SEATTLE STEAM
COMPANY

1325 Fourth Avenue, Suite 1440
Seattle, Washington 98101
Telephone 206/623-6366
Fax 467-6394

January 29, 1993

Mr. Joe Hicky
UST Program
State of Washington
Department of Ecology
Northwest Regional Office
3190 - 160th Ave. S.E.
Bellevue, WA 98008-5452

Dear Mr. Hicky:

Enclosed are the results of the chemical analyses of groundwater samples obtained in December, 1992 from monitoring wells around the plant.

TPH and PAH concentrations detected in this round of testing indicate no significant changes from previous samplings of these wells.

We will continue to test these wells on semi-annual basis. The next round of testing will be around mid-May and we will be keeping you informed of the results as we get them.

Sincerely,

Ruel T. Harder
Chief Engineer

RTH/sh
Encl.
cc: DOE File

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

19017 120th Avenue N.E., Suite 107 • Bothell, Washington 98011
Telephone (206) 486-7905 (FAX 486-7651)

January 23, 1993

Ruel Harder
Seattle Steam Company
1319 Western Avenue
Seattle, Washington 98101

Re: Results of Ground Water Monitoring for Selected Wells, Post Street and Western Avenue Plants, December, 1992

Dear Mr. Harder:

Here are the results of chemical analyses of ground-water samples, obtained in December 1992, from selected monitoring wells at the subject plants. The wells were installed in December 1989 and January 1990 (DOF report dated February 1990). The purpose of this work is to provide a basis for evaluating changes in ground-water quality as a result of the relining of the tanks on Western Avenue, and evaluating whether migration of dissolved oil constituents toward the west is occurring.

WORK PLAN

- Ground-water Sampling and Analyses - Ground-water samples were taken from the two wells (PS-1 and PS-2) installed at the Post Street Plant (Figure 1), and two of the wells (WA-7, and WA-16) installed at the Western Avenue Plant (Figure 2). A duplicate sample (WA-7d) was also taken. The samples were submitted to the laboratory for analysis of total petroleum hydrocarbons (TPH) (Ecology Method WTPH-418.1) and polynuclear aromatic hydrocarbons (PAH's) using EPA Method 8310. (For previous sampling rounds, method 8100 was used for PAH testing, however, because of indications of apparent "false positives," and/or interference effects, the laboratory elected to perform either the 8270 or 8310 analyses to attempt to meet the MTCA method A cleanup level limits for the carcinogenic PAH's (CPAH's).

- Data Analysis and Report - The results of the analyses and laboratory results are presented in this report. This report includes:
  - Site plans showing the monitoring well locations;
  - Results of the laboratory analyses;
  - Description of our sampling procedures; and
  - Evaluation of water-quality conditions

EVALUATION OF CHEMICAL ANALYSIS RESULTS

The results of the chemical analyses for this and previous rounds of sampling are shown on Table 1, attached.

Review of the analytical results show the following:

Post Street Plant

- The TPH concentration in water samples from well PS-1 has varied from less than 1 mg/L to 4 mg/L. Carcinogenic PAH (CPAH) concentrations continue to be below detection limits (for this sampling round, detection limits for CPAHs for the water sample from PS-1 were 0.005 mg/L because of matrix and/or other effects-refer to the attached laboratory analysis sheets).

- The TPH concentration in water samples from well PS-2 has remained less than 1.0 mg/L. PAH's were not detected in well PS-2 (detection limits for CPAH compounds were 0.0001 mg/L).

Western Avenue Plant

- TPH which initially ranged from about 1.1 to 1.5 mg/L in water samples from wells WA-7 and -16, has been less than 1 mg/L in the last four rounds of sampling over the past year and one half.

- PAH's were not detected in the current round of water samples from wells WA-7 and WA-16 (detection limits for CPAH compounds of 0.0001 mg/L).

- We have discontinued sampling of WA-13, located between the Western Avenue Plant and the tanks on the north side of Western Avenue, because of poor recovery and heavy turbidity.

We recommend that water quality sampling continue to evaluate long-term water quality trends following the remedial actions accomplished by Seattle Steam. We suggest that the sampling continue to be accomplished semi-annually. The next round is recommended for mid-May.

FIELD GROUND-WATER SAMPLING PROCEDURES

Wells that were expected to have the lowest level of contamination, were sampled first. A water level measurement was initially made. The samples were collected by first removing at least 3 casing volumes of water and/or measuring pH, specific conductivity, and temperature until a consistent reading was obtained. A clear PVC bottom-filling disposable bailer was used for each well. Laboratory-supplied containers were then carefully filled, taking care to remove air bubbles. After filling, the bottles were tapped to minimize air bubbles. Samples were then immediately placed in chilled ice chests for transport to the laboratory. One duplicate sample was obtained from one well (WA-7) for the current sampling round. (A rinsate blank was not considered appropriate, considering the use of disposable bailers.) Ground-water sampling activities were documented on the Water Quality Sample Field Data Sheet, and an appropriate chain of custody form was filled out.

All samples for chemical analysis were placed in containers provided by North Creek Analytical of Bothell, Washington. All samples were labeled. A chain-of-custody form was completed for all samples to be transmitted to the laboratory. A copy of the form, signed by a representative of the laboratory who received the samples and by the person delivering the samples to the laboratory, was retained and kept in the project file.

This report has been prepared using generally accepted professional practices, related to the nature of the work accomplished, in the same or similar localities, at the time the services were performed. This report was prepared for the exclusive use of the Seattle Steam Company for specific application to the project purpose. No other conditions, expressed or implied, should be understood.

We appreciate the opportunity of providing you with our services. If you have any questions, please call.

Sincerely,
DALTON, OLMSTED & FUGLEVAND, INC.

Terry L. Olmsted
Sr. Consulting Engineering Geologist

Enclosures: Table 1, Summary of Results of Chemical Analyses
Figure 1 & 2, Site Plan
Laboratory Results - December 1992 Round of Sampling

Dalton, Olmsted & Fuglevand, Inc.
Environmental Consultants
Seattle Steam Co. 01/08/93

Table 1. Summary of Results of Chemical Analyses on Monitoring Well Samples Post Street and Western Avenue Plants

POST STREET PLANT

	Date/Concentration in mg/L (Units for other values are indicated)					
Well No. PS-1	**12/19/89**	**02/19/91**	**05/24/91**	**11/26/91**	**06/04/92**	**12/9/92**
TPH(EPA 418.1)	2.1	1.1	<1.0	<1.0	4.2, 3.7(d))	1.5
PAH - EPA Method	8100	8100	8100	8270	8310	8310
Acenapthene	<0.006	<0.0005	<0.0001	0.0012	<0.025, <0.025(d)	<0.005
Benzo(a)anthracene(CPAH)	0.007	<0.0005	<0.0001	<0.0002	<0.0001, <0.0001(d)	<0.005
Chrysene(CPAH)	0.010	<0.0005	<0.0001	<0.0002	<0.0001, <0.0001(d)	<0.005
Fluoranthene	<0.006	<0.0005	<0.0001	0.0002	<0.025, <0.025(d)	<0.005
Pyrene	0.006	<0.0005	0.00029	0.00028	<0.025, <0.025(d)	<0.005
Other PAH compounds	N.D.*	<0.0005	<0.0001	<0.0002	N.D., N.D.(d)	N.D.
pH	N.A.	6.7	N.A.	7.6	7.4	6.87
Conductivity(umohs/cm)	N.A.	458	N.A.	321	242	405

Well No. PS-2						
TPH(EPA 418.1)	0.6	<1.0	<1.0	<1.0	<1.0	<1.0
PAH - EPA Method	8100	8100	8100	8270	8310	8310
PAH Compounds	N.A.	<0.0005	<0.0001	<0.0002	N.D.	N.D.
pH	N.A.	6.7	N.A.	7.8	7.7	6.91
Conductivity(umohs/cm)	N.A.	227	N.A.	169	231	165

WESTERN AVENUE PLANT

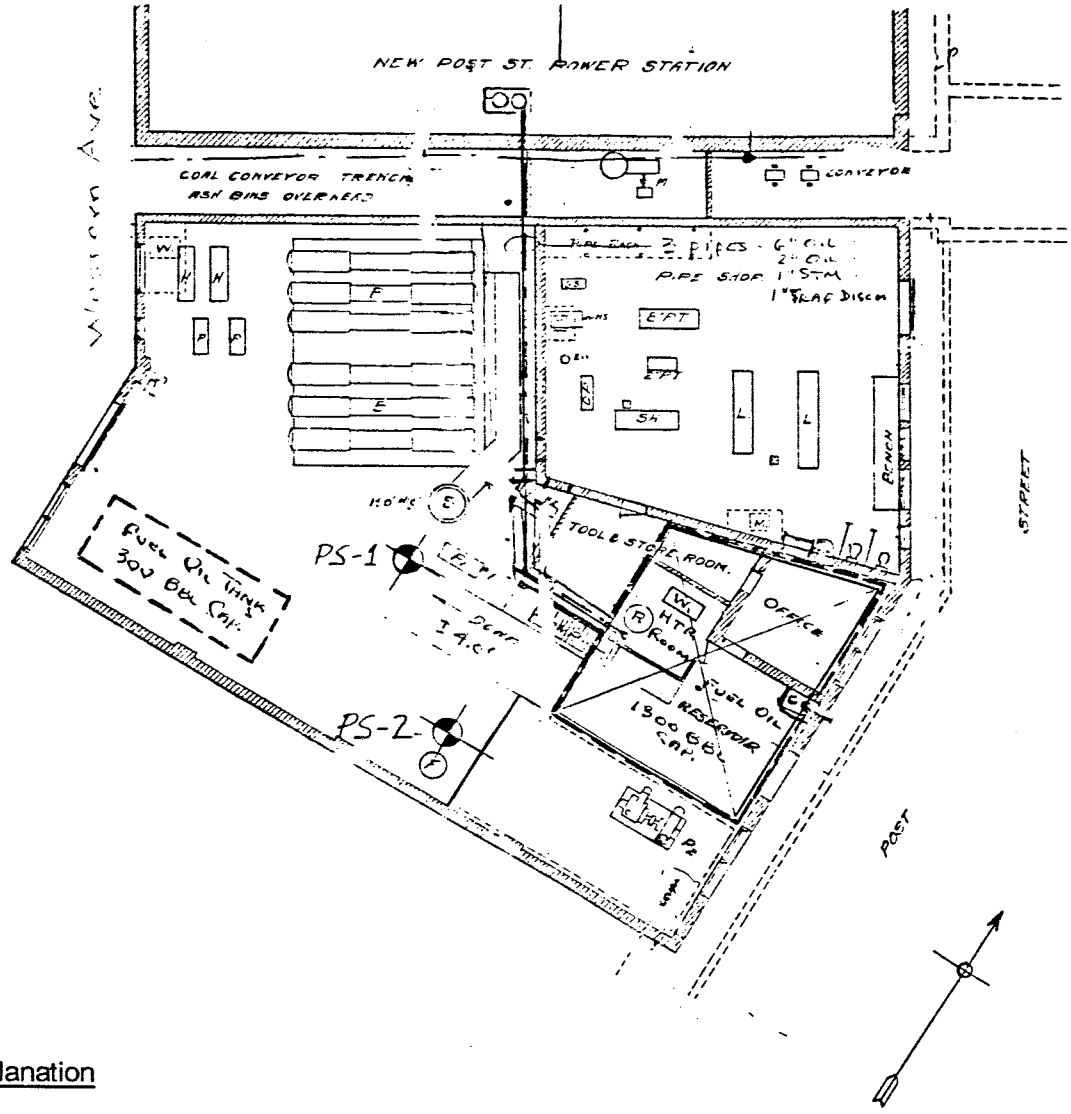
	Date/Concentration in mg/L (Units for other values are indicated)					
Well No. WA-7	**01/17/90**	**02/13/91**	**05/24/91**	**11/26/91**	**06/04/92**	**12/9/92**
TPH(EPA 418.1)	1.1	1.5	<1.0	<1.0	<1.0	<1.0, <1.0(d)
PAH - EPA Method	8100	8100	8100	8270	8310	8310
Acenaphthylene	<0.008	<0.001	0.00015	<0.0002	<0.025	<0.005, <0.005(d)
Other PAH Compounds	N.D.*	<0.001	<0.0001	<0.0002	N.D.	N.D., N.D. (d)
pH	N.A.	6.7	N.A.	6.6	7.2	6.72
Conductivity(umohs/cm)	N.A.	3900	N.A.	2800	2670	3220

Well No. WA-16						
TPH(EPA 418.1)	0.5	1.6	<1.0	<1.0	<1.0	<1.0
PAH - EPA Method	8100	8100	8100	8270	8310	8310
PAH Compounds	<0.008	<0.001	<0.0001	<0.0002	N.D.	N.D.
pH	N.A.	6.6	N.A.	7.1	7.7	6.84
Conductivity(umohs/cm)	N.A.	910	N.A.	869	664	677

Well No. WA-13				
TPH(EPA 418.1)	1.1	1.3	<1.0	1.8
PAH - EPA Method	8100	8100	8100	8270
Benzo (a) anthracene(CPAH)	<0.008	<0.001	<0.0001	0.00070
Benzo (b&k) fluoranthene(CPAH)	<0.008	<0.001	<0.0001	0.0012
Benzo (ghi) perylene	<0.008	<0.001	<0.0001	0.00068
Benzo (a) pyrene(CPAH)	N.A.	<0.001	0.0013	0.00073
Crysene(CPAH)	<0.008	<0.001	<0.0001	0.00086
Fluoranthene	<0.008	<0.001	<0.0001	0.00067
Indeno (1,2,3-cd) pyrene(CPAH)	<0.008	<0.001	<0.0001	0.00059
Phenanthrene	<0.008	<0.001	<0.0001	0.00024
Pyrene	<0.008	<0.001	<0.0001	0.0011
Other PAH Compounds	N.A.	<0.001	<0.0001	<0.0002
pH	N.A.	7.2	N.A.	7.1
Conductivity(umohs/cm)	N.A.	780	N.A.	655

Sampling of WA-13 discontinued because of poor recovery and turbidity

NOTES:Refer to attached laboratory reports for detailed results
*Refer to Dec.1989/Jan.1990 laboratory reports for detection limits
TPH = Total Recoverable Petroleum Hydrocarbons
PAH = Polynuclear Aromatic Hydrocarbons
N.D.= Not detected above detection limits as indicated on attached laboratory data sheets
N.A.= Not analyzed
(d) = duplicate sample



Explanation

PS-1

Monitoring Well Location and Designation

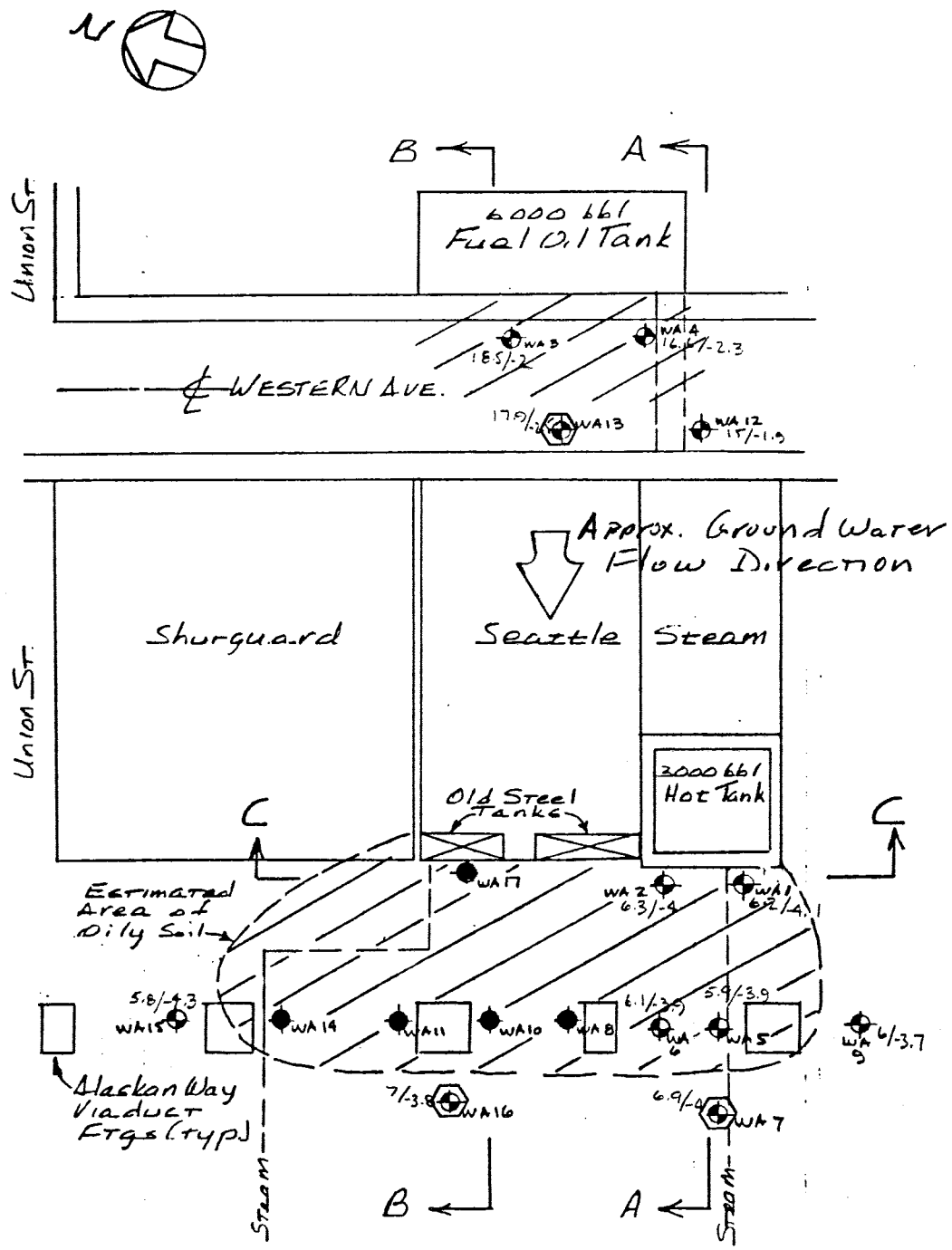
Approx. Scale: 1"=25'

Seattle Steam Company
POST STREET PLANT

SITE PLAN

SSC-001-01 **FIGURE 1**

DALTON, OLMSTED & FUGLEVAND, INC.



Explanation

Monitoring Well

7/-3.8 Surface/Groundwater Elev. 1-27-90 10 AM

Boring

Approx. Scale 1" = 35'

Seattle Steam Company
WESTERN AVENUE PLANT

SITE PLAN

SSC-001-01 **FIGURE 2**

DALTON, OLMSTED & FUGLEVAND, INC.

LABORATORY RESULTS - DECEMBER 9, 1992 ROUND OF SAMPLING

NORTH CREEK ANALYTICAL

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Matrix Descript:	Water	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	WTPH-418.1	Extracted:	Dec 11, 1992
Attention: Terry Olmsted	First Sample #:	212-0360	Analyzed:	Dec 11, 1992
			Reported:	Dec 22, 1992

TOTAL RECOVERABLE PETROLEUM HYDROCARBONS (WTPH-418.1)

Sample Number	Sample Description	Petroleum Oil mg/L (ppm)
212-0360	WA-7	N.D.
212-0361	WA-7(D)	N.D.
212-0362	WA-16	N.D.
212-0363	PS-1	1.5
212-0364	PS-2	N.D.
BLK121192	Method Blank	N.D.

Detection Limits:	**1.0**

Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc

Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Sample Descript:	Water, WA-7	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	212-0360	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	0.10	N.D.
Benzo (a) pyrene	0.10	N.D.
Benzo (b) fluoranthene	0.10	N.D.
Benzo (ghi) perylene	0.10	N.D.
Benzo (k) fluoranthene	0.10	N.D.
Chrysene	0.10	N.D.
Dibenzo (a,h) anthracene	0.10	N.D.
Fluoranthene	0.10	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	0.10	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	0.50	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 133

Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc

Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Sample Descript:	Water, WA-7(D)	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	212-0361	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	0.10	N.D.
Benzo (a) pyrene	0.10	N.D.
Benzo (b) fluoranthene	0.10	N.D.
Benzo (ghi) perylene	0.10	N.D.
Benzo (k) fluoranthene	0.10	N.D.
Chrysene	0.10	N.D.
Dibenzo (a,h) anthracene	0.10	N.D.
Fluoranthene	0.10	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	0.10	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	0.50	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 99

Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc

Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Sample Descript:	Water, WA-16	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	212-0362	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	0.10	N.D.
Benzo (a) pyrene	0.10	N.D.
Benzo (b) fluoranthene	0.10	N.D.
Benzo (ghi) perylene	0.10	N.D.
Benzo (k) fluoranthene	0.10	N.D.
Chrysene	0.10	N.D.
Dibenzo (a,h) anthracene	0.10	N.D.
Fluoranthene	0.10	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	0.10	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	0.50	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 137

Analytes reported as N.D. were not present above the stated limit of detection.

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Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Sample Descript:	Water, PS-1	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	212-0363	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	5.0	N.D.
Benzo (a) pyrene	5.0	N.D.
Benzo (b) fluoranthene	5.0	N.D.
Benzo (ghi) perylene	5.0	N.D.
Benzo (k) fluoranthene	5.0	N.D.
Chrysene	5.0	N.D.
Dibenzo (a,h) anthracene	5.0	N.D.
Fluoranthene	5.0	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	5.0	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	5.0	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 138

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

NORTH CREEK ANALYTICAL inc

Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03	Sampled:	Dec 9, 1992
19017 120th Avenue NE, #107	Sample Descript:	Water, PS-2	Received:	Dec 9, 1992
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	212-0364	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	0.10	N.D.
Benzo (a) pyrene	0.10	N.D.
Benzo (b) fluoranthene	0.10	N.D.
Benzo (ghi) perylene	0.10	N.D.
Benzo (k) fluoranthene	0.10	N.D.
Chrysene	0.10	N.D.
Dibenzo (a,h) anthracene	0.10	N.D.
Fluoranthene	0.10	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	0.10	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	0.50	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 126

Analytes reported as N.D. were not present above the stated limit of detection.

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Kimberle Stark
Project Manager

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID:	Seattle Steam, SSC-001-03		
19017 120th Avenue NE, #107	Sample Descript:	Method Blank		
Bothell, WA 98011	Analysis Method:	EPA 8310	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Sample Number:	BLK121492	Analyzed:	Dec 15, 1992
			Reported:	Dec 22, 1992

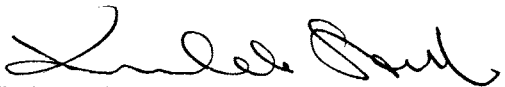
POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8310)

Analyte	Detection Limit µg/L (ppb)	Sample Results µg/L (ppb)
Acenaphthene	5.0	N.D.
Acenaphthylene	5.0	N.D.
Anthracene	5.0	N.D.
Benzo (a) anthracene	0.10	N.D.
Benzo (a) pyrene	0.10	N.D.
Benzo (b) fluoranthene	0.10	N.D.
Benzo (ghi) perylene	0.10	N.D.
Benzo (k) fluoranthene	0.10	N.D.
Chrysene	0.10	N.D.
Dibenzo (a,h) anthracene	0.10	N.D.
Fluoranthene	0.10	N.D.
Fluorene	5.0	N.D.
Indeno (1,2,3-cd) pyrene	0.10	N.D.
Naphthalene	5.0	N.D.
Phenanthrene	5.0	N.D.
Pyrene	0.50	N.D.

2-Fluorobiphenyl Surrogate Recovery, %: 82

Analytes reported as N.D. were not present above the stated limit of detection.

NORTH CREEK ANALYTICAL inc



Kimberle Stark
Project Manager

NORTH CREEK ANALYTICAL

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID: Seattle Steam, SSC-001-03	Analyst:	S. Mitchell
19017 120th Avenue NE, #107	EPA Method: WTPH-418.1		
Bothell, WA 98011	Sample Matrix: Water	Extracted:	Dec 11, 1992
Attention: Terry Olmsted	Units: mg/L (ppm)	Analyzed:	Dec 11, 1992
		Reported:	Dec 22, 1992

HYDROCARBON QUALITY CONTROL DATA REPORT

ACCURACY ASSESSMENT
Laboratory Control Sample

Petroleum Oil	
Spike Conc. Added:	5.2
Spike Result:	4.5
% Recovery:	87
Upper Control Limit %:	120
Lower Control Limit %:	80

PRECISION ASSESSMENT
Sample Duplicate

Petroleum Oil	
Sample Number:	212-0396
Original Result:	N.D.
Duplicate Result:	N.D.
Relative % Difference	Relative Percent Difference values are not reported at sample concentration levels less than ten times the Detection Limit.
Maximum RPD:	20

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Kimberle Stark
Project Manager

$$\%\ \text{Recovery:} \quad \frac{\text{Spike Result}}{\text{Spike Concentration Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Original Result - Duplicate Result}}{(\text{Original Result + Duplicate Result}) / 2} \times 100$$

NORTH CREEK ANALYTICAL

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Dalton, Olmsted & Fuglevand, Inc.	Client Project ID: Seattle Steam, SSC-001-03	Analyst:	S. Kouri
19017 120th Avenue NE, #107	EPA Method: 8310		
Bothell, WA 98011	Sample Matrix : Water	Extracted:	Dec 14, 1992
Attention: Terry Olmsted	Units: µg/L (ppb)	Analyzed:	Dec 15, 1992
	QC Sample #: BLK121492	Reported:	Dec 22, 1992

BLANK QUALITY CONTROL DATA REPORT

ANALYTE	Fluorene	Indeno(1,2,3-cd) pyrene	Chrysene
Sample Result:	N.D.	N.D.	N.D.
Spike Conc. Added:	9.1	0.91	0.91
Spike Result:	9.1	0.80	0.54
Spike % Recovery:	100%	88%	59%
Spike Dup. Result:	7.7	0.89	0.70
Spike Duplicate % Recovery:	85%	98%	77%
Upper Control Limit %:	126	134	156
Lower Control Limit %:	38	35	28
Relative % Difference:	17%	10%	30%
Maximum RPD:	42	28	26

NORTH CREEK ANALYTICAL inc

Kimberle Stark
Project Manager

$$\%\ \text{Recovery:} \quad \frac{\text{Spike Result - Sample Result}}{\text{Spike Conc. Added}} \times 100$$

$$\text{Relative \% Difference:} \quad \frac{\text{Spike Result - Spike Dup. Result}}{(\text{Spike Result + Spike Dup. Result}) / 2} \times 100$$

Dalton, Olmsted & Fuglevand, Inc. *Environmental Consultants*

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CHAIN OF CUSTODY REPORT

CLIENT: DOF
ADDRESS:
PHONE: FAX:

REPORT TO: DOF T. Olmsted
BILLING TO: DOF
P.O. NUMBER:
NCA QUOTE #:

SAME DAY (2-8 HR.) RUSH	(+150%)
NEXT DAY RUSH	(+100%)
2 DAY RUSH	(+80%)
3 DAY RUSH	(+60%)
5 DAY RUSH	(+40%)
10 DAY STANDARD	(LIST PRICE) X

PROJECT NAME: Seattle Steam
PROJECT NUMBER: SSC-001-03
SAMPLED BY: T. Olmsted

	SAMPLE IDENTIFICATION: NUMBER OR DESCRIPTION	SAMPLING DATE / TIME	MATRIX (W,S,O)	# OF CONT.	WTPH 418.1	PAH 8310	ANALYSIS REQUESTED	COMMENTS & PRESERVATIVES USED	LABORATORY NUMBER
1	WA 7	12/9 0830	W	3	X	X			212036O
2	WA 7(d)	0830	W	3	X	X			212036I
3	WA 16	0915	W	3	X	X			212036Z
4	PS-1	1015	W	3	X	X			212036S
5	PS-2	1040	W	3	X	X			212036Y
6									
7									
8									
9								TOTAL # OF CONTAINERS	
10								RECEIVED?	

RELINQUISHED BY: P. Olmsted — DATE: 12/9/92 — TIME: 1450
FIRM: DOF
RECEIVED BY: F. O'Kelly — DATE: 12-09-92 — TIME: 2:50
FIRM: NCA

RELINQUISHED BY: — DATE: — TIME:
FIRM:
RECEIVED BY: — DATE: — TIME:
FIRM:

SAMPLE RECEIPT INFORMATION: CONTAINER CONDITION?: (GOOD) VIOLATED COOL (4° C)? (YES) NO