



B & C EQUIPMENT CO.

A Division of PRECO

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RECEIVED
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DEPT. OF ECOLOGY

January 25, 1993

Washington Department of Ecology
3190 160th Avenue SE
Bellevue, Washington 98008-5452

#2342

Attn: Joseph M. Hickey
Ben Amoah-Forson

Re: Cascade Autovon Co., 12727 412th Avenue SE, North Bend, WA.
Monitoring Well 4th Quarterly Sampling Event.

Dear Mr. Hickey:

Enclosed are the analytical results of B & C Equipment's 4th quarterly sampling event at Cascade Autovon.

On December 17, 1992, Cascade Autovon's 3 monitoring wells were sampled and analyzed for total petroleum hydrocarbons (TPH) by EPA Modified Method 8015 and benzene, toluene, ethyl benzene, and xylene (BTEX) by Method WTPH-G with BTEX. The analytical results revealed concentrations well below DOE cleanup standards for all 3 wells.

Prior to sampling, depth to water measurements were taken to determine the volume in each well using the monitor well monuments as the fixed referenced point. The enclosed illustration conveys the groundwater gradient for December 17th in addition to the relative groundwater elevations using 100.00' as the monument elevation of MW-1 (highest monument elevation).

All three wells were developed prior to sampling by purging at least (3) casing volumes of water from each source. Previous to purging the wells, a submersible extension hand pump was thoroughly rinsed with water, washed withalconox detergent, and once again rinsed with water to remove any possible contaminants that may have remained on the pump. The sample was collected at each location with a stainless steel bailer using the same cleansing procedure as was used for the pump. This procedure was followed for each sampling station.

The current Department of Ecology (DOE) groundwater cleanup standards for the parameters analyzed are:

Total Petroleum Hydrocarbons (TPH)	.....	1000 ppb* = 1.0 ppm
Benzene	.....	5.0 ppb = 0.005 ppm
Toluene	.....	40.0 ppb = 0.04 ppm
Ethyl benzene	.....	30.0 ppb = 0.03 ppm
Xylene	.....	20.0 ppb = 0.02 ppm

*ppb - parts per billion.

Summarized in the following tables are the analytical results from all 4 quarterly sampling events at Cascade Autovon.

TABLE 1
March 11, 1992

<u>Sample #</u>	<u>TPH</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl benzene</u>	<u>Xylene</u>
MW-1	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND

TABLE 2
June 12, 1992

<u>Sample #</u>	<u>TPH</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl benzene</u>	<u>Xylene</u>
MW-1	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND

TABLE 3
September 4, 1992

<u>Sample #</u>	<u>TPH</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl benzene</u>	<u>Xylene</u>
MW-1	ND	ND	ND	ND	ND
MW-2	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND

Note: "ND" denotes non-detected.
 TPH detection limit 1.0 ppm (1st quarter)
 TPH detection limit 0.75 ppm (2nd, 3rd quarter)
 Benzene detection limit 0.001 ppm
 Toluene detection limit 0.001 ppm
 Ethyl benzene detection limit .. 0.001 ppm
 Xylene detection limit 0.001 ppm

TABLE 4
December 17, 1992

<u>Sample #</u>	<u>TPH (8015)</u>	<u>TPH-G</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl benzene</u>	<u>Xylene</u>
MW-1	ND	0.27	ND	ND	ND	0.001
MW-2	ND	ND	ND	ND	ND	ND
MW-3	ND	ND	ND	ND	ND	ND

Note: TPH (8015) detection limit 0.75 ppm
 TPH-G detection limit 0.1 ppm
 Benzene detection limit 0.001 ppm
 Toluene detection limit 0.001 ppm
 Ethyl benzene detection limit .. 0.001 ppm
 Xylene detection limit 0.001 ppm

CONCLUSIONS:

The results from all 4 quarterly sampling events revealed concentrations below DOE cleanup goals for all TPH and BTEX parameters. Based on these results, B & C Equipment feels no further quarterly groundwater monitoring is warranted.

In reference to Mr. Ben Amoah-Forson's letter dated 2/14/92, there is no requirement to implement a long term groundwater monitoring program. However, B & C recommends continuing the monitoring program on an annual basis. This would provide documentation as to the on-site groundwater conditions over a long period of time. Should the question arise regarding the possibility of off-site migration of petroleum contamination, the analytical documentation from a continued monitoring program would chronicle the groundwater conditions at Cascade Autovon.

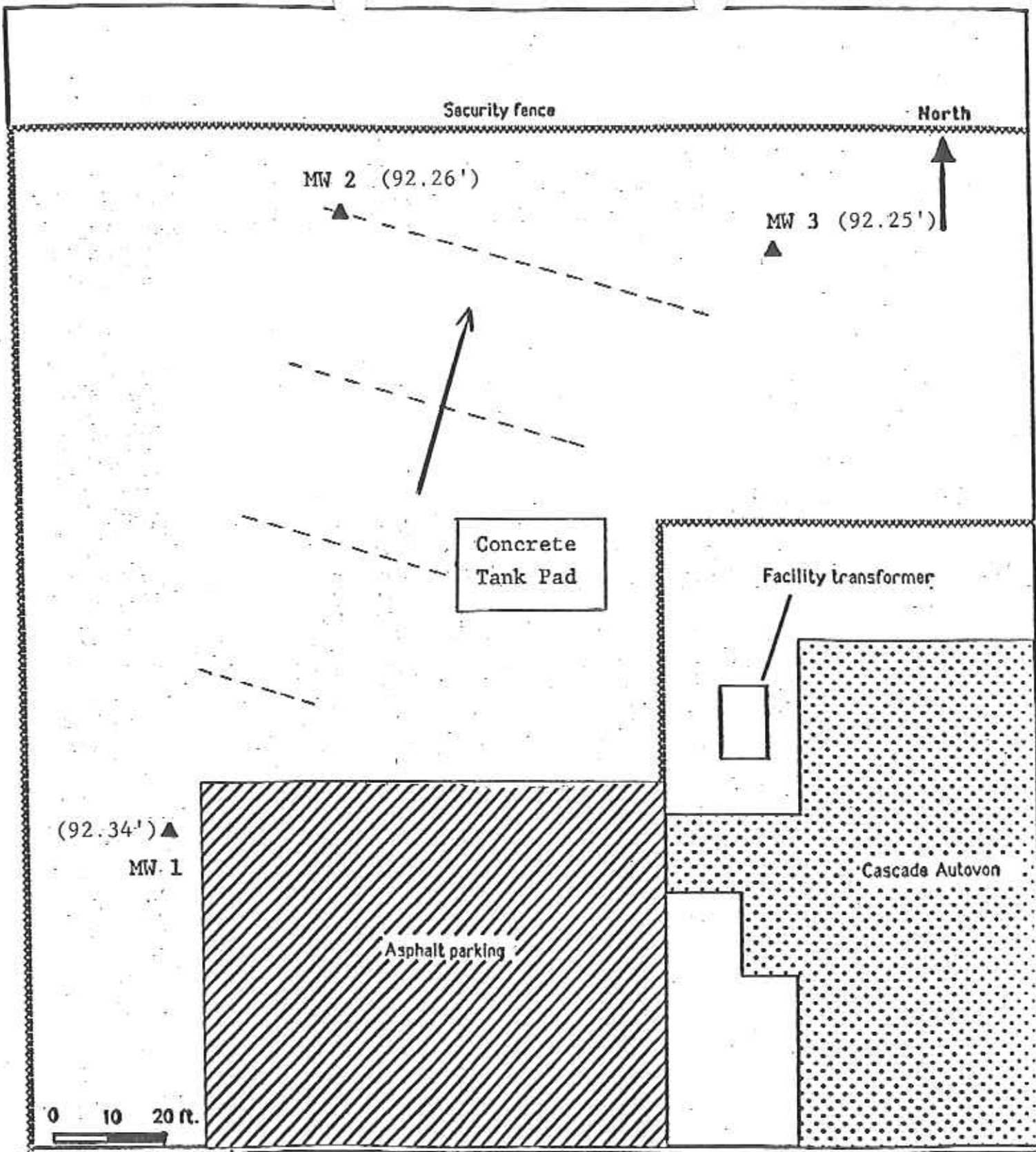
If you have any questions regarding the results or B & C's recommendations, please don't hesitate to contact me.

Sincerely,
B & C EQUIPMENT CO.



Barry D. DePan
Staff Geologist

cc: John Reeves, Cascade Autovon Co.
Bill Knutson, PEMCO



KEY

- ▲ Monitor Well # and location.
- Groundwater gradient
- Contour Interval = 0.02'

	B & C
	Job # 1342
	Date: 12/17/92
Barry DePan	

Cascade Autovon Co.
 12727 412th Ave. S.E.
 North Bend, WA 98045



PEMCO

20320 80th Ave. S.
 Kent, Washington 98032
 Office (206) 872-8990
 FAX (206) 872-8987

CHAIN OF CUSTODY

REQUEST FOR LABORATORY ANALYSIS

PROJECT NAME: *Cascade Astoria*

ADDRESS: *12727 412th Ave SE*

North Bend, WA 98045

SAMPLER
Berry DePan

PROJ. NO. *1341-925*

SAMPLE NUMBER	DATE	TIME	Soil	Water	SAMPLE LOCATION TANK SIZE & PRODUCT	Depth	WTPH-HCID	WTPH-G w/BTEX	WTPH-D	WTPH-418.1 Mod.	TPH 418.1	TPH 8015 Mod.	Chlorinated Solvents 601/8010	PCB 608/8080	TCLP (8 metals)	TCLP (As, Cd, Cr, Pb)	PAH 625/8270	Total Pb	
MW-1	12/17/92	11:00			Monitor Well MW-1	7.5'		✓				✓							
MW-2	12/17	11:50			" "	7.5'		✓				✓							
MW-3	12/17	1:30			" "	7.5'		✓				✓							

Relinquished by: *Barry D. DePan*

Date: *12/17/92* Time: *3:00*

Received by: *Mary Luther*

Relinquished by:

Date:

Received by:

Relinquished by:

Date:

Received by:

COMMENTS:

RUSH: YES NO

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: PEMCO - WA

Date: December 29, 1992

Report On: Analysis of Water

Lab No.: 29129

Page 1 of 3

IDENTIFICATION:

Samples received on 12-17-92

Project: 1341-905 Cascade Autovon

ANALYSIS:

Lab No. 29129-1

Client ID: MW-1

WTPH-G with BTEX by Method 8020
Date Analyzed: 12-22-92

Gasoline, mg/l (C7-C12)	0.27
Benzene, mg/l	< 0.001
Toluene, mg/l	< 0.001
Ethyl Benzene, mg/l	< 0.001
Xylenes, mg/l	0.001

SURROGATE RECOVERY, %

Trifluorotoluene	84
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TPH Per EPA SW-846 Modified Method 8015
Date Extracted: 12-28-92
Date Analyzed: 12-28-92

Total Petroleum Fuel Hydrocarbons, mg/l	< 0.75
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SURROGATE RECOVERY, %

1-Chlorooctane	115
o-terphenyl	115

Continued

SOUND ANALYTICAL SERVICES, INC.

PEMCO - WA
Project: 1341-905
Page 2 of 3
Lab No. 29129
December 29, 1992

Lab No. 29129-2

Client ID: MW-2

WTPH-G with BTEX by Method 8020
Date Analyzed: 12-22-92

Gasoline, mg/l (C7-C12)	< 0.1
Benzene, mg/l	< 0.001
Toluene, mg/l	< 0.001
Ethyl Benzene, mg/l	< 0.001
Xylenes, mg/l	< 0.001

SURROGATE RECOVERY, %

Trifluorotoluene	86
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TPH Per EPA SW-846 Modified Method 8015
Date Extracted: 12-28-92
Date Analyzed: 12-28-92

Total Petroleum Fuel Hydrocarbons, mg/l	< 0.75
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SURROGATE RECOVERY, %

1-Chlorooctane	69
o-terphenyl	78

Continued

SOUND ANALYTICAL SERVICES, INC.

PEMCO - WA
Project: 1341-905
Page 3 of 3
Lab No. 29129
December 29, 1992

Lab No. 29129-3

Client ID: MW-3

WTPH-G with BTEX by Method 8020
Date Analyzed: 12-22-92

Gasoline, mg/l (C7 - C12)	< 0.1
Benzene, mg/l	< 0.001
Toluene, mg/l	< 0.001
Ethyl Benzene, mg/l	< 0.001
Xylenes, mg/l	< 0.001

SURROGATE RECOVERY, %

Trifluorotoluene	80
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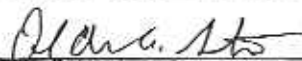
TPH Per EPA SW-846 Modified Method 8015
Date Extracted: 12-28-92
Date Analyzed: 12-28-92

Total Petroleum Fuel Hydrocarbons, mg/l	< 0.75
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SURROGATE RECOVERY, %

1-Chlorooctane	123
o-terphenyl	117

SOUND ANALYTICAL SERVICES


DEAN A. STROM

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206) 922-2310 - FAX (206) 922-5047

QUALITY CONTROL REPORT

Total Petroleum Fuel Hydrocarbons by Method 8015

Client: PEMCO - WA
Lab No: 29129qc2
Units: mg/l
Date: December 29, 1992

METHOD BLANK

Blank No. 003R0101.D

Parameter	Blank Value
Total Petroleum Fuel Hydrocarbons	< 0.75
<u>SURROGATE RECOVERY%</u>	
1-chlorooctane	120
o-terphenyl	113

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4813 PACIFIC HIGHWAY EAST, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

QUALITY CONTROL REPORT

WTPH-G with BTEX by EPA SW-846 Method 8020

Client: PEMCO - WA
Lab No: 29129qc1
Units: mg/l
Date: December 29, 1992

METHOD BLANK

Blank No. 92122149

Parameter	Blank Value
Gasoline (C ₇ -C ₁₂)	< 0.1
Benzene	< 0.001
Toluene	< 0.001
Ethyl Benzene	< 0.001
Xylenes	< 0.001
<u>SURROGATE RECOVERY, %</u> Trifluorotoluene	79