	1.2038	-0.013807	1
0.1033	1.18	1.1942	-0.014195	1
0.1066	1.18	1.1847	-0.0046605	1
0.11	1.16	1.1749	-0.014917	1
0.1133	1.15	1.1655	-0.015536	1
0.1166	1.15	1.1562	-0.00623	1
0.12	1.13	1.1467	-0.01672	1
0.1233	1.11	1.1376	-0.027564	1
0.1266	1.11	1.1285	-0.018482	1

0.13	1.1	1.1192	-0.0192	1
0.1333	1.1	1.1103	-0.010264	1
0.1366	1.08	1.1014	-0.021399	1
0.14	1.07	1.0923	-0.02234	1
0.1433	1.07	1.0836	-0.013619	1
0.1466	1.05	1.075	-0.024967	1
0.15	1.05	1.0661	-0.016125	1
0.1533	1.03	1.0576	-0.027613	1
0.1566	1.03	1.0492	-0.019169	1
0.16	1.02	1.0405	-0.020539	1
0.1633	1	1.0322	-0.032232	1
0.1666	1	1.024	-0.02399	1
0.17	0.99	1.0156	-0.025568	1
0.1733	0.99	1.0075	-0.017459	1
0.1766	0.97	0.99942	-0.029415	1
0.18	0.97	0.9912	-0.021195	1
0.1833	0.95	0.98328	-0.033281	1
0.1866	0.95	0.97543	-0.025431	1
0.19	0.94	0.96741	-0.027408	1
0.1933	0.94	0.95968	-0.019684	1
0.1966	0.92	0.95202	-0.032021	1
0.2	0.92	0.94419	-0.024191	1
0.2033	0.91	0.93665	-0.026652	1
0.2066	0.91	0.92917	-0.019174	1
0.21	0.89	0.92153	-0.031531	1
0.2133	0.89	0.91417	-0.024174	1
0.2166	0.87	0.90687	-0.036875	1
0.22	0.87	0.89942	-0.029416	1
0.2233	0.87	0.89223	-0.022234	1
0.2266	0.86	0.88511	-0.025111	1
0.23	0.86	0.87783	-0.017831	1
0.2333	0.84	0.87082	-0.030822	1
0.2366	0.84	0.86387	-0.023869	1
0.24	0.83	0.85676	-0.026764	1
0.2433	0.83	0.84992	-0.019923	1
0.2466	0.83	0.84314	-0.013137	1
0.25	0.81	0.8362	-0.026202	1
0.2533	0.81	0.82953	-0.019526	1
0.2566	0.81	0.8229	-0.012903	1
0.26	0.8	0.81613	-0.016134	1
0.2633	0.8	0.80962	-0.0096181	1
0.2666	0.78	0.80315	-0.023154	1
0.27	0.78	0.79655	-0.016548	1
0.2733	0.78	0.79019	-0.010188	1
0.2766	0.76	0.78388	-0.023879	1
0.28	0.76	0.77743	-0.017432	1
0.2833	0.76	0.77122	-0.011225	1
0.2866	0.75	0.76507	-0.015067	1
0.29	0.75	0.75877	-0.0087742	1
0.2933	0.73	0.75272	-0.022716	1
0.2966	0.73	0.74671	-0.016706	1
0.3	0.73	0.74056	-0.010564	1
0.3033	0.72	0.73465	-0.014652	1
0.3066	0.72	0.72879	-0.008786	1

0.31	0.72	0.72279	-0.0027917	1
0.3133	0.7	0.71702	-0.017021	1
0.3166	0.7	0.7113	-0.011296	1
0.32	0.7	0.70545	-0.0054455	1
0.3233	0.68	0.69981	-0.019813	1
0.3266	0.68	0.69423	-0.014226	1
0.33	0.68	0.68852	-0.0085156	1
0.3333	0.64	0.68302	-0.043018	1
0.35	0.65	0.65586	-0.0058649	1
0.3667	0.62	0.62979	-0.0097909	1
0.3833	0.61	0.6049	0.0050996	1
0.4	0.57	0.58085	-0.010853	1
0.4167	0.56	0.55776	0.0022393	1
0.4333	0.54	0.53572	0.004283	1
0.45	0.53	0.51442	0.01558	1
0.4667	0.51	0.49397	0.016031	1
0.4833	0.49	0.47445	0.015554	1
0.5	0.48	0.45558	0.024415	1
0.5167	0.46	0.43747	0.022527	1
0.533	0.43	0.42049	0.0095107	1
0.55	0.43	0.40348	0.026521	1
0.5667	0.41	0.38744	0.022562	1
0.5833	0.4	0.37213	0.027874	1
0.6	0.38	0.35733	0.022668	1
0.6167	0.37	0.34313	0.026874	1
0.6333	0.37	0.32957	0.040435	1
0.65	0.35	0.31646	0.033537	1
0.6667	0.33	0.30388	0.026118	1
0.6833	0.33	0.29187	0.038128	1
0.7	0.32	0.28027	0.039731	1
0.7167	0.3	0.26913	0.030873	1
0.7333	0.3	0.25849	0.041509	1
0.75	0.29	0.24821	0.041786	1
0.7667	0.29	0.23835	0.051654	1
0.7833	0.27	0.22893	0.041073	1
0.8	0.27	0.21983	0.050174	1
0.8167	0.25	0.21109	0.038914	1
0.8333	0.25	0.20274	0.047256	1
0.85	0.25	0.19468	0.055316	1
0.8667	0.24	0.18694	0.053056	1
0.8833	0.22	0.17956	0.040444	1
0.9	0.22	0.17242	0.047583	1
0.9167	0.22	0.16556	0.054437	1
0.9333	0.21	0.15902	0.05098	1
0.95	0.21	0.1527	0.057302	1
0.9667	0.21	0.14663	0.063373	1
0.9833	0.19	0.14083	0.049168	1
1	0.19	0.13523	0.054767	1
1.2	0.13	0.083194	0.046806	1
1.4	0.11	0.05118	0.05882	1
1.6	0.1	0.031485	0.068515	1
1.8	0.08	0.019369	0.060631	1
2	0.06	0.011916	0.048084	1
2.2	0.05	0.0073303	0.04267	1

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VISUAL MATCH PARAMETER ESTIMATES

```
K = 1.7472E-003
y0 = 1.1100E+000
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TYPE CURVE DATA

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.150E+000	4.000E+000	6.941E-004		

SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
0	0.0000	0.0000	8.936	0.00	1.61	1.00	0.73
1	0.0033	0.0033	8.920	0.02	1.59	0.99	0.72
2	0.0067	0.0067	8.904	0.03	1.58	0.98	0.72
3	0.0100	0.0100	8.888	0.05	1.56	0.97	0.71
4	0.0133	0.0133	8.872	0.06	1.54	0.96	0.70
5	0.0167	0.0167	8.856	0.08	1.53	0.95	0.69
6	0.0200	0.0200	8.840	0.10	1.51	0.94	0.69
7	0.0233	0.0233	8.824	0.11	1.50	0.93	0.68
8	0.0267	0.0267	8.808	0.13	1.48	0.92	0.67
9	0.0300	0.0300	8.792	0.14	1.46	0.91	0.67
10	0.0333	0.0333	8.776	0.16	1.45	0.90	0.66
11	0.0366	0.0366	8.761	0.18	1.43	0.89	0.65
12	0.0400	0.0400	8.745	0.19	1.42	0.88	0.64
13	0.0433	0.0433	8.729	0.21	1.40	0.87	0.64
14	0.0466	0.0466	8.729	0.21	1.40	0.87	0.64
15	0.0500	0.0500	8.713	0.22	1.38	0.86	0.63
16	0.0533	0.0533	8.697	0.24	1.37	0.85	0.62
17	0.0566	0.0566	8.681	0.26	1.35	0.84	0.61
18	0.0600	0.0600	8.665	0.27	1.34	0.83	0.61
19	0.0633	0.0633	8.649	0.29	1.32	0.82	0.60
20	0.0666	0.0666	8.633	0.30	1.30	0.81	0.59
21	0.0700	0.0700	8.633	0.30	1.30	0.81	0.59
22	0.0733	0.0733	8.617	0.32	1.29	0.80	0.59
23	0.0766	0.0766	8.601	0.33	1.27	0.79	0.58
24	0.0800	0.0800	8.586	0.35	1.26	0.78	0.57
25	0.0833	0.0833	8.586	0.35	1.26	0.78	0.57
26	0.0866	0.0866	8.569	0.37	1.24	0.77	0.56
27	0.0900	0.0900	8.554	0.38	1.23	0.76	0.56
28	0.0933	0.0933	8.538	0.40	1.21	0.75	0.55
29	0.0966	0.0966	8.538	0.40	1.21	0.75	0.55
30	0.1000	0.1000	8.522	0.41	1.19	0.74	0.54

SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
31	0.1033	0.1033	8.506	0.43	1.18	0.73	0.54
32	0.1066	0.1066	8.506	0.43	1.18	0.73	0.54
33	0.1100	0.1100	8.490	0.45	1.16	0.72	0.53
34	0.1133	0.1133	8.474	0.46	1.15	0.71	0.52
35	0.1166	0.1166	8.474	0.46	1.15	0.71	0.52
36	0.1200	0.1200	8.458	0.48	1.13	0.70	0.51
37	0.1233	0.1233	8.442	0.49	1.11	0.69	0.51
38	0.1266	0.1266	8.442	0.49	1.11	0.69	0.51
39	0.1300	0.1300	8.426	0.51	1.10	0.68	0.50
40	0.1333	0.1333	8.426	0.51	1.10	0.68	0.50
41	0.1366	0.1366	8.410	0.53	1.08	0.67	0.49
42	0.1400	0.1400	8.394	0.54	1.07	0.66	0.48
43	0.1433	0.1433	8.394	0.54	1.07	0.66	0.48
44	0.1466	0.1466	8.379	0.56	1.05	0.65	0.48
45	0.1500	0.1500	8.379	0.56	1.05	0.65	0.48
46	0.1533	0.1533	8.363	0.57	1.03	0.64	0.47
47	0.1566	0.1566	8.363	0.57	1.03	0.64	0.47
48	0.1600	0.1600	8.347	0.59	1.02	0.63	0.46
49	0.1633	0.1633	8.331	0.61	1.00	0.62	0.46
50	0.1666	0.1666	8.331	0.61	1.00	0.62	0.46
51	0.1700	0.1700	8.315	0.62	0.99	0.61	0.45
52	0.1733	0.1733	8.315	0.62	0.99	0.61	0.45
53	0.1766	0.1766	8.299	0.64	0.97	0.60	0.44
54	0.1800	0.1800	8.299	0.64	0.97	0.60	0.44
55	0.1833	0.1833	8.283	0.65	0.95	0.59	0.43
56	0.1866	0.1866	8.283	0.65	0.95	0.59	0.43
57	0.1900	0.1900	8.267	0.67	0.94	0.58	0.43
58	0.1933	0.1933	8.267	0.67	0.94	0.58	0.43
59	0.1966	0.1966	8.251	0.69	0.92	0.57	0.42
60	0.2000	0.2000	8.251	0.69	0.92	0.57	0.42
61	0.2033	0.2033	8.235	0.70	0.91	0.56	0.41

SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B	DATUM TRANS.			
62	0.2066	0.2066	8.235	0.70		0.91	0.56	0.41
63	0.2100	0.2100	8.219	0.72		0.89	0.55	0.40
64	0.2133	0.2133	8.219	0.72		0.89	0.55	0.40
65	0.2166	0.2166	8.203	0.73		0.87	0.54	0.40
66	0.2200	0.2200	8.203	0.73		0.87	0.54	0.40
67	0.2233	0.2233	8.203	0.73		0.87	0.54	0.40
68	0.2266	0.2266	8.187	0.75		0.86	0.53	0.39
69	0.2300	0.2300	8.187	0.75		0.86	0.53	0.39
70	0.2333	0.2333	8.171	0.77		0.84	0.52	0.38
71	0.2366	0.2366	8.171	0.77		0.84	0.52	0.38
72	0.2400	0.2400	8.156	0.78		0.83	0.51	0.38
73	0.2433	0.2433	8.156	0.78		0.83	0.51	0.38
74	0.2466	0.2466	8.156	0.78		0.83	0.51	0.38
75	0.2500	0.2500	8.140	0.80		0.81	0.50	0.37
76	0.2533	0.2533	8.140	0.80		0.81	0.50	0.37
77	0.2566	0.2566	8.140	0.80		0.81	0.50	0.37
78	0.2600	0.2600	8.124	0.81		0.80	0.50	0.36
79	0.2633	0.2633	8.124	0.81		0.80	0.50	0.36
80	0.2666	0.2666	8.108	0.83		0.78	0.49	0.35
81	0.2700	0.2700	8.108	0.83		0.78	0.49	0.35
82	0.2733	0.2733	8.108	0.83		0.78	0.49	0.35
83	0.2766	0.2766	8.092	0.84		0.76	0.48	0.35
84	0.2800	0.2800	8.092	0.84		0.76	0.48	0.35
85	0.2833	0.2833	8.092	0.84		0.76	0.48	0.35
86	0.2866	0.2866	8.076	0.86		0.75	0.47	0.34
87	0.2900	0.2900	8.076	0.86		0.75	0.47	0.34
88	0.2933	0.2933	8.060	0.88		0.73	0.46	0.33
89	0.2966	0.2966	8.060	0.88		0.73	0.46	0.33
90	0.3000	0.3000	8.060	0.88		0.73	0.46	0.33
91	0.3033	0.3033	8.044	0.89		0.72	0.45	0.33
92	0.3066	0.3066	8.044	0.89		0.72	0.45	0.33

SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
93	0.3100	0.3100	8.044	0.89	0.72	0.45	0.33
94	0.3133	0.3133	8.028	0.91	0.70	0.44	0.32
95	0.3166	0.3166	8.028	0.91	0.70	0.44	0.32
96	0.3200	0.3200	8.028	0.91	0.70	0.44	0.32
97	0.3233	0.3233	8.012	0.92	0.68	0.43	0.31
98	0.3266	0.3266	8.012	0.92	0.68	0.43	0.31
99	0.3300	0.3300	8.012	0.92	0.68	0.43	0.31
100	0.3333	0.3333	7.966	0.97	0.64	0.40	0.29
101	0.3500	0.3500	7.981	0.96	0.65	0.41	0.30
102	0.3667	0.3667	7.949	0.99	0.62	0.39	0.28
103	0.3833	0.3833	7.933	1.00	0.61	0.38	0.28
104	0.4000	0.4000	7.901	1.04	0.57	0.36	0.26
105	0.4167	0.4167	7.885	1.05	0.56	0.35	0.25
106	0.4333	0.4333	7.869	1.07	0.54	0.34	0.25
107	0.4500	0.4500	7.853	1.08	0.53	0.33	0.24
108	0.4667	0.4667	7.837	1.10	0.51	0.32	0.23
109	0.4833	0.4833	7.821	1.12	0.49	0.31	0.22
110	0.5000	0.5000	7.805	1.13	0.48	0.30	0.22
111	0.5167	0.5167	7.789	1.15	0.46	0.29	0.21
112	0.5333	0.5333	7.758	1.18	0.43	0.27	0.20
113	0.5500	0.5500	7.758	1.18	0.43	0.27	0.20
114	0.5667	0.5667	7.742	1.19	0.41	0.26	0.19
115	0.5833	0.5833	7.726	1.21	0.40	0.25	0.18
116	0.6000	0.6000	7.710	1.23	0.38	0.24	0.17
117	0.6167	0.6167	7.694	1.24	0.37	0.23	0.17
118	0.6333	0.6333	7.694	1.24	0.37	0.23	0.17
119	0.6500	0.6500	7.678	1.26	0.35	0.22	0.16
120	0.6667	0.6667	7.662	1.27	0.33	0.21	0.15
121	0.6833	0.6833	7.662	1.27	0.33	0.21	0.15
122	0.7000	0.7000	7.646	1.29	0.32	0.20	0.14
123	0.7167	0.7167	7.630	1.31	0.30	0.19	0.14

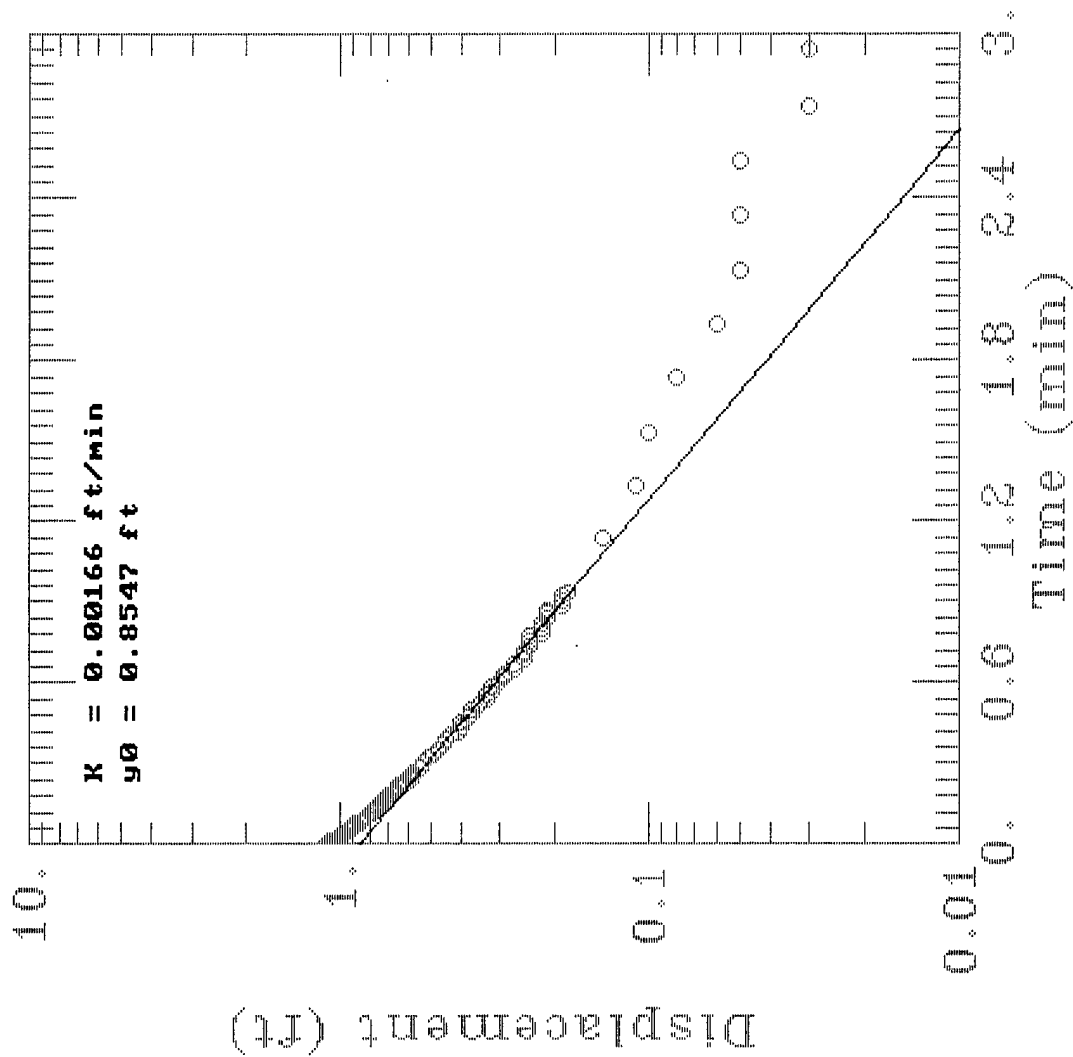
SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
124	0.7333	0.7333	7.630	1.31	0.30	0.19	0.14
125	0.7500	0.7500	7.614	1.32	0.29	0.18	0.13
126	0.7667	0.7667	7.614	1.32	0.29	0.18	0.13
127	0.7833	0.7833	7.598	1.34	0.27	0.17	0.12
128	0.8000	0.8000	7.598	1.34	0.27	0.17	0.12
129	0.8167	0.8167	7.582	1.35	0.25	0.16	0.12
130	0.8333	0.8333	7.582	1.35	0.25	0.16	0.12
131	0.8500	0.8500	7.582	1.35	0.25	0.16	0.12
132	0.8667	0.8667	7.566	1.37	0.24	0.15	0.11
133	0.8833	0.8833	7.551	1.39	0.22	0.14	0.10
134	0.9000	0.9000	7.551	1.39	0.22	0.14	0.10
135	0.9167	0.9167	7.551	1.39	0.22	0.14	0.10
136	0.9333	0.9333	7.535	1.40	0.21	0.13	0.09
137	0.9500	0.9500	7.535	1.40	0.21	0.13	0.09
138	0.9667	0.9667	7.535	1.40	0.21	0.13	0.09
139	0.9833	0.9833	7.519	1.42	0.19	0.12	0.09
140	1.0000	1.0000	7.519	1.42	0.19	0.12	0.09
141	1.2000	1.2000	7.455	1.48	0.13	0.08	0.06
142	1.4000	1.4000	7.439	1.50	0.11	0.07	0.05
143	1.6000	1.6000	7.423	1.51	0.10	0.06	0.04
144	1.8000	1.8000	7.407	1.53	0.08	0.05	0.04
145	2.0000	2.0000	7.391	1.55	0.06	0.04	0.03
146	2.2000	2.2000	7.375	1.56	0.05	0.03	0.02
147	2.4000	2.4000	7.375	1.56	0.05	0.03	0.02
148	2.6000	2.6000	7.375	1.56	0.05	0.03	0.02
149	2.8000	2.8000	7.360	1.58	0.03	0.02	0.01
150	3.0000	3.0000	7.360	1.58	0.03	0.02	0.01
151	3.2000	3.2000	7.360	1.58	0.03	0.02	0.01
152	3.4000	3.4000	7.360	1.58	0.03	0.02	0.01
153	3.6000	3.6000	7.344	1.59	0.02	0.01	0.01
154	3.8000	3.8000	7.344	1.59	0.02	0.01	0.01

SLUG OUT TEST MW-12

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
155	4.0000	4.0000	7.344	1.59	0.02	0.01	0.01
156	4.2000	4.2000	7.344	1.59	0.02	0.01	0.01
157	4.4000	4.4000	7.344	1.59	0.02	0.01	0.01
158	4.6000	4.6000	7.344	1.59	0.02	0.01	0.01
159	4.8000	4.8000	7.344	1.59	0.02	0.01	0.01
160	5.0000	5.0000	7.344	1.59	0.02	0.01	0.01
161	5.2000	5.2000	7.328	1.61	0.00	0.00	0.00
162	5.4000	5.4000	7.328	1.61	0.00	0.00	0.00
163	5.6000	5.6000	7.344	1.59	0.02	0.01	0.01
164	5.8000	5.8000	7.344	1.59	0.02	0.01	0.01
165	6.0000	6.0000	7.344	1.59	0.02	0.01	0.01
166	6.2000	6.2000	7.344	1.59	0.02	0.01	0.01
167	6.4000	6.4000	7.344	1.59	0.02	0.01	0.01
168	6.6000	6.6000	7.344	1.59	0.02	0.01	0.01
169	6.8000	6.8000	7.344	1.59	0.02	0.01	0.01
170	7.0000	7.0000	7.344	1.59	0.02	0.01	0.01
171	7.2000	7.2000	7.344	1.59	0.02	0.01	0.01
172	7.4000	7.4000	7.344	1.59	0.02	0.01	0.01
173	7.6000	7.6000	7.344	1.59	0.02	0.01	0.01
174	7.8000	7.8000	7.344	1.59	0.02	0.01	0.01
175	8.0000	8.0000	7.344	1.59	0.02	0.01	0.01
176	8.2000	8.2000	7.344	1.59	0.02	0.01	0.01
177	8.4000	8.4000	7.344	1.59	0.02	0.01	0.01
178	8.6000	8.6000	7.344	1.59	0.02	0.01	0.01
179	8.8000	8.8000	7.344	1.59	0.02	0.01	0.01
180	9.0000	9.0000	7.344	1.59	0.02	0.01	0.01
181	9.2000	9.2000	7.344	1.59	0.02	0.01	0.01
182	9.4000	9.4000	7.344	1.59	0.02	0.01	0.01
183	9.6000	9.6000	7.344	1.59	0.02	0.01	0.01
184	9.8000	9.8000	7.344	1.59	0.02	0.01	0.01
185	10.0000	10.0000	7.344	1.59	0.02	0.01	0.01

SLUG IN TEST MW-13



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 131
 Number of estimated parameters.... 2
 Degrees of freedom..... 129
 Residual mean..... 0.004906
 Residual standard deviation..... 0.02573
 Residual variance..... 0.0006619

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.1	1.0237	0.076295	1
0.0067	1.08	1.0163	0.063654	1
0.01	1.07	1.0093	0.060746	1
0.0133	1.05	1.0022	0.047788	1
0.0167	1.04	0.99501	0.044992	1
0.02	1.02	0.98806	0.031935	1
0.0233	1.02	0.98117	0.03883	1
0.0267	1	0.97412	0.025883	1
0.03	1	0.96732	0.03268	1
0.0333	0.99	0.96057	0.02943	1
0.0367	0.97	0.95367	0.016335	1
0.04	0.97	0.94701	0.022989	1
0.0433	0.96	0.9404	0.019597	1
0.0467	0.96	0.93364	0.026357	1
0.05	0.94	0.92713	0.012872	1
0.0533	0.92	0.92066	-0.00065899	1
0.0567	0.92	0.91404	0.0059591	1
0.06	0.91	0.90766	0.002337	1
0.0633	0.91	0.90133	0.0086705	1
0.0667	0.89	0.89485	-0.0048504	1
0.07	0.89	0.88861	0.0013937	1
0.0733	0.88	0.88241	-0.0024059	1
0.0767	0.88	0.87606	0.0039373	1
0.08	0.86	0.86995	-0.0099498	1
0.0833	0.86	0.86388	-0.0038795	1
0.0867	0.84	0.85767	-0.01767	1
0.09	0.84	0.85168	-0.011685	1
0.0933	0.84	0.84574	-0.0057421	1
0.0967	0.83	0.83966	-0.0096626	1
0.1	0.83	0.8338	-0.0038036	1
0.1033	0.81	0.82799	-0.017986	1
0.1067	0.81	0.82203	-0.012034	1
0.11	0.81	0.8163	-0.0062977	1
0.1133	0.8	0.8106	-0.010602	1
0.1167	0.8	0.80477	-0.0047748	1
0.12	0.78	0.79916	-0.019159	1
0.1233	0.78	0.79358	-0.013583	1
0.1267	0.77	0.78788	-0.017878	1

0.13	0.77	0.78238	-0.012381	1
0.1333	0.77	0.77692	-0.0069215	1
0.1367	0.75	0.77134	-0.021337	1
0.14	0.75	0.76595	-0.015954	1
0.1433	0.75	0.76061	-0.01061	1
0.1467	0.73	0.75514	-0.025142	1
0.15	0.73	0.74987	-0.019873	1
0.1533	0.73	0.74464	-0.014641	1
0.1567	0.72	0.73929	-0.019288	1
0.16	0.72	0.73413	-0.014129	1
0.1633	0.7	0.72901	-0.029007	1
0.1667	0.7	0.72377	-0.023766	1
0.17	0.7	0.71872	-0.018716	1
0.1733	0.7	0.7137	-0.013701	1
0.1767	0.69	0.70857	-0.018571	1
0.18	0.69	0.70363	-0.013626	1
0.1833	0.69	0.69872	-0.0087166	1
0.1867	0.67	0.69369	-0.023694	1
0.19	0.67	0.68885	-0.018854	1
0.1933	0.67	0.68405	-0.014047	1
0.1967	0.65	0.67913	-0.02913	1
0.2	0.65	0.67439	-0.024391	1
0.2033	0.65	0.66969	-0.019685	1
0.2067	0.64	0.66487	-0.024871	1
0.21	0.64	0.66023	-0.020232	1
0.2133	0.64	0.65562	-0.015625	1
0.2167	0.64	0.65091	-0.010912	1
0.22	0.62	0.64637	-0.02637	1
0.2233	0.62	0.64186	-0.02186	1
0.2267	0.62	0.63725	-0.017246	1
0.23	0.61	0.6328	-0.022799	1
0.2333	0.61	0.62838	-0.018384	1
0.2367	0.61	0.62387	-0.013867	1
0.24	0.61	0.61951	-0.0095136	1
0.2433	0.59	0.61519	-0.025191	1
0.2467	0.59	0.61077	-0.020769	1
0.25	0.59	0.60651	-0.016507	1
0.2533	0.59	0.60227	-0.012275	1
0.2567	0.59	0.59795	-0.0079453	1
0.26	0.57	0.59377	-0.023773	1
0.2633	0.57	0.58963	-0.01963	1
0.2667	0.57	0.58539	-0.015391	1
0.27	0.57	0.58131	-0.011307	1
0.2867	0.54	0.56107	-0.021068	1
0.3034	0.53	0.54153	-0.011535	1
0.32	0.51	0.52279	-0.012792	1
0.3367	0.49	0.50459	-0.014591	1
0.3534	0.48	0.48702	-0.007024	1
0.37	0.46	0.47017	-0.010168	1
0.3867	0.45	0.4538	-0.0037992	1
0.4034	0.43	0.438	-0.0080002	1
0.42	0.41	0.42284	-0.012841	1
0.4367	0.4	0.40812	-0.0081198	1
0.4534	0.4	0.39391	0.0060888	1

TYPE CURVE DATA

y0 = 8.54744E-001

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	8.547E-001	3.000E+000	5.546E-003		

SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.			
0	0.0000	-0.0633	6.373	0.10	1.00	0.91	0.46
1	0.0033	-0.0600	6.054	-0.22	1.32	1.20	0.60
2	0.0067	-0.0566	5.497	-0.78	1.88	1.71	0.85
3	0.0100	-0.0533	5.003	-1.27	2.37	2.16	1.08
4	0.0133	-0.0500	4.828	-1.45	2.55	2.32	1.16
5	0.0167	-0.0466	4.892	-1.39	2.48	2.26	1.13
6	0.0200	-0.0433	5.003	-1.27	2.37	2.16	1.08
7	0.0233	-0.0400	5.401	-0.88	1.98	1.80	0.90
8	0.0267	-0.0366	7.853	1.58	-0.48	-0.43	-0.22
9	0.0300	-0.0333	6.755	0.48	0.62	0.57	0.28
10	0.0333	-0.0300	6.978	0.70	0.40	0.36	0.18
11	0.0366	-0.0267	6.293	0.02	1.08	0.99	0.49
12	0.0400	-0.0233	6.054	-0.22	1.32	1.20	0.60
13	0.0433	-0.0200	5.943	-0.33	1.43	1.30	0.65
14	0.0466	-0.0167	5.959	-0.32	1.42	1.29	0.64
15	0.0500	-0.0133	6.134	-0.14	1.24	1.13	0.56
16	0.0533	-0.0100	6.277	0.00	1.10	1.00	0.50
17	0.0566	-0.0067	6.341	0.06	1.04	0.94	0.47
18	0.0600	-0.0033	6.325	0.05	1.05	0.96	0.48
19	0.0633	-0.0000	6.277	0.00	1.10	1.00	0.50
20	0.0666	0.0033	6.277	0.00	1.10	1.00	0.50
21	0.0700	0.0067	6.293	0.02	1.08	0.99	0.49
22	0.0733	0.0100	6.309	0.03	1.07	0.97	0.48
23	0.0766	0.0133	6.325	0.05	1.05	0.96	0.48
24	0.0800	0.0167	6.341	0.06	1.04	0.94	0.47
25	0.0833	0.0200	6.357	0.08	1.02	0.93	0.46
26	0.0866	0.0233	6.357	0.08	1.02	0.93	0.46
27	0.0900	0.0267	6.373	0.10	1.00	0.91	0.46
28	0.0933	0.0300	6.373	0.10	1.00	0.91	0.46
29	0.0966	0.0333	6.388	0.11	0.99	0.90	0.45
30	0.1000	0.0367	6.404	0.13	0.97	0.88	0.44

SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				TRANS.			
31	0.1033	0.0400	6.404	0.13	0.97	0.88	0.44
32	0.1066	0.0433	6.420	0.14	0.96	0.87	0.43
33	0.1100	0.0467	6.420	0.14	0.96	0.87	0.43
34	0.1133	0.0500	6.436	0.16	0.94	0.86	0.43
35	0.1166	0.0533	6.452	0.17	0.92	0.84	0.42
36	0.1200	0.0567	6.452	0.17	0.92	0.84	0.42
37	0.1233	0.0600	6.468	0.19	0.91	0.83	0.41
38	0.1266	0.0633	6.468	0.19	0.91	0.83	0.41
39	0.1300	0.0667	6.484	0.21	0.89	0.81	0.41
40	0.1333	0.0700	6.484	0.21	0.89	0.81	0.41
41	0.1366	0.0733	6.500	0.22	0.88	0.80	0.40
42	0.1400	0.0767	6.500	0.22	0.88	0.80	0.40
43	0.1433	0.0800	6.516	0.24	0.86	0.78	0.39
44	0.1466	0.0833	6.516	0.24	0.86	0.78	0.39
45	0.1500	0.0867	6.532	0.25	0.84	0.77	0.38
46	0.1533	0.0900	6.532	0.25	0.84	0.77	0.38
47	0.1566	0.0933	6.532	0.25	0.84	0.77	0.38
48	0.1600	0.0967	6.548	0.27	0.83	0.75	0.38
49	0.1633	0.1000	6.548	0.27	0.83	0.75	0.38
50	0.1666	0.1033	6.563	0.29	0.81	0.74	0.37
51	0.1700	0.1067	6.563	0.29	0.81	0.74	0.37
52	0.1733	0.1100	6.563	0.29	0.81	0.74	0.37
53	0.1766	0.1133	6.579	0.30	0.80	0.73	0.36
54	0.1800	0.1167	6.579	0.30	0.80	0.73	0.36
55	0.1833	0.1200	6.595	0.32	0.78	0.71	0.36
56	0.1866	0.1233	6.595	0.32	0.78	0.71	0.36
57	0.1900	0.1267	6.611	0.33	0.77	0.70	0.35
58	0.1933	0.1300	6.611	0.33	0.77	0.70	0.35
59	0.1966	0.1333	6.611	0.33	0.77	0.70	0.35
60	0.2000	0.1367	6.627	0.35	0.75	0.68	0.34
61	0.2033	0.1400	6.627	0.35	0.75	0.68	0.34

SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	0.1433	6.627	0.35	0.75	0.68	0.34
63	0.2100	0.1467	6.643	0.37	0.73	0.67	0.33
64	0.2133	0.1500	6.643	0.37	0.73	0.67	0.33
65	0.2166	0.1533	6.643	0.37	0.73	0.67	0.33
66	0.2200	0.1567	6.659	0.38	0.72	0.65	0.33
67	0.2233	0.1600	6.659	0.38	0.72	0.65	0.33
68	0.2266	0.1633	6.675	0.40	0.70	0.64	0.32
69	0.2300	0.1667	6.675	0.40	0.70	0.64	0.32
70	0.2333	0.1700	6.675	0.40	0.70	0.64	0.32
71	0.2366	0.1733	6.675	0.40	0.70	0.64	0.32
72	0.2400	0.1767	6.691	0.41	0.69	0.62	0.31
73	0.2433	0.1800	6.691	0.41	0.69	0.62	0.31
74	0.2466	0.1833	6.691	0.41	0.69	0.62	0.31
75	0.2500	0.1867	6.707	0.43	0.67	0.61	0.30
76	0.2533	0.1900	6.707	0.43	0.67	0.61	0.30
77	0.2566	0.1933	6.707	0.43	0.67	0.61	0.30
78	0.2600	0.1967	6.723	0.45	0.65	0.59	0.30
79	0.2633	0.2000	6.723	0.45	0.65	0.59	0.30
80	0.2666	0.2033	6.723	0.45	0.65	0.59	0.30
81	0.2700	0.2067	6.739	0.46	0.64	0.58	0.29
82	0.2733	0.2100	6.739	0.46	0.64	0.58	0.29
83	0.2766	0.2133	6.739	0.46	0.64	0.58	0.29
84	0.2800	0.2167	6.739	0.46	0.64	0.58	0.29
85	0.2833	0.2200	6.755	0.48	0.62	0.57	0.28
86	0.2866	0.2233	6.755	0.48	0.62	0.57	0.28
87	0.2900	0.2267	6.755	0.48	0.62	0.57	0.28
88	0.2933	0.2300	6.770	0.49	0.61	0.55	0.28
89	0.2966	0.2333	6.770	0.49	0.61	0.55	0.28
90	0.3000	0.2367	6.770	0.49	0.61	0.55	0.28
91	0.3033	0.2400	6.770	0.49	0.61	0.55	0.28
92	0.3066	0.2433	6.786	0.51	0.59	0.54	0.27

SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
93	0.3100	0.2467	6.786	0.51	0.59	0.54	0.27
94	0.3133	0.2500	6.786	0.51	0.59	0.54	0.27
95	0.3166	0.2533	6.786	0.51	0.59	0.54	0.27
96	0.3200	0.2567	6.786	0.51	0.59	0.54	0.27
97	0.3233	0.2600	6.802	0.52	0.57	0.52	0.26
98	0.3266	0.2633	6.802	0.52	0.57	0.52	0.26
99	0.3300	0.2667	6.802	0.52	0.57	0.52	0.26
100	0.3333	0.2700	6.802	0.52	0.57	0.52	0.26
101	0.3500	0.2867	6.834	0.56	0.54	0.49	0.25
102	0.3667	0.3034	6.850	0.57	0.53	0.48	0.24
103	0.3833	0.3200	6.866	0.59	0.51	0.46	0.23
104	0.4000	0.3367	6.882	0.60	0.49	0.45	0.22
105	0.4167	0.3534	6.898	0.62	0.48	0.43	0.22
106	0.4333	0.3700	6.914	0.64	0.46	0.42	0.21
107	0.4500	0.3867	6.930	0.65	0.45	0.41	0.20
108	0.4667	0.4034	6.846 ⁹	0.37	0.75 ^{.43}	0.66	0.33
109	0.4833	0.4200	6.962	0.68	0.41	0.38	0.19
110	0.5000	0.4367	6.978	0.70	0.40	0.36	0.18
111	0.5167	0.4534	6.978	0.70	0.40	0.36	0.18
112	0.5333	0.4700	6.993	0.72	0.38	0.35	0.17
113	0.5500	0.4867	7.009	0.73	0.37	0.33	0.17
114	0.5667	0.5034	7.009	0.73	0.37	0.33	0.17
115	0.5833	0.5200	7.025	0.75	0.35	0.32	0.16
116	0.6000	0.5367	7.041	0.76	0.33	0.30	0.15
117	0.6167	0.5534	7.041	0.76	0.33	0.30	0.15
118	0.6333	0.5700	7.057	0.78	0.32	0.29	0.14
119	0.6500	0.5867	7.057	0.78	0.32	0.29	0.14
120	0.6667	0.6034	7.073	0.80	0.30	0.28	0.14
121	0.6833	0.6200	7.089	0.81	0.29	0.26	0.13
122	0.7000	0.6367	7.089	0.81	0.29	0.26	0.13
123	0.7167	0.6534	7.105	0.83	0.27	0.25	0.12

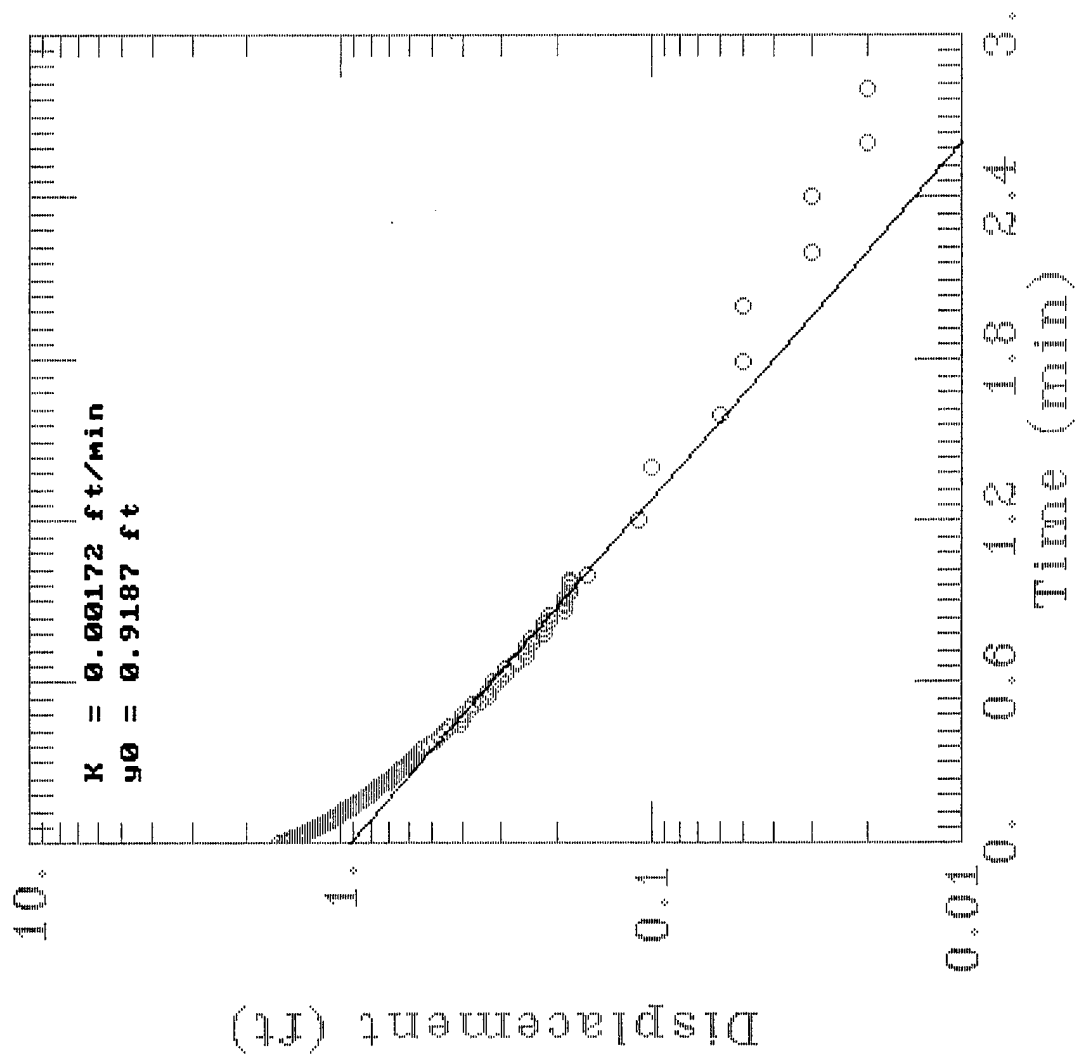
SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
124	0.7333	0.6700	7.105	0.83	0.27	0.25	0.12
125	0.7500	0.6867	7.121	0.84	0.25	0.23	0.12
126	0.7667	0.7034	7.121	0.84	0.25	0.23	0.12
127	0.7833	0.7200	7.121	0.84	0.25	0.23	0.12
128	0.8000	0.7367	7.137	0.86	0.24	0.22	0.11
129	0.8167	0.7534	7.137	0.86	0.24	0.22	0.11
130	0.8333	0.7700	7.137	0.86	0.24	0.22	0.11
131	0.8500	0.7867	7.153	0.88	0.22	0.20	0.10
132	0.8667	0.8034	7.153	0.88	0.22	0.20	0.10
133	0.8833	0.8200	7.153	0.88	0.22	0.20	0.10
134	0.9000	0.8367	7.168	0.89	0.21	0.19	0.09
135	0.9167	0.8534	7.168	0.89	0.21	0.19	0.09
136	0.9333	0.8700	7.168	0.89	0.21	0.19	0.09
137	0.9500	0.8867	7.184	0.91	0.19	0.17	0.09
138	0.9667	0.9034	7.184	0.91	0.19	0.17	0.09
139	0.9833	0.9200	7.184	0.91	0.19	0.17	0.09
140	1.0000	0.9367	7.200	0.92	0.18	0.16	0.08
141	1.2000	1.1367	7.232	0.96	0.14	0.13	0.07
142	1.4000	1.3367	7.264	0.99	0.11	0.10	0.05
143	1.6000	1.5367	7.280	1.00	0.10	0.09	0.04
144	1.8000	1.7367	7.296	1.02	0.08	0.07	0.04
145	2.0000	1.9367	7.312	1.04	0.06	0.06	0.03
146	2.2000	2.1367	7.328	1.05	0.05	0.04	0.02
147	2.4000	2.3367	7.328	1.05	0.05	0.04	0.02
148	2.6000	2.5367	7.328	1.05	0.05	0.04	0.02
149	2.8000	2.7367	7.344	1.07	0.03	0.03	0.01
150	3.0000	2.9367	7.344	1.07	0.03	0.03	0.01
151	3.2000	3.1367	7.344	1.07	0.03	0.03	0.01
152	3.4000	3.3367	7.360	1.08	0.02	0.01	0.01
153	3.6000	3.5367	7.360	1.08	0.02	0.01	0.01
154	3.8000	3.7367	7.360	1.08	0.02	0.01	0.01

SLUG IN TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
155	4.0000	3.9367	7.360	1.08	0.02	0.01	0.01
156	4.2000	4.1367	7.360	1.08	0.02	0.01	0.01
157	4.4000	4.3367	7.360	1.08	0.02	0.01	0.01
158	4.6000	4.5367	7.360	1.08	0.02	0.01	0.01
159	4.8000	4.7367	7.360	1.08	0.02	0.01	0.01
160	5.0000	4.9367	7.360	1.08	0.02	0.01	0.01
161	5.2000	5.1367	7.360	1.08	0.02	0.01	0.01
162	5.4000	5.3367	7.360	1.08	0.02	0.01	0.01
163	5.6000	5.5367	7.376	1.10	-0.00	-0.00	-0.00
164	5.8000	5.7367	7.376	1.10	-0.00	-0.00	-0.00
165	6.0000	5.9367	7.376	1.10	-0.00	-0.00	-0.00
166	6.2000	6.1367	7.360	1.08	0.02	0.01	0.01
167	6.4000	6.3367	7.360	1.08	0.02	0.01	0.01
168	6.6000	6.5367	7.360	1.08	0.02	0.01	0.01
169	6.8000	6.7367	7.360	1.08	0.02	0.01	0.01
170	7.0000	6.9367	7.344	1.07	0.03	0.03	0.01
171	7.2000	7.1367	7.344	1.07	0.03	0.03	0.01
172	7.4000	7.3367	7.344	1.07	0.03	0.03	0.01
173	7.6000	7.5367	7.360	1.08	0.02	0.01	0.01
174	7.8000	7.7367	7.360	1.08	0.02	0.01	0.01
175	8.0000	7.9367	7.360	1.08	0.02	0.01	0.01
176	8.2000	8.1367	7.360	1.08	0.02	0.01	0.01
177	8.4000	8.3367	7.360	1.08	0.02	0.01	0.01
178	8.6000	8.5367	7.360	1.08	0.02	0.01	0.01
179	8.8000	8.7367	7.360	1.08	0.02	0.01	0.01
180	9.0000	8.9367	7.360	1.08	0.02	0.01	0.01
181	9.2000	9.1367	7.360	1.08	0.02	0.01	0.01
182	9.4000	9.3367	7.360	1.08	0.02	0.01	0.01
183	9.6000	9.5367	7.360	1.08	0.02	0.01	0.01
184	9.8000	9.7367	7.376	1.10	-0.00	-0.00	-0.00
185	10.0000	9.9367	7.376	1.10	-0.00	-0.00	-0.00

SLUG OUT TEST MW-13



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 149
 Number of estimated parameters.... 2
 Degrees of freedom..... 147
 Residual mean..... 0.009471
 Residual standard deviation..... 0.04587
 Residual variance..... 0.002104

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.56	1.3936	0.16643	1
0.0067	1.51	1.3804	0.12959	1
0.01	1.48	1.3678	0.11224	1
0.0133	1.45	1.3552	0.094773	1
0.0167	1.43	1.3424	0.087567	1
0.02	1.42	1.3301	0.089869	1
0.0233	1.38	1.3179	0.062058	1
0.0267	1.37	1.3055	0.064499	1
0.03	1.35	1.2935	0.056463	1
0.0333	1.32	1.2817	0.038317	1
0.0366	1.3	1.2699	0.030062	1
0.04	1.29	1.2579	0.03205	1
0.0433	1.27	1.2464	0.023578	1
0.0466	1.26	1.235	0.025	1
0.05	1.24	1.2233	0.016659	1
0.0533	1.23	1.2121	0.017869	1
0.0566	1.19	1.201	-0.011023	1
0.06	1.19	1.1897	0.00031493	1
0.0633	1.18	1.1788	0.001217	1
0.0666	1.16	1.168	-0.0079808	1
0.07	1.15	1.157	-0.0069548	1
0.0733	1.13	1.1464	-0.016353	1
0.0766	1.11	1.1358	-0.025848	1
0.08	1.11	1.1251	-0.015125	1
0.0833	1.1	1.1148	-0.014814	1
0.0866	1.08	1.1046	-0.024598	1
0.09	1.07	1.0942	-0.024171	1
0.0933	1.05	1.0841	-0.034144	1
0.0966	1.05	1.0742	-0.024209	1
0.1	1.03	1.0641	-0.034068	1
0.1033	1.02	1.0543	-0.034317	1
0.1066	1.02	1.0447	-0.024656	1
0.11	1	1.0348	-0.034794	1
0.1133	0.99	1.0253	-0.035311	1
0.1166	0.97	1.0159	-0.045915	1
0.12	0.97	1.0063	-0.036325	1
0.1233	0.95	0.9971	-0.047103	1
0.1266	0.95	0.98797	-0.037966	1

0.13	0.94	0.97864	-0.038639	1
0.1333	0.94	0.96967	-0.029671	1
0.1366	0.92	0.96079	-0.040785	1
0.14	0.91	0.95172	-0.041715	1
0.1433	0.91	0.94299	-0.032994	1
0.1466	0.89	0.93435	-0.044352	1
0.15	0.89	0.92553	-0.035532	1
0.1533	0.87	0.91705	-0.04705	1
0.1566	0.87	0.90865	-0.038647	1
0.16	0.86	0.90007	-0.040069	1
0.1633	0.86	0.89182	-0.031821	1
0.1666	0.84	0.88365	-0.043648	1
0.17	0.84	0.87531	-0.035306	1
0.1733	0.83	0.86729	-0.037285	1
0.1766	0.83	0.85934	-0.029337	1
0.18	0.81	0.85123	-0.041225	1
0.1833	0.81	0.84342	-0.033425	1
0.1866	0.8	0.8357	-0.035696	1
0.19	0.8	0.82781	-0.027806	1
0.1933	0.78	0.82022	-0.04022	1
0.1966	0.78	0.8127	-0.032704	1
0.2	0.78	0.80503	-0.025032	1
0.2033	0.76	0.79765	-0.037655	1
0.2066	0.76	0.79035	-0.030345	1
0.21	0.75	0.78288	-0.032884	1
0.2133	0.75	0.77571	-0.02571	1
0.2166	0.73	0.7686	-0.038601	1
0.22	0.73	0.76135	-0.031346	1
0.2233	0.73	0.75437	-0.024369	1
0.2266	0.72	0.74746	-0.027456	1
0.23	0.72	0.7404	-0.0204	1
0.2333	0.7	0.73361	-0.033615	1
0.2366	0.7	0.72689	-0.026892	1
0.24	0.7	0.72003	-0.02003	1
0.2433	0.68	0.71343	-0.033432	1
0.2466	0.68	0.70689	-0.026894	1
0.25	0.68	0.70022	-0.020221	1
0.2533	0.67	0.6938	-0.023804	1
0.2566	0.67	0.68745	-0.017446	1
0.26	0.67	0.68096	-0.010956	1
0.2633	0.65	0.67472	-0.024716	1
0.2666	0.65	0.66853	-0.018533	1
0.27	0.64	0.66222	-0.022222	1
0.2733	0.64	0.65615	-0.016154	1
0.2766	0.64	0.65014	-0.010141	1
0.28	0.64	0.644	-0.0040032	1
0.2833	0.62	0.6381	-0.018102	1
0.2866	0.62	0.63225	-0.012254	1
0.29	0.6	0.62629	-0.026286	1
0.2933	0.6	0.62055	-0.020546	1
0.2966	0.6	0.61486	-0.01486	1
0.3	0.6	0.60906	-0.0090554	1
0.3033	0.59	0.60347	-0.013474	1
0.3066	0.59	0.59794	-0.0079439	1

0.31	0.59	0.5923	-0.0022992	1
0.3133	0.59	0.58687	0.0031286	1
0.3166	0.57	0.58149	-0.011493	1
0.32	0.57	0.576	-0.006004	1
0.3233	0.57	0.57073	-0.00072559	1
0.3266	0.57	0.5655	0.0045045	1
0.33	0.56	0.56016	-0.00015713	1
0.3333	0.56	0.55502	0.0049761	1
0.35	0.54	0.52976	0.010241	1
0.3667	0.51	0.50564	0.0043553	1
0.3833	0.49	0.48276	0.0072375	1
0.4	0.48	0.46079	0.019213	1
0.4167	0.46	0.43981	0.020188	1
0.4333	0.44	0.41991	0.020091	1
0.45	0.41	0.40079	0.009205	1
0.4667	0.4	0.38255	0.017449	1
0.4833	0.4	0.36524	0.034761	1
0.5	0.38	0.34861	0.031387	1
0.5167	0.37	0.33274	0.037255	1
0.5333	0.35	0.31795	0.032047	1
0.55	0.33	0.30323	0.026774	1
0.5667	0.33	0.28942	0.040577	1
0.5833	0.32	0.27633	0.043675	1
0.6	0.32	0.26375	0.056253	1
0.6167	0.3	0.25174	0.048259	1
0.6333	0.29	0.24035	0.049651	1
0.65	0.29	0.22941	0.060591	1
0.6667	0.27	0.21897	0.051034	1
0.6833	0.27	0.20906	0.060943	1
0.7	0.25	0.19954	0.050459	1
0.7167	0.25	0.19046	0.059542	1
0.7333	0.25	0.18184	0.068161	1
0.75	0.24	0.17356	0.066439	1
0.7667	0.24	0.16566	0.074339	1
0.7833	0.22	0.15816	0.061836	1
0.8	0.22	0.15096	0.069035	1
0.8167	0.22	0.14409	0.075907	1
0.8333	0.21	0.13757	0.072428	1
0.85	0.21	0.13131	0.07869	1
0.8667	0.19	0.12533	0.064667	1
0.8833	0.19	0.11966	0.070339	1
0.9	0.19	0.11421	0.075786	1
0.9167	0.19	0.10901	0.080985	1
0.9333	0.18	0.10408	0.075918	1
0.95	0.18	0.099344	0.080656	1
0.9667	0.18	0.094822	0.085178	1
0.9833	0.18	0.090531	0.089469	1
1	0.16	0.08641	0.07359	1
1.2	0.11	0.049459	0.060541	1
1.4	0.1	0.02831	0.07169	1
1.6	0.06	0.016204	0.043796	1
1.8	0.05	0.0092749	0.040725	1
2	0.05	0.0053088	0.044691	1
2.2	0.03	0.0030387	0.026961	1

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VISUAL MATCH PARAMETER ESTIMATES

[illegible]

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	9.187E-001	3.000E+000	4.963E-003		

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
0	0.0000	0.0000	8.936	0.00	1.56	1.00	0.71
1	0.0033	0.0033	8.936	0.00	1.56	1.00	0.71
2	0.0067	0.0067	8.888	0.05	1.51	0.97	0.69
3	0.0100	0.0100	8.856	0.08	1.48	0.95	0.67
4	0.0133	0.0133	8.824	0.11	1.45	0.93	0.66
5	0.0167	0.0167	8.808	0.13	1.43	0.92	0.65
6	0.0200	0.0200	8.792	0.14	1.42	0.91	0.64
7	0.0233	0.0233	8.760	0.18	1.38	0.89	0.63
8	0.0267	0.0267	8.745	0.19	1.37	0.88	0.62
9	0.0300	0.0300	8.729	0.21	1.35	0.87	0.61
10	0.0333	0.0333	8.697	0.24	1.32	0.85	0.60
11	0.0366	0.0366	8.681	0.26	1.30	0.84	0.59
12	0.0400	0.0400	8.665	0.27	1.29	0.83	0.59
13	0.0433	0.0433	8.649	0.29	1.27	0.82	0.58
14	0.0466	0.0466	8.633	0.30	1.26	0.81	0.57
15	0.0500	0.0500	8.617	0.32	1.24	0.80	0.56
16	0.0533	0.0533	8.601	0.33	1.23	0.79	0.56
17	0.0566	0.0566	8.570	0.37	1.19	0.77	0.54
18	0.0600	0.0600	8.570	0.37	1.19	0.77	0.54
19	0.0633	0.0633	8.554	0.38	1.18	0.76	0.54
20	0.0666	0.0666	8.538	0.40	1.16	0.74	0.53
21	0.0700	0.0700	8.522	0.41	1.15	0.73	0.52
22	0.0733	0.0733	8.506	0.43	1.13	0.72	0.51
23	0.0766	0.0766	8.490	0.45	1.11	0.71	0.51
24	0.0800	0.0800	8.490	0.45	1.11	0.71	0.51
25	0.0833	0.0833	8.474	0.46	1.10	0.70	0.50
26	0.0866	0.0866	8.458	0.48	1.08	0.69	0.49
27	0.0900	0.0900	8.442	0.49	1.07	0.68	0.48
28	0.0933	0.0933	8.426	0.51	1.05	0.67	0.48
29	0.0966	0.0966	8.426	0.51	1.05	0.67	0.48
30	0.1000	0.1000	8.410	0.53	1.03	0.66	0.47

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
31	0.1033	0.1033	8.394	0.54	1.02	0.65	0.46
32	0.1066	0.1066	8.394	0.54	1.02	0.65	0.46
33	0.1100	0.1100	8.378	0.56	1.00	0.64	0.46
34	0.1133	0.1133	8.363	0.57	0.99	0.63	0.45
35	0.1166	0.1166	8.347	0.59	0.97	0.62	0.44
36	0.1200	0.1200	8.347	0.59	0.97	0.62	0.44
37	0.1233	0.1233	8.331	0.61	0.95	0.61	0.43
38	0.1266	0.1266	8.331	0.61	0.95	0.61	0.43
39	0.1300	0.1300	8.315	0.62	0.94	0.60	0.43
40	0.1333	0.1333	8.315	0.62	0.94	0.60	0.43
41	0.1366	0.1366	8.299	0.64	0.92	0.59	0.42
42	0.1400	0.1400	8.283	0.65	0.91	0.58	0.41
43	0.1433	0.1433	8.283	0.65	0.91	0.58	0.41
44	0.1466	0.1466	8.267	0.67	0.89	0.57	0.40
45	0.1500	0.1500	8.267	0.67	0.89	0.57	0.40
46	0.1533	0.1533	8.251	0.69	0.87	0.56	0.40
47	0.1566	0.1566	8.251	0.69	0.87	0.56	0.40
48	0.1600	0.1600	8.235	0.70	0.86	0.55	0.39
49	0.1633	0.1633	8.235	0.70	0.86	0.55	0.39
50	0.1666	0.1666	8.219	0.72	0.84	0.54	0.38
51	0.1700	0.1700	8.219	0.72	0.84	0.54	0.38
52	0.1733	0.1733	8.203	0.73	0.83	0.53	0.38
53	0.1766	0.1766	8.203	0.73	0.83	0.53	0.38
54	0.1800	0.1800	8.187	0.75	0.81	0.52	0.37
55	0.1833	0.1833	8.187	0.75	0.81	0.52	0.37
56	0.1866	0.1866	8.172	0.76	0.80	0.51	0.36
57	0.1900	0.1900	8.172	0.76	0.80	0.51	0.36
58	0.1933	0.1933	8.156	0.78	0.78	0.50	0.35
59	0.1966	0.1966	8.156	0.78	0.78	0.50	0.35
60	0.2000	0.2000	8.156	0.78	0.78	0.50	0.35
61	0.2033	0.2033	8.140	0.80	0.76	0.49	0.35

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	0.2066	8.140	0.80	0.76	0.49	0.35
63	0.2100	0.2100	8.124	0.81	0.75	0.48	0.34
64	0.2133	0.2133	8.124	0.81	0.75	0.48	0.34
65	0.2166	0.2166	8.108	0.83	0.73	0.47	0.33
66	0.2200	0.2200	8.108	0.83	0.73	0.47	0.33
67	0.2233	0.2233	8.108	0.83	0.73	0.47	0.33
68	0.2266	0.2266	8.092	0.84	0.72	0.46	0.33
69	0.2300	0.2300	8.092	0.84	0.72	0.46	0.33
70	0.2333	0.2333	8.076	0.86	0.70	0.45	0.32
71	0.2366	0.2366	8.076	0.86	0.70	0.45	0.32
72	0.2400	0.2400	8.076	0.86	0.70	0.45	0.32
73	0.2433	0.2433	8.060	0.88	0.68	0.44	0.31
74	0.2466	0.2466	8.060	0.88	0.68	0.44	0.31
75	0.2500	0.2500	8.060	0.88	0.68	0.44	0.31
76	0.2533	0.2533	8.044	0.89	0.67	0.43	0.30
77	0.2566	0.2566	8.044	0.89	0.67	0.43	0.30
78	0.2600	0.2600	8.044	0.89	0.67	0.43	0.30
79	0.2633	0.2633	8.028	0.91	0.65	0.42	0.30
80	0.2666	0.2666	8.028	0.91	0.65	0.42	0.30
81	0.2700	0.2700	8.012	0.92	0.64	0.41	0.29
82	0.2733	0.2733	8.012	0.92	0.64	0.41	0.29
83	0.2766	0.2766	8.012	0.92	0.64	0.41	0.29
84	0.2800	0.2800	8.012	0.92	0.64	0.41	0.29
85	0.2833	0.2833	7.996	0.94	0.62	0.40	0.28
86	0.2866	0.2866	7.996	0.94	0.62	0.40	0.28
87	0.2900	0.2900	7.980	0.96	0.60	0.39	0.27
88	0.2933	0.2933	7.980	0.96	0.60	0.39	0.27
89	0.2966	0.2966	7.980	0.96	0.60	0.39	0.27
90	0.3000	0.3000	7.980	0.96	0.60	0.39	0.27
91	0.3033	0.3033	7.965	0.97	0.59	0.38	0.27
92	0.3066	0.3066	7.965	0.97	0.59	0.38	0.27

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				TRANS.			
93	0.3100	0.3100	7.965	0.97	0.59	0.38	0.27
94	0.3133	0.3133	7.965	0.97	0.59	0.38	0.27
95	0.3166	0.3166	7.949	0.99	0.57	0.37	0.26
96	0.3200	0.3200	7.949	0.99	0.57	0.37	0.26
97	0.3233	0.3233	7.949	0.99	0.57	0.37	0.26
98	0.3266	0.3266	7.949	0.99	0.57	0.37	0.26
99	0.3300	0.3300	7.933	1.00	0.56	0.36	0.25
100	0.3333	0.3333	7.933	1.00	0.56	0.36	0.25
101	0.3500	0.3500	7.917	1.02	0.54	0.35	0.25
102	0.3667	0.3667	7.885	1.05	0.51	0.33	0.23
103	0.3833	0.3833	7.869	1.07	0.49	0.32	0.22
104	0.4000	0.4000	7.853	1.08	0.48	0.31	0.22
105	0.4167	0.4167	7.837	1.10	0.46	0.30	0.21
106	0.4333	0.4333	7.821	1.12	0.44	0.29	0.20
107	0.4500	0.4500	7.789	1.15	0.41	0.26	0.19
108	0.4667	0.4667	7.773	1.16	0.40	0.25	0.18
109	0.4833	0.4833	7.773	1.16	0.40	0.25	0.18
110	0.5000	0.5000	7.758	1.18	0.38	0.24	0.17
111	0.5167	0.5167	7.742	1.19	0.37	0.23	0.17
112	0.5333	0.5333	7.726	1.21	0.35	0.22	0.16
113	0.5500	0.5500	7.710	1.23	0.33	0.21	0.15
114	0.5667	0.5667	7.710	1.23	0.33	0.21	0.15
115	0.5833	0.5833	7.694	1.24	0.32	0.20	0.14
116	0.6000	0.6000	7.694	1.24	0.32	0.20	0.14
117	0.6167	0.6167	7.678	1.26	0.30	0.19	0.14
118	0.6333	0.6333	7.662	1.27	0.29	0.18	0.13
119	0.6500	0.6500	7.662	1.27	0.29	0.18	0.13
120	0.6667	0.6667	7.646	1.29	0.27	0.17	0.12
121	0.6833	0.6833	7.646	1.29	0.27	0.17	0.12
122	0.7000	0.7000	7.630	1.31	0.25	0.16	0.12
123	0.7167	0.7167	7.630	1.31	0.25	0.16	0.12

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				TRANS.			
124	0.7333	0.7333	7.630	1.31	0.25	0.16	0.12
125	0.7500	0.7500	7.614	1.32	0.24	0.15	0.11
126	0.7667	0.7667	7.614	1.32	0.24	0.15	0.11
127	0.7833	0.7833	7.598	1.34	0.22	0.14	0.10
128	0.8000	0.8000	7.598	1.34	0.22	0.14	0.10
129	0.8167	0.8167	7.598	1.34	0.22	0.14	0.10
130	0.8333	0.8333	7.583	1.35	0.21	0.13	0.09
131	0.8500	0.8500	7.583	1.35	0.21	0.13	0.09
132	0.8667	0.8667	7.567	1.37	0.19	0.12	0.09
133	0.8833	0.8833	7.567	1.37	0.19	0.12	0.09
134	0.9000	0.9000	7.567	1.37	0.19	0.12	0.09
135	0.9167	0.9167	7.567	1.37	0.19	0.12	0.09
136	0.9333	0.9333	7.551	1.39	0.18	0.11	0.08
137	0.9500	0.9500	7.551	1.39	0.18	0.11	0.08
138	0.9667	0.9667	7.551	1.39	0.18	0.11	0.08
139	0.9833	0.9833	7.551	1.39	0.18	0.11	0.08
140	1.0000	1.0000	7.535	1.40	0.16	0.10	0.07
141	1.2000	1.2000	7.487	1.45	0.11	0.07	0.05
142	1.4000	1.4000	7.471	1.47	0.10	0.06	0.04
143	1.6000	1.6000	7.439	1.50	0.06	0.04	0.03
144	1.8000	1.8000	7.423	1.51	0.05	0.03	0.02
145	2.0000	2.0000	7.423	1.51	0.05	0.03	0.02
146	2.2000	2.2000	7.407	1.53	0.03	0.02	0.01
147	2.4000	2.4000	7.407	1.53	0.03	0.02	0.01
148	2.6000	2.6000	7.391	1.55	0.02	0.01	0.01
149	2.8000	2.8000	7.391	1.55	0.02	0.01	0.01
150	3.0000	3.0000	7.376	1.56	0.00	0.00	0.00
151	3.2000	3.2000	7.376	1.56	0.00	0.00	0.00
152	3.4000	3.4000	7.376	1.56	0.00	0.00	0.00
153	3.6000	3.6000	7.391	1.55	0.02	0.01	0.01
154	3.8000	3.8000	7.391	1.55	0.02	0.01	0.01

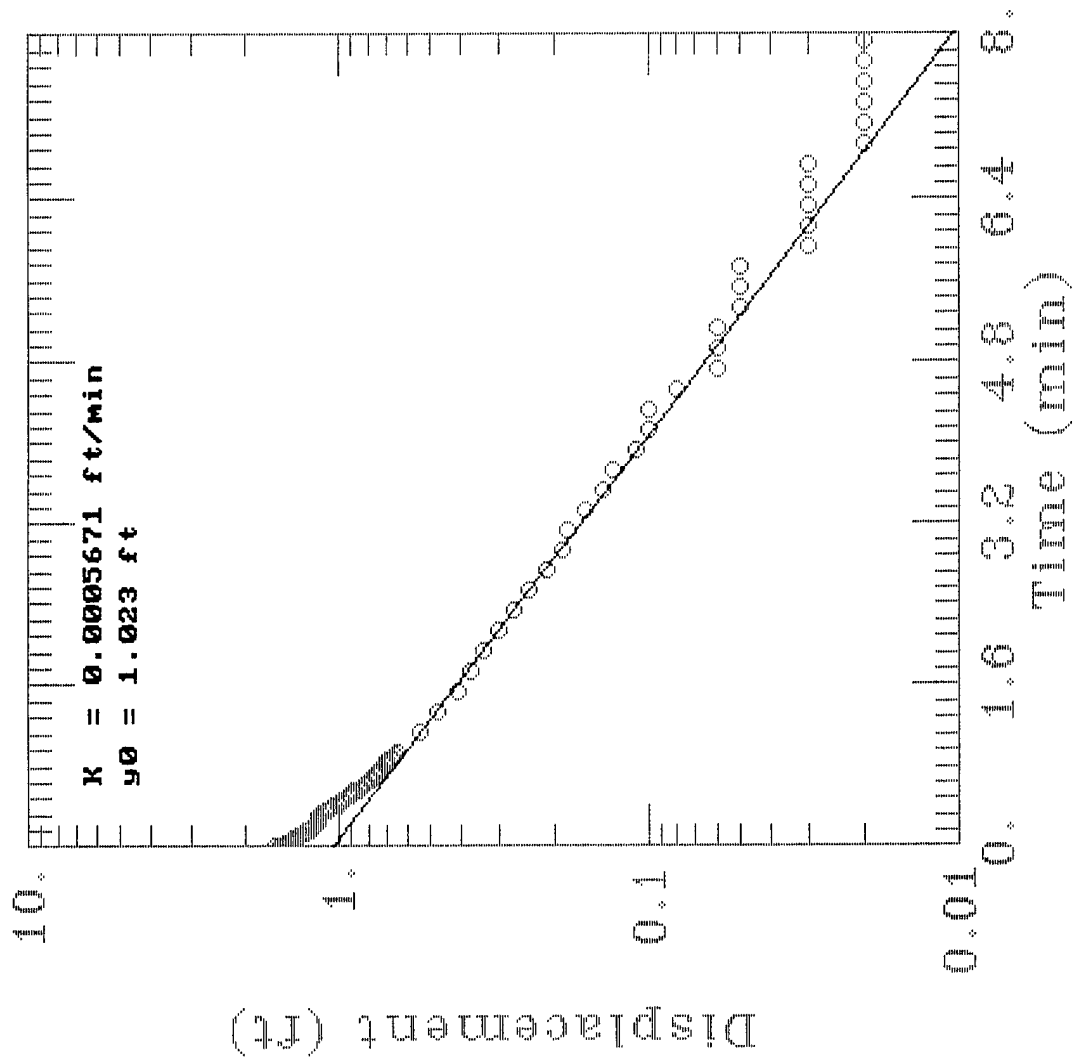
SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B	DATUM TRANS.		
155	4.0000	4.0000	7.391	1.55	0.02	0.01	0.01
156	4.2000	4.2000	7.391	1.55	0.02	0.01	0.01
157	4.4000	4.4000	7.391	1.55	0.02	0.01	0.01
158	4.6000	4.6000	7.391	1.55	0.02	0.01	0.01
159	4.8000	4.8000	7.391	1.55	0.02	0.01	0.01
160	5.0000	5.0000	7.391	1.55	0.02	0.01	0.01
161	5.2000	5.2000	7.391	1.55	0.02	0.01	0.01
162	5.4000	5.4000	7.391	1.55	0.02	0.01	0.01
163	5.6000	5.6000	7.391	1.55	0.02	0.01	0.01
164	5.8000	5.8000	7.391	1.55	0.02	0.01	0.01
165	6.0000	6.0000	7.391	1.55	0.02	0.01	0.01
166	6.2000	6.2000	7.391	1.55	0.02	0.01	0.01
167	6.4000	6.4000	7.391	1.55	0.02	0.01	0.01
168	6.6000	6.6000	7.376	1.56	0.00	0.00	0.00
169	6.8000	6.8000	7.376	1.56	0.00	0.00	0.00
170	7.0000	7.0000	7.376	1.56	0.00	0.00	0.00
171	7.2000	7.2000	7.376	1.56	0.00	0.00	0.00
172	7.4000	7.4000	7.360	1.58	-0.02	-0.01	-0.01
173	7.6000	7.6000	7.376	1.56	0.00	0.00	0.00
174	7.8000	7.8000	7.360	1.58	-0.02	-0.01	-0.01
175	8.0000	8.0000	7.360	1.58	-0.02	-0.01	-0.01
176	8.2000	8.2000	7.360	1.58	-0.02	-0.01	-0.01
177	8.4000	8.4000	7.360	1.58	-0.02	-0.01	-0.01
178	8.6000	8.6000	7.344	1.59	-0.03	-0.02	-0.01
179	8.8000	8.8000	7.344	1.59	-0.03	-0.02	-0.01
180	9.0000	9.0000	7.360	1.58	-0.02	-0.01	-0.01
181	9.2000	9.2000	7.344	1.59	-0.03	-0.02	-0.01
182	9.4000	9.4000	7.344	1.59	-0.03	-0.02	-0.01
183	9.6000	9.6000	7.360	1.58	-0.02	-0.01	-0.01
184	9.8000	9.8000	7.360	1.58	-0.02	-0.01	-0.01
185	10.0000	10.0000	7.360	1.58	-0.02	-0.01	-0.01

SLUG OUT TEST MW-13

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
186	12.0000	12.0000	7.391	1.55	0.02	0.01	0.01

SLUG IN TEST MW-14



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 155
 Number of estimated parameters.... 2
 Degrees of freedom..... 153
 Residual mean..... 0.008005
 Residual standard deviation..... 0.03651
 Residual variance..... 0.001333

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0034	1.58	1.4624	0.11758	1
0.0067	1.53	1.4581	0.071859	1
0.01	1.51	1.4539	0.05613	1
0.0134	1.51	1.4495	0.060517	1
0.0167	1.51	1.4452	0.064762	1
0.02	1.51	1.441	0.068995	1
0.0234	1.5	1.4367	0.063344	1
0.0267	1.48	1.4324	0.047552	1
0.03	1.47	1.4283	0.041747	1
0.0334	1.47	1.4239	0.046057	1
0.0367	1.47	1.4198	0.050228	1
0.04	1.47	1.4156	0.054386	1
0.0434	1.45	1.4113	0.038658	1
0.0467	1.43	1.4072	0.022791	1
0.05	1.42	1.4031	0.016913	1
0.0534	1.42	1.3989	0.021147	1
0.0567	1.42	1.3948	0.025244	1
0.06	1.42	1.3907	0.029329	1
0.0634	1.4	1.3865	0.013526	1
0.0667	1.4	1.3824	0.017586	1
0.07	1.39	1.3784	0.011635	1
0.0734	1.39	1.3742	0.015795	1
0.0767	1.39	1.3702	0.01982	1
0.08	1.37	1.3662	0.0038329	1
0.0834	1.37	1.362	0.0079554	1
0.0867	1.35	1.3581	-0.0080553	1
0.09	1.35	1.3541	-0.0040777	1
0.0934	1.35	1.35	8.3402E-006	1
0.0967	1.34	1.346	-0.0060376	1
0.1	1.34	1.3421	-0.0020952	1
0.1034	1.34	1.338	0.0019547	1
0.1067	1.32	1.3341	-0.014126	1
0.11	1.32	1.3302	-0.010219	1
0.1134	1.31	1.3262	-0.016205	1
0.1167	1.31	1.3223	-0.01232	1
0.12	1.31	1.3184	-0.0084474	1
0.1234	1.31	1.3145	-0.0044689	1
0.1267	1.29	1.3106	-0.020619	1

0.13	1.29	1.3068	-0.01678	1
0.1334	1.29	1.3028	-0.012837	1
0.1367	1.29	1.299	-0.009021	1
0.14	1.27	1.2952	-0.025216	1
0.1434	1.27	1.2913	-0.021308	1
0.1467	1.26	1.2875	-0.027526	1
0.15	1.26	1.2838	-0.023755	1
0.1534	1.26	1.2799	-0.019881	1
0.1567	1.26	1.2761	-0.016132	1
0.16	1.24	1.2724	-0.032394	1
0.1634	1.24	1.2686	-0.028555	1
0.1667	1.24	1.2648	-0.024839	1
0.17	1.24	1.2611	-0.021135	1
0.1734	1.23	1.2573	-0.027329	1
0.1767	1.23	1.2536	-0.023647	1
0.18	1.23	1.25	-0.019975	1
0.1834	1.23	1.2462	-0.016203	1
0.1867	1.21	1.2426	-0.032553	1
0.19	1.21	1.2389	-0.028914	1
0.1934	1.21	1.2352	-0.025175	1
0.1967	1.21	1.2316	-0.021557	1
0.2	1.19	1.228	-0.03795	1
0.2034	1.19	1.2242	-0.034245	1
0.2067	1.19	1.2207	-0.030659	1
0.21	1.19	1.2171	-0.027084	1
0.2134	1.18	1.2134	-0.033411	1
0.2167	1.18	1.2099	-0.029857	1
0.22	1.18	1.2063	-0.026314	1
0.2234	1.18	1.2027	-0.022674	1
0.2267	1.18	1.1992	-0.019151	1
0.23	1.16	1.1956	-0.035639	1
0.2334	1.16	1.192	-0.032031	1
0.2367	1.16	1.1885	-0.02854	1
0.24	1.16	1.1851	-0.025058	1
0.2434	1.15	1.1815	-0.031482	1
0.2467	1.15	1.178	-0.028022	1
0.25	1.15	1.1746	-0.024572	1
0.2534	1.15	1.171	-0.021027	1
0.2567	1.15	1.1676	-0.017597	1
0.26	1.15	1.1642	-0.014178	1
0.2634	1.15	1.1607	-0.010665	1
0.2667	1.15	1.1573	-0.0072651	1
0.2834	1.16	1.1402	0.019786	1
0.3001	1.16	1.1234	0.036587	1
0.3167	1.15	1.107	0.043041	1
0.3334	1.13	1.0906	0.039351	1
0.3501	1.1	1.0746	0.025421	1
0.3667	1.08	1.0588	0.02116	1
0.3834	1.05	1.0432	0.0067613	1
0.4001	1.04	1.0279	0.012133	1
0.4167	1	1.0128	-0.012812	1
0.4334	0.99	0.99789	-0.0078894	1
0.4501	0.97	0.98319	-0.013186	1
0.4667	0.96	0.96904	-0.0090441	1

0.4834	0.94	0.95451	-0.014511	1
0.5001	0.92	0.94045	-0.020447	1
0.5167	0.91	0.92667	-0.016673	1
0.5334	0.89	0.91302	-0.023019	1
0.5501	0.88	0.89957	-0.019566	1
0.5667	0.86	0.88639	-0.026391	1
0.5834	0.84	0.87333	-0.03333	1
0.6001	0.83	0.86046	-0.030462	1
0.6167	0.83	0.84786	-0.01786	1
0.6334	0.81	0.83537	-0.025367	1
0.6501	0.8	0.82306	-0.023058	1
0.6667	0.78	0.811	-0.031003	1
0.6834	0.78	0.79905	-0.019054	1
0.7001	0.77	0.78728	-0.01728	1
0.7167	0.75	0.77575	-0.025749	1
0.7334	0.75	0.76432	-0.014319	1
0.7501	0.73	0.75306	-0.023057	1
0.7667	0.73	0.74203	-0.012028	1
0.7834	0.72	0.73109	-0.011094	1
0.8001	0.7	0.72032	-0.020322	1
0.8167	0.7	0.70977	-0.0097719	1
0.8334	0.69	0.69931	-0.0093139	1
0.8501	0.69	0.68901	0.00098997	1
0.8667	0.67	0.67892	-0.0089183	1
0.8834	0.67	0.66891	0.0010851	1
0.9001	0.65	0.65906	-0.009059	1
0.9167	0.65	0.64941	0.00059408	1
0.9334	0.64	0.63984	0.00016261	1
1.1334	0.54	0.53563	0.0043705	1
1.3334	0.48	0.44839	0.031606	1
1.5334	0.41	0.37537	0.034635	1
1.7334	0.37	0.31423	0.055769	1
1.9334	0.34	0.26305	0.076947	1
2.1334	0.3	0.22021	0.079789	1
2.3334	0.27	0.18435	0.085654	1
2.5334	0.24	0.15432	0.085678	1
2.7334	0.21	0.12919	0.080812	1
2.9334	0.19	0.10815	0.081852	1
3.1334	0.18	0.090534	0.089466	1
3.3334	0.16	0.075789	0.084211	1
3.5334	0.14	0.063446	0.076554	1
3.7334	0.13	0.053113	0.076887	1
3.9334	0.11	0.044462	0.065538	1
4.1334	0.1	0.037221	0.062779	1
4.3334	0.1	0.031159	0.068841	1
4.5334	0.08	0.026084	0.053916	1
4.7334	0.06	0.021836	0.038164	1
4.9334	0.06	0.01828	0.04172	1
5.1334	0.06	0.015302	0.044698	1
5.3334	0.05	0.01281	0.03719	1
5.5334	0.05	0.010724	0.039276	1
5.7334	0.05	0.0089773	0.041023	1
5.9334	0.03	0.0075152	0.022485	1
6.1334	0.03	0.0062912	0.023709	1

VISUAL MATCH PARAMETER ESTIMATES

[illegible]

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.023E+000	8.000E+000	1.022E-002		

SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				TRANS.			
0	0.0000	-0.0666	5.417	-1.16	2.76	1.73	1.25
1	0.0033	-0.0633	5.481	-1.10	2.69	1.69	1.22
2	0.0067	-0.0599	5.465	-1.12	2.71	1.70	1.23
3	0.0100	-0.0566	5.338	-1.24	2.83	1.78	1.29
4	0.0133	-0.0533	5.274	-1.31	2.90	1.82	1.32
5	0.0167	-0.0499	5.385	-1.20	2.79	1.75	1.27
6	0.0200	-0.0466	5.417	-1.16	2.76	1.73	1.25
7	0.0233	-0.0433	5.561	-1.02	2.61	1.64	1.19
8	0.0267	-0.0399	5.561	-1.02	2.61	1.64	1.19
9	0.0300	-0.0366	6.150	-0.43	2.02	1.27	0.92
10	0.0333	-0.0333	6.771	0.19	1.40	0.88	0.64
11	0.0366	-0.0300	7.232	0.65	0.94	0.59	0.43
12	0.0400	-0.0266	6.850	0.27	1.32	0.83	0.60
13	0.0433	-0.0233	6.627	0.05	1.55	0.97	0.70
14	0.0466	-0.0200	6.484	-0.10	1.69	1.06	0.77
15	0.0500	-0.0166	6.436	-0.14	1.74	1.09	0.79
16	0.0533	-0.0133	6.532	-0.05	1.64	1.03	0.75
17	0.0566	-0.0100	6.691	0.11	1.48	0.93	0.67
18	0.0600	-0.0066	6.659	0.08	1.51	0.95	0.69
19	0.0633	-0.0033	6.611	0.03	1.56	0.98	0.71
20	0.0666	0.0000	6.580	0.00	1.59	1.00	0.72
21	0.0700	0.0034	6.596	0.02	1.58	0.99	0.72
22	0.0733	0.0067	6.643	0.06	1.53	0.96	0.70
23	0.0766	0.0100	6.659	0.08	1.51	0.95	0.69
24	0.0800	0.0134	6.659	0.08	1.51	0.95	0.69
25	0.0833	0.0167	6.659	0.08	1.51	0.95	0.69
26	0.0866	0.0200	6.659	0.08	1.51	0.95	0.69
27	0.0900	0.0234	6.675	0.09	1.50	0.94	0.68
28	0.0933	0.0267	6.691	0.11	1.48	0.93	0.67
29	0.0966	0.0300	6.707	0.13	1.47	0.92	0.67
30	0.1000	0.0334	6.707	0.13	1.47	0.92	0.67

SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
31	0.1033	0.0367	6.707	0.13	1.47	0.92	0.67
32	0.1066	0.0400	6.707	0.13	1.47	0.92	0.67
33	0.1100	0.0434	6.723	0.14	1.45	0.91	0.66
34	0.1133	0.0467	6.739	0.16	1.43	0.90	0.65
35	0.1166	0.0500	6.755	0.17	1.42	0.89	0.64
36	0.1200	0.0534	6.755	0.17	1.42	0.89	0.64
37	0.1233	0.0567	6.755	0.17	1.42	0.89	0.64
38	0.1266	0.0600	6.755	0.17	1.42	0.89	0.64
39	0.1300	0.0634	6.771	0.19	1.40	0.88	0.64
40	0.1333	0.0667	6.771	0.19	1.40	0.88	0.64
41	0.1366	0.0700	6.787	0.21	1.39	0.87	0.63
42	0.1400	0.0734	6.787	0.21	1.39	0.87	0.63
43	0.1433	0.0767	6.787	0.21	1.39	0.87	0.63
44	0.1466	0.0800	6.803	0.22	1.37	0.86	0.62
45	0.1500	0.0834	6.803	0.22	1.37	0.86	0.62
46	0.1533	0.0867	6.818	0.24	1.35	0.85	0.62
47	0.1566	0.0900	6.818	0.24	1.35	0.85	0.62
48	0.1600	0.0934	6.818	0.24	1.35	0.85	0.62
49	0.1633	0.0967	6.834	0.25	1.34	0.84	0.61
50	0.1666	0.1000	6.834	0.25	1.34	0.84	0.61
51	0.1700	0.1034	6.834	0.25	1.34	0.84	0.61
52	0.1733	0.1067	6.850	0.27	1.32	0.83	0.60
53	0.1766	0.1100	6.850	0.27	1.32	0.83	0.60
54	0.1800	0.1134	6.866	0.29	1.31	0.82	0.59
55	0.1833	0.1167	6.866	0.29	1.31	0.82	0.59
56	0.1866	0.1200	6.866	0.29	1.31	0.82	0.59
57	0.1900	0.1234	6.866	0.29	1.31	0.82	0.59
58	0.1933	0.1267	6.882	0.30	1.29	0.81	0.59
59	0.1966	0.1300	6.882	0.30	1.29	0.81	0.59
60	0.2000	0.1334	6.882	0.30	1.29	0.81	0.59
61	0.2033	0.1367	6.882	0.30	1.29	0.81	0.59

SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	0.1400	6.898	0.32	1.27	0.80	0.58
63	0.2100	0.1434	6.898	0.32	1.27	0.80	0.58
64	0.2133	0.1467	6.914	0.33	1.26	0.79	0.57
65	0.2166	0.1500	6.914	0.33	1.26	0.79	0.57
66	0.2200	0.1534	6.914	0.33	1.26	0.79	0.57
67	0.2233	0.1567	6.914	0.33	1.26	0.79	0.57
68	0.2266	0.1600	6.930	0.35	1.24	0.78	0.56
69	0.2300	0.1634	6.930	0.35	1.24	0.78	0.56
70	0.2333	0.1667	6.930	0.35	1.24	0.78	0.56
71	0.2366	0.1700	6.930	0.35	1.24	0.78	0.56
72	0.2400	0.1734	6.946	0.37	1.23	0.77	0.56
73	0.2433	0.1767	6.946	0.37	1.23	0.77	0.56
74	0.2466	0.1800	6.946	0.37	1.23	0.77	0.56
75	0.2500	0.1834	6.946	0.37	1.23	0.77	0.56
76	0.2533	0.1867	6.962	0.38	1.21	0.76	0.55
77	0.2566	0.1900	6.962	0.38	1.21	0.76	0.55
78	0.2600	0.1934	6.962	0.38	1.21	0.76	0.55
79	0.2633	0.1967	6.962	0.38	1.21	0.76	0.55
80	0.2666	0.2000	6.978	0.40	1.19	0.75	0.54
81	0.2700	0.2034	6.978	0.40	1.19	0.75	0.54
82	0.2733	0.2067	6.978	0.40	1.19	0.75	0.54
83	0.2766	0.2100	6.978	0.40	1.19	0.75	0.54
84	0.2800	0.2134	6.994	0.41	1.18	0.74	0.54
85	0.2833	0.2167	6.994	0.41	1.18	0.74	0.54
86	0.2866	0.2200	6.994	0.41	1.18	0.74	0.54
87	0.2900	0.2234	6.994	0.41	1.18	0.74	0.54
88	0.2933	0.2267	6.994	0.41	1.18	0.74	0.54
89	0.2966	0.2300	7.009	0.43	1.16	0.73	0.53
90	0.3000	0.2334	7.009	0.43	1.16	0.73	0.53
91	0.3033	0.2367	7.009	0.43	1.16	0.73	0.53
92	0.3066	0.2400	7.009	0.43	1.16	0.73	0.53

SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B	DATUM TRANS.			
93	0.3100	0.2434	7.025	0.45		1.15	0.72	0.52
94	0.3133	0.2467	7.025	0.45		1.15	0.72	0.52
95	0.3166	0.2500	7.025	0.45		1.15	0.72	0.52
96	0.3200	0.2534	7.025	0.45		1.15	0.72	0.52
97	0.3233	0.2567	7.025	0.45		1.15	0.72	0.52
98	0.3266	0.2600	7.025	0.45		1.15	0.72	0.52
99	0.3300	0.2634	7.025	0.45		1.15	0.72	0.52
100	0.3333	0.2667	7.025	0.45		1.15	0.72	0.52
101	0.3500	0.2834	7.009	0.43		1.16	0.73	0.53
102	0.3667	0.3001	7.009	0.43		1.16	0.73	0.53
103	0.3833	0.3167	7.025	0.45		1.15	0.72	0.52
104	0.4000	0.3334	7.041	0.46		1.13	0.71	0.51
105	0.4167	0.3501	7.073	0.49		1.10	0.69	0.50
106	0.4333	0.3667	7.089	0.51		1.08	0.68	0.49
107	0.4500	0.3834	7.121	0.54		1.05	0.66	0.48
108	0.4667	0.4001	7.137	0.56		1.04	0.65	0.47
109	0.4833	0.4167	7.169	0.59		1.00	0.63	0.46
110	0.5000	0.4334	7.185	0.60		0.99	0.62	0.45
111	0.5167	0.4501	7.201	0.62		0.97	0.61	0.44
112	0.5333	0.4667	7.216	0.64		0.96	0.60	0.43
113	0.5500	0.4834	7.232	0.65		0.94	0.59	0.43
114	0.5667	0.5001	7.248	0.67		0.92	0.58	0.42
115	0.5833	0.5167	7.264	0.68		0.91	0.57	0.41
116	0.6000	0.5334	7.280	0.70		0.89	0.56	0.41
117	0.6167	0.5501	7.296	0.72		0.88	0.55	0.40
118	0.6333	0.5667	7.312	0.73		0.86	0.54	0.39
119	0.6500	0.5834	7.328	0.75		0.84	0.53	0.38
120	0.6667	0.6001	7.344	0.76		0.83	0.52	0.38
121	0.6833	0.6167	7.344	0.76		0.83	0.52	0.38
122	0.7000	0.6334	7.360	0.78		0.81	0.51	0.37
123	0.7167	0.6501	7.376	0.80		0.80	0.50	0.36

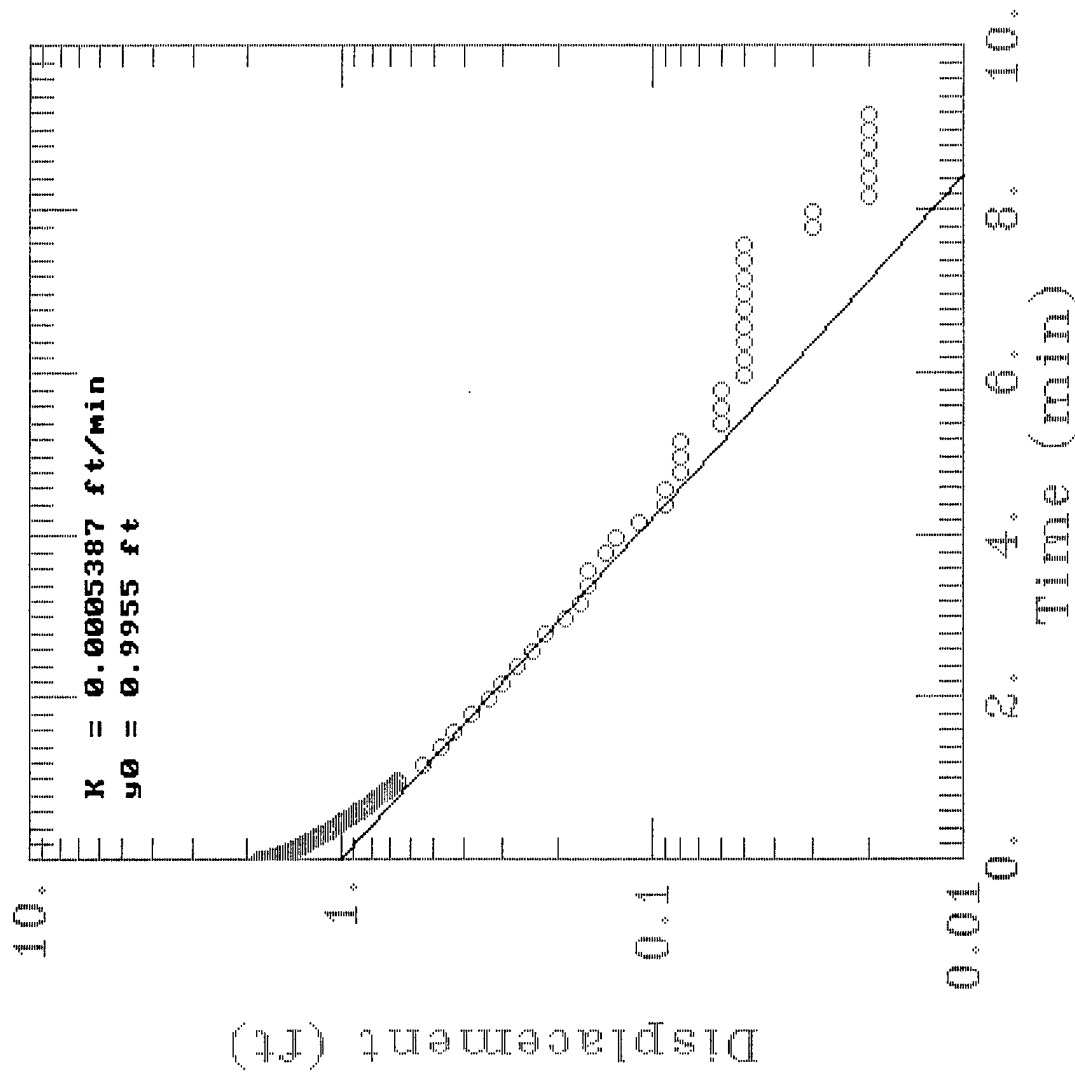
SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
124	0.7333	0.6667	7.392	0.81	0.78	0.49	0.35
125	0.7500	0.6834	7.392	0.81	0.78	0.49	0.35
126	0.7667	0.7001	7.407	0.83	0.77	0.48	0.35
127	0.7833	0.7167	7.423	0.84	0.75	0.47	0.34
128	0.8000	0.7334	7.423	0.84	0.75	0.47	0.34
129	0.8167	0.7501	7.439	0.86	0.73	0.46	0.33
130	0.8333	0.7667	7.439	0.86	0.73	0.46	0.33
131	0.8500	0.7834	7.455	0.88	0.72	0.45	0.33
132	0.8667	0.8001	7.471	0.89	0.70	0.44	0.32
133	0.8833	0.8167	7.471	0.89	0.70	0.44	0.32
134	0.9000	0.8334	7.487	0.91	0.69	0.43	0.31
135	0.9167	0.8501	7.487	0.91	0.69	0.43	0.31
136	0.9333	0.8667	7.503	0.92	0.67	0.42	0.30
137	0.9500	0.8834	7.503	0.92	0.67	0.42	0.30
138	0.9667	0.9001	7.519	0.94	0.65	0.41	0.30
139	0.9833	0.9167	7.519	0.94	0.65	0.41	0.30
140	1.0000	0.9334	7.535	0.96	0.64	0.40	0.29
141	1.2000	1.1334	7.630	1.05	0.54	0.34	0.25
142	1.4000	1.3334	7.694	1.11	0.48	0.30	0.22
143	1.6000	1.5334	7.758	1.18	0.41	0.26	0.19
144	1.8000	1.7334	7.806	1.23	0.37	0.23	0.17
145	2.0000	1.9334	7.837	1.26	0.34	0.21	0.15
146	2.2000	2.1334	7.869	1.29	0.30	0.19	0.14
147	2.4000	2.3334	7.901	1.32	0.27	0.17	0.12
148	2.6000	2.5334	7.933	1.35	0.24	0.15	0.11
149	2.8000	2.7334	7.965	1.39	0.21	0.13	0.09
150	3.0000	2.9334	7.981	1.40	0.19	0.12	0.09
151	3.2000	3.1334	7.997	1.42	0.18	0.11	0.08
152	3.4000	3.3334	8.013	1.43	0.16	0.10	0.07
153	3.6000	3.5334	8.028	1.45	0.14	0.09	0.07
154	3.8000	3.7334	8.044	1.46	0.13	0.08	0.06

SLUG IN TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.			
155	4.0000	3.9334	8.060	1.48	0.11	0.07	0.05
156	4.2000	4.1334	8.076	1.50	0.10	0.06	0.04
157	4.4000	4.3334	8.076	1.50	0.10	0.06	0.04
158	4.6000	4.5334	8.092	1.51	0.08	0.05	0.04
159	4.8000	4.7334	8.108	1.53	0.06	0.04	0.03
160	5.0000	4.9334	8.108	1.53	0.06	0.04	0.03
161	5.2000	5.1334	8.108	1.53	0.06	0.04	0.03
162	5.4000	5.3334	8.124	1.54	0.05	0.03	0.02
163	5.6000	5.5334	8.124	1.54	0.05	0.03	0.02
164	5.8000	5.7334	8.124	1.54	0.05	0.03	0.02
165	6.0000	5.9334	8.140	1.56	0.03	0.02	0.01
166	6.2000	6.1334	8.140	1.56	0.03	0.02	0.01
167	6.4000	6.3334	8.140	1.56	0.03	0.02	0.01
168	6.6000	6.5334	8.140	1.56	0.03	0.02	0.01
169	6.8000	6.7334	8.140	1.56	0.03	0.02	0.01
170	7.0000	6.9334	8.156	1.58	0.02	0.01	0.01
171	7.2000	7.1334	8.156	1.58	0.02	0.01	0.01
172	7.4000	7.3334	8.156	1.58	0.02	0.01	0.01
173	7.6000	7.5334	8.156	1.58	0.02	0.01	0.01
174	7.8000	7.7334	8.156	1.58	0.02	0.01	0.01
175	8.0000	7.9334	8.156	1.58	0.02	0.01	0.01
176	8.2000	8.1334	8.172	1.59	-0.00	-0.00	-0.00
177	8.4000	8.3334	8.172	1.59	-0.00	-0.00	-0.00
178	8.6000	8.5334	8.172	1.59	-0.00	-0.00	-0.00
179	8.8000	8.7334	8.172	1.59	-0.00	-0.00	-0.00
180	9.0000	8.9334	8.172	1.59	-0.00	-0.00	-0.00
181	9.2000	9.1334	8.172	1.59	-0.00	-0.00	-0.00
182	9.4000	9.3334	8.172	1.59	-0.00	-0.00	-0.00
183	9.6000	9.5334	8.172	1.59	-0.00	-0.00	-0.00
184	9.8000	9.7334	8.172	1.59	-0.00	-0.00	-0.00
185	10.0000	9.9334	8.172	1.59	-0.00	-0.00	-0.00

SLUG OUT TEST MW-14



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 177
 Number of estimated parameters.... 2
 Degrees of freedom..... 175
 Residual mean..... 0.01297
 Residual standard deviation..... 0.05282
 Residual variance..... 0.00279

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0034	1.78	1.6283	0.15166	1
0.0067	1.74	1.6229	0.11708	1
0.01	1.74	1.6175	0.12247	1
0.0134	1.74	1.612	0.12801	1
0.0167	1.72	1.6066	0.11337	1
0.02	1.7	1.6013	0.098709	1
0.0233	1.69	1.596	0.094032	1
0.0267	1.69	1.5905	0.099498	1
0.03	1.67	1.5852	0.084785	1
0.0333	1.66	1.5799	0.080054	1
0.0367	1.64	1.5745	0.065465	1
0.04	1.64	1.5693	0.070699	1
0.0433	1.62	1.5641	0.055916	1
0.0467	1.61	1.5587	0.051273	1
0.05	1.61	1.5535	0.056454	1
0.0533	1.59	1.5484	0.041618	1
0.0567	1.59	1.5431	0.046921	1
0.06	1.58	1.5379	0.042051	1
0.0633	1.56	1.5328	0.027163	1
0.0667	1.56	1.5276	0.032412	1
0.07	1.54	1.5225	0.01749	1
0.0733	1.54	1.5174	0.022551	1
0.0767	1.53	1.5123	0.017748	1
0.08	1.53	1.5072	0.022775	1
0.0833	1.51	1.5022	0.0077856	1
0.0867	1.51	1.4971	0.01293	1
0.09	1.5	1.4921	0.0079068	1
0.0933	1.5	1.4871	0.012867	1
0.0967	1.48	1.482	-0.0020402	1
0.1	1.48	1.4771	0.0028863	1
0.1033	1.46	1.4722	-0.012204	1
0.1067	1.46	1.4672	-0.0071616	1
0.11	1.46	1.4623	-0.0022845	1
0.1133	1.45	1.4574	-0.0074237	1
0.1167	1.45	1.4524	-0.0024324	1
0.12	1.43	1.4476	-0.017604	1
0.1233	1.43	1.4428	-0.012792	1
0.1267	1.42	1.4379	-0.017851	1

0.13	1.42	1.4331	-0.013071	1
0.1333	1.42	1.4283	-0.0083076	1
0.1367	1.4	1.4234	-0.023416	1
0.14	1.4	1.4187	-0.018684	1
0.1433	1.39	1.414	-0.023968	1
0.1467	1.39	1.4091	-0.019126	1
0.15	1.39	1.4044	-0.014442	1
0.1533	1.37	1.3998	-0.029773	1
0.1567	1.37	1.395	-0.024979	1
0.16	1.37	1.3903	-0.020342	1
0.1633	1.35	1.3857	-0.03572	1
0.1667	1.35	1.381	-0.030975	1
0.17	1.35	1.3764	-0.026384	1
0.1733	1.34	1.3718	-0.031809	1
0.1767	1.34	1.3671	-0.027111	1
0.18	1.34	1.3626	-0.022566	1
0.1833	1.32	1.358	-0.038037	1
0.1867	1.32	1.3534	-0.033386	1
0.19	1.32	1.3489	-0.028887	1
0.1933	1.31	1.3444	-0.034403	1
0.1967	1.31	1.3398	-0.029799	1
0.2	1.31	1.3353	-0.025345	1
0.2033	1.29	1.3309	-0.040906	1
0.2067	1.29	1.3263	-0.036348	1
0.21	1.29	1.3219	-0.031939	1
0.2133	1.27	1.3175	-0.047545	1
0.2167	1.27	1.313	-0.043033	1
0.22	1.27	1.3087	-0.038668	1
0.2233	1.27	1.3043	-0.034318	1
0.2267	1.26	1.2999	-0.039851	1
0.23	1.26	1.2955	-0.03553	1
0.2333	1.26	1.2912	-0.031223	1
0.2367	1.26	1.2868	-0.026801	1
0.24	1.24	1.2825	-0.042524	1
0.2433	1.24	1.2783	-0.03826	1
0.2467	1.24	1.2739	-0.033883	1
0.25	1.23	1.2696	-0.039648	1
0.2533	1.23	1.2654	-0.035428	1
0.2567	1.23	1.2611	-0.031094	1
0.26	1.21	1.2569	-0.046902	1
0.2633	1.21	1.2527	-0.042724	1
0.2667	1.21	1.2484	-0.038433	1
0.27	1.21	1.2443	-0.034283	1
0.2733	1.19	1.2401	-0.050147	1
0.2767	1.19	1.2359	-0.0459	1
0.28	1.19	1.2318	-0.041792	1
0.2833	1.19	1.2277	-0.037697	1
0.2867	1.18	1.2235	-0.043492	1
0.29	1.18	1.2194	-0.039425	1
0.2933	1.18	1.2154	-0.035372	1
0.2967	1.16	1.2112	-0.051209	1
0.3	1.16	1.2072	-0.047183	1
0.3033	1.16	1.2032	-0.04317	1
0.3067	1.16	1.199	-0.03905	1

0.31	1.16	1.1951	-0.035064	1
0.3133	1.15	1.1911	-0.041091	1
0.3167	1.15	1.187	-0.037012	1
0.32	1.15	1.1831	-0.033066	1
0.3367	1.11	1.1633	-0.053298	1
0.3534	1.1	1.1439	-0.043861	1
0.37	1.08	1.1249	-0.044861	1
0.3867	1.07	1.1061	-0.036066	1
0.4034	1.05	1.0876	-0.037584	1
0.42	1.04	1.0695	-0.02952	1
0.4367	1.02	1.0516	-0.031649	1
0.4534	1	1.0341	-0.034077	1
0.47	0.99	1.0169	-0.026901	1
0.4867	0.97	0.99991	-0.029909	1
0.5034	0.96	0.9832	-0.023202	1
0.5197	0.94	0.96716	-0.027163	1
0.5367	0.92	0.95072	-0.030715	1
0.5534	0.91	0.93483	-0.024829	1
0.57	0.91	0.9193	-0.009302	1
0.5867	0.89	0.90394	-0.013941	1
0.6034	0.88	0.88884	-0.0088371	1
0.62	0.86	0.87407	-0.014074	1
0.6367	0.86	0.85947	0.00053141	1
0.6534	0.84	0.84511	-0.0051076	1
0.67	0.83	0.83107	-0.0010704	1
0.6867	0.81	0.81718	-0.0071839	1
0.7034	0.81	0.80353	0.0064705	1
0.72	0.8	0.79018	0.0098171	1
0.7367	0.78	0.77698	0.0030204	1
0.7534	0.78	0.764	0.016003	1
0.77	0.76	0.75131	0.008693	1
0.7867	0.75	0.73875	0.011247	1
0.8034	0.75	0.72641	0.023591	1
0.82	0.73	0.71434	0.015656	1
0.8367	0.72	0.70241	0.017592	1
0.8534	0.72	0.69067	0.029329	1
0.87	0.7	0.6792	0.020801	1
0.8867	0.7	0.66785	0.03215	1
0.9034	0.68	0.65669	0.023309	1
0.92	0.68	0.64578	0.034217	1
0.9367	0.67	0.63499	0.035007	1
0.9534	0.65	0.62438	0.025617	1
0.97	0.65	0.61401	0.035988	1
0.9867	0.65	0.60375	0.046248	1
1.1867	0.54	0.49342	0.046579	1
1.3867	0.48	0.40325	0.076747	1
1.5867	0.43	0.32956	0.10044	1
1.7867	0.38	0.26934	0.11066	1
1.9867	0.33	0.22012	0.10988	1
2.1867	0.3	0.17989	0.12011	1
2.3867	0.27	0.14702	0.12298	1
2.5867	0.24	0.12015	0.11985	1
2.7867	0.22	0.098196	0.1218	1
2.9867	0.19	0.080251	0.10975	1

0.5200

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040 1041 1042 1043 1044

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K = 5.38739E-004
y0 = 9.95513E-001
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Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	9.955E-001	1.000E+001	4.194E-003		

SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
0	0.0000	-0.0133	10.226	-0.21	2.04	1.11	0.93
1	0.0033	-0.0100	10.146	-0.13	1.96	1.07	0.89
2	0.0067	-0.0066	9.891	0.13	1.70	0.93	0.77
3	0.0100	-0.0033	9.939	0.08	1.75	0.96	0.80
4	0.0133	0.0000	10.019	0.00	1.83	1.00	0.83
5	0.0167	0.0034	9.971	0.05	1.78	0.97	0.81
6	0.0200	0.0067	9.923	0.10	1.74	0.95	0.79
7	0.0233	0.0100	9.923	0.10	1.74	0.95	0.79
8	0.0267	0.0134	9.923	0.10	1.74	0.95	0.79
9	0.0300	0.0167	9.907	0.11	1.72	0.94	0.78
10	0.0333	0.0200	9.891	0.13	1.70	0.93	0.77
11	0.0366	0.0233	9.875	0.14	1.69	0.92	0.77
12	0.0400	0.0267	9.875	0.14	1.69	0.92	0.77
13	0.0433	0.0300	9.859	0.16	1.67	0.91	0.76
14	0.0466	0.0333	9.843	0.18	1.66	0.90	0.75
15	0.0500	0.0367	9.828	0.19	1.64	0.90	0.75
16	0.0533	0.0400	9.828	0.19	1.64	0.90	0.75
17	0.0566	0.0433	9.812	0.21	1.62	0.89	0.74
18	0.0600	0.0467	9.796	0.22	1.61	0.88	0.73
19	0.0633	0.0500	9.796	0.22	1.61	0.88	0.73
20	0.0666	0.0533	9.780	0.24	1.59	0.87	0.72
21	0.0700	0.0567	9.780	0.24	1.59	0.87	0.72
22	0.0733	0.0600	9.764	0.26	1.58	0.86	0.72
23	0.0766	0.0633	9.748	0.27	1.56	0.85	0.71
24	0.0800	0.0667	9.748	0.27	1.56	0.85	0.71
25	0.0833	0.0700	9.732	0.29	1.54	0.84	0.70
26	0.0866	0.0733	9.732	0.29	1.54	0.84	0.70
27	0.0900	0.0767	9.716	0.30	1.53	0.83	0.69
28	0.0933	0.0800	9.716	0.30	1.53	0.83	0.69
29	0.0966	0.0833	9.700	0.32	1.51	0.83	0.69
30	0.1000	0.0867	9.700	0.32	1.51	0.83	0.69

SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
31	0.1033	0.0900	9.684	0.34	1.50	0.82	0.68
32	0.1066	0.0933	9.684	0.34	1.50	0.82	0.68
33	0.1100	0.0967	9.668	0.35	1.48	0.81	0.67
34	0.1133	0.1000	9.668	0.35	1.48	0.81	0.67
35	0.1166	0.1033	9.652	0.37	1.46	0.80	0.67
36	0.1200	0.1067	9.652	0.37	1.46	0.80	0.67
37	0.1233	0.1100	9.652	0.37	1.46	0.80	0.67
38	0.1266	0.1133	9.636	0.38	1.45	0.79	0.66
39	0.1300	0.1167	9.636	0.38	1.45	0.79	0.66
40	0.1333	0.1200	9.621	0.40	1.43	0.78	0.65
41	0.1366	0.1233	9.621	0.40	1.43	0.78	0.65
42	0.1400	0.1267	9.605	0.41	1.42	0.77	0.64
43	0.1433	0.1300	9.605	0.41	1.42	0.77	0.64
44	0.1466	0.1333	9.605	0.41	1.42	0.77	0.64
45	0.1500	0.1367	9.589	0.43	1.40	0.77	0.64
46	0.1533	0.1400	9.589	0.43	1.40	0.77	0.64
47	0.1566	0.1433	9.573	0.45	1.39	0.76	0.63
48	0.1600	0.1467	9.573	0.45	1.39	0.76	0.63
49	0.1633	0.1500	9.573	0.45	1.39	0.76	0.63
50	0.1666	0.1533	9.557	0.46	1.37	0.75	0.62
51	0.1700	0.1567	9.557	0.46	1.37	0.75	0.62
52	0.1733	0.1600	9.557	0.46	1.37	0.75	0.62
53	0.1766	0.1633	9.541	0.48	1.35	0.74	0.62
54	0.1800	0.1667	9.541	0.48	1.35	0.74	0.62
55	0.1833	0.1700	9.541	0.48	1.35	0.74	0.62
56	0.1866	0.1733	9.525	0.49	1.34	0.73	0.61
57	0.1900	0.1767	9.525	0.49	1.34	0.73	0.61
58	0.1933	0.1800	9.525	0.49	1.34	0.73	0.61
59	0.1966	0.1833	9.509	0.51	1.32	0.72	0.60
60	0.2000	0.1867	9.509	0.51	1.32	0.72	0.60
61	0.2033	0.1900	9.509	0.51	1.32	0.72	0.60

SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	0.1933	9.493	0.53	1.31	0.71	0.59
63	0.2100	0.1967	9.493	0.53	1.31	0.71	0.59
64	0.2133	0.2000	9.493	0.53	1.31	0.71	0.59
65	0.2166	0.2033	9.477	0.54	1.29	0.70	0.59
66	0.2200	0.2067	9.477	0.54	1.29	0.70	0.59
67	0.2233	0.2100	9.477	0.54	1.29	0.70	0.59
68	0.2266	0.2133	9.461	0.56	1.27	0.70	0.58
69	0.2300	0.2167	9.461	0.56	1.27	0.70	0.58
70	0.2333	0.2200	9.461	0.56	1.27	0.70	0.58
71	0.2366	0.2233	9.461	0.56	1.27	0.70	0.58
72	0.2400	0.2267	9.445	0.57	1.26	0.69	0.57
73	0.2433	0.2300	9.445	0.57	1.26	0.69	0.57
74	0.2466	0.2333	9.445	0.57	1.26	0.69	0.57
75	0.2500	0.2367	9.445	0.57	1.26	0.69	0.57
76	0.2533	0.2400	9.430	0.59	1.24	0.68	0.56
77	0.2566	0.2433	9.430	0.59	1.24	0.68	0.56
78	0.2600	0.2467	9.430	0.59	1.24	0.68	0.56
79	0.2633	0.2500	9.414	0.61	1.23	0.67	0.56
80	0.2666	0.2533	9.414	0.61	1.23	0.67	0.56
81	0.2700	0.2567	9.414	0.61	1.23	0.67	0.56
82	0.2733	0.2600	9.398	0.62	1.21	0.66	0.55
83	0.2766	0.2633	9.398	0.62	1.21	0.66	0.55
84	0.2800	0.2667	9.398	0.62	1.21	0.66	0.55
85	0.2833	0.2700	9.398	0.62	1.21	0.66	0.55
86	0.2866	0.2733	9.382	0.64	1.19	0.65	0.54
87	0.2900	0.2767	9.382	0.64	1.19	0.65	0.54
88	0.2933	0.2800	9.382	0.64	1.19	0.65	0.54
89	0.2966	0.2833	9.382	0.64	1.19	0.65	0.54
90	0.3000	0.2867	9.366	0.65	1.18	0.64	0.54
91	0.3033	0.2900	9.366	0.65	1.18	0.64	0.54
92	0.3066	0.2933	9.366	0.65	1.18	0.64	0.54

SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
93	0.3100	0.2967	9.350	0.67	1.16	0.63	0.53
94	0.3133	0.3000	9.350	0.67	1.16	0.63	0.53
95	0.3166	0.3033	9.350	0.67	1.16	0.63	0.53
96	0.3200	0.3067	9.350	0.67	1.16	0.63	0.53
97	0.3233	0.3100	9.350	0.67	1.16	0.63	0.53
98	0.3266	0.3133	9.334	0.69	1.15	0.63	0.52
99	0.3300	0.3167	9.334	0.69	1.15	0.63	0.52
100	0.3333	0.3200	9.334	0.69	1.15	0.63	0.52
101	0.3500	0.3367	9.302	0.72	1.11	0.61	0.51
102	0.3667	0.3534	9.286	0.73	1.10	0.60	0.50
103	0.3833	0.3700	9.270	0.75	1.08	0.59	0.49
104	0.4000	0.3867	9.254	0.77	1.07	0.58	0.48
105	0.4167	0.4034	9.238	0.78	1.05	0.57	0.48
106	0.4333	0.4200	9.223	0.80	1.04	0.57	0.47
107	0.4500	0.4367	9.207	0.81	1.02	0.56	0.46
108	0.4667	0.4534	9.191	0.83	1.00	0.55	0.46
109	0.4833	0.4700	9.175	0.84	0.99	0.54	0.45
110	0.5000	0.4867	9.159	0.86	0.97	0.53	0.44
111	0.5167	0.5034	9.143	0.88	0.96	0.52	0.43
112	0.5333	0.5200	9.127	0.89	0.94	0.51	0.43
113	0.5500	0.5367	9.111	0.91	0.92	0.50	0.42
114	0.5667	0.5534	9.095	0.92	0.91	0.50	0.41
115	0.5833	0.5700	9.095	0.92	0.91	0.50	0.41
116	0.6000	0.5867	9.079	0.94	0.89	0.49	0.41
117	0.6167	0.6034	9.063	0.96	0.88	0.48	0.40
118	0.6333	0.6200	9.047	0.97	0.86	0.47	0.39
119	0.6500	0.6367	9.047	0.97	0.86	0.47	0.39
120	0.6667	0.6534	9.031	0.99	0.84	0.46	0.38
121	0.6833	0.6700	9.016	1.00	0.83	0.45	0.38
122	0.7000	0.6867	9.000	1.02	0.81	0.44	0.37
123	0.7167	0.7034	9.000	1.02	0.81	0.44	0.37

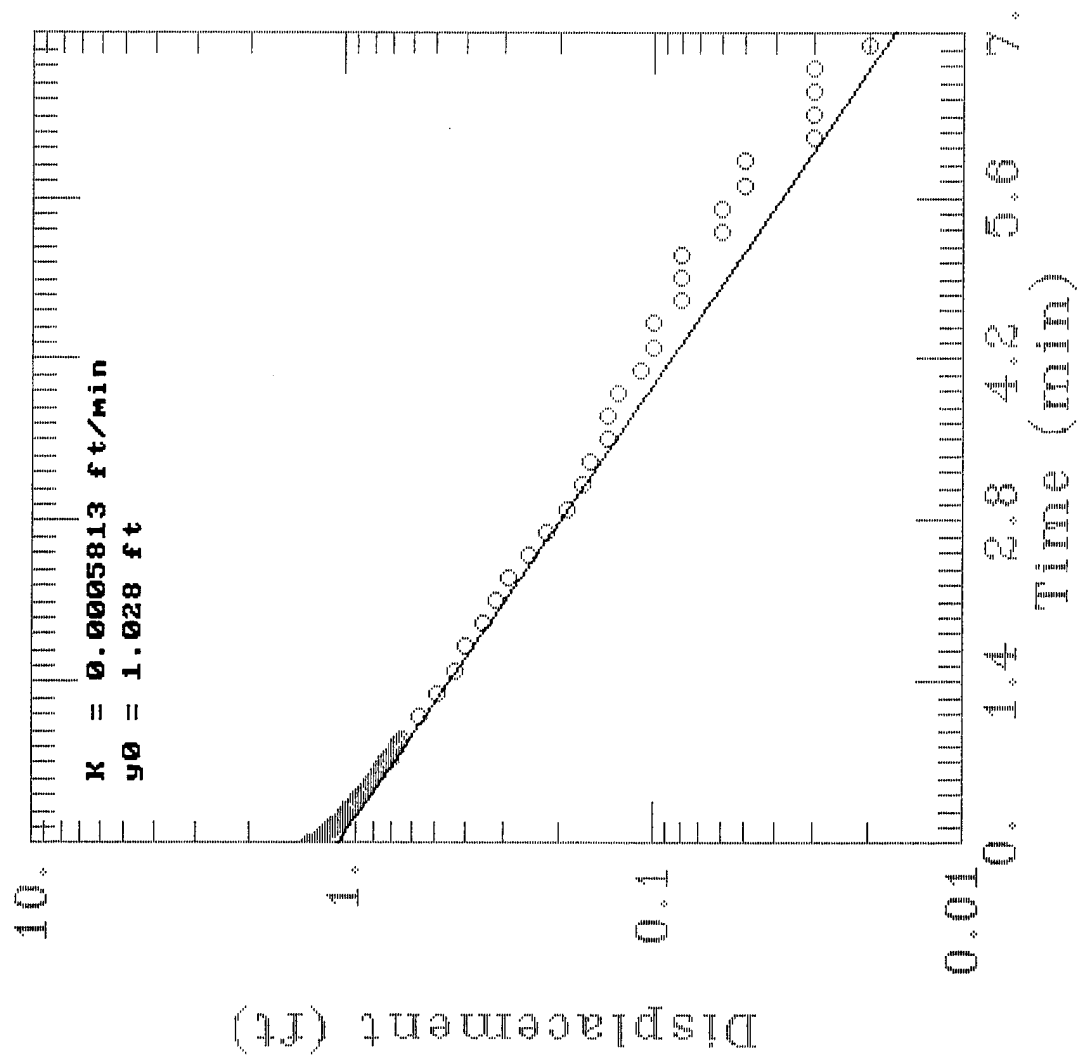
SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
124	0.7333	0.7200	8.984	1.04	0.80	0.43	0.36
125	0.7500	0.7367	8.968	1.05	0.78	0.43	0.35
126	0.7667	0.7534	8.968	1.05	0.78	0.43	0.35
127	0.7833	0.7700	8.952	1.07	0.76	0.42	0.35
128	0.8000	0.7867	8.936	1.08	0.75	0.41	0.34
129	0.8167	0.8034	8.936	1.08	0.75	0.41	0.34
130	0.8333	0.8200	8.920	1.10	0.73	0.40	0.33
131	0.8500	0.8367	8.904	1.12	0.72	0.39	0.33
132	0.8667	0.8534	8.904	1.12	0.72	0.39	0.33
133	0.8833	0.8700	8.888	1.13	0.70	0.38	0.32
134	0.9000	0.8867	8.888	1.13	0.70	0.38	0.32
135	0.9167	0.9034	8.872	1.15	0.68	0.37	0.31
136	0.9333	0.9200	8.872	1.15	0.68	0.37	0.31
137	0.9500	0.9367	8.856	1.16	0.67	0.36	0.30
138	0.9667	0.9534	8.840	1.18	0.65	0.36	0.30
139	0.9833	0.9700	8.840	1.18	0.65	0.36	0.30
140	1.0000	0.9867	8.840	1.18	0.65	0.36	0.30
141	1.2000	1.1867	8.729	1.29	0.54	0.30	0.25
142	1.4000	1.3867	8.665	1.35	0.48	0.26	0.22
143	1.6000	1.5867	8.618	1.40	0.43	0.23	0.20
144	1.8000	1.7867	8.570	1.45	0.38	0.21	0.17
145	2.0000	1.9867	8.522	1.50	0.33	0.18	0.15
146	2.2000	2.1867	8.490	1.53	0.30	0.16	0.14
147	2.4000	2.3867	8.458	1.56	0.27	0.15	0.12
148	2.6000	2.5867	8.426	1.59	0.24	0.13	0.11
149	2.8000	2.7867	8.411	1.61	0.22	0.12	0.10
150	3.0000	2.9867	8.379	1.64	0.19	0.10	0.09
151	3.2000	3.1867	8.363	1.66	0.17	0.10	0.08
152	3.4000	3.3867	8.347	1.67	0.16	0.09	0.07
153	3.6000	3.5867	8.347	1.67	0.16	0.09	0.07
154	3.8000	3.7867	8.331	1.69	0.14	0.08	0.06

SLUG OUT TEST MW-14

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
155	4.0000	3.9867	8.315	1.70	0.13	0.07	0.06
156	4.2000	4.1867	8.299	1.72	0.11	0.06	0.05
157	4.4000	4.3867	8.283	1.74	0.09	0.05	0.04
158	4.6000	4.5867	8.283	1.74	0.09	0.05	0.04
159	4.8000	4.7867	8.267	1.75	0.08	0.04	0.04
160	5.0000	4.9867	8.267	1.75	0.08	0.04	0.04
161	5.2000	5.1867	8.267	1.75	0.08	0.04	0.04
162	5.4000	5.3867	8.251	1.77	0.06	0.03	0.03
163	5.6000	5.5867	8.251	1.77	0.06	0.03	0.03
164	5.8000	5.7867	8.251	1.77	0.06	0.03	0.03
165	6.0000	5.9867	8.235	1.78	0.05	0.03	0.02
166	6.2000	6.1867	8.235	1.78	0.05	0.03	0.02
167	6.4000	6.3867	8.235	1.78	0.05	0.03	0.02
168	6.6000	6.5867	8.235	1.78	0.05	0.03	0.02
169	6.8000	6.7867	8.235	1.78	0.05	0.03	0.02
170	7.0000	6.9867	8.235	1.78	0.05	0.03	0.02
171	7.2000	7.1867	8.235	1.78	0.05	0.03	0.02
172	7.4000	7.3867	8.235	1.78	0.05	0.03	0.02
173	7.6000	7.5867	8.235	1.78	0.05	0.03	0.02
174	7.8000	7.7867	8.220	1.80	0.03	0.02	0.01
175	8.0000	7.9867	8.220	1.80	0.03	0.02	0.01
176	8.2000	8.1867	8.204	1.81	0.02	0.01	0.01
177	8.4000	8.3867	8.204	1.81	0.02	0.01	0.01
178	8.6000	8.5867	8.204	1.81	0.02	0.01	0.01
179	8.8000	8.7867	8.204	1.81	0.02	0.01	0.01
180	9.0000	8.9867	8.204	1.81	0.02	0.01	0.01
181	9.2000	9.1867	8.204	1.81	0.02	0.01	0.01
182	9.4000	9.3867	8.188	1.83	0.00	0.00	0.00
183	9.6000	9.5867	8.188	1.83	0.00	0.00	0.00
184	9.8000	9.7867	8.188	1.83	0.00	0.00	0.00
185	10.0000	9.9867	8.188	1.83	0.00	0.00	0.00

SLUG IN TEST MW-15



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 151
 Number of estimated parameters.... 2
 Degrees of freedom..... 149
 Residual mean..... 0.004893
 Residual standard deviation..... 0.02403
 Residual variance..... 0.0005775

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.26	1.19	0.07	1
0.0067	1.24	1.1872	0.052792	1
0.01	1.23	1.1845	0.045495	1
0.0133	1.23	1.1818	0.048192	1
0.0167	1.23	1.179	0.050965	1
0.02	1.23	1.1764	0.053649	1
0.0233	1.21	1.1737	0.036328	1
0.0267	1.21	1.1709	0.039081	1
0.03	1.21	1.1683	0.041747	1
0.0333	1.19	1.1656	0.024408	1
0.0367	1.19	1.1629	0.027142	1
0.04	1.19	1.1602	0.02979	1
0.0433	1.18	1.1576	0.022432	1
0.0467	1.18	1.1549	0.025147	1
0.05	1.18	1.1522	0.027777	1
0.0533	1.18	1.1496	0.030401	1
0.0567	1.16	1.1469	0.013097	1
0.06	1.16	1.1443	0.015709	1
0.0633	1.16	1.1417	0.018315	1
0.0667	1.15	1.139	0.010993	1
0.07	1.15	1.1364	0.013586	1
0.0733	1.15	1.1338	0.016174	1
0.0767	1.15	1.1312	0.018834	1
0.08	1.13	1.1286	0.0014097	1
0.0833	1.13	1.126	0.0039795	1
0.0867	1.13	1.1234	0.0066211	1
0.09	1.13	1.1208	0.0091791	1
0.0933	1.13	1.1183	0.011731	1
0.0967	1.12	1.1156	0.0043546	1
0.1	1.12	1.1131	0.006895	1
0.1033	1.12	1.1106	0.0094296	1
0.1067	1.12	1.108	0.012035	1
0.11	1.1	1.1054	-0.0054422	1
0.1133	1.1	1.1029	-0.0029251	1
0.1167	1.1	1.1003	-0.00033769	1
0.12	1.1	1.0978	0.0021678	1
0.1233	1.1	1.0953	0.0046676	1
0.1267	1.08	1.0928	-0.012763	1

0.13	1.08	1.0903	-0.010275	1
0.1333	1.08	1.0878	-0.007792	1
0.1367	1.08	1.0852	-0.0052401	1
0.14	1.07	1.0828	-0.012769	1
0.1433	1.07	1.0803	-0.010303	1
0.1467	1.07	1.0778	-0.0077691	1
0.15	1.07	1.0753	-0.005315	1
0.1533	1.07	1.0729	-0.0028665	1
0.1567	1.05	1.0703	-0.02035	1
0.16	1.05	1.0679	-0.017912	1
0.1633	1.05	1.0655	-0.015481	1
0.1667	1.05	1.063	-0.012981	1
0.17	1.05	1.0606	-0.010561	1
0.1733	1.05	1.0581	-0.0081457	1
0.1767	1.04	1.0557	-0.015663	1
0.18	1.04	1.0533	-0.01326	1
0.1833	1.04	1.0509	-0.010861	1
0.1867	1.04	1.0484	-0.008396	1
0.19	1.04	1.046	-0.0060088	1
0.1933	1.02	1.0436	-0.023627	1
0.1967	1.02	1.0412	-0.021179	1
0.2	1.02	1.0388	-0.018808	1
0.2033	1.02	1.0364	-0.016443	1
0.2067	1.02	1.034	-0.014011	1
0.21	1.02	1.0317	-0.011657	1
0.2133	1.02	1.0293	-0.0093075	1
0.2167	1.02	1.0269	-0.0068928	1
0.22	1	1.0246	-0.024555	1
0.2233	1	1.0222	-0.022222	1
0.2267	1	1.0198	-0.019824	1
0.23	1	1.0175	-0.017501	1
0.2333	1	1.0152	-0.015184	1
0.2367	0.99	1.0128	-0.022803	1
0.24	0.99	1.0105	-0.020497	1
0.2567	0.97	0.99891	-0.028906	1
0.2734	0.97	0.98745	-0.017449	1
0.29	0.96	0.97619	-0.01619	1
0.3067	0.94	0.96499	-0.024993	1
0.3234	0.92	0.95392	-0.033925	1
0.34	0.92	0.94305	-0.023048	1
0.3567	0.91	0.93223	-0.022232	1
0.3734	0.89	0.92154	-0.031539	1
0.39	0.89	0.91103	-0.021032	1
0.4067	0.88	0.90058	-0.020582	1
0.4234	0.86	0.89025	-0.030253	1
0.4397	0.86	0.88028	-0.020285	1
0.4567	0.84	0.87001	-0.030007	1
0.4734	0.84	0.86003	-0.020028	1
0.49	0.83	0.85022	-0.020223	1
0.5067	0.81	0.84047	-0.030471	1
0.5234	0.81	0.83083	-0.02083	1
0.54	0.81	0.82136	-0.011358	1
0.5567	0.8	0.81194	-0.011937	1
0.5734	0.78	0.80262	-0.022624	1

0.4400

0.59	0.78	0.79347	-0.013472	1
0.6067	0.76	0.78437	-0.024371	1
0.6234	0.76	0.77537	-0.015375	1
0.64	0.75	0.76653	-0.016534	1
0.6567	0.75	0.75774	-0.0077418	1
0.6734	0.73	0.74905	-0.01905	1
0.69	0.73	0.74051	-0.01051	1
0.7067	0.72	0.73202	-0.012016	1
0.7234	0.72	0.72362	-0.0036201	1
0.74	0.7	0.71537	-0.01537	1
0.7567	0.7	0.70716	-0.0071643	1
0.7734	0.7	0.69905	0.00094686	1
0.79	0.68	0.69108	-0.011083	1
0.8067	0.68	0.68316	-0.003156	1
0.8234	0.67	0.67532	-0.0053202	1
0.84	0.67	0.66762	0.0023796	1
0.8567	0.65	0.65996	-0.0099628	1
0.8734	0.65	0.65239	-0.002393	1
0.89	0.65	0.64495	0.0050454	1
0.9067	0.64	0.63756	0.002443	1
1.1067	0.56	0.55529	0.0047133	1
1.3067	0.49	0.48363	0.0063675	1
1.5067	0.43	0.42122	0.0087754	1
1.7067	0.4	0.36687	0.03313	1
1.9067	0.35	0.31953	0.030471	1
2.1067	0.32	0.2783	0.041703	1
2.3067	0.29	0.24239	0.047614	1
2.5067	0.25	0.21111	0.038892	1
2.7067	0.22	0.18387	0.036133	1
2.9067	0.19	0.16014	0.029859	1
3.1067	0.17	0.13948	0.030524	1
3.3067	0.16	0.12148	0.038522	1
3.5067	0.14	0.1058	0.034197	1
3.7067	0.14	0.09215	0.04785	1
3.9067	0.13	0.080259	0.049741	1
4.1067	0.11	0.069902	0.040098	1
4.3067	0.1	0.060882	0.039118	1
4.5067	0.1	0.053026	0.046974	1
4.7067	0.08	0.046183	0.033817	1
4.9067	0.08	0.040224	0.039776	1
5.1067	0.08	0.035033	0.044967	1
5.3067	0.06	0.030513	0.029487	1
5.5067	0.06	0.026575	0.033425	1
5.7067	0.05	0.023146	0.026854	1
5.9067	0.05	0.020159	0.029841	1
6.1067	0.03	0.017558	0.012442	1
6.3067	0.03	0.015292	0.014708	1
6.5067	0.03	0.013319	0.016681	1
6.7067	0.03	0.0116	0.0184	1
6.9067	0.02	0.010103	0.0098966	1
7.1067	0.02	0.0087996	0.0112	1
7.3067	0.02	0.0076641	0.012336	1
7.5067	0.02	0.0066751	0.013325	1
7.7067	0.02	0.0058138	0.014186	1

[illegible]

VISUAL MATCH PARAMETER ESTIMATES

[illegible]

Time	Drawdown	Time	Drawdown	Time	Drawdown
0.000E+000	1.028E+000	7.000E+000	1.652E-002		

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
0	0.0000	-0.0933	5.385	-1.02	2.28	1.81	1.04
1	0.0033	-0.0900	5.321	-1.08	2.34	1.86	1.06
2	0.0067	-0.0866	5.528	-0.88	2.13	1.70	0.97
3	0.0100	-0.0833	5.783	-0.62	1.88	1.49	0.85
4	0.0133	-0.0800	5.942	-0.46	1.72	1.37	0.78
5	0.0167	-0.0766	5.879	-0.53	1.78	1.42	0.81
6	0.0200	-0.0733	5.512	-0.89	2.15	1.71	0.98
7	0.0233	-0.0700	5.114	-1.29	2.55	2.03	1.16
8	0.0267	-0.0666	4.939	-1.47	2.72	2.16	1.24
9	0.0300	-0.0633	4.908	-1.50	2.75	2.19	1.25
10	0.0333	-0.0600	5.465	-0.94	2.20	1.75	1.00
11	0.0366	-0.0567	8.426	2.02	-0.76	-0.61	-0.35
12	0.0400	-0.0533	6.802	0.40	0.86	0.68	0.39
13	0.0433	-0.0500	6.515	0.11	1.15	0.91	0.52
14	0.0466	-0.0467	6.722	0.32	0.94	0.75	0.43
15	0.0500	-0.0433	5.656	-0.75	2.01	1.59	0.91
16	0.0533	-0.0400	6.006	-0.40	1.66	1.32	0.75
17	0.0566	-0.0367	6.038	-0.37	1.62	1.29	0.74
18	0.0600	-0.0333	6.372	-0.03	1.29	1.03	0.59
19	0.0633	-0.0300	6.547	0.14	1.12	0.89	0.51
20	0.0666	-0.0267	6.515	0.11	1.15	0.91	0.52
21	0.0700	-0.0233	6.388	-0.02	1.27	1.01	0.58
22	0.0733	-0.0200	6.293	-0.11	1.37	1.09	0.62
23	0.0766	-0.0167	6.309	-0.09	1.35	1.08	0.61
24	0.0800	-0.0133	6.356	-0.05	1.31	1.04	0.59
25	0.0833	-0.0100	6.420	0.02	1.24	0.99	0.56
26	0.0866	-0.0067	6.436	0.03	1.23	0.97	0.56
27	0.0900	-0.0033	6.420	0.02	1.24	0.99	0.56
28	0.0933	-0.0000	6.404	0.00	1.26	1.00	0.57
29	0.0966	0.0033	6.404	0.00	1.26	1.00	0.57

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B	DATUM			
30	0.1000	0.0067	6.420	0.02		1.24	0.99	0.56
31	0.1033	0.0100	6.436	0.03		1.23	0.97	0.56
32	0.1066	0.0133	6.436	0.03		1.23	0.97	0.56
33	0.1100	0.0167	6.436	0.03		1.23	0.97	0.56
34	0.1133	0.0200	6.436	0.03		1.23	0.97	0.56
35	0.1166	0.0233	6.452	0.05		1.21	0.96	0.55
36	0.1200	0.0267	6.452	0.05		1.21	0.96	0.55
37	0.1233	0.0300	6.452	0.05		1.21	0.96	0.55
38	0.1266	0.0333	6.468	0.06		1.19	0.95	0.54
39	0.1300	0.0367	6.468	0.06		1.19	0.95	0.54
40	0.1333	0.0400	6.468	0.06		1.19	0.95	0.54
41	0.1366	0.0433	6.484	0.08		1.18	0.94	0.54
42	0.1400	0.0467	6.484	0.08		1.18	0.94	0.54
43	0.1433	0.0500	6.484	0.08		1.18	0.94	0.54
44	0.1466	0.0533	6.484	0.08		1.18	0.94	0.54
45	0.1500	0.0567	6.500	0.10		1.16	0.92	0.53
46	0.1533	0.0600	6.500	0.10		1.16	0.92	0.53
47	0.1566	0.0633	6.500	0.10		1.16	0.92	0.53
48	0.1600	0.0667	6.515	0.11		1.15	0.91	0.52
49	0.1633	0.0700	6.515	0.11		1.15	0.91	0.52
50	0.1666	0.0733	6.515	0.11		1.15	0.91	0.52
51	0.1700	0.0767	6.515	0.11		1.15	0.91	0.52
52	0.1733	0.0800	6.531	0.13		1.13	0.90	0.51
53	0.1766	0.0833	6.531	0.13		1.13	0.90	0.51
54	0.1800	0.0867	6.531	0.13		1.13	0.90	0.51
55	0.1833	0.0900	6.531	0.13		1.13	0.90	0.51
56	0.1866	0.0933	6.531	0.13		1.13	0.90	0.51
57	0.1900	0.0967	6.547	0.14		1.12	0.89	0.51
58	0.1933	0.1000	6.547	0.14		1.12	0.89	0.51
59	0.1966	0.1033	6.547	0.14		1.12	0.89	0.51
60	0.2000	0.1067	6.547	0.14		1.12	0.89	0.51

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
61	0.2033	0.1100	6.563	0.16	1.10	0.87	0.50
62	0.2066	0.1133	6.563	0.16	1.10	0.87	0.50
63	0.2100	0.1167	6.563	0.16	1.10	0.87	0.50
64	0.2133	0.1200	6.563	0.16	1.10	0.87	0.50
65	0.2166	0.1233	6.563	0.16	1.10	0.87	0.50
66	0.2200	0.1267	6.579	0.17	1.08	0.86	0.49
67	0.2233	0.1300	6.579	0.17	1.08	0.86	0.49
68	0.2266	0.1333	6.579	0.17	1.08	0.86	0.49
69	0.2300	0.1367	6.579	0.17	1.08	0.86	0.49
70	0.2333	0.1400	6.595	0.19	1.07	0.85	0.49
71	0.2366	0.1433	6.595	0.19	1.07	0.85	0.49
72	0.2400	0.1467	6.595	0.19	1.07	0.85	0.49
73	0.2433	0.1500	6.595	0.19	1.07	0.85	0.49
74	0.2466	0.1533	6.595	0.19	1.07	0.85	0.49
75	0.2500	0.1567	6.611	0.21	1.05	0.84	0.48
76	0.2533	0.1600	6.611	0.21	1.05	0.84	0.48
77	0.2566	0.1633	6.611	0.21	1.05	0.84	0.48
78	0.2600	0.1667	6.611	0.21	1.05	0.84	0.48
79	0.2633	0.1700	6.611	0.21	1.05	0.84	0.48
80	0.2666	0.1733	6.611	0.21	1.05	0.84	0.48
81	0.2700	0.1767	6.627	0.22	1.04	0.82	0.47
82	0.2733	0.1800	6.627	0.22	1.04	0.82	0.47
83	0.2766	0.1833	6.627	0.22	1.04	0.82	0.47
84	0.2800	0.1867	6.627	0.22	1.04	0.82	0.47
85	0.2833	0.1900	6.627	0.22	1.04	0.82	0.47
86	0.2866	0.1933	6.643	0.24	1.02	0.81	0.46
87	0.2900	0.1967	6.643	0.24	1.02	0.81	0.46
88	0.2933	0.2000	6.643	0.24	1.02	0.81	0.46
89	0.2966	0.2033	6.643	0.24	1.02	0.81	0.46
90	0.3000	0.2067	6.643	0.24	1.02	0.81	0.46
91	0.3033	0.2100	6.643	0.24	1.02	0.81	0.46

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
92	0.3066	0.2133	6.643	0.24	1.02	0.81	0.46
93	0.3100	0.2167	6.643	0.24	1.02	0.81	0.46
94	0.3133	0.2200	6.659	0.25	1.00	0.80	0.46
95	0.3166	0.2233	6.659	0.25	1.00	0.80	0.46
96	0.3200	0.2267	6.659	0.25	1.00	0.80	0.46
97	0.3233	0.2300	6.659	0.25	1.00	0.80	0.46
98	0.3266	0.2333	6.659	0.25	1.00	0.80	0.46
99	0.3300	0.2367	6.675	0.27	0.99	0.78	0.45
100	0.3333	0.2400	6.675	0.27	0.99	0.78	0.45
101	0.3500	0.2567	6.691	0.29	0.97	0.77	0.44
102	0.3667	0.2734	6.691	0.29	0.97	0.77	0.44
103	0.3833	0.2900	6.707	0.30	0.96	0.76	0.43
104	0.4000	0.3067	6.722	0.32	0.94	0.75	0.43
105	0.4167	0.3234	6.738	0.33	0.92	0.73	0.42
106	0.4333	0.3400	6.738	0.33	0.92	0.73	0.42
107	0.4500	0.3567	6.754	0.35	0.91	0.72	0.41
108	0.4667	0.3734	6.770	0.37	0.89	0.71	0.41
109	0.4833	0.3900	6.770	0.37	0.89	0.71	0.41
110	0.5000	0.4067	6.786	0.38	0.88	0.70	0.40
111	0.5167	0.4234	6.802	0.40	0.86	0.68	0.39
112	0.5333	0.4400	6.802	0.40	0.86	0.68	0.39
113	0.5500	0.4567	6.818	0.41	0.84	0.67	0.38
114	0.5667	0.4734	6.818	0.41	0.84	0.67	0.38
115	0.5833	0.4900	6.834	0.43	0.83	0.66	0.38
116	0.6000	0.5067	6.850	0.45	0.81	0.65	0.37
117	0.6167	0.5234	6.850	0.45	0.81	0.65	0.37
118	0.6333	0.5400	6.850	0.45	0.81	0.65	0.37
119	0.6500	0.5567	6.866	0.46	0.80	0.63	0.36
120	0.6667	0.5734	6.882	0.48	0.78	0.62	0.35
121	0.6833	0.5900	6.882	0.48	0.78	0.62	0.35
122	0.7000	0.6067	6.898	0.49	0.76	0.61	0.35

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
123	0.7167	0.6234	6.898	0.49	0.76	0.61	0.35
124	0.7333	0.6400	6.914	0.51	0.75	0.59	0.34
125	0.7500	0.6567	6.914	0.51	0.75	0.59	0.34
126	0.7667	0.6734	6.930	0.53	0.73	0.58	0.33
127	0.7833	0.6900	6.930	0.53	0.73	0.58	0.33
128	0.8000	0.7067	6.945	0.54	0.72	0.57	0.33
129	0.8167	0.7234	6.945	0.54	0.72	0.57	0.33
130	0.8333	0.7400	6.961	0.56	0.70	0.56	0.32
131	0.8500	0.7567	6.961	0.56	0.70	0.56	0.32
132	0.8667	0.7734	6.961	0.56	0.70	0.56	0.32
133	0.8833	0.7900	6.977	0.57	0.68	0.54	0.31
134	0.9000	0.8067	6.977	0.57	0.68	0.54	0.31
135	0.9167	0.8234	6.993	0.59	0.67	0.53	0.30
136	0.9333	0.8400	6.993	0.59	0.67	0.53	0.30
137	0.9500	0.8567	7.009	0.61	0.65	0.52	0.30
138	0.9667	0.8734	7.009	0.61	0.65	0.52	0.30
139	0.9833	0.8900	7.009	0.61	0.65	0.52	0.30
140	1.0000	0.9067	7.025	0.62	0.64	0.51	0.29
141	1.2000	1.1067	7.105	0.70	0.56	0.44	0.25
142	1.4000	1.3067	7.168	0.76	0.49	0.39	0.22
143	1.6000	1.5067	7.232	0.83	0.43	0.34	0.20
144	1.8000	1.7067	7.264	0.86	0.40	0.32	0.18
145	2.0000	1.9067	7.312	0.91	0.35	0.28	0.16
146	2.2000	2.1067	7.343	0.94	0.32	0.25	0.14
147	2.4000	2.3067	7.375	0.97	0.29	0.23	0.13
148	2.6000	2.5067	7.407	1.00	0.25	0.20	0.12
149	2.8000	2.7067	7.439	1.04	0.22	0.18	0.10
150	3.0000	2.9067	7.471	1.07	0.19	0.15	0.09
151	3.2000	3.1067	7.487	1.08	0.17	0.14	0.08
152	3.4000	3.3067	7.503	1.10	0.16	0.13	0.07
153	3.6000	3.5067	7.519	1.12	0.14	0.11	0.06

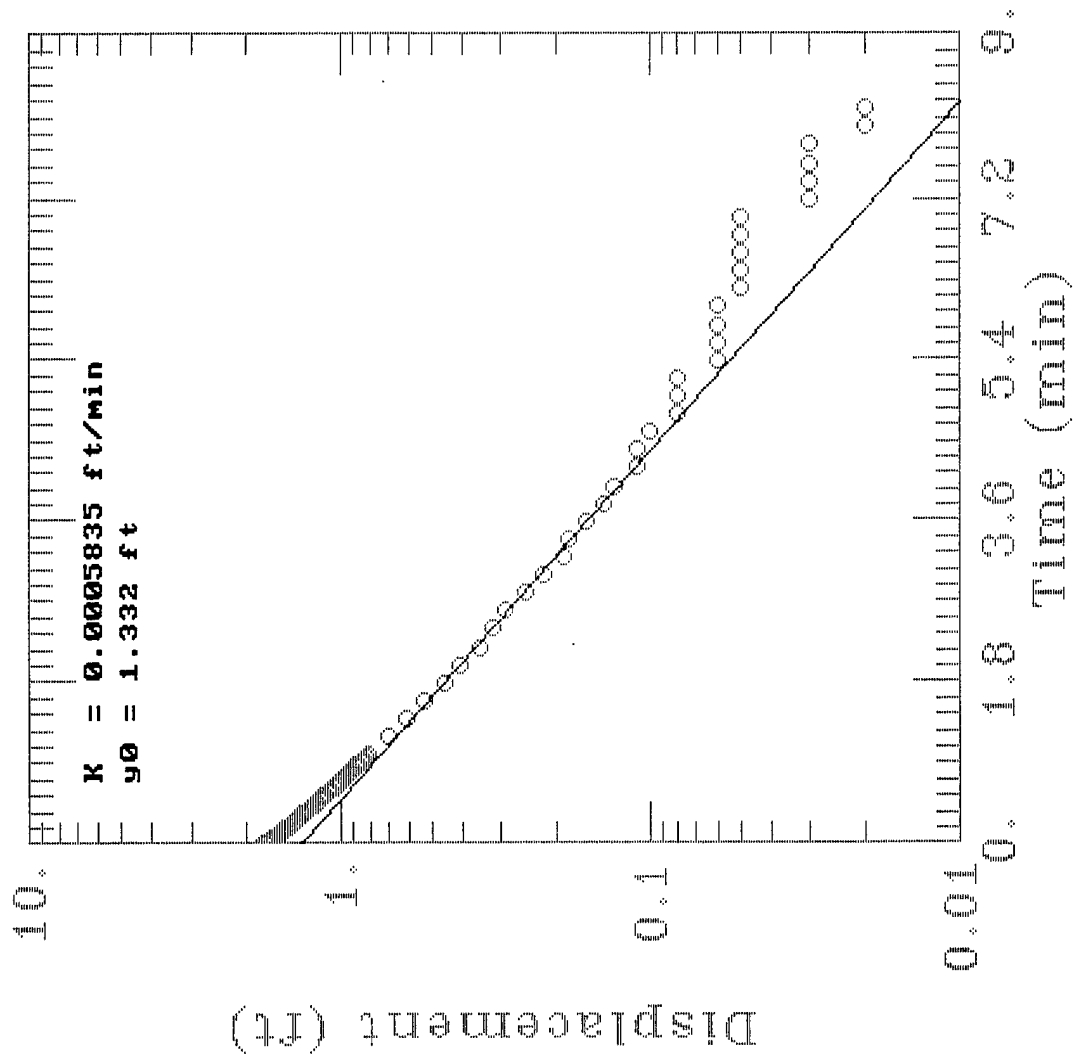
SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
154	3.8000	3.7067	7.519	1.12	0.14	0.11	0.06
155	4.0000	3.9067	7.534	1.13	0.13	0.10	0.06
156	4.2000	4.1067	7.550	1.15	0.11	0.09	0.05
157	4.4000	4.3067	7.566	1.16	0.10	0.08	0.04
158	4.6000	4.5067	7.566	1.16	0.10	0.08	0.04
159	4.8000	4.7067	7.582	1.18	0.08	0.06	0.04
160	5.0000	4.9067	7.582	1.18	0.08	0.06	0.04
161	5.2000	5.1067	7.582	1.18	0.08	0.06	0.04
162	5.4000	5.3067	7.598	1.19	0.06	0.05	0.03
163	5.6000	5.5067	7.598	1.19	0.06	0.05	0.03
164	5.8000	5.7067	7.614	1.21	0.05	0.04	0.02
165	6.0000	5.9067	7.614	1.21	0.05	0.04	0.02
166	6.2000	6.1067	7.630	1.23	0.03	0.03	0.01
167	6.4000	6.3067	7.630	1.23	0.03	0.03	0.01
168	6.6000	6.5067	7.630	1.23	0.03	0.03	0.01
169	6.8000	6.7067	7.630	1.23	0.03	0.03	0.01
170	7.0000	6.9067	7.646	1.24	0.02	0.01	0.01
171	7.2000	7.1067	7.646	1.24	0.02	0.01	0.01
172	7.4000	7.3067	7.646	1.24	0.02	0.01	0.01
173	7.6000	7.5067	7.646	1.24	0.02	0.01	0.01
174	7.8000	7.7067	7.646	1.24	0.02	0.01	0.01
175	8.0000	7.9067	7.646	1.24	0.02	0.01	0.01
176	8.2000	8.1067	7.646	1.24	0.02	0.01	0.01
177	8.4000	8.3067	7.646	1.24	0.02	0.01	0.01
178	8.6000	8.5067	7.646	1.24	0.02	0.01	0.01
179	8.8000	8.7067	7.646	1.24	0.02	0.01	0.01
180	9.0000	8.9067	7.662	1.26	0.00	0.00	0.00
181	9.2000	9.1067	7.662	1.26	0.00	0.00	0.00
182	9.4000	9.3067	7.662	1.26	0.00	0.00	0.00
183	9.6000	9.5067	7.662	1.26	0.00	0.00	0.00
184	9.8000	9.7067	7.662	1.26	0.00	0.00	0.00

SLUG IN TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
185	10.0000	9.9067	7.662	1.26	0.00	0.00	0.00

SLUG OUT TEST MW-15



ANALYSIS OF MODEL RESIDUALS

residual = calculated - observed
 weighted residual = residual * weight

Weighted Residual Statistics:

Number of residuals..... 174
 Number of estimated parameters.... 2
 Degrees of freedom..... 172
 Residual mean..... 0.005061
 Residual standard deviation..... 0.01966
 Residual variance..... 0.0003865

Model Residuals:

Time	Observed	Calculated	Residual	Weight
0.0033	1.74	1.6947	0.045292	1
0.0066	1.74	1.6906	0.04945	1
0.01	1.72	1.6863	0.033723	1
0.0133	1.72	1.6821	0.037861	1
0.0166	1.7	1.678	0.021988	1
0.02	1.7	1.6738	0.02623	1
0.0233	1.7	1.6697	0.030336	1
0.0266	1.69	1.6656	0.024433	1
0.0299	1.69	1.6615	0.02852	1
0.0333	1.69	1.6573	0.03272	1
0.0366	1.67	1.6532	0.016786	1
0.0399	1.67	1.6492	0.020842	1
0.0433	1.67	1.645	0.025011	1
0.0466	1.66	1.641	0.019047	1
0.0499	1.66	1.6369	0.023074	1
0.0533	1.64	1.6328	0.0072114	1
0.0566	1.64	1.6288	0.011218	1
0.0599	1.64	1.6248	0.015214	1
0.0633	1.64	1.6207	0.019321	1
0.0666	1.62	1.6167	0.0032977	1
0.0699	1.62	1.6127	0.0072645	1
0.0733	1.62	1.6087	0.011341	1
0.0766	1.61	1.6047	0.0052882	1
0.0799	1.61	1.6008	0.0092255	1
0.0833	1.61	1.5967	0.013272	1
0.0866	1.59	1.5928	-0.0028102	1
0.0899	1.59	1.5889	0.0010979	1
0.0933	1.59	1.5849	0.0051144	1
0.0966	1.59	1.581	0.0090031	1
0.0999	1.58	1.5771	0.0028822	1
0.1033	1.58	1.5731	0.0068689	1
0.1066	1.58	1.5693	0.010729	1
0.1099	1.58	1.5654	0.014579	1
0.1133	1.56	1.5615	-0.0014637	1
0.1166	1.56	1.5576	0.0023675	1
0.1199	1.56	1.5538	0.0061893	1
0.1233	1.54	1.5499	-0.0098829	1
0.1266	1.54	1.5461	-0.0060801	1

0.1299	1.54	1.5423	-0.0022867	1
0.1333	1.54	1.5384	0.001612	1
0.1366	1.53	1.5346	-0.0046134	1
0.1399	1.53	1.5308	-0.00084807	1
0.1433	1.53	1.527	0.0030217	1
0.1466	1.51	1.5232	-0.013232	1
0.1499	1.51	1.5195	-0.0094943	1
0.1533	1.51	1.5157	-0.0056533	1
0.1566	1.51	1.5119	-0.0019345	1
0.1599	1.5	1.5082	-0.0082248	1
0.1633	1.5	1.5044	-0.0044122	1
0.1666	1.5	1.5007	-0.00072099	1
0.1699	1.5	1.497	0.0029612	1
0.1733	1.5	1.4933	0.0067455	1
0.1766	1.48	1.4896	-0.0095907	1
0.1799	1.48	1.4859	-0.0059358	1
0.1833	1.48	1.4822	-0.0021796	1
0.1866	1.46	1.4785	-0.018543	1
0.1899	1.46	1.4749	-0.014915	1
0.1933	1.46	1.4712	-0.011187	1
0.1966	1.46	1.4676	-0.0075771	1
0.1999	1.46	1.464	-0.0039763	1
0.2033	1.45	1.4603	-0.010276	1
0.2066	1.45	1.4567	-0.0066926	1
0.2099	1.45	1.4531	-0.0031185	1
0.2133	1.45	1.4494	0.00055479	1
0.2166	1.43	1.4459	-0.015889	1
0.2199	1.43	1.4423	-0.012341	1
0.2233	1.43	1.4387	-0.0086952	1
0.2266	1.42	1.4352	-0.015165	1
0.2299	1.42	1.4316	-0.011644	1
0.2333	1.42	1.428	-0.0080249	1
0.2366	1.42	1.4245	-0.0045211	1
0.2399	1.4	1.421	-0.021026	1
0.2433	1.4	1.4174	-0.017434	1
0.2466	1.4	1.414	-0.013956	1
0.2499	1.4	1.4105	-0.010487	1
0.2533	1.4	1.4069	-0.0069212	1
0.2566	1.39	1.4035	-0.013469	1
0.2599	1.39	1.4	-0.010026	1
0.2633	1.39	1.3965	-0.0064866	1
0.2666	1.39	1.3931	-0.0030601	1
0.2699	1.39	1.3896	0.00035787	1
0.2733	1.37	1.3861	-0.016129	1
0.2766	1.37	1.3827	-0.012728	1
0.2799	1.37	1.3793	-0.0093357	1
0.2833	1.37	1.3758	-0.0058489	1
0.2866	1.35	1.3725	-0.022473	1
0.2899	1.35	1.3691	-0.019106	1
0.2933	1.35	1.3656	-0.015645	1
0.2966	1.35	1.3623	-0.012294	1
0.2999	1.35	1.359	-0.0089515	1
0.3033	1.35	1.3555	-0.0055162	1
0.3066	1.34	1.3522	-0.01219	1

5727 0.3166

0.3099	1.34	1.3489	-0.0088726	1
0.3133	1.34	1.3455	-0.0054629	1
0.3166	1.34	1.3422	-0.0021616	1
~~0.3199~~	1.32	1.3389	-0.018869	1
0.3233	1.32	1.3355	-0.015484	1
0.3266	1.32	1.3322	-0.012207	1
0.3433	1.31	1.3157	-0.0057479	1
0.36	1.29	1.2995	-0.0094919	1
0.3766	1.27	1.2835	-0.013532	1
0.3933	1.26	1.2677	-0.0076742	1
0.41	1.24	1.252	-0.012012	1
0.4266	1.23	1.2366	-0.0066355	1
0.4433	1.21	1.2214	-0.011357	1
0.46	1.19	1.2063	-0.016267	1
0.4766	1.18	1.1915	-0.011452	1
0.4933	1.16	1.1767	-0.016732	1
0.51	1.15	1.1622	-0.012193	1
0.5263	1.13	1.1482	-0.018176	1
0.5433	1.13	1.1337	-0.0037375	1
0.56	1.11	1.1197	-0.0097302	1
0.5766	1.1	1.106	-0.0059782	1
0.5933	1.08	1.0923	-0.012314	1
0.61	1.07	1.0788	-0.0088184	1
0.6266	1.05	1.0656	-0.015569	1
0.6433	1.03	1.0524	-0.022404	1
0.66	1.03	1.0394	-0.0094014	1
0.6766	1.02	1.0266	-0.006636	1
0.6933	1	1.014	-0.013952	1
0.71	1	1.0014	-0.0014246	1
0.7266	0.99	0.98913	0.00087439	1
0.7433	0.97	0.9769	-0.006905	1
0.76	0.96	0.96484	-0.0048353	1
0.7766	0.94	0.95299	-0.012986	1
0.7933	0.94	0.94121	-0.0012116	1
0.81	0.92	0.92958	-0.009583	1
0.8266	0.91	0.91817	-0.0081663	1
0.8433	0.91	0.90682	0.0031776	1
0.86	0.89	0.89562	-0.0056186	1
0.8766	0.88	0.88462	-0.0046191	1
0.8933	0.88	0.87369	0.0063104	1
0.91	0.86	0.8629	-0.0028952	1
0.9266	0.84	0.8523	-0.012298	1
0.9433	0.84	0.84177	-0.0017675	1
0.96	0.83	0.83137	-0.0013674	1
0.9766	0.83	0.82116	0.008843	1
0.9933	0.81	0.81101	-0.0010117	1
1.1933	0.7	0.69882	0.0011774	1
1.3933	0.61	0.60215	0.0078472	1
1.5933	0.53	0.51886	0.011144	1
1.7933	0.46	0.44708	0.012919	1
1.9933	0.41	0.38524	0.024765	1
2.1933	0.35	0.33194	0.018055	1
2.3933	0.32	0.28603	0.033974	1
2.5933	0.29	0.24646	0.04354	1

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
0	0.0000	-0.0067	9.620	0.02	1.74	0.99	0.79
1	0.0033	-0.0034	9.636	0.00	1.75	1.00	0.80
2	0.0067	0.0000	9.636	0.00	1.75	1.00	0.80
3	0.0100	0.0033	9.620	0.02	1.74	0.99	0.79
4	0.0133	0.0066	9.620	0.02	1.74	0.99	0.79
5	0.0167	0.0100	9.604	0.03	1.72	0.98	0.78
6	0.0200	0.0133	9.604	0.03	1.72	0.98	0.78
7	0.0233	0.0166	9.588	0.05	1.70	0.97	0.77
8	0.0267	0.0200	9.588	0.05	1.70	0.97	0.77
9	0.0300	0.0233	9.588	0.05	1.70	0.97	0.77
10	0.0333	0.0266	9.572	0.06	1.69	0.96	0.77
11	0.0366	0.0299	9.572	0.06	1.69	0.96	0.77
12	0.0400	0.0333	9.572	0.06	1.69	0.96	0.77
13	0.0433	0.0366	9.556	0.08	1.67	0.95	0.76
14	0.0466	0.0399	9.556	0.08	1.67	0.95	0.76
15	0.0500	0.0433	9.556	0.08	1.67	0.95	0.76
16	0.0533	0.0466	9.540	0.10	1.66	0.95	0.75
17	0.0566	0.0499	9.540	0.10	1.66	0.95	0.75
18	0.0600	0.0533	9.524	0.11	1.64	0.94	0.74
19	0.0633	0.0566	9.524	0.11	1.64	0.94	0.74
20	0.0666	0.0599	9.524	0.11	1.64	0.94	0.74
21	0.0700	0.0633	9.524	0.11	1.64	0.94	0.74
22	0.0733	0.0666	9.509	0.13	1.62	0.93	0.74
23	0.0766	0.0699	9.509	0.13	1.62	0.93	0.74
24	0.0800	0.0733	9.509	0.13	1.62	0.93	0.74
25	0.0833	0.0766	9.492	0.14	1.61	0.92	0.73
26	0.0866	0.0799	9.492	0.14	1.61	0.92	0.73
27	0.0900	0.0833	9.492	0.14	1.61	0.92	0.73
28	0.0933	0.0866	9.477	0.16	1.59	0.91	0.72
29	0.0966	0.0899	9.477	0.16	1.59	0.91	0.72
30	0.1000	0.0933	9.477	0.16	1.59	0.91	0.72

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
31	0.1033	0.0966	9.477	0.16	1.59	0.91	0.72
32	0.1066	0.0999	9.461	0.17	1.58	0.90	0.72
33	0.1100	0.1033	9.461	0.17	1.58	0.90	0.72
34	0.1133	0.1066	9.461	0.17	1.58	0.90	0.72
35	0.1166	0.1099	9.461	0.17	1.58	0.90	0.72
36	0.1200	0.1133	9.445	0.19	1.56	0.89	0.71
37	0.1233	0.1166	9.445	0.19	1.56	0.89	0.71
38	0.1266	0.1199	9.445	0.19	1.56	0.89	0.71
39	0.1300	0.1233	9.429	0.21	1.54	0.88	0.70
40	0.1333	0.1266	9.429	0.21	1.54	0.88	0.70
41	0.1366	0.1299	9.429	0.21	1.54	0.88	0.70
42	0.1400	0.1333	9.429	0.21	1.54	0.88	0.70
43	0.1433	0.1366	9.413	0.22	1.53	0.87	0.69
44	0.1466	0.1399	9.413	0.22	1.53	0.87	0.69
45	0.1500	0.1433	9.413	0.22	1.53	0.87	0.69
46	0.1533	0.1466	9.397	0.24	1.51	0.86	0.69
47	0.1566	0.1499	9.397	0.24	1.51	0.86	0.69
48	0.1600	0.1533	9.397	0.24	1.51	0.86	0.69
49	0.1633	0.1566	9.397	0.24	1.51	0.86	0.69
50	0.1666	0.1599	9.381	0.25	1.50	0.85	0.68
51	0.1700	0.1633	9.381	0.25	1.50	0.85	0.68
52	0.1733	0.1666	9.381	0.25	1.50	0.85	0.68
53	0.1766	0.1699	9.381	0.25	1.50	0.85	0.68
54	0.1800	0.1733	9.381	0.25	1.50	0.85	0.68
55	0.1833	0.1766	9.365	0.27	1.48	0.85	0.67
56	0.1866	0.1799	9.365	0.27	1.48	0.85	0.67
57	0.1900	0.1833	9.365	0.27	1.48	0.85	0.67
58	0.1933	0.1866	9.349	0.29	1.46	0.84	0.67
59	0.1966	0.1899	9.349	0.29	1.46	0.84	0.67
60	0.2000	0.1933	9.349	0.29	1.46	0.84	0.67
61	0.2033	0.1966	9.349	0.29	1.46	0.84	0.67

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM TRANS.	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
62	0.2066	0.1999	9.349	0.29	1.46	0.84	0.67
63	0.2100	0.2033	9.333	0.30	1.45	0.83	0.66
64	0.2133	0.2066	9.333	0.30	1.45	0.83	0.66
65	0.2166	0.2099	9.333	0.30	1.45	0.83	0.66
66	0.2200	0.2133	9.333	0.30	1.45	0.83	0.66
67	0.2233	0.2166	9.317	0.32	1.43	0.82	0.65
68	0.2266	0.2199	9.317	0.32	1.43	0.82	0.65
69	0.2300	0.2233	9.317	0.32	1.43	0.82	0.65
70	0.2333	0.2266	9.302	0.33	1.42	0.81	0.64
71	0.2366	0.2299	9.302	0.33	1.42	0.81	0.64
72	0.2400	0.2333	9.302	0.33	1.42	0.81	0.64
73	0.2433	0.2366	9.302	0.33	1.42	0.81	0.64
74	0.2466	0.2399	9.286	0.35	1.40	0.80	0.64
75	0.2500	0.2433	9.286	0.35	1.40	0.80	0.64
76	0.2533	0.2466	9.286	0.35	1.40	0.80	0.64
77	0.2566	0.2499	9.286	0.35	1.40	0.80	0.64
78	0.2600	0.2533	9.286	0.35	1.40	0.80	0.64
79	0.2633	0.2566	9.270	0.37	1.39	0.79	0.63
80	0.2666	0.2599	9.270	0.37	1.39	0.79	0.63
81	0.2700	0.2633	9.270	0.37	1.39	0.79	0.63
82	0.2733	0.2666	9.270	0.37	1.39	0.79	0.63
83	0.2766	0.2699	9.270	0.37	1.39	0.79	0.63
84	0.2800	0.2733	9.254	0.38	1.37	0.78	0.62
85	0.2833	0.2766	9.254	0.38	1.37	0.78	0.62
86	0.2866	0.2799	9.254	0.38	1.37	0.78	0.62
87	0.2900	0.2833	9.254	0.38	1.37	0.78	0.62
88	0.2933	0.2866	9.238	0.40	1.35	0.77	0.62
89	0.2966	0.2899	9.238	0.40	1.35	0.77	0.62
90	0.3000	0.2933	9.238	0.40	1.35	0.77	0.62
91	0.3033	0.2966	9.238	0.40	1.35	0.77	0.62
92	0.3066	0.2999	9.238	0.40	1.35	0.77	0.62

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H A/B DATUM	H	H/H(0)	H/H(0)
				TRANS.	TRANS.	TRANS.	THEOR
93	0.3100	0.3033	9.238	0.40	1.35	0.77	0.62
94	0.3133	0.3066	9.222	0.41	1.34	0.76	0.61
95	0.3166	0.3099	9.222	0.41	1.34	0.76	0.61
96	0.3200	0.3133	9.222	0.41	1.34	0.76	0.61
97	0.3233	0.3166	9.222	0.41	1.34	0.76	0.61
98	0.3266	0.3199	9.206	0.43	1.32	0.75	0.60
99	0.3300	0.3233	9.206	0.43	1.32	0.75	0.60
100	0.3333	0.3266	9.206	0.43	1.32	0.75	0.60
101	0.3500	0.3433	9.190	0.45	1.31	0.75	0.59
102	0.3667	0.3600	9.174	0.46	1.29	0.74	0.59
103	0.3833	0.3766	9.158	0.48	1.27	0.73	0.58
104	0.4000	0.3933	9.142	0.49	1.26	0.72	0.57
105	0.4167	0.4100	9.126	0.51	1.24	0.71	0.56
106	0.4333	0.4266	9.111	0.52	1.23	0.70	0.56
107	0.4500	0.4433	9.095	0.54	1.21	0.69	0.55
108	0.4667	0.4600	9.079	0.56	1.19	0.68	0.54
109	0.4833	0.4766	9.063	0.57	1.18	0.67	0.54
110	0.5000	0.4933	9.047	0.59	1.16	0.66	0.53
111	0.5167	0.5100	9.031	0.60	1.15	0.65	0.52
112	0.5333	0.5266	9.015	0.62	1.13	0.65	0.51
113	0.5500	0.5433	9.015	0.62	1.13	0.65	0.51
114	0.5667	0.5600	8.999	0.64	1.11	0.64	0.51
115	0.5833	0.5766	8.983	0.65	1.10	0.63	0.50
116	0.6000	0.5933	8.967	0.67	1.08	0.62	0.49
117	0.6167	0.6100	8.951	0.68	1.07	0.61	0.48
118	0.6333	0.6266	8.935	0.70	1.05	0.60	0.48
119	0.6500	0.6433	8.919	0.72	1.03	0.59	0.47
120	0.6667	0.6600	8.919	0.72	1.03	0.59	0.47
121	0.6833	0.6766	8.904	0.73	1.02	0.58	0.46
122	0.7000	0.6933	8.888	0.75	1.00	0.57	0.46
123	0.7167	0.7100	8.888	0.75	1.00	0.57	0.46

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H		H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.	H TRANS.		
124	0.7333	0.7266	8.872	0.76	0.99	0.56	0.45
125	0.7500	0.7433	8.856	0.78	0.97	0.55	0.44
126	0.7667	0.7600	8.840	0.80	0.96	0.55	0.43
127	0.7833	0.7766	8.824	0.81	0.94	0.54	0.43
128	0.8000	0.7933	8.824	0.81	0.94	0.54	0.43
129	0.8167	0.8100	8.808	0.83	0.92	0.53	0.42
130	0.8333	0.8266	8.792	0.84	0.91	0.52	0.41
131	0.8500	0.8433	8.792	0.84	0.91	0.52	0.41
132	0.8667	0.8600	8.776	0.86	0.89	0.51	0.41
133	0.8833	0.8766	8.760	0.88	0.88	0.50	0.40
134	0.9000	0.8933	8.760	0.88	0.88	0.50	0.40
135	0.9167	0.9100	8.744	0.89	0.86	0.49	0.39
136	0.9333	0.9266	8.728	0.91	0.84	0.48	0.38
137	0.9500	0.9433	8.728	0.91	0.84	0.48	0.38
138	0.9667	0.9600	8.712	0.92	0.83	0.47	0.38
139	0.9833	0.9766	8.712	0.92	0.83	0.47	0.38
140	1.0000	0.9933	8.697	0.94	0.81	0.46	0.37
141	1.2000	1.1933	8.585	1.05	0.70	0.40	0.32
142	1.4000	1.3933	8.490	1.15	0.61	0.35	0.28
143	1.6000	1.5933	8.410	1.23	0.53	0.30	0.24
144	1.8000	1.7933	8.346	1.29	0.46	0.26	0.21
145	2.0000	1.9933	8.299	1.34	0.41	0.24	0.19
146	2.2000	2.1933	8.235	1.40	0.35	0.20	0.16
147	2.4000	2.3933	8.203	1.43	0.32	0.18	0.14
148	2.6000	2.5933	8.171	1.47	0.29	0.16	0.13
149	2.8000	2.7933	8.139	1.50	0.25	0.15	0.12
150	3.0000	2.9933	8.108	1.53	0.22	0.13	0.10
151	3.2000	3.1933	8.076	1.56	0.19	0.11	0.09
152	3.4000	3.3933	8.060	1.58	0.18	0.10	0.08
153	3.6000	3.5933	8.044	1.59	0.16	0.09	0.07
154	3.8000	3.7933	8.028	1.61	0.14	0.08	0.07

SLUG OUT TEST MW-15

SAMPLE NUMBER	TIME (MINUTES)	T(0) TRANS.	XD READING	H	H TRANS.	H/H(0) TRANS.	H/H(0) THEOR
				A/B DATUM TRANS.			
155	4.0000	3.9933	8.012	1.62	0.13	0.07	0.06
156	4.2000	4.1933	7.996	1.64	0.11	0.06	0.05
157	4.4000	4.3933	7.996	1.64	0.11	0.06	0.05
158	4.6000	4.5933	7.980	1.66	0.10	0.05	0.04
159	4.8000	4.7933	7.964	1.67	0.08	0.05	0.04
160	5.0000	4.9933	7.964	1.67	0.08	0.05	0.04
161	5.2000	5.1933	7.964	1.67	0.08	0.05	0.04
162	5.4000	5.3933	7.948	1.69	0.06	0.04	0.03
163	5.6000	5.5933	7.948	1.69	0.06	0.04	0.03
164	5.8000	5.7933	7.948	1.69	0.06	0.04	0.03
165	6.0000	5.9933	7.932	1.70	0.05	0.03	0.02
166	6.2000	6.1933	7.932	1.70	0.05	0.03	0.02
167	6.4000	6.3933	7.932	1.70	0.05	0.03	0.02
168	6.6000	6.5933	7.932	1.70	0.05	0.03	0.02
169	6.8000	6.7933	7.932	1.70	0.05	0.03	0.02
170	7.0000	6.9933	7.932	1.70	0.05	0.03	0.02
171	7.2000	7.1933	7.932	1.70	0.05	0.03	0.02
172	7.4000	7.3933	7.916	1.72	0.03	0.02	0.01
173	7.6000	7.5933	7.916	1.72	0.03	0.02	0.01
174	7.8000	7.7933	7.916	1.72	0.03	0.02	0.01
175	8.0000	7.9933	7.901	1.73	0.02	0.01	0.01
176	8.2000	8.1933	7.901	1.73	0.02	0.01	0.01
177	8.4000	8.3933	7.885	1.75	0.00	0.00	0.00
178	8.6000	8.5933	7.885	1.75	0.00	0.00	0.00
179	8.8000	8.7933	7.885	1.75	0.00	0.00	0.00
180	9.0000	8.9933	7.885	1.75	0.00	0.00	0.00
181	9.2000	9.1933	7.885	1.75	0.00	0.00	0.00
182	9.4000	9.3933	7.885	1.75	0.00	0.00	0.00
183	9.6000	9.5933	7.901	1.73	0.02	0.01	0.01
184	9.8000	9.7933	7.901	1.73	0.02	0.01	0.01
185	10.0000	9.9933	7.885	1.75	0.00	0.00	0.00