Chen Northern, Inc.

Consulting Engineers and Scientists

2214 North 4th Avenue
P.O. Box 2601
Tri-Cities, Washington 99302

509 547-1671
509 547-1673 Facsimile

December 2, 1993

Mr. Phil Briggs
Chevron U.S.A. Products Company
P.O. Box 5004
San Ramon, California 94583-0804

DEC 07 '93 PM

Subject: Phase III Excavation Remediation of Petroleum Impacted Soil at Chevron Station 9-3883, 1602 Terrace Heights Road, Yakima, Washington.

Gentlemen:

On September 29, 1993 we received a facsimile from your office approving the removal of impacted soil at Chevron Station 9-3883. Direction was given to address the suspected petroleum impacted soil found on site during the removal of the station canopy and building. We were also instructed to check for petroleum hydrocarbon impact beneath the now accessible, former building site, adjacent to a former dry well site. The existence of a previously noted dark layer of stained soil was also addressed during this operation. These activities supplement the work completed early in 1993, described by the report entitled, "Limited Environmental Assessment for Tank Closure, Chevron Service Station No. 6009-3883, Yakima, Washington", March 1993.

The removal of the station building and canopy, was directed by Mr. Bob Hall, current owner of the property. During the removal, soil suspected of having been impacted by petroleum hydrocarbons, was encountered. Chevron was contacted regarding this situation, who then contacted Chen-Northern to sample and submit the soil for laboratory analysis. Analytical results indicated the presence of petroleum product content over Model Toxic Control Act method A action levels. Chen-Northern was then contacted to oversee removal and disposal of the impacted soil.

On October 5, 1993 we met the excavation contractor, Jeff Larson of Larson Demolition at the site. Ten test pit were excavated around the site to depths from 6 to 14 feet below ground surface (Figure 1). The purpose of the test pits was to delineate location and quantity of hydrocarbon impact at the site. These test pits were inspected visually and screened with a photoionization detector (PID) for the existence of volatile organic constituents. Results of (PID) headspace readings are given in Table 1, submitted with this report. During this process the (PID) indicated the presence of volatile organic constituents in several of the test pits in the north portion of the site. This zone corresponded to the previous location of the pump islands. Excavation ensued in the areas where volatile were detected.

On October 6, 1993 excavation continued pursuing removal of soil impacted by petroleum product. During that process a layer of black soil was encountered. The existence of this soil was referenced in our March 1993 report on the site. The black layer was also noted in test pit 83N, 135W. Volatile organic constituents detected with our (PID) were non-detected or at low levels in this soil. Samples of the black soil were collected at selected locations for laboratory analysis by identification of potential metals and volatile constituents. Conversations with Bob Hall, owner of Hall Chevrolet and current owner of the site, indicated he planned to grade the site to match elevations with the auto dealership to the south. Mr. Hall expressed concern about encountering the layer of black soil. It was decided that by the time Mr. Hall is ready to grade the site, analytical results would be compiled on the black soil, and a decision could be made to remove or not remove this soil.

As part of the scope of work, we were asked to assess the area north of the former dry well under the former building site for the presence of impacted soil. Analytical results from test pit 48N,120W adjacent to the former dry well indicated no remaining petroleum impacted soil remained at this location. Earlier remediation efforts had reached the location of the building and stopped for building stability reasons. It was confirmed that the prior remediation had been successful in removal of impacted soil.

The major portion of the impacted soil, which was removed on October 5th and 6th, came from below the cement canopy supports and adjacent areas. The area below the canopy column foundations was not accessible during prior site activities. The monitor well situated west of the north canopy support was left intact. Excavation continued at the site until only traces of volatile organic constituents were detected in (PID) headspace measurements. Soils were segregated by headspace screening, visual analysis and odor. Non-impacted soil was stockpiled at the sides of the excavation and later used as backfill. Excavated soils, that appeared to be impacted, were placed on, and covered with plastic sheeting in the southeast corner of the site (Figure 1). When through headspace (PID), visual and odor analysis the site appeared clean, samples were taken throughout the base and sidewalls of the excavation.

The samples collected from the excavation were submitted for analysis to Analytical Technologies, Inc., in Renton, Washington. The analytical results are included as an addendum to this letter. Analytical testing included benzene, ethylbenzene, toluene, and xylene according to EPA method 8020, total petroleum hydrocarbon as gasoline and diesel by EPA method 8015, total petroleum hydrocarbon by EPA method 418.1, volatile by EPA method 8240 and metals.

Chen-Northern was directed to coordinate disposal of the impacted soil stockpile at the Rebanco site, in Klickitat County, Washington. Approximately 429 cubic yards of impacted material was excavated on site. Samples of the stockpiled soil were analyzed for benzene, ethylbenzene, toluene, and xylenes, according to EPA method 8020, total petroleum hydrocarbon as gasoline, by EPA method 8015, PCB's, by EPA method 8080, and total petroleum hydrocarbons, by EPA method 418.1. Laboratory analysis followed Rebanco's request for analytical procedure during disposal of soil from that site earlier in 1993. Yakima County Health Department officials

indicated coordination through their office would not be required for disposal activities at the Rebanco site. Timely disposal of this material is being pursued.

Analytical results on all sample parameters tested indicated results less than Model Toxic Control Act method A levels. Laboratory analytical results are included as an attachment to this report.

Based on our observations during remediation, and analytical results from samples taken at the site, this site appears to have been remediated to within the guidelines of Washington State Department of Ecology, Model Toxic Control Act method A action levels. We recommended disposing of the 429 cubic yard impacted soil stockpile as planned allowing site grading to proceed. Analytical results indicate the black soil layer was not impacted, consequently removal of this material does not appear necessary.

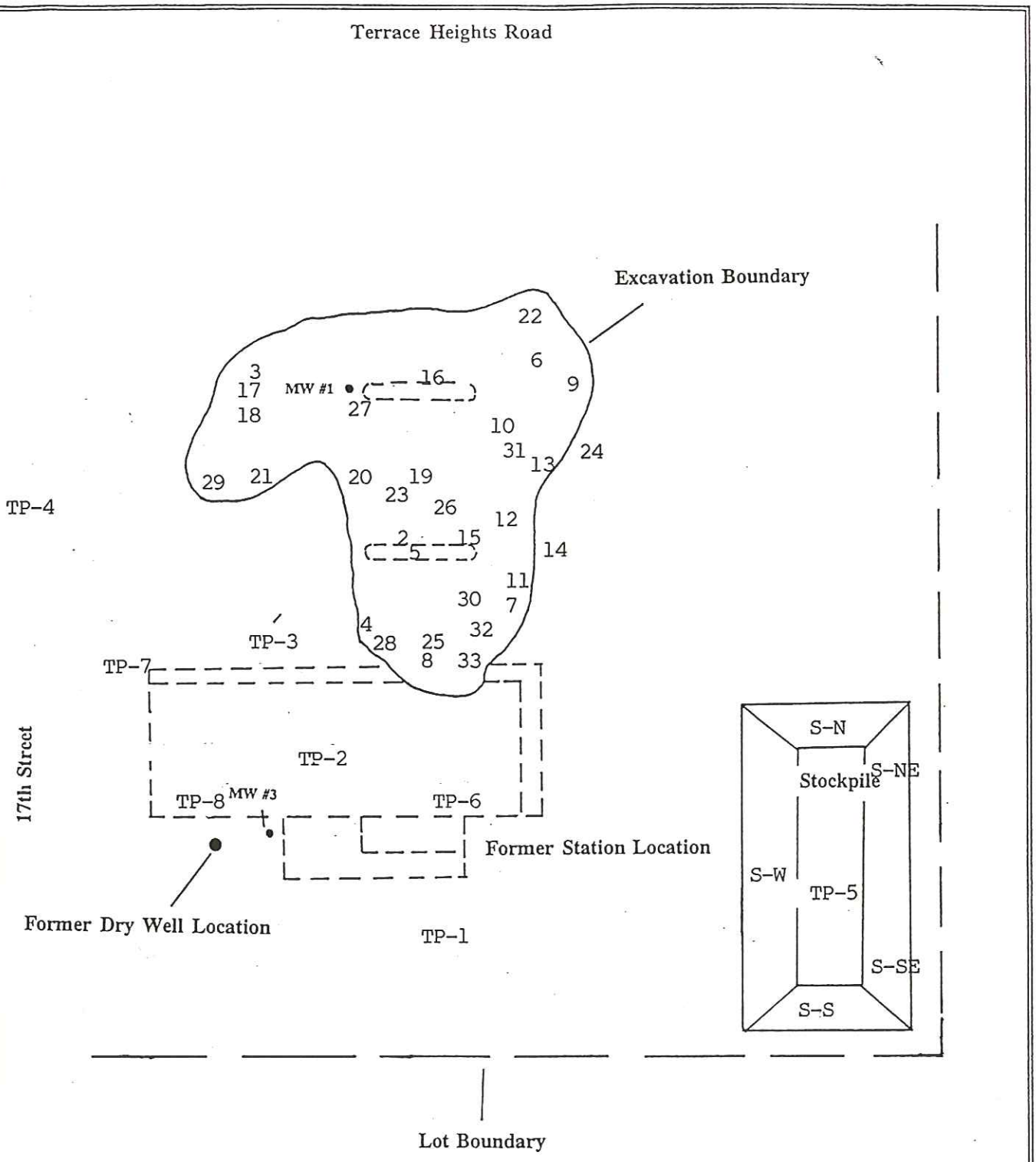
If you have any questions regarding the content of this report, please feel free to contact us at your convenience. We have appreciated the opportunity to work on this project and look forward to its successful conclusion.

Respectfully submitted,
Chen-Northern, Inc.

Gerald Harper for
Paul Danielson
Project Manager

Gerald D. Harper
Gerald G. Harper
Division Manager

ATTACHMENTS



LEGEND

3 - Sample Locations
TP - Test Pit Locations
S - Stockpile Sample Location

CHEN-NORTHERN, INC. JOB NO. 192-2129-1	SITE PLAN CHEVRON STATION NO. 9-3883 YAKIMA, WASHINGTON			
	DRAWN BY: M.B.	CHECKED BY: G.H.	SCALE: 1" = 30'	FIGURE: 1

TABLE 1
CHEVRON YAKIMA STATION NO. 9-3883
LABORATORY & HEADSPACE RESULTS

Sample No.	TPH 418.1	TPH-D	Benzene	Ethylbenzen	Toluene	Xylenes	TPH-G	PCB's	ppm Headspace
TP-1									0
TP-2									0
TP-3									0
TP-4									0
TP-5									0
TP-6									0
TP-7									0
TP-8*	<21	<11							-
2		<11					<5		-
3			<0.032	<0.032	<0.032	<0.032	<6		-
4	84	59							-
5			<0.028	<0.028	<0.028	<0.028	<6		2.2
6			<0.026	<0.026	<0.026	<0.026	<5		0
7			<0.026	<0.026	<0.026	<0.026	<5		0
8			<0.029	<0.029	<0.029	<0.029	<6		2.1
9									2.8
10		<10					<5		1.6
11									0
12									0
13									2.8

TABLE 1
CHEVRON YAKIMA STATION NO. 9-3883
LABORATORY & HEADSPACE RESULTS

Sample No.	TPH 418.1	TPH-D	Benzene	Ethylbenzen	Toluene	Xylenes	TPH-G	PCB's	ppm Headspace
14									0
15									0
16									0
17									11.9
18									44.7
19									11.3
20									1.7
21									1.5
22									20.4
23									60.3
24									2.0
25									27.9
26									4.5
27									4.1
28									5.1
29									5.3
30									2.9
31									0
32									0
33									0

TABLE 1
CHEVRON YAKIMA STATION NO. 9-3883
LABORATORY & HEADSPACE RESULTS

Sample No.	TPH 418.1	TPH-D	Benzene	Ethylbenzen	Toluene	Xylenes	TPH-G	PCB's	ppm Headspace
S-N	76								-
S-NE								All <0.037	-
S-W			<0.028	<0.028	0.034	0.050	7		-
S-SE			<0.027	0.030	0.095	0.24	20		-
S-S			<0.028	<0.028	0.095	0.25	13		-

* EPA 8240 and Metals results not listed, see lab results

Note: TP= Test Pit Samples
S= Stockpile Samples

NOV 15 '93 J.M.M.

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

ATI I.D. # 9310-089

October 22, 1993

Chen-Northern, Inc.
2214 N. 4th Ave.
Pasco WA 99301

Attention : Paul Danielson

Project Number : 192-2129-1

Project Name : Chevron Station 9-3883

Dear Mr. Danielson:

On October 8, 1993, Analytical Technologies, Inc. (ATI), received 14 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.

The analysis for volatile organics and the related moisture analysis were performed by ATI, San Diego, California. Their report is included as an appendix.

Please note that this report has a summary report for the BETX/WA DOE WTPH-G and WA DOE WTPH-D analyses. If you have any questions, please call.

Sincerely,

Donna M. McKinney
Senior Project Manager

DM/hal/elf

Enclosure

APPENDIX

Analytical Technologies, Inc.

ATI I.D. # 9310-089

SAMPLE CROSS REFERENCE SHEET

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

ATI #	CLIENT DESCRIPTION	DATE SAMPLED	MATRIX
9310-089-1	110N 105W-7	10/06/93	SOIL
9310-089-2	130N 95W-7	10/06/93	SOIL
9310-089-3	90N 105W-6	10/06/93	SOIL
9310-089-4	110N 115W-5	10/06/93	SOIL
9310-089-5	140N 140W-8	10/06/93	SOIL
9310-089-6	92N 80W-7	10/06/93	SOIL
9310-089-7	140N 80W-8	10/06/93	SOIL
9310-089-8	48N 120W-14.5	10/06/93	SOIL
9310-089-9	95N 115W-5	10/06/93	SOIL
9310-089-10	STOCKPILE SE	10/06/93	SOIL
9310-089-11	STOCKPILE WEST	10/06/93	SOIL
9310-089-12	STOCKPILE NORTH	10/06/93	SOIL
9310-089-13	STOCKPILE NE	10/06/93	SOIL
9310-089-14	STOCKPILE SOUTH	10/06/93	SOIL

----- TOTALS -----

MATRIX	# SAMPLES
SOIL	14

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. # 9310-089

ANALYTICAL SCHEDULE

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

ANALYSIS	TECHNIQUE	REFERENCE	LAB
VOLATILE COMPOUNDS	GCMS	EPA 8240	SD
POLYCHLORINATED BIPHENYLS (PCBs)	GC/ECD	EPA 8080	R
BETX	GC/PID	EPA 8020	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-G	R
TOTAL PETROLEUM HYDROCARBONS	GC/FID	WA DOE WTPH-D	R
PETROLEUM HYDROCARBONS	IR	WA DOE WPTH-418.1 MODIFIED	R
ANTIMONY	ICAP	EPA 6010	R
ARSENIC	AA/GF	EPA 7060	R
BERYLLIUM	ICAP	EPA 6010	R
CADMIUM	ICAP	EPA 6010	R
CHROMIUM	ICAP	EPA 6010	R
COPPER	ICAP	EPA 6010	R
LEAD	ICAP	EPA 6010	R
MERCURY	AA/COLD VAPOR	EPA 7471	R
NICKEL	ICAP	EPA 6010	R
SELENIUM	AA/GF	EPA 7740	R
SILVER	ICAP	EPA 6010	R
THALLIUM	AA/GF	EPA 7841	R
ZINC	ICAP	EPA 6010	R

CONTINUED ON NEXT PAGE

Analytical Technologies, Inc.

ATI I.D. # 9310-089

ANALYTICAL SCHEDULE
CONTINUED

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

ANALYSIS	TECHNIQUE	REFERENCE	LAB
MOISTURE	GRAVIMETRIC	CLP SOW ILM01.0	R

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

Analytical Technologies, Inc.

ATI I.D. # 9310-089

CASE NARRATIVE

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

CASE NARRATIVE: POLYCHLORINATED BIPHENYLS (PCBs) ANALYSIS

One (1) soil sample was received by ATI on October 8, 1993, for the analysis of polychlorinated biphenyls (PCBs).

The surrogate recovery of sample 9310-089-13 (Stockpile NE) was out of limits. The sample was reextracted. The surrogate recovery was within limits in the reextracted sample. The results from the reextracted analysis are reported.

All other corresponding quality assurance and quality control results defined as blank spike (BS), matrix spike/matrix spike duplicate (MS/MSD), and method blank were within the established control limits.

Analytical Technologies, Inc.

ATI I.D. # 9310-089 RE

PCB ANALYSIS
DATA SUMMARY

CLIENT	: CHEN-NORTHERN, INC.	DATE SAMPLED	: N/A
PROJECT #	: 192-2129-1	DATE RECEIVED	: N/A
PROJECT NAME	: CHEVRON STATION 9-3883	DATE EXTRACTED	: 10/15/93
CLIENT I.D.	: METHOD BLANK	DATE ANALYZED	: 10/18/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8080	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PCB 1016	<0.033
PCB 1221	<0.033
PCB 1232	<0.033
PCB 1242	<0.033
PCB 1248	<0.033
PCB 1254	<0.033
PCB 1260	<0.033

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL	120	52 - 125
DIBUTYLCHLORENDATE	69	24 - 137

RE = Reanalysis.

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089-13 RE

PCB ANALYSIS
DATA SUMMARY

CLIENT	: CHEN-NORTHERN, INC.	DATE SAMPLED	: 10/06/93
PROJECT #	: 192-2129-1	DATE RECEIVED	: 10/08/93
PROJECT NAME	: CHEVRON STATION 9-3883	DATE EXTRACTED	: 10/15/93
CLIENT I.D.	: STOCKPILE NE	DATE ANALYZED	: 10/18/93
SAMPLE MATRIX	: SOIL	UNITS	: mg/Kg
EPA METHOD	: 8080	DILUTION FACTOR	: 1

RESULTS ARE CORRECTED FOR MOISTURE CONTENT

COMPOUNDS	RESULTS
PCB 1016	<0.037
PCB 1221	<0.037
PCB 1232	<0.037
PCB 1242	<0.037
PCB 1248	<0.037
PCB 1254	<0.037
PCB 1260	<0.037

SURROGATE PERCENT RECOVERY		LIMITS
DECACHLOROBIPHENYL	113	52 - 125
DIBUTYLCHLORENDATE	65	24 - 137

RE = Reanalysis.

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089 RE

PCB ANALYSIS
QUALITY CONTROL DATA

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883
SAMPLE MATRIX : SOIL
EPA METHOD : 8080

SAMPLE I.D. # : BLANK
DATE EXTRACTED : 10/15/93
DATE ANALYZED : 10/18/93
UNITS : mg/Kg

COMPOUNDS	SAMPLE RESULT	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED SAMPLE	DUP. % REC.	RPD
PCB 1260	<0.0333	0.333	0.267	80	N/A	N/A	N/A

CONTROL LIMITS	% REC.	RPD
PCB 1260	74 - 120	31

SURROGATE RECOVERIES	SPIKE	DUP. SPIKE	LIMITS
DECACHLOROBIPHENYL	120	N/A	52 - 125
DIBUTYLCHLORENDATE	59	N/A	24 - 137

RE = Reanalysis.

Analytical**Technologies,** Inc.

ATI I.D. # 9310-089

TOTAL PETROLEUM HYDROCARBONS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883
METHOD : WA DOE WTPH-418.1 MODIFIED
DATE EXTRACTED : 10/08/93
DATE ANALYZED : 10/08/93
UNITS : mg/Kg
SAMPLE MATRIX : SOIL
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	TOTAL PETROLEUM HYDROCARBONS	TOTAL PETROLEUM HYDROCARBONS*
9310-089-8	48N 120W-14.5	<21	-
9310-089-9	95N 115W-5	84	81
9310-089-12	STOCKPILE NORTH	76	73
METHOD BLANK	-	<20	<20

* Reanalyzed after second aliquot of silica gel added.

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT : CHEN-NORTHERN, INC.
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883
METHOD : WA DOE WTPH-418.1 MODIFIED
SAMPLE MATRIX : SOIL

SAMPLE I.D. # : 9310-039-6
DATE EXTRACTED : 10/08/93
DATE ANALYZED : 10/08/93
UNITS : mg/Kg

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
PETROLEUM HYDROCARBONS (MOTOR OIL)	<20	<20	NC	N/A	N/A	N/A	N/A	N/A	N/A

NC = Not Calculable.

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: CHEN-NORTHERN, INC.	SAMPLE I.D. #	: 9310-039-1
PROJECT #	: 192-2129-1	DATE EXTRACTED	: 10/08/93
PROJECT NAME	: CHEVRON STATION 9-3883	DATE ANALYZED	: 10/08/93
METHOD	: WA DOE WTPH-418.1 MODIFIED	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
PETROLEUM HYDROCARBONS (MOTOR OIL)	<20	<20	NC	400	466	117	473	118	1

NC = Not Calculable.

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

TOTAL PETROLEUM HYDROCARBONS
QUALITY CONTROL DATA

CLIENT	: CHEN-NORTHERN, INC.	SAMPLE I.D. #	: BLANK
PROJECT #	: 192-2129-1	DATE EXTRACTED	: 10/08/93
PROJECT NAME	: CHEVRON STATION 9-3883	DATE ANALYZED	: 10/08/93
METHOD	: WA DOE WTPH-418.1 MODIFIED	UNITS	: mg/Kg
SAMPLE MATRIX	: SOIL		

COMPOUND	SAMPLE RESULT	SAMPLE DUP. RESULT	RPD	SPIKE ADDED	SPIKED RESULT	% REC.	DUP. SPIKED RESULT	DUP. % REC.	RPD
PETROLEUM HYDROCARBONS (MOTOR OIL)	<20	N/A	N/A	400	474	119	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spiked Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Spike Result} - \text{Dup. Spike Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 9310-089

METALS ANALYSIS

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

ELEMENT	DATE PREPARED	DATE ANALYZED
ANTIMONY	10/13/93	10/14/93
ARSENIC	10/11/93	10/14/93
BERYLLIUM	10/13/93	10/14/93
CADMIUM	10/13/93	10/14/93
CHROMIUM	10/13/93	10/14/93
COPPER	10/13/93	10/14/93
LEAD	10/13/93	10/14/93
MERCURY	10/12/93	10/13/93
NICKEL	10/13/93	10/14/93
SELENIUM	10/11/93	10/12/93
SILVER	10/13/93	10/14/93
THALLIUM	10/11/93	10/12/93
ZINC	10/13/93	10/14/93

Analytical Technologies, Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	ANTIMONY	ARSENIC	BERYLLIUM
9310-089-9	95N 115W-5	<3.2	3.8	<0.32
METHOD BLANK	-	<2.5	<0.25	<0.25

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	CADMIUM	CHROMIUM	COPPER
9310-089-9	95N 115W-5	<0.32	13	27
METHOD BLANK	-	<0.25	<0.50	<0.50

Analytical Technologies, Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	LEAD	MERCURY	NICKEL
9310-089-9	95N 115W-5	33	<0.13	17
METHOD BLANK	-	<1.5	<0.10	<0.50

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	SELENIUM	SILVER	THALLIUM
9310-089-9	95N 115W-5	<0.31	<0.32	<0.31
METHOD BLANK	-	<0.25	<0.25	<0.25

Analytical Technologies, Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg
RESULTS ARE CORRECTED FOR MOISTURE CONTENT

ATI I.D. #	CLIENT I.D.	ZINC
9310-089-9	95N 115W-5	73
METHOD BLANK	-	<0.50

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
QUALITY CONTROL DATA

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg

ELEMENT	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
ANTIMONY	9310-086-7	<3.0	<3.0	NC	11.9	59.8	20F
ANTIMONY	BLANK	<2.5	N/A	N/A	43.1	50.0	86
ARSENIC	9310-089-6	3.8	3.5	8	6.42	2.46	107
ARSENIC	BLANK	<0.25	N/A	N/A	2.04	2.00	102
BERYLLIUM	9310-086-7	0.57	0.53	7	51.0	59.8	84
BERYLLIUM	BLANK	<0.25	N/A	N/A	43.0	50.0	86
CADMIUM	9310-086-7	<1.5	<1.5	NC	50.8	59.8	85
CADMIUM	BLANK	<0.25	N/A	N/A	46.5	50.0	93
CHROMIUM	9310-086-7	7.7	6.6	15	55.9	59.8	81
CHROMIUM	BLANK	<0.50	N/A	N/A	43.9	50.0	88
COPPER	9310-086-7	30	30	0	80.9	59.8	85
COPPER	BLANK	<0.50	N/A	N/A	47.5	50.0	95
LEAD	9310-086-7	3.0	3.8	24	56.8	59.8	G
LEAD	BLANK	<1.5	N/A	N/A	45.2	50.0	90
MERCURY	9310-014-5	<0.12	<0.12	NC	0.647	0.605	107
MERCURY	BLANK	<0.10	N/A	N/A	0.525	0.500	105
NICKEL	9310-086-7	10	10	0	56.5	59.8	78
NICKEL	BLANK	<0.50	N/A	N/A	43.4	50.0	87
SELENIUM	9310-089-9	<0.31	<0.30	NC	0.913	1.54	59
SELENIUM	BLANK	<0.25	N/A	N/A	1.27	1.25	102
SILVER	9310-086-7	<0.30	<0.30	NC	54.5	59.8	91
SILVER	BLANK	<0.25	N/A	N/A	46.6	50.0	93
THALLIUM	9310-089-9	<0.31	<0.30	NC	0.800	1.54	52F
THALLIUM	BLANK	<0.25	N/A	N/A	1.19	1.25	95

NC = Not Calculable.
F = Out of limits due to matrix interference.
G = Out of limits due to high levels of target analytes in sample.

CONTINUED ON NEXT PAGE

Analytical Technologies, Inc.

ATI I.D. # 9310-089

METALS ANALYSIS
QUALITY CONTROL DATA
CONTINUED

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : mg/Kg

ELEMENT	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
ZINC	9310-086-7	46	41	11	97.3	59.8	86
ZINC	BLANK	<0.50	N/A	N/A	45.6	50.0	91

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

Analytical Technologies, Inc.

ATI I.D. # 9310-089

GENERAL CHEMISTRY ANALYSIS

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883

PARAMETER	DATE ANALYZED
MOISTURE (SAMPLES -8, -9, -12, -13)	10/08/93
MOISTURE (SAMPLES -1 THROUGH -7, -10, -11, -14)	10/11/93

Analytical Technologies, Inc.

ATI I.D. # 9310-089

GENERAL CHEMISTRY ANALYSIS
DATA SUMMARY

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : %

ATI I.D. #	CLIENT I.D.	MOISTURE
9310-089-1	110N 105W-7	5.7
9310-089-2	130N 95W-7	4.2
9310-089-3	90N 105W-6	14
9310-089-4	110N 115W-5	9.1
9310-089-5	140N 140W-8	21
9310-089-6	92N 80W-7	4.1
9310-089-7	140N 80W-8	5.3
9310-089-8	48N 120W-14.5	5.4
9310-089-9	95N 115W-5	19
9310-089-10	STOCKPILE SE	8.9
9310-089-11	STOCKPILE WEST	9.8
9310-089-12	STOCKPILE NORTH	8.8
9310-089-13	STOCKPILE NE	9.8
9310-089-14	STOCKPILE SOUTH	11

Analytical**Technologies,**Inc.

ATI I.D. # 9310-089

GENERAL CHEMISTRY ANALYSIS
QUALITY CONTROL DATA

CLIENT : CHEN-NORTHERN, INC. MATRIX : SOIL
PROJECT # : 192-2129-1
PROJECT NAME : CHEVRON STATION 9-3883 UNITS : %

PARAMETER	ATI I.D.	SAMPLE RESULT	DUP RESULT	RPD	SPIKED RESULT	SPIKE ADDED	% REC
MOISTURE	9310-073-1	7.0	7.0	0	N/A	N/A	N/A
MOISTURE	9310-089-14	11	10	10	N/A	N/A	N/A

$$\% \text{ Recovery} = \frac{(\text{Spike Sample Result} - \text{Sample Result})}{\text{Spike Concentration}} \times 100$$

$$\text{RPD (Relative \% Difference)} = \frac{|(\text{Sample Result} - \text{Duplicate Result})|}{\text{Average Result}} \times 100$$

AnalyticalTechnologies, Inc. ATI Reference: 9310-089

Analytical Summary Report

Client: Chen-Northern, Inc. **Project: Chevron Station 9-3883**

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: SOIL** **Units: mg/Kg (Dry Weight Basis)**

ATI Sample #:	0	1	2	3	4	5
Client ID:	Method Blank	110N 105W-7	130N 95W-7	90N 105W-6	110N 115W-5	140N 140W-8
Date Sampled:	N/A	10/06/93	10/06/93	10/06/93	10/06/93	10/06/93
Date Extracted:	10/08/93	10/08/93	10/08/93	10/08/93	10/08/93	10/08/93
Date Analyzed:	10/08/93	10/09/93	10/09/93	10/09/93	10/09/93	10/10/93
Benzene	<0.025	-	-	<0.029	<0.028	<0.032
Ethylbenzene	<0.025	-	-	<0.029	<0.028	<0.032
Toluene	<0.025	-	-	<0.029	<0.028	<0.032
Total Xylenes	<0.025	-	-	<0.029	<0.028	<0.032
Gasoline (Toluene to Dodecane)	<5	<5	<5	<6	<6	<6
Surrogate Recoveries (%)						
Bromofluorobenzene	90	-	-	81	91	80
Trifluorotoluene	121	81	88	78	71	78

ATI Sample #:	6	7	10	11	14
Client ID:	92N 80W-7	140N 80W-8	STOCKPILE SE	STOCKPILE WEST	STOCKPILE SOUTH
Date Sampled:	10/06/93	10/06/93	10/06/93	10/06/93	10/06/93
Date Extracted:	10/08/93	10/08/93	10/08/93	10/08/93	10/08/93
Date Analyzed:	10/10/93	10/10/93	10/10/93	10/10/93	10/10/93
Benzene	<0.026	<0.026	<0.027	<0.028	<0.028
Ethylbenzene	<0.026	<0.026	0.030	<0.028	<0.028
Toluene	<0.026	<0.026	0.095	0.034	0.095
Total Xylenes	<0.026	<0.026	0.24	0.050	0.25
Gasoline (Toluene to Dodecane)	<5	<5	20	7	13
Surrogate Recoveries (%)					
Bromofluorobenzene	88	87	91	88	89
Trifluorotoluene	85	90	74	80	83

Surrogate Limits: (BFB:52-116 TFT:50-150)

AnalyticalTechnologies, Inc. ATI Reference: 9310-089

Quality Control Summary Report

Client: Chen-Northern, Inc. **Project: Chevron Station 9-3883**

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: SOIL** **Units: mg/Kg** **Matrix Spike/Matrix Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/08/93** **Sample ID: 9310-089-1**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
GASOLINE	<5.00	<5.00	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	81	80	-	50-150

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: SOIL** **Units: mg/Kg** **Matrix Spike/Matrix Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/08/93** **Sample ID: 9310-082-4**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
BENZENE	<0.0250	N/A	N/A	1.00	0.585	59	0.655	66	11	35-113	20
TOLUENE	0.0485	N/A	N/A	1.00	0.658	61	0.735	69	11	43-107	20
TOTAL XYLENES	0.959	N/A	N/A	2.00	2.29	67	2.38	71	4	46-114	20
GASOLINE	<5.00	<5.00	NC	50.0	45.8	92	45.6	91	0	50-112	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	89	85	90	52-116
TRIFLUOROTOLUENE	75	78	89	50-150

Analysis: WA DOE WTPH-G/8020(BETX) **Matrix: SOIL** **Units: mg/Kg** **Blank Spike/Blank Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/08/93** **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	<0.0250	N/A	N/A	1.00	1.05	105	1.02	102	3	63-115	20
TOLUENE	<0.0250	N/A	N/A	1.00	1.10	110	1.05	105	5	75-110	20
TOTAL XYLENES	<0.0250	N/A	N/A	2.00	2.18	109	2.10	105	4	79-109	20
GASOLINE	<5.00	N/A	N/A	50.0	48.3	97	50.1	100	4	80-119	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
BROMOFLUOROBENZENE	90	99	94	52-116
TRIFLUOROTOLUENE	121	103	96	50-150

Analytical**Technologies,**Inc. ATI Reference: 9310-089

Analytical Summary Report

Client: Chen-Northern, Inc.

Project: Chevron Station 9-3883

Analysis: WA DOE WTPH-D **Matrix: SOIL** **Units: mg/Kg (Dry Weight Basis)**

ATI Sample #:	0	0	1	2	8	9
Client ID:	Method Blank	Method Blank	110N 105W-7	130N 95W-7	48N 120W-14.5	95N 115W-5
Date Sampled:	N/A	N/A	10/06/93	10/06/93	10/06/93	10/06/93
Date Extracted:	10/08/93	10/08/93	10/08/93	10/08/93	10/08/93	10/08/93
Date Analyzed:	10/10/93	10/10/93	10/10/93	10/10/93	10/10/93	10/10/93
Diesel (C12-C24)	<10	<10	<11	<10	<11	59
Surrogate Recoveries (%)						
O-Terphenyl	92	94	90	98	92	95

Surrogate Limits: (O-T:50-150)

Analytical**Technologies,**Inc. ATI Reference: 9310-089

Quality Control Summary Report

Client: Chen-Northern, Inc. **Project: Chevron Station 9-3883**

Analysis: WA DOE WTPH-D **Matrix: SOIL** **Units: mg/Kg** **Matrix Spike/Matrix Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/10/93** **Sample ID: 9310-055-3**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
DIESEL	<10.0	<10.0	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
O-TERPHENYL	81	78	-	50-150

Analysis: WA DOE WTPH-D **Matrix: SOIL** **Units: mg/Kg** **Matrix Spike/Matrix Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/10/93** **Sample ID: 9310-055-8**

Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
DIESEL	<10.0	<10.0	NC	200	180	90	182	91	1	63-131	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
O-TERPHENYL	87	89	91	50-150

Analysis: WA DOE WTPH-D **Matrix: SOIL** **Units: mg/Kg** **Blank Spike/Blank Spike Duplicate**

Extracted: 10/08/93 **Analyzed: 10/10/93** **Sample ID: Blank**

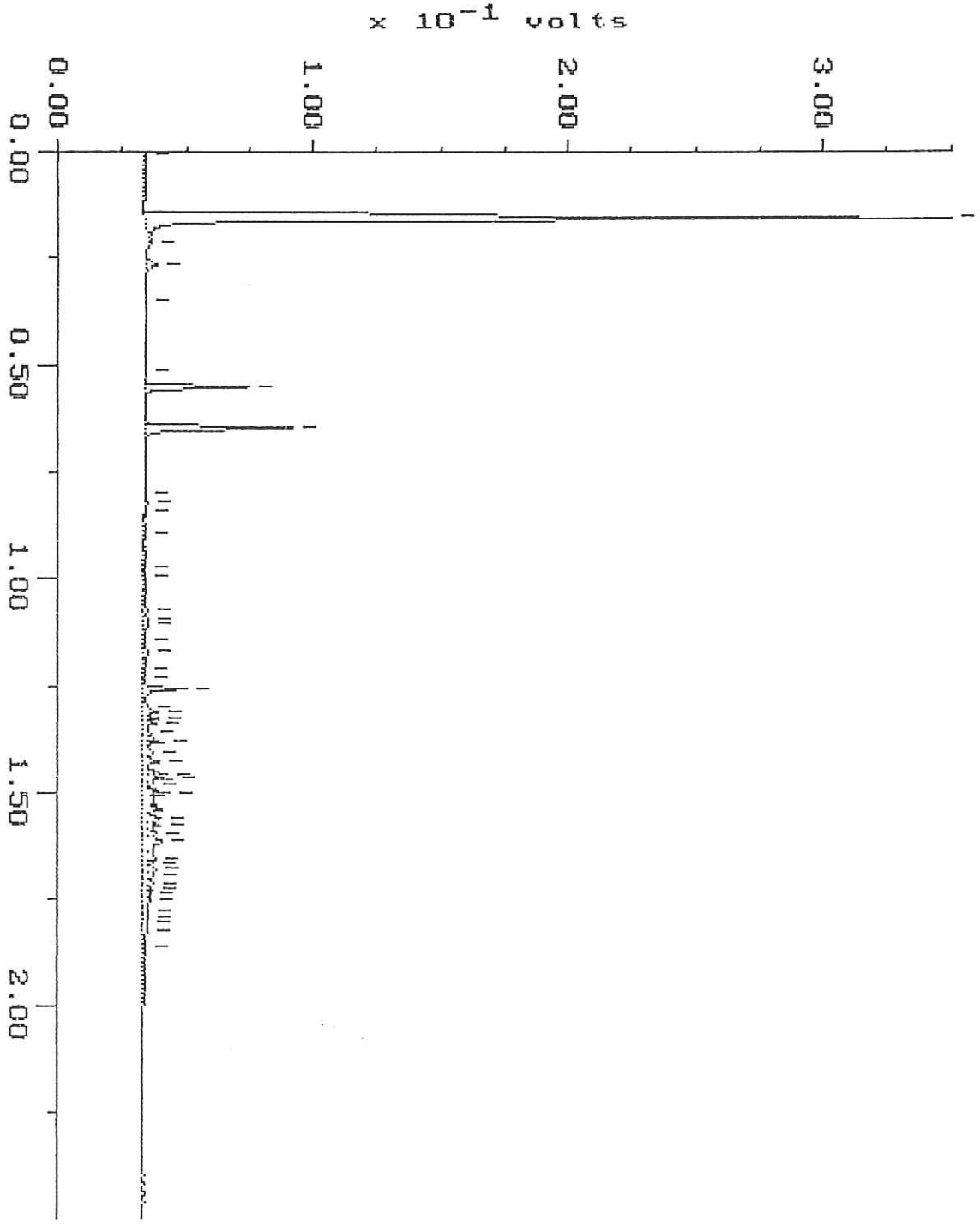
Compound	Sample Result	Duplicate Result	RPD	Spike Added	Spike Result	Spike %Rec	Spike Dup. Result	Spike Dup. %Rec	RPD	Limits %Rec	Limits RPD
DIESEL	<10.0	N/A	N/A	200	181	91	N/A	N/A	N/A	69-122	20

Quality Control Surrogate Recoveries (%)

Compound	Sample	Spike	Spike Dup.	Limits
O-TERPHENYL	94	95	N/A	50-150

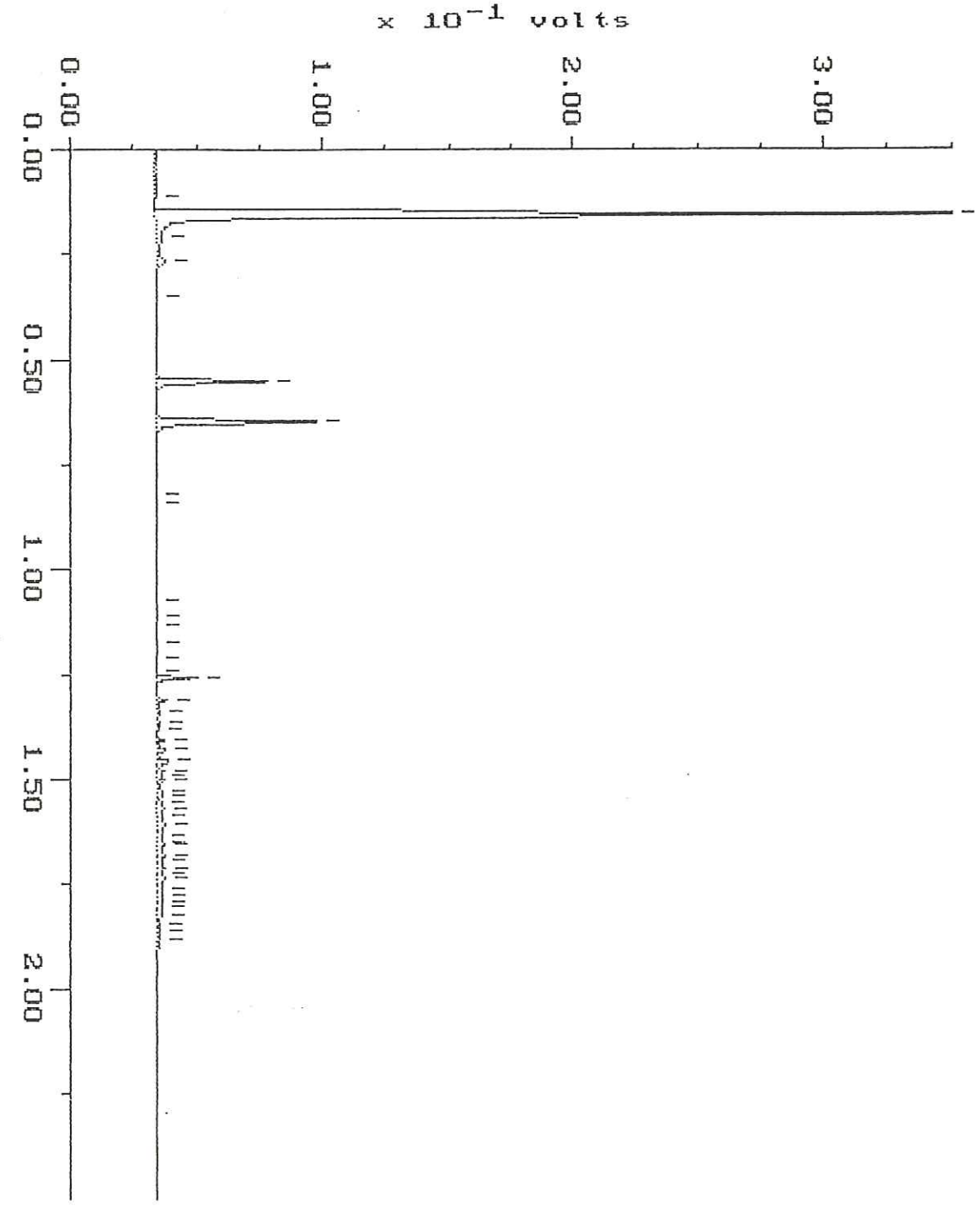
WA DOE WTPH-G

Sample: 9310-089-10 **Channel:** FID **Filename:** RA109G10
Acquired: 10-OCT-93 19:24 **Method:** F:\BRO2\MAXDATA\GLAD\101093GS **Operator:** ATI
Comments: ATI : A COMMITMENT TO QUALITY



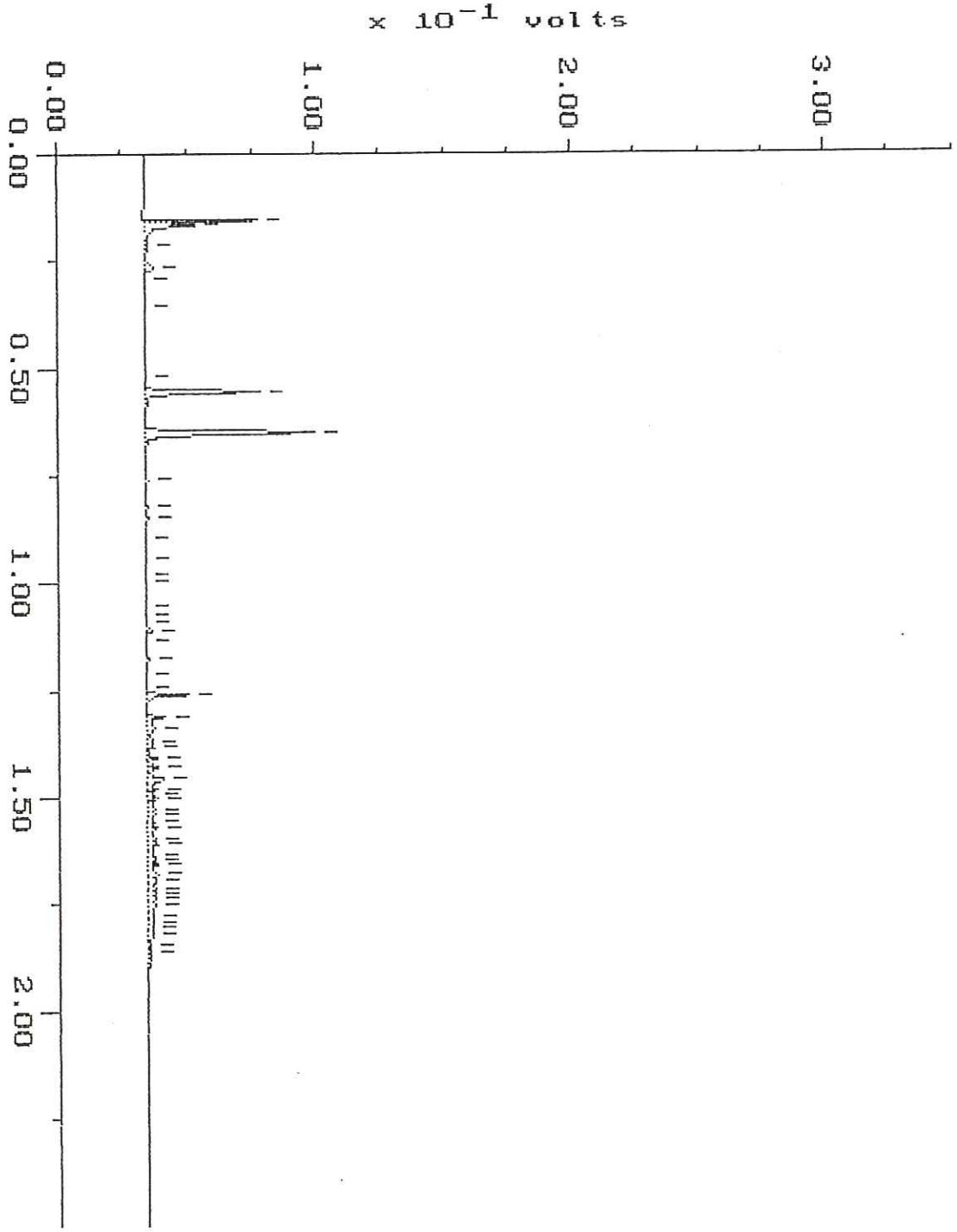
WA DOE WTPH-G

Sample: 9310-089-11 Channel: FID Filename: RA109G11
Acquired: 10-OCT-93 19:53 Method: F:\BRO2\MAXDATA\GLAD\101093GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



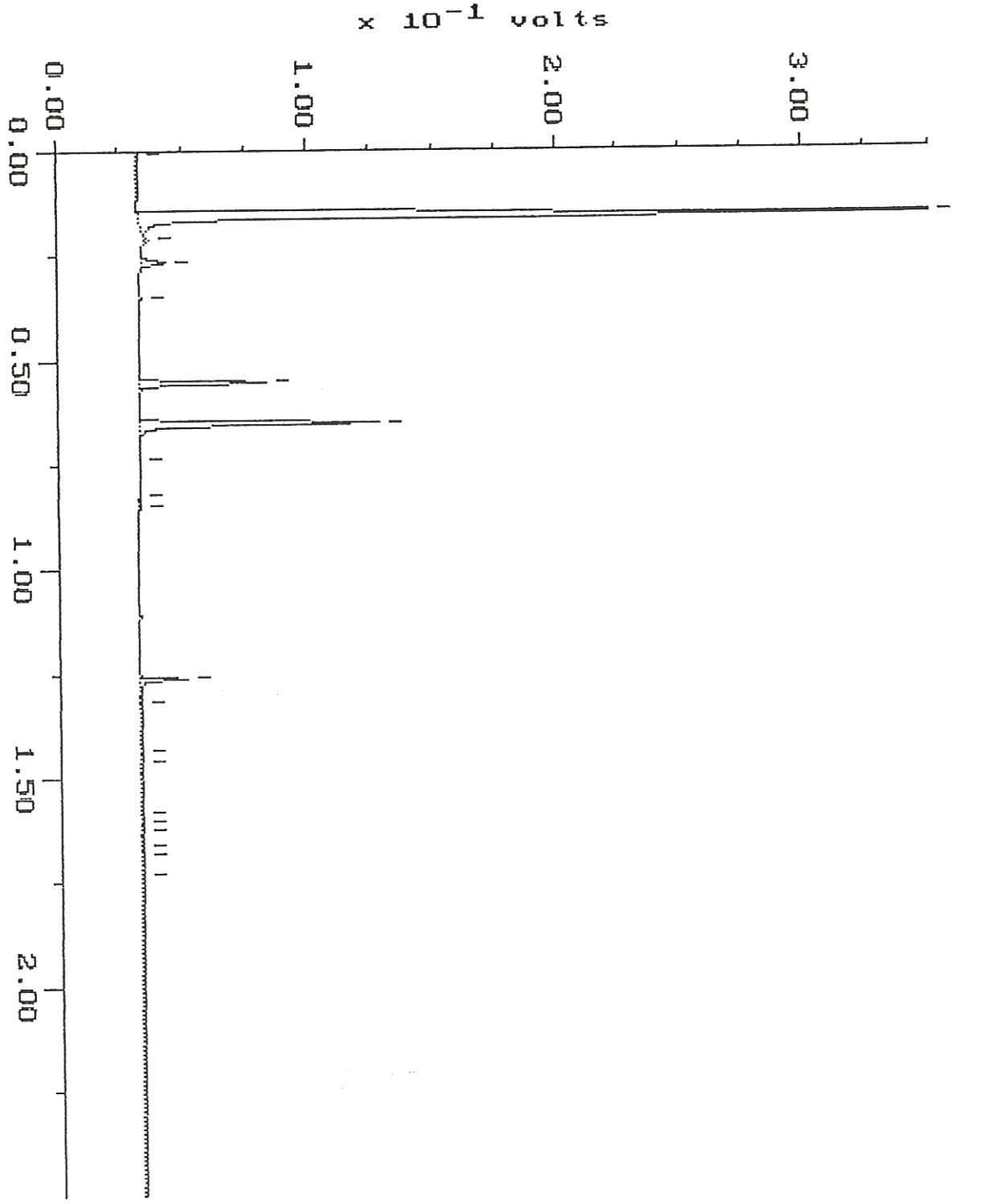
WA DOE WTPH-G

Sample: 9310-089-14 Channel: FID Filename: RA109G12
Acquired: 10-OCT-93 20:20 Method: F:\BRO2\MAXDATA\GLAD\101093GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY



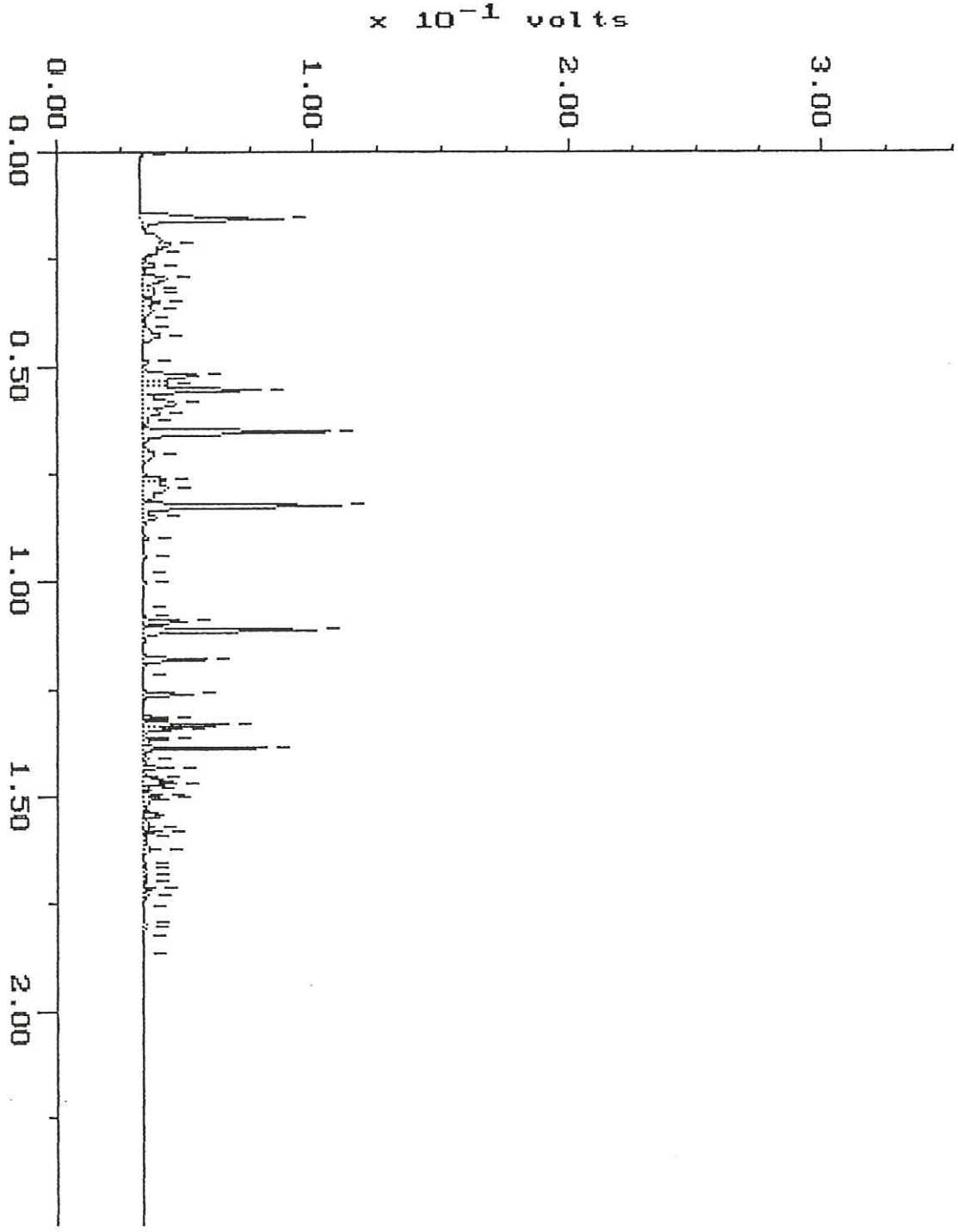
WA DOE WTPH-G Blank

Sample: SRB-A 10-8 Channel: FID Filename: RA089G08
Acquired: 08-OCT-93 17:44 Method: F:\BRO2\MAXDATA\GLAD\100893GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

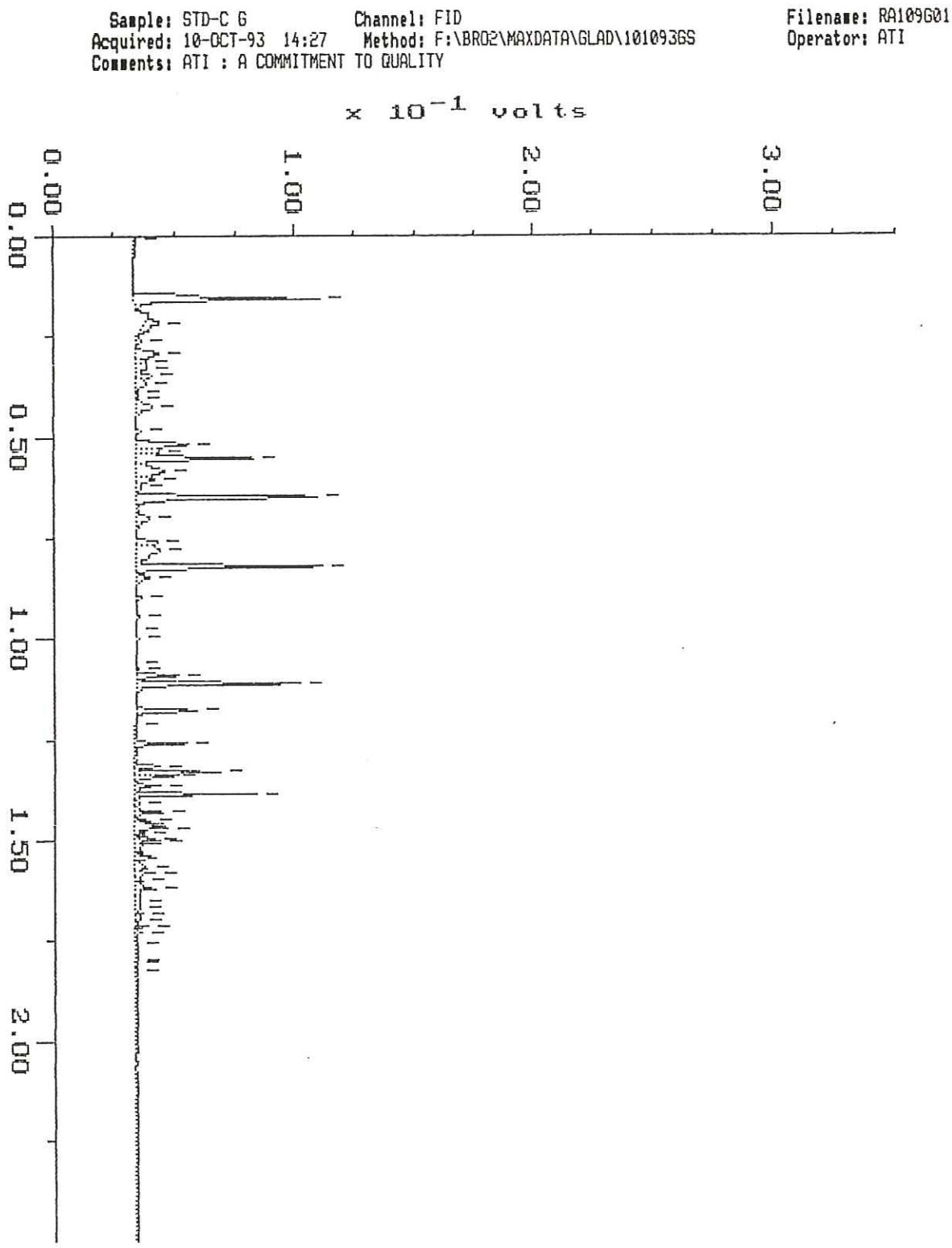


Continuing Calibration

Sample: STD-C G Channel: FID Filename: RA089G01
Acquired: 08-OCT-93 7:42 Method: F:\BRO2\MAXDATA\GLAD\100893GS Operator: ATI
Comments: ATI : A COMMITMENT TO QUALITY

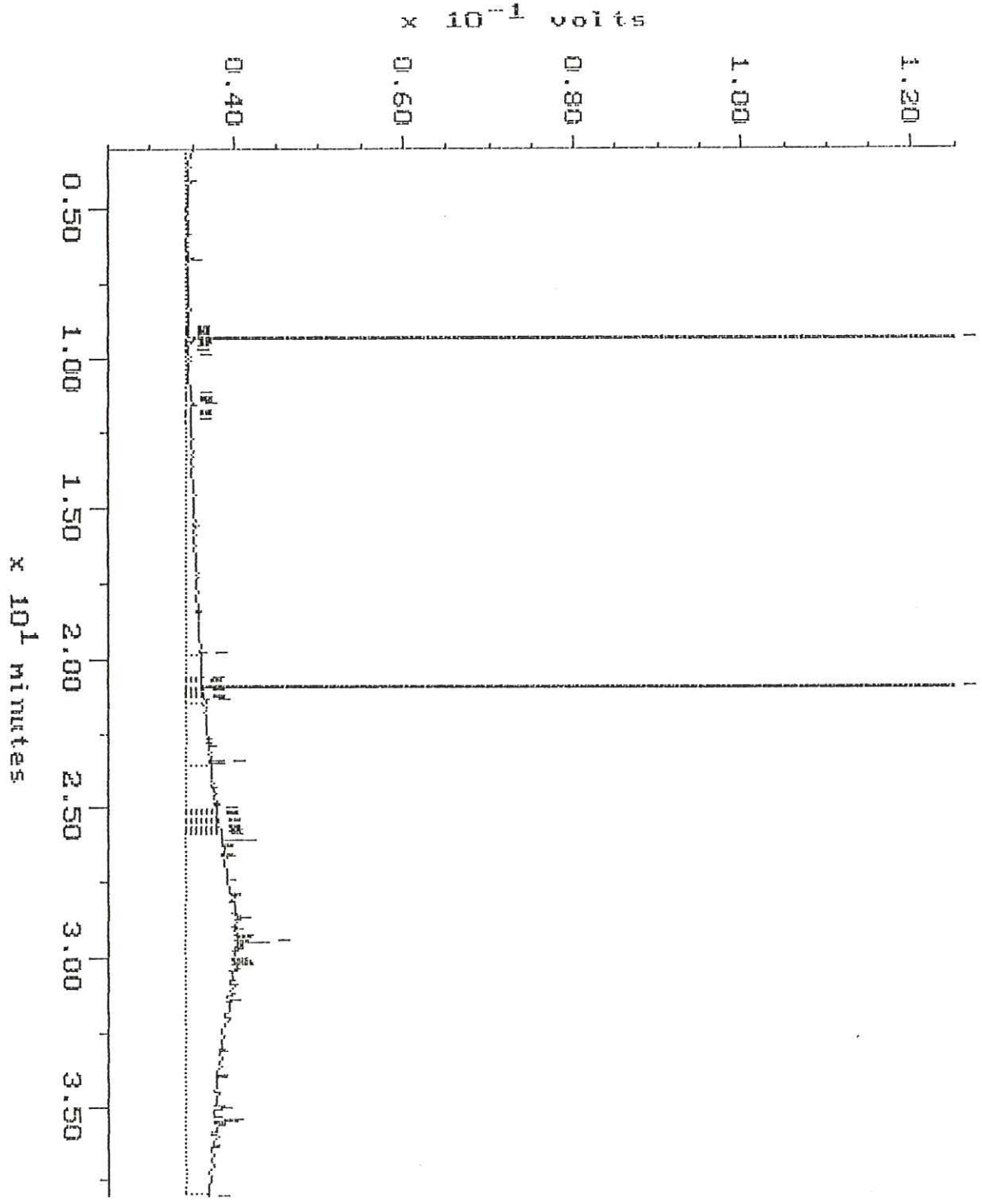


Continuing Calibration



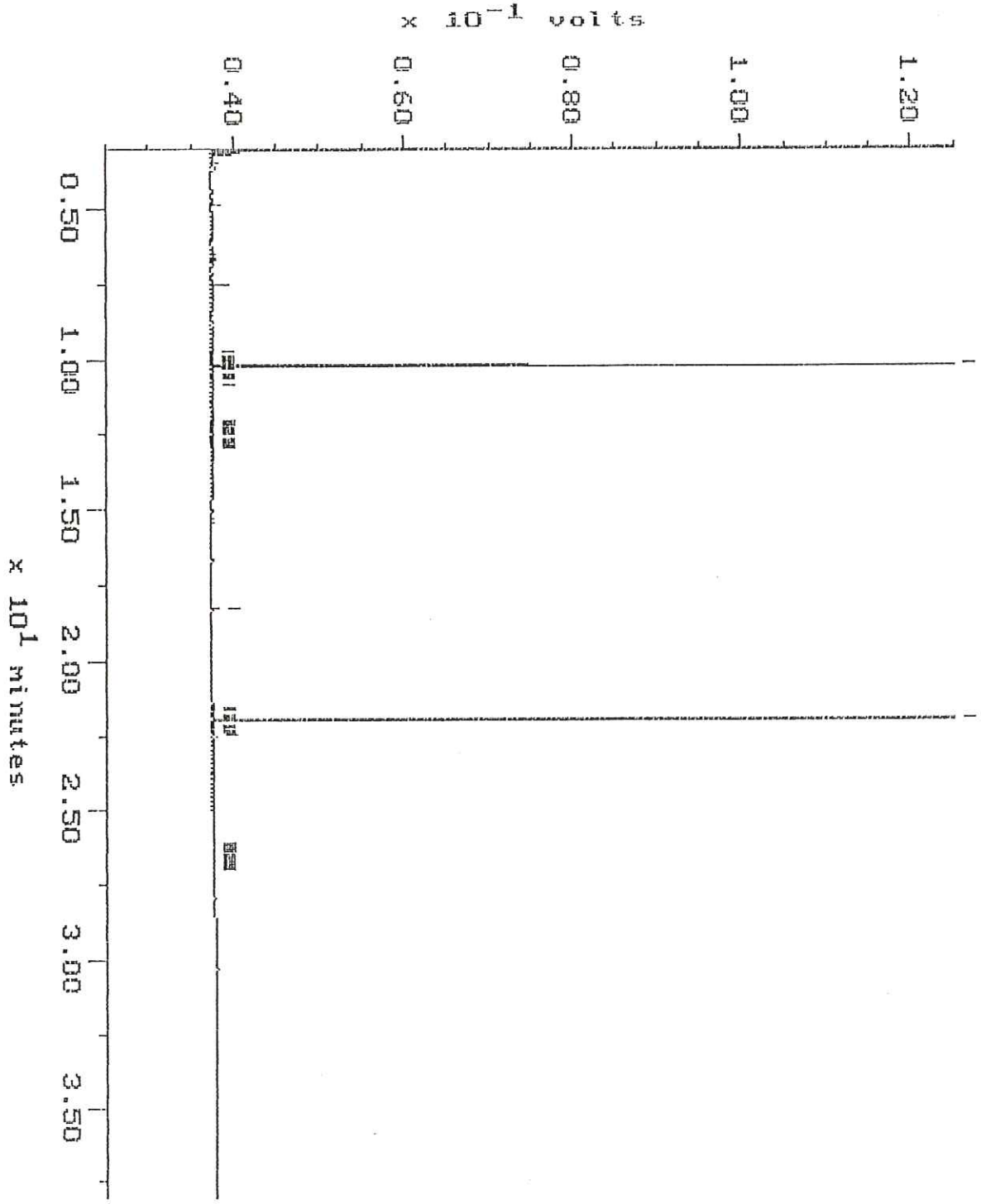
WA DOE WTPH-D

Sample: 9310-089-9 Channel: DEMITRI Filename: RA108D08
Acquired: 10-OCT-93 16:58 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL1010 Operator: ATI
Comments: ATI RUSH FUELS: A MISSION OF EXCELLENCE IN ANALYTICAL CHROMATOGRAPHY



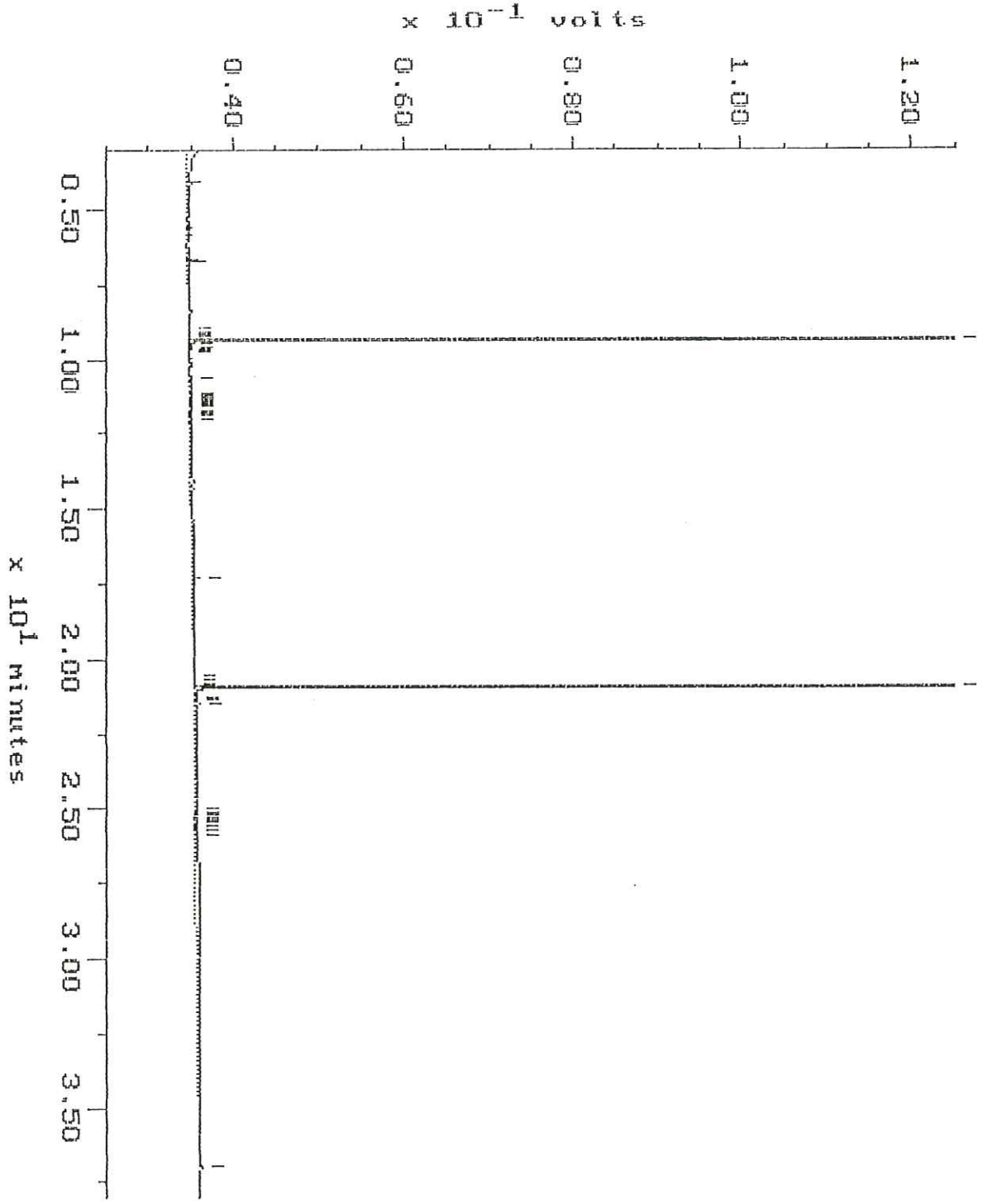
Blank

Sample: SRB 10-8 Channel: CLARENCE Filename: RA108C04
Acquired: 10-OCT-93 13:52 Method: F:\BRO2\MAXDATA\SERGE-C\FUEL1010 Operator: ATI
Comments: ATI RUSH FUELS: DEDICATED TO QUALITY CLIENT SERVICE



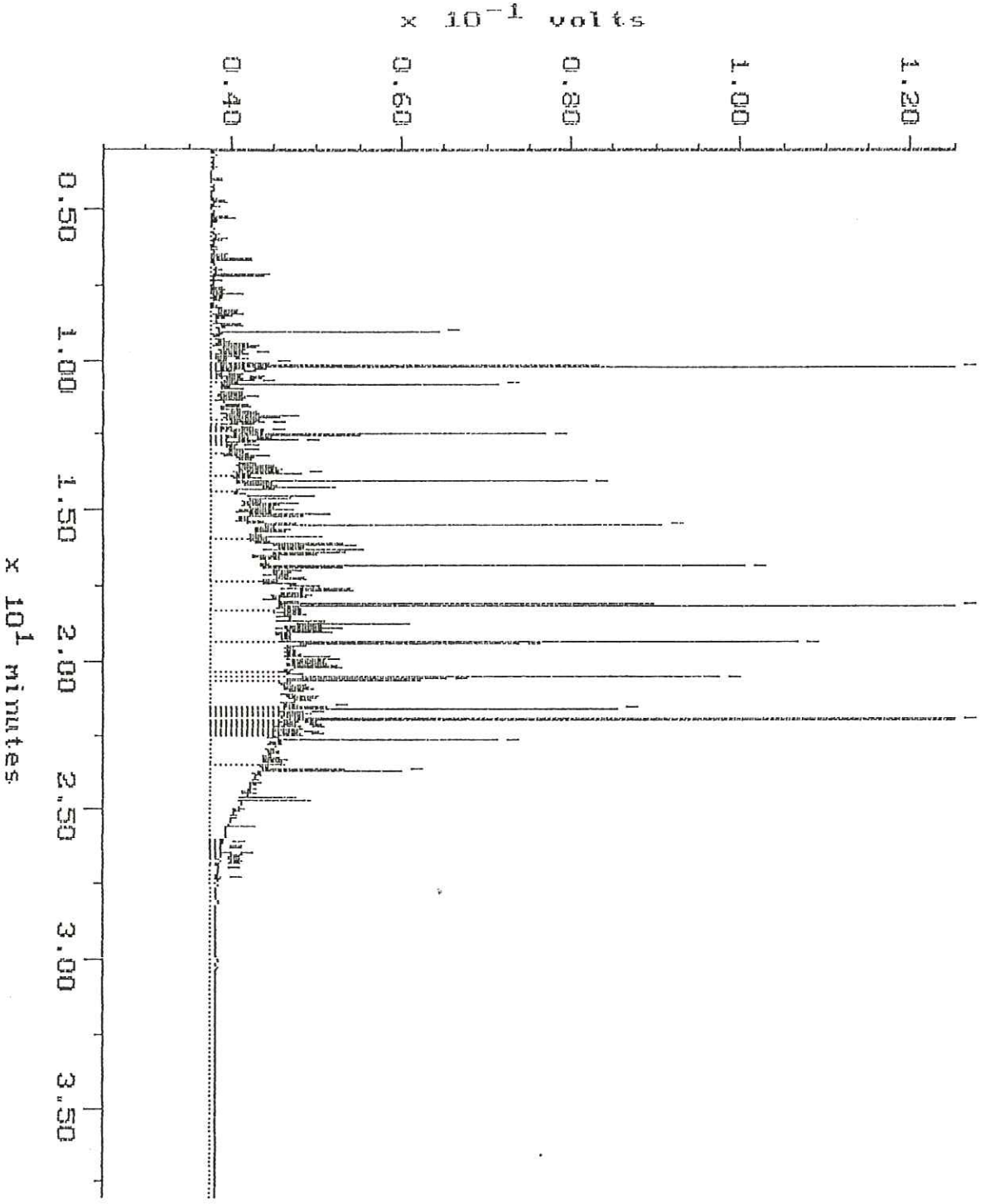
Blank

Sample: SRB 10-8 Channel: DEMITRI Filename: RA108D04
Acquired: 10-OCT-93 13:52 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL1010 Operator: ATI
Comments: ATI RUSH FUELS: A MISSION OF EXCELLENCE IN ANALYTICAL CHROMATOGRAPHY



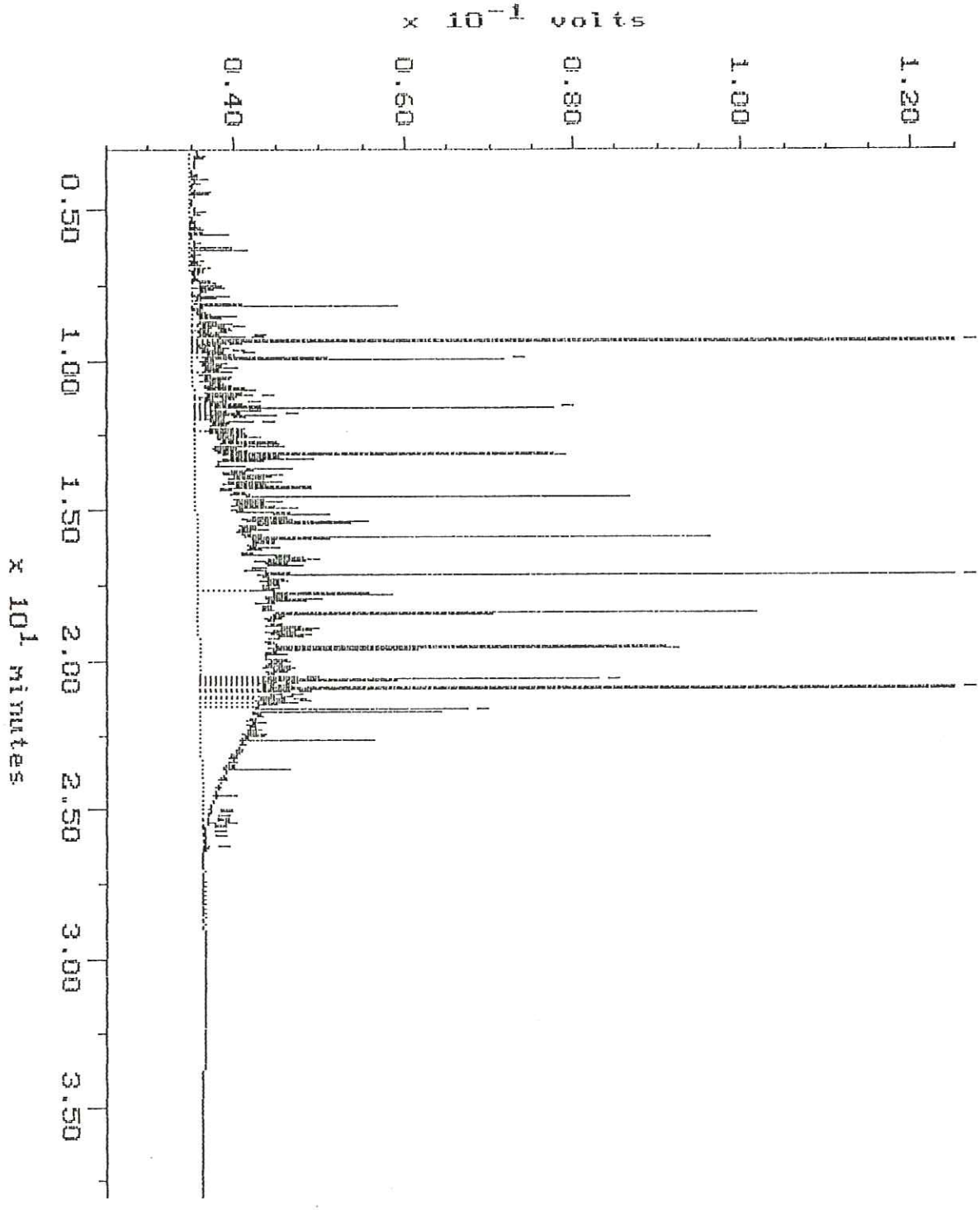
Continuing Calibration

Sample: D 500 **Channel:** CLARENCE **Filename:** RA108C03
Acquired: 10-OCT-93 13:06 **Method:** F:\BRD2\MAXDATA\SERGE-C\FUEL1010 **Operator:** ATI
Comments: ATI RUSH FUELS: DEDICATED TO QUALITY CLIENT SERVICE

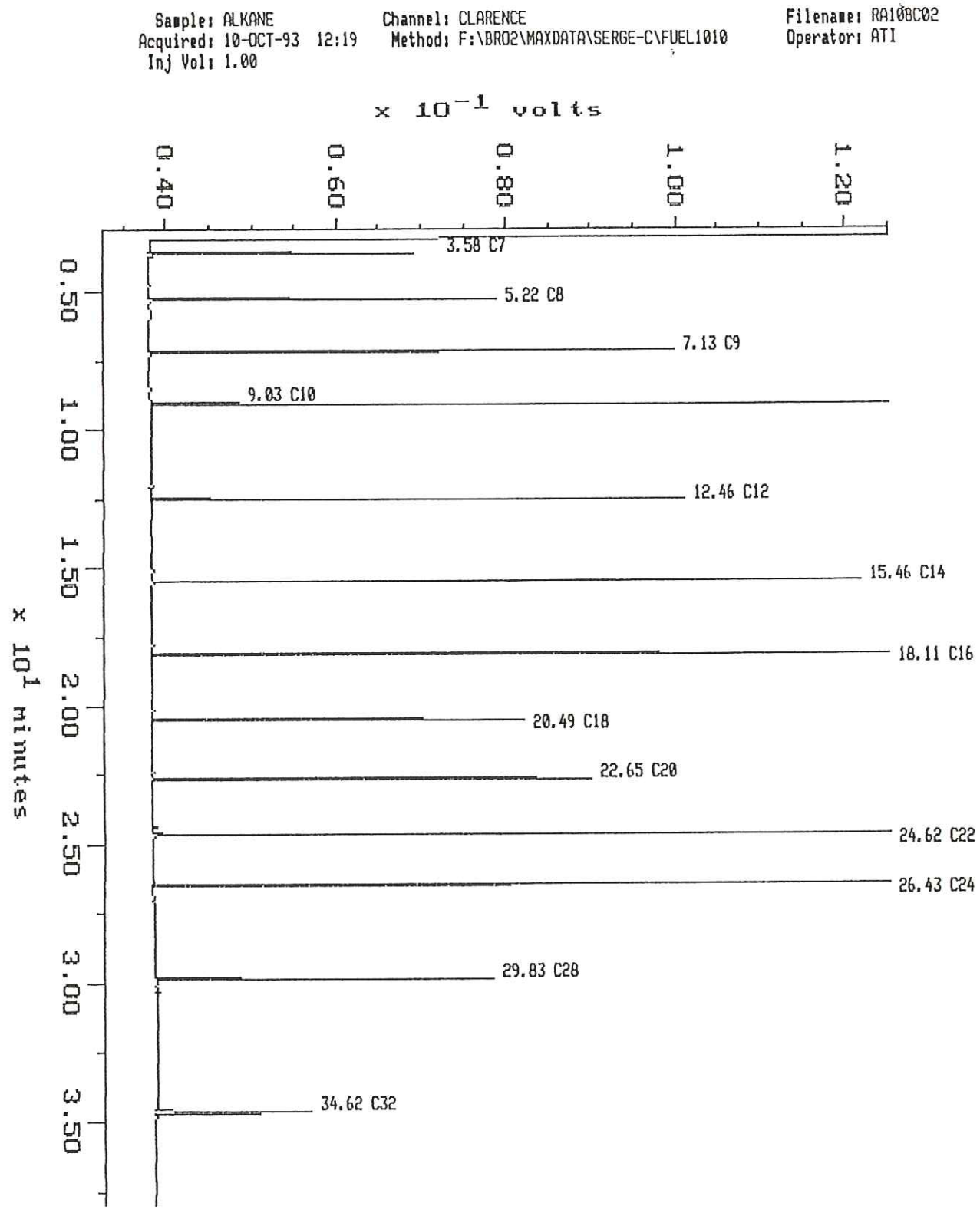


Continuing Calibration

Sample: D 500 Channel: DEMITRI Filename: RA108D03
Acquired: 10-OCT-93 13:06 Method: F:\BRO2\MAXDATA\SERGE-D\FUEL1010 Operator: ATI
Comments: ATI RUSH FUELS: A MISSION OF EXCELLENCE IN ANALYTICAL CHROMATOGRAPHY



Alkane

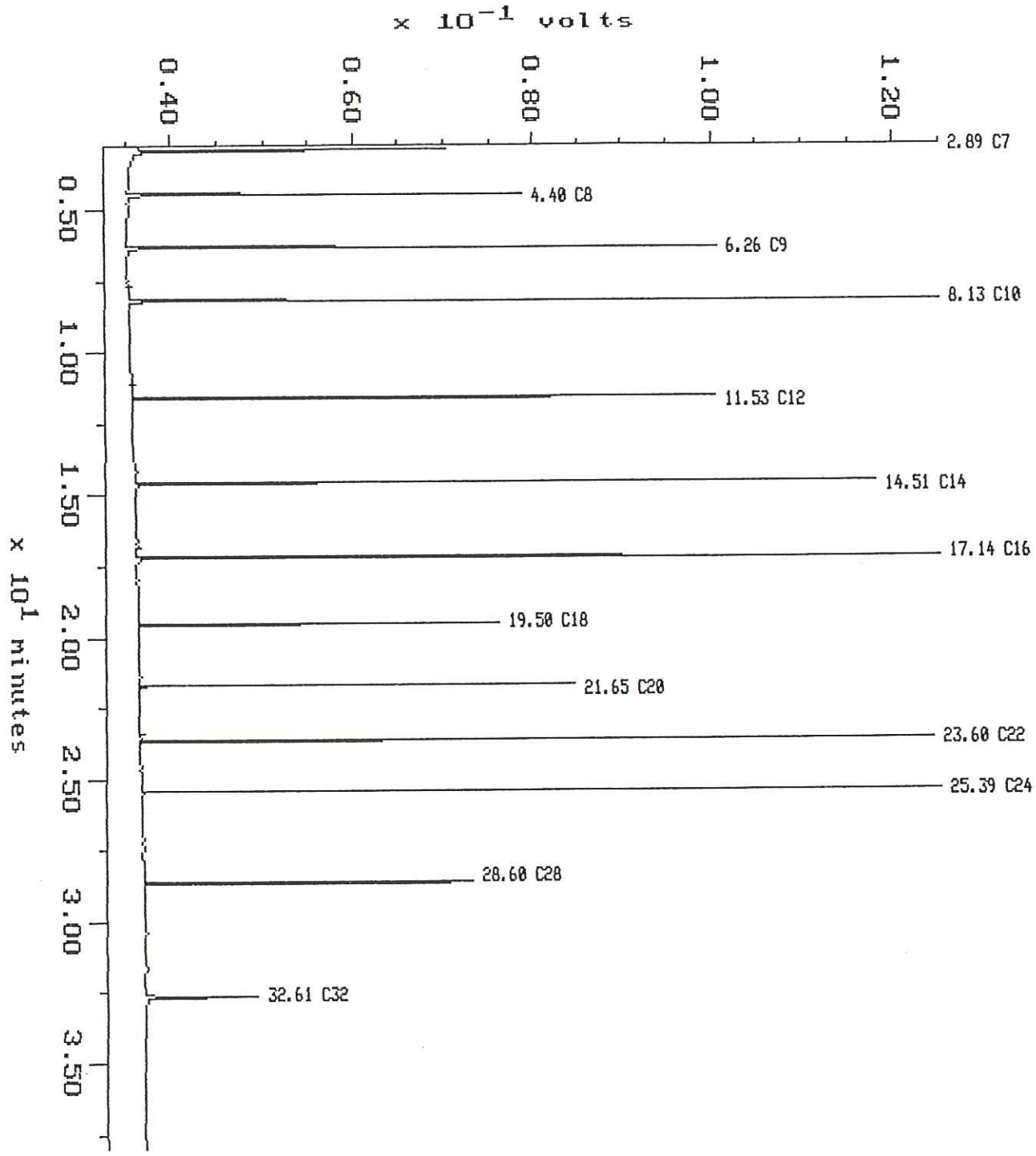

Sample: ALKANE
Acquired: 10-OCT-93 12:19
Inj Vol: 1.00
Channel: CLARENCE
Method: F:\BRO2\MAXDATA\SERGE-C\FUEL1010
Filename: RA108C02
Operator: ATI
x 10⁻¹ volts
0.40
0.60
0.80
1.00
1.20
3.58 C7
5.22 C8
7.13 C9
9.03 C10
12.46 C12
15.46 C14
18.11 C16
20.49 C18
22.65 C20
24.62 C22
26.43 C24
29.83 C28
34.62 C32
0.50
1.00
1.50
2.00
2.50
3.00
3.50
x 10¹ minutes

Alkane

Sample: ALKANE
Acquired: 10-OCT-93 12:19
Inj Vol: 1.00

Channel: DEMITRI
Method: F:\BRO2\MAXDATA\SERGE-D\FUEL1010

Filename: RA108D02
Operator: ATI



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

DATE: 10-7-93 Page 1 of 2 ATI ACCESSION # 9310-089

COMPANY: Chevron - Northern Inc.
REPORT TO: Paul Davidson
ADDRESS: 2214 N 4th Ave
Pasco WA 99301
PHONE: (509) 547-1671 FAX: (509) 547-1673
PROJECT MANAGER: Phil Briggs - Chevron
PROJECT NUMBER: 192-2129-1 (CNI)
PROJECT NAME: Station No # 9-3883
ATI will DISPOSE / RETURN samples (circle one)

Sample ID	Date	Time	Matrix	LabID	FUELS: TPH-HCID WA/OR	BETX/TPH-G combo WA/OR	BETX (by 8020)	TPH-G WA/OR	TPH-D WA/OR	8015 modified	418.1 WA/OR	413.2	AK-GRO	AK-DRO	ORGANIC COMPOUNDS: 8240 GCMS Volatiles	8270 GCMS Semivolatiles	8080 Pesticides/PCBs	PCB only (by 8080) STD/lo level	8010 Halogenated VOCs	8020 Aromatic VOCs	8310 HPLC PAHs	8040 Phenols	8140 OP Pesticides	8150 OC Herbicides	METALS: Metals (Indicate below *)	Total Lead	Priority Pollutant Metals (13)	TAL Metals (23)	TCLP: TCLP-Volatiles (ZHE-8240)	TCLP-Semivolatiles (8270)	TCLP-Pesticides (8080)	TCLP-Herbicides (8150)	TCLP-Metals (8 metals)	OTHER: % Moisture (please indicate)	Soil-4 9260				Total # of Containers/sample
115N 105W -7	10/6	7:00	Soil	1				X	X																													1
130N 95W -7	"	"	"	2				X	X																													1
90N 105W -6				3		X	X																															1
110N 115W -5				4		X	X																															1
140N 140W -9				5		X	X																															1
92N 80W -7				6		X	X																															1
140N 90W -8				7		X	X																															1
40N 120W-14.5	10/6	11:30	"	8					X		X																								X				2
95N 115W-5	10/6	1:15	"	9					X		X																												2
Station SE	10/1	2:00	"	10		X																																	
Station West	"	"	"	11		X					Y																												

1 Broken

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

DATE: 10-7-93 Page 2 of 2 ATI ACCESSION # 9310-089

COMPANY: Chevron Northern Inc
REPORT TO: Paul Daniels
ADDRESS: 2214 N 4th Ave
Pasco WA 99301
PHONE: (509) 547-1671 FAX: (509) 547-1673
PROJECT MANAGER: Phil Briggs Chevron
PROJECT NUMBER: 192-2129-1
PROJECT NAME: 4th & N St 9-3383

ATI will DISPOSE / RETURN samples (circle one)

Sample ID	Date	Time	Matrix	LabID	FUELS: TPH-HCID WA/OR	FUELS: BETX/TPH-G combo WA/OR	FUELS: BETX (by 8020) WA/OR	FUELS: TPH-G WA/OR	FUELS: TPH-D WA/OR	FUELS: 8015 modified	FUELS: 418.1 WA/OR	FUELS: 413.2	FUELS: AK-GRO	FUELS: AK-DRO	ORGANIC COMPOUNDS: 8240 GCMS Volatiles	ORGANIC COMPOUNDS: 8270 GCMS Semivolatiles	ORGANIC COMPOUNDS: 8080 Pesticides/PCBs	ORGANIC COMPOUNDS: PCB only (by 8080) STD/lo level	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	ORGANIC COMPOUNDS: 8020 Aromatic VOCs	ORGANIC COMPOUNDS: 8310 HPLC PAHs	ORGANIC COMPOUNDS: 8040 Phenols	ORGANIC COMPOUNDS: 8140 OP Pesticides	ORGANIC COMPOUNDS: 8150 OC Herbicides	METALS: Metals (Indicate below *)	METALS: Total Lead	METALS: Priority Pollutant Metals (13)	METALS: TAL Metals (23)	TCLP: TCLP-Volatiles (ZHE-8240)	TCLP: TCLP-Semivolatiles (8270)	TCLP: TCLP-Pesticides (8080)	TCLP: TCLP-Herbicides (8150)	TCLP: TCLP-Metals (8 metals)	OTHER: % Moisture (please indicate)	OTHER	OTHER	OTHER	OTHER	Total # of Containers/sample
Stockpile Soil	10/6	2:00	Soil	14		X																																	

Turnaround Time		Sample Receipt	
STANDARD TAT		TOTAL # CONTAINERS RECVD	1
1 WEEK TAT		COC SEALS PRESENT?	N
4 WORK DAY TAT		COC SEALS INTACT?	NA
3 WORK DAY TAT	X	RECEIVED COLD?	Y
2 WORK DAY TAT		RECEIVED INTACT?	Y
24 HOUR TAT		RECEIVED VIA: Fed Ex	

Special Instructions:
Purpose 1

* Metals needed:

Relinquished By:	Relinquished By:	Relinquished By:
Date: 10/7	Date:	Date:
Time: 12:00	Time:	Time:
Received By:	**Received By:**	**Received By:**
Date: 10893	Date:	Date:
Time: 1210	Time:	Time:
MARCIA POSTMA		

SAMPLE CROSS REFERENCE

Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

Report Date: October 18, 1993
ATI I.D. : 310182

ATI #	Client Description	Matrix	Date Collected
1	9310-089-8	SOIL	06-OCT-93

---TOTALS---

Matrix	# Samples
SOIL	1

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

ANALYTICAL SCHEDULE

Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

ATI I.D.: 310182

Analysis	Technique/Description
EPA 8240 (GC/MS FOR VOLATILE ORGANICS)	GC/MASS SPECTROMETER

NOTE: ALL SAMPLE RESULTS WERE CALCULATED IN DRY WEIGHT.

GAS CHROMATOGRAPHY/MASS SPECTROSCOPY RESULTS

Test : EPA 8240 (GC/MS FOR VOLATILE ORGANICS)
Client : ANALYTICAL TECHNOLOGIES, INC. ATI I.D. : 310182
Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	9310-089-8	SOIL	06-OCT-93	N/A	14-OCT-93	1.00

Parameter	Units	1
CHLOROMETHANE	MG/KG	<0.05
VINYL CHLORIDE	MG/KG	<0.3
BROMOMETHANE	MG/KG	<0.05
CHLOROETHANE	MG/KG	<0.3
ACETONE	MG/KG	<0.53
1,1-DICHLOROETHENE	MG/KG	<0.005
METHYLENE CHLORIDE	MG/KG	<0.03
CARBON DISULFIDE	MG/KG	<0.11
1,2-DICHLOROETHENE (TOTAL)	MG/KG	<0.005
1,1-DICHLOROETHANE	MG/KG	<0.005
CHLOROFORM	MG/KG	<0.005
2-BUTANONE (MEK)	MG/KG	<0.11
1,1,1-TRICHLOROETHANE	MG/KG	<0.005
CARBON TETRACHLORIDE	MG/KG	<0.005
1,2-DICHLOROETHANE	MG/KG	<0.005
BENZENE	MG/KG	<0.005
TRICHLOROETHENE	MG/KG	<0.005
1,2-DICHLOROPROPANE	MG/KG	<0.005
BROMODICHLOROMETHANE	MG/KG	<0.005
4-METHYL-2-PENTANONE (MIBK)	MG/KG	<0.05
CIS-1,3-DICHLOROPROPENE	MG/KG	<0.005
TOLUENE	MG/KG	<0.01
TRANS-1,3-DICHLOROPROPENE	MG/KG	<0.005
2-HEXANONE (MBK)	MG/KG	<0.05
1,1,2-TRICHLOROETHANE	MG/KG	<0.005
TETRACHLOROETHENE	MG/KG	<0.005
DIBROMOCHLOROMETHANE	MG/KG	<0.005
CHLOROBENZENE	MG/KG	<0.005
ETHYLBENZENE	MG/KG	<0.005
XYLENES (TOTAL)	MG/KG	<0.05
STYRENE	MG/KG	<0.005
BROMOFORM	MG/KG	<0.3
1,1,2,2-TETRACHLOROETHANE	MG/KG	<0.005
SURROGATES		
1,2-DICHLOROETHANE-D4	%	107
TOLUENE-D8	%	103
BFB	%	95

ADDITIONAL COMPOUNDS (SEMI-QUANTITATED)

Method : EPA 8240 (GC/MS FOR VOLATILE ORGANICS)
Client : ANALYTICAL TECHNOLOGIES, INC. ATI I.D.: 310182
Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

Sample	Parameters	Units	Results
1	NONE DETECTED	N/A	N/A

GAS CHROMATOGRAPHY/MASS SPECTROSCOPY - QUALITY CONTROL

REAGENT BLANK

Test : EPA 8240 (GC/MS FOR VOLATILE ORGANICS)
Blank I.D. : 27067
Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

ATI I.D. : 310182
Date Extracted: N/A
Date Analyzed : 14-OCT-93
Dil. Factor : 1.00

Parameters	Units	Results
CHLOROMETHANE	MG/KG	<0.05
VINYL CHLORIDE	MG/KG	<0.3
BROMOMETHANE	MG/KG	<0.05
CHLOROETHANE	MG/KG	<0.3
ACETONE	MG/KG	<0.50
1,1-DICHLOROETHENE	MG/KG	<0.005
METHYLENE CHLORIDE	MG/KG	<0.03
CARBON DISULFIDE	MG/KG	<0.10
1,2-DICHLOROETHENE (TOTAL)	MG/KG	<0.005
1,1-DICHLOROETHANE	MG/KG	<0.005
CHLOROFORM	MG/KG	<0.005
2-BUTANONE (MEK)	MG/KG	<0.10
1,1,1-TRICHLOROETHANE	MG/KG	<0.005
CARBON TETRACHLORIDE	MG/KG	<0.005
,2-DICHLOROETHANE	MG/KG	<0.005
ENZENE	MG/KG	<0.005
TRICHLOROETHENE	MG/KG	<0.005
1,2-DICHLOROPROPANE	MG/KG	<0.005
BROMODICHLOROMETHANE	MG/KG	<0.005
4-METHYL-2-PENTANONE (MIBK)	MG/KG	<0.05
CIS-1,3-DICHLOROPROPENE	MG/KG	<0.005
TOLUENE	MG/KG	<0.01
TRANS-1,3-DICHLOROPROPENE	MG/KG	<0.005
2-HEXANONE (MBK)	MG/KG	<0.05
1,1,2-TRICHLOROETHANE	MG/KG	<0.005
TETRACHLOROETHENE	MG/KG	<0.005
DIBROMOCHLOROMETHANE	MG/KG	<0.005
CHLOROBENZENE	MG/KG	<0.005
ETHYLBENZENE	MG/KG	<0.005
XYLENES (TOTAL)	MG/KG	<0.05
STYRENE	MG/KG	<0.005
BROMOFORM	MG/KG	<0.3
1,1,2,2-TETRACHLOROETHANE	MG/KG	<0.005
SURROGATES		
1,2-DICHLOROETHANE-D4	%	99
TOLUENE-D8	%	100
BFB	%	98

GAS CHROMATOGRAPHY/MASS SPECTROSCOPY - QUALITY CONTROL

MSMSD

Test : EPA 8240 (GC/MS FOR VOLATILE ORGANICS)
MSMSD # : 55032
Client : ANALYTICAL TECHNOLOGIES, INC.

Project # : 9310-089-8
Project Name: CHEVRON NORTHERN

ATI I.D. : 310182
Date Extracted: N/A
Date Analyzed : 14-OCT-93
Sample Matrix : SOIL
REF I.D. : 310182-01

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
1,1-DICHLOROETHENE	MG/KG	<0.005	0.053	0.051	96	0.054	102	6
BENZENE	MG/KG	<0.005	0.053	0.056	106	0.058	109	4
TRICHLOROETHENE	MG/KG	<0.005	0.053	0.056	106	0.054	102	4
TOLUENE	MG/KG	<0.01	0.050	0.060	120	0.060	120	0
CHLOROBENZENE	MG/KG	<0.005	0.053	0.060	113	0.060	113	0

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

GAS CHROMATOGRAPHY/MASS SPECTROSCOPY - QUALITY CONTROL

BLANK SPIKE

Test : EPA 8240 (GC/MS FOR VOLATILE ORGANICS)
Blank Spike #: 40639
Client : ANALYTICAL TECHNOLOGIES, INC.
Project # : 9310-089-8
Project Name : CHEVRON NORTHERN

ATI I.D. : 310182
Date Extracted: N/A
Date Analyzed : 14-OCT-93
Sample Matrix : SOIL

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
1,1-DICHLOROETHENE	MG/KG	<0.005	0.052	0.050	104
BENZENE	MG/KG	<0.005	0.053	0.050	106
TRICHLOROETHENE	MG/KG	<0.005	0.052	0.050	104
TOLUENE	MG/KG	<0.01	0.053	0.050	106
CHLOROBENZENE	MG/KG	<0.005	0.055	0.050	110

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result