Applied Geotechnology Inc.

February 11, 1993

15,582.021

Mr. Keith Kringlen
Chevron U.S.A. Products Company
Site Assessment and Remediation Group
20500 Richmond Beach Drive N.W.
Seattle, Washington 98177

Dear Mr. Kringlen:

Quarterly Groundwater Quality Assessment
Second Round
Houghton Beach Park
Kirkland, Washington

GENERAL

This report summarizes results of Applied Geotechnology Inc.'s (AGI) second round of quarterly groundwater quality assessment at Houghton Beach Park in Kirkland, Washington. This assessment was conducted in accordance with the compliance monitoring plan described in the *Site Cleanup Actions, Independent Remedial Action* report dated December 16, 1992.

PURPOSE AND SCOPE OF SERVICES

The purpose of our services was to conduct groundwater compliance monitoring to fulfill requirements under the Washington Administrative Code (WAC) 173-340-410 and to confirm long-term effectiveness of site remedial actions. Our scope of services consisted of:

- Collecting groundwater samples from each of seven monitoring wells and three underdrainage outfalls (MW-3D, MW-8, MW-10, MW-11A, MW-12, MW-13, MW-14, OF-1, OF-2, and OF-3). Approximate locations of these monitoring points are shown on Figure 1, Groundwater Monitoring Network.

- Collecting one duplicate groundwater sample for quality control purposes.

- Submitting water samples to Columbia Analytical Services, Inc. in Bothell, Washington for analysis of benzene, ethylbenzene, toluene, and total xylenes (BETX), and polycyclic aromatic hydrocarbons (PAHs) by EPA Methods 8020 and 8310, respectively.

- Documenting our activities and findings in this report.

P.O. Box 3885 Bellevue, WA 98009 FAX 206/646-9523 Telephone 206/453-8383

GROUNDWATER QUALITY SAMPLING

Groundwater quality sampling was conducted in accordance with procedures outlined in the project Sampling and Analysis Plan dated December 1991. Groundwater sampling was conducted on December 15, 16, and 22, 1992. It was necessary to return on December 22 to resample MW-12 because the original sample container was broken in the laboratory. Outfalls 1 and 3 were not sampled because they were not producing water at the time of our visits. Periodic site checks will be performed during the next several months after substantial rainfall events to attempt to collect samples from OF-1 and OF-3.

ANALYTICAL RESULTS

Table 1 summarizes the results of analytical testing. Concentrations reported are in milligrams per liter, which is approximately equivalent to parts per million (ppm) depending on water density. There were no detectable concentrations of BETX or PAHs in any of the samples, except in the sample from MW-14. PAH concentrations detected in MW-14 were below cleanup levels. AGI's Quality Assurance Report of the analytical data and the full laboratory reports of chemical analysis are attached.

DISCUSSION

Analytical results from each of the first two rounds of quarterly groundwater sampling indicate that analyte concentrations in all samples were below cleanup levels. Quarterly sampling will continue until analyses indicate groundwater at each location of the site is in compliance with the cleanup levels for four consecutive quarters, or until compliance with cleanup levels is demonstrated statistically as outlined in the *Site Cleanup Actions* report. The next quarterly sampling will occur in March 1993.

Sincerely,

APPLIED GEOTECHNOLOGY INC.

for
Ross R. Stainsby
Geologist

Stephen Reimers, P.E.
Senior Engineer

RRS/SR/jlh

attachments

cc: Mr. Amile T. Joven, P.E.; Shell Oil Company
Mr. Lynn Stokesbary; City of Kirkland
Mr. Ching-Pi Wang; Washington State Department of Ecology

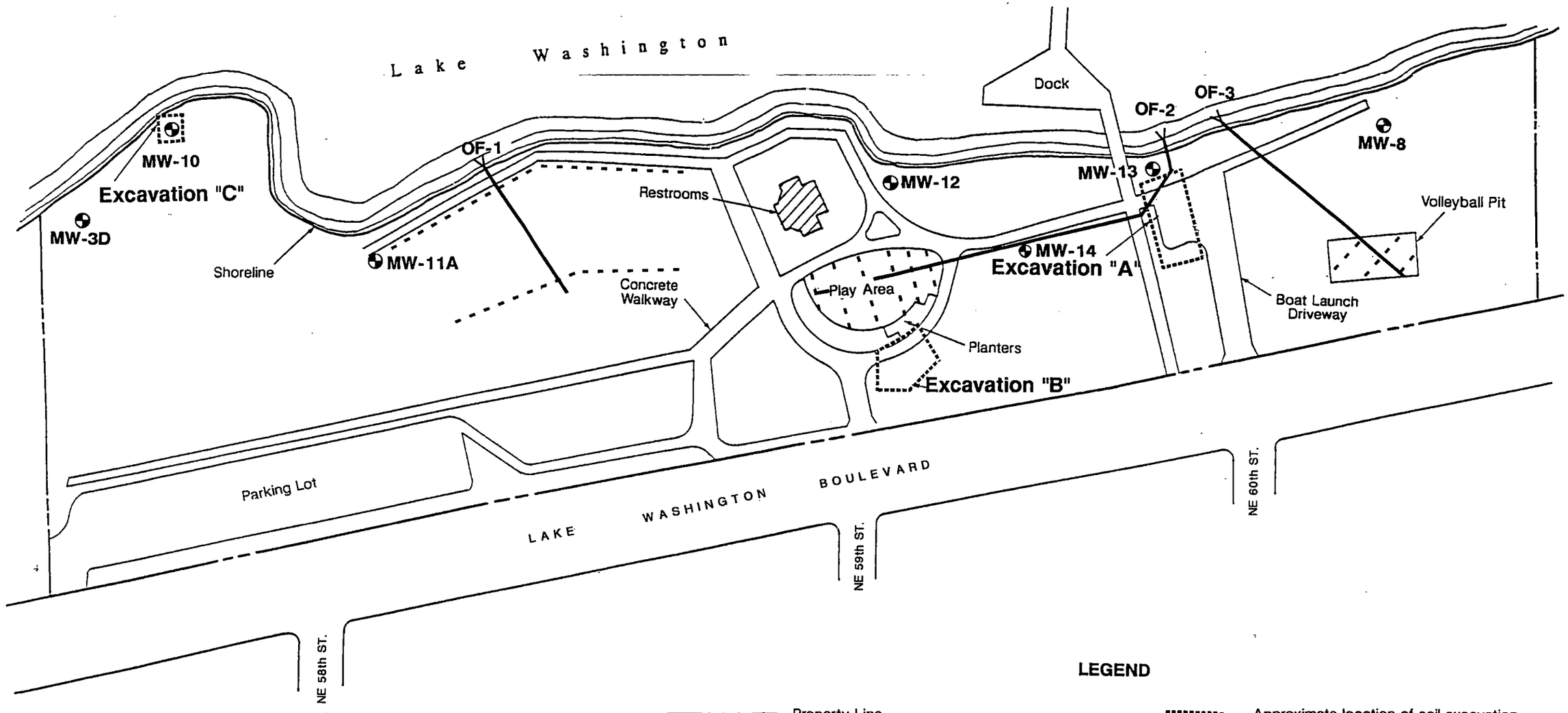
ATTACHMENTS

Table 1
Groundwater Monitoring Samples/Second Round
PAHs & BETX – Water
Quantified by EPA Method 8310 & 8020
Chevron/Houghton Beach
Kirkland, Washington

Compounds	Detection Limit (mg/L)	Cleanup Level (mg/L)	Sample I.D. MW–3D (mg/L)	MW–8 (mg/L)	MW–10 (mg/L)	MW–11A (mg/L)	MW–12 (mg/L)	Dup MW–15* (mg/L)	MW–13 (mg/L)	MW–14 (mg/L)	Outfall 2 (mg/L)
PAH – 8310											
Acenaphthene	0.001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	0.001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) anthracene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (b) fluoranthene	0.0002		ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (k) fluoranthene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (g,h,i) perylene	0.0002		ND	ND	ND	ND	ND	ND	ND	ND	ND
Benzo (a) pyrene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo (a,h) anthracene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	0.0002		ND	ND	ND	ND	ND	ND	ND	0.0005	ND
Fluorene	0.0002	0.320	ND	ND	ND	ND	ND	ND	ND	ND	ND
Indeno (1,2,3–cd) pyrene	0.0001		ND	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	0.001	0.064	ND	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	0.0001		ND	ND	ND	ND	ND	ND	ND	0.001	ND
Pyrene	0.0002		ND	ND	ND	ND	ND	ND	ND	0.0005	ND
BETX – 8020											
Benzene	0.0005	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	0.001	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	0.001	0.005	ND	ND	ND	ND	ND	ND	ND	ND	ND
Total Xylenes	0.001	0.020	ND	ND	ND	ND	ND	ND	ND	ND	ND

Notes:

*Sample MW–15 is a duplicate of MW–12.
mg/L – Milligrams per liter is approximately equivalent to parts per million, depending on density of water sample.
ND – Not detected.



LEGEND

- Property Line
- MW-8 — Existing Monitoring Well number and approximate location
- Approximate location of soil excavation for Method B cleanup
- Underdrainage tightline
- Underdrainage perforated line
- OF-2 — Underdrainage Outfall number and approximate location

N

0 60

Scale in Feet

Reference: Drawing titled Areas of Known Petroleum-Contaminated Soil Based on Test Pit and Borings (Existing Features) by GeoEngineers.

552900

Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

Groundwater Monitoring Network

Chevron/Houghton Beach
Kirkland, Washington

FIGURE 1

JOB NUMBER	DRAWN	APPROVED	DATE	REVISED	DATE
15,582.021	KM		2/5/93		

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: Chevron – Houghton Beach Project
Project No.: 15582.021
Lab Name: CAS – Bothell, Kelso
Lab Number: B920683, K927853B
Sample No.: MW–3D, MW–10, MW–11*, MW–13, MW–14, MW–8; MW–12, OUTFALL 2, MW–15, TRIP BLANK

*Sample bottle for EPA 8310 analysis was broken. Well resampled; new sample ID is MW–11A–12/92.

Matrix: Water

QUALITY ASSURANCE SUMMARY

All data are of known and acceptable quality.

ANALYTICAL METHODS

Parameter	Technique	Method
BETX	GC/PID	EPA 5030/8020
Polycyclic Aromatic Hydrocarbons (PAH)	HPLC	EPA 3510/8310, 3520/8310

TIMELINESS

Parameter	Date Sampled	Date Extracted	Date Analyzed	Time Until Extraction	Time Until Analysis
BETX a	12/15/92	N/A	12/30/92	N/A	15 (14)
BETX	12/16/92	N/A	12/30/92	N/A	14 (14)
PAH b	12/15/92	12/22/92	12/29/92	7 (7)	7 (40)
PAH c	12/22/92	12/27/92	12/29/92	5 (7)	2 (40)
PAH d	12/16/92	12/22/92	12/29/92	6 (7)	7 (40)

a – Samples MW–3D, MW–10, MW–11, MW–13, OUTFALL 2
b – Samples MW–3D, MW–10, MW–13, OUTFALL 2
c – Sample MW–11A–12/92
d – Samples MW–14, MW–12, MW–8, MW–15
N/A – Not Applicable. Extraction not required.
Numbers in parentheses indicate recommended holding times in days for water.

All samples were extracted and analyzed within recommended holding times for water except for the analysis of samples MW–3D, MW–10, MW–11,MW–13, and OUTFALL 2 for BETX. These analyses occurred a few hours past midnight on the fifteenth day of sample holding. This technical exceedance of holding time does not compromise sample integrity because of the extremely conservative assumptions used to set holding times. Sample data are considered to be acceptable without qualification.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: Chevron – Houghton Beach Project
Project No.: 15582.021
Lab Name: CAS – Bothell, Kelso
Lab Number: B920683, K927853B
Sample No.: MW–3D, MW–10, MW–11*, MW–13, MW–14, MW–8; MW–12, OUTFALL 2, MW–15, TRIP BLANK

*Sample bottle for EPA 8310 analysis was broken. Well resampled; new sample ID is MW–11A–12/92.

FIELD QUALITY CONTROL SAMPLES

Field Duplicates: Samples MW–12 and MW–15 are field duplicates analyzed by EPA 8020 and 8310. No analytes were detected at or above their method reporting limits, indicating acceptable field and laboratory precision.

Rinsate: None collected.

Trip Blank: Sample TRIP BLANK was analyzed by EPA 8020. No analytes were detected at or above their method reporting limits, indicating sample cross–contamination is not likely.

LAB QUALITY CONTROL SAMPLES

Reagent Blank: No analytes were detected at or above their method reporting limits by the following methods:

EPA 5030/8020
EPA 3510/8310
EPA 3520/8310

Matrix Spikes: The matrix spike/matrix spike duplicate percent recovery and relative percent differences (RPD) are within CAS's control limits for the following methods:

EPA 3510/8310

EPA 5030/8020: Only a matrix spike sample was analyzed. Sample/sample duplicate analysis was substituted for the method–required matrix spike/spike duplicate analysis. Data are not considered compromised.

Lab Control: A Laboratory Control Sample was analyzed by EPA 3510/8310, 3520/8310 and 5030/8020. Percent recovery of all analytes was within CAS's control limits.

QUALITY ASSURANCE REPORT

PROJECT AND SAMPLE INFORMATION

Project Name: Chevron – Houghton Beach Project
Project No.: 15582.021
Lab Name: CAS – Bothell, Kelso
Lab Number: B920683, K927853B
Sample No.: MW–3D, MW–10, MW–11*, MW–13, MW–14, MW–8; MW–12, OUTFALL 2, MW–15, TRIP BLANK

*Sample bottle for EPA 8310 analysis was broken. Well resampled; new sample ID is MW–11A–12/92.

Duplicates: Sample/sample duplicate analysis was performed by EPA 5030/8020. All relative percent difference (RPD) data were within CAS's control limits.

Surrogates: Surrogate percent recoveries are acceptable and within CAS's control limits for the following methods:

EPA 5030/8020
EPA 3510/8310
EPA 3520/8310

SIGNATURES

Prepared by: K.A.Bourbonnais Date: 2/10/93
Checked by: S H[illegible] Date: 2/10/93

Columbia Analytical Services inc.

January 5, 1993

Service Request No.: K927853B

Steve Reimers
Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue, WA 98009

Re: **Chevron - Houghton Beach/Project #15582.021/B920683**

Dear Steve:

Enclosed are the results of the samples submitted to our laboratory on December 17, 1992. Preliminary results were transmitted via facsimile on January 4, 1993. For your reference, these analyses have been assigned our service request number K927853B.

CAS originally received samples for Chevron-Houghton Beach, project number 15582.021 on December 17, 1992. Sample MW-11 was received broken and the service request K927853 placed on hold until Sample MW-11 was resampled and then received on December 24, 1992.

Sample Outfall 2 (K7853-4) formed a severe emulsion and was therefore extracted by an alternative Method 3520. All QC for this method was within CAS acceptance limits.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

for Colin Elliott

Colin B. Elliott
Senior Project Chemist

CBE/td

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22/92
Sample Matrix:	Water	**Work Order No.:**	K927853B

Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
μg/L (ppb)

	Sample Name:	**MW-3D**	**MW-10**	**MW-13**
	Lab Code:	**K7853-1**	**K7853-2**	**K7853-3**
	Date Analyzed:	**12/29/92**	**12/29/92**	**12/29/92**
Analyte	**MRL**			
Naphthalene	1	ND	ND	ND
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Fluorene	0.2	ND	ND	ND
Phenanthrene	0.1	ND	ND	ND
Anthracene	0.1	ND	ND	ND
Fluoranthene	0.2	ND	ND	ND
Pyrene	0.2	ND	ND	ND
Benz(a)anthracene	0.1	ND	ND	ND
Chrysene	0.1	ND	ND	ND
Benzo(b)fluoranthene	0.2	ND	ND	ND
Benzo(k)fluoranthene	0.1	ND	ND	ND
Benzo(a)pyrene	0.1	ND	ND	ND
Dibenz(a,h)anthracene	0.1	ND	ND	ND
Benzo(g,h,i)perylene	0.2	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by ______ Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22/92
Sample Matrix:	Water	**Work Order No.:**	K927853B

Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
µg/L (ppb)

		Sample Name:	**Outfall 2**	**MW-14**	**MW-12**
		Lab Code:	**K7853-4[a]**	**K7853-5**	**K7853-6**
		Date Analyzed:	**12/29/92**	**12/29/92**	**12/29/92**
Analyte	**MRL**				
Naphthalene	1		ND	ND	ND
Acenaphthene	1		ND	ND	ND
Acenaphthylene	1		ND	ND	ND
Fluorene	0.2		ND	ND	ND
Phenanthrene	0.1		ND	1.0	ND
Anthracene	0.1		ND	ND	ND
Fluoranthene	0.2		ND	0.5	ND
Pyrene	0.2		ND	0.5	ND
Benz(a)anthracene	0.1		ND	ND	ND
Chrysene	0.1		ND	ND	ND
Benzo(b)fluoranthene	0.2		ND	ND	ND
Benzo(k)fluoranthene	0.1		ND	ND	ND
Benzo(a)pyrene	0.1		ND	ND	ND
Dibenz(a,h)anthracene	0.1		ND	ND	ND
Benzo(g,h,i)perylene	0.2		ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.1		ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
a Extracted by EPA Method 3520

Approved by [signature] Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22,27/92
Sample Matrix:	Water	**Work Order No.:**	K927853B

Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
µg/L (ppb)

Sample Name:		MW-8	MW-15	MW-11A-12/92
Lab Code:		K7853-7	K7853-8	K7853-9
Date Analyzed:		12/29/92	12/29/92	12/29/92
Analyte	**MRL**			
Naphthalene	1	ND	ND	ND
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Fluorene	0.2	ND	ND	ND
Phenanthrene	0.1	ND	ND	ND
Anthracene	0.1	ND	ND	ND
Fluoranthene	0.2	ND	ND	ND
Pyrene	0.2	ND	ND	ND
Benz(a)anthracene	0.1	ND	ND	ND
Chrysene	0.1	ND	ND	ND
Benzo(b)fluoranthene	0.2	ND	ND	ND
Benzo(k)fluoranthene	0.1	ND	ND	ND
Benzo(a)pyrene	0.1	ND	ND	ND
Dibenz(a,h)anthracene	0.1	ND	ND	ND
Benzo(g,h,i)perylene	0.2	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by DD Poynair Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Extracted:**	12/22,27/92
Project:	Chevron - Houghton Beach/#15582.021	**Work Order No.:**	K927853B
Sample Matrix:	Water		

Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
µg/L (ppb)

Sample Name:		Method Blank	Method Blank	Method Blank
Lab Code:		K7853-MB1	K7853-MB2[a]	K7853-MB3
Date Analyzed:		12/29/92	12/29/92	12/29/92
Analyte	**MRL**			
Naphthalene	1	ND	ND	ND
Acenaphthene	1	ND	ND	ND
Acenaphthylene	1	ND	ND	ND
Fluorene	0.2	ND	ND	ND
Phenanthrene	0.1	ND	ND	ND
Anthracene	0.1	ND	ND	ND
Fluoranthene	0.2	ND	ND	ND
Pyrene	0.2	ND	ND	ND
Benz(a)anthracene	0.1	ND	ND	ND
Chrysene	0.1	ND	ND	ND
Benzo(b)fluoranthene	0.2	ND	ND	ND
Benzo(k)fluoranthene	0.1	ND	ND	ND
Benzo(a)pyrene	0.1	ND	ND	ND
Dibenz(a,h)anthracene	0.1	ND	ND	ND
Benzo(g,h,i)perylene	0.2	ND	ND	ND
Indeno(1,2,3-cd)pyrene	0.1	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
a Extracted by EPA Method 3520

Approved by _____ Date 1/5/93

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APPENDIX A

LABORATORY QC RESULTS

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22/92
Sample Matrix:	Water	**Date Analyzed:**	12/29,30/92
		Work Order No.:	K927853B

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310

Sample Name	**Lab Code**	**Percent Recovery** *p*-Terphenyl
MW-3D	K7853-1	72
MW-10	K7853-2	69
MW-13	K7853-3	61
Outfall 2	K7853-4[a]	35
MW-14	K7853-5	69
MW-12	K7853-6	69
MW-8	K7853-7	75
MW-15	K7853-8	81
MW-13	K7853-3MS	80
MW-13	K7853-3DMS	76
	CAS Acceptance Criteria	35-132

a Extracted using EPA Method 3520.

Approved by ______ Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22,27/92
Sample Matrix:	Water	**Date Analyzed:**	12/29/92
		Work Order No.:	K927853B

Surrogate Recovery Summary
Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310

Sample Name	Lab Code	Percent Recovery *p*-Terphenyl
MW-11A-12/92	K7853-9	79
Laboratory Control Sample	K7853-LCS1	80
Laboratory Control Sample	K7853-LCS2[a]	92
Method Blank	K7853-MB1	76
Method Blank	K7853-MB2[a]	80
Method Blank	K7853-MB3	83
	CAS Acceptance Criteria	35-132

a Extracted using EPA Method 3520

Approved by _____ Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Received:**	12/17/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Extracted:**	12/22/92
Sample Matrix:	Water	**Date Analyzed:**	12/29,30/92
		Work Order No.:	K927853B

Matrix Spike/Duplicate Matrix Spike Summary
Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
µg/L (ppb)

Sample Name: MW-13
Lab Code: K7853-3

Analyte	Spike Level MS	Spike Level DMS	Sample Result	Spike Result MS	Spike Result DMS	Percent Recovery MS	Percent Recovery DMS	CAS Acceptance Criteria	Relative Percent Difference
Acenaphthene	10	10	ND	8	7	80	70	46-118	13
Fluoranthene	2.0	2.0	ND	1.8	1.6	90	80	40-130	12
Benzo(a)pyrene	1.0	1.0	ND	0.8	0.7	80	70	40-130	13

ND None Detected at or above the method reporting limit

Approved by _____ Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Extracted:**	12/22/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Analyzed:**	12/29/92
LCS Matrix:	Water	**Work Order No.:**	K927853B

Laboratory Control Sample Summary 1
Polynuclear Aromatic Hydrocarbons
EPA Methods 3510/8310
µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Acenaphthene	10	8	80	46-118
Fluoranthene	2.0	1.7	85	40-130
Benzo(a)pyrene	1.0	0.7	70	40-130

Approved by JDD Poynter Date 1/5/93

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Extracted:**	12/22/92
Project:	Chevron - Houghton Beach/#15582.021	**Date Analyzed:**	12/29/92
LCS Matrix:	Water	**Work Order No.:**	K927853B

Laboratory Control Sample Summary 2
Polynuclear Aromatic Hydrocarbons
EPA Methods 3520/8310
µg/L (ppb)

Analyte	True Value	Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Acenaphthene	10	6	60	46-118
Fluoranthene	2.0	1.8	90	40-130
Benzo(a)pyrene	1.0	0.7	70	40-130

Approved by [signature] Date 1/5/93

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APPENDIX B

CHAIN OF CUSTODY INFORMATION

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Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 12-16-92 Page 1 of 2 (RRS 12-16-92)

000013

PROJECT INFORMATION

Project Manager: STEVE REIMERS
Project Name: CHEVRON | HOUGHTON
Project Number: 15882.021
Site Location: KIRKLAND Sampled By: RRS

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☐ SW-846 ☐ CLP ☐ Screening ☒ AGI Std. ☐ Special

Laboratory Number: B92-0683

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State; TPH-G State; TPH-D State; TPH Special Instructions; 418.1 State; 8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs; 8020 Aromatic VOCs; 8020M - BETX only; 8240 GCMS Volatiles; 8270 GCMS Semivol.; 8310 HPLC PAHs; 8040 Phenols; DWS - Volatiles and Semivol.	PESTS/PCBs: 8080 OC Pest/PCBs; 8080M PCBs only; 8140 OP Pesticides; 8150 OC Herbicides; DWS - Herb/pest	METALS: Selected metals: list; Total Lead (Wa); Organic Lead (Ca); TCL Metals (23); Priority Poll. Metals (13); DWS - Metals; MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE); TCLP - Semivolatiles; TCLP - Pesticides; TCLP - Metals	OTHER	NUMBER OF CONTAINERS
MW-3D	12-15-92	1135	WATER	K7853-1		2 2 (RRS) 1						3
MW-10	↓	1210	↓	-2		2 2 1						3
MW-11		1240				2 2 1		Recvd broken				3
MW-13		1500		-3		4 4 2						6
OUTFALL 2	↓	1430		-4		2 2 1						3
MW-14	12-16-92	1045		-5		2 2 1						3
MW-12	↓	1010		-6		2 2 1						3
MW-8	↓	1105	↓	-7		2 2 1						3

LAB INFORMATION

Lab Name: COLUMBIA ANALY.
Lab Address:
Via: HAND

SAMPLE RECEIPT

Total Number of Containers:
Chain of Custody Seals?: Y/N/NA
Intact?: Y/N/NA
Received in Good Condition/Cold:

Turn Around Time: ☒ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions: Called Steve Reimers at AGI-Bellevue
- Steve will re-sample MW-11 for method 8310
- Add a comment to our letter about the Broken bottle.

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1940	Signature: Time:	Signature: Time:
Printed Name: R. STAINSBY Date: 12-16-92	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time:	Signature: Ruth Allison Time:	Signature: Time:
Printed Name: Date:	Printed Name: Ruth Allison Date:	Printed Name: Date:
Company: CAS 12-16-92 12:40	Company: CAS 12/17/92 1000	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

CBE 12/18.

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 12/91

Columbia Analytical Services inc.
1317 South 13th Ave. • Kelso, WA 98626 • (206) 577-7222, FAX (206) 636-1068

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

DATE 12-16-92 PAGE 2 OF 2

PROJECT NAME CHEVRON/HOUGHTON# 1558C.021
PROJECT MNGR. STEVE REIMERS
COMPANY/ADDRESS APPLIED GEOTECHNOLOGY
300 120TH AVE NE
PHONE 453-8383
SAMPLERS SIGNATURE [signature]

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GC/MS 625/8270	Volatile Organics GC/MS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA 418.1 ☐ Oregon 418.1 ☐	TPH/Gas/BTEX 5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐ Hydrocarbon Scan ☐	TPH - HCID	TCLP Metals ☐ VOA ☐ Semi ☐ Pest/Herb ☐	Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020	8310 (PAHs)		REMARKS
MW-15	12-16-92	1200	47853-8	WATER							2									1		
TRIP BLANK	12-16-92			S							1											

RELINQUISHED BY: [signature]
Signature
K. STAINSBY
Printed Name
AGI
Firm
12-16-92 1240
Date/Time

RECEIVED BY: [signature]
Signature
CAS
Printed Name
12-16-92 12140
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. #
Bill to:

SAMPLE RECEIPT:
Shipping VIA:
Shipping #:
Condition:
Lab No.: B42-0683

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY: Ruth Allison
Signature
Ruth Allison
Printed Name
CAS
Firm 12/17/92 1000
Date/Time

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retained by originator

400-05

K-7853-9

Applied Geotechnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-CUSTODY

Date 12/22/92 Page 1 of 1

000015

PROJECT INFORMATION

Project Manager: Steve Reimers
Project Name: Chevron / Houghton Beach
Project Number: 15582.021
Site Location: Kirkland, WA Sampled By: WRS

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☒ SW-846 ☐ CLP ☐ Screening ☐ AGI Std. ☐ Special

Laboratory Number:

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: TPH-ID State:	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	ORGANIC COMPOUNDS: 8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	PESTS/PCBs: 8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	METALS: Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	LEACHING TESTS: TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals	OTHER				NUMBER OF CONTAINERS
MW11A-12/92	12/22/92	1620	Water	K7853-9												X																								3

LAB INFORMATION

Lab Name: C.A.S.
Lab Address: Kelso, WA
Via:

SAMPLE RECEIPT

Total Number of Containers:
Chain of Custody Seals?: Y/N/NA
Intact?: Y/N/NA
Received in Good Condition/Cold:

Turn Around Time: ☒ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: W Simonson Time: 1715	Signature: Time:	Signature: Time:
Printed Name: W. Simonson Date: 12/24/92	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Ruth Allison Time:	Signature: Time:	Signature: Time:
Printed Name: Ruth Allison Date:	Printed Name: Date:	Printed Name: Date:
Company: CAS 12/24/92 1000	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev. 12/91

APPENDIX C

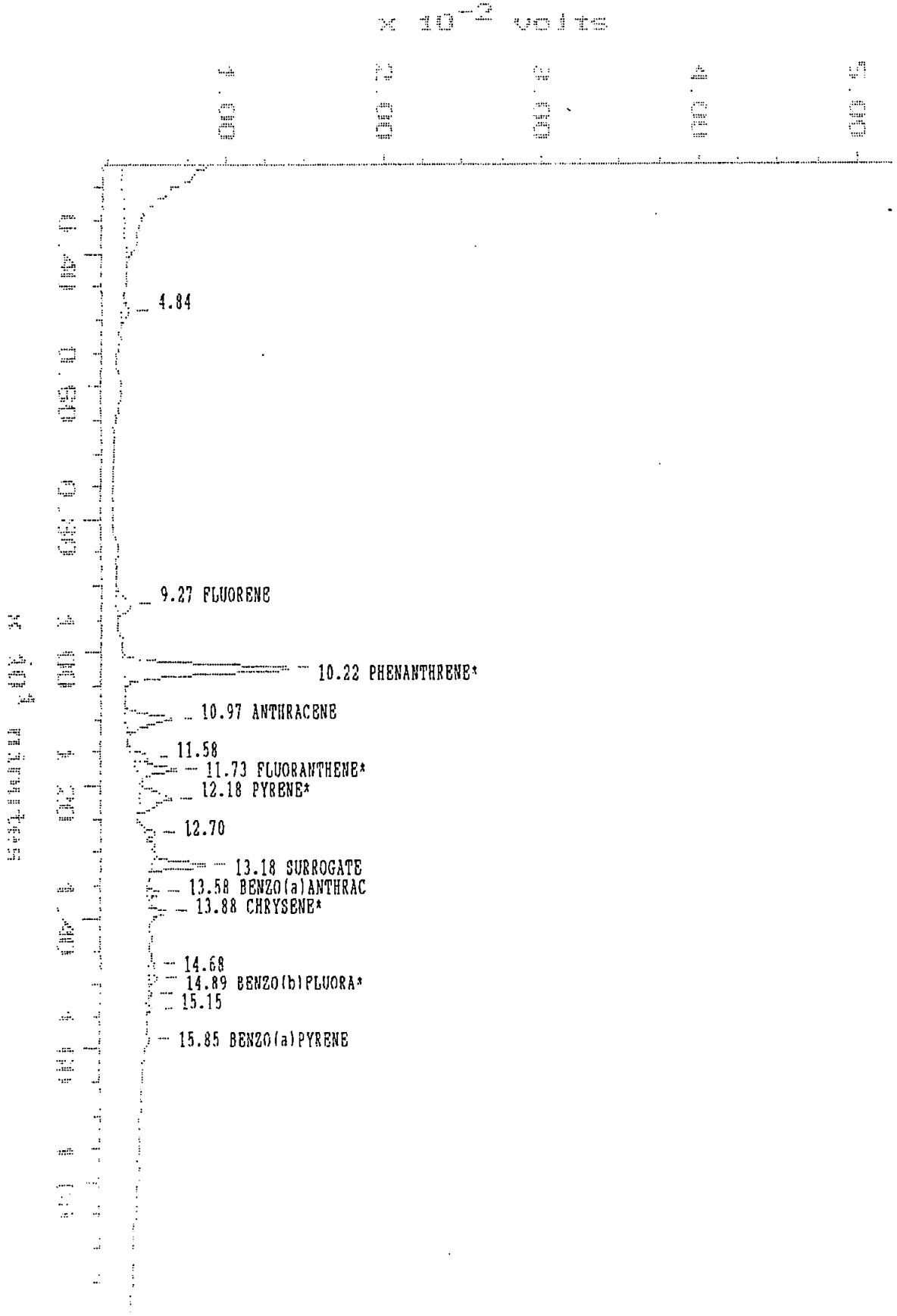
RAW DATA

1317 South 13th Avenue • P.O. Box 479 • Kelso, Washington 98626 • Telephone 206/577-7222 • Fax 206/636-1068

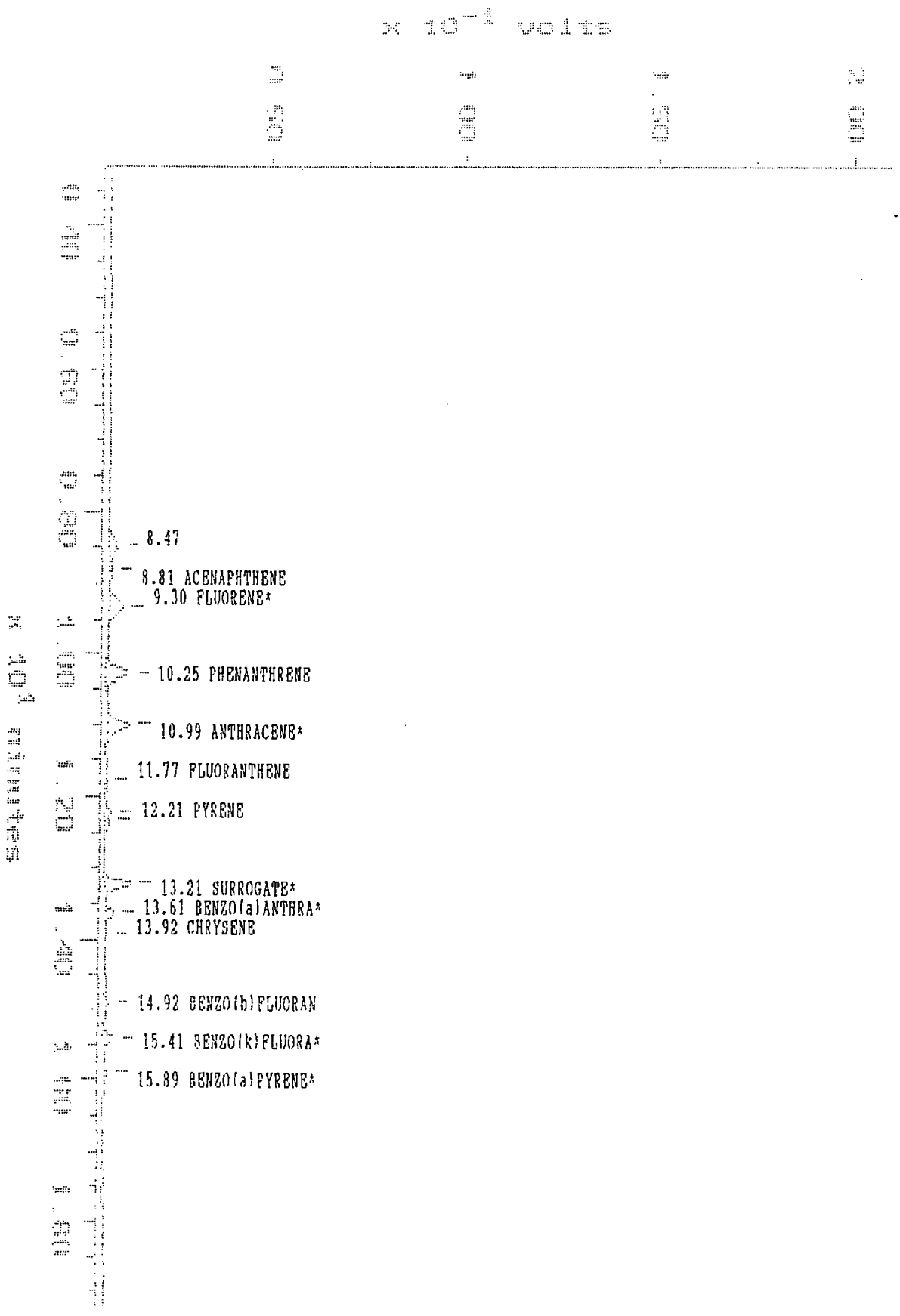
Sample: 7853-5
Acquired: 29-DEC-92 20:59
Dilution: 1 : 1.000

Channel: UV WATERS 484
Method: C:\MAX\DATA1\1229PAH3
Amount: 0.950

Filename: 1229PA18
Operator: DKH



Sample: 7853-5 Channel: FLUO WATERS 470 Filename: 1229PA18
Acquired: 29-DEC-92 20:59 Method: C:\MAX\DATA1\1229PAH3 Operator: DKH
Dilution: 1 : 1.000 Amount: 0.950



MAXIMA 820 CUSTOM REPORT

Printed: 30-DEC-1992 16:37:11

SAMPLE: 7853-5
#18 in Method: 8310 PAH
Acquired: 29-DEC-1992 20:59
Rate: 2.0 points/sec
Duration: 20.000 minutes
Operator: DKH

Type: UNKN
Instrument: PADDINGTON
Filename: 1229PA18.
Index: 18

Dilution: 1.000
Amount: 0.950

DETECTOR: UV WATERS 484

Component Name	Original Conc ((mg/kg-ug/L))	Solution Conc ((mg/L-ppm))	Retention Time (minutes)	Peak Area	Peak Height	Surrogate ((% Recovery))
			1.417	10067	809	
			2.450	319429	6997	
			4.842	6249	428	
FLUORENE	0.28	0.26	9.267	10855	804	26.130
PHENANTHRENE*	0.98	0.93	10.217	108711	10337	93.034
ANTHRACENE	0.14 NEC	0.13	10.967	31921	2846	13.434
			11.575	8448	927	
FLUORANTHENE*	0.51	0.48	11.733	19042	2524	48.407
PYRENE*	0.50	0.48	12.175	25309	2059	47.613
			12.700	4698	724	
SURROGATE	0.73	0.70	13.175	22521	3416	69.631
BENZO(a)ANTHRAC	0.07!! ND	0.07!!	13.583	4485	758	6.702!!
CHRYSENE*	0.06!! ND	0.05!!	13.875	6292	1042	5.498!!
			14.683	1964	240	
BENZO(b)FLUORA*	0.06!! ND	0.05!!	14.892	3544	520	5.262!!
			15.150	1134	190	
BENZO(k)FLUORAN	0.03!! ND	0.03!!	15.375	1475	253	2.954!!
BENZO(a)PYRENE	0.07!! ND	0.07!!	15.850	1663	251	6.602!!
TOTAL	3.42!!	3.25!!		587810	35124	

Result calculation based on peak response more than 10% outside of calibration range.

DETECTOR: FLUO WATERS 470

Component Name	Original Conc ((mg/kg-ug/L))	Solution Conc ((mg/L-ppm))	Retention Time (minutes)	Peak Area	Peak Height	Surrogate ((% Recovery))
			8.467	31490	1764	
ACENAPHTHENE	Invalid	Invalid	8.808	10104	748	Invalid
FLUORENE* ND (TP)	0.19	0.18	9.300	49478	3537	18.021

PHENANTHRENE	0.89	0.84	10.250	58224	5276	84.425
ANTHRACENE*	0.09 ND	0.09	10.992	56092	5663	8.950
FLUORANTHENE	0.33	0.31	11.767	4824	611	31.273
PYRENE	0.13	0.12	12.208	9224	1287	12.428
			12.325	9046	1163	
SURROGATE*	0.72	0.69	13.208	49693	6793	68.517
BENZO(a)ANTHRA*	0.02!! ND	0.02!!	13.608	17166	2380	2.316!!
CHRYSENE	Invalid	Invalid	13.917	4040	497	Invalid
BENZO(b)FLUORAN	Invalid	Invalid	14.917	3634	586	Invalid
BENZO(k)FLUORA*	Invalid	Invalid	15.408	17717	2351	Invalid
BENZO(a)PYRENE*	Invalid	Invalid	15.892	8586	981	Invalid
OTAL	2.38!!	2.26!!		329317	33637	

!! Result calculation based on peak response more than 10% outside of calibration range.

Columbia Analytical Services inc.

January 12, 1993

Work Order No.: B920683

Steve Reimers
Applied Geotechnology, Inc.
P.O. Box 3885
Bellevue, WA 98009

Re: **Chevron - Houghton Beach/Project #15582.021**

Dear Steve:

Attached are the results of BTEX analysis for the samples submitted to our laboratory on December 16, 1992. Preliminary results were transmitted via facsimile on December 6, 1992. For your reference, these analyses have been assigned our service request number B920683.

Unfortunately, samples MW-3D, MW-10, MW-11, MW-13 and Outfall-2 were analyzed just beyond midnight of the 14th day of holding time.

All analyses were performed consistent with our laboratory's quality assurance program. All results are intended to be considered in their entirety, and CAS is not responsible for use of less than the complete report. Results only apply to samples analyzed.

Please call if you have any questions.

Respectfully submitted,

Columbia Analytical Services, Inc.

Colin B. Elliott
Laboratory Manager

CBE/bdr

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/15/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Work Order No.:**	B920683

BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name:		**MW-3D**	**MW-10**	**MW-11**
Lab Code:		**B0683-1**	**B0683-2**	**B0683-3**
Date Analyzed:		**12/30/92***	**12/30/92***	**12/30/92***
Analyte	**MRL**			
Benzene	0.0005	ND	ND	ND
Toluene	0.001	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND
Total Xylenes	0.001	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
***** Sample was analyzed one day past the end of the recommended maximum holding time. EPA studies have shown that VOC data is not significantly impacted for selected parameters, when the samples are preserved and stored for up to 90 days prior to initiation of analysis.

Approved by Colin Elliott Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/15,16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Work Order No.:**	B920683

BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name:		**MW-13**	**OUTFALL-2**	**MW-14**
Lab Code:		**B0683-4**	**B0683-5**	**B0683-6**
Date Analyzed:		**12/30/92***	**12/30/92***	**12/30/92**
Analyte	**MRL**			
Benzene	0.0005	ND	ND	ND
Toluene	0.001	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND
Total Xylenes	0.001	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit
* Sample was analyzed one day past the end of the recommended maximum holding time. EPA studies have shown that VOC data is not significantly impacted for selected parameters, when the samples are preserved and stored for up to 90 days prior to initiation of analysis.

Approved by Adam Ellis Date 1/12/93

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Work Order No.:**	B920683

BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name:		**MW-12**	**MW-8**	**MW-15**
Lab Code:		**B0683-7**	**B0683-8**	**B0683-9**
Date Analyzed:		**12/30/92**	**12/30/92**	**12/30/92**
Analyte	**MRL**			
Benzene	0.0005	ND	ND	ND
Toluene	0.001	ND	ND	ND
Ethylbenzene	0.001	ND	ND	ND
Total Xylenes	0.001	ND	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Chris Elliott Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/15,16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Work Order No.:**	B920683

BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name:		**Trip Blank**	**Method Blank**
Lab Code:		**B0683-10**	**B0683-MB**
Date Analyzed:		**12/30/92**	**12/29/92**
Analyte	**MRL**		
Benzene	0.0005	ND	ND
Toluene	0.001	ND	ND
Ethylbenzene	0.001	ND	ND
Total Xylenes	0.001	ND	ND

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by John Elliott Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Date Analyzed:**	12/29,30/92
		Work Order No.:	B920683

Surrogate Recovery Summary
BTEX
EPA Methods 5030/8020

Sample Name	Lab Code	Spike Level (mg/L)	Percent Recovery *α,α,α*-Trifluorotoluene
MW-3D	B0683-1	0.500	101
MW-10	B0683-2	0.500	103
MW-11	B0683-3	0.500	102
MW-13	B0683-4	0.500	102
MW-13	B0683-4Dup	0.500	102
OUTFALL-2	B0683-5	0.500	102
MW-14	B0683-6	0.500	100
MW-12	B0683-7	0.500	101
MW-8	B0683-8	0.500	102
MW-15	B0683-9	0.500	103
Trip Blank	B0683-10	0.500	100
Method Blank	B0683-MB	0.500	98
Laboratory Control Sample	B0683-LCS	0.500	110
	CAS Acceptance Criteria		50-130

Approved by Chris Elliott Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/15,16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Date Analyzed:**	12/30/92
		Work Order No.:	B920683

Duplicate Summary
BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name: MW-13
Lab Code: B0683-4

Analyte	MRL	Sample Result	Duplicate Sample Result	Average	Relative Percent Difference
Benzene	0.0005	ND	ND	--	--
Toluene	0.001	ND	ND	--	--
Ethylbenzene	0.001	ND	ND	--	--
Total Xylenes	0.001	ND	ND	--	--

MRL Method Reporting Limit
ND None Detected at or above the method reporting limit

Approved by Alan Elliott Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client:	Applied Geotechnology, Inc.	**Date Collected:**	12/15,16/92
Project:	Chevron - Houghton Beach	**Date Received:**	12/16/92
Sample Matrix:	Water	**Date Analyzed:**	12/30/92
		Work Order No.:	B920683

Matrix Spike Summary
BTEX
EPA Methods 5030/8020
mg/L (ppm)

Sample Name: Batch QC
Lab Code: B0684-11

Analyte	Spike Level	Sample Result	Spiked Sample Result	Percent Recovery	CAS Percent Recovery Acceptance Criteria
Benzene	0.100	ND	0.099	99	51-159
Toluene	0.100	ND	0.095	95	50-156
Ethylbenzene	0.100	ND	0.093	93	49-157

ND None Detected at or above the method reporting limit

Approved by _____ Date 1/12/93

18912 North Creek Parkway, Suite 118 • Bothell, WA 98011 • 206/486-6983 • Fax 206/486-7695

Applied G[illegible]chnology Inc.
Geotechnical Engineering
Geology & Hydrogeology

CHAIN-OF-[illegible]

RRS 12-16-92

Date 12-16-92 Page 2 1 of 2

PROJECT INFORMATION

Project Manager: STEVE REIMERS
Project Name: CHEVRON | HOUGHTON
Project Number: 15882.021
Site Location: KIRKLAND Sampled By: RRS

DISPOSAL INFORMATION

☒ Lab Disposal (return if not indicated)
Disposal Method: _____
Disposed by: _____ Disposal Date: _____

QC INFORMATION (check one)

☐ SW-846 ☐ CLP ☐ Screening ☒ AGI Std. ☐ Special

Laboratory Number: BQ2-0683

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID
MW-3D	12-15-92	1135	WATER	
MW-10		1210		
MW-11		1240		
MW-13		1500		
OUTFALL 2		1430		
MW-14	12-16-92	1045		
MW-12		1010		
MW-8		1105		

	TPH-ID State:	TPH-G State:	TPH-D State:	TPH Special Instructions	418.1 State:	8015M	8010 Halogenated VOCs	8020 Aromatic VOCs	8020M - BETX only	8240 GCMS Volatiles	8270 GCMS Semivol.	8310 HPLC PAHs	8040 Phenols	DWS - Volatiles and Semivol.	8080 OC Pest/PCBs	8080M PCBs only	8140 OP Pesticides	8150 OC Herbicides	DWS - Herb/pest	Selected metals: list	Total Lead (Wa)	Organic Lead (Ca)	TCL Metals (23)	Priority Poll. Metals (13)	DWS - Metals	MFSP - Metals (Wa)	TCLP - Volatiles (ZHE)	TCLP - Semivolatiles	TCLP - Pesticides	TCLP - Metals				NUMBER OF CONTAINERS
PETROLEUM HYDROCARBONS																																	
ORGANIC COMPOUNDS																																	
PESTS/PCBs																																	
METALS																																	
LEACHING TESTS																																	
OTHER																																	
MW-3D									2	2 RRS	1																						3
MW-10									2	2	1																						3
MW-11									2	2	1																						3
MW-13									4	4	2																						6
OUTFALL 2									2	2	1																						3
MW-14									2	2	1																						3
MW-12									2	2	1																						3
MW-8									2	2	1																						3

LAB INFORMATION

Lab Name: COLUMBIA ANALYT.
Lab Address:
Via: HAND

SAMPLE RECEIPT

Total Number of Containers:	
Chain of Custody Seals?: Y/N/NA	
Intact?: Y/N/NA	
Received In Good Condition/Cold:	

Turn Around Time: ☒ Standard ☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 1 wk.

PRIOR AUTHORIZATION IS REQUIRED FOR RUSH DATA

Special Instructions:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
Signature: Time: 1240	Signature: Time:	Signature: Time:
Printed Name: R. STAINSBY Date: 12-16-92	Printed Name: Date:	Printed Name: Date:
Company: AGI	Company:	Company:
RECEIVED BY: 1.	**RECEIVED BY: 2.**	**RECEIVED BY: 3.**
Signature: Time:	Signature: Time:	Signature: Time:
Printed Name: Date:	Printed Name: Date:	Printed Name: Date:
Company: COLS 12-16-92 12:40	Company:	Company:

AGI OFFICES: Bellevue: (206) 453-8383 Tacoma: (206) 383-4380
Portland: (503) 222-2820 Pleasanton: (415) 460-5495

DISTRIBUTION: White, Canary to Analytical Laboratory; Pink to AGI Project Files; Gold to AGI Disposal Files

Rev 12/91

Analytical Services inc.
1317 South 13th Ave. • Kelso, WA 98626 • (206) 577-7222, FAX (206) 636-1068

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST

DATE 12-16-92 PAGE 2 OF 2

PROJECT NAME CHEVRON / HOUGHTON 1558C.021
PROJECT MNGR. STEVE REIMERS
COMPANY/ADDRESS APPLIED GEOTECHNOLOGY
300 120TH AVE NE
PHONE 453-8365
SAMPLERS SIGNATURE

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX	NUMBER OF CONTAINERS	Base/Neu/Acid Organics GCMS 625/8270	Volatile Organics GCMS 624/8240	Halogenated or Aromatic Volatiles 601/8010 ☐ 602/8020 ☐	Pesticides/PCBs 608/8080	Total Petroleum Hydrocarbons EPA 418.1 ☐ Oregon 418.1 ☐	TPH/Gas/BTEX/5030/8015/8020 Gas ☐ BTEX ☐	TPH/8015 Modified Diesel ☐	Hydrocarbon Scan ☐	TPH - HCID	TCLP Metals ☐ VOA ☐	Semi Pest/ VOA ☐ Herb ☐ Metals (total or dissolved) List Below	Cyanide	pH, Cond, Cl, SO_4, PO_4, F, Br NO_2, NO_3 (circle)	NH_3-N, COD, Total-P, TKN, TOC (circle)	Total Organic Halides (TOX) 9020	8310 (PAHs)		REMARKS
MW-15	12-16-92	1200		WATER						2											1		
TRIP BLANK	12-16-92			S						1													

RELINQUISHED BY:
Signature: R. STANSBY
Printed Name: AGE
Firm
Date/Time: 12-16-92 1240

RECEIVED BY:
Signature
Printed Name: CMS
Firm
Date/Time: 12-16-92 12140

RELINQUISHED BY:
Signature
Printed Name
Firm
Date/Time

RECEIVED BY:
Signature
Printed Name
Firm
Date/Time

TURNAROUND REQUIREMENTS:
___ 24 hr ___ 48 hr ___ 5 day
X Standard (~ 10-15 working days)
___ Provide Verbal Preliminary Results
___ Provide FAX Preliminary Results
Requested Report Date ___

REPORT REQUIREMENTS
___ I. Routine Report
___ II. Report (includes DUP, MS, MSD, as required, may be charged as samples)
___ III. Data Validation Report (includes All Raw Data)
___ IV. CLP Deliverable Report

INVOICE INFORMATION:
P.O. # ___
Bill to: ___

SAMPLE RECEIPT:
Shipping VIA: ___
Shipping #: ___
Condition: ___
Lab No.: B47-0683

SPECIAL INSTRUCTIONS/COMMENTS:

DISTRIBUTION: WHITE - return to originator; YELLOW - lab; PINK - retain