GROUNDWATER MONITORING REPORT: OCTOBER - DECEMBER 1993

FORMER CHEVRON SERVICE STATION NO. 60090709 4211 PRESTON-FALL CITY ROAD SE FALL CITY, WASHINGTON

JANUARY 4, 1994

Prepared for:

Chevron U.S.A. Products Company
Site Assessment and Remediation Group
20500 Richmond Beach Drive NW
Seattle, Washington 98177

Prepared by:

Groundwater Technology, Inc.
19033 West Valley Hwy, Suite D-104
Kent, Washington 98032

Steve Hartman
Staff Geologist

Mark E. Nichols
Project Manager/Hydrogeologist

GROUNDWATER TECHNOLOGY, INC.

TABLE OF CONTENTS

GROUNDWATER MONITORING REPORT
OCTOBER - DECEMBER 1993
FORMER CHEVRON SERVICE STATION #60090709
4211 PRESTON-FALL CITY ROAD SE
FALL CITY, WASHINGTON

1.0 INTRODUCTION

1.1 Purpose

The results of routine groundwater monitoring and sampling for the former Chevron service station #60090709 are presented in this report. The site is located at 4211 Preston-Fall City Road SE in Fall City, Washington. The site location map and site plan are shown in Figures 1 and 2, respectively. The objectives of the monitoring and sampling activities are to evaluate groundwater quality and to monitor the movement of petroleum compounds that may be present on site. Groundwater Technology conducted site work and prepared this report in accordance with Chevron U.S.A. Products Company specifications NW-101692SEP for routine groundwater monitoring. The field work activities discussed in this report were performed on November 22, 1993.

1.2 Scope of Work

The work steps completed during this reporting period are listed below.

- Measured total well depth, depth to groundwater, thickness of separate-phase hydrocarbons (if present), and calculated groundwater elevations relative to an assumed site datum.
- Obtained groundwater samples from selected monitoring wells (MW-1, MW-2, MW-3, MW-4 and MW-5) during the site visit for chemical analysis.
- Treated and disposed on-site water generated during this well purgings. Prior to discharge to soil, the groundwater collected during purging was treated by filtering the water through two canisters of granular activated carbon connected in series.

2.0 METHODS

2.1 Groundwater Measurements

Groundwater measurements were obtained using an Oil Recovery Systems, Inc. Interface Probe™. The probe and measuring tape were cleaned using Alconox and distilled water prior to use at each well. Water level measurements were used to calculate groundwater elevations relative to the site datum. Water level measurements were made from the top of casing of each well and are accurate to approximately 0.01 feet.

2.2 Sampling Protocol

Those monitoring wells selected for sampling, which contained less than 0.02 feet of separate-phase hydrocarbons, were purged by bailing approximately three (3) well volumes, or until dry, prior to sampling. Each well was purged using a clean, unused disposable bailer or by pumping using a diaphragm-pump and clean, dedicated suction-tubing.

Wells which recharged slowly were allowed to recover to within 60 percent of the static water level, prior to sample collection, or for two hours, whichever came first.

The wells were sampled in order of least to most contaminated, if data were available to determine the order. Each well was sampled within 24 hours of purging.

The samples were decanted into properly prepared, laboratory-supplied containers and stored for shipment to the laboratory in cooled containers. A chain-of-custody form was filled-out and accompanied the samples to the laboratory. A laboratory-supplied, travel blank was sent with each sample set. Copies of field forms used to record monitoring and sampling data are included in Appendix A.

2.3 Sample Analyses

Per Chevron specifications, samples collected from this site were analyzed by EPA or Washington State methods as follows:

- Volatile aromatic hydrocarbons, benzene, toluene, ethylbenzene, and xylenes (BTEX), by EPA Method 8020.
- Total petroleum hydrocarbons-as-gasoline (TPH-G) by EPA Method 8015, modified.

3.0 RESULTS

3.1 Groundwater Measurements

The depth to groundwater at the site ranged from approximately 18.1 to 18.6 feet below grade level. The apparent groundwater flow direction is northeasterly with a gradient of approximately 0.01. Groundwater elevations and contours are shown in Figure 3. Groundwater elevations and measurements for this reporting period and previous monitoring or sampling dates are summarized in Table 1.

3.2 Analytical Findings

Benzene and TPH-G concentrations were detected in samples from monitoring wells MW-1, MW-2, MW-4, and MW-5. Concentration ranged from 8.1 to 1,100 ppb for benzene and 1,100 to 1,600 ppb for TPH-G.

Phase-separated hydrocarbons were not detected in the monitored wells during this site visit. Model Toxics Control Act, Compliance Cleanup Levels - Method A [MTCA-CCLs (a)] and analytical results for this sampling event are summarized in Table 2. The laboratory method detection limits for this sampling event are also shown in Table 2. Complete laboratory results are included in Appendix B.

TABLES

Table 1
WELL CASINGS AND GROUNDWATER ELEVATIONS
CHEVRON SERVICE STATION #60090709
4211 PRESTON–FALL CITY ROAD SE, FALL CITY, WASHINGTON

WELL I.D.	DATE	TOC (feet)	DTW (feet)	WTE (feet)
MW–1	11/14/90	98.88	12.20	86.68
	01/03/91	98.88	16.60	82.28
	01/16/91	98.88	13.27	85.61
	01/25/91	98.88	17.71	81.17
	09/05/91	98.88	20.18	78.70
	01/10/92	98.88	19.07	79.81
	02/14/92	97.16	17.87	79.29
	12/18/92	97.16	17.69	79.47
	01/18/93	97.16	19.63	77.53
	05/27/93	97.16	17.31	79.85
	11/22/93	97.16	18.56	78.60
MW–2	11/14/90	98.90	12.11	86.79
	01/03/91	98.90	18.55	80.35
	01/16/91	98.90	13.15	85.75
	01/25/91	98.90	17.54	81.36
	09/05/91	98.90	20.01	78.89
	01/10/92	98.90	18.93	79.97
	02/14/92	96.99	17.56	79.43
	12/18/92	96.99	17.38	79.61
	01/18/93	96.99	19.37	77.62
	05/27/93	96.99	17.00	79.99
	11/22/93	96.99	18.31	78.68
MW–3	11/14/90	99.24	12.15	87.09
	01/03/91	99.24	18.78	80.46
	01/16/91	99.24	13.22	86.02
	01/25/91	99.24	17.78	81.46
	09/05/91	99.24	20.26	78.98
	01/10/92	99.24	19.29	79.95
	02/14/92	97.08	17.78	79.30
	12/18/92	97.08	17.61	79.47
	01/18/93	97.08	19.56	77.52
	05/27/93	97.08	17.15	79.93
	11/22/93	97.08	18.47	78.61

Table 1
WELL CASINGS AND GROUNDWATER ELEVATIONS
CHEVRON SERVICE STATION #60090709
4211 PRESTON–FALL CITY ROAD SE, FALL CITY, WASHINGTON

WELL I.D.	DATE	TOC (feet)	DTW (feet)	WTE (feet)
MW–4	11/14/90	99.25	11.86	87.39
	01/03/91	99.25	18.39	80.86
	01/16/91	99.25	13.00	86.25
	01/25/91	99.25	17.37	81.88
	09/05/91	99.25	19.89	79.36
	01/10/92	99.25	18.82	80.43
	02/14/92	97.58	17.68	79.90
	12/18/92	97.58	17.43	80.15
	01/18/93	97.58	19.52	78.06
	05/27/93	97.58	17.15	80.43
	11/22/93	97.58	18.59	78.99
MW–5	11/14/90	98.25	11.42	86.83
	01/03/91	98.25	17.98	80.27
	01/16/91	98.25	12.50	85.75
	01/25/91	98.25	16.99	81.26
	09/05/91	98.25	19.49	78.76
	01/10/92	98.25	18.40	79.85
	02/14/92	97.06	17.31	79.75
	12/18/92	97.06	17.07	79.99
	01/18/93	97.06	19.11	77.95
	05/27/93	97.06	16.80	80.26
	11/22/93	97.06	18.14	78.92

DTW – Depth to water
TOC = Top of casing & groundwater elevations expressed as feet above mean sea level.
WTE = Water table elevation

FALCTY–W.WK1

Table 2
GROUNDWATER CHEMICAL ANALYSES RESULTS
CHEVRON SERVICE STATION #60090709
4211 PRESTON–FALL CITY ROAD SE, FALL CITY, WASHINGTON

WELL I.D.	DATE	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	XYLENES (ppb)	TPH-G (ppb)	TPH-D (ppb)	TPH-O (ppb)	TPH-418.1 (ppm)
MTCA-CCLs(a)		5	40	30	20	1000	1000	1000	1
MDL		0.5	0.5	0.5	0.5	100	--	--	--
MW-1	01/16/91	185	6	47	52	1200	ND	ND	1.2
	09/05/91	28	9	18	23	1800	ND	--	--
	09/05/91	28	8	17	21	1800	ND	--	--
	01/10/92	ND	2	6	9	430	ND	--	--
	01/18/93	89	10	9	17	1330	300	ND	--
	05/27/93	31	1.8	4.5	9.1	1200	--	--	--
	11/22/93	8.1	2.3	3.9	8.0	1200	--	--	--
MW-2	01/16/91	995	137	6	71	3100	ND	14600	7.4
	09/05/91	62	4	6	10	900	ND	--	--
	01/10/92	ND	ND	1	ND	94		--	--
Duplicate	01/10/92	ND	ND	1	ND	110	ND	--	--
	01/18/93	38	ND	ND	ND	ND	ND	ND	--
	05/27/93	23	1	1	2.4	360	--	--	--
	11/22/93	98	2.8	4.1	15	1100	--	--	--
MW-3	01/16/91	3	ND	ND	2	ND	ND		9800
	09/05/91	0.3	ND	ND	ND	ND	ND	--	--
	01/10/92	ND	ND	ND	ND	ND	ND	--	--
	01/18/93	ND	ND	ND	ND	ND	ND	ND	--
	05/27/93	ND	ND	ND	ND	ND	--	--	--
	11/22/93	ND	ND	ND	ND	ND	--	--	--

GROUNDWATER TECHNOLOGY ®

Table 2
GROUNDWATER CHEMICAL ANALYSES RESULTS
CHEVRON SERVICE STATION #60090709
4211 PRESTON–FALL CITY ROAD SE, FALL CITY, WASHINGTON

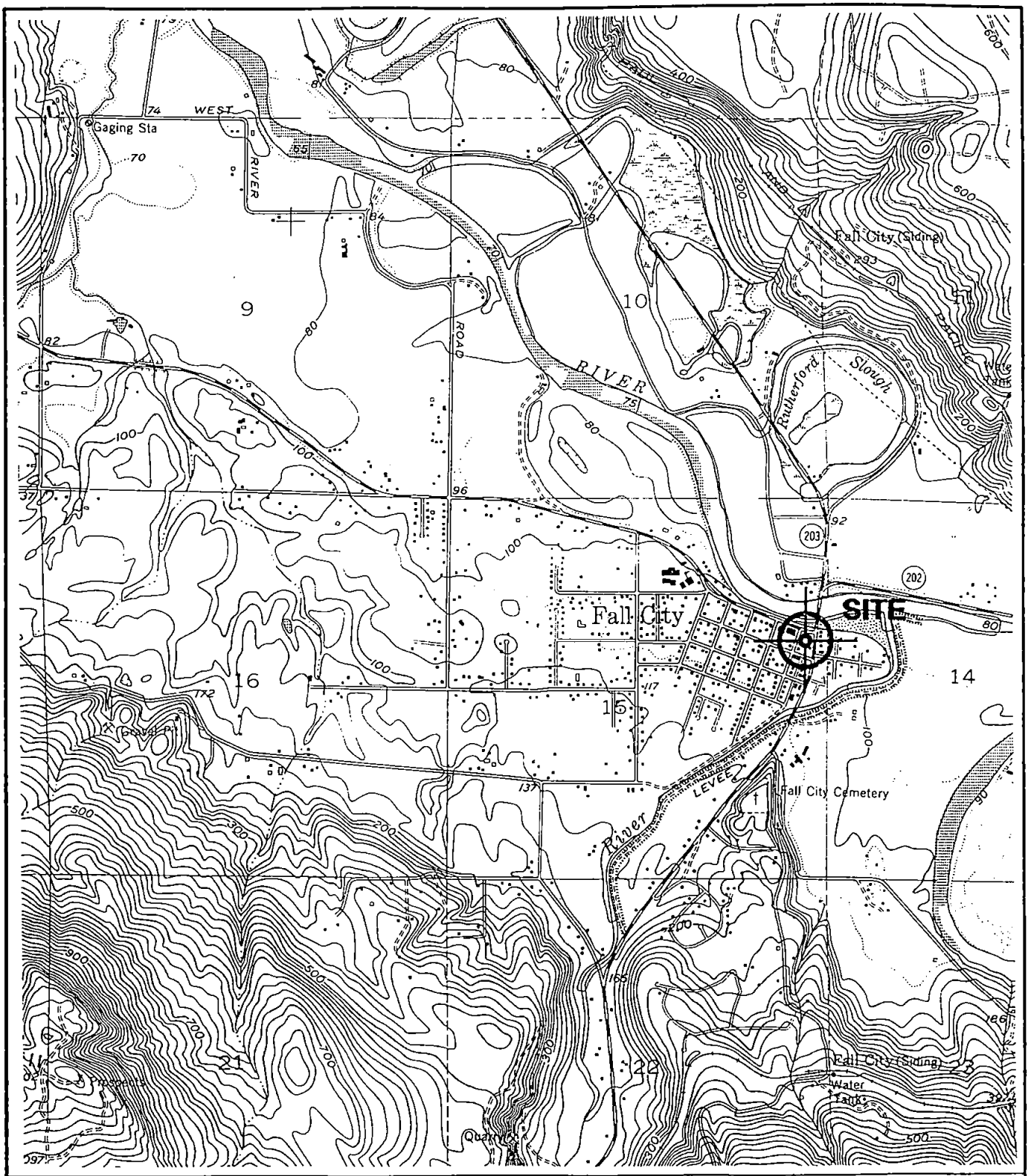
WELL I.D.	DATE	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	XYLENES (ppb)	TPH-G (ppb)	TPH-D (ppb)	TPH-O (ppb)	TPH-418.1 (ppm)
MTCA-CCLs(a)		5	40	30	20	1000	1000	1000	1
MDL		0.5	0.5	0.5	0.5	100	--	--	--
MW-4	01/16/91	560	9	24	25	ND	ND	ND	ND
	09/05/91	820	17	110	280	2900	ND	--	--
	01/10/92	640	6	13	120	1400	ND	--	--
	01/18/93	850	4	46	178	900	ND	ND	--
	05/27/93	1000	15	80	240	1400	--	--	--
Dilution	11/22/93	810	4.1	98	380	1600	--	--	--
MW-5	01/16/91	653	12	47	50	ND	ND	ND	ND
	09/05/91	2900	130	230	890	6900	ND	--	--
Duplicate	01/16/91	625	12	45	49	--	--	--	--
	01/10/92	150	3	4	40	540	ND	--	--
	01/18/93	702	9	22	145	730	ND	ND	--
Dilution	05/27/93	210	3.1	21	62	400	--	--	--
Dilution	11/22/93	1100	9.6	66	200	1400	--	--	--

ppb = Parts per billion
ppm = Parts per million
TPH-G = Total petroleum hydrocarbons as gasoline (ppb)
TPH-D = Total petroleum hydrocarbons as diesel (ppb)
TPH-O = TPH as oil (EPA Methods 3510/8015/Washington DOE Method WTPH-D extended)
TPH-418.1 = TPH by EPA Method 418.1 (ppm)
-- = Not sampled or groundwater not detected.
MTCA-CCLs(a) = Model Toxics Control Act, Compliance Cleanup Levels, Method A
MDL = Method Detection Limits
Dilution = Diluted at laboratory. See laboratory report for method detection limit.

FALCTY-C.WK1

GROUNDWATER TECHNOLOGY

FIGURES



GROUNDWATER TECHNOLOGY

19033 W. VALLEY HWY
KENT, WASHINGTON
(206) 251-5441

N

SCALE: 0 FEET 2000

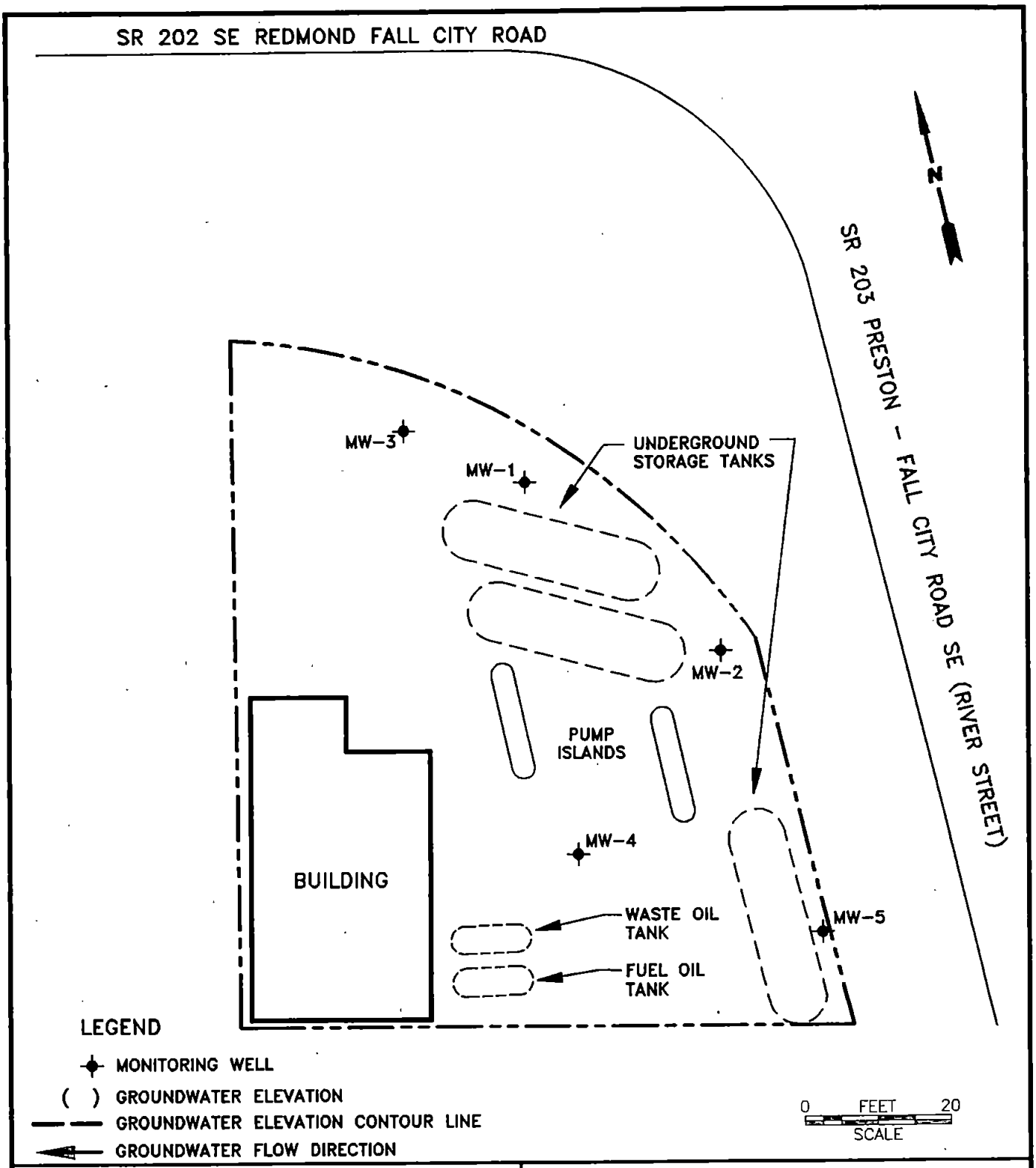
SITE LOCATION MAP

CLIENT:
CHEVRON U.S.A. PRODUCTS CO.
SERVICE STATION NO. 6009-0709

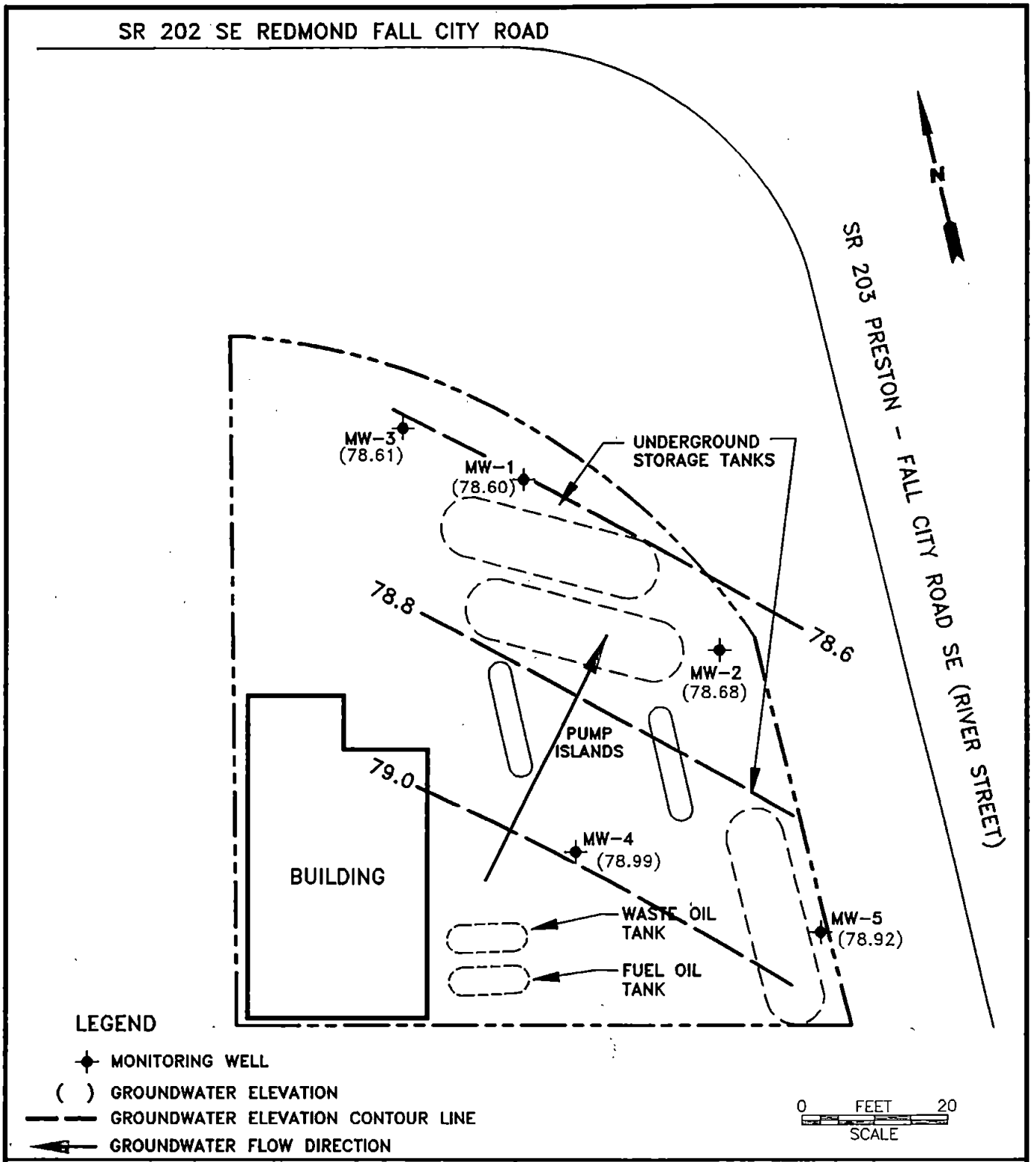
DATE: 5/27/93

LOCATION:
4211 PRESTON-FALL CITY ROAD SE
FALL CITY, WASHINGTON

FIGURE: 1



GROUNDWATER TECHNOLOGY 19033 W. VALLEY HWY KENT, WASHINGTON (206) 251-5441				SITE PLAN		
CLIENT: CHEVRON U.S.A. PRODUCTS CO SERVICE STATION NO. 6009-0709				LOCATION: 4211 PRESTON-FALL CITY RD. FALL CITY, WASHINGTON	REV. NO.: 0	DATE: 1/3/94
PM	PE/RG	DESIGNED SH	DETAILED CY	ACAD FILE: GEC194	PROJECT NO.: 020604446	FIGURE: 2



GROUNDWATER TECHNOLOGY 19033 W. VALLEY HWY KENT, WASHINGTON (206) 251-5441				**GROUNDWATER ELEVATIONS AND CONTOURS (11/22/93)**			
CLIENT: CHEVRON U.S.A. PRODUCTS CO SERVICE STATION NO. 6009-0709				LOCATION: 4211 PRESTON-FALL CITY RD. FALL CITY, WASHINGTON		REV. NO.: 0	DATE: 1/3/94
PM	PE/RG	DESIGNED SH	DETAILED CY	ACAD FILE: GEC194	PROJECT NO.: 020604446		FIGURE: 3

APPENDIX A

FIELD MONITORING AND SAMPLING DATA

JDE#

Address:
4211 Preston–Fall City Rd.
Fall City, WA
Sampling Personnel: [illegible]

GROUNDWATER MONITORING AND SAMPLING DATA
CHEVRON SITE NO. 6009–0709

11·22·93

MONITORING WELL #	MW–3	MW–2	MW–5	MW–4	MW–1						
General Data	2	2	2	2	2						
Time	11:15	11:20	11:25	11:30	11:40						
DTB	23'	24	21.5'	22	23						
DTP											
DTW	18.47	18.31	18.14	18.59	15.56						
WC	4.53	5.69	3.36	3.41	4.44						
Purge Data											
Method	Hand	Hand	Hand	Hand	Hand						
Gal. Purged	2	2.5	2	2	2						
# Casing Vol.	3	3	3	3	3						
Sampling Data											
Date	11·22·93	11·22·93	11·22·93	11·22	11·22						
Time	12:55	1:00	1:05	1:10	1:15						
Technique	DB	DB	DB	DB	DB						
Preservation	HCl	HCl	HCl	HCl	HCl						
Other	Ice	Ice	Ice	Ice	Ice						
Observation											
Sheen (y/n)	N	N	N	N	N						
Odor (y/n)	N	N	N	N	N						
Well Condition											
(good/poor)	G	P	G	G	G						
Locked (y/n)	Y	Y	Y	Y	Y						
Labs:											
BTEX	X	X	X	X	X						
TPHG	X	X	X	X	X						

NOTES/ABBREV.:
DTW = DEPTH TO WATER
DTP = DEPTH TO PRODUCT
DTB = DEPTH TO BOTTOM
WC = WATER COLUMN (DTB–DTW)
DB = DISPOSABLE BAILER
DP = DIAGPHRAM PUMP

COMMENTS:
MW2 Cement Above T.O.C

APPENDIX B

LABORATORY ANALYSIS TEST RESULTS
LABORATORY QA/QC
CHAIN-OF-CUSTODY

AnalyticalTechnologies,Inc.
560 Naches Avenue, S.W., Suite 101, Renton, WA 98055 (206) 228-8335
Karen L. Mixon, Laboratory Manager

ATI I.D. # 9311-230

December 8, 1993

Groundwater Technology, Inc.
19033 West Valley Highway
Suite D-104
Kent WA 98032

Attention : Mark Nichols

Project Number : 6009-0709

Project Name : Chevron-Preston, Fall City

Dear Mr. Nichols:

On November 22, 1993, Analytical Technologies, Inc. (ATI), received six samples for analysis. The samples were analyzed with EPA methodology or equivalent methods as specified in the attached analytical schedule. The results, sample cross reference, and quality control data are enclosed.

Please note that this report has a summary report for the fuels analyses. If you have any questions, please call.

Sincerely,

Victoria L. Bayly
Project Manager

VLB/hal/ff/elf

Enclosure

Analytical Technologies, Inc.

ATI I.D. # 9311-230

SAMPLE CROSS REFERENCE SHEET

CLIENT : GROUNDWATER TECHNOLOGY, INC.
PROJECT # : 6009-0709
PROJECT NAME : CHEVRON-PRESTON, FALL CITY

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9311-230-1	MW-3	11/22/93	WATER
9311-230-2	MW-2	11/22/93	WATER
9311-230-3	MW-5	11/22/93	WATER
9311-230-4	MW-4	11/22/93	WATER
9311-230-5	MW-1	11/22/93	WATER
9311-230-6	TB-LB	N/A	WATER

----- TOTALS -----

MATRIX	# SAMPLES
WATER	6

ATI STANDARD DISPOSAL PRACTICE

The samples from this project will be disposed of in thirty (30) days from the date of the report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Analytical Technologies, Inc.

ATI I.D. # 9311-230

ANALYTICAL SCHEDULE

CLIENT : GROUNDWATER TECHNOLOGY, INC.
PROJECT # : 6009-0709
PROJECT NAME : CHEVRON-PRESTON, FALL CITY

ANALYSIS	TECHNIQUE	REFERENCE	LAB
BETX	GC/PID	EPA 8020	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R

R = ATI - Renton
SD = ATI - San Diego
PHX = ATI - Phoenix
PNR = ATI - Pensacola
FC = ATI - Fort Collins
SUB = Subcontract

Analytical Technologies, Inc. ATI Reference: 9311-230

Analytical Summary Report

Client: Groundwater Technology, Inc. **Project: Chevron-Preston, Fall City**

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L**

ATI Sample #:	0		0		0	1		2		3	
Client ID:	Method Blank		Method Blank		Method Blank	MW-3		MW-2		MW-5	
Date Sampled:	N/A		N/A		N/A	11/22/93		11/22/93		11/22/93	
Date Extracted:	N/A		N/A		N/A	N/A		N/A		N/A	
Date Analyzed:	11/22/93		11/23/93		11/24/93	11/23/93		11/23/93		11/23/93	
Benzene	<0.5		<0.5		<0.5	<0.5		98		1100	D5
Ethylbenzene	<0.5		<0.5		<0.5	<0.5		4.1		66	
Toluene	<0.5		<0.5		<0.5	<0.5		2.8		9.6	
Total Xylenes	<0.5		<0.5		<0.5	<0.5		15		200	D5
Gasoline (Toluene to Dodecane)	<100		<100		<100	<100		1100		1400	
Surrogate Recoveries (%)											
Bromofluorobenzene	92		94		92	99		117		106	
Trifluorotoluene	93		89		89	90		91		93	

ATI Sample #:	4		5		6	
Client ID:	MW-4		MW-1		TB-LB	
Date Sampled:	11/22/93		11/22/93		N/A	
Date Extracted:	N/A		N/A		N/A	
Date Analyzed:	11/23/93		11/24/93		11/23/93	
Benzene	810	D5	8.1		<0.5	
Ethylbenzene	98		3.9		<0.5	
Toluene	4.1		2.3		<0.5	
Total Xylenes	380	D5	8.0		<0.5	
Gasoline (Toluene to Dodecane)	1600		1200		<100	
Surrogate Recoveries (%)						
Bromofluorobenzene	112		121	F	91	
Trifluorotoluene	90		91		91	

Surrogate Limits: (BFB:76-120 TFT:50-150)
D5 Value from a twenty fold diluted analysis.
F Out of limits due to matrix interference.

Analytical Technologies, Inc.

ATI Reference: 9311-230

Quality Control Summary Report

Client: Groundwater Technology, Inc.

Project: Chevron-Preston, Fall City

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L** **Blank Spike/Blank Spike Duplicate**

Extracted: N/A **Analyzed: 11/22/93** **Sample ID: Blank**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
BENZENE	<0.500	N/A	N/A	20.0	19.7	99	19.6	98	1	80-111	20
TOLUENE	<0.500	N/A	N/A	20.0	20.4	102	20.4	102	0	78-111	20
TOTAL XYLENES	<0.500	N/A	N/A	40.0	41.4	103	41.5	104	0	80-114	20
GASOLINE	<100	N/A	N/A	1000	1040	104	987	99	5	75-120	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	92	97	97	76-120
TRIFLUOROTOLUENE	93	94	93	50-150

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L** **Blank Spike/Blank Spike Duplicate**

Extracted: N/A **Analyzed: 11/23/93** **Sample ID: Blank**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
BENZENE	<0.500	N/A	N/A	20.0	19.8	99	19.6	98	1	80-111	20
TOLUENE	<0.500	N/A	N/A	20.0	20.8	104	20.6	103	1	78-111	20
TOTAL XYLENES	<0.500	N/A	N/A	40.0	42.5	106	41.6	104	2	80-114	20
GASOLINE	<100	N/A	N/A	1000	1010	101	941	94	7	75-120	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	94	99	98	76-120
TRIFLUOROTOLUENE	89	90	91	50-150

Analytical Technologies, Inc. ATI Reference: 9311-230

Quality Control Summary Report

Client: Groundwater Technology, Inc. **Project: Chevron-Preston, Fall City**

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L** **Blank Spike/Blank Spike Duplicate**

Extracted: N/A **Analyzed: 11/24/93** **Sample ID: Blank**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
BENZENE	<0.500	N/A	N/A	20.0	19.8	99	N/A	N/A	N/A	80-111	20
TOLUENE	<0.500	N/A	N/A	20.0	20.6	103	N/A	N/A	N/A	78-111	20
TOTAL XYLENES	<0.500	N/A	N/A	40.0	41.9	105	N/A	N/A	N/A	80-114	20
GASOLINE	<100	N/A	N/A	1000	975	98	N/A	N/A	N/A	75-120	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	92	97	N/A	76-120
TRIFLUOROTOLUENE	89	92	N/A	50-150

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L** **Matrix Spike/Matrix Spike Duplicate**

Extracted: N/A **Analyzed: 11/24/93** **Sample ID: 9311-242-4**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
GASOLINE	<100	<100	NC	N/A	N/A	N/A	N/A	N/A	N/A	N/A	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Sample Dup.	Spike Dup.	Limits
TRIFLUOROTOLUENE	87	89	N/A	50-150

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: WATER** **Units: ug/L** **Matrix Spike/Matrix Spike Duplicate**

Extracted: N/A **Analyzed: 11/22/93** **Sample ID: 9311-220-1**

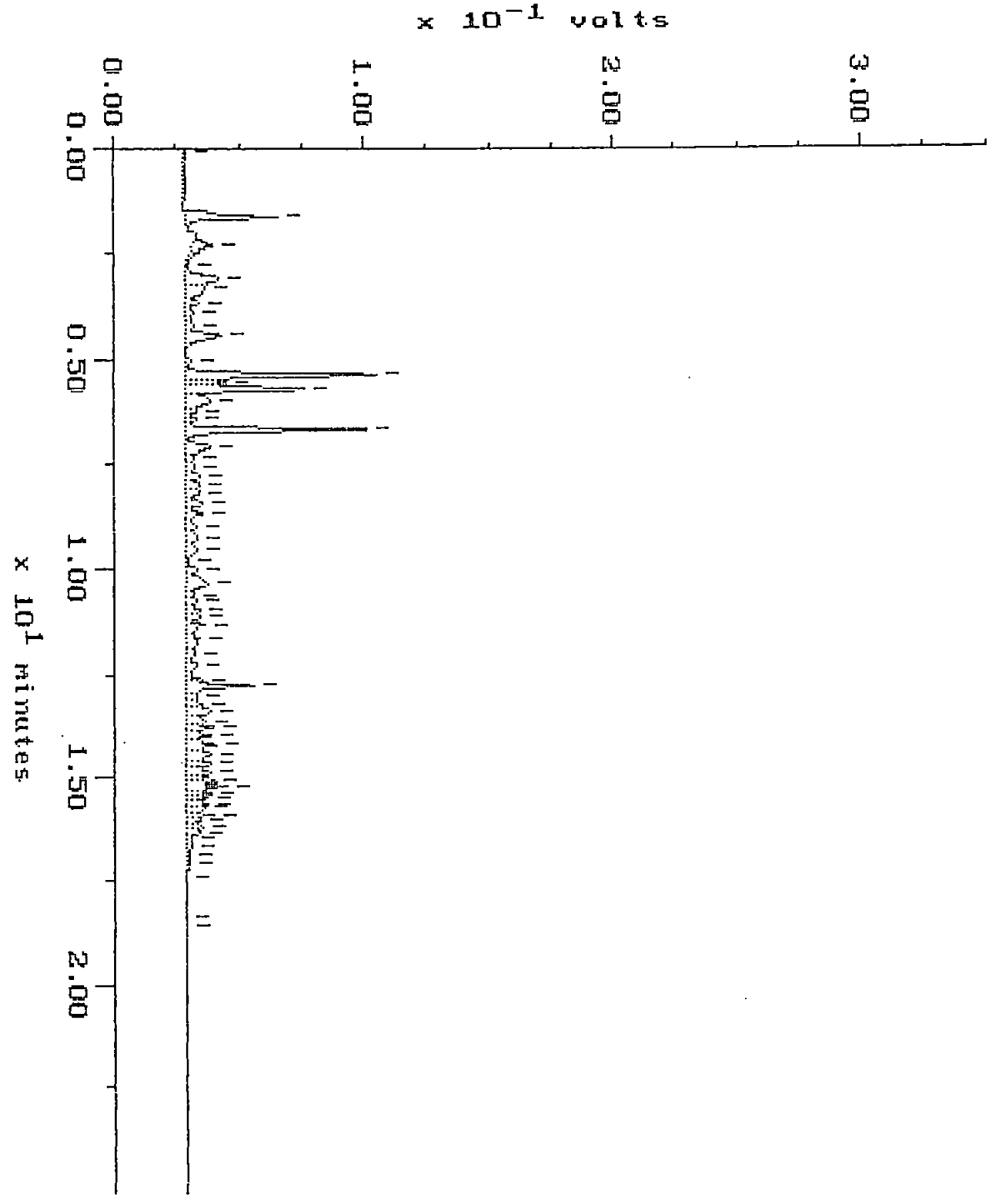
Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
BENZENE	<0.500	N/A	N/A	20.0	19.6	98	19.4	97	1	77-112	20
TOLUENE	2.86	N/A	N/A	20.0	24.4	108	23.0	101	6	72-113	20
TOTAL XYLENES	0.600	N/A	N/A	40.0	44.6	110	42.5	105	5	80-110	20
GASOLINE	<100	<100	NC	1000	1010	101	1050	105	4	58-127	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	101	105	103	76-120
TRIFLUOROTOLUENE	94	95	95	50-150

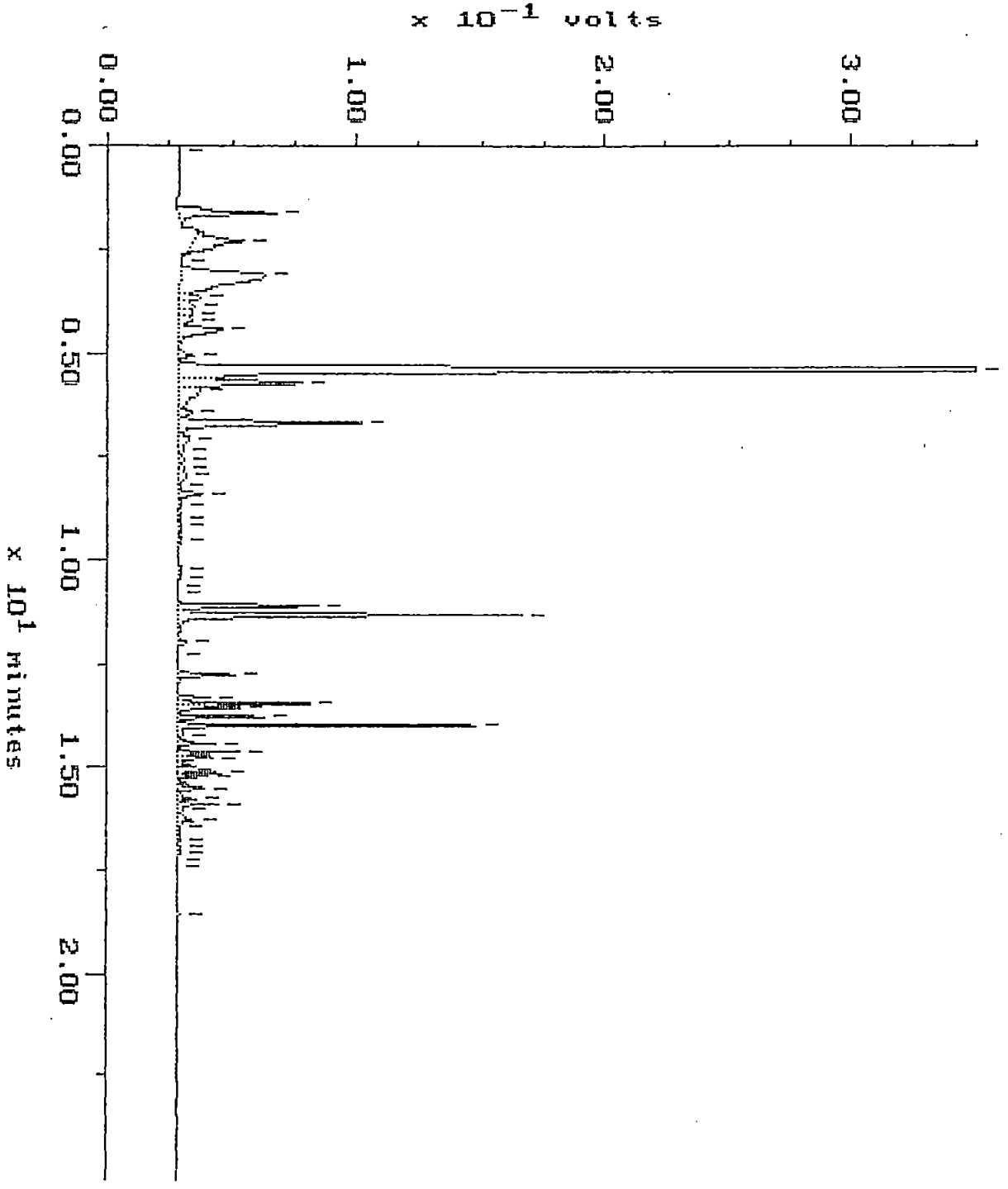
WA DOE WTPH-G

Sample: 9311-230-2 Channel: FID Filename: RB239G27
Acquired: 23-NOV-93 22:32 Method: F:\BRO2\MAXDATA\GLAD\112393GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



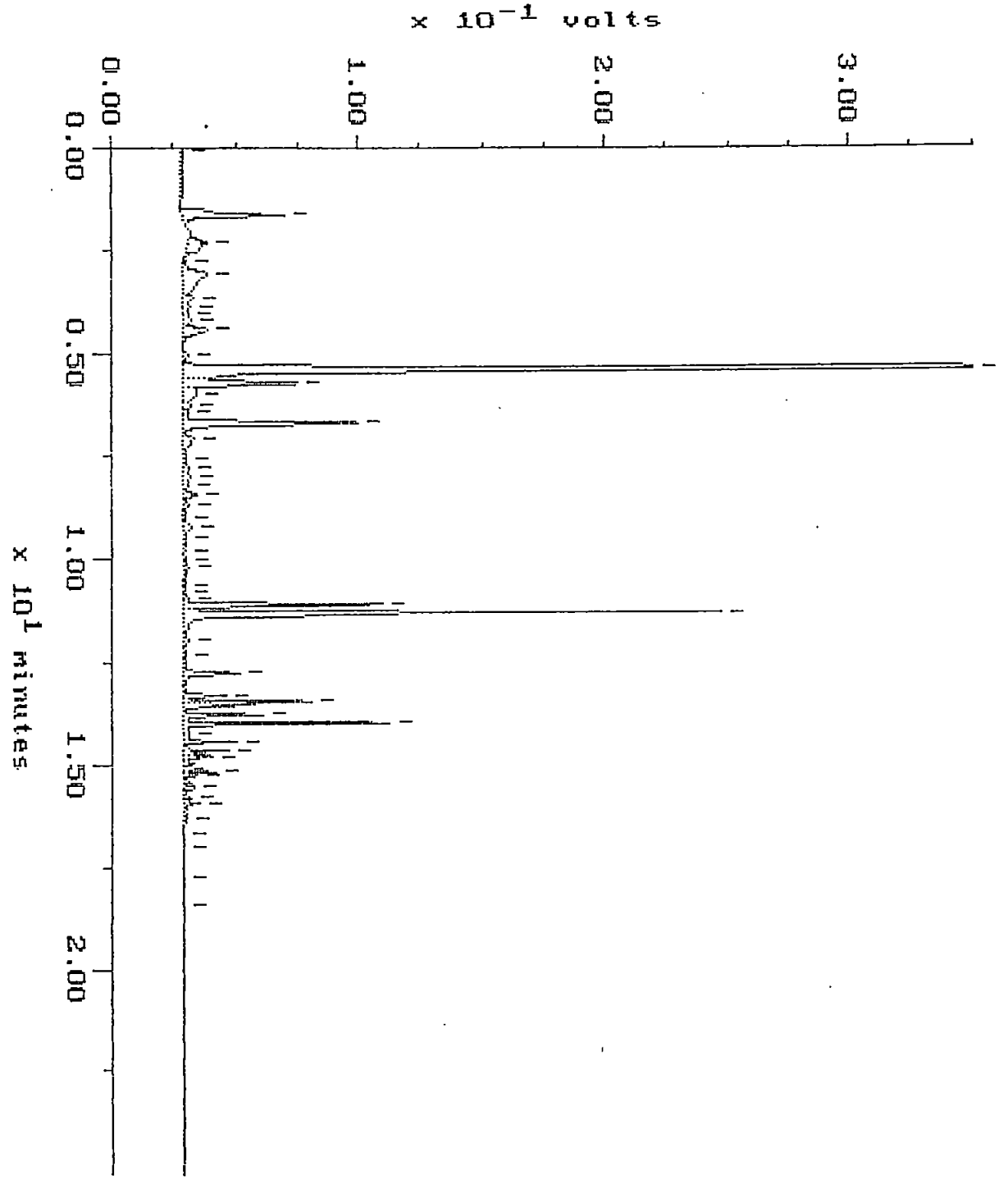
WA DOE WTPH-G

Sample: 9311-230-3 Channel: FID Filename: RB239G28
Acquired: 23-NOV-93 23:01 Method: F:\BR02\MAXDATA\GLAD\112393GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



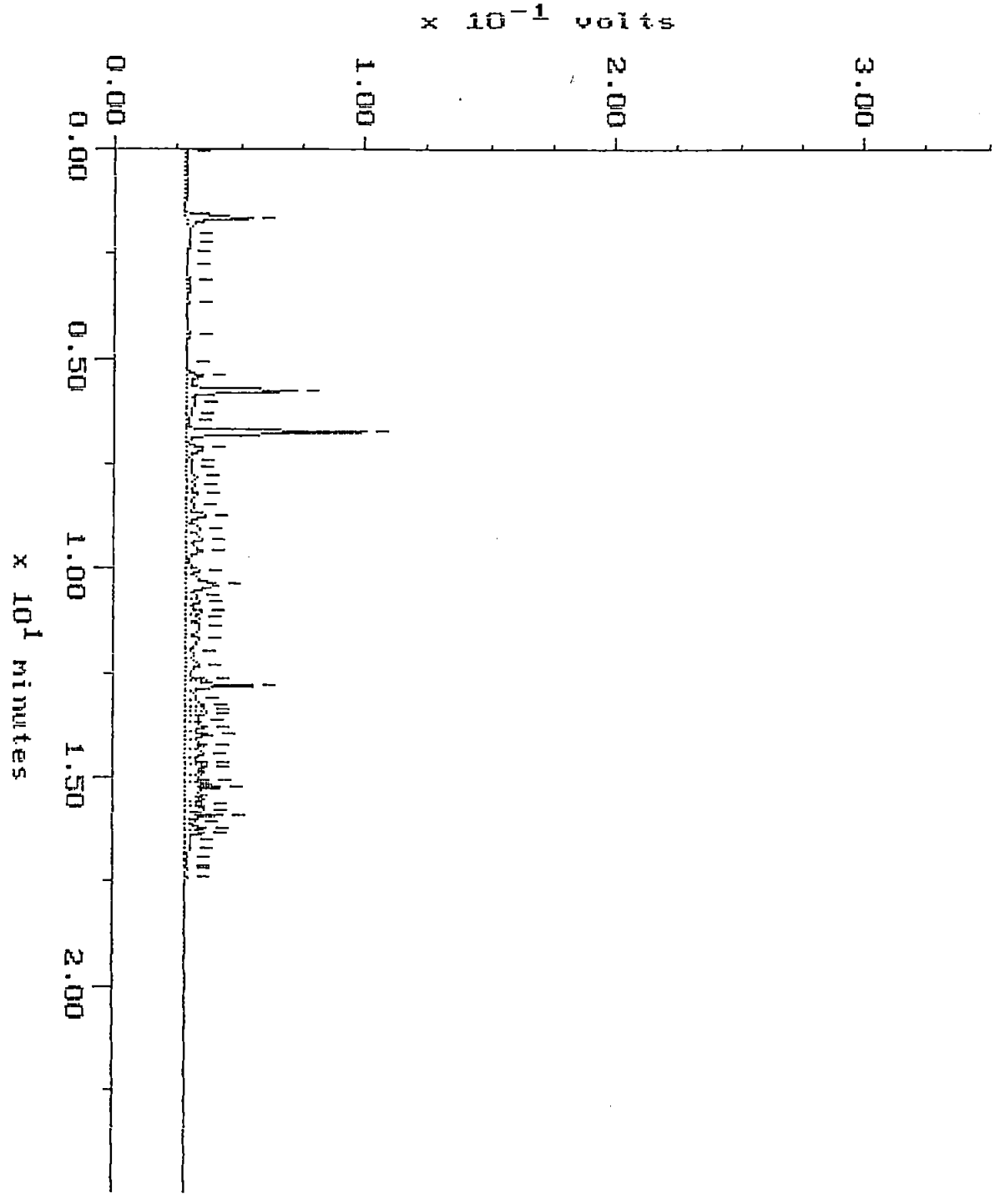
WA DOE WTPH-G

Sample: 9311-230-4 **Channel:** FID **Filename:** RB239G29
Acquired: 23-NOV-93 23:29 **Method:** F:\BRO2\MAXDATA\GLAD\112393GS **Operator:** ATI
Comments: ATI : A COMMITMENT TO QUALITY



WA DOE WTPH-G

Sample: 9311-230-5 Channel: FID Filename: RB239G36
Acquired: 24-NOV-93 2:48 Method: F:\BRO2\MAXDATA\GLAD\112393GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

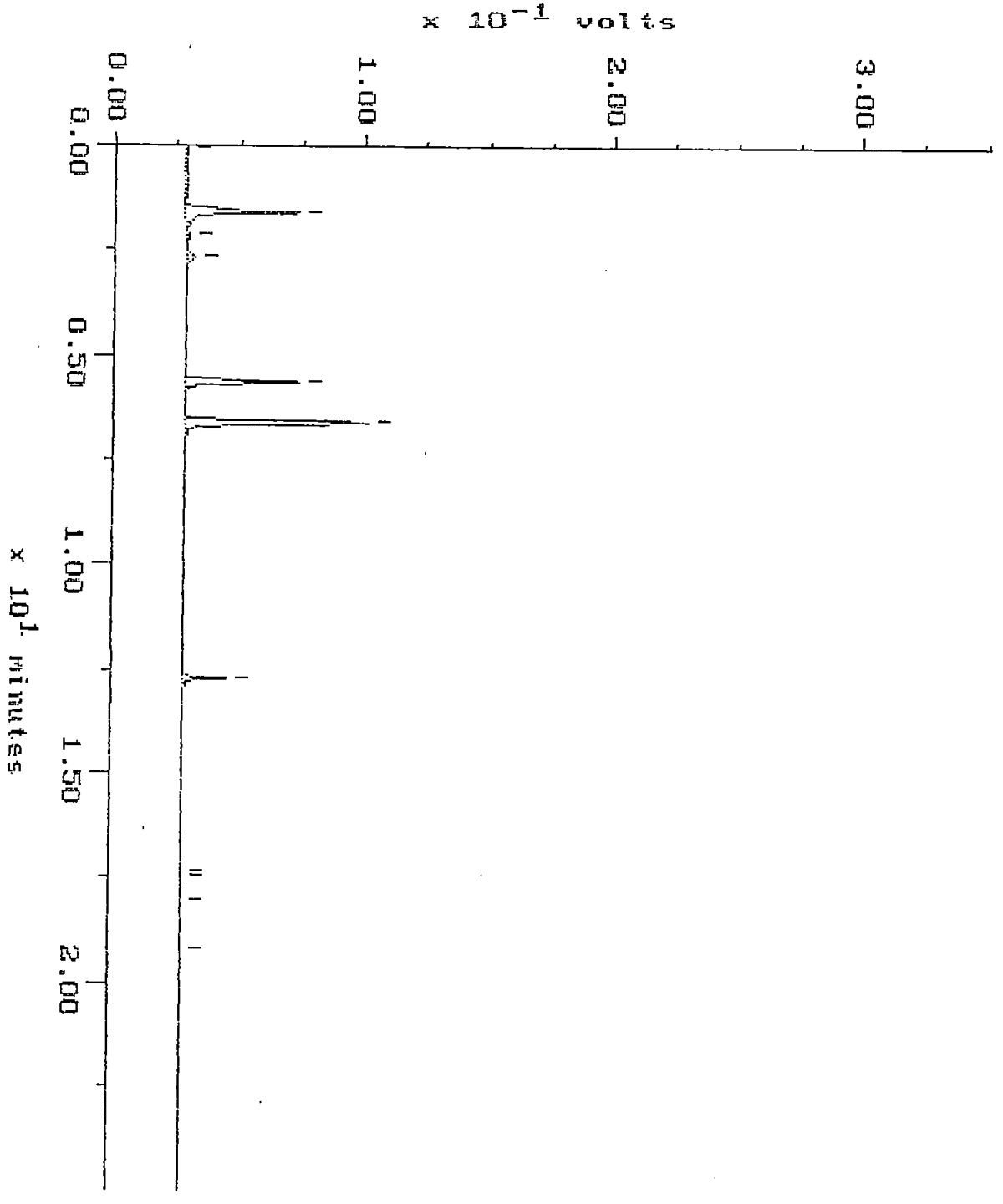


WA DOE WTPH-G

Blank

Sample: WRB 11-22 Channel: FID
Acquired: 22-NOV-93 9:20 Method: F:\BRD2\MAXDATA\GLAD\112293GS
Comments: ATI : A COMMITMENT TO QUALITY

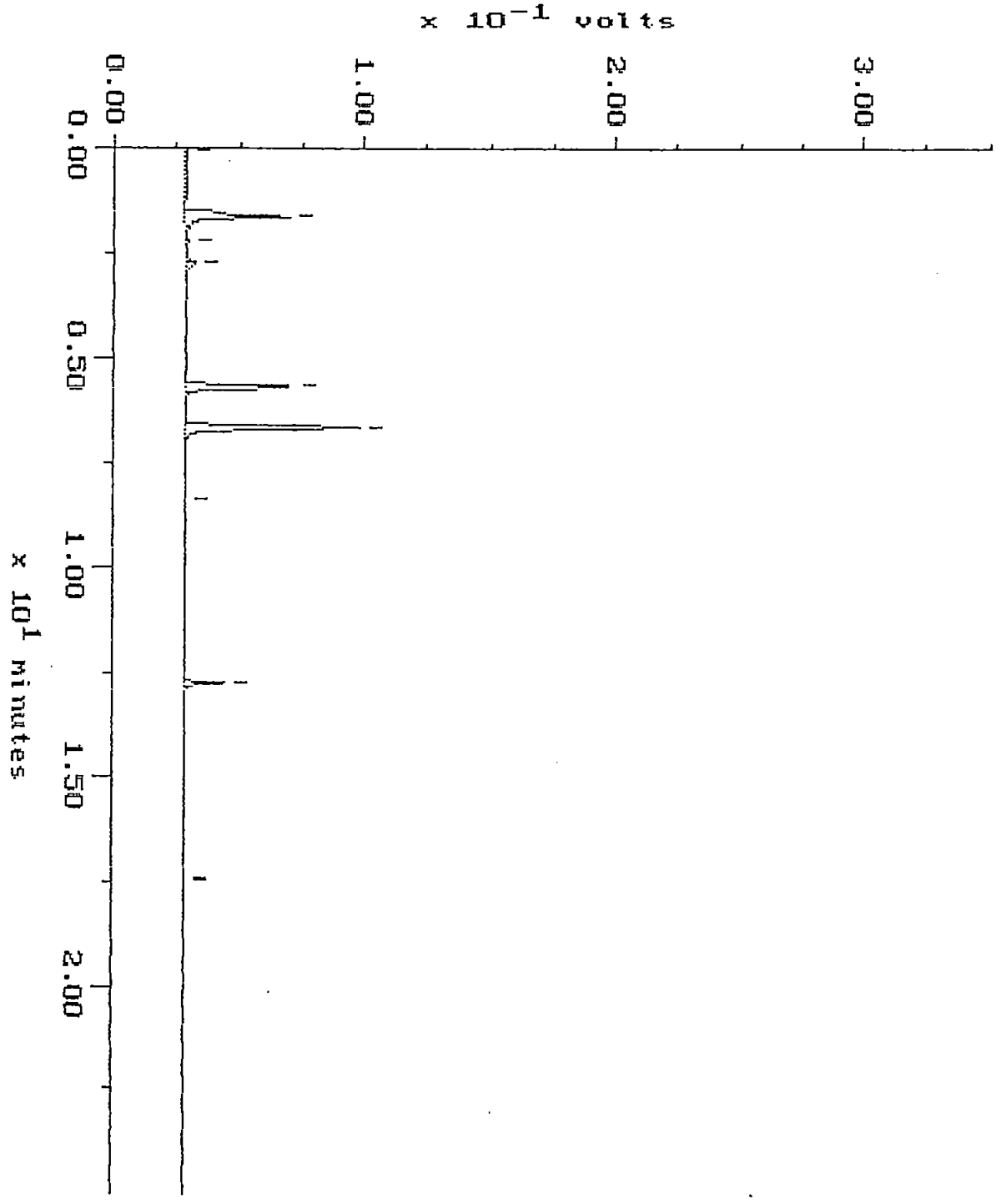
Filename: RB229G03
Operator: ATI



Blank

WA DOE WTPH-G

Sample: WRB 11-23 Channel: FID Filename: RB239603
Acquired: 23-NOV-93 9:46 Method: F:\BRO2\MAXDATA\GLAD\112393GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

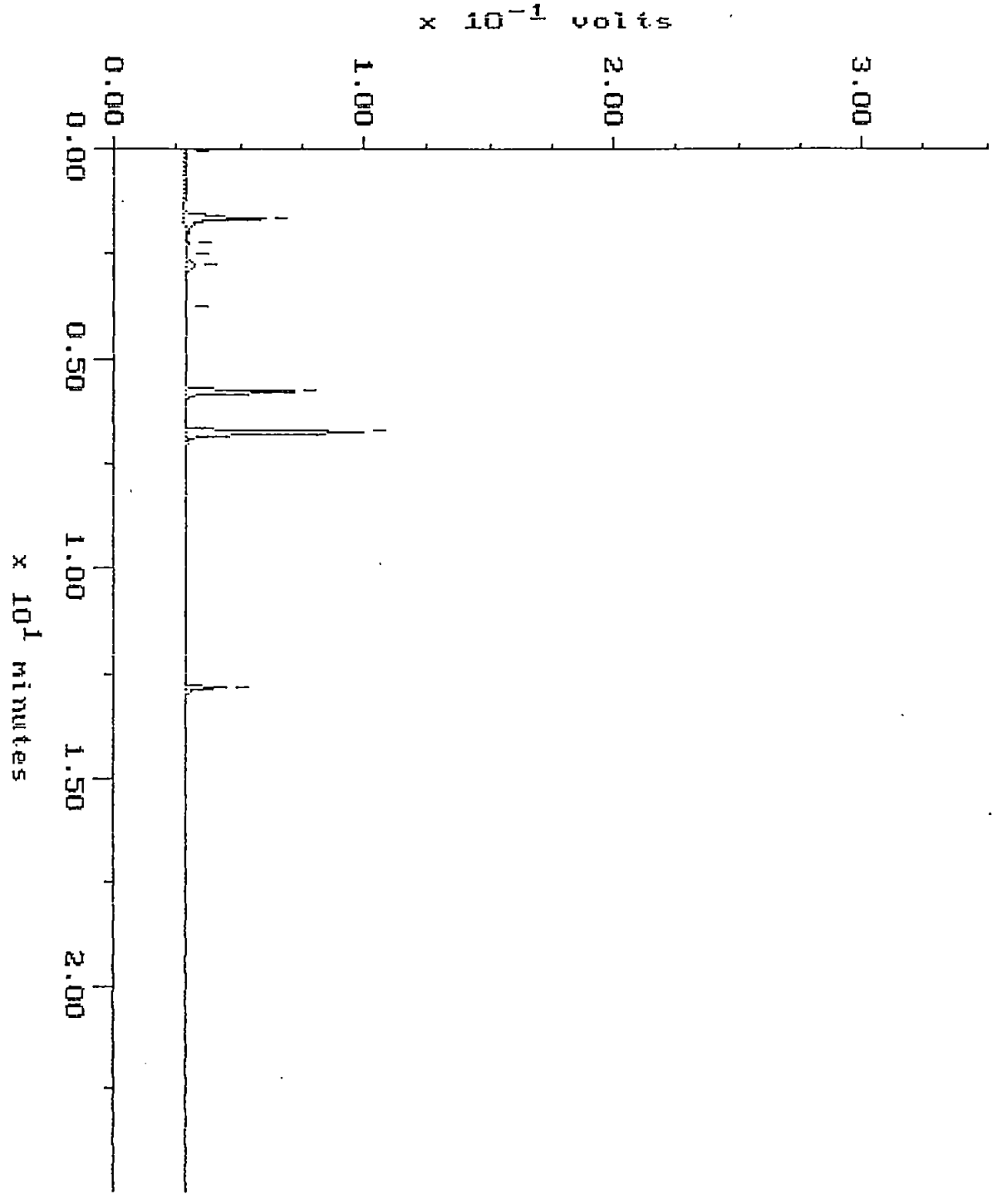


Blank

WA DOE WTPH-G

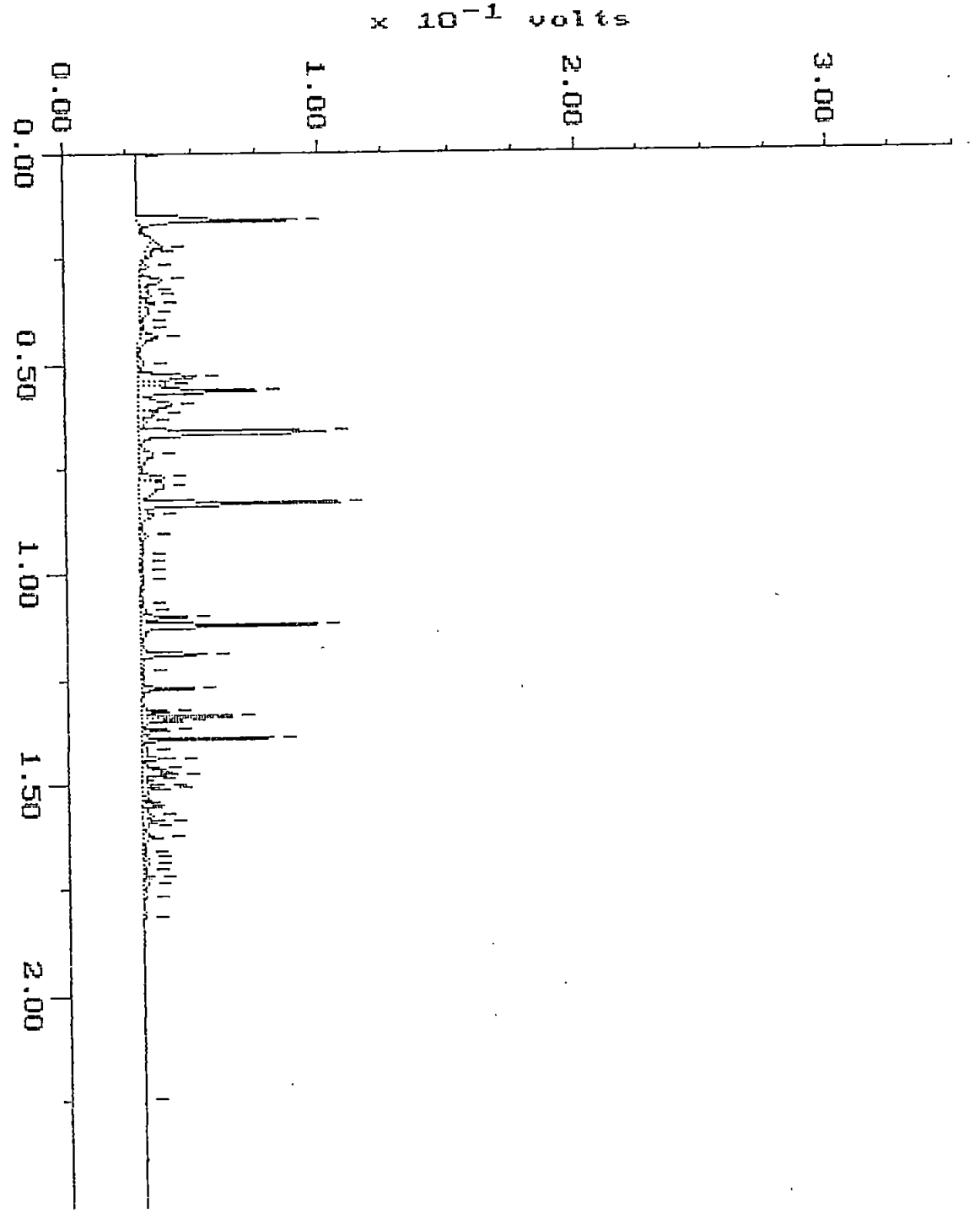
Sample: WRB 11-24 Channel: FID
Acquired: 24-NOV-93 9:28 Method: F:\BRD2\MAXDATA\GLAD\112493GS
Comments: ATI : A COMMITMENT TO QUALITY

Filename: RB249G03
Operator: ATI



Continuing Calibration

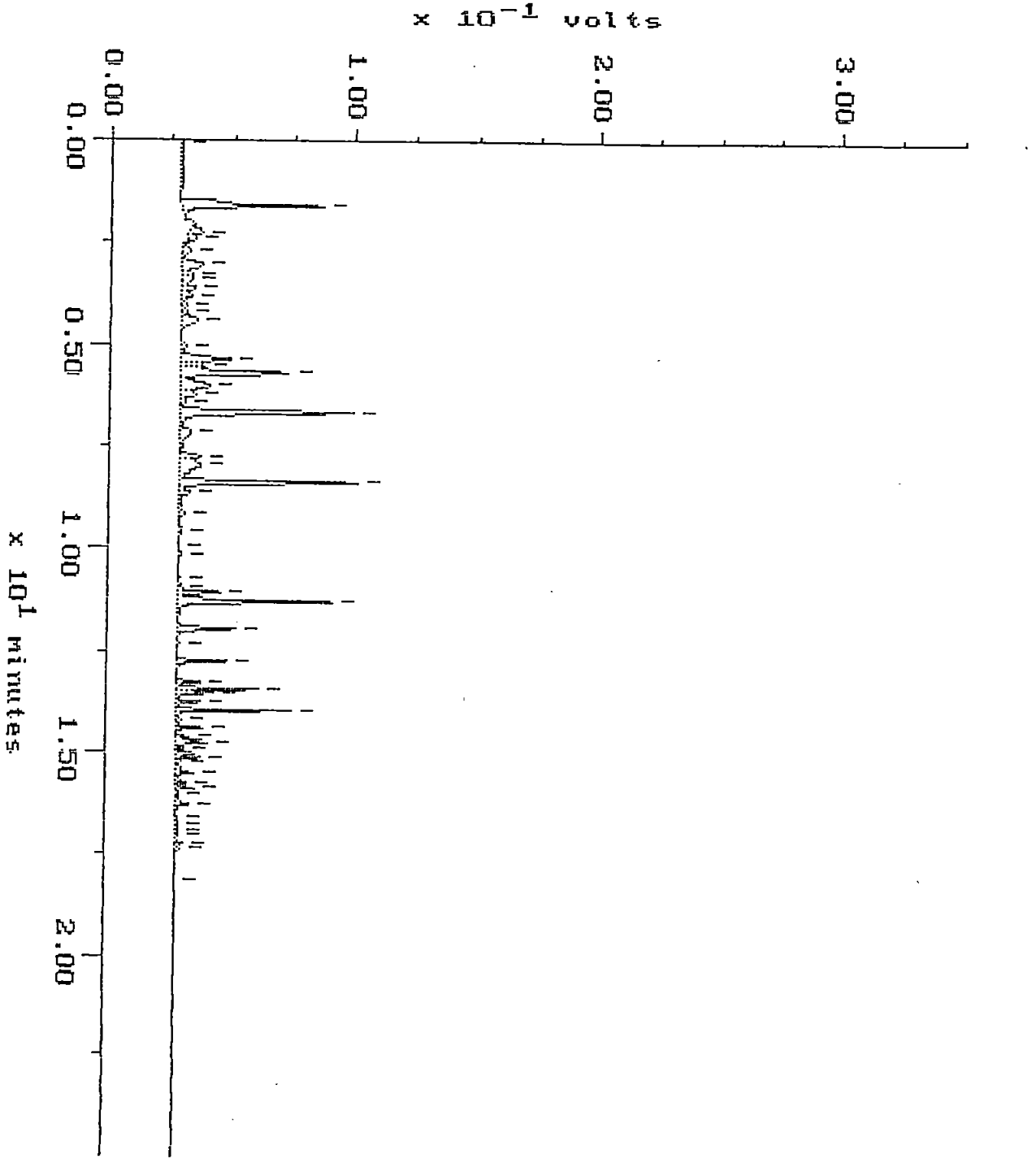
Sample: STD-C 6 Channel: FID Filename: RB229G01
Acquired: 22-NOV-93 8:06 Method: F:\BRO2\MAXDATA\GLAD\11229365 Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



Continuing Calibration

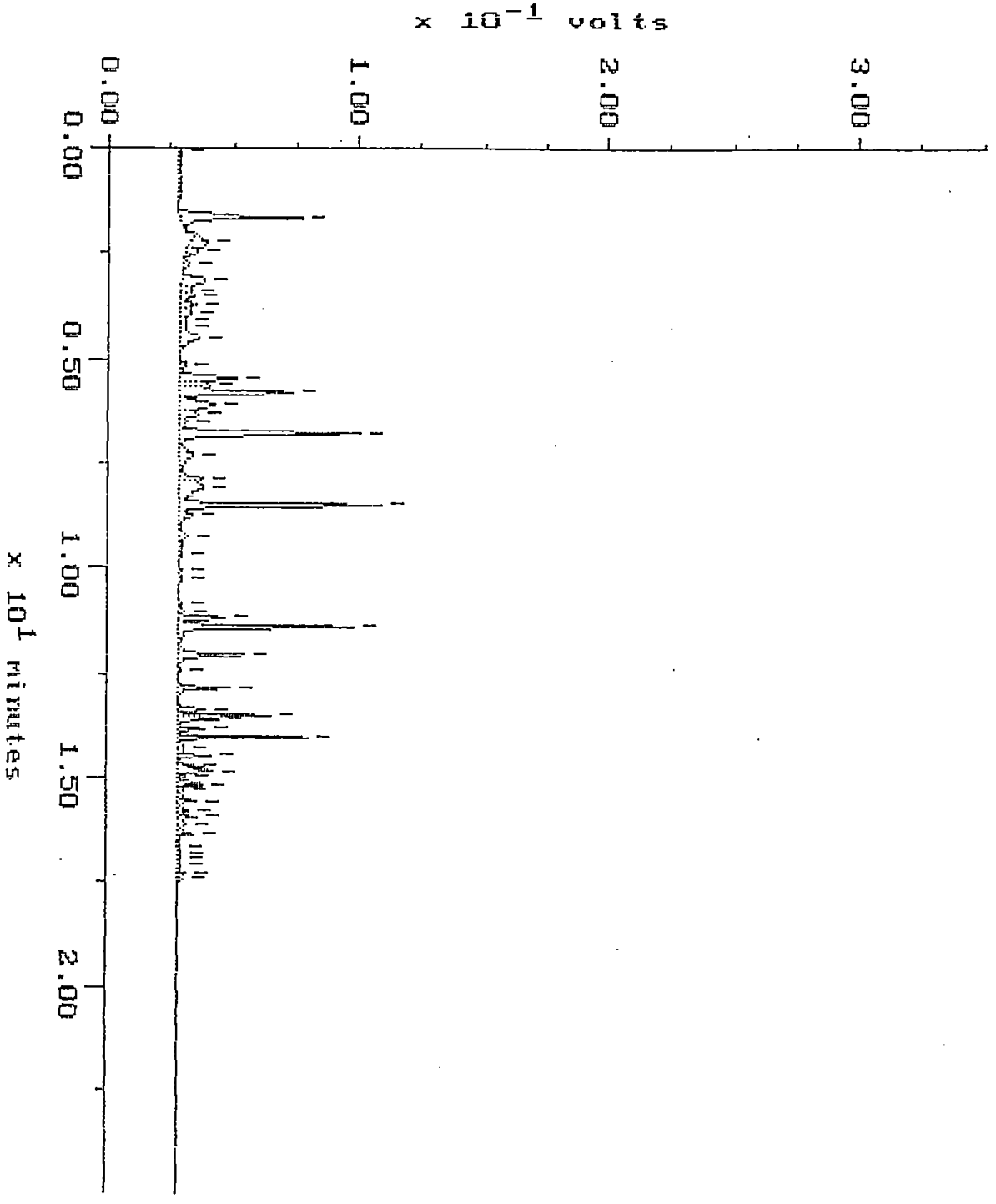
Sample: STD-C 6 Channel: FID
Acquired: 23-NOV-93 8:37 Method: F:\BRG2\MAXDATA\GLAD\112393GS
Comments: ATI : A COMMITMENT TO QUALITY

Filename: RB239601
Operator: ATI



Continuing Calibration

Sample: STD-C G **Channel:** FID **Filename:** RB249G01
Acquired: 24-NOV-93 8:06 **Method:** F:\BRO2\MAXDATA\GLAD\1124936S **Operator:** ATI
Comments: ATI : A COMMITMENT TO QUALITY



x y Lal Rep ar Cor) (/rc or t: No nc -o ,u ay ec

Chevron U.S.A. Inc.
20500 Richmond Beach Drive N.W.
Seattle, WA 98177
FAX (206)546-0531

Chevron Facility Number 6009-0709
Facility Address 4211 Preston - Fall City Rd.
Consultant Project Number
Consultant Name GROUNDWATER TECHNOLOGY, INC.
Address 19033 W. Valley Hwy, Suite D-104, Kent, WA 98032
Project Contact (Name) MARK E. NICHOLS
(Phone) 206 251 5441 (Fax Number) 206 251 8452

Chevron Contact (Name) Keith Kringlen
(Phone) 546-0530
Laboratory Name ANALYTICAL TECHNOLOGIES, INC.
Laboratory Release Number 9436230
Samples Collected by (Name) GENE Josey
Collection Date 11-22-93
Signature Gene Josey

9311-230

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation (Y/N)	Iced (Yes or No)	Analyses To Be Performed: TPH-G/BTEX (8015 mod./8020)	BTEX (8020)	TPH-HCID State:	TPH-G State:	TPH-D State:	TPH Special Instructions	TPH-IR (418.1)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Total and/or Dissolved LEAD State:	Remarks
MW-3	1	2	W	d	12:55	✓	y	✓												
MW-2	2	2	W	d	1:00	✓	y	✓												
MW-5	3	2	W	d	1:05	✓	y	✓												
MW-4	4	2	W	d	1:10	✓	y	✓												
MW-1	5	2	W	d	1:15	✓	y	✓												
TB-LB	6	2	W	d			y	✓												

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Gene Josey	GTI	11.22.93 14:15		ATL-WA	11/22/93 14:15
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
(10 Days)
As Contracted