

**ENGINEERING REPORT**

**on**

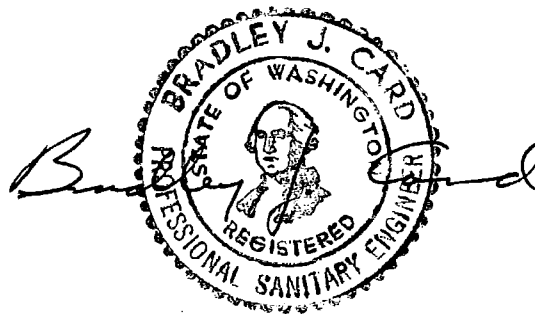
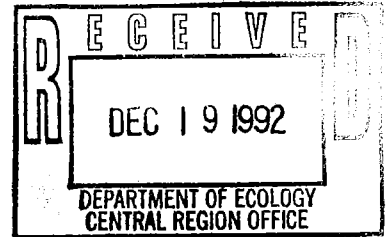
**INTERMEDIATE CLEANUP and SITE CLOSURE**

**for**

**FIFTH WHEEL TRUCK REPAIR**

**307 East Arlington Street**

**Yakima, Washington**



April 1991

Job No. 90113

Prepared by

PLSA ENGINEERING & SURVEYING  
WDOE LIC. NO. S000210  
1120 West Lincoln Avenue  
Yakima, WA 98902  
(509) 575-6990

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**ENGINEERING REPORT**  
**on**  
**INTERMEDIATE CLEANUP and SITE CLOSURE**  
**for**  
**FIFTH WHEEL TRUCK REPAIR**  
**307 East Arlington Street**  
**Yakima, Washington**

**INTRODUCTION**

A site assessment of the Hahn Motor Co. building presently occupied by Fifth Wheel Truck Repair, 307 East Arlington St., Yakima, Washington, reported that petroleum contaminated soil (PCS) is present at a drywell located at the northwest corner of the premises. The site assessment report, dated October 25, 1989, was prepared by Earth Consultants, Inc. of Bellevue, Washington.

Following this site assessment, Ken Leingang Excavating, Inc., removed a catch basin from within the Fifth Wheel Truck Repair building. During removal it was discovered that the catch basin was actually a dry well, and that petroleum contaminated soil (PCS) was present.

This report summarizes the results of the investigation of the extent of the contamination, cleanup of the northwest corner drywell, and offers the Hahn Motor Company's proposal for dealing with the situation short of demolishing the Fifth Wheel Truck Repair building. Results of laboratory testing of a representative soil and water samples for presence of Total Petroleum Hydrocarbon (TPH) are included. Geotechnical engineers and geologists from PLSA Engineering & Surveying, experienced with local soil conditions and environmental sampling, collected samples and

evaluated the analytical results. Removal of contaminated soil was performed by Ken Leingang Excavating, a registered decommissioning contractor.

The owner's representatives and contact persons for this project are as follows:

Ms. Donna Pieti, General Manager, and  
Mr. Richard Hahn, Owner  
Hahn Motor Company  
P.O. Box 382  
1202 South First Street  
Yakima, Washington 98901  
phone (509) 453-9171

#### **SAMPLING PLAN**

Representative soil and water samples were collected from excavations. Sample containers were supplied by the analytical laboratory and were clean glass with teflon lined, screwed caps. Sampling equipment was cleaned with non-petroleum based detergent between samplings. Water samples from below the surface were collected using a clean, teflon bailer.

All samples were stored and shipped to the laboratory by overnight express in a refrigerated, insulated container.

#### **CLEANUP STATUS**

A drywell installed at the northwest corner of the Fifth Wheel Truck Repair premises collected stormwater and drainage from truck steam cleaning. The presence of Petroleum Contaminated Soil (PCS) was detected, characterized, and reported in the Earth Consultants October 25, 1989 report.

After the October 25, 1989 report, a catch basin located within the building was excavated and found to discharge directly to cobbly soil under the concrete floor. Soil samples for possible PCS were collected for characterization from this location by PLSA. Subsequent laboratory analysis confirmed the presence of PCS. See Appendix I, June, 1990 analytical report.

PCS was removed from the interior catch basin excavation until further removal would extend to beyond the building footings resulting in need to demolish the building. Approximately 250 cubic yards of PCS are estimated to remain below the building. Results of laboratory analysis of the soil remaining in the excavation may be found in the November, 1990 analytical report in Appendix I.

The drywell located at the northwest corner of the premises and identified as contaminated by Earth Consultants was recently excavated and approximately 120 cubic yards of petroleum contaminated soil (PCS) was removed. Petroleum contamination was found to be confined to the immediate vicinity of the drywell and did not extend to the building or outside the property lines.

#### **ANALYTICAL RESULTS OF INVESTIGATIVE SAMPLING**

Monitoring well No.'s 4 and 5 were drilled under PLSA supervision along the west side of the Fifth Wheel Truck Repair building in late January 1991. Static water level was at 25 feet below the surface. Laboratory test results for presence of contamination in both soil and water from these monitoring wells may be found in Appendix II. Sample locations are depicted in Figure 1.

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A soil sample was collected from soil found approximately 10 feet below the surface in monitoring well #4. This sample contained <10 ppm TPH as determined by EPA 418.1. Water samples from monitoring well #'s 4 and 5 analyzed below detection limits for Volatile Organic Compounds (VOC's), TPH, PCB, and toxic metals with the exception of copper and mercury which was 0.04 ppm and 1.3 ppb, mercury, respectively. Monitoring well #5 contained 2.2 ppb mercury. Nothing on-site was identified as a possible mercury source.

Monitoring wells drilled for Consolidated Freightways under Blymer Engineers supervision on the east side of the Fifth Wheel Truck Repair/Body Shop complex were sampled by others. Results of analysis of water samples from these wells, found also in Appendix II, were originally included in a December 27, 1990 Phase I Subsurface Investigation dated October 27, 1990 and prepared by Blymer Engineers, Inc. These samples contained levels of TPH below 1 mg/l and low levels of tetrachlorethene and 1,1,1-trichlorethane.

Analytical laboratory reports on samples collected from a boring adjacent to the drywell (Earth Consultants Boring B-3) show groundwater to be <5.0 ppm TPH, EP-TOX metals below detection limits and TPH in three soils samples collected from -3.0', -9.0', and -15.0' to be 1780, 1130, 618 ppm, respectively.

**PROPOSED INTERMEDIATE CLEANUP ACTION**

Experience with petroleum contamination in Yakima Valley soils has found that petroleum or petroleum breakdown products do not leach from soils below petroleum saturation at any great rate if at all. Good water samples have been collected from many sites where contaminated soil extends to the water table where the water had to be in direct contact with contaminated soil. Therefore,

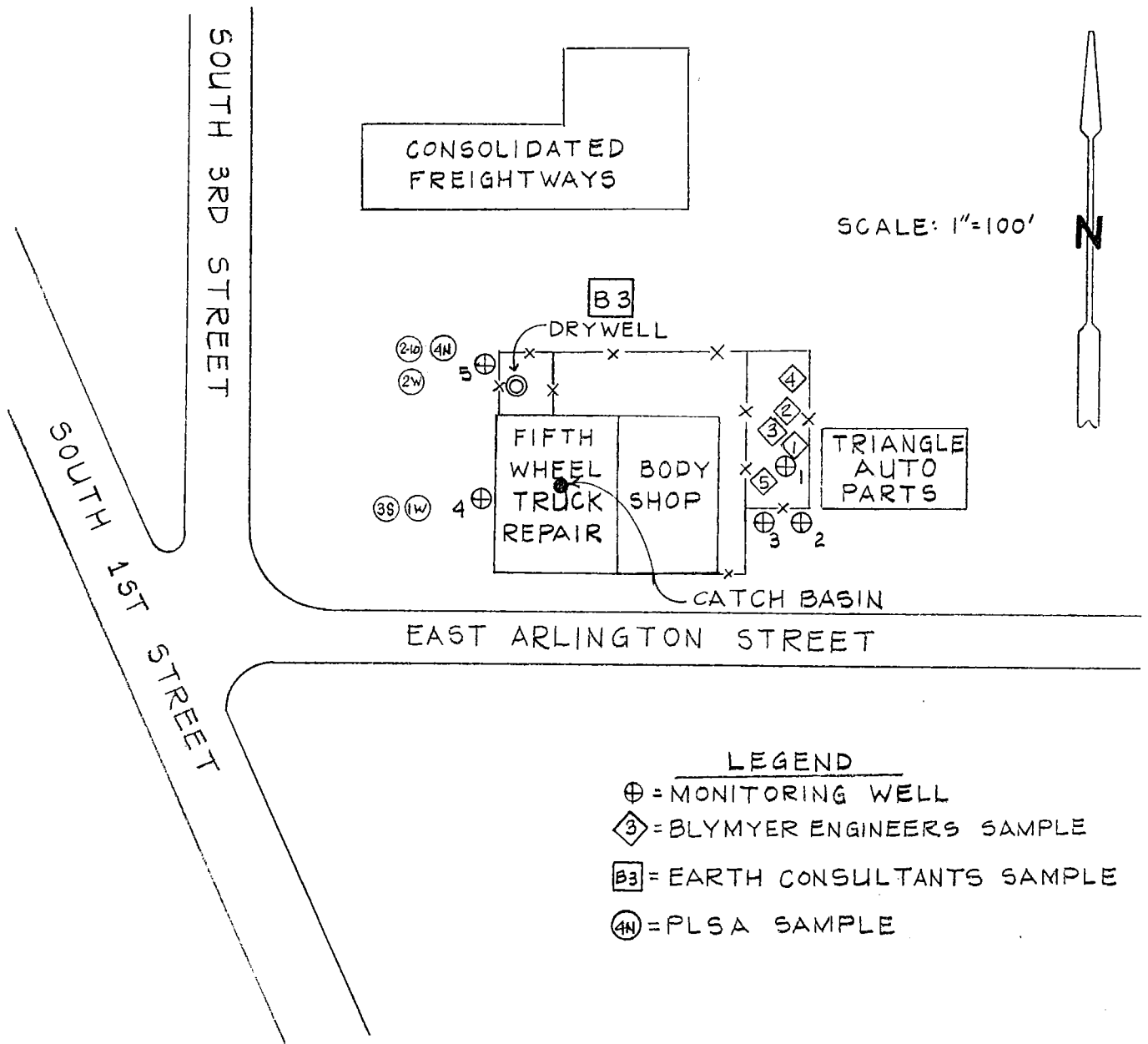
intermediate cleanup by removing as much PCS as possible without damaging the building is proposed with final cleanup deferred until the building is removed.

To eliminate any further contamination of soil, the drywell within the building has been removed and replaced with a catch basin discharging through a coalescing plate oil separator to the municipal sewer.

To insure ground water protection, it is further proposed to monitor resource protection wells located nearby both west and east of the contaminated soil location. The east resource protection wells are owned by Consolidated Freightways which borders the premises on the east and north. See Figure 2. PLSA recommends that quarterly sampling of monitoring well nos. 4 and 5 for one year. Blymer Engineers similarly recommends quarterly sampling in their report prepared for Consolidated Freightways. These Consolidated sampling results could be included with Fifth Wheel Truck Repair results for tracking of movement of petroleum into the ground water, if any.

#### **RISK ANALYSIS**

Sampling shows that petroleum is not leaching into the ground water. Heavy oil is recognized as having low toxicity. There have been no reports of petroleum contamination of any nearby domestic wells. PCS is below the concrete slab floor of the building away from contact by humans or animals. Therefore, risk has been reduced by actions already taken and it appears that there has been no impact on ground water quality from Fifth Wheel Truck Repair. Risk of any possible, subsequent, contamination of ground water in an environmentally significant amount is small to negligible.



- LEGEND
- ⊕ = MONITORING WELL
  - ◇ = BLYMYER ENGINEERS SAMPLE
  - B3 = EARTH CONSULTANTS SAMPLE
  - ⊙ = PLSA SAMPLE

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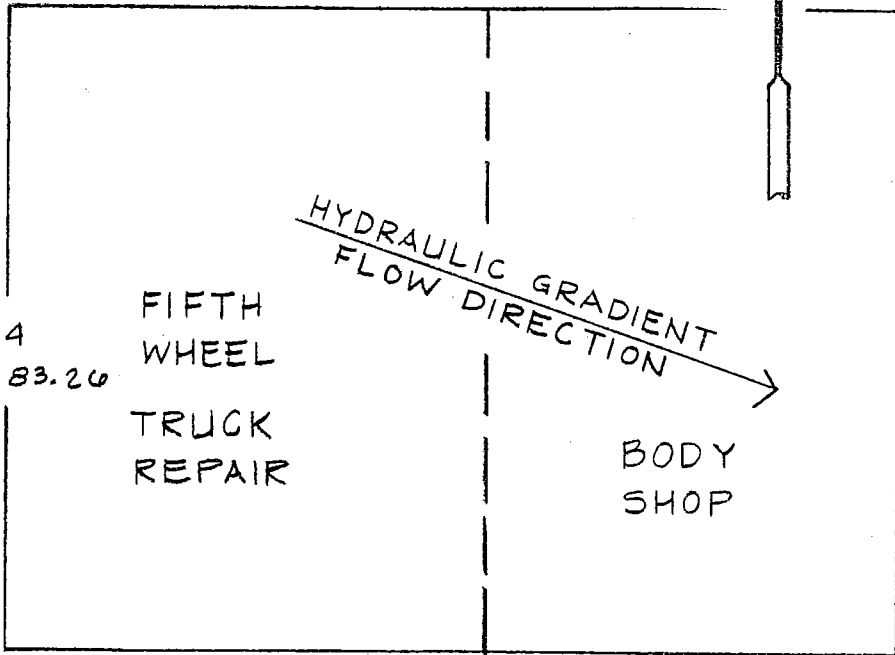
FIGURE 1  
 MONITORING WELL LOCATION  
 HAHN MOTOR CO., YAKIMA, WA.

MW#5  
⊕ 83.61



SCALE: 1"=30'

MW#4  
⊕ 83.26



MW#1  
⊕ 81.16

MW#3  
⊕ 80.95

MW#2  
⊕ 80.74

*c/osc  
on CF*

LEGEND

⊕ = MONITORING WELL  
86.00 = GROUND WATER ELEV.

EAST ARLINGTON STREET

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FIGURE 2

HYDRAULIC GRADIENT  
AT HAHN MOTOR CO.  
YAKIMA, WA

APRIL 11, 1991



## **NORTHWEST CORNER DRYWELL CLOSURE**

PCS surrounding the northwest corner drywell (See Figure 1) was removed until significant readings were no longer obtained using the Photovac TIP 1 photoanalyzer. Ground water was not encountered in the excavation. Representative soil samples were collected and shipped overnight in a refrigerated container to be analyzed for presence of petroleum hydrocarbons, volatile organic compounds and priority pollutant metals.

Results of laboratory analysis of representative final soil samples collected from the northwest corner drywell excavation may be found in Appendix III. No contaminants were found in excess of WAC 173-340 cleanup guidelines.

The excavation was backfilled with clean, granular fill, the surface repaved, and a replacement drywell sump designed to receive stormwater only was installed.

## **PCS DISPOSAL**

PCS removed from excavations within the Fifth Wheel Truck Repair building and the northwest corner drywell has been spread on Hahn premises for remediation by land farming. Representative soil samples will be collected from the remediated soil for laboratory testing. The soil will be used as fill when laboratory tests find that remediation has progressed to below WAC 173-340 cleanup guidelines.

## **GROUND WATER HYDRAULIC GRADIENT**

Permission was granted by Blymer Engineering to measure the static water level in the Consolidated Freightways resource protection wells located east of Fifth Wheel Truck Repair. Static level was measured in these wells and the two wells constructed west of Fifth Wheel Truck Repair on the same day. The results of these measurements and the calculated hydraulic gradient may be found in Figure 2. Hydraulic gradient was found to be toward the southeast. Groundwater flow passing the Fifth Wheel Truck Repair wells would be intercepted by the Consolidated wells.

## **WELLS**

A listing of documented water wells located within 1/2 mile of the site may be found in Appendix IV.

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## APPENDIX I

### Contaminant Characterization and Concentration

# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4630 PACIFIC HIGHWAY EAST, SUITE B-14, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922-5047

Report To: PLSA Engineering

Date: June 4, 1990  
Revised: June 11, 1990

Report On: Analysis of Soil

Lab No.: 11576

IDENTIFICATION:

Samples Received on 06-01-90  
Job No. 90104  
Client ID: RUSH Sample #1

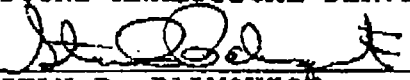
ANALYSIS:

Total Petroleum Hydrocarbons, ppm 13,259  
by EPA Method 418.1

Total Petroleum Fuel Hydrocarbons, ppm 22  
by EPA SW-846 Modified Method 8015

TPH as Diesel & Heavy Oil

SOUND ANALYTICAL SERVICES

  
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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

4630 PACIFIC HIGHWAY EAST, SUITE B-14, TACOMA, WASHINGTON 98424 - TELEPHONE (206)922-2310 - FAX (206)922- 5047

Report To: PLSA Engineering

Date: November 19, 1990

Report On: Analysis of Soil

Lab No.: 14505

Page 1 of 3

IDENTIFICATION:

Samples Received on 11-13-90

Project: 90113

Client ID: RUSH 1

ANALYSIS:

Sample was analyzed in accordance with Test Methods for Evaluating Solid Waste, (SW-846), U.S.E.P.A., 1986 Method 8240 (Volatile Organics)

| CAS No.    | Compounds                  | Concentration<br>ug/kg | PQL  |
|------------|----------------------------|------------------------|------|
| 74-87-3    | Chloromethane              | ND                     | 100  |
| 74-83-9    | Bromomethane               | ND                     | 100  |
| 75-01-4    | Vinyl Chloride             | ND                     | 100  |
| 75-00-3    | Chloroethane               | ND                     | 100  |
| 75-09-2    | Methylene Chloride         | ND                     | 50   |
| 67-64-1    | Acetone                    | ND                     | 1000 |
| 75-15-0    | Carbon Disulfide           | ND                     | 50   |
| 75-35-4    | 1,1-Dichloroethene         | ND                     | 50   |
| 75-34-3    | 1,1-Dichloroethane         | ND                     | 50   |
| 540-59-0   | 1,2-Dichloroethene (Total) | ND                     | 50   |
| 67-66-3    | Chloroform                 | ND                     | 50   |
| 107-06-2   | 1,2-Dichloroethane         | ND                     | 50   |
| 78-93-3    | 2-Butanone                 | ND                     | 1000 |
| 71-55-6    | 1,1,1-Trichloroethane      | ND                     | 50   |
| 56-23-5    | Carbon Tetrachloride       | ND                     | 50   |
| 108-05-4   | Vinyl Acetate              | ND                     | 500  |
| 75-27-4    | Bromodichloromethane       | ND                     | 50   |
| 78-87-5    | 1,2-Dichloropropane        | ND                     | 50   |
| 10061-01-5 | Cis-1,3-Dichloropropene    | ND                     | 50   |
| 79-01-6    | Trichloroethene            | ND                     | 50   |
| 124-48-1   | Dibromochloromethane       | ND                     | 50   |
| 79-00-5    | 1,1,2-Trichloroethane      | ND                     | 50   |

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 Project: 90113  
 Lab No. 14505  
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 November 19, 1990

Client ID: RUSH 1

EPA Method 8240 Continued . . . . .

| CAS No.    | Compounds                 | Concentration<br>ug/kg | PQL |
|------------|---------------------------|------------------------|-----|
| 71-43-2    | Benzene                   | 75                     | 50  |
| 10061-02-6 | Trans-1,3-Dichloropropene | ND                     | 50  |
| 75-25-2    | Bromoform                 | ND                     | 50  |
| 108-10-1   | 4-Methyl-2-Pentanone      | ND                     | 500 |
| 591-78-6   | 2-Hexanone                | ND                     | 50  |
| 127-18-4   | Tetrachloroethene         | 265                    | 50  |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | ND                     | 50  |
| 108-88-3   | Toluene                   | 1,105                  | 50  |
| 108-90-7   | Chlorobenzene             | ND                     | 50  |
| 100-41-4   | Ethyl Benzene             | 583                    | 50  |
| 100-42-5   | Styrene                   | ND                     | 50  |
| 1330-20-7  | Total Xylenes             | 7,982                  | 50  |

PQL - Practical Quantitation Limit - These are the detection limits for this sample. This number is based on sample size, matrix and dilution required.

\* = Compound was detected but below PQL.

### Volatile Surrogates

| Surrogate                | Percent Recovery | Control Limits |
|--------------------------|------------------|----------------|
| Toluene - D8             | 81.3             | 81 - 117       |
| Bromofluorobenzene       | ***              | 74 - 121       |
| 1,2-Dichloroethane<br>D4 | 91.3             | 70 - 121       |

\*\*\* Due to high hydrocarbon level the surrogate recovery skewed.

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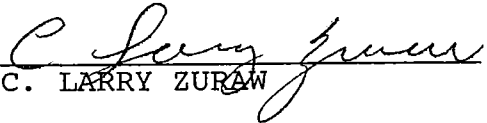
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November 19, 1990

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|   | <u>Concentration, ppm</u> |
|---|---------------------------|
| Total Petroleum Hydrocarbons by<br>EPA Method 418.1                     | 1,938                     |
| Total Petroleum Fuel Hydrocarbons<br>by EPA SW-846 Modified Method 8015 | 1,768                     |
| TPH as  | Mineral Spirits/Diesel    |

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C. LARRY ZURAW

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## APPENDIX II

### Investigative Analytical Results

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

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Report To: PLSA Engineering

Date: February 8, 1991

Report On: Analysis of Water

Lab No.: 15832-2

IDENTIFICATION:

Samples Received on 02-05-91

Project: 90113

Client ID: RUSH 3S


-----  
ANALYSIS:

PCB - Type  
PCB - mg/l

ND  
< 0.01

ND = Not Detectable

SOUND ANALYTICAL SERVICES



MARTY FRENCH

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: PLSA Engineering

Date: February 8, 1991

Report On: Analysis of Water

Lab No.: 15832-1

Page 1 of 3

IDENTIFICATION:

Samples Received on 02-05-91

Project: 90113

Client ID: RUSH 4N

-----  
ANALYSIS:

Sample was analyzed in accordance with Test Methods for Evaluating Solid Waste, (SW-846), U.S.E.P.A., 1986 Method 8240 (Volatile Organics)

| CAS No.    | Compounds                  | Concentration<br>ug/l | PQL |
|------------|----------------------------|-----------------------|-----|
| 74-87-3    | Chloromethane              | ND                    | 10  |
| 74-83-9    | Bromomethane               | ND                    | 10  |
| 75-01-4    | Vinyl Chloride             | ND                    | 10  |
| 75-00-3    | Chloroethane               | ND                    | 10  |
| 75-09-2    | Methylene Chloride         | ND                    | 5   |
| 67-64-1    | Acetone                    | ND                    | 100 |
| 75-15-0    | Carbon Disulfide           | ND                    | 5   |
| 75-35-4    | 1,1-Dichloroethene         | ND                    | 5   |
| 75-34-3    | 1,1-Dichloroethane         | ND                    | 5   |
| 540-59-0   | 1,2-Dichloroethene (Total) | ND                    | 5   |
| 67-66-3    | Chloroform                 | ND                    | 5   |
| 107-06-2   | 1,2-Dichloroethane         | ND                    | 5   |
| 78-93-3    | 2-Butanone                 | ND                    | 100 |
| 71-55-6    | 1,1,1-Trichloroethane      | ND                    | 5   |
| 56-23-5    | Carbon Tetrachloride       | ND                    | 5   |
| 108-05-4   | Vinyl Acetate              | ND                    | 50  |
| 75-27-4    | Bromodichloromethane       | ND                    | 5   |
| 78-87-5    | 1,2-Dichloropropane        | ND                    | 5   |
| 10061-01-5 | Cis-1,3-Dichloropropene    | ND                    | 5   |
| 79-01-6    | Trichloroethene            | ND                    | 5   |
| 124-48-1   | Dibromochloromethane       | ND                    | 5   |
| 79-00-5    | 1,1,2-Trichloroethane      | ND                    | 5   |

ND = Not Detectable

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Client ID: RUSH 4N

EPA Method 8240 Continued . . . . .

| CAS No.    | Compounds                 | Concentration<br>ug/l | PQL |
|------------|---------------------------|-----------------------|-----|
| 71-43-2    | Benzene                   | ND                    | 5   |
| 10061-02-6 | Trans-1,3-Dichloropropene | ND                    | 5   |
| 75-25-2    | Bromoform                 | ND                    | 5   |
| 108-10-1   | 4-Methyl-2-Pentanone      | ND                    | 50  |
| 591-78-6   | 2-Hexanone                | ND                    | 5   |
| 127-18-4   | Tetrachloroethene         | ND                    | 5   |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | ND                    | 5   |
| 108-88-3   | Toluene                   | ND                    | 5   |
| 108-90-7   | Chlorobenzene             | ND                    | 5   |
| 100-41-4   | Ethyl Benzene             | ND                    | 5   |
| 100-42-5   | Styrene                   | ND                    | 5   |
| 1330-20-7  | Total Xylenes             | ND                    | 5   |

ND = Not Detectable

PQL - Practical Quantitation Limit - These are the detection limits for this sample. This number is based on sample size, matrix and dilution required.

\* = Compound was detected but below PQL.

### Volatile Surrogates

| Surrogate                | Percent Recovery | Control Limits |
|--------------------------|------------------|----------------|
| Toluene - D8             | 118              | 81 - 117       |
| Bromofluorobenzene       | 112              | 74 - 121       |
| 1,2-Dichloroethane<br>D4 | 116              | 70 - 121       |

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February 8, 1991

Client ID: RUSH 4N

| <u>Total Metals by ICP:</u> | <u>Concentration, ppm</u> |
|-----------------------------|---------------------------|
| Antimony                    | < 0.06                    |
| Arsenic                     | < 0.05                    |
| Beryllium                   | < 0.005                   |
| Cadmium                     | < 0.005                   |
| Chromium                    | < 0.01                    |
| Copper                      | < 0.025                   |
| Lead                        | < 0.05                    |
| Mercury*                    | 0.0022                    |
| Nickel                      | < 0.04                    |
| Selenium                    | < 0.05                    |
| Silver                      | < 0.01                    |
| Thallium                    | < 0.1                     |
| Zinc                        | < 0.02                    |

\*by Cold Vapor

|            |        |
|------------|--------|
| PCB - Type | ND     |
| PCB - mg/l | < 0.01 |

ND = Not Detectable

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: PLSA Engineering

Date: February 1, 1991

Report On: Analysis of Water

Lab No.: 15718-1

Page 1 of 3

IDENTIFICATION:

Samples Received on 01-29-91

Project: 90113

Client ID: 1W

-----  
ANALYSIS:

Sample was analyzed in accordance with Test Methods for Evaluating Solid Waste, (SW-846), U.S.E.P.A., 1986 Method 8240 (Volatile Organics)

| CAS No.    | Compounds                  | Concentration<br>ug/l | PQL |
|------------|----------------------------|-----------------------|-----|
| 74-87-3    | Chloromethane              | ND                    | 10  |
| 74-83-9    | Bromomethane               | ND                    | 10  |
| 75-01-4    | Vinyl Chloride             | ND                    | 10  |
| 75-00-3    | Chloroethane               | ND                    | 10  |
| 75-09-2    | Methylene Chloride         | ND                    | 5   |
| 67-64-1    | Acetone                    | ND                    | 100 |
| 75-15-0    | Carbon Disulfide           | ND                    | 5   |
| 75-35-4    | 1,1-Dichloroethene         | ND                    | 5   |
| 75-34-3    | 1,1-Dichloroethane         | ND                    | 5   |
| 540-59-0   | 1,2-Dichloroethene (Total) | ND                    | 5   |
| 67-66-3    | Chloroform                 | ND                    | 5   |
| 107-06-2   | 1,2-Dichloroethane         | ND                    | 5   |
| 78-93-3    | 2-Butanone                 | ND                    | 100 |
| 71-55-6    | 1,1,1-Trichloroethane      | ND                    | 5   |
| 56-23-5    | Carbon Tetrachloride       | ND                    | 5   |
| 108-05-4   | Vinyl Acetate              | ND                    | 50  |
| 75-27-4    | Bromodichloromethane       | ND                    | 5   |
| 78-87-5    | 1,2-Dichloropropane        | ND                    | 5   |
| 10061-01-5 | Cis-1,3-Dichloropropene    | ND                    | 5   |
| 79-01-6    | Trichloroethene            | ND                    | 5   |
| 124-48-1   | Dibromochloromethane       | ND                    | 5   |
| 79-00-5    | 1,1,2-Trichloroethane      | ND                    | 5   |

ND = Not Detectable

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# SOUND ANALYTICAL SERVICES, INC.

PLSA Engineering  
 Project: 90113  
 Lab No. 15718-1  
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 February 1, 1991

Client ID: 1W

EPA Method 8240 Continued . . . . .

| CAS No.    | Compounds                 | Concentration<br>ug/l | PQL |
|------------|---------------------------|-----------------------|-----|
| 71-43-2    | Benzene                   | ND                    | 5   |
| 10061-02-6 | Trans-1,3-Dichloropropene | ND                    | 5   |
| 75-25-2    | Bromoform                 | ND                    | 5   |
| 108-10-1   | 4-Methyl-2-Pentanone      | ND                    | 50  |
| 591-78-6   | 2-Hexanone                | ND                    | 5   |
| 127-18-4   | Tetrachloroethene         | ND                    | 5   |
| 79-34-5    | 1,1,2,2-Tetrachloroethane | ND                    | 5   |
| 108-88-3   | Toluene                   | ND                    | 5   |
| 108-90-7   | Chlorobenzene             | ND                    | 5   |
| 100-41-4   | Ethyl Benzene             | ND                    | 5   |
| 100-42-5   | Styrene                   | ND                    | 5   |
| 1330-20-7  | Total Xylenes             | ND                    | 5   |

ND = Not Detectable

PQL - Practical Quantitation Limit - These are the detection limits for this sample. This number is based on sample size, matrix and dilution required.

\* = Compound was detected but below PQL.

### Volatile Surrogates

| Surrogate                | Percent Recovery | Control Limits |
|--------------------------|------------------|----------------|
| Toluene - D8             | 103              | 81 - 117       |
| Bromofluorobenzene       | 116              | 74 - 121       |
| 1,2-Dichloroethane<br>D4 | 94.6             | 70 - 121       |

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 Department of Ecology

# SOUND ANALYTICAL SERVICES, INC.

PLSA Engineering  
Project: 90113  
Page 3 of 3  
Lab No. 15718-1  
February 1, 1991

Client ID: 1W

| <u>Total Metals by ICP:</u> | <u>Concentration, mg/l</u> |
|-----------------------------|----------------------------|
| Antimony                    | < 0.06                     |
| Arsenic                     | < 0.05                     |
| Beryllium                   | < 0.005                    |
| Cadmium                     | < 0.005                    |
| Chromium                    | < 0.01                     |
| Copper                      | 0.04                       |
| Lead                        | < 0.05                     |
| Mercury*                    | 0.0013                     |
| Nickel                      | < 0.04                     |
| Selenium                    | < 0.05                     |
| Silver                      | < 0.01                     |
| Thallium                    | < 0.1                      |
| Zinc                        | < 0.02                     |

\*by Cold Vapor

Total Petroleum Hydrocarbons  
by EPA Method 418.1 < 1.0

SOUND ANALYTICAL SERVICES

  
STAN P. PALMQUIST

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Washington State  
Department of Ecology

# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

---

Report To: PLSA Engineering

Date: February 1, 1991

Report On: Analysis of Soil

Lab No.: 15718-2

IDENTIFICATION:

Samples Received on 01-29-91

Project: 90113

Client ID: 2-10

-----

ANALYSIS:

Concentration, mg/kg

Total Petroleum Hydrocarbons  
by EPA Method 418.1

< 10.0

Total Petroleum Fuel Hydrocarbons  
by EPA SW-846 Modified Method 8015

< 10.0

SOUND ANALYTICAL SERVICES

  
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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

## QUALITY CONTROL REPORT

### DUPLICATES

Lab No: 15718-2  
Date: February 1, 1991  
Client: PLSA Engineering

Client ID: 2-10  
Matrix: Soil  
Units: mg/kg

| Compound                          | Sample(S) | Duplicate(D) | RPD* |
|-----------------------------------|-----------|--------------|------|
| Total Petroleum Hydrocarbons      | < 10.0    | < 10.0       | ---  |
| Total Petroleum Fuel Hydrocarbons | < 10.0    | < 10.0       | ---  |

\*RPD = relative percent difference  
=  $[(S - D) / ((S + D) / 2)] \times 100$

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

---

Report To: PLSA Engineering

Date: January 31, 1991

Report On: Analysis of Water

Lab No.: 15752

IDENTIFICATION:

Samples Received on 01-31-91

Project: 90113

Client ID: RUSH 2W

-----

ANALYSIS:

Total Petroleum Hydrocarbons, mg/l  
by EPA Method 418.1

< 1.0

SOUND ANALYTICAL SERVICES

  
STAN P. PALMQUIST

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

## QUALITY CONTROL REPORT

### DUPLICATES

Lab No: 15752  
Date: January 31, 1991  
Client: PLSA Engineering

Client ID: 2W  
Matrix: Water  
Units: mg/l

| Compound                     | Sample(S) | Duplicate(D) | RPD* |
|------------------------------|-----------|--------------|------|
| Total Petroleum Hydrocarbons | < 1.0     | < 1.0        | ---  |

\*RPD = relative percent difference  
=  $[(S - D) / ((S + D) / 2)] \times 100$

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43201

# Sample Custody Record

DATE 10/10/90

PAGE 1 OF 1

## HART CROWSEY

Hart Crowsner, Inc.  
1910 Fairview Avenue East  
Seattle, Washington 98102-3699

JOB NUMBER 3097/Bredy LAB NUMBER \_\_\_\_\_  
PROJECT MANAGER Brian Dicks/Roman Dorebel  
PROJECT NAME Consolidated Freightways

SAMPLED BY: George Lightner

LAB NO. SAMPLE TIME STATION MATRIX

MW-3 1855 \_\_\_\_\_

MW-2 1415 \_\_\_\_\_

MW-1 1515 \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

Blind \_\_\_\_\_

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Blind \_\_\_\_\_

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### TESTING

### NO. OF CONTAINERS

### OBSERVATIONS/COMMENTS/

### COMPOSITING INSTRUCTIONS

Contract: Roman Dorebel  
(415) 521-3773 Blymyer  
Engineers for ANHYTE.

4 VOA: TPH-g/BTXE

4 VOA: ~~SOLO~~ SOLO

3-1 liter: TPH-D

4 VOA: TPH-g/BTXE

4 VOA: BOLD

3-1 liter: TPH-D

4 VOA: TPH-g/BTXE

4 VOA: BOLD

3-1 liter: TPH-D

4 VOA: TPH-g/BTXE

4 VOA: BOLD

4 VOA: BOLD

METHOD OF SHIPMENT  
Federal Express

TOTAL NUMBER OF CONTAINERS 41 samples + 5 Trip blanks = 46

SPECIAL SHIPMENT/HANDLING OR STORAGE REQUIREMENTS  
Keep cool - glass bottles - Fragile

### DISTRIBUTION:

1. PROVIDE WHITE AND YELLOW COPIES TO LABORATORY
2. RETURN PINK COPY TO PROJECT MANAGER
3. LABORATORY TO FILL IN SAMPLE NUMBER AND SIGN FOR RECEIPT
4. LABORATORY TO RETURN WHITE COPY TO HART CROWSEY

| RELINQUISHED BY        | DATE         | RECEIVED BY            | DATE         |
|------------------------|--------------|------------------------|--------------|
| <u>George Lightner</u> | <u>10/10</u> | <u>Matthias Cobary</u> | <u>10/10</u> |
| <u>George Lightner</u> | <u>10/11</u> | <u>Federal Express</u> | <u>10/11</u> |
| <u>George Lightner</u> | <u>10/11</u> | <u>Kelly Temple</u>    | <u>10/11</u> |
| <u>George Lightner</u> | <u>10/11</u> | <u>NET Pacific</u>     | <u>10/11</u> |



NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

NET Pacific, Inc.  
435 Tesconi Circle  
Santa Rosa, CA 95401  
Tel: (707) 526-7200  
Fax: (707) 526-9623

Roman Worobel  
Consolidated Freightways  
c/o Blymyer Engineers Inc  
1829 Clement Ave.  
Alameda, CA 94501

Date: 10-30-90  
NET Client Acct. No: 560  
NET Pacific Log No: 4320  
Received: 10-11-90 1000

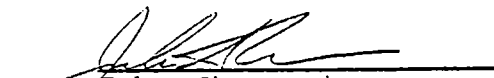


Client Reference Information

Consolidated Frieghtways, Job: 3097/89604

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

  
Jules Skamarack  
Laboratory Manager

Enclosure(s)

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Client Acct: 560  
 Client Name: Consolidated Freightways  
 NET Log No: 4320

Date: 10-30-90  
 Page: 2

Ref: Consolidated Freightways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-3 10-10-90 1255  
 LAB Job No: (-65051 )

| Parameter | Method | Reporting Limit | Results | Units |
|-----------|--------|-----------------|---------|-------|
|-----------|--------|-----------------|---------|-------|

METHOD 601

|                           |  |      |          |      |
|---------------------------|--|------|----------|------|
| DATE ANALYZED             |  |      | 10-17-90 |      |
| DILUTION FACTOR*          |  |      | 1        |      |
| Bromodichloromethane      |  | 0.4  | ND       | ug/L |
| Bromoform                 |  | 0.4  | ND       | ug/L |
| Bromomethane              |  | 0.4  | ND       | ug/L |
| Carbon tetrachloride      |  | 0.4  | ND       | ug/L |
| Chlorobenzene             |  | 0.4  | ND       | ug/L |
| Chloroethane              |  | 0.4  | ND       | ug/L |
| 2-Chloroethylvinyl ether  |  | 1.0  | ND       | ug/L |
| Chloroform                |  | 0.4  | 0.6      | ug/L |
| Chloromethane             |  | 0.4  | ND       | ug/L |
| Dibromochloromethane      |  | 0.4  | ND       | ug/L |
| 1,2-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,3-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,4-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| Dichlorodifluoromethane   |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,2-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethene        |  | 0.4  | ND       | ug/L |
| trans-1,2-Dichloroethene  |  | 0.4  | ND       | ug/L |
| 1,2-Dichloropropane       |  | 0.4  | ND       | ug/L |
| cis-1,3-Dichloropropene   |  | 0.4  | ND       | ug/L |
| trans-1,3-Dichloropropene |  | 0.4  | ND       | ug/L |
| Methylene Chloride        |  | 10   | ND       | ug/L |
| 1,1,2,2-Tetrachloroethane |  | 0.4  | ND       | ug/L |
| Tetrachloroethene         |  | 0.4  | 10       | ug/L |
| 1,1,1-Trichloroethane     |  | 0.4  | 3.0      | ug/L |
| 1,1,2-Trichloroethane     |  | 0.4  | ND       | ug/L |
| Trichloroethene           |  | 0.4  | ND       | ug/L |
| Trichlorofluoromethane    |  | 0.4  | ND       | ug/L |
| Vinyl chloride            |  | 2.0  | ND       | ug/L |
| PETROLEUM HYDROCARBONS    |  |      | --       |      |
| VOLATILE (WATER)          |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| METHOD GC FID/5030        |  |      | --       |      |
| as Gasoline               |  | 0.05 | ND       | mg/L |
| METHOD 602                |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| Benzene                   |  | 0.5  | ND       | ug/L |
| Ethylbenzene              |  | 0.5  | ND       | ug/L |
| Toluene                   |  | 0.5  | ND       | ug/L |
| Xylenes, total            |  | 0.5  | ND       | ug/L |

Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 3

Ref: Consolidated Freightways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-3            10-10-90        1255  
LAB Job No: (-65051 )

| Parameter              | Method | Reporting<br>Limit | Results  | Units |
|------------------------|--------|--------------------|----------|-------|
| PETROLEUM HYDROCARBONS |        |                    | --       |       |
| EXTRACTABLE (WATER)    |        |                    | --       |       |
| DILUTION FACTOR *      |        |                    | 1        |       |
| DATE EXTRACTED         |        |                    | 10-17-90 |       |
| DATE ANALYZED          |        |                    | 10-17-90 |       |
| METHOD GC FID/3510     |        |                    | --       |       |
| as Diesel              |        | 0.05               | 0.11     | mg/L  |

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Client Acct: 560  
 Client Name: Consolidated Freightways  
 NET Log No: 4320

Date: 10-30-90  
 Page: 4

Ref: Consolidated Frieghtways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-2 10-10-90 1415  
 LAB Job No: (-65052 )

| Parameter | Method | Reporting Limit | Results | Units |
|-----------|--------|-----------------|---------|-------|
|-----------|--------|-----------------|---------|-------|

METHOD 601

|                           |      |     |          |      |
|---------------------------|------|-----|----------|------|
| DATE ANALYZED             |      |     | 10-17-90 |      |
| DILUTION FACTOR*          |      |     | 1        |      |
| Bromodichloromethane      | 0.4  | ND  |          | ug/L |
| Bromoform                 | 0.4  | ND  |          | ug/L |
| Bromomethane              | 0.4  | ND  |          | ug/L |
| Carbon tetrachloride      | 0.4  | ND  |          | ug/L |
| Chlorobenzene             | 0.4  | ND  |          | ug/L |
| Chloroethane              | 0.4  | ND  |          | ug/L |
| 2-Chloroethylvinyl ether  | 1.0  | ND  |          | ug/L |
| Chloroform                | 0.4  | 0.5 |          | ug/L |
| Chloromethane             | 0.4  | ND  |          | ug/L |
| Dibromochloromethane      | 0.4  | ND  |          | ug/L |
| 1,2-Dichlorobenzene       | 0.4  | ND  |          | ug/L |
| 1,3-Dichlorobenzene       | 0.4  | ND  |          | ug/L |
| 1,4-Dichlorobenzene       | 0.4  | ND  |          | ug/L |
| Dichlorodifluoromethane   | 0.4  | ND  |          | ug/L |
| 1,1-Dichloroethane        | 0.4  | ND  |          | ug/L |
| 1,2-Dichloroethane        | 0.4  | ND  |          | ug/L |
| 1,1-Dichloroethene        | 0.4  | ND  |          | ug/L |
| trans-1,2-Dichloroethene  | 0.4  | ND  |          | ug/L |
| 1,2-Dichloropropane       | 0.4  | ND  |          | ug/L |
| cis-1,3-Dichloropropene   | 0.4  | ND  |          | ug/L |
| trans-1,3-Dichloropropene | 0.4  | ND  |          | ug/L |
| Methylene Chloride        | 10   | ND  |          | ug/L |
| 1,1,2,2-Tetrachloroethane | 0.4  | ND  |          | ug/L |
| Tetrachloroethene         | 0.4  | 12  |          | ug/L |
| 1,1,1-Trichloroethane     | 0.4  | 3.5 |          | ug/L |
| 1,1,2-Trichloroethane     | 0.4  | ND  |          | ug/L |
| Trichloroethene           | 0.4  | ND  |          | ug/L |
| Trichlorofluoromethane    | 0.4  | ND  |          | ug/L |
| Vinyl chloride            | 2.0  | ND  |          | ug/L |
| PETROLEUM HYDROCARBONS    |      | --  |          |      |
| VOLATILE (WATER)          |      | --  |          |      |
| DILUTION FACTOR *         |      | 1   |          |      |
| DATE ANALYZED             |      |     | 10-20-90 |      |
| METHOD GC FID/5030        |      |     | --       |      |
| as Gasoline               | 0.05 | ND  |          | mg/L |
| METHOD 602                |      |     | --       |      |
| DILUTION FACTOR *         |      | 1   |          |      |
| DATE ANALYZED             |      |     | 10-20-90 |      |
| Benzene                   | 0.5  | ND  |          | ug/L |
| Ethylbenzene              | 0.5  | ND  |          | ug/L |
| Toluene                   | 0.5  | ND  |          | ug/L |
| Xylenes, total            | 0.5  | ND  |          | ug/L |



Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 5

Ref: Consolidated Frieghtways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-2 10-10-90 1415  
LAB Job No: (-65052 )

| Parameter              | Method | Reporting<br>Limit | Results  | Units |
|------------------------|--------|--------------------|----------|-------|
| PETROLEUM HYDROCARBONS |        |                    | --       |       |
| EXTRACTABLE (WATER)    |        |                    | --       |       |
| DILUTION FACTOR *      |        |                    | 1        |       |
| DATE EXTRACTED         |        |                    | 10-17-90 |       |
| DATE ANALYZED          |        |                    | 10-17-90 |       |
| METHOD GC FID/3510     |        |                    | --       |       |
| as Diesel              |        | 0.05               | ND       | mg/L  |

Client Acct: 560  
 Client Name: Consolidated Freightways  
 NET Log No: 4320

Date: 10-30-90  
 Page: 6

Ref: Consolidated Frieghtways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-1 10-10-90 1515  
 LAB Job No: (-65053 )

| Parameter | Method | Reporting Limit | Results | Units |
|-----------|--------|-----------------|---------|-------|
|-----------|--------|-----------------|---------|-------|

METHOD 601

|                           |  |      |          |      |
|---------------------------|--|------|----------|------|
| DATE ANALYZED             |  |      | 10-17-90 |      |
| DILUTION FACTOR*          |  |      | 1        |      |
| Bromodichloromethane      |  | 0.4  | ND       | ug/L |
| Bromoform                 |  | 0.4  | ND       | ug/L |
| Bromomethane              |  | 0.4  | ND       | ug/L |
| Carbon tetrachloride      |  | 0.4  | ND       | ug/L |
| Chlorobenzene             |  | 0.4  | ND       | ug/L |
| Chloroethane              |  | 0.4  | ND       | ug/L |
| 2-Chloroethylvinyl ether  |  | 1.0  | ND       | ug/L |
| Chloroform                |  | 0.4  | 0.5      | ug/L |
| Chloromethane             |  | 0.4  | ND       | ug/L |
| Dibromochloromethane      |  | 0.4  | ND       | ug/L |
| 1,2-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,3-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,4-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| Dichlorodifluoromethane   |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,2-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethene        |  | 0.4  | ND       | ug/L |
| trans-1,2-Dichloroethene  |  | 0.4  | ND       | ug/L |
| 1,2-Dichloropropane       |  | 0.4  | ND       | ug/L |
| cis-1,3-Dichloropropene   |  | 0.4  | ND       | ug/L |
| trans-1,3-Dichloropropene |  | 0.4  | ND       | ug/L |
| Methylene Chloride        |  | 10   | ND       | ug/L |
| 1,1,2,2-Tetrachloroethane |  | 0.4  | ND       | ug/L |
| Tetrachloroethene         |  | 0.4  | 12       | ug/L |
| 1,1,1-Trichloroethane     |  | 0.4  | 2.2      | ug/L |
| 1,1,2-Trichloroethane     |  | 0.4  | ND       | ug/L |
| Trichloroethene           |  | 0.4  | ND       | ug/L |
| Trichlorofluoromethane    |  | 0.4  | ND       | ug/L |
| Vinyl chloride            |  | 2.0  | ND       | ug/L |
| PETROLEUM HYDROCARBONS    |  |      | --       |      |
| VOLATILE (WATER)          |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| METHOD GC FID/5030        |  |      | --       |      |
| as Gasoline               |  | 0.05 | ND       | mg/L |
| METHOD 602                |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| Benzene                   |  | 0.5  | ND       | ug/L |
| Ethylbenzene              |  | 0.5  | ND       | ug/L |
| Toluene                   |  | 0.5  | ND       | ug/L |
| Xylenes, total            |  | 0.5  | ND       | ug/L |

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Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 7

Ref: Consolidated Frieghtways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-1 10-10-90 1515  
LAB Job No: (-65053 )

| Parameter              | Method | Reporting<br>Limit | Results  | Units |
|------------------------|--------|--------------------|----------|-------|
| PETROLEUM HYDROCARBONS |        |                    | --       |       |
| EXTRACTABLE (WATER)    |        |                    | --       |       |
| DILUTION FACTOR *      |        |                    | 1        |       |
| DATE EXTRACTED         |        |                    | 10-17-90 |       |
| DATE ANALYZED          |        |                    | 10-17-90 |       |
| METHOD GC FID/3510     |        |                    | --       |       |
| as Diesel              |        | 0.05               | 1.0      | mg/L  |

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Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 8

Ref: Consolidated Freightways, Job: 3097/89604

SAMPLE DESCRIPTION: Trip Blank  
LAB Job No: (-65054)

| Parameter | Method | Reporting Limit | Results | Units |
|-----------|--------|-----------------|---------|-------|
|-----------|--------|-----------------|---------|-------|

METHOD 601

|                           |  |      |          |      |
|---------------------------|--|------|----------|------|
| DATE ANALYZED             |  |      | 10-17-90 |      |
| DILUTION FACTOR*          |  |      | 1        |      |
| Bromodichloromethane      |  | 0.4  | ND       | ug/L |
| Bromoform                 |  | 0.4  | ND       | ug/L |
| Bromomethane              |  | 0.4  | ND       | ug/L |
| Carbon tetrachloride      |  | 0.4  | ND       | ug/L |
| Chlorobenzene             |  | 0.4  | ND       | ug/L |
| Chloroethane              |  | 0.4  | ND       | ug/L |
| 2-Chloroethylvinyl ether  |  | 1.0  | ND       | ug/L |
| Chloroform                |  | 0.4  | ND       | ug/L |
| Chloromethane             |  | 0.4  | ND       | ug/L |
| Dibromochloromethane      |  | 0.4  | ND       | ug/L |
| 1,2-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,3-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,4-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| Dichlorodifluoromethane   |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,2-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethene        |  | 0.4  | ND       | ug/L |
| trans-1,2-Dichloroethene  |  | 0.4  | ND       | ug/L |
| 1,2-Dichloropropane       |  | 0.4  | ND       | ug/L |
| cis-1,3-Dichloropropene   |  | 0.4  | ND       | ug/L |
| trans-1,3-Dichloropropene |  | 0.4  | ND       | ug/L |
| Methylene Chloride        |  | 10   | ND       | ug/L |
| 1,1,2,2-Tetrachloroethane |  | 0.4  | ND       | ug/L |
| Tetrachloroethene         |  | 0.4  | ND       | ug/L |
| 1,1,1-Trichloroethane     |  | 0.4  | ND       | ug/L |
| 1,1,2-Trichloroethane     |  | 0.4  | ND       | ug/L |
| Trichloroethene           |  | 0.4  | ND       | ug/L |
| Trichlorofluoromethane    |  | 0.4  | ND       | ug/L |
| Vinyl chloride            |  | 2.0  | ND       | ug/L |
| PETROLEUM HYDROCARBONS    |  |      | --       |      |
| VOLATILE (WATER)          |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-22-90 |      |
| METHOD GC FID/5030        |  |      | --       |      |
| as Gasoline               |  | 0.05 | ND       | mg/L |
| METHOD 602                |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-22-90 |      |
| Benzene                   |  | 0.5  | ND       | ug/L |
| Ethylbenzene              |  | 0.5  | ND       | ug/L |
| Toluene                   |  | 0.5  | ND       | ug/L |
| Xylenes, total            |  | 0.5  | ND       | ug/L |

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Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 9

Ref: Consolidated Freightways, Job: 3097/89604

SAMPLE DESCRIPTION: Trip Blank  
LAB Job No: (-65054 )

| Parameter              | Method | Reporting<br>Limit | Results  | Units |
|------------------------|--------|--------------------|----------|-------|
| PETROLEUM HYDROCARBONS |        |                    | --       |       |
| EXTRACTABLE (WATER)    |        |                    | --       |       |
| DILUTION FACTOR *      |        |                    | 1        |       |
| DATE EXTRACTED         |        |                    | 10-17-90 |       |
| DATE ANALYZED          |        |                    | 10-17-90 |       |
| METHOD GC FID/3510     |        |                    | --       |       |
| as Diesel              |        | 0.05               | ND       | mg/L  |

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Client Acct: 560  
 Client Name: Consolidated Freightways  
 NET Log No: 4320

Date: 10-30-90  
 Page: 10

Ref: Consolidated Freightways, Job: 3097/89604

SAMPLE DESCRIPTION: MW-3 Bailer 10-10-90  
 LAB Job No: (-65055 )

| Parameter | Method | Reporting Limit | Results | Units |
|-----------|--------|-----------------|---------|-------|
|-----------|--------|-----------------|---------|-------|

METHOD 601

|                           |  |      |          |      |
|---------------------------|--|------|----------|------|
| DATE ANALYZED             |  |      | 10-17-90 |      |
| DILUTION FACTOR*          |  |      | 1        |      |
| Bromodichloromethane      |  | 0.4  | ND       | ug/L |
| Bromoform                 |  | 0.4  | ND       | ug/L |
| Bromomethane              |  | 0.4  | ND       | ug/L |
| Carbon tetrachloride      |  | 0.4  | ND       | ug/L |
| Chlorobenzene             |  | 0.4  | ND       | ug/L |
| Chloroethane              |  | 0.4  | ND       | ug/L |
| 2-Chloroethylvinyl ether  |  | 1.0  | ND       | ug/L |
| Chloroform                |  | 0.4  | 9.3      | ug/L |
| Chloromethane             |  | 0.4  | ND       | ug/L |
| Dibromochloromethane      |  | 0.4  | ND       | ug/L |
| 1,2-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,3-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| 1,4-Dichlorobenzene       |  | 0.4  | ND       | ug/L |
| Dichlorodifluoromethane   |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,2-Dichloroethane        |  | 0.4  | ND       | ug/L |
| 1,1-Dichloroethene        |  | 0.4  | ND       | ug/L |
| trans-1,2-Dichloroethene  |  | 0.4  | ND       | ug/L |
| 1,2-Dichloropropane       |  | 0.4  | ND       | ug/L |
| cis-1,3-Dichloropropene   |  | 0.4  | ND       | ug/L |
| trans-1,3-Dichloropropene |  | 0.4  | ND       | ug/L |
| Methylene Chloride        |  | 10   | ND       | ug/L |
| 1,1,2,2-Tetrachloroethane |  | 0.4  | ND       | ug/L |
| Tetrachloroethene         |  | 0.4  | ND       | ug/L |
| 1,1,1-Trichloroethane     |  | 0.4  | ND       | ug/L |
| 1,1,2-Trichloroethane     |  | 0.4  | ND       | ug/L |
| Trichloroethene           |  | 0.4  | ND       | ug/L |
| Trichlorofluoromethane    |  | 0.4  | ND       | ug/L |
| Vinyl chloride            |  | 2.0  | ND       | ug/L |
| PETROLEUM HYDROCARBONS    |  |      | --       |      |
| VOLATILE (WATER)          |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| METHOD GC FID/5030        |  |      | --       |      |
| as Gasoline               |  | 0.05 | ND       | mg/L |
| METHOD 602                |  |      | --       |      |
| DILUTION FACTOR *         |  |      | 1        |      |
| DATE ANALYZED             |  |      | 10-20-90 |      |
| Benzene                   |  | 0.5  | ND       | ug/L |
| Ethylbenzene              |  | 0.5  | ND       | ug/L |
| Toluene                   |  | 0.5  | ND       | ug/L |
| Xylenes, total            |  | 0.5  | ND       | ug/L |

Client Acct: 560  
Client Name: Consolidated Freightways  
NET Log No: 4320

Date: 10-30-90  
Page: 11

Ref: Consolidated Freightways, Job: 3097/89604

QUALITY CONTROL DATA

| Parameter | Reporting Limits | Units | Cal Verif Stand % Recovery | Blank Data | Spike % Recovery | Duplicate Spike % Recovery | RPD |
|-----------|------------------|-------|----------------------------|------------|------------------|----------------------------|-----|
| Diesel    | 0.05             | mg/L  | 99                         | ND         | 94               | 90                         | 4.3 |

QUALITY CONTROL DATA

| Parameter | Reporting Limits | Units | Cal Verif Stand % Recovery | Blank Data | Spike % Recovery | Duplicate Spike % Recovery | RPD |
|-----------|------------------|-------|----------------------------|------------|------------------|----------------------------|-----|
| Gasoline  | 0.05             | mg/L  | 86                         | ND         | 82               | 96                         | 16  |
| Benzene   | 0.5              | ug/L  | 90                         | ND         | 94               | 112                        | 18  |
| Toluene   | 0.5              | ug/L  | 100                        | ND         | 97               | 108                        | 11  |

COMMENT: Blank Results were ND on other analytes tested.

QUALITY CONTROL DATA

| Parameter       | Reporting Limits | Units | Cal Verif Stand % Recovery | Blank Data | Spike % Recovery | Duplicate Spike % Recovery | RPD |
|-----------------|------------------|-------|----------------------------|------------|------------------|----------------------------|-----|
| Chlorobenzene   | 0.4              | ug/L  | N/A                        | ND         | 104              | 103                        | < 1 |
| 1,1-Dce         | 0.4              | ug/L  | N/A                        | ND         | 127              | 123                        | 2.8 |
| Trichloroethene | 0.4              | ug/L  | N/A                        | ND         | 97               | 98                         | < 1 |

COMMENT: Blank Results were ND on other analytes tested.

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NET Pacific, Inc.

## KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- \* : Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated Reporting Limits by the dilution factor (but do not multiply reported values).
- ICVS : Initial Calibration Verification Standard (External Standard).
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference,  $100 \frac{|\text{Value 1} - \text{Value 2}|}{\text{mean value}}$ .
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

### Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

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**TABLE 1**  
**RESULTS OF ANALYSES OF ENVIRONMENTAL SAMPLES**  
**FOR TOTAL PETROLEUM HYDROCARBONS, SOIL**  
**BY IR (EPA METHOD 418.1)**  
**Results Reported as ug/g (ppm)**

| <u>Sample #</u>              | <u>Total Petroleum Hydrocarbons (ppm)</u> |
|------------------------------|---|
| Sump #1, WB soil             | 236                                       |
| Sump #2, BATT soil           | 36.2                                      |
| B-1, 8.0' soil               | 16.9                                      |
| B-1, 15.0' soil              | 17.2                                      |
| B-2, 10.0' soil              | 16.7                                      |
| B-2, 15.0' soil              | 162                                       |
| -B-3, 3.0' soil              | 1780                                      |
| -B-3, 9.0', soil             | 1130                                      |
| -B-3, 15.0', soil            | 618                                       |
| WDOE SCGs                    | 200                                       |
| Quality Assurance            |   |
| B-2, 15.0' (Duplicate, Soil) | 133                                       |

WDOE SCGs = Washington State Department of Ecology (WDOE) Soil Cleanup Goals (See text).

WB = Wash Bay

BATT = Battery Storage Area

As reported by the project laboratory, August 3, 1989.

**TABLE 2**  
**RESULTS OF ANALYSES OF ENVIRONMENTAL SAMPLES**  
**FOR TOTAL PETROLEUM HYDROCARBONS, GROUNDWATER**  
**BY IR (EPA METHOD 418.1)**  
**Results Reported as ug/g (ppm)**

| <u>Sample #</u>              | <u>Total Petroleum Hydrocarbons (ppm)</u> |
|------------------------------|---|
| B-1, WS-1 Groundwater        | <5.0                                      |
| B-2, WS-2 Groundwater        | 5.0                                       |
| B-3, WS-1 Groundwater        | <5.0                                      |
| <u>Quality Assurance</u>     |   |
| B-2, 15.0' (Duplicate, Soil) | 133.                                      |
| WDOE GCGs                    | 15.0                                      |

WDOE GCGs = Washington State Department of Ecology  
 (WDOE) Groundwater Cleanup Goals  
 (See text).

As reported by the project laboratory, August 3, 1989.

**TABLE 3**  
**RESULTS OF ANALYSIS OF ENVIRONMENTAL SAMPLES**  
**FOR EP-TOX METALS IN ACCORDANCE WITH**  
**"TEST METHODS FOR EVALUATING SOLID WASTE"**  
**EPA SW-846, 3RD EDITION**  
**Results Reported as ppm (mg/L)**

| <u>Sample #</u> | <u>B-3, 9.0'</u> | <u>B-1, 15.0'</u> | <u>B-2, 15.0'</u> | <u>ALLOWABLE LIMITS***</u> |
|-----------------|------------------|-------------------|-------------------|----------------------------|
| <u>Analyte</u>  |                  |                   |                   |                            |
| Arsenic         | <0.1             | <0.1              | <0.1              | 5.0                        |
| Barium          | 0.3              | <0.1              | 0.5               | 100.0                      |
| Cadmium         | <0.1             | <0.1              | <0.1              | 1.0                        |
| Chromium        | <0.1             | <0.1              | <0.1              | 5.0                        |
| Lead            | <0.1             | <0.1              | <0.1              | 5.0                        |
| Mercury         | <0.05            | <0.05             | <0.05             | 0.2                        |
| Selenium        | <0.1             | <0.1              | <0.1              | 1.0                        |
| Silver          | <0.1             | <0.1              | <0.1              | 5.0                        |
| Copper          | <0.1             | <0.1              | <0.1              | *                          |
| Nickel          | <0.1             | <0.1              | <0.1              | *                          |
| Zinc            | <0.1             | <0.1              | <0.1              | *                          |

\*\*\* = Dangerous Waste Maximum Concentrations in Extract, WAC 173-303-090, Dangerous waste characteristics, WDOE, Dangerous Waste Regulations, Chapter 173-303, Amended January 1989.

\* = No reported value as per Chapter 173-303-090, WAC.

As reported by the project laboratory, August 3, 1989.

## APPENDIX III

### Northwest Corner Drywell Final Sample Results

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# SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: PLSA Engineering

Date: April 17, 1991

Report On: Analysis of Soil

Lab No.: 17076

IDENTIFICATION:

Samples Received on 04-16-91

Project: 90113

-----  
ANALYSIS:

| Lab Sample No.   | RUSH 1 | RUSH 2 | RUSH 3 | RUSH 4 |
|--|--------|--------|--------|--------|
| Client Identification                                  | 1      | 2      | 3      | 4      |
| Units  | ppm    | ppm    | ppm    | ppm    |
| Benzene  | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Toluene  | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Ethyl Benzene  | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| Xylenes  | < 0.05 | < 0.05 | < 0.05 | < 0.05 |
| BTEX by EPA SW-846<br>Method 8020                      |        |        |        |        |
| Total Petroleum<br>Hydrocarbons by EPA<br>Method 418.1 | 150    | 160    | 15     | 32     |
| Total Metals:  |        |        |        |        |
| Arsenic  | < 5.1  | < 5.1  | < 5.1  | < 5.1  |
| Cadmium  | < 0.13 | 0.43   | < 0.13 | < 0.13 |
| Chromium   | 15.1   | 14.0   | 13.1   | 8.2    |
| Lead   | 13.1   | 14.1   | < 1.5  | 5.1    |
| Mercury  | < 0.10 | < 0.10 | < 0.10 | < 0.10 |

Note - BTEX and TPH results reported on an as received basis.

SOUND ANALYTICAL SERVICES

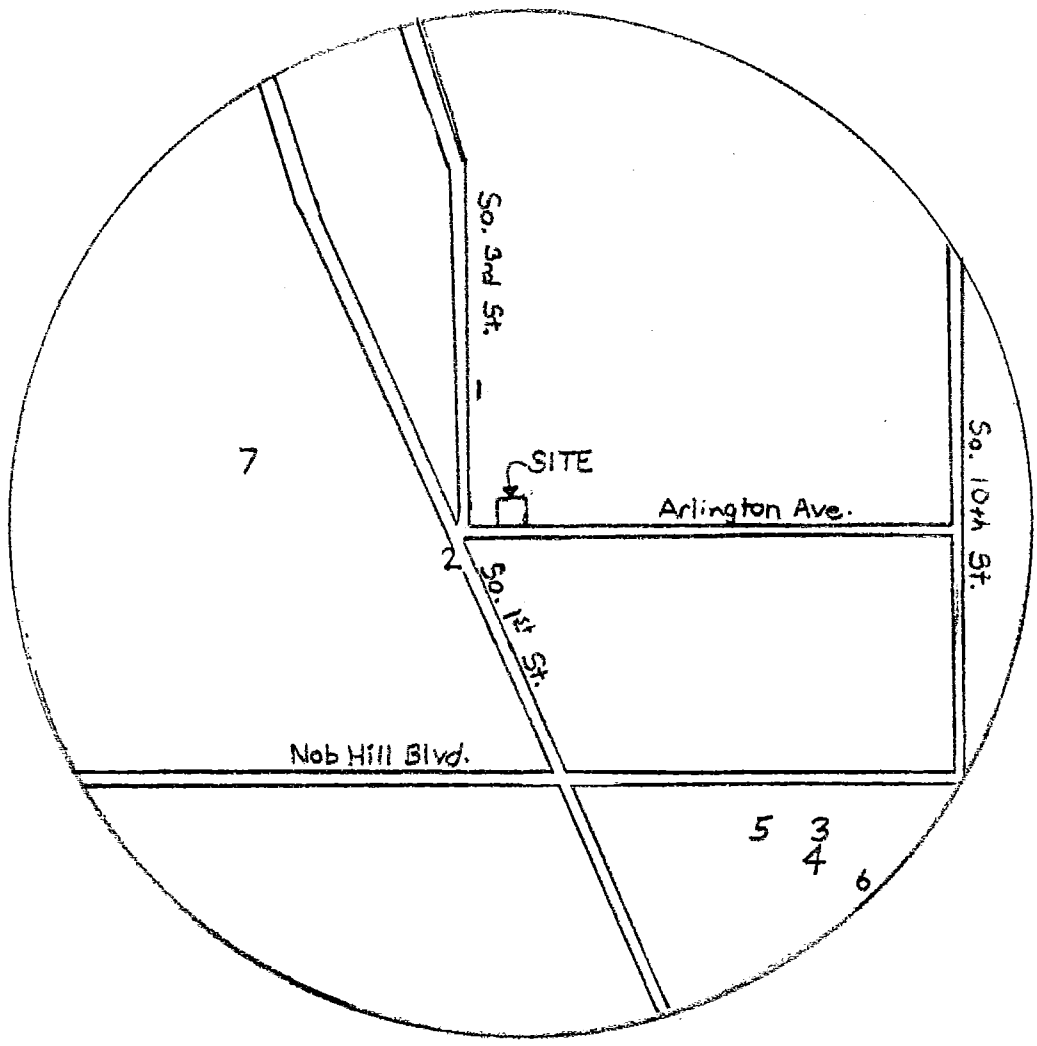
  
C. LARRY ZURAW

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## APPENDIX IV

### Nearby Wells

**FIGURE 1**  
**WATER WELL LOCATION**  
**MAP**  
**HAHN MOTORS,**  
**YAKIMA, WA.**



**KEY:**  
 6- Location And Number  
 Of Water Well  
**SCALE: 1"=1000'**

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# WATER WELL REPORT

Start Card No. 10398

STATE OF WASHINGTON

Water Right Permit No. 3

(1) OWNER: Name JAMES HENNESS Address 1419 So 8th Street 98901  
 (2) LOCATION OF WELL: County Yakima SE 1/4 NE 1/4 Sec 30 T. 13 N., R. 19 W.M.  
 (2a) STREET ADDRESS OF WELL (or nearest address): \_\_\_\_\_

(3) PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
 Abandoned  New well  Deepened  Reconditioned   
 Method: Dug  Cable  Rotary  Bored  Driven  Jetted

(5) DIMENSIONS: Diameter of well 6 inches.  
 Drilled 88 feet. Depth of completed well \_\_\_\_\_ ft.

(6) CONSTRUCTION DETAILS:  
 Casing installed: 6 Diam. from + 2 ft. to 17 ft.  
 Welded  Liner installed  Threaded   
 Perforations: Yes  No   
 Type of perforator used \_\_\_\_\_  
 SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
 Manufacturer's Name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No. \_\_\_\_\_  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
 Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Surface seal: Yes  No  To what depth? 18 ft.  
 Material used in seal BENTONITE  
 Did any strata contain unusable water? Yes  No   
 Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
 Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
 Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation above mean sea level \_\_\_\_\_ ft.  
 Static level 20' 8" ft. below top of well Date 11-30-88  
 Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
 Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
 Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
 Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 " " " " " "  
 " " " " " "  
 Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  

| Time | Water Level | Time | Water Level | Time | Water Level |
|------|-------------|------|-------------|------|-------------|
|      |             |      |             |      |             |
|      |             |      |             |      |             |

Date of test \_\_\_\_\_  
 Bailer test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
 Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
 Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION  
 Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

| MATERIAL                 | FROM   | TO    |
|--------------------------|--------|-------|
| TOP SOIL & GRAVEL        | 0      | 1 1/2 |
| SAND GRAVEL COBBLES      | MH 1/2 | 33    |
| HARD PAN - TRACE 10 GPM  | H 33   | 38    |
| GRAVEL BOLLERS           | VH 38  | 45    |
| HARD PAN                 | VVH 45 | 50    |
| CONCRETE GRAVEL HARD PAN | VH 50  | 55    |
| HARD PAN                 | 55     | 65    |
| SAND GRAVEL              | 65     | 69    |
| COARSE GRAVEL & COBBLES  | 69     | 79    |
| COARSE GRAVEL & COBBLES  | 79     | 88    |

30 GPM

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Work started 11-30-88, 19. Completed 11-30-88, 19.

**WELL CONSTRUCTOR CERTIFICATION:**  
 I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.  
 NAME RIEBE WELL DRILLING Inc  
 (PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)  
 Address PO BOX 10866  
 (Signed) John H Riebe License No. 6422  
 (WELL DRILLER)  
 Contractor's Registration No. 132 KI Date 12-1-88, 19



# WATER WELL REPORT

STATE OF WASHINGTON

Application No. **G4-24200**  
Permit No. \_\_\_\_\_

(1) **OWNER:** Name NOEL CANNING CORP. Address 1011 SOUTH 3RD ST., YAKIMA, WASH. 98901  
 (2) **LOCATION OF WELL:** County Yakima NW 1/4 NE 1/4 Sec 30 T 13 N, R 19E W.M.  
 Bearing and distance from section or subdivision corner \_\_\_\_\_

(3) **PROPOSED USE:** Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 (4) **TYPE OF WORK:** Owner's number of well (if more than one) 2  
 New well  Method: Dug  Bored   
 Deepened  Cable  Driven   
 Reconditioned  Rotary  Jetted

(5) **DIMENSIONS:** Diameter of well 12, 10, 8 inches.  
 Drilled 752 ft. Depth of completed well 752 ft.

(6) **CONSTRUCTION DETAILS:** 0 67°  
 Casing installed: 10" Diam. from 42 ft. to 400 ft.  
 Threaded  8" Diam. from 360 ft. to 680 ft.  
 Welded  " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
 Type of perforator used TORCH (8" LINER)  
 SIZE of perforations 1/8 in. by 8 in.  
720 perforations from 560 ft. to 680 ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
 Manufacturer's Name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No \_\_\_\_\_  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel: \_\_\_\_\_  
 Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal: Yes  No  To what depth? 30 ft.  
 Material used in seal CEMENT  
 Did any strata contain unusable water? Yes  No   
 Type of water? SURFACE Depth of strata 45  
 Method of sealing strata off CASED & CEMENTED

(7) **PUMP:** Manufacturer's Name \_\_\_\_\_  
 Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) **WATER LEVELS:** Land-surface elevation 1025 ft.  
 Static level 14 ft. below top of well Date 3/18/77  
 Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
 Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level  
 Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
 Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 " " " " "  
 " " " " "  
 Recovery data (time taken to zero when pump is turned on) (water level measured from well top to water level)  

| Time | Water Level | Time | Water Level | Time | Water Level |
|------|-------------|------|-------------|------|-------------|
|      |             |      |             |      |             |

 Administrative Record for the Yakima Railroad Area  
Washington State  
Department of Ecology  
 Date of test \_\_\_\_\_  
 \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 Artesian flow 67 g.p.m. Date \_\_\_\_\_  
 Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

## (10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

| MATERIAL                                | FROM | TO  |
|---|------|-----|
| BLACKTOP, REBAR CEMENT & FILL           | 0    | 4   |
| SOIL & GRAVEL                           | 4    | 10  |
| GRAVEL, BLDRS & SOIL V. HD.             | 10   | 30  |
| SAND, GRAVEL, BLDRS, WATER, CAVING      | 30   | 47  |
| CEMENT GRAVEL & BLDRS                   | 47   | 50  |
| HARD PAN & BLDRS                        | 50   | 63  |
| LOOSELY CEMENTED GRAVEL & BLDRS         | 63   | 77  |
| BOULDERS, SAND, GRAVEL, WATER.          | 77   | 92  |
| V. HD. BASALT BLDRS, GRAVEL, WATER      | 92   | 107 |
| CEMENT GRAVEL, DEC. ROCK & BLDRS.       | 107  | 117 |
| BROKEN BASALT BLDRS V. HD.              | 117  | 135 |
| SAME W. DEC. ROCK                       | 135  | 145 |
| HD PAN & BLDRS                          | 145  | 152 |
| BROKEN BASALT BLDRS & HD PAN            | 152  | 190 |
| DEC, ROCK, CLAY & BLDRS                 | 190  | 236 |
| WHITE CLAY                              | 236  | 238 |
| DEC. ROCK, CLAY & BLDRS                 | 238  | 242 |
| WHITE CLAY                              | 242  | 247 |
| DEC., ROCK, CLAY & BLDRS                | 247  | 299 |
| SANDSTONE, CLAY, CEM. GRAV, BLDRS       | 299  | 308 |
| DEC., ROCK, CLAY & BLDRS                | 308  | 332 |
| BASALT BLDRS & CLAY                     | 332  | 347 |
| BR. CLAY, SAND, GRAVEL, SOME WATER      | 347  | 351 |
| SAND, GRAVEL, CLAY " "                  | 351  | 358 |
| DEC. ROCK & BLDRS.                      | 358  | 365 |
| BROKEN BASALT & SED. ROCK               | 365  | 380 |
| GRAY CLAY                               | 380  | 388 |
| GRAVEL, GREY CLAY & BLDRS               | 388  | 391 |
| BROKEN BASALT ROCK                      | 391  | 400 |
| CEMENT GRAVEL, CLAY & BLDRS             | 400  | 412 |
| TAN SANDY CLAY                          | 412  | 416 |
| GRAVEL, BLDRS & CLAY                    | 416  | 423 |
| TAN SANDY CLAY                          | 423  | 438 |
| GRAVEL, CLAY & BLDRS                    | 438  | 468 |
| SED. ROCK, SAND, GRAVEL, CLAY, CONGLOM. | 468  | 510 |
| BR. SANDY CLAY                          | 510  | 519 |

Work started 1/5/77, 19\_\_\_\_ Completed 3/12/77, 19\_\_\_\_

WELL DRILLER'S STATEMENT: **RECEIVED**  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.  
 MAY 16 1977

NAME RIEBE WELL DRILLING (Person, firm, or corporation) TYPE Driller  
 Address YAKIMA, WASH. DEPARTMENT OF ECOLOGY CENTRAL REGIONAL OFFICE  
 [Signed] John Riebe (Well Driller)  
 License No. 3601 Date 3/20/77, 19\_\_\_\_



WATER WELL REPORT STATE OF WASHINGTON

64-28585 Application No. Permit No. 2

(1) OWNER: Name YAKIMA PRECAST Address 1202 S 1st STREET YAKIMA, WA 98901

LOCATION OF WELL: County YAKIMA Sec. 30 T. 13.N. R. 19 W.M. Lots 54-62 also N51.5' of lot 53

(3) PROPOSED USE: Domestic [ ] Industrial [x] Municipal [ ] Irrigation [ ] Test Well [ ] Other [ ]

(4) TYPE OF WORK: Owner's number of well (if more than one)... Method: Dug [ ] Bored [ ] New well [x] Cable [x] Driven [ ] Deepened [ ] Rotary [ ] Jetted [ ] Reconditioned [ ]

(5) DIMENSIONS: Diameter of well 6 inches. Drilled 57 ft. Depth of completed well 57 ft.

(6) CONSTRUCTION DETAILS: Casing installed: 6" Diam. from 1 ft. to 57 ft. Threaded [ ] Welded [x]

Perforations: Yes [x] No [ ] Type of perforator used Mills SIZE of perforations 1/4 in. by 2 in.

Screens: Yes [ ] No [x] Manufacturer's Name Type Diam. Slot size

Gravel packed: Yes [ ] No [x] Size of gravel: Gravel placed from ft. to ft.

Surface seal: Yes [x] No [ ] To what depth? 20 ft. Material used in seal Bentonite

(7) PUMP: Manufacturer's Name Type: H.P.

(8) WATER LEVELS: Land-surface elevation above mean sea level... Static level 17 ft. below top of well Date 10-26-84

(9) WELL TESTS: Drawdown is amount water level is lowered below static level Was a pump test made? Yes [ ] No [x]

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level) Time Water Level

Date of test Bailer test 30 gal./min. with 3 ft. drawdown after 1 hrs. Artesian flow g.p.m. Date Temperature of water

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

Table with columns MATERIAL, FROM, TO. Rows: sand gravel + cobbles, hard pan, sand + gravel, hard pan, sand + gravel, hard pan, sand + fine gravel, gravel

This document is part of the official Administrative Record for the Yakima Railroad Area Washington State Department of Ecology

RECEIVED

DEC 14 1984

Work started 19... Completed 19...

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Henry Bach Well Drilling (Person, firm, or corporation) (Type or print)

Address 243 Box 1348 Yakima, Wa. 98901

[Signed] Henry Bach (Well Driller)

License No. 0053 Date 11-10, 1984

# WATER WELL REPORT

Application No. \_\_\_\_\_

STATE OF WASHINGTON

Permit No. 27

(1) OWNER: Name JIM HENNESS Address 1415 So. 8<sup>th</sup> Street

(2) LOCATION OF WELL: County Yakima - NE 1/4 SE 1/4 Sec. 30 T.13 N., R.19 W.M.  
 and distance from section or subdivision corner

(3) PROPOSED USE: Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
 New well  Method: Dug  Bored   
 Deepened  Cable  Driven   
 Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 2 inches.  
 Drilled \_\_\_\_\_ ft. Depth of completed well 32' ft.

(6) CONSTRUCTION DETAILS:  
 Casing installed: 2" Diam. from 0 ft. to 32 ft.  
 Threaded  \_\_\_\_\_ " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Welded  \_\_\_\_\_ " Diam. from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Perforations: Yes  No   
 Type of perforator used \_\_\_\_\_  
 SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 \_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
 Manufacturer's Name \_\_\_\_\_  
 Type \_\_\_\_\_ Model No \_\_\_\_\_  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
 Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel: \_\_\_\_\_  
 Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal: Yes  No  To what depth? 6 ft.  
 Material used in seal Bentonite & cement grout  
 Did any strata contain unusable water? Yes  No   
 Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
 Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
 Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation above mean sea level APP 1635 ft.  
 Static level 20 ft. below top of well Date 2-17-77  
 Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
 Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
 Was a pump test made? Yes  No  If yes, by whom? \_\_\_\_\_  
 Yield: 10 gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 " " " " " "  
 " " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  

| Time | Water Level | Time | Water Level | Time | Water Level |
|------|-------------|------|-------------|------|-------------|
|      |             |      |             |      |             |
|      |             |      |             |      |             |

 Date of test \_\_\_\_\_  
 Filter test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
 Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
 Temperature of water 58° Was a chemical analysis made? Yes  No

(10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

| MATERIAL     | FROM | TO  |
|--------------|------|-----|
| Top Soil     | 0    | 1/2 |
| Conglomerate | 1/2  | 32  |

**RECEIVED**  
 FEB 25 1977  
 DEPARTMENT OF ECOLOGY  
 CENTRAL REGIONAL OFFICE

This document is part of the official  
 Administrative Record for the  
 Yakima Railroad Area.  
 Washington State  
 Department of Ecology

Work started 2-17-77 1977 Completed 2-17-77 1977

**WELL DRILLER'S STATEMENT:**  
 This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Jensen Well Drilling  
 (Person, firm, or corporation) (Type or print)  
 Address 1603 So 10<sup>th</sup> Ave  
 [Signed] Lourence Jensen  
 (Well Driller)  
 License No. 0218 Dates 2-20-77

# WATER WELL REPORT

STATE OF WASHINGTON

3168  
Start Card No. 007281

Water Right Permit No. 5

1) OWNER: Name Mr. Lemus Address 1407 S. 7TH Street Yakima

(2) LOCATION OF WELL: County Yakima NE SE Sec. 30 T. 13 N. R. 19 W.M.

(2a) STREET ADDRESS OF WELL (or nearest address): PARCEL #191330-41422

(3) PROPOSED USE:  Domestic  Industrial  Municipal   
 Irrigation  Test Well  Other   
 DeWater

(4) TYPE OF WORK: Owner's number of well (if more than one) \_\_\_\_\_  
Abandoned  New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) DIMENSIONS: Diameter of well 6 inches.  
Drilled 60 feet. Depth of completed well 60 ft.

(6) CONSTRUCTION DETAILS:  
Casing installed: 6 " Diam. from 0 ft. to 60 ft.  
Welded  Liner installed  Threaded   
Perforations: Yes  No   
Type of perforator used \_\_\_\_\_  
SIZE of perforations \_\_\_\_\_ in. by \_\_\_\_\_ in.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
\_\_\_\_\_ perforations from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Screens: Yes  No   
Manufacturer's Name \_\_\_\_\_  
Type \_\_\_\_\_ Model No. \_\_\_\_\_  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.  
Diam. \_\_\_\_\_ Slot size \_\_\_\_\_ from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Gravel packed: Yes  No  Size of gravel \_\_\_\_\_  
Gravel placed from \_\_\_\_\_ ft. to \_\_\_\_\_ ft.

Surface seal: Yes  No  To what depth? 28 ft.  
Material used in seal Bentonite  
Did any strata contain unusable water? Yes  No   
Type of water? \_\_\_\_\_ Depth of strata \_\_\_\_\_  
Method of sealing strata off \_\_\_\_\_

(7) PUMP: Manufacturer's Name \_\_\_\_\_  
Type: \_\_\_\_\_ H.P. \_\_\_\_\_

(8) WATER LEVELS: Land-surface elevation above mean sea level \_\_\_\_\_ ft.  
Static level 12 ft. below top of well Date 4-18-89  
Artesian pressure \_\_\_\_\_ lbs. per square inch Date \_\_\_\_\_  
Artesian water is controlled by \_\_\_\_\_ (Cap, valve, etc.)

(9) WELL TESTS: Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom? Bach  
Yield: \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
" " " " " "  
" " " " " "

Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
100 GPM @ 50' , 60 GPM @ 40'  
Date of test \_\_\_\_\_  
Bailer test \_\_\_\_\_ gal./min. with \_\_\_\_\_ ft. drawdown after \_\_\_\_\_ hrs.  
Airtest \_\_\_\_\_ gal./min. with stem set at \_\_\_\_\_ ft. for \_\_\_\_\_ hrs.  
Artesian flow \_\_\_\_\_ g.p.m. Date \_\_\_\_\_  
Temperature of water \_\_\_\_\_ Was a chemical analysis made? Yes  No

**(10) WELL LOG or ABANDONMENT PROCEDURE DESCRIPTION**

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of information.

| MATERIAL                                | FROM | TO |
|---|------|----|
| Sandy loam & cobbles                    | 0    | 2  |
| Sandy loam, cobbles & gravel            | 2    | 15 |
| Coarse gravel & sand                    | 15   | 27 |
| Gravel & sand w/brown sandy clay        | 27   | 31 |
| Coarse gravel & sand                    | 31   | 48 |
| Coarse gravel & sand w/brown sandy clay | 48   | 54 |
| Coarse gravel & sand                    | 54   | 60 |

This document is part of the official  
Administrative Record for the  
Yakima Railroad Area.  
Washington State  
Department of Ecology

SEARCHED \_\_\_\_\_ INDEXED \_\_\_\_\_

SERIALIZED \_\_\_\_\_ FILED \_\_\_\_\_

JUN 11 1990

YAKIMA COUNTY CLERK

Work started 4-18, 1989 Completed 4-18, 1989

**WELL CONSTRUCTOR CERTIFICATION:**  
I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

NAME Bach Well Drilling Co.  
(PERSON, FIRM, OR CORPORATION) (TYPE OR PRINT)  
Address 2111 Birchfield Rd. Yakima, Wa.  
(Signed) Seab Duff License No. 1436  
(WELL DRILLER)  
Contractor's Registration No. BACHWDC137NU Date 4-20, 1989



# WATER WELL REPORT

STATE OF WASHINGTON

Application No. ....

Permit No. ....

(1) **OWNER:** Name Rainier Plastics Address 1101 Heinrich Yakima wa

(2) **LOCATION OF WELL:** County Yakima - NE 1/4 SW 1/4 Sec. 30 T.13.N., R.19E.W.M.  
and distance from section or subdivision corner

(3) **PROPOSED USE:** Domestic  Industrial  Municipal   
Irrigation  Test Well  Other

(4) **TYPE OF WORK:** Owner's number of well (if more than one) 2  
New well  Method: Dug  Bored   
Deepened  Cable  Driven   
Reconditioned  Rotary  Jetted

(5) **DIMENSIONS:** Diameter of well 6 inches  
Drilled 58 ft. Depth of completed well 55 ft.

(6) **CONSTRUCTION DETAILS:**  
**Casing installed:** 6" Diam. from 1 ft. to 54 ft.  
Threaded  " Diam. from ..... ft. to ..... ft.  
Welded  " Diam. from ..... ft. to ..... ft.

**Perforations:** Yes  No   
Type of perforator used .....  
SIZE of perforations ..... in. by ..... in.  
..... perforations from ..... ft. to ..... ft.  
..... perforations from ..... ft. to ..... ft.  
..... perforations from ..... ft. to ..... ft.

**Screens:** Yes  No   
Manufacturer's Name ..... Model No. ....  
Diam. .... Slot size ..... from ..... ft. to ..... ft.  
Diam. .... Slot size ..... from ..... ft. to ..... ft.

**Gravel packed:** Yes  No  Size of gravel: .....  
Gravel placed from ..... ft. to ..... ft.

**Surface seal:** Yes  No  To what depth? 15 ft.  
Material used in seal Best Sealant  
Did any strata contain unusable water? Yes  No   
Type of water? ..... Depth of strata .....  
Method of sealing strata off.....

(7) **PUMP:** Manufacturer's Name .....  
Type: ..... H.P. ....

(8) **WATER LEVELS:** Land-surface elevation above mean sea level. .... ft.  
Static level ..... ft. below top of well Date .....  
Artesian pressure ..... lbs. per square inch Date .....  
Artesian water is controlled by ..... (Cap, valve, etc.)

(9) **WELL TESTS:** Drawdown is amount water level is lowered below static level  
Was a pump test made? Yes  No  If yes, by whom? air lift  
Yield: 30 gal./min. with ..... ft. drawdown after ..... hrs.  
" " " " " " " " " " " "

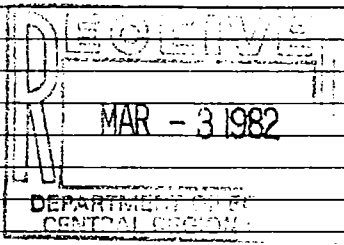
Recovery data (time taken as zero when pump turned off) (water level measured from well top to water level)  
Time Water Level Time Water Level Time Water Level  
.....  
.....  
.....  
Date of test .....

Bailer test..... gal./min. with ..... ft. drawdown after ..... hrs.  
Artesian flow..... g.p.m. Date .....  
Temperature of water..... Was a chemical analysis made? Yes  No

### (10) WELL LOG:

Formation: Describe by color, character, size of material and structure, and show thickness of aquifers and the kind and nature of the material in each stratum penetrated, with at least one entry for each change of formation.

| MATERIAL                    | FROM | TO |
|-----------------------------|------|----|
| Gravel & Boulders           | 0    | 3  |
| Clay Gravel                 | 3    | 6  |
| Clay Gravel Gravel Boulders | 6    | 12 |
| Gravel & Sand               | 12   | 35 |
| Sand                        | 35   | 54 |
| Gravel & Sand & Boulders    | 35   | 54 |
|                             |      |    |
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This document is part of the official  
Administrative Record for the  
Yakima Railroad Area,  
Washington State  
Department of Ecology

Work started 2/10/ 1982, Completed 2/13 1982

**WELL DRILLER'S STATEMENT:**  
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Paul W. Downing (Person, firm, or corporation) (Type or print)  
Address Rt. 3, Box 3350 Selah  
[Signed] Tom McQueen (Well Driller)  
License No. 0357 Date 2/15 1982

