NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

May 24, 1990

David L. Graham
OMNI Environmental Services
10950 S.W. 5th Street, Suite 160
Beaverton, OR 97005

Re: UST - Multnomah County
Hauser Electric

Dear Mr. Graham:

We have completed our review of the information submitted concerning the cleanup of contamination found during removal of an underground storage tank at the Hauser Electric site at 18725 S.E. Powell Boulevard (possibly 18725 S.E. Royal Street) in Gresham. Based on the cleanup actions and the results of final monitoring, we require no further actions at this time.

This decision resulted from our evaluation and judgement based on the regulations and facts as we now understand them, including:

1. The tank and accessible contaminated soils have been removed and properly disposed of.
2. The pumping and treatment of groundwater from around the tank area has dropped levels of dissolved gasoline constituents from 370 parts per billion (ppb) benzene to consistently below the drinking water standard of 5 ppb benzene. Other dissolved constituents have not been detected since early during the remediation.
3. It appears we have reached the annual high water level at the site and testing before and after pumping has not found contaminants above drinking water standards. Based on the information presented, we would not anticipate elevated levels in the future. The data suggesting there is a hydraulic separation between the remediated shallow aquifer and the locally used deeper aquifer further supports the conclusion that adverse impacts to any drinking water wells is very unlikely.
4. Natural degradation appears capable of reducing any remaining contamination to near background levels without adverse impacts. We concur that no significant threat remains at this site that would require further action at this time.

The remediation equipment and monitoring system can be removed. The monitoring and pumping wells must be abandoned in accordance with the guidelines of the Water Resources Division to avoid providing possible pathways for future introduction of contaminants.

Information concerning the tank, soil removal, and groundwater remediation should be maintained with the permanent facility records. We remind you that the current investigation is limited to this gasoline tank and related contamination and in no way transfers any liability to the State of Oregon.

Although we agree that the current conditions at the site do not appear to pose an environmental threat, the responsibility for environmental evaluation, reporting, and cleanup rests with the landowners.

We appreciate your responsiveness and cooperation during this cleanup. Please contact me at 229-6142 with any questions.

Sincerely,

Loren G. Garner

Loren G. Garner
Environmental Engineer
Northwest Region

cc: ECD, UST Cleanup Division
Dave Hammes
U.S. Bancorp
P.O. Box 4412
Portland, OR 97208-4412
Norman Swoboda
P.O. Box 409
Washougal, WA 98671
Carrie C. Sleeper
City of Gresham
1333 N.W. Eastman
Gresham, OR 97030

OMNI
ENVIRONMENTAL
SERVICES, INC.

Consulting
Engineering
Testing

May 10, 1990

Mr. Loren G. Garner
Northwest Region
Department of Environmental Quality
811 S.W. 6th Avenue
Portland, Oregon 97204

Re: Groundwater remediation at the former Hauser Electric site in Gresham, Oregon

Dear Mr. Garner:

This letter is to present you with the data generated during the groundwater remediation activities that have been in progress since June, 1989 at the former Hauser Electric site in Gresham, Oregon (Figure 1). The remediation activities have been successful in reducing dissolved benzene concentrations in the groundwater to a level that is at or below the MCL for drinking water standards. Based on the information provided in this letter, OMNI requests on behalf of our client, that the site be officially closed.

In April 1989, OMNI supervised the removal of an underground gasoline storage tank at the site. It was determined at that time that tampering with the tank's fill and/or vent lines in the fall of 1989, had apparently allowed water from precipitation that collected in the area to enter the UST and displace the remaining product. During the removal of the UST and contaminated soils from the immediate area, a small amount of free product (gasoline) was observed entering the excavation, along with groundwater, at a depth of approximately 6 feet below land surface (bls). A series of test pits and borings conducted using a backhoe and a hand auger indicated that gasoline contamination was restricted to the immediate area of the UST (Figure 2).

Subsurface information obtained during initial site characterization and well drilling activities indicated that gravely, sandy silt (Multnomah silt loam) was present from the surface to a depth of approximately 6 feet bls. A layer of cobbles was encountered 6 feet bls, followed by coarse, compacted gravels to a depth of 20 feet. The water-bearing materials encountered at the site are thought to be part of the Unconsolidated Gravel/Troutdale aquifer which consists of unconsolidated gravels of late Pliocene to Pleistocene age. These gravels, consisting primarily of locally derived basaltic clasts, overlie the cemented gravels of the Troutdale Formation. The reported thickness of the aquifer ranges from 0 to 580 feet (*Lithology, Thickness, and Extent of Hydrogeology Units Underlying the East Portland Area, Oregon*, U.S. Geological Survey, Water Resources Investigations Report 88-4110, Hartford and McFarland, 1989).

Two 2-inch groundwater monitoring wells and one 4-inch pumping well were installed on site in June 1989 (Figure 3). All three wells were drilled to a maximum depth of 20 feet bls. Slotted well casing was installed from 5 to 20 feet bls. The establishment of the groundwater gradient for the shallow groundwater flow system in the vicinity of the site was not possible due to the negligible variation in the potentiometric surface in the vicinity of the wells. The probable flow direction is to the south-southeast toward Johnson Creek.

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

A groundwater remediation system consisting of a submersible stainless steel pump, an oil-water separator and a discharge line connected to a temporary storm sewer hook-up was installed. OMNI initially obtained a temporary discharge permit from the DEQ, which authorized the emission of low level contaminants into the storm sewer. Prior to initiation of long-term pumping, water samples were collected to ensure that concentrations were below the permit levels. Subsequent extensions of the temporary permit were granted by the DEQ so that remediation could continue without delay.

Initial groundwater samples collected from the pumping well contained 370 ppb benzene prior to the onset of pumping. Benzene concentrations were quickly reduced to nondetectable levels (<5 ppb) during continuous pumping from August 3, 1989 to September 5, 1989 (Figure 6). This type of response is typical of pump and treat remediation activities. The rapid decrease in contaminant concentration results from several phenomena
occurring independently or in concert. At the Hauser site, the rapid decrease apparently occurred because the pumping of the aquifer and the natural lowering of the water table due to seasonal fluctuations lowered the water table below the soil horizon which contained the majority of the residual gasoline contamination (Figures 3,4,and 5). After this initial drop in concentration, a cyclic pumping scheme was used in an attempt to determine if the concentrations would increase significantly when the water levels were allowed to recover due to the mobilization of the remaining residual contamination. Groundwater levels were allowed to recharge between periods of pumping and sampling. An increase in benzene concentrations was observed during the onset of this intermittent pumping phase which can be attributed to the fact that rising groundwater levels came in contact with aquifer materials that contained higher levels of residual contamination (Figure 6). During intermittent pumping from September 1989 to the present, benzene concentrations in the groundwater have remained at acceptable levels. In addition to BTEX, groundwater samples were also analyzed for the presence of gasoline and hydrogen ion concentration (pH) as mandated in the initial discharge permit. The pH of the sampled water ranged from 5.90 to 6.70, with an average of 6.29. Gasoline concentrations in the groundwater samples has been below the limit of detection (0.1 ppm) since October 30, 1989. Table 1 is a listing of the pertinent data collected during the duration of the project. Copies of all the groundwater sample analyses are included in Appendix A.

Groundwater levels at the site showed a prominent seasonal fluctuation. Hydrographs of groundwater level data are illustrated in Figures 3, 4, and 5. The seasonal change in the groundwater level can best be seen in Figure 4. Drawdown in response to pumping can also be distinguished in Figure 4 and Figure 5 which illustrates water levels in the two monitoring wells as well as the pumping well. Draw-down was observed in both monitoring wells during pumping activities indicating that the radius of influence of the pumping well encompassed the area of observed contamination. Pumping rates during remediation activities ranged from 7 to 30 gallons per minute (gpm) depending on the time of year and the amount of water moving through the aquifer. Average pumping rates during remedial activities were approximately 15 gpm. The availability of groundwater decreased during the late summer and fall and increased significantly in February of 1990.

Water level data obtained from an on-site drinking water well (Figure 2) which is approximately 70 feet deep, suggests that the aquifer being remediated at the site and the aquifer represented by the water level in the drinking water well are hydraulically isolated (Figure 7). The static water level in the drinking water well is significantly lower that the static water levels observed in wells 1, 2, and 3, indicating that they are separate aquifers. Also, there is no indication that the natural fluctuations in the static water level in the water well coincides with those observed in wells 1, 2, and 3. A groundwater sample was collected from the drinking water well on July 7, 1989 and contained nondetectable levels of BTEX (Appendix A).

Currently groundwater levels at the site are near a seasonal high (Figures 3,4,5), and groundwater was in contact with the zone of greatest residual contamination. Given these conditions, it would be expected that the highest contaminant concentrations would be observed at the onset of pumping. A groundwater sample collected on April 30, 1990 (after purging approximately 3 borehole volumes) contained only 5 ppb benzene. A final sample was collected after the pump had been allowed to run for approximately one week. Benzene concentration in the sample was less than 1 ppb. The low concentration of benzene in this sample and the large number of samples since November 1989 that have been below the MCL for benzene, indicate that the concentration of benzene contamination in the area has been reduced to a level that does not warrant further remedial action.

As of the last pumping and sampling cycle, further remedial activities at the site have been discontinued. Please provide us with an official closure letter for the site, so that the on-site remediation system can be decommissioned and the temporary storm sewer hook-up eliminated. If you need any additional information, Please contact Mr. Dave Graham, Manager of Hazardous Waste Operations, or me at your convenience.

Sincerely,

Stanton K. Jones
Geologist/Environmental Scientist

HW118-03.020

Attachments

cc Mr. Dave Hammes, U.S. Bancorp
Ms. Carrie Sleeper, City of Gresham

Table 1

Date	MW1	MW2	PW3	Total Volume Pumped (gal×10^3)	Contaminant (ppb)					pH
					B	T	E	X	Gas	
05/30/89	6.92	5.64	5.77							
05/31/89	7.55	5.68	5.81							
06/02/89	7.64	5.77	5.87							
06/21/89	8.20	6.36	6.50							
06/22/89	8.23	6.40	6.53						5000	
08/01/89	9.12	7.25	7.38		370	29	170	310		
08/03/89	9.15	7.58	10.17	2	180	16	50	75		6.60
08/04/89	9.22	7.87	12.14	5	16	ND	ND	ND	120	6.65
08/05/89	9.28	8.07	12.86		ND	ND	ND	ND	ND	6.45
08/08/89	9.48	8.66	16.08							
08/11/89	9.55	9.19	16.24	18	ND	ND	ND	ND	ND	6.45
08/17/89	9.71	9.84	17.72	280	ND	ND	ND	ND	ND	6.00
08/25/89	9.84	10.14	17.65	340	ND	ND	ND	ND	ND	6.00
08/29/89	9.88	10.20	17.06							
09/01/89	10.01	10.37	17.72	410	ND	ND	ND	ND	ND	6.20
09/05/89	10.07	10.20	10.37							
09/06/89	10.07	10.30	12.37	420	16	3	ND	2	ND	5.90
09/14/89	10.10	10.24	10.17							
09/15/89	10.24	10.30	12.57	435	42	8	2	5	260	6.25
09/28/89	10.33	10.10	10.27							
10/13/89	10.47	10.01	10.17							
10/16/89	10.50	10.04	10.17							
10/17/89	10.53	10.30	12.34	460	57	6	9	6	160	6.30
10/20/89	10.56	10.93	13.62	530	24	34	ND	15	600	6.30
10/27/89	10.56	10.50	10.73							
10/30/89	10.53	11.02	12.76	585	20	17	ND	5	ND	6.20
11/03/89	10.76	10.56	10.93							
11/06/89	11.15	10.56	13.48	660	16	14	ND	14	ND	6.30
11/10/89	10.89	10.56	11.06							
11/14/89	11.19	10.47	15.42	725	10	6	ND	18	ND	6.00
11/17/89	10.79	10.40	10.93							
11/20/89	11.09	10.47	15.68	780	ND	ND	ND	19	ND	6.15
11/28/89	10.04	9.84	10.01							
12/01/89	10.14	9.94	11.81	860	ND	ND	ND	ND	ND	6.10
01/26/90	7.22	5.09	5.22							
02/02/90	6.66	5.25	7.22	1015	ND	ND	ND	ND	ND	6.70
02/22/90	6.40	5.25	5.41							
03/02/90	6.76	5.61	6.30	1182	2	ND	ND	2	ND	6.20
03/26/90	7.12	5.71	5.87							
04/04/90	6.82	6.17	7.22	1369	2	ND	ND	2	ND	6.70
04/24/90	7.84	6.30	6.50		5	ND	2	2	ND	6.10
04/30/90	7.35	6.10	7.84	1542	ND	ND	ND	ND	ND	6.20
05/02/90	7.48	5.94	6.10							

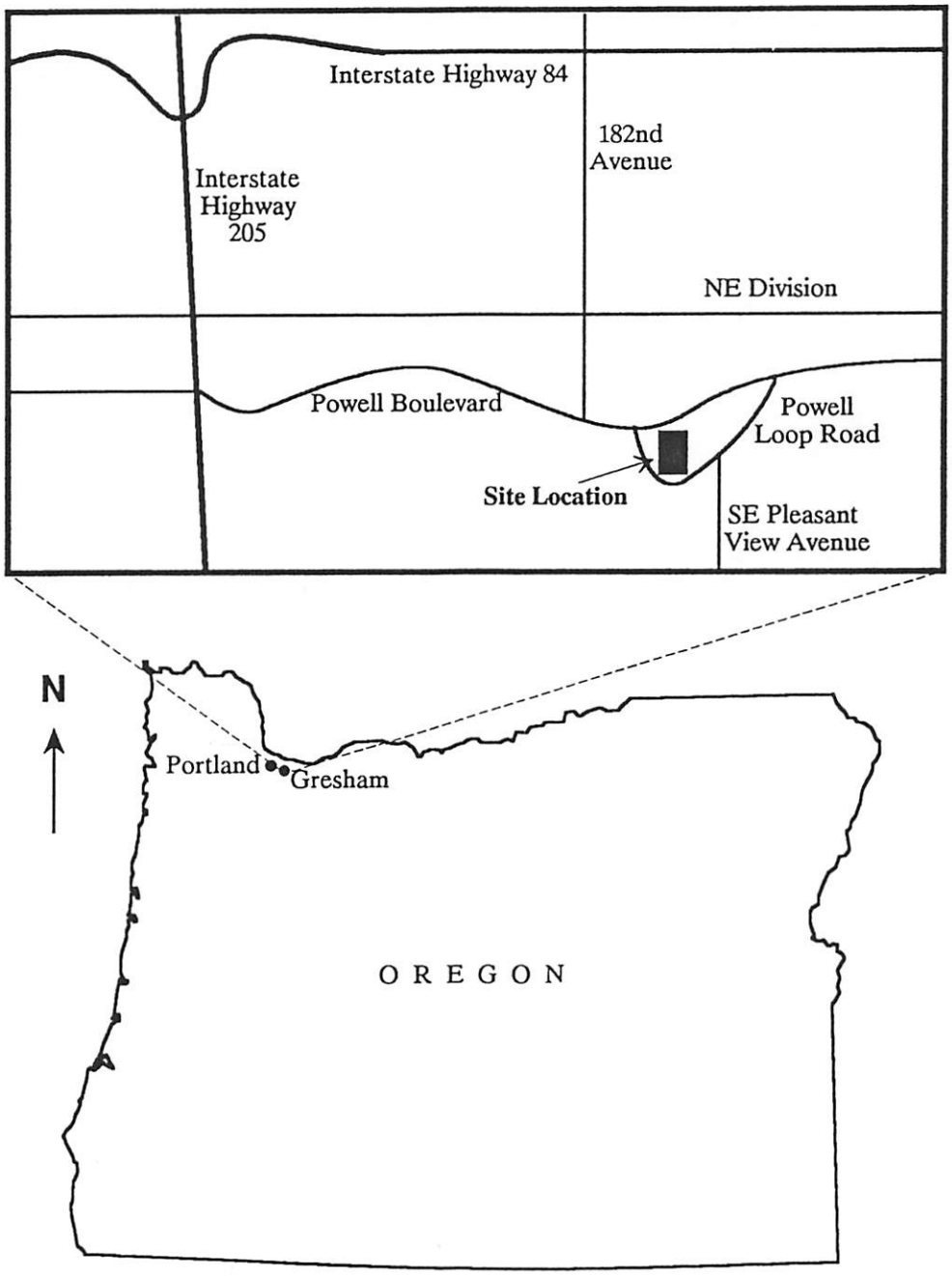

Figure 1. Regional location map.

OMNI Environmental Services, Inc.	Not to Scale	Project No.: HW118.03 Date: May 10, 1990 Drawing: HW(A):W118-3-1.DRW

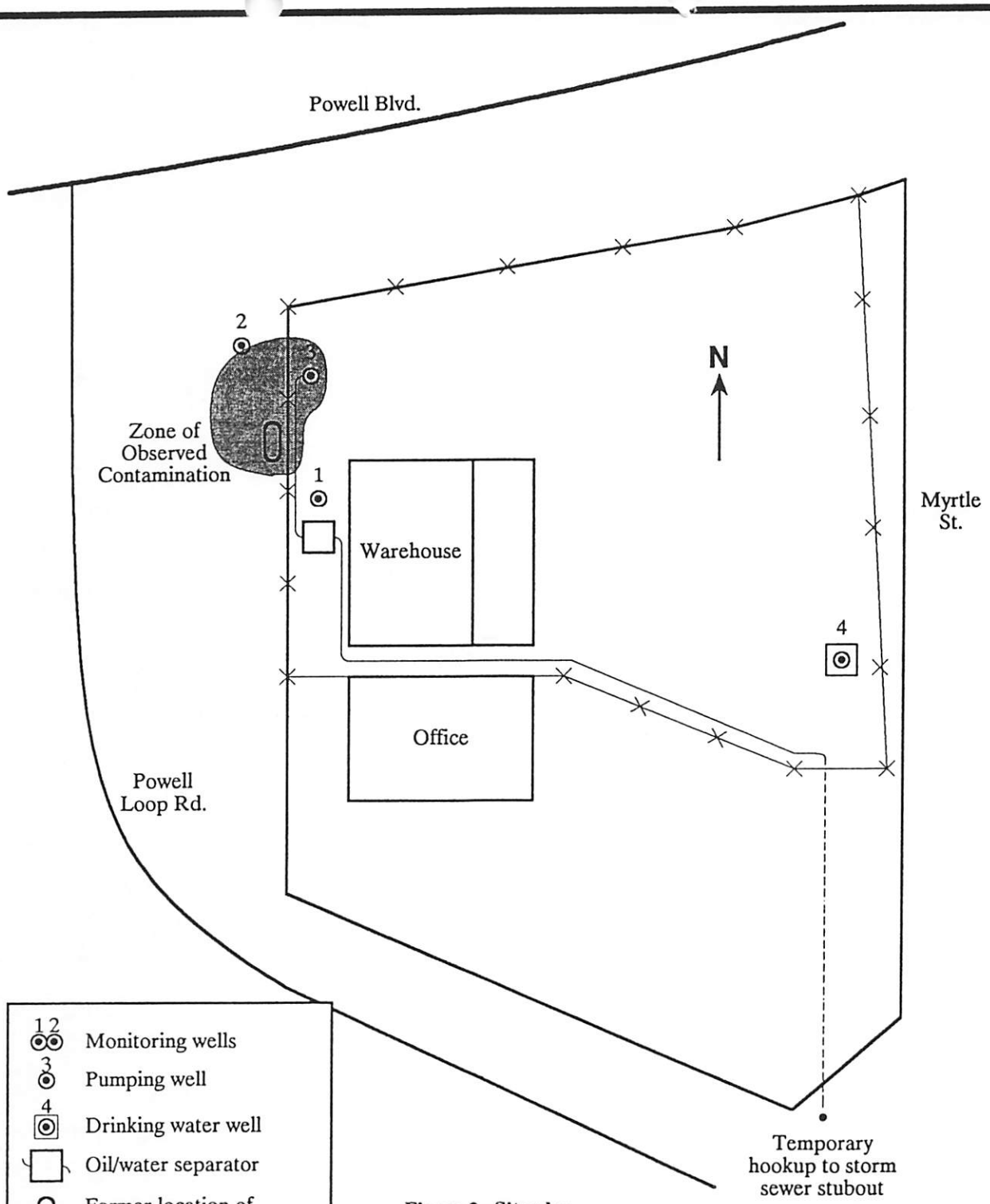

Figure 2. Site plan.

OMNI Environmental Services, Inc.

0 25 50
Scale in Feet

Project No.: HW118-03

Date: May 9, 1990

Drawing: HW(A):W118-3-2.DRW

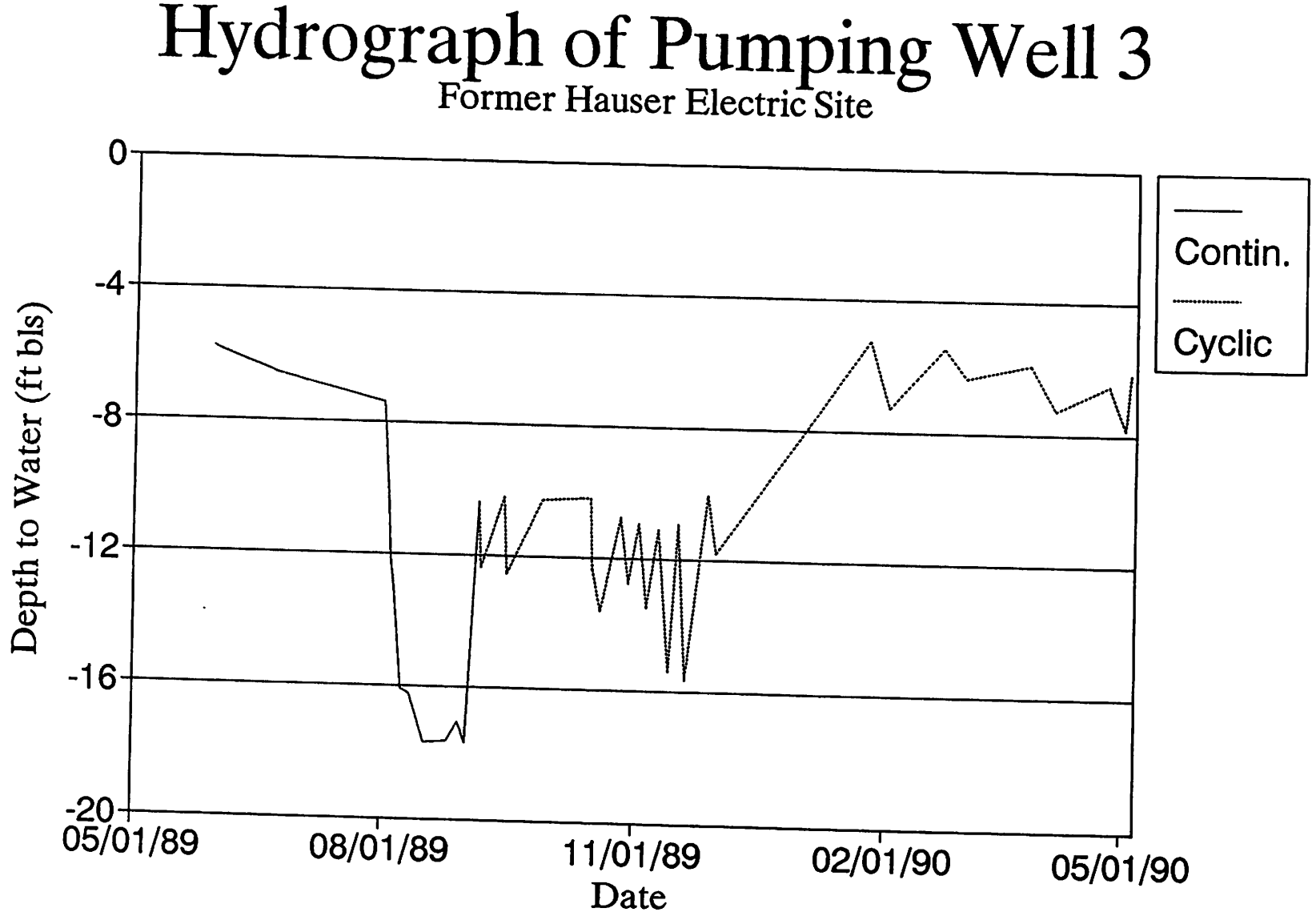

Figure 3. Hydrograph of pumping well 3 illustrating aquifer response to continuous and cyclic pumping scheme during remediation at the former Hauser Electric site.

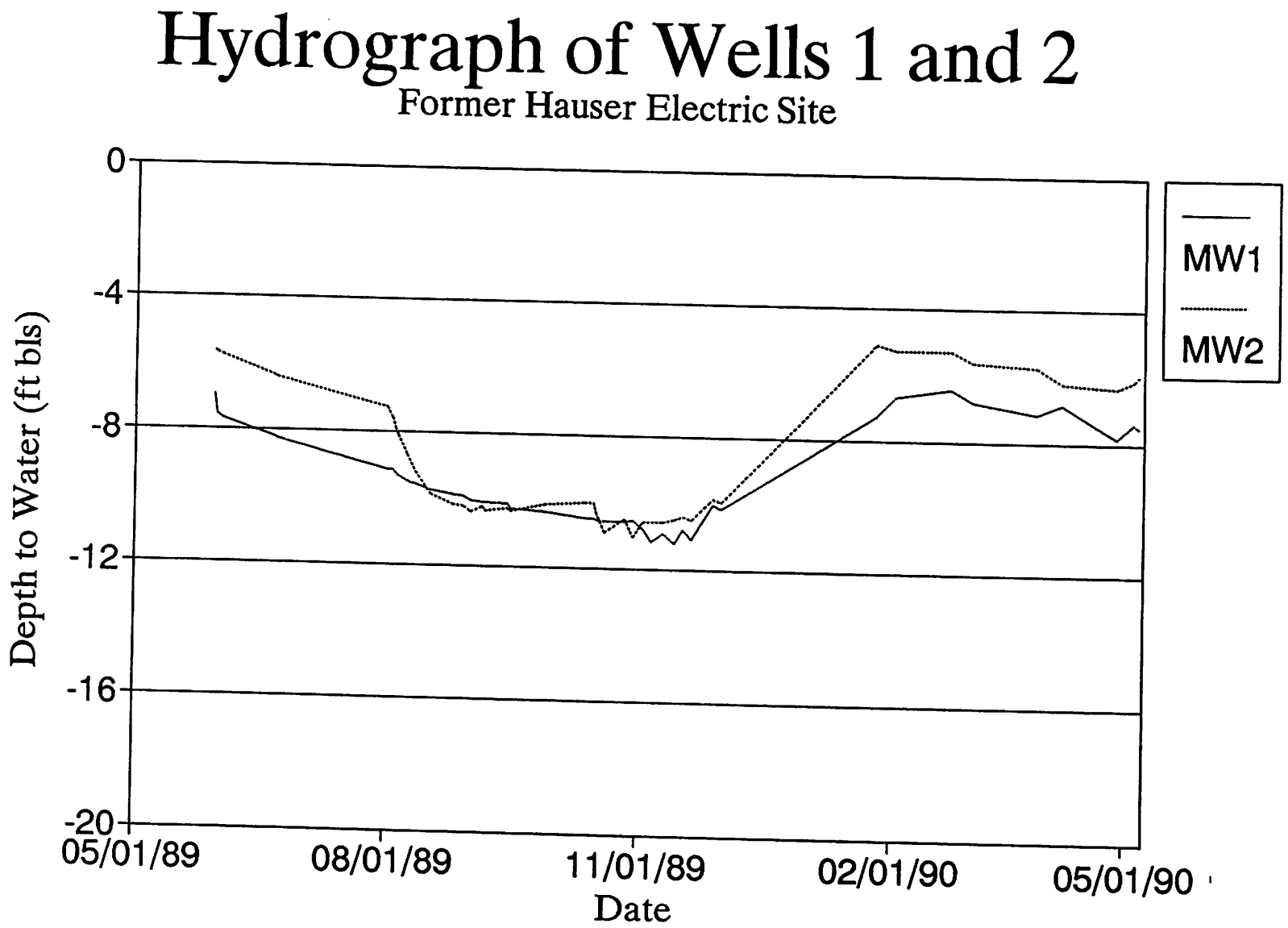

Figure 4. Hydrographs of monitoring wells 1 and 2 illustrating seasonal fluctuation of the water table and response to pumping in well 3 during remediation at the former Hauser Electric site.

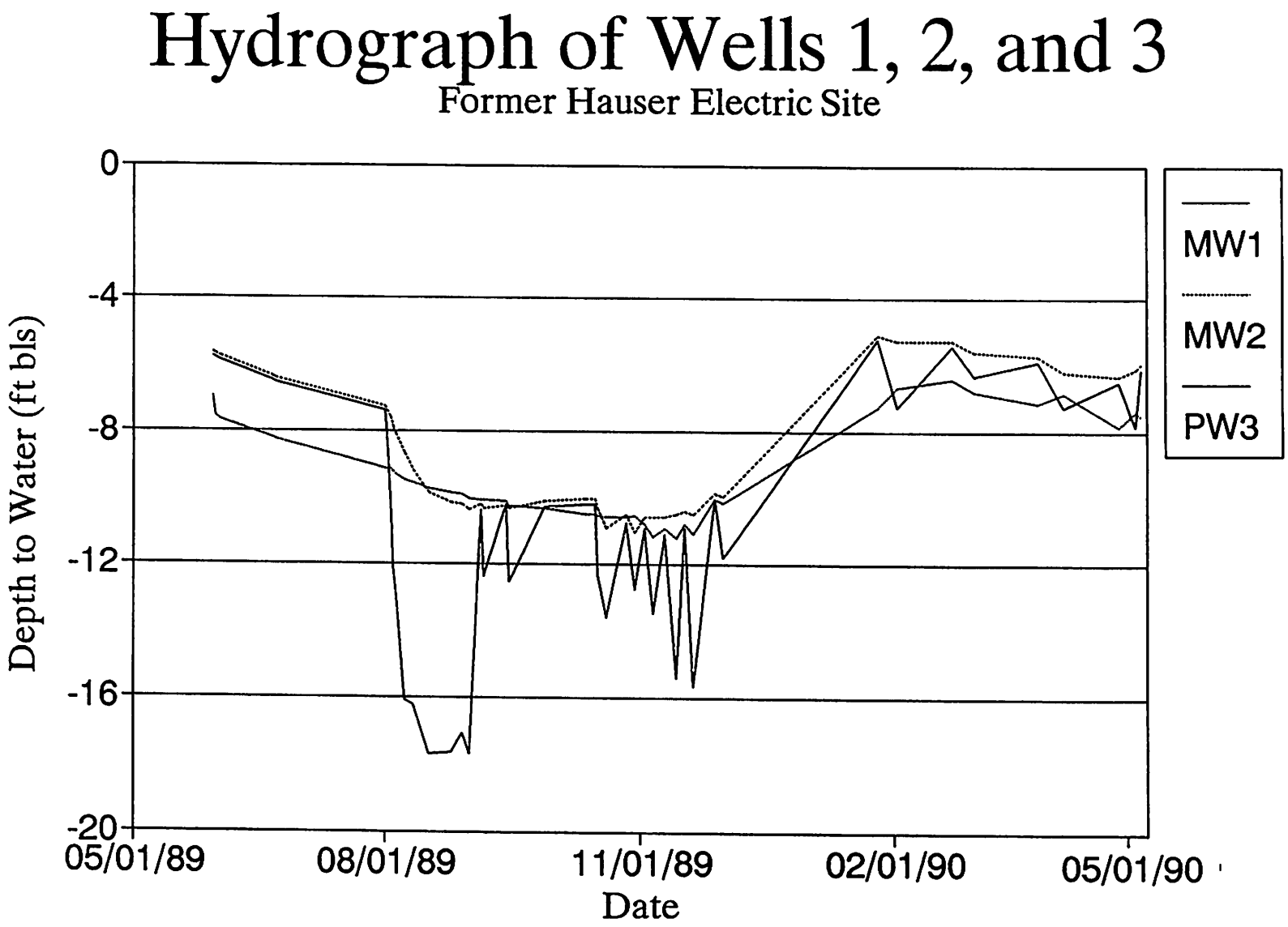

Figure 5. Hydrograph of wells 1, 2, and 3 illustrating seasonal fluctuation of the water table and drawdown in the pumping well during remediation at the former Hauser Electric site.

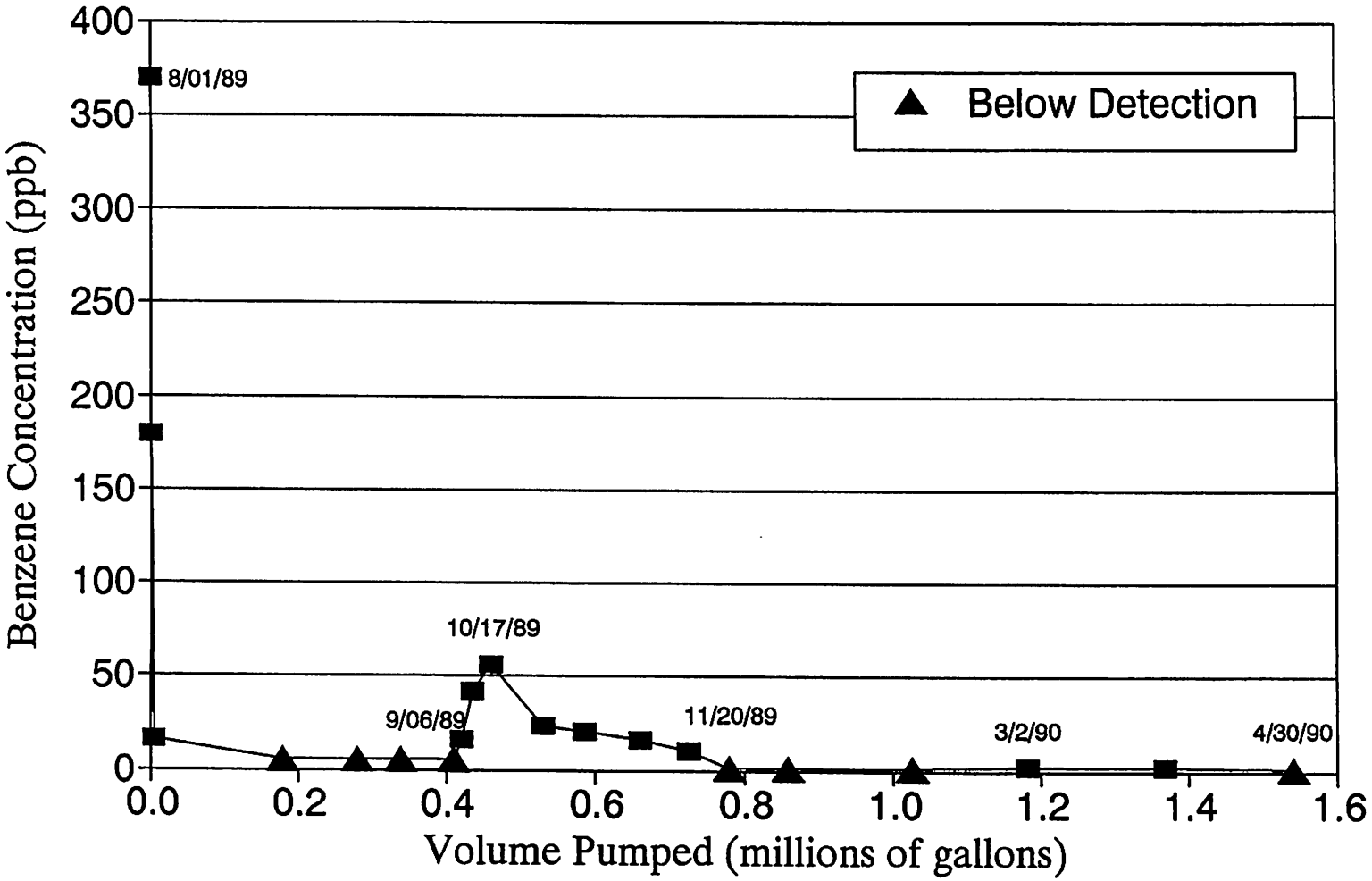

Figure 6. Dissolved benzene concentration in groundwater; former Hauser Electric site. Note that the detection limit for benzene changed from 5 ppb to 1 ppb on 9/06/89.

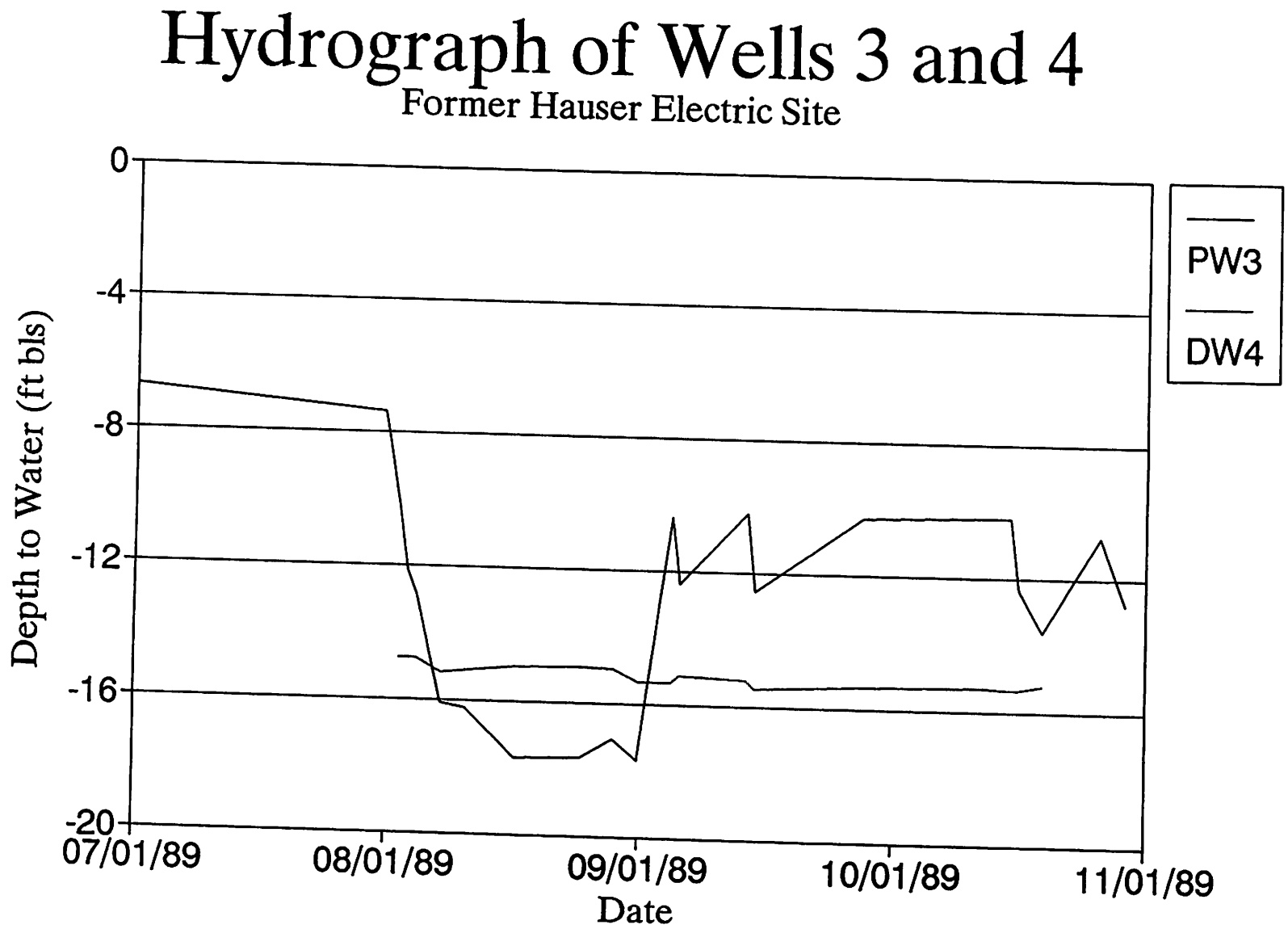

Figure 7. Hydrograph of pumping well 3 and drinking water well 4 illustrating depth to water differences and lack of response to pumping during remediation at the former Hauser Electric site.

Appendix A

Sample Analyses

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0880
FAX # (503) 644-2202

May 8, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Re: JOB #HW118.03
PEL #90-1152

Enclosed is the lab report for your sample which was received on April 30, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Joe Ingram
Chemist

pacific environmental laboratory inc

PEL REPORT NUMBER: 90-1152
CLIENT: OMNI Environmental Services, Inc.
JOB REFERENCE: HW118.03
DATE: May 8, 1990
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Sample I.D.	HAW 900430 EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	ND	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.20

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

RECEIVED MAY 0 3 1990

May 2, 1990

OMNI
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

RE: JOB #HW118-03
P.O. #5911
PEL #90-1112

Enclosed is the lab report for your sample which was received on April 25, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.
Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Margret Schuch
Chemist

pacific environmental laboratory inc.

PEL REPORT NUMBER: 90-1112
CLIENT: OMNI
JOB REFERENCE: HW118-03
DATE: May 2, 1990
ITEM: One Water Sample

METHOD: pH per EPA 9040
Results in Standard Units

Sample I.D.	pH
HAW900424	6.1
Range	0-14

METHOD: BTEX per EPA 602
Gasoline per EPA 8015
Results in ug/L (ppb)

Sample I.D.	Benzene	Toluene	Ethyl Benzene	Xylene	Gasoline
HAW900424	5	ND	2	2	ND
Lab Blank	ND	ND	ND	ND	ND
Detection Limit	1	1	1	1	1,000

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

April 12, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: JOB #HW118-03
PEL #90-0874

Enclosed is the lab report for your sample which was received on April 4, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Joe Ingram
Chemist

PEL REPORT NUMBER: 90-0874
CLIENT: OMNI Environmental Services, Inc.
DATE: April 12, 1990
JOB REFERENCE: HW118-03
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 900403 EW	Lab Blank	Detection Limit
Benzene	2	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	2	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.70

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

March 12, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: JOB #HW 118-02
P.O.#6498
PEL #90-0520

Enclosed is the lab report for your sample which was received on March 2, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 90-0520
CLIENT: OMNI Environmental Services, Inc.
DATE: March 12, 1990
JOB REFERENCE: HW 118-02
P.O. NUMBER: 6498
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 900302EW	Lab Blank	Detection Limit
Benzene	2	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	2	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.20

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

February 9, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: JOB #HW 118-02
P.O.#6367
PEL #90-0283

Enclosed is the lab report for your sample which was received on February 2, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 90-0283
CLIENT: OMNI Environmental Services, Inc.
DATE: February 9, 1990
JOB REFERENCE: HW 118-02
P.O. NUMBER: 6367
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 900202EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	ND	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.70

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

December 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1675

Enclosed is the lab report for your job #HW118-02 which was received in our lab on December 4, 1989.

I. Sample Description

Three Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis. Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

PEL REPORT NUMBER: 89-1675
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: December 11, 1989
ITEMS: Three Water Samples

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 891201EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	ND	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.10

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1589

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 21, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

PEL REPORT NUMBER: 89-1589
CLIENT: OMNI Environmental
JOB REFERENCE: HW118-02
DATE: November 30, 1989
ITEMS: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891120EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	19	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.15

PACIFIC ENVIRONMENTAL LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 27, 1989

OMNI Environmental Service
10950 SW 5th Ave., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1525

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 14, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

pacific environmental laboratory inc.

PEL REPORT NUMBER: 89-1525
CLIENT: OMNI Environmental
JOB REFERENCE: HW118-02
DATE: November 27, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891114EW	Lab Blank	Detection Limit
Benzene	10	ND	1
Toluene	6	ND	1
Ethyl Benzene	ND	ND	1
Xylene	18	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.0

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 15, 1989

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1470

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 7, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 89-1470
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: November 15, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891106EW	Lab Blank	Detection Limit
Benzene	16	ND	1
Toluene	14	ND	1
Ethyl Benzene	ND	ND	1
Xylene	14	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.3

pacific environmental laboratory inc

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 8, 1989

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1399

Enclosed is the lab report for your job #HW118-02 which was received in our lab on October 31, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

PACIFIC environmental laboratory inc.

PEL REPORT NUMBER: 89-1399
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: November 8, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891030EW	Lab Blank	Detection Limit
Benzene	20	ND	1
Toluene	17	ND	1
Ethyl Benzene	ND	ND	1
Xylene	5	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.2

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

October 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1334

Enclosed is the lab report for your job #HW392-2 (Hauser) which was received in our lab on October 23, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 89-1334
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-2 (Hauser)
DATE: October 30, 1989
ITEMS: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 891020EW	Lab Blank	Detection Limit
Benzene	24	ND	1
Toluene	34	ND	1
Ethyl Benzene	ND	ND	1
Xylene	15	ND	1
Gasoline	600	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.3

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

October 25, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1288

Enclosed is the lab report for your job #HW392-02 which was received in our lab on October 17, 1989.

I. Sample Description

Two Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

pacific environmental laboratory inc.

PEL REPORT NUMBER: 89-1288
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02
DATE: October 25, 1989
ITEMS: Two Water Samples

METHOD: BTEX per EPA 8020
Results in ug/L (ppb)

	HAW 891017EW2	Lab Blank	Detection Limit
Benzene	57	ND	1
Toluene	6	ND	1
Ethyl Benzene	9	ND	1
Xylene	6	ND	1

METHOD: Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 891017EW2	Lab Blank	Detection Limit
Gasoline	160	ND	100

METHOD: pH per EPA 9040
Results in standard units

	HAW 891017EW1
pH	6.30

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

September 25, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, Oregon 97005

Attn: Stan Jones

Re: PEL #89-1061

Enclosed is the lab report for your job #HW392-02 which was received in our lab on September 15, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

Pacific Environmental Laboratory, Inc.

PEL REPORT NUMBER: 89-1061
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02
P.O. NUMBER: 5754
DATE: September 25, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890915
pH	6.25

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890915	Lab Blank	Detection Limit
Benzene	42	ND	1
Toluene	8	ND	1
Ethyl Benzene	2	ND	1
Xylene	5	ND	1
Gasoline	260	ND	100

RECEIVED SEP 18 1989

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

September 14, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Re: PEL #89-0999

Enclosed is the lab report for your job number HW392-02 which was received in our lab on September 6, 1989.

I. Sample Description

One Water Sample

The sample was received under chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists.

If you have any questions, please feel free to call.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 89-0999
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02 Hauser
P.O. NUMBER: 5706
DATE: September 14, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890906
pH	5.90

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890906	Lab Blank	Detection Limit
Benzene	16	ND	1
Toluene	3	ND	1
Ethyl Benzene	ND	ND	1
Xylene	2	ND	1
Gasoline	ND	ND	100

ND = Not Detected

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

September 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Re: PEL #89-0976

Enclosed is the lab report for your job number HW392-02 which was received in our lab on September 1, 1989.

I. Sample Description

One Water Sample

The sample was received under chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists.

If you have any questions, please feel free to call.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

PEL REPORT NUMBER: 89-0976
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02 Hauser
P.O. NUMBER: 5700
DATE: September 11, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890901
pH	6.20

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890901	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detected

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

September 1, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Re: PEL #89-0932

Enclosed is the lab report for your job number HW392-02 which was received in our lab on August 25, 1989.

I. Sample Description

One Water Sample

The sample was received under chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists.

If you have any questions, please feel free to call.

Sincerely,

John Melvin
Lab Director

Philip Nerenberg
President

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 89-0932
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02
DATE: September 1, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890825
pH	6.00

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890825	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detected

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Re: PEL #89-0896

Enclosed is the lab report for your job number HW392-02 which was received in our lab on August 22, 1989.

I. Sample Description

One Water Sample

The sample was received under chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists.

If you have any questions, please feel free to call.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

pacific environmental laboratory inc.

PEL REPORT NUMBER: 89-0896
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW392-02 Hauser
P.O. NUMBER: 5669
DATE: August 30, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890817
pH	6.00

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890817	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detected

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pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 21, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 180
Beaverton, OR 97005

Attn: Stan Jones

Re: PEL #89-0837

Enclosed is the lab report for your job number HW392-05 which was received in our lab on August 14, 1989.

I. Sample Description

One Water Sample

The sample was received under chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists.

If you have any questions, please feel free to call.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

 Pacific Environmental Laboratory

PEL REPORT NUMBER: 89-0837
CLIENT: OMNI Environmental Services
DATE: August 21, 1989
ITEMS: One Water Sample

METHOD: EPA 9040
Results in Standard Units

	HAW 890811
pH	6.45

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890811	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detected

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pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 14, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PEL REPORT NUMBER: 89-0788
P.O./JOB NUMBER: 5605/HW392-02
DATE SUBMITTED: 8/07/89
ITEM: One Water Sample

ANALYSIS

METHOD: pH per EPA 9040
Results in standard units

	HAW 890805
pH	6.45

METHODS: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890805	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detection

Respectfully,

Philip Nerenberg
Chemist

Reviewed by:

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PEL REPORT NUMBER: 89-0780
P.O./JOB NUMBER: 5605/HW392-02
DATE SUBMITTED: 8/04/89
ITEM: One Water Sample

ANALYSIS

METHODS: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890804	Lab Blank	Detection Limit
Benzene	16	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	120	ND	100

ND = Not Detected

METHOD: pH per EPA 9040
Results in standard units

	HAW 890804
pH	6.65

Respectfully,

Philip Nerenberg
Chemist

Reviewed by: LMO

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 4, 1989

OMNI Environmental Services
P.O. Box 743
Beaverton, Oregon 97005

Attention: Stan Jones

PAL Report Number: 89-0775
PO/Job Number: 5604/HW392-02
Date Submitted: 8/3/89
Items: One Water Sample

ANALYSIS

Method: EPA 602
Results in ug/L (ppb)

	HAW 890803	Lab Blank	Detection Limit
Benzene	180	ND	5
Toluene	16	ND	5
Ethyl Benzene	50	ND	5
Xylene	75	ND	5

Method: pH per EPA 9040

HAW 890803 6.6

Method: EPA 413.1
Results in mg/L (ppm)

	HAW 890803	Lab Blank	Detection Limit
Oil & Grease	18	ND	2

ND = Not Detected

Philip Nerenberg
Chemist

Linnet O'Hanlon
Chemist

PACIFIC ANALYTICAL LABORATORY inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

RECEIVED JUL 12 1989

July 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Randall Bailey

PAL REPORT NUMBER: 89-0666
P.O./JOB NUMBER: 5515/392-02
DATE SUBMITTED: 7/10/89
ITEMS: Two Water Samples

ANALYSIS

METHOD: EPA 602

Results in ug/L (ppb)

	S-1	S-2	Lab Blank	Detection Limit
Benzene	370	ND	ND	5
Toluene	29	ND	ND	5
Ethyl Benzene	170	ND	ND	5
Xylene	310	ND	ND	5

ND = Not Detected

Respectfully,

Philip Nerenberg
Philip Nerenberg
Chemist

S-1 - PW3 (Pumping well)
S-2 = DW 4 (On site Drinking water well)

Reviewed by: DMC

PACIFIC ANALYTICAL LABORATORY inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

June 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PAL REPORT NUMBER: 879-0605
P.O./JOB NUMBER: 5283/PS392-02
DATE SUBMITTED: 6/23/89
ITEMS: One Water Sample

ANALYSIS

METHOD: Gasoline per EPA 8015

Results in mg/L (ppm)

	H890622 SJ Water	Lab Blank	Detection Limit
Gasoline	5	ND	0.1

ND = Not Detected

Respectfully,

Philip Nerenberg
Chemist

Reviewed by:

OMNI
ENVIRONMENTAL
SERVICES, INC.

March 29, 1990

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Mr. Loren Garner
Environmental Engineer
Northwest Region
Regional Operations Division
Department of Environmental Quality
811 S.W. Fifth Avenue
Portland, OR 97204

Re: Groundwater Remediation in Progress at the Hauser Electric Project, 18725 S.E. Royal Street in Gresham, Oregon

Dear Mr. Garner:

This letter is a follow-up to our telephone conversation of Tuesday, March 27, 1990. During that conversation you recommended that the current monthly remediation schedule should continue through the end of April 1990. You also recommended that OMNI collect an initial groundwater sample when the pump is first turned on at the beginning of each pumping period. The pump was turned on again Monday, March 26, 1990; therefore, OMNI will collect an initial groundwater sample during the next pumping period, at the end of April 1990. As I stated in our conversation, OMNI monitors the groundwater levels in the two monitoring wells and the pumping well. Current water levels are relatively high; however, the depths to groundwater may not have reached stable levels.

Enclosed is a photocopy of the latest analysis results. As you will see the contaminant concentrations remain at low ppb to nondetectable levels. The next set of groundwater samples will be collected at the beginning of next week, when the pump is turned off. I will provide you with an update of those results in a future letter report. If you have any questions regarding the continuation of this project please contact me at your convenience.

Best regards,

Eileen L. Webb

Eileen L. Webb
Geologist/Environmental Scientist

cc: Mr. Dave Hammes, U.S. Bancorp
Ms. Carrie Sleeper, City of Gresham

Enclosure
HW118-02.014

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

March 12, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: JOB #HW 118-02
P.O.#6498
PEL #90-0520

Enclosed is the lab report for your sample which was received on March 2, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

pacific environmental laboratory inc.

PEL REPORT NUMBER: 90-0520
CLIENT: OMNI Environmental Services, Inc.
DATE: March 12, 1990
JOB REFERENCE: HW 118-02
P.O. NUMBER: 6498
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 900302EW	Lab Blank	Detection Limit
Benzene	2	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	2	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.20

3/27/90

Discussed recent sampling - results are encouraging.

I asked for continued intermittent pumping through late April 90 - at least until we are sure we've gone through the full high GW cycle (no new soils will be inundated this spring).

I also asked for sampling of the water early during pumping, which would better represent the stagnant water condition.

Pending the results of the April testing, they may submit the proposal for termination of remedial activities.

Loren Garner

OMNI
ENVIRONMENTAL
SERVICES, INC.

February 26, 1990

Consulting
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Testing

OMNI™

Mr. Loren Garner
Environmental Engineer
Northwest Region
Regional Operations Division
Department of Environmental Quality
811 S.W. Fifth Avenue
Portland, OR 97204

Re: Groundwater Remediation in Progress at the Hauser Electric Project, 18725 S.E. Royal Street in Gresham, Oregon

Dear Mr. Garner:

This letter is to provide you with an update on the progress at the Hauser site. As we agreed during our phone conversation of December 4, 1989, our revised sampling schedule includes turning the pump on at the site one time each month and leaving it running for about one week. At the end of each pumping period groundwater samples are collected and analyzed for benzene, toluene, ethyl benzene, xylene, total gasoline, and pH, as has been done in the past. During our conversation we also agreed that the pumping and sampling operation will continue through at least April 1, 1990, or until sampling results show nondetectable levels of the above-mentioned contaminants.

At the end of January 1990, OMNI turned the pump on for one week and collected groundwater samples from the site on February 2, 1990. The analysis results showed nondetectable levels of the above-mentioned contaminants, as was the case for the previous sample. The latest analytical results (dated 11-4-89, 11-15-89, 11-27-89, 11-30-89, 12-11-89, and 2-9-90) are enclosed. Also enclosed is a graph showing the total volume pumped during the project. Review of these analyses will show continued progress of the remediation program for the Hauser site.

OMNI is continuing to work with the City of Gresham in our efforts to keep the City informed as to the progress of the remediation at the site. Enclosed is a letter dated February 12, 1990 to Ms. Carrie Sleeper with the City of Gresham.

The next set of groundwater samples will be collected at the end of next week. I will provide you with an update of the results in a future letter report. If you have any questions regarding the continuation of this project please contact me at your convenience.

Best regards,

Eileen L. Webb

Eileen L. Webb
Geologist/Environmental Scientist

Enclosures (2)
HW118-02.011

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

February 9, 1990

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: JOB #HW 118-02
P.O.#6367
PEL #90-0283

Enclosed is the lab report for your sample which was received on February 2, 1990.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis unless otherwise noted.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 90-0283
CLIENT: OMNI Environmental Services, Inc.
DATE: February 9, 1990
JOB REFERENCE: HW 118-02
P.O. NUMBER: 6367
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 900202EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	ND	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.70

PACIFIC environmental laboratory INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

December 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1675

Enclosed is the lab report for your job #HW118-02 which was received in our lab on December 4, 1989.

I. Sample Description

Three Water Samples

The samples were received under a chain of custody.

The samples were received in containers consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis. Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
Philip Nerenberg
President

PACIFIC environmental laboratory inc.

PEL REPORT NUMBER: 89-1675
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: December 11, 1989
ITEMS: Three Water Samples

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 891201EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	ND	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.10

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1589

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 21, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

Pacific Environmental Laboratory Inc.

PEL REPORT NUMBER: 89-1589
CLIENT: OMNI Environmental
JOB REFERENCE: HW118-02
DATE: November 30, 1989
ITEMS: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891120EW	Lab Blank	Detection Limit
Benzene	ND	ND	1
Toluene	ND	ND	1
Ethyl Benzene	ND	ND	1
Xylene	19	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.15

PACIFIC environmental laboratory INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 27, 1989

OMNI Environmental Service
10950 SW 5th Ave., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1525

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 14, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Philip Nerenberg
President

Linnet O'Hanlon
Chemist

PEL REPORT NUMBER: 89-1525
CLIENT: OMNI Environmental
JOB REFERENCE: HW118-02
DATE: November 27, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891114EW	Lab Blank	Detection Limit
Benzene	10	ND	1
Toluene	6	ND	1
Ethyl Benzene	ND	ND	1
Xylene	18	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH 6.0

PACIFIC environmental LABORATORY INC.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 15, 1989

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1470

Enclosed is the lab report for your job #HW118-02 which was received in our lab on November 7, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

PACIFIC environmental laboratory inc.

PEL REPORT NUMBER: 89-1470
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: November 15, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891106EW	Lab Blank	Detection Limit
Benzene	16	ND	1
Toluene	14	ND	1
Ethyl Benzene	ND	ND	1
Xylene	14	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.3

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

November 8, 1989

OMNI Environmental Services, Inc.
10950 S.W. 5th St., Suite 160
Beaverton, OR 97005

Attn: Eileen Webb

Re: PEL #89-1399

Enclosed is the lab report for your job #HW118-02 which was received in our lab on October 31, 1989.

I. Sample Description

One Water Sample

The sample was received under a chain of custody.

The sample was received in a container consistent with EPA protocol.

II. Quality Control

No project specific QC was requested. In-house QC data is available upon request.

III. Analytical Results

Test methods may include minor modifications of published methods such as detection limits or parameter lists. Solid and waste samples are reported on an "as received" basis.

Compounds not detected are listed under results as ND.

Sincerely,

Howard Holmes
Lab Manager

Philip Nerenberg
President

Pacific Environmental Laboratory Inc

PEL REPORT NUMBER: 89-1399
CLIENT: OMNI Environmental Services
JOB REFERENCE: HW118-02
DATE: November 8, 1989
ITEM: One Water Sample

METHOD: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

Compound	HAW 891030EW	Lab Blank	Detection Limit
Benzene	20	ND	1
Toluene	17	ND	1
Ethyl Benzene	ND	ND	1
Xylene	5	ND	1
Gasoline	ND	ND	100

METHOD: pH per EPA 9040
Results in Standard Units

pH.....6.2

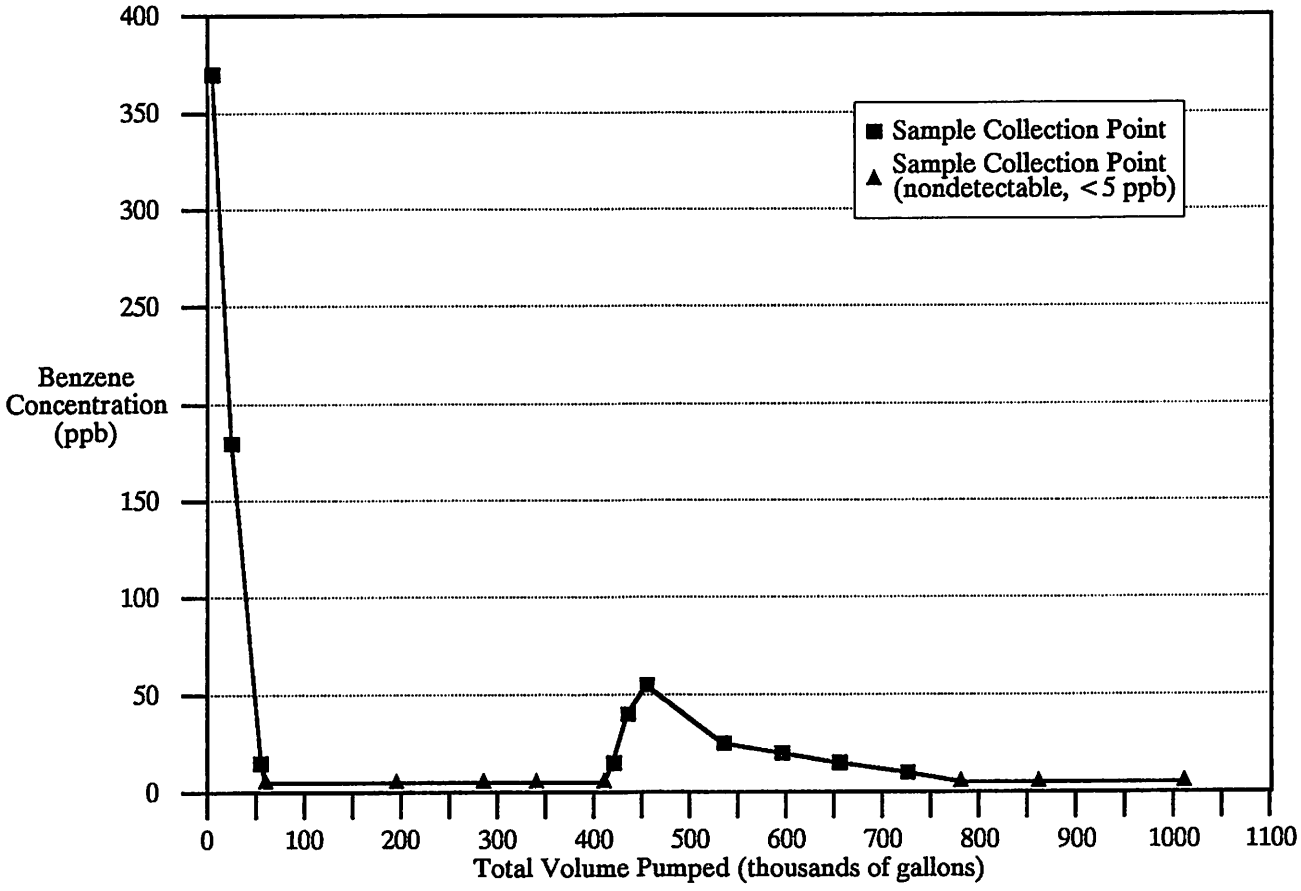

Figure 4. Groundwater remediation, former Hauser Electric site.

OMNI
ENVIRONMENTAL
SERVICES, INC.

February 12, 1989

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Ms. Carrie Sleeper
City of Gresham
1333 N.W. Eastman Parkway
Gresham, Oregon 07030-3825

Re: Groundwater Remediation in Progress at the Hauser Electric Project, 18725 S.E. Royal Street in Gresham, Oregon

Dear Ms. Sleeper:

The groundwater remediation at the Hauser Electric site is again progressing. In cooperation with Mr. Loren Garner of the Oregon Department of Environmental Quality Northwest Region office, OMNI is sampling once each month for the duration of the rainy season. We expect to sample through at least the month of April 1990.

The latest groundwater sampling was performed on February 2, 1990. The sample was again analyzed for benzene, toluene, ethyl benzene, xylene (BETX), and total gasoline. The concentrations of these compounds were reported as nondetectable on the enclosed photocopy of the lab report. I will keep you posted on the groundwater analysis results as the sampling program continues. If you have any questions regarding the continuation of this project please call Mr. David Graham, Manager of Environmental Operations, at 643-3755.

Best regards,

Eileen L. Webb
Geologist/Environmental Scientist

Enclosure
HW118-02.010

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005

U.S. BANK

111 S.W. FIFTH AVENUE
P.O. BOX 4412
PORTLAND, OREGON 97208-4412

January 11, 1990

Mr. Loren Garner
Environmental Engineer
Department of Environmental Quality
811 S.W. Fifth Avenue
Portland, Oregon 97204

Re: NPDES Permit Application for the Former Hauser Electric Site, Gresham, Oregon

Dear Mr. Garner:

Enclosed is U.S. Bancorp's application for an NPDES discharge permit for the former Hauser Electric Site located in Gresham, Oregon. Also enclosed is the application fee of fifty dollars ($50.00). If you should have any questions regarding the application, please do not hesitate to contact me or Mr. David L. Graham of OMNI Environmental Services, Inc. at your convenience.

Sincerely,

R. L. Bolme
Corporate Construction Manager

RLB/kls

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December 20, 1989

Mr. Loren Garner
Environmental Engineer
Northwest Region Office
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204-1390

Re: Continuation of Groundwater Remediation Efforts at the Former Hauser Electric Site in Gresham, Oregon

Dear Mr. Garner:

It was a pleasure to talk with you on Monday, December 4, 1989. As you may recall, during our conversation you stated that OMNI's permit to discharge treated groundwater to Johnson Creek from the former Hauser Electric site to Johnson Creek has expired. It was also stated that OMNI has been granted a verbal extension of the discharge permit until we have applied for and received a general NPDES water discharge permit. I received the application packet for the general NPDES permit from you this week. Thank you for your prompt response. OMNI is now in the process of applying for the permit.

I informed you that the last two sampling results show the groundwater to be quickly approaching undetectable limits for benzene, toluene, ethyl benzene, xylene, and total gasoline. The last sampling analysis resulted in nondetectable levels for these contaminants. Therefore, OMNI requests that a revised sampling schedule be implemented. For the revised schedule, the groundwater pump will be turned on the first week of each month and left on for a period of approximately one week. At the end of that time a water sample will be collected for analysis as usual. The pumping and sampling routine will continue through at least April 1, 1990 (end of the major rainy season), as we agreed during our phone conversation. I will continue to keep you informed of the progress of the remediation efforts and sample analyses throughout the remainder of the groundwater remediation project.

If you have any questions or feel you need more information, please call Mr. David Graham, Manager of the Environmental Management Division, or me, at (503) 643-3755.

Best regards,

Eileen L Webb

Eileen L. Webb
Geologist/Environmental Scientist
Environmental Management Department

cm
XW118-02.014

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

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November 1, 1989

Mr Loren Garner
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, OR 97204

Re: Groundwater Remediation at the Former Hauser Electric Site in Gresham, Oregon

Dear Mr. Garner:

OMNI Environmental Services, Inc. has completed the initial groundwater pumping and remediation under the 60 day Special Discharge Permit (see attached DEQ letter dated July 6, 1989). This letter is to inform you of the current site status and of the future groundwater remediation activities to be conducted at the site.

In April 1989, OMNI supervised the removal of an underground storage tank on the above-mentioned property (Figure 1). It was determined at that time that a release of gasoline from the tank had occurred. During the removal of contaminated soils from around the tank, it became apparent that gasoline had encountered the uppermost water table. Free product (gasoline) was observed entering the excavation. In June 1989, the site was characterized to determine the lateral extent of contamination. A series of test borings were conducted using a hand auger and a backhoe. The contamination was found to be contained in the immediate area of the UST at a depth of approximately 6.0 feet below land surface (Figure 2). Two monitoring wells and a remediation well were drilled on site. A groundwater remediation system consisting of a submersible stainless steel pump, an oil-water separator, and a discharge line connected to the storm sewer were installed (Figure 3). The City of Gresham approved a temporary storm sewer hook up after the proposed remediation plan was approved by the DEQ.

The goal of the groundwater remedial action at this site was to reduce benzene concentrations in the groundwater to drinking water standards (5 ppb). Benzene concentrations in the groundwater at the Hauser site were 370 ppb prior to the initiation of the pumping program. The pumping system was placed in continuous operation on August 2, 1989. Samples of the discharge water were collected every 24 hours during the first three days of pumping and weekly during the remainder of the permit period. Benzene concentrations decreased rapidly as pumping progressed. Concentrations were reduced to less than 5 ppb after 1 week of pumping (Table 1). After undetectable levels of benzene were observed over an extended period of time, the pumping was discontinued and the groundwater level was allowed to recover. After a short period of recovery, the pumping was resumed and additional groundwater samples were collected. This process was repeated twice. Concentrations of benzene increased from below detection to 16 ppb to 42 ppb in subsequent sampling (Table 1, Figure 4). This increase in concentrations was the result of the fact that the recovered groundwater levels came in contact with soils in the contaminated zone of the aquifer. A rise in groundwater levels associated with fall and winter precipitation will likely cause contaminant levels to increase as groundwater continues to come in contact with the contaminated soils.

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

It is obvious from the most recent samples collected that the contamination is still present in the groundwater and saturated zone in the general area of the former underground storage tank. In our conversation on October 5, 1989 you verbally authorized an extension of the Special Discharge Permit for an additional 60 days. In view of this, OMNI is continuing to pump and monitor the groundwater in accordance with the guidelines of the original permit. OMNI will continue to analyze groundwater samples for gasoline (EPA method 8015) in place of oil and grease (EPA method 413.1), and will sample water entering the system. Should contaminant levels in the groundwater exceed the allowed discharge levels, water exiting the system will also be sampled to ensure contaminant concentrations do not exceed the allowable discharge levels. If benzene concentrations in the groundwater continue to remain well above the 5 ppb level for an extended period of time, OMNI may propose that in the future samples be collected on a monthly basis so that analytical costs may be kept to a minimum. In view of the analytical data, it is highly improbable that contaminant levels in the discharge water would exceed the allowed 10 ppm discharge limit.

Please send me written verification of the Special Discharge Permit extension. If you should have any questions regarding the enclosed information or require additional details, feel free to call Mr. Dave Graham or me at your convenience.

Sincerely,

Stanton K. Jones
Geologist/Environmental Scientist

David L. Graham
Manager, Hazardous Waste Operations

Enclosures

cm
HW118-02.008

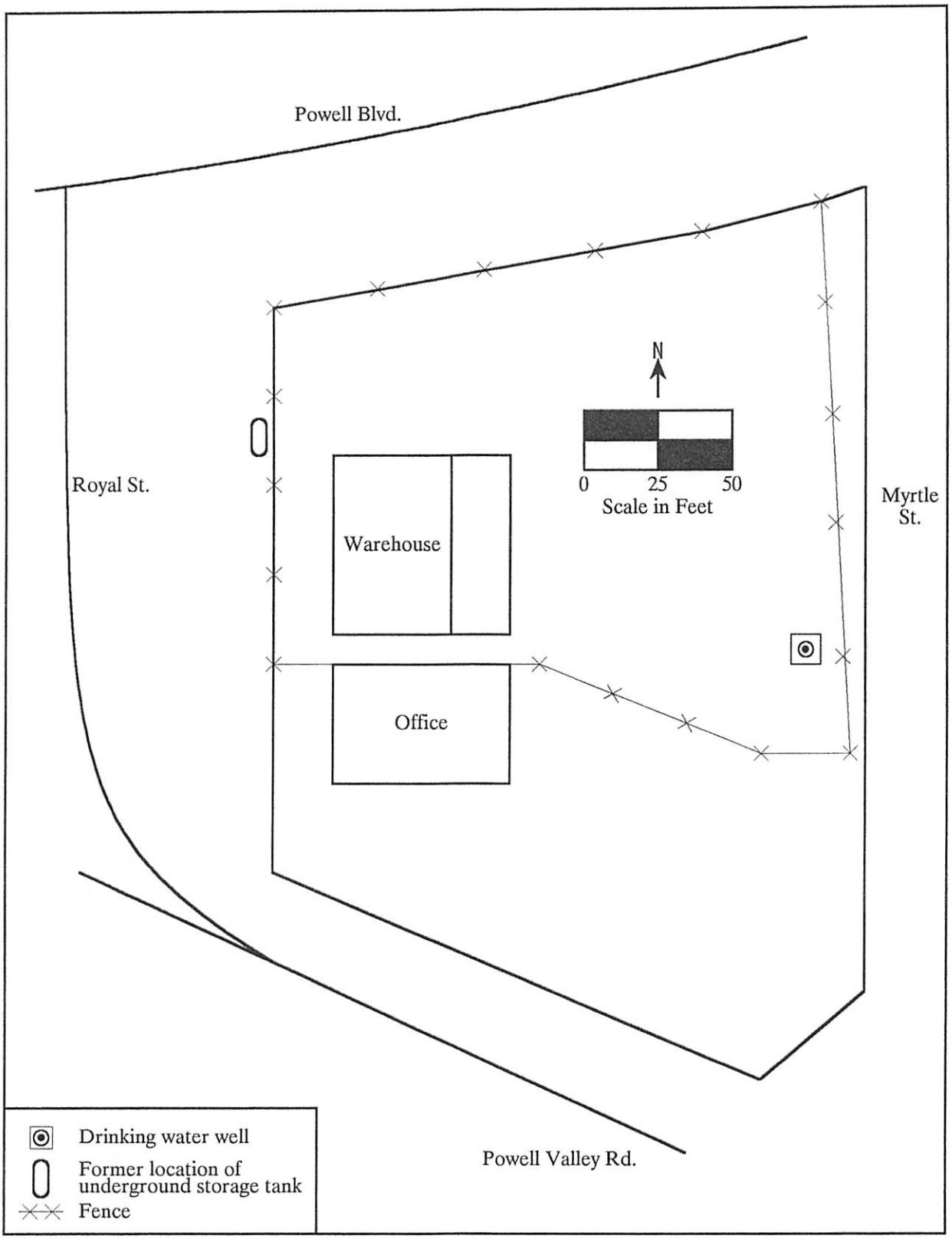

Figure 1. Site plan.

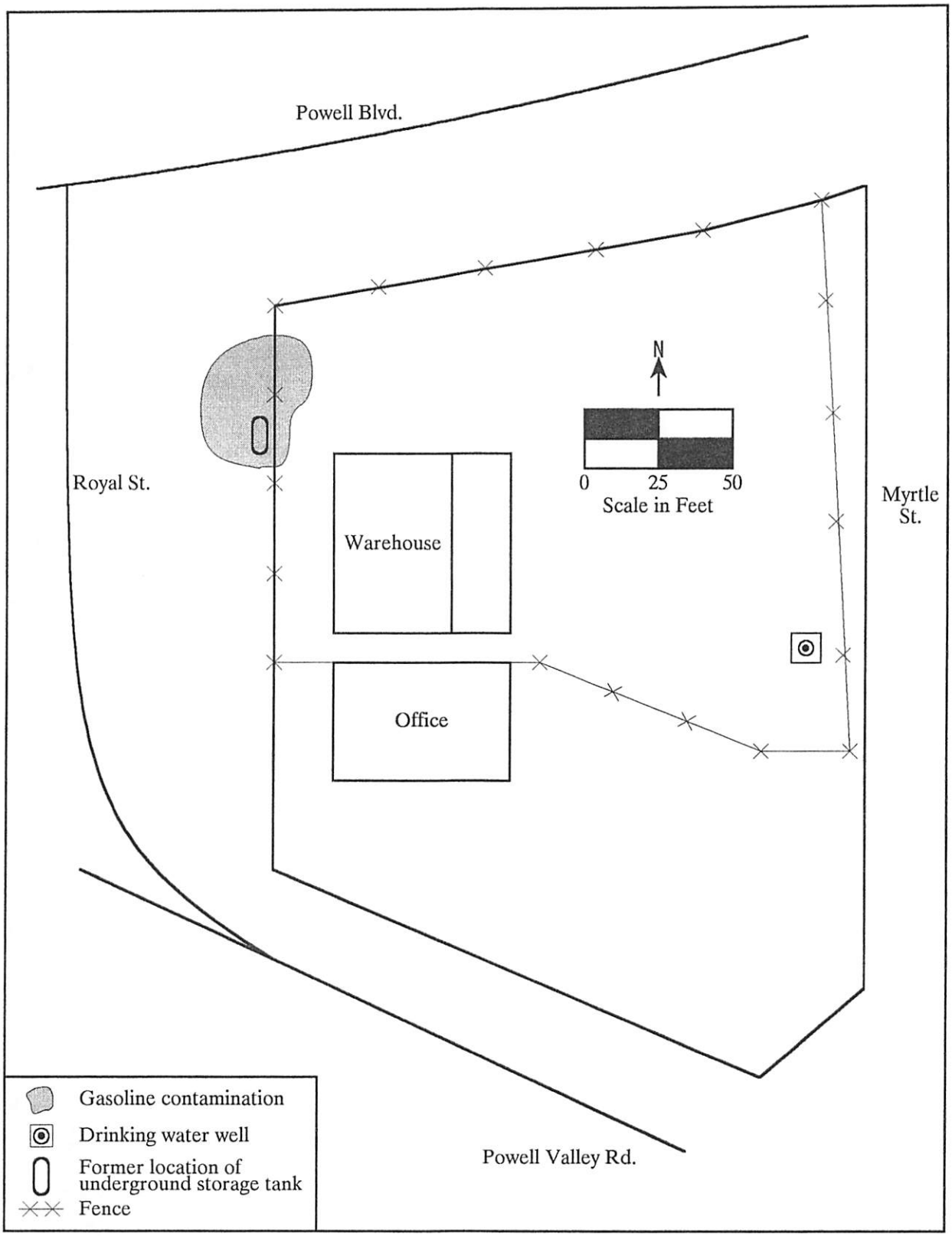

Figure 2. Site sketch showing extent of gasoline contamination as of July, 1989.

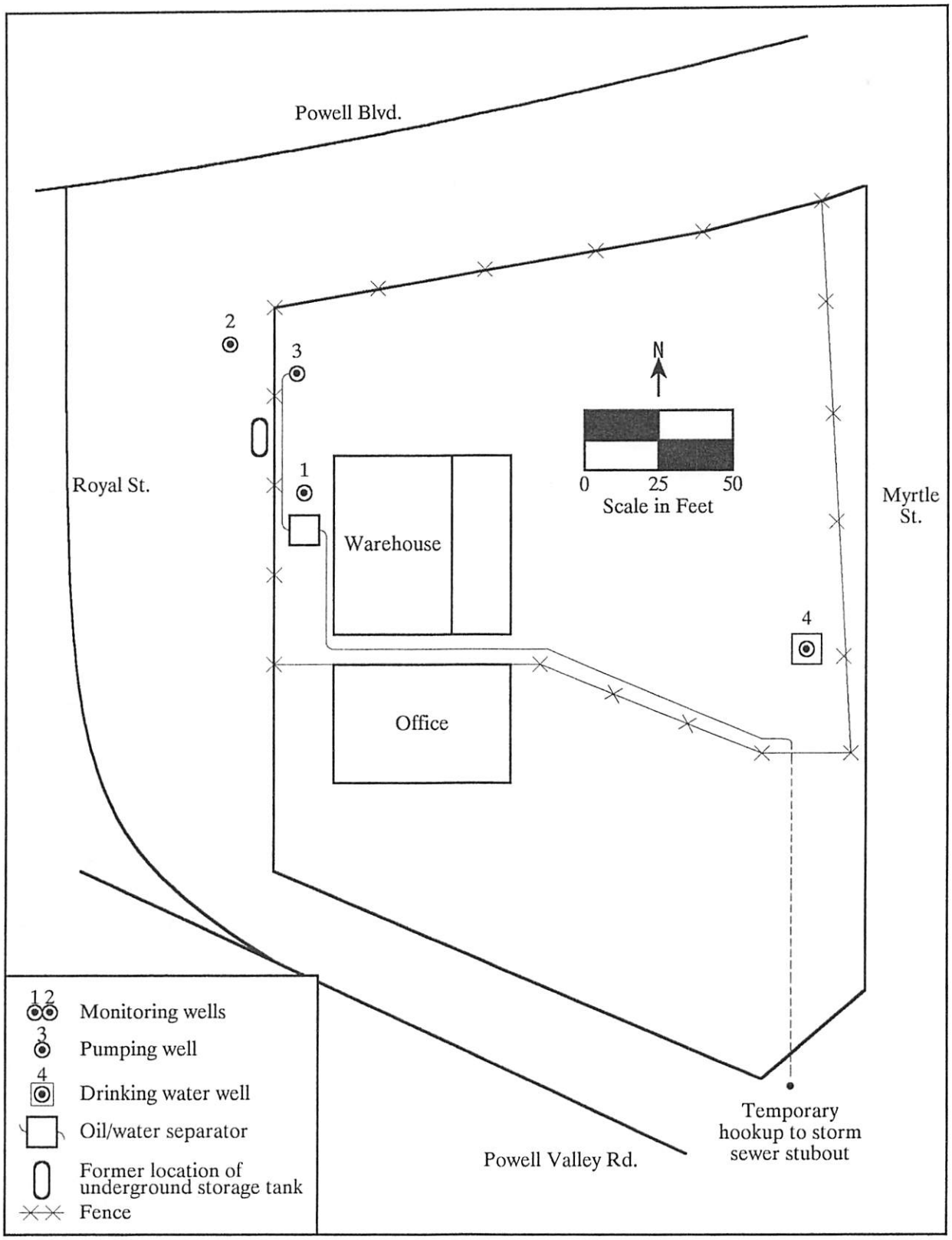

Figure 3. Site sketch showing remediation system.

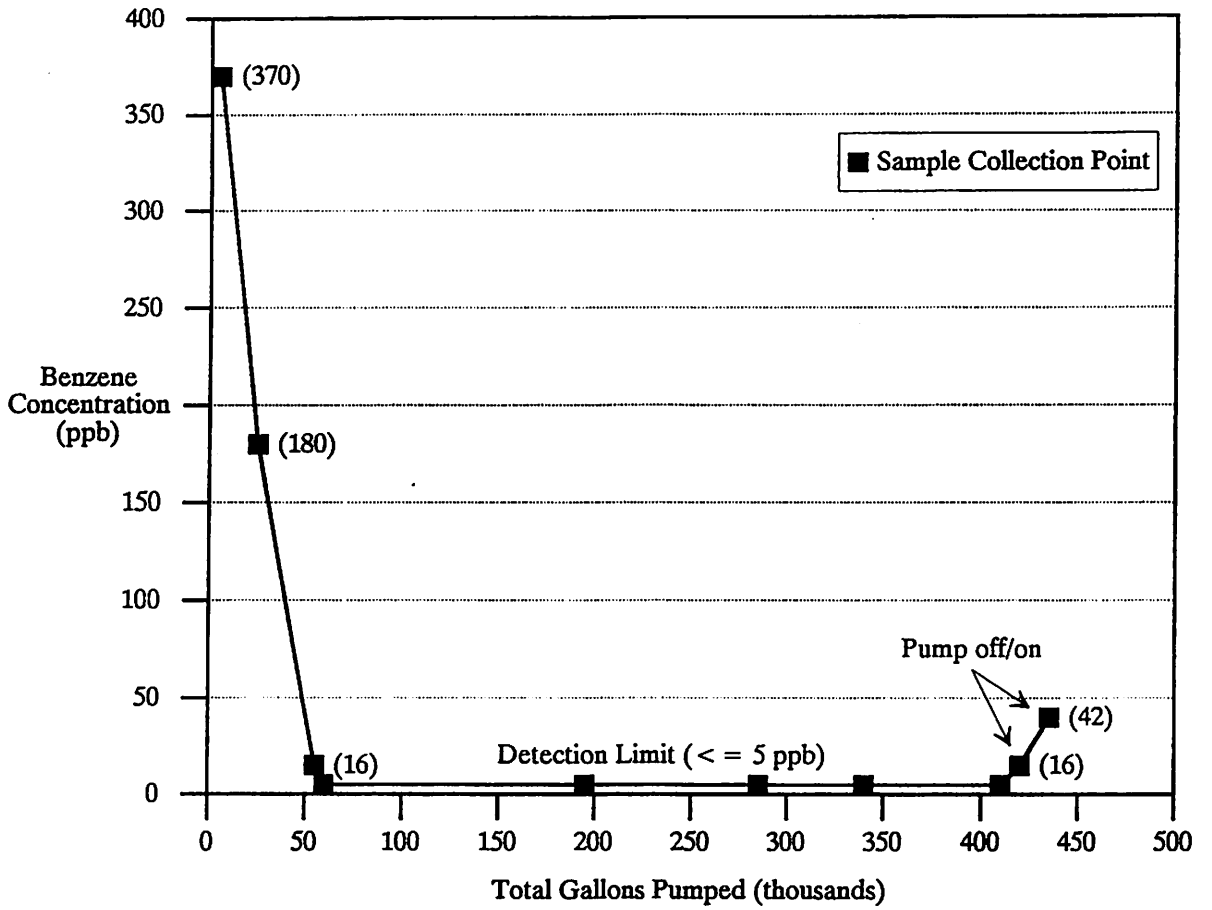

Figure 4. Groundwater remediation, former Hauser Electric site.

Table 1

Pertinent Remediation Data

Date	Monitoring Well #1	Monitoring Well #2	Pumping Well #3	Drinking Water Well #4	Pumping Rate	Sample Collected	Benzene Level ppb[1]
8/01	2.78m	2.21m	2.25m	NA	0gpm		370
8/02 (13:04)	2.78	2.24	3.07	NA	20gpm		
(14:33)	2.79	2.25	3.04	NA	20gpm		
(15:40)	2.79	2.25	3.05	NA	20gpm		
8/03	2.79	2.31	3.10	4.49	17gpm	•	180
8/04	2.81	2.40	3.70	4.50	20gpm	•	16
8/05	2.83	2.46	3.92	4.49	20gpm	•	ND[2]
8/08	2.89	2.64	4.90	4.62	19gpm		
8/11	2.91	2.80	4.95	4.60	16gpm	•	ND
8/17	2.96	3.00	5.40	4.56	9.1gpm	•	ND
8/25	3.00	3.09	5.38	4.55	5.0gpm	•	ND
8/29	3.01	3.11	5.20	4.56	4.0gpm		
9/01	3.05	3.16	5.20	4.67	4.0gpm (off)[3]	•	ND
9/05	3.07	3.11	3.16	4.67	(on) 7.0gpm		
9/06	3.07	3.14	3.77	4.61	7.0gpm (off)	•	16
9/14	3.08	3.12	3.10	4.64	(on) 10.0gpm		
9/15	3.12	3.14	3.83	4.71	10.0gpm (off)	•	42
9/28	3.15	3.08	3.13	4.67			
10/13	3.19	3.05	3.10	4.66	(off)		
10/16 (13:30)	3.20	3.06	3.10	4.68	15gpm (off)		
10/17 (11:30)	3.21	3.14	3.76	3.68	16.67gpm (on)	•	56

Table 1

Pertinent Remediation Data (continued)

Date	Monitoring Well #1	Monitoring Well #2	Pumping Well #3	Drinking Water Well #4	Pumping Rate	Sample Collected	Benzene Level ppb[1]
10/20 (16:00)	3.22	3.33	4.15	4.63	(off)	•	24
Max. Drawdown	.42m	.95m	2.95m	NA			
Observed	.59 feet	2.59 feet	7.05 feet				

Distance between wells:

Pumping well #3 to Monitoring well #1 = 11.9m (39 feet)
Pumping well #3 to Monitoring well #2 = 7.16m (23.5 feet)
Pumping well #3 to Drinking water well #4 = 57.30m (188 feet)
Monitoring well #1 to Monitoring well #2 = 18.39m (60 feet)

Well Depths:

Monitoring Well #1: 6.10m (2" dia.)
Monitoring Well #2: 6.10m (2" dia.)
Pumping Well #3: 6.10m (4" dia.)
Drinking Water Well #4: 20.12m (6" dia.)

[1] ppb = parts per billion.
[2] ND = below detection (< 5 ppb).
[3] (off) = Pump off. (on) = Pump on.

HW392B02.144

RECEIVED AUG - 2 1989

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

July 26, 1989

Stanton K. Jones
OMNI Environmental Services
10950 S.W. 5th Street, Suite 160
Beaverton, OR 97005

Re: UST - Multnomah County
Hauser Electric - Special Permit

Dear Mr. Jones:

In your letter of July 18, 1989, you requested a special permit to discharge treated groundwater from the former Hauser Electric site at 18725 S.E. Powell Boulevard in Gresham to Johnson Creek via the storm sewer system. You propose to use an oil/water separator to treat the gasoline contaminated water prior to discharge.

The Department has determined that there is no practicable no-discharge alternative available at this site. The review concludes that stream water quality standards will not be violated, provided the permittee complies with the discharge limitations below.

This letter approves your proposed treatment system and authorizes you to discharge treated groundwater to the existing storm sewer, provided the following conditions are met:

1. Prior to discharge, contaminated groundwaters are treated so that all waters discharged to public waters shall not exceed the following limitations:

Parameter	Limitations
Oil and Grease	shall not exceed 10 mg/l
Gasoline constituents (Total BTX&E)	shall not exceed 10 mg/l
pH	Shall be within 6 - 9

2. To confirm that adequate treatment is occurring, the above parameters shall be monitored daily for the first three days of discharge and weekly thereafter. Monitoring results shall be verbally reported to the regional staff and submitted to the department in the final site cleanup report.

3. Prior to use of the storm sewer, its use shall be approved by the owner of the storm sewer system.

4. The permittee shall notify the department within 24 hours of any breakdown or failure of the treatment system to consistently meet the effluent limitations.

5. If the separator system does not provide adequate treatment, it shall be shut down and the system modified or replaced so as to meet the necessary limitations.

This Special Permit is good for 60 days. If dewatering or groundwater treatment will last longer than 60 days, the permittee must apply for and receive a regular NPDES waste discharge permit.

Questions regarding this permit and other concerns should be addressed to Loren Garner, Northwest Region, at 229-6142.

Sincerely,

Lydia R. Taylor
Administrator,
Water Quality Division

cc: Northwest Region
ECD, UST Cleanup Section
Carrie C. Sleeper
City of Gresham
1333 N.W. Eastman
Gresham, OR 97030

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August 16, 1989

Mr. Loren Garner
Department of Environmental Quality
811 S.W. Sixth Avenue
Portland, Oregon 97204

Re: Groundwater Remediation at the Former Hauser Electric Site in Gresham, OR

Dear Mr. Garner:

Enclosed are copies of the laboratory analyses of the discharge water during the first three days of pumping activity (August 3, 4, 5, 1989).

As discussed in our telephone conversation on August 4, 1989, a method more suitable for the detection of gasoline in the discharge water was adopted. According to Mr. Phillip Nerenberg at Pacific Environmental Laboratory (see attached letter and description of the oil and grease method), the EPA Method 8015 for gasoline should provide a more representative view of the sample.

The levels of BTEX and gasoline in the discharge water have decreased dramatically within the initial three day period. In view of the latest analytical results, we would like to collect future samples from the water emerging from the well before it enters the oil/water separator. In this way, laboratory expenses may be kept to a minimum by not having to sample both the input and the output. Should the contaminant levels of the pumped water exceed the discharge standards set by the DEQ, then additional sampling of the discharge water will be collected.

Enclosed is a map showing more accurate locations of the wells and the contaminant boundary determined in April 1989 by means of a hand auger. Records of water levels and discharge rates have also been included for your information.

If you require additional information, please contact me at 643-3755.

Sincerely,

Stanton K. Jones
Staff Geologist

cc: Carrie Sleeper, City of Gresham

cm
HW392B02.008

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

OMNI™

Miscellaneous Data

Date	Monitoring Well #1	Monitoring Well #2	Monitoring Well #3	Monitoring Well #4	Pumping Rate
8/01	2.78m	2.21m	2.25m	NA	0gpm
8/02 13:04	2.78	2.24	3.07	NA	20gpm
14:33	2.79	2.25	3.04	NA	20gpm
15:40	2.79	2.25	3.05	NA	20gpm
8/03	2.79	2.31	3.10	4.49	17gpm
8/04	2.81	2.40	3.70	4.50	20gpm
8/05	2.83	2.46	3.92	4.49	20gpm
8/08	2.89	2.64	4.90	4.62	19gpm
8/11	2.91	2.80	4.95	4.60	16gpm
Drawdown	.13m	.59m	2.70m	.11m	

Average volume of water removed per day = 27,400 gallons.

Distance between wells:

Pumping well #3 to Monitoring well #1 = 39 feet.
Pumping well #3 to Monitoring well #2 = 23.5 feet.
Pumping well #3 to Drinking water well #4 = 188 feet.
Monitoring well #1 to Monitoring well #2 = 60 feet.

HW392B02.008

RECEIVED AUG - 8 1989

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 4, 1989

OMNI Environmental Services
P.O. Box 743
Beaverton, Oregon 97005

Attention: Stan Jones

PAL Report Number: 89-0775
PO/Job Number: 5604/HW392-02
Date Submitted: 8/3/89
Items: One Water Sample

ANALYSIS

Method: EPA 602
Results in ug/L (ppb)

	HAW 890803	Lab Blank	Detection Limit
Benzene	180	ND	5
Toluene	16	ND	5
Ethyl Benzene	50	ND	5
Xylene	75	ND	5

Method: pH per EPA 9040

HAW 890803 6.6

Method: EPA 413.1
Results in mg/L (ppm)

	HAW 890803	Lab Blank	Detection Limit
Oil & Grease	18	ND	2

ND = Not Detected

Philip Nerenberg
Chemist

Linnet O'Hanlon
Chemist

PACIFIC environmental laboratory inc

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PEL REPORT NUMBER: 89-0780
P.O./JOB NUMBER: 5605/HW392-02
DATE SUBMITTED: 8/04/89
ITEM: One Water Sample

ANALYSIS

METHODS: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890804	Lab Blank	Detection Limit
Benzene	16	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	120	ND	100

ND = Not Detected

METHOD: pH per EPA 9040
Results in standard units

	HAW 890804
pH	6.65

Respectfully,

Philip Nerenberg
Chemist

Reviewed by: LMO

Pacific Environmental Laboratory Inc.
9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0860
FAX # (503) 644-2202

August 14, 1989

OMNI Environmental Services
10850 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PEL REPORT NUMBER: 89-0788
P.O./JOB NUMBER: 5805/HW392-02
DATE SUBMITTED: 8/07/89
ITEM: One Water Sample

ANALYSIS

METHOD: pH per EPA 9040
Results in standard units

	HAW 890805
pH	6.45

METHODS: BTEX per EPA 8020
Gasoline per EPA 8015
Results in ug/L (ppb)

	HAW 890805	Lab Blank	Detection Limit
Benzene	ND	ND	5
Toluene	ND	ND	5
Ethyl Benzene	ND	ND	5
Xylene	ND	ND	5
Gasoline	ND	ND	100

ND = Not Detection

Respectfully,

Philip Nerenberg
Chemist

Reviewed by:

pacific environmental laboratory inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660
FAX # (503) 644-2202

August 11, 1989

OMNI Environmental Services
10950 SW 5th Ave., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

Dear Stan,

Enclosed is a copy of the oil and grease method EPA 413.1. This test is improper for gasoline analysis, as is stated in section 1.1 and 1.2.

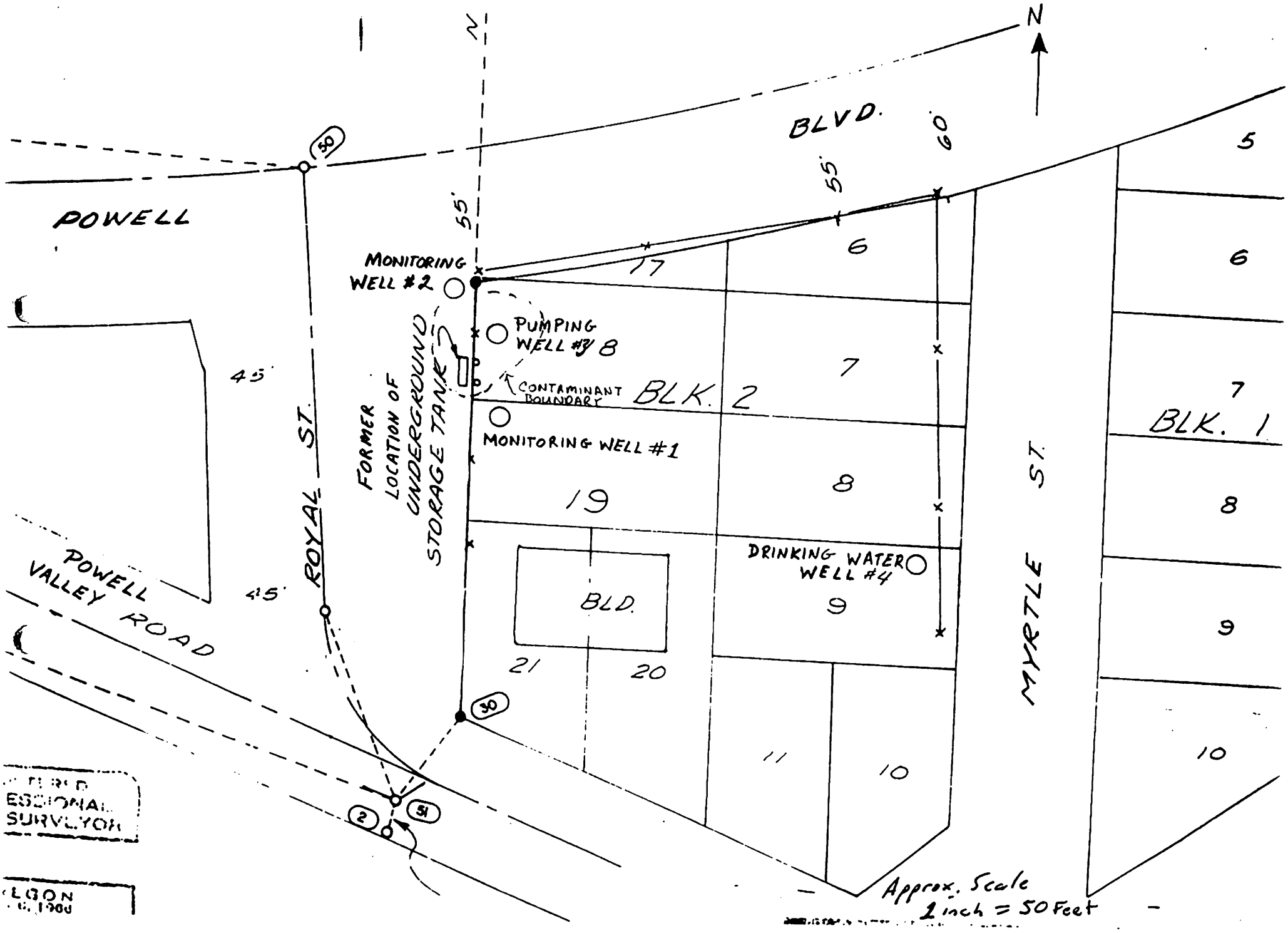
To obtain an accurate result for gasoline quantitation, there are two methods available. Modified EPA 3810 and 8015 are designed for volatiles analysis and use Gas Chromotography (GC) to gain qualitative as well as quantitative results. 8015 is the more accurate of the two and can achieve lower detection limits.

If you have any more questions, feel free to call.

Respectfully,

Philip Nerenberg

Philip Nerenberg
Chemist


N
BLVD.
POWELL
MONITORING WELL #2
PUMPING WELL #3
CONTAMINANT BOUNDARY
FORMER LOCATION OF UNDERGROUND STORAGE TANK
MONITORING WELL #1
DRINKING WATER WELL #4
BLD.
ROYAL ST.
MYRTLE ST.
POWELL VALLEY ROAD
BLK. 2
BLK. 1
55'
60'
45'
17
19
21
20
11
10
Approx. Scale
1 inch = 50 Feet

OIL AND GREASE, TOTAL, RECOVERABLE

Method 413.1 (Gravimetric, Separatory Funnel Extraction)

STORET NO. 00556

1. Scope and Application
   - 1.1 This method includes the measurement of fluorocarbon-113 extractable matter from surface and saline waters, industrial and domestic wastes. It is applicable to the determination of relatively non-volatile hydrocarbons, vegetable oils, animal fats, waxes, soaps, greases and related matter.
   - 1.2 The method is not applicable to measurement of light hydrocarbons that volatilize at temperatures below 70°C. Petroleum fuels from gasoline through #2 fuel oils are completely or partially lost in the solvent removal operation.
   - 1.3 Some crude oils and heavy fuel oils contain a significant percentage of residue-type materials that are not soluble in fluorocarbon-113. Accordingly, recoveries of these materials will be low.
   - 1.4 The method covers the range from 5 to 1000 mg/1 of extractable material.
2. Summary of Method
   - 2.1 The sample is acidified to a low pH (< 2) and serially extracted with fluorocarbon-113 in a separatory funnel. The solvent is evaporated from the extract and the residue weighed.
3. Definitions
   - 3.1 The definition of oil and grease is based on the procedure used. The nature of the oil and/or grease, and the presence of extractable non-oily matter will influence the material measured and interpretation of results.
4. Sampling and Storage
   - 4.1 A representative sample of 1 liter volume should be collected in a glass bottle. If analysis is to be delayed for more than a few hours, the sample is preserved by the addition of 5 ml HCl (6.1) at the time of collection and refrigerated at 4°C.
   - 4.2 Because losses of grease will occur on sampling equipment, the collection of a composite sample is impractical. Individual portions collected at prescribed time intervals must be analyzed separately to obtain the average concentration over an extended period.
5. Apparatus
   - 5.1 Separatory funnel, 2000 ml, with Teflon stopcock.
   - 5.2 Vacuum pump, or other source of vacuum.
   - 5.3 Flask, boiling, 125 ml (Corning No. 4100 or equivalent).
   - 5.4 Distilling head, Claisen or equivalent.
   - 5.5 Filter paper, Whatman No. 40, 11 cm.
6. Reagents
   - 6.1 Hydrochloric acid, 1:1. Mix equal volumes of conc. HCl and distilled water.

Approved for NPDES
Issued 1974
Editorial revision 1978

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

July 26, 1989

Stanton K. Jones
OMNI Environmental Services
10950 S.W. 5th Street, Suite 160
Beaverton, OR 97005

Re: UST - Multnomah County
Hauser Electric - Special Permit

Dear Mr. Jones:

In your letter of July 18, 1989, you requested a special permit to discharge treated groundwater from the former Hauser Electric site at 18725 S.E. Powell Boulevard in Gresham to Johnson Creek via the storm sewer system. You propose to use an oil/water separator to treat the gasoline contaminated water prior to discharge.

The Department has determined that there is no practicable no-discharge alternative available at this site. The review concludes that stream water quality standards will not be violated, provided the permittee complies with the discharge limitations below.

This letter approves your proposed treatment system and authorizes you to discharge treated groundwater to the existing storm sewer, provided the following conditions are met:

1. Prior to discharge, contaminated groundwaters are treated so that all waters discharged to public waters shall not exceed the following limitations:

Parameter	Limitations
Oil and Grease	shall not exceed 10 mg/l
Gasoline constituents (Total BTX&E)	shall not exceed 10 mg/l
pH	Shall be within 6 - 9

2. To confirm that adequate treatment is occurring, the above parameters shall be monitored daily for the first three days of discharge and weekly thereafter. Monitoring results shall be verbally reported to the regional staff and submitted to the department in the final site cleanup report.

3. Prior to use of the storm sewer, its use shall be approved by the owner of the storm sewer system.

4. The permittee shall notify the department within 24 hours of any breakdown or failure of the treatment system to consistently meet the effluent limitations.

5. If the separator system does not provide adequate treatment, it shall be shut down and the system modified or replaced so as to meet the necessary limitations.

This Special Permit is good for 60 days. If dewatering or groundwater treatment will last longer than 60 days, the permittee must apply for and receive a regular NPDES waste discharge permit.

Questions regarding this permit and other concerns should be addressed to Loren Garner, Northwest Region, at 229-6142.

Sincerely,

Lydia R. Taylor

Lydia R. Taylor
Administrator,
Water Quality Division

cc: Northwest Region
ECD, UST Cleanup Section
Carrie C. Sleeper
City of Gresham
1333 N.W. Eastman
Gresham, OR 97030

PERMIT EVALUATION REPORT July 26, 1989

Special Permit for groundwater discharge from
Hauser Electric site in Gresham

OMNI Environmental Services is involved with a tank removal and cleanup at the former site of Hauser Electric at 18725 S.E. Powell Boulevard in Gresham. Gasoline contamination was discovered in soils and groundwater. The groundwater in this area is at about 6 feet and most residences in this area are supported by drinking water wells. The drinking water well on site is about 200 feet away and does not show contamination presently. They are attempting to resolve groundwater impacts by simply withdrawing the contaminant plume. There is no apparent recoverable free product at this site.

There is limited sanitary service available in the area, but access problems and concerns about increased flows on the part of the treatment plant show discharge to the storm system to be a more reasonable alternative.

Although soils are reasonably permeable, it is preferred to have off site discharge rather than reinjection in order to withdraw the contaminated plume and avoid reinjecting any contamination in the vicinity of drinking water supplies.

Present concentrations of dissolved constituents are roughly one part per million. We anticipate no problems in meeting the permit limits consistently or any adverse impacts to Johnson Creek. No adverse air quality impacts are expected.

Discharge under this permit would be expected to continue for at least four weeks. If longer durations are needed we will have them apply for a NPDES permit. This permit has been cleared through the Northwest Region and the Environmental Cleanup Division.

Loren G. Garner

Loren G. Garner
Northwest Region

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

CLEARANCE		
TO	INITIAL	DATE
E G Woods	EGW	7/26
Kent Asbaker	PAL	7/26
Lydia Taylor	LT	7/31
LGG-NWR		
for sending		

July 26, 1989

for

Stanton K. Jones
OMNI Environmental Services
10950 S.W. 5th Street, Suite 160
Beaverton, OR 97005

x 6142

Re: UST - Multnomah County
Hauser Electric - Special Permit

Dear Mr. Jones:

In your letter of July 18, 1989, you requested a special permit to discharge treated groundwater from the former Hauser Electric site at 18725 S.E. Powell Boulevard in Gresham to Johnson Creek via the storm sewer system. You propose to use an oil/water separator to treat the gasoline contaminated water prior to discharge.

The Department has determined that there is no practicable no-discharge alternative available at this site. The review concludes that stream water quality standards will not be violated, provided the permittee complies with the discharge limitations below.

This letter approves your proposed treatment system and authorizes you to discharge treated groundwater to the existing storm sewer, provided the following conditions are met:

1. Prior to discharge, contaminated groundwaters are treated so that all waters discharged to public waters shall not exceed the following limitations:

Parameter	Limitations
Oil and Grease	shall not exceed 10 mg/l
Gasoline constituents (Total BTX&E)	shall not exceed 10 mg/l
pH	Shall be within 6 - 9

2. To confirm that adequate treatment is occurring, the above parameters shall be monitored daily for the first three days of discharge and weekly thereafter. Monitoring results shall be verbally reported to the regional staff and submitted to the department in the final site cleanup report.

3. Prior to use of the storm sewer, its use shall be approved by the owner of the storm sewer system.

4. The permittee shall notify the department within 24 hours of any breakdown or failure of the treatment system to consistently meet the effluent limitations.

5. If the separator system does not provide adequate treatment, it shall be shut down and the system modified or replaced so as to meet the necessary limitations.

This Special Permit is good for 60 days. If dewatering or groundwater treatment will last longer than 60 days, the permittee must apply for and receive a regular NPDES waste discharge permit.

Questions regarding this permit and other concerns should be addressed to Loren Garner, Northwest Region, at 229-6142.

Sincerely,

Lydia R. Taylor
Administrator,
Water Quality Division

cc: Northwest Region
ECD, UST Cleanup Section
Carrie C. Sleeper
City of Gresham
1333 N.W. Eastman
Gresham, OR 97030

NEIL GOLDSCHMIDT
GOVERNOR

Department of Environmental Quality

811 SW SIXTH AVENUE, PORTLAND, OREGON 97204-1390 PHONE (503) 229-5696

July 24, 1989

Stanton K. Jones
OMNI Environmental Services
10950 S.W. 5th Street, Suite 160
Beaverton, OR 97005

Re: UST - Multnomah County
Hauser Electric

Dear Mr. Jones:

This letter is to confirm our verbal approval of your proposal for dealing with the remaining contamination at the Hauser Electric tank site at 18725 S.E. Powell Boulevard in Gresham. Based on our discussions and your proposal letter, the anticipated remedial actions appear to be appropriate for the site and should be able to resolve the environmental concerns over time.

Your proposal is approved and accepted as being in compliance with the requirements of current Department rules and guidelines requiring elimination of contaminant sources and appropriate treatment of stable contamination. The discharge of pumped groundwater must be monitored and will be subject to permitting if it goes into the storm drainage system. Based on your request a temporary permit will be issued within a few days that can allow the project to begin. If the project will go longer than 60 days, a NPDES permit will be needed.

The data from your earlier investigations and a more detailed remediation system design should be submitted to the department along with your proposal for monitoring and verifying the effectiveness of the cleanup. As the system is installed and monitored, you should coordinate your findings and conclusions with the Department. Appropriate adjustments or modifications should be made as cleanup progresses to assure that the measures are effective.

We look forward to completion of this cleanup. Please contact me at 229-6142 with any questions.

Sincerely,

Loren G. Garner

Loren G. Garner
Environmental Engineer
Northwest Region

cc: ECD, UST Cleanup Division
Ms. Carrie Sleeper, City of Gresham

Carrie C. Sleeper
1333 NW Eastman
Gresham, OR 97030

OMNI
ENVIRONMENTAL
SERVICES, INC.

Consulting
Engineering
Testing

July 18, 1989

Mr. Loren Garner
Department of Environmental Quality
811 SW Sixth Avenue
Portland, Oregon 97204

Dear Mr. Garner:

OMNI Environmental Services, Inc. (OMNI) is assisting a client, U.S. Bancorp, with the management of gasoline contamination at 18725 SE Powell Boulevard (the former Hauser Electric site on SE Powell Boulevard and Royal Street) in Gresham, Oregon (Figure 1). The purpose of this letter is to inform the DEQ of our findings concerning this project and to propose a corrective action plan. The foremost goals of our proposed plan are to prevent the migration of contaminated groundwater to nearby drinking water wells and to reduce the level of contamination in the groundwater to acceptable levels.

The gasoline contamination originated from a underground storage tank which was located in the Multnomah County right-of-way (after the relocation of Powell Boulevard) (Figures 2 and 3). The release of gasoline appears to have been initiated by the removal of the UST's vent pipe during a site survey and UST assessment in September 1988, at which time the UST and surrounding soils were determined to be free of contamination.

The contents of the UST, approximately 430 gallons (determined in September 1988 by the same site survey), were released from the UST through the vent pipe opening when the low-lying area was flooded due to heavy precipitation between September 1988 and March 1989. Water entered the UST and displaced the contents of the tank. The displaced gasoline migrated through the highly permeable bedding material surrounding the tank to a depth of approximately 6.5 feet below the surface, where it reached the local water table and spread out in a north-northeasterly direction. The distribution of the gasoline was determined through a series of hand auger borings in April 1989.

The UST was removed under OMNI supervision on April 3, 1989. Mr. Loren Garner of the Oregon Department of Environmental Quality and the City of Gresham Fire Marshall were on the site. Contaminated soil in the vicinity of the UST was removed and disposed of. The excavation area was allowed to ventilate and has since been filled and compacted.

In May 1989 one pumping well and two monitoring wells were installed on the site (Figure 3) in order to monitor groundwater and to take necessary remedial action. Water samples were collected from the pumping well at the conclusion of two 2-hour pump tests (June 23, 1989 and July 11, 1989). Laboratory analyses of the first sample showed that the groundwater contained 5 ppm (parts per million) of gasoline. The second water sample, S-1 (Appendix A), was analyzed for BTEX and found to contain 370 ppb of benzene. At no time during the pump test did the groundwater exhibit a sheen. A faint momentary gasoline odor was observed, however, when water was placed in a jar and vigorously agitated. The drinking water well located on the property approximately 200 feet east of the former UST (Figure 3), was sampled (S-2) and found to contain no detectable BTEX contamination (Appendix A).

10950 S.W. 5th Street
Suite 160
Beaverton, OR 97005
503/643-3755
FAX: 503/526-2085

OMNI proposes to withdraw water from the pumping well at a maximum rate of 20 gallons per minute. As a safety precaution, the water will pass through an oil/water separator to remove any sheen or film that may appear as pumping progresses. The water will be discharged into the storm sewer system via a temporary hook-up. A storm sewer stub-out line is located near the southwestern property boundary.

The storm sewer discharges into Johnson Creek approximately 200-300 yards south-southeast of the site. Average monthly flow rates of Johnson Creek for the time period of 1941-1982 are included in Appendix B.

Weekly samples of the water discharging into the storm sewer will be collected and analyzed for TPH, BTEX, etc., as specified by the DEQ to ensure that contaminant levels do not exceed permitted discharge levels.

OMNI requests, on behalf of our client, a permit to discharge into Johnson Creek via the storm sewer system. OMNI also requests that upon approval of this proposal, DEQ contact the City of Gresham so that permitting processes associated with the temporary hook-up to the storm sewer system can be expedited.

OMNI is pleased to be able to work in cooperation with the Oregon DEQ. Should you have any additional questions, please call.

Sincerely,

Stanton K. Jones
Staff Scientist

David L. Graham
Manager Hazardous Materials Management

Attachments

cc: Ms. Carrie Sleeper, City of Gresham
Mr. Rick Bolme, U.S. Bancorp

cm
HW392-02.002

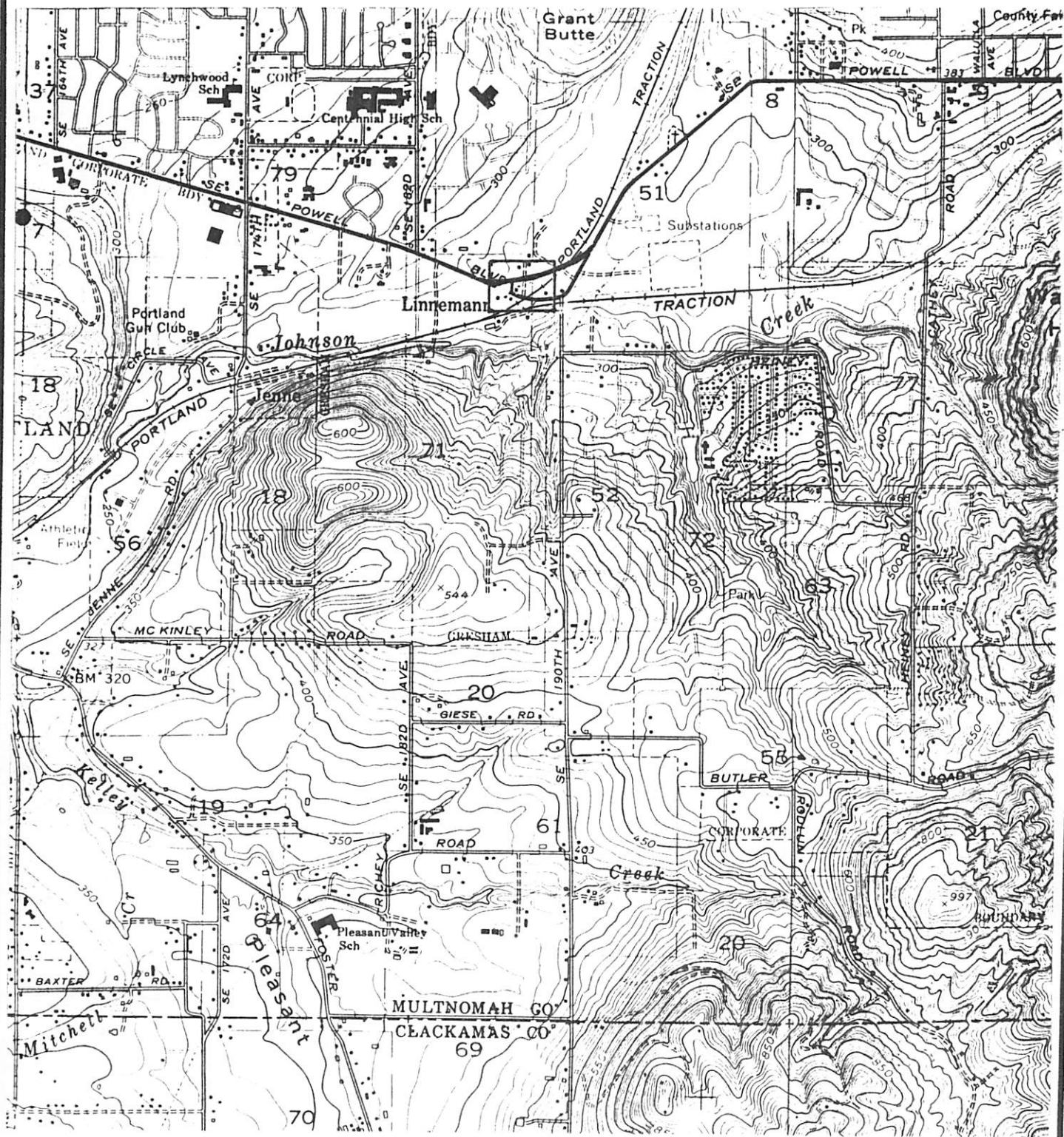


Figure 1. Site Location

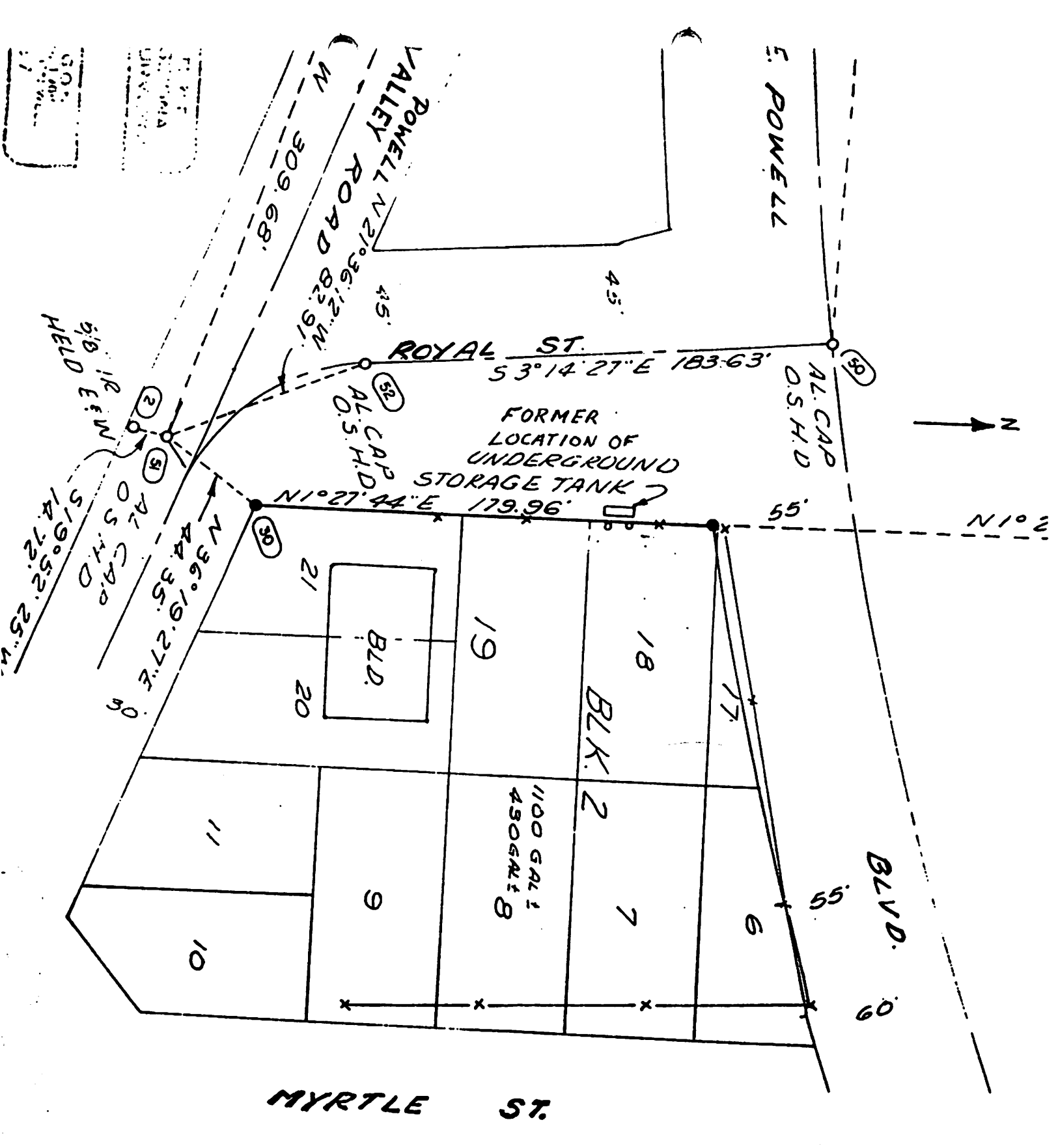


Figure 2. Site Plan
Approximate Scale 1" = 50'

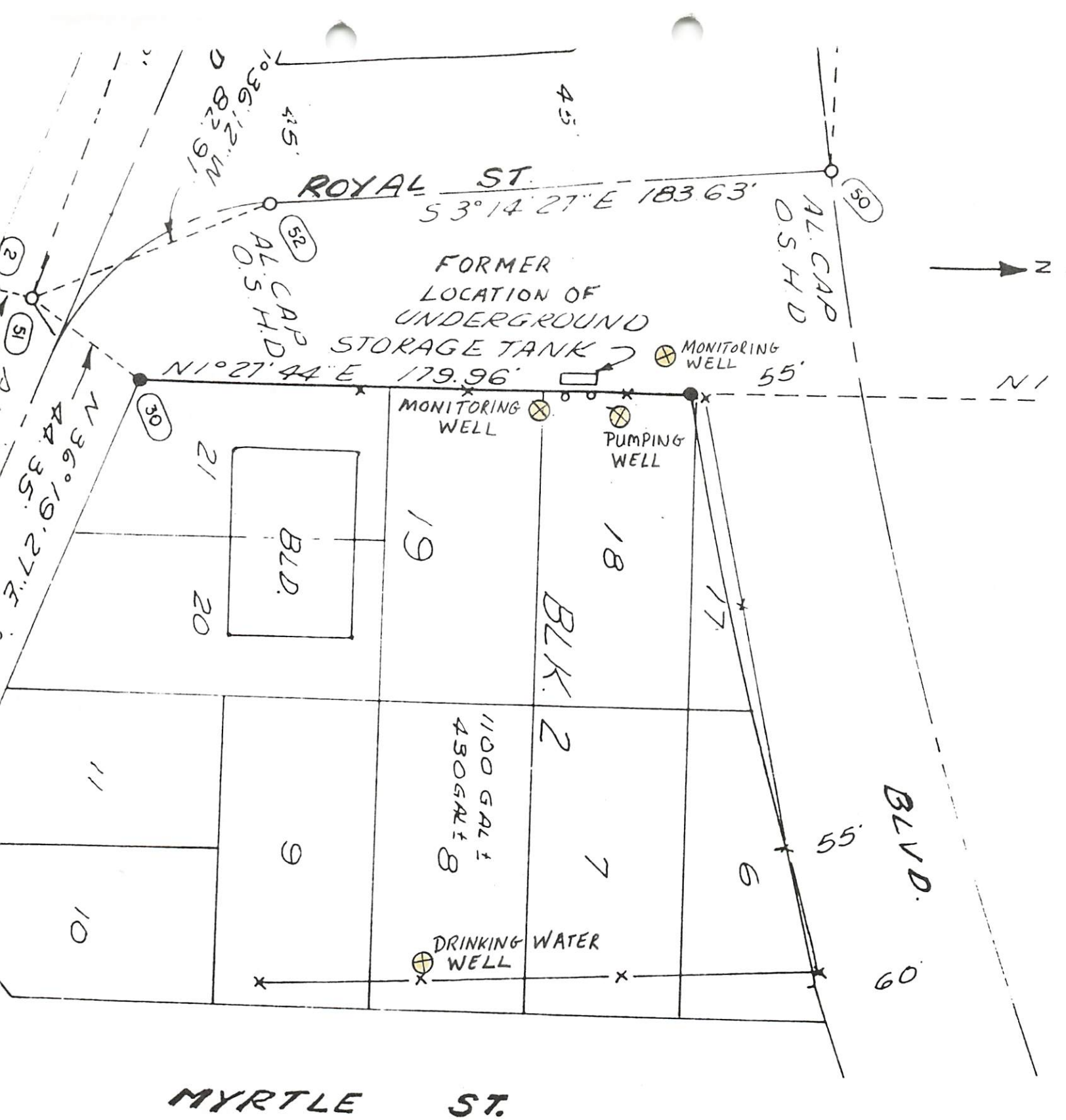


Figure 3. Well Locations

Appendix A
Analytical Results

PACIFIC ANALYTICAL LABORATORY inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0660

June 30, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Stan Jones

PAL REPORT NUMBER: 879-0605
P.O./JOB NUMBER: 5283/PS392-02
DATE SUBMITTED: 6/23/89
ITEMS: One Water Sample

ANALYSIS

METHOD: Gasoline per EPA 8015

Results in mg/L (ppm)

	H890622 SJ Water	Lab Blank	Detection Limit
Gasoline	5	ND	0.1

ND = Not Detected

Respectfully,

Philip Nerenberg
Chemist

Reviewed by:

PACIFIC ANALYTICAL LABORATORY inc.

9405 S.W. Nimbus Ave. Beaverton, OR 97005 (503) 644-0860

July 11, 1989

OMNI Environmental Services
10950 SW 5th St., Suite 160
Beaverton, OR 97005

Attn: Randall Bailey

PAL REPORT NUMBER: 89-0666
P.O./JOB NUMBER: 5515/392-02
DATE SUBMITTED: 7/10/89
ITEMS: Two Water Samples

ANALYSIS

METHOD: EPA 602

Results in ug/L (ppb)

	S-1	S-2	Lab Blank	Detection Limit
Benzene	370	ND	ND	5
Toluene	29	ND	ND	5
Ethyl Benzene	170	ND	ND	5
Xylene	310	ND	ND	5

ND = Not Detected

Respectfully,

Philip Nerenberg

Philip Nerenberg
Chemist

Reviewed by: DMQ

Appendix B

Johnson Creek Flow Rates

1941-1982

Source: USGS Water Resources Division

14211500 JOHNSON CREEK AT SYCAMORE, OR

LOCATION.--Lat 45°28'40", long 122°30'24", in lot 2, SW¼ sec.13, T.1 S., R.2 E., Multnomah County, Hydrologic Unit 17090012, on right bank 0.3 mi southwest of Sycamore station, 2.5 mi east of city limits of Portland, and at mile 10.2.

DRAINAGE AREA.--26.5 mi².

PERIOD OF RECORD.--July 1940 to September 1982.

GAGE.--Water-stage recorder and V-notch weir. Datum of gage is 228.47 ft National Geodetic Vertical Datum of 1929.

REMARKS.--Slight diurnal fluctuation at low flow caused by recreational ponds upstream. Small diversions for irrigation above station.

AVERAGE DISCHARGE.--42 years, 54.6 ft³/s, 26.29 in/yr, 39,560 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 2,620 ft³/s Dec. 22, 1964, gage height, 14.68 ft; minimum, 0.08 ft³/s Aug. 21, 1966.

STATISTICAL SUMMARIES

MONTHLY AND ANNUAL MEAN DISCHARGES 1941-82

MONTH	MINIMUM (CFS)	MAXIMUM (CFS)	MEAN (CFS)	STANDARD DEVIATION (CFS)	COEFFICIENT OF VARIATION	PERCENT OF ANNUAL RUNOFF
OCTOBER	1.3	65	10	15	1.48	1.6
NOVEMBER	1.6	239	71	63	.88	10.8
DECEMBER	4.3	302	135	73	.54	20.5
JANUARY	9.0	308	148	84	.57	22.5
FEBRUARY	16	320	119	62	.52	18.1
MARCH	20	196	87	44	.50	13.2
APRIL	9.5	130	48	30	.63	7.2
MAY	3.3	90	25	23	.93	3.7
JUNE	1.5	53	9.3	9.9	1.06	1.4
JULY	.6	7.1	2.3	1.3	.57	.3
AUGUST	.4	8.0	1.8	1.5	.82	.3
SEPTEMBER	.6	11	2.8	2.8	1.01	.4
ANNUAL	16	91	55	16	.30	100

MAGNITUDE AND PROBABILITY OF ANNUAL LOW FLOW BASED ON PERIOD OF RECORD 1942-82

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL NON-EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	20 5%	50 2%	100 1%
1	.6	.3	.2	.2	.1	.1
3	.6	.4	.3	.2	.1	.1
7	.7	.4	.3	.2	.2	.1
14	.8	.5	.3	.3	.2	.2
30	.9	.6	.4	.4	.3	.2
60	1.2	.8	.6	.5	.5	.4
90	1.5	1.0	.8	.7	.6	.6
120	2.1	1.4	1.1	.9	.8	.7
183	5.1	3.1	2.3	1.9	1.4	1.2

MAGNITUDE AND PROBABILITY OF INSTANTANEOUS PEAK FLOW BASED ON PERIOD OF RECORD 1941-82

DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT						
1.25 80%	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
799	1250	1860	2250	2720	3050	3370

WEIGHTED SKEW = -.405

MAGNITUDE AND PROBABILITY OF ANNUAL HIGH FLOW BASED ON PERIOD OF RECORD 1941-82

PERIOD (CONSECUTIVE DAYS)	DISCHARGE, IN CFS, FOR INDICATED RECURRENCE INTERVAL, IN YEARS, AND ANNUAL EXCEEDANCE PROBABILITY, IN PERCENT					
	2 50%	5 20%	10 10%	25 4%	50 2%	100 1%
1	919	1330	1550	1780	1930	2050
3	640	870	984	1090	1160	1210
7	443	591	662	730	768	799
15	308	409	460	511	541	566
30	233	296	324	349	362	372
60	176	226	250	271	283	292
90	154	196	214	231	240	246

DURATION TABLE OF DAILY MEAN FLOW FOR PERIOD OF RECORD 1941-82

DISCHARGE, IN CFS, WHICH WAS EQUALED OR EXCEEDED FOR INDICATED PERCENT OF TIME														
5%	10%	15%	20%	25%	30%	40%	50%	60%	70%	75%	80%	85%	90%	95%
247	151	107	79	60	45	26	14	6.0	3.2	2.4	1.9	1.5	1.1	.7

Date: 7-13-89 12:51pm
From: Michael Anderson:ECD:DEQ
To: Loren Garner:NWR
cc: MRAnderson:ECD
Subj: Call from Randall Bailey

I got a call from Randall Bailey of OMNI Environmental (643-3755) about a project he is working on for Hauser Electric. He said that he has been working with you on it, but that he needed some information and that you were out of town until Monday.

Basically, he has a water sample with a reading of 5 ppm TPH and 370 ppb benzene and wants to know what to do. After talking a while about monitoring, etc. he mentioned that the property is for sale and the client wants it cleaned up ASAP. If he pumped the water, he wanted to know what to do with it - treat and discharge to storm sewer or sanitary sewer?

I told him about the possibility of getting a 60-day temporary discharge permit if the contamination was limited enough so that he felt that was sufficient time. I gave him some of the parameters (TPH, BTEX) that were on a draft of one of these permits that I had on file, but, I told him that he would have to talk to you about the specifics of that permit. I also mentioned that long-term discharge would require an NPDES permit.

Finally, he wanted to know "how clean". Given no information about the site, I told him that all I could do was to recommend proposed or adopted drinking water standards as target values. I gave him a copy of some of the standards from the proposed groundwater regulations to use as a reference. I told him, however, that you were the lead person on the site and he should continue to work with you on the site in terms of approval of corrective action, etc.

If you have any questions about this, please stop by.


L h 68

LUST FORM

INCIDENT INFORMATION

LUST Incident Nbr: _____ LUST Log Nbr: 26-89-057 UST Facility ID: New Ra
Date Received: 4/7/89 Received By: LGGarner Emergency Resp Taken: Y (N)
Tank Location: Name: Hahner Electric
Street: 18725 SE Powell
City: Gresham Zip: _____
County: Mult Phone: _____
Incident Comments: _____

CONTACT & MAIL TYPES

Reported By: Name: Omni
Street: _____
City: _____ Zip: _____
County: _____ Phone: _____

LUST Contact: Name: Omni Joe Goulet
Street: _____
City: _____ Zip: _____
County: _____ Phone: 643-3255

Responsible Party: Name: US Bancorp
Street: _____
City: _____ Zip: _____
County: _____ Phone: _____

SITE ASSESSMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Investigated: 4/7/89 Investigated By: LGGarner
Release Exists: (Y) N (Circle) Confirmation Method: (A)Staff B)Lab:DEQ C)Lab:RP D)Lab:Other E)RP F)Other (Circle)
Cleanup Necessary: (Y) N (Circle) Regulated Tank: (Y) N (Circle) Exposure Assessment: Y N (Circle)
Off-Site Migration: Y N (?) (Circle) Estimated Gallons Released: ≈ 400gal Priority: _____
Discovery Date: 4/3/89 (Dirk Wixom)
How Discovered: (Circle) A)Routine Monitoring B)Inventory Control (C)Decommissioning D)Site Assessment E)Complaint F)Tank Test G)Other

Material Released: (Circle)
A)Unleaded Gasoline B)Leaded Gasoline (C)Misc. Gasoline
D)Diesel E)Fuel Oil F)Waste Oil
G)Lubricant H)Solvent I)Bunker Fuel
J)Other Pet. Dist. K)Chemical L)Unknown

Source of Release: (Circle) A)Tank Leak B)Pipe Leak (C)Overfill D)Surface Spill Maybe displacement
E)Pump/Valve Leak F)Other G)Unknown

Impacts: (Circle)					
Soil	(Y)	N	%	?	
Groundwater	(Y)	N	%	(?)	
Surface Water	Y	(N)	%	?	
Drinking Water	Y	(N)	%	?	
Facility (Vapor)	Y	(N)	%	?	
Facility (Free Product)	Y	(N)	%	?	

Site Assessment Comments: _____

SITE MANAGEMENT

LUST Incident Nbr: (XXXXXXXXXXXX)
Date Released Stopped: 4/7/89
Cleanup Activity: Start Date: 4/7/89 Under Control Date: 4/7/89
End Date: 5/24/90 Contractor Name: OMNI
Cleanup Guideline: (Circle) Matrix (C.A.P.) Cleanup Lead: (Circle) (RP) SLw/TF SLw/oTF

Free Product Disposal:
Est. Gallons: N/A
Resp. Party: _____
Disposal Location: _____
Removal Date: _____

Soil Disposal:
Est. Cu/Yds: _____
Resp. Party: _____
Disposal Location: _____
Removal Date: _____

Enforcement Action: (Circle) Y (N)
Cost Recovery Initiated: (Circle) Y (N)
Source of Cost Recovery:
Pct. R.P.: _____
Pct. SLw/TF: _____
Pct. SLw/oTF: _____

Estimations: Cost of Cleanup: _____ Staff Time On Project: _____

Site Management Comments: _____

While You Were Out

To Lgg Houser Electric

Date 4-7-89 Time 8:55

Bill Jolly called

of Gresham Fire Dept.

Phone 669-2526 781-5775

- [x] Telephoned
- [ ] Please call
- [ ] Will call again
- [ ] In person
- [ ] Wants to see you
- [ ] Returned your call

Message 18725 SE Powell a tank has been pulled and apparently there is some contamination. Wants you to call right away.

Taken by CB

FORM CS 97883 Recycled Paper

OMNI ENVIRONMENTAL SERVICES, INC.

Eileen L. Webb
Geologist/Environmental Scientist
Environmental Management Division

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