TASK 1

YAKIMA RAILROAD AREA REMEDIAL INVESTIGATION
SITE HISTORY/SOIL VAPOR ASSESSMENT
SOUTHGATE LAUNDRY
YAKIMA, WASHINGTON

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YAKIMA, WASHINGTON

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1.0 INTRODUCTION

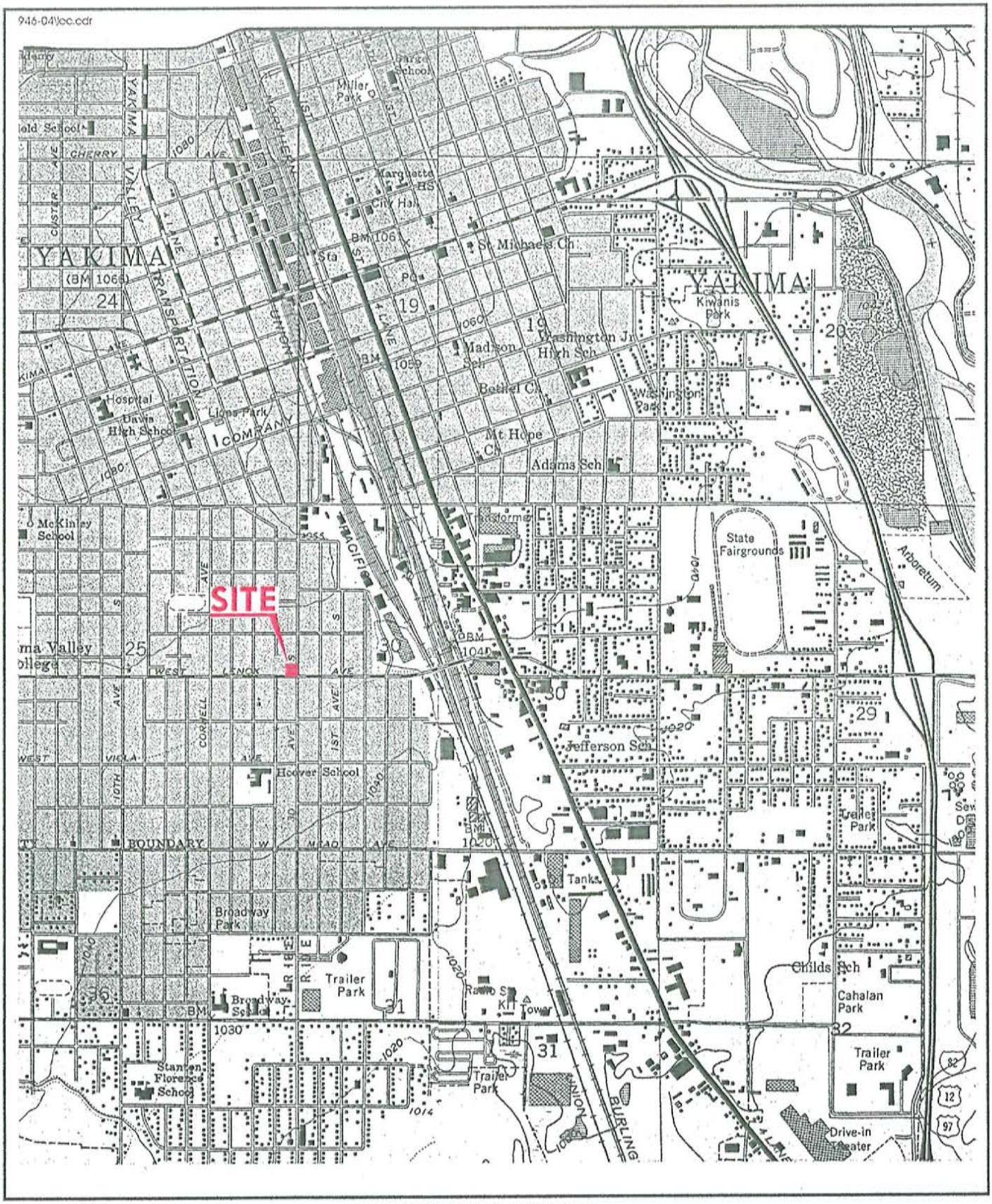
This report presents the findings of a site history evaluation and soil vapor assessment completed by Maxim Technologies, Inc. (Maxim) personnel at the Southgate Laundry facility in Yakima, Washington (Figure 1). Our field investigation was conducted on March 22, 1996. We performed the environmental investigation in accordance with our agreement with Noel Corporation dated November 29, 1995. The Site History Evaluation and Soil Vapor Assessment described in this report were prepared in accordance with Washington State Department of Ecology (Ecology) requirements for completion of Task 1 of a Yakima Railroad Area Remedial Investigation Work Plan. The Work Plan is referenced in the Agreed Order issued to Noel Corporation by Ecology (Ecology 1996).

This report describes the site history of the Southgate Laundry facility and the methods and results of the investigation. The report also provides conclusions and recommendations for further investigative activities at the facility. A glossary of technical terms and acronyms used throughout this report is included in Appendix A.

1.1 PROJECT OBJECTIVES

The purpose of activities under Task 1 of the Remedial Investigation at the Southgate Laundry facility is to gather sufficient data to identify the nature and extent of contamination and the selection of a cleanup action alternative(s). Information gathered from the site history report will be used to guide soil sampling, determine probable migration pathways, and identify possible contamination sources. The objectives of the Soil Vapor Assessment are to:

- assess the lateral extent of target volatile organic compounds (VOCs) in soil vapors of the vadose zone;
- make a preliminary determination of lateral boundaries of subsurface VOCs contamination;
- provide data to assist in selecting locations for soil borings and groundwater monitoring wells; and,
- identify potential source areas.



From USGS 7.5' Yakima West Quad

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Location Map
Southgate Laundry
Yakima, Washington
FIGURE 1

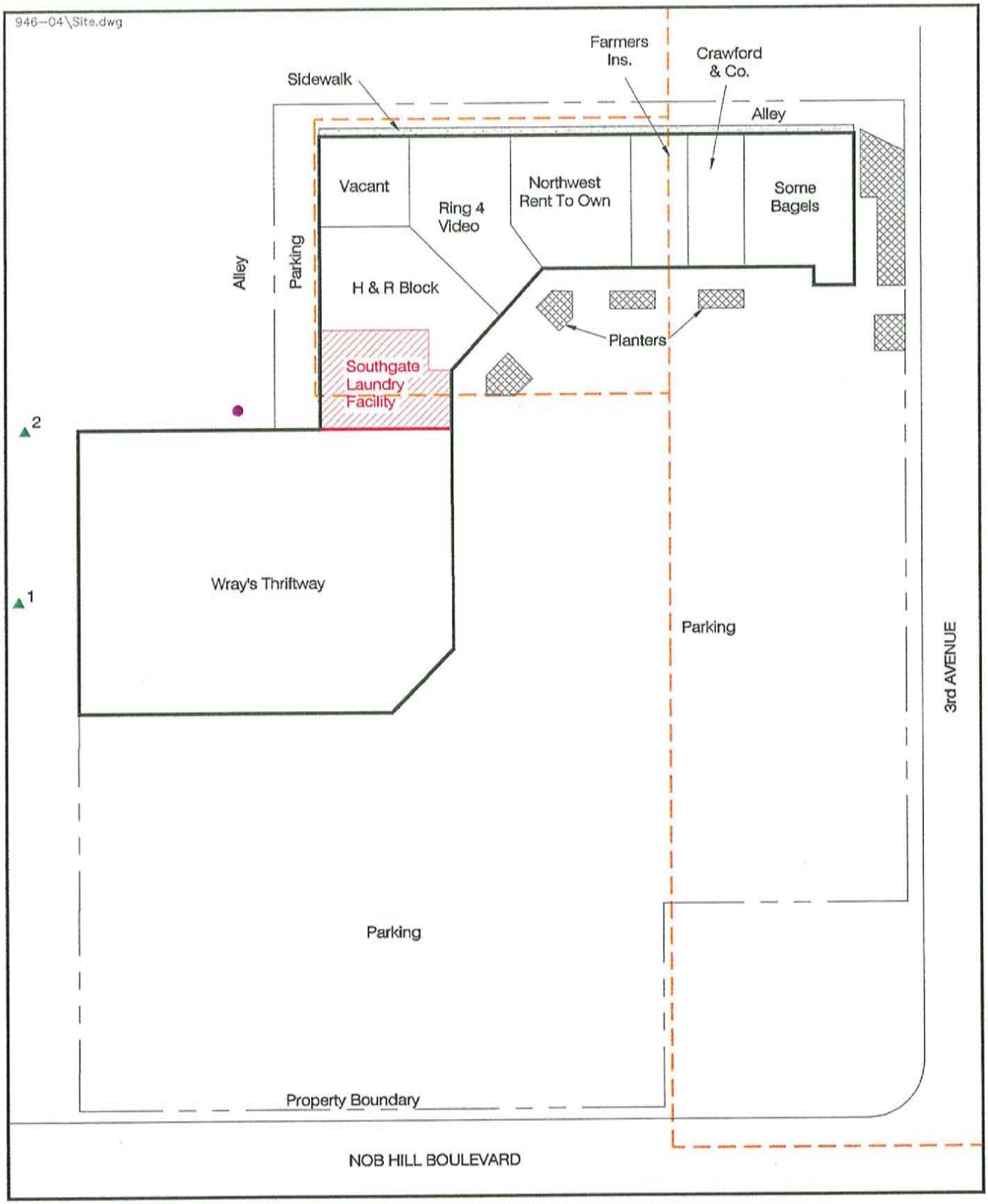
1.2 SITE DESCRIPTION

The Southgate Laundry facility is one of several businesses occupying the Southgate Shopping Center. The shopping center is located on the northwest corner of the intersection of South Third Avenue and West Nob Hill Boulevard in the southeast portion of Yakima, Washington (Figure 1). The Southgate Shopping Center is located approximately two miles west of the Yakima River and is situated on an irregularly shaped parcel, approximately 4.5 acres in size. Eight businesses, a bank and a paved parking lot are located within the parcel. The shopping center occupies most of the northern and western portions of the parcel and contains the following businesses: *Some Bagels*, *Crawford and Company*, *Farmers Insurance*, *Northwest Rent-to-Own, Ring 4 Video, H & R Block, Southgate Cleaners and Self Service Laundry*, and *Wray's Thriftway* grocery store (Figure 2). Several dry wells exist on the shopping center property to collect precipitation runoff from the buildings and parking lot. The site is served by city water, sewer, and other public utilities (Slagle, 1996).

The Southgate Laundry is located within an area designated as the Yakima Railroad Area (Roeder 1994). The Yakima Railroad Area (YRRA) was established by Ecology in response to the discovery of tetrachloroethylene (PCE) in the shallow aquifer of the area. Throughout the YRRA, depth to the water table reportedly ranges from 4 - 35 feet. Groundwater flow velocities are reported to be 6 - 12 feet per day (Ecology 1996). The predominant flow direction is to the southeast toward the Yakima River.

1.3 REPORT ORGANIZATION

Section 2.0 of this report provides a history of the site, Section 3.0 provides a description of the methods used to conduct the soil vapor assessment including the March 22, 1996 field investigation, methods of analysis and data validation, and methods of data evaluation. Results from the soil vapor investigation are presented in Section 4.0. Section 5.0 provides a summary of environmental conditions at the site and presents conclusions. Section 6.0 presents alternatives for corrective action and provides recommendations for further activities at the site.



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Site Map
Showing Location of Dry Well and Irrigation Well
Southgate Laundry
Yakima, Washington
FIGURE 2

2.0 SITE HISTORY

The Southgate Laundry facility and the Southgate shopping center were constructed in 1978. Prior to that time, the site was within a residential area composed of single family houses and empty lots. A Sanborn Fire Insurance map from 1920 shows a single-family dwelling near the northeast corner of the site and an irrigation canal on the east side of the parcel.

2.1 SITE OWNERSHIP AND OPERATION

The Southgate Laundry has been owned by the Noel Corporation since it was constructed in 1978. From 1978 to 1988, Ms. Verlina Hoff operated the Southgate Laundry at its present location under a lease agreement with the Noel Corporation. The Southgate Laundry has historically conducted dry cleaning at the facility in addition to the coin-operated washing and drying business. During the first few years under the operation of Ms. Hoff, a self-service dry cleaning machine was employed at the facility. The Southgate Laundry was subleased by Ms. Hoff to an unknown operator from 1988 to 1993. Mr. Sam Kim has operated and leased the business since 1993 to the present time.

2.2 HAZARDOUS MATERIALS

Staff and customers at the Southgate Laundry facility have used a variety of dry cleaning solvents. These solvents have been composed of various organic chemicals including petroleum-based compounds and PCE. Chemical spills or leaks have occurred on the concrete floor of the facility. A 5 - 10 gallon release of PCE occurred at the self-serve dry cleaning machine in 1978. The overall condition of the floor was reported as good with cracked areas in 1992 (Slagle 1996). A 110-gallon tank was reportedly located at the rear of the facility and formerly contained PCE (Slagle 1996). The manager of the business stated that this tank had been out of service for approximately five years (Kim 1996). Currently, dry cleaning solvents are purchased in one and two gallon containers and stored on shelves behind the cleaning machine.

Waste management practices at the Southgate Laundry include disposal through the use of the local solid waste management facility. All used dry cleaning solvents are recycled on-site (Kim, 1996). The dry cleaning machines are set in sumps in the concrete floor.

A Site Screening Investigation (SSI) was performed at the site in 1989 on behalf of the U.S. EPA (Pitz 1989). The 1989 SSI recorded that the Southgate Laundry used an estimated 400 gallons of tetrachloroethylene (PCE) dry-cleaning solvent per year. At that time, solvent was stored in a 55-gallon steel drum located inside the building. The drum was covered by a bolted steel lid and was located on a wooden loft approximately eight feet above the dry cleaning machine. Solvent was delivered to the facility approximately two times per month by truck. All used solvent was recycled on-site and no other hazardous material was recorded for this site. The 1989 SSI also reported that wastes generated on-site included spent carbon filters and wastewater separated from reclaimed PCE. Approximately 18 - 20 spent filters were generated per year and disposed of in the local municipal solid waste landfill. Less than three gallons of wastewater was generated per year at the time of the SSI. The SSI concluded that there was no evidence of past on-site release or inappropriate disposal of hazardous substances. The site inspection also determined that all wastes generated in the past during normal site operations had been handled and disposed of properly. The 1989 SSI report is included in Appendix B.

2.3 HISTORY OF PHYSICAL CHANGES

Since the time of its construction in 1978, two self-service dry cleaning machines have been installed and removed from the Southgate Laundry. Also, solvents are now delivered and stored in smaller containers to improve inventory control and reduce spill hazards.

Physical changes that have occurred in the area currently containing the Southgate Shopping Center include the removal of a gas station and associated underground storage tank (USTs) and an UST removal at a former car wash. A gas station located at the southeast corner of the site was removed between 1973 and 1977. Tanks were reportedly removed, however no documentation of the tank closures has been located. The former Southgate Car Wash functioned as a combination gas station/car wash. Two 8,000 gallon UST's containing gasoline at this facility were decommissioned and removed in 1990.

2.4 HISTORY OF SITE REGULATORY ACTIONS

The Southgate Laundry site has been under consideration by the U.S. EPA and Ecology since January 1989. A summary of regulatory actions is presented in Table 1.

TABLE 1
SUMMARY OF REGULATORY ACTIONS
SOUTHGATE LAUNDRY FACILITY
YAKIMA, WASHINGTON

DATE	COMPLIANCE ACTION
January 1989	EPA conducts a site assessment to determine hazard ranking of the Southgate Laundry Site
November 1989	EPA Screening Site Inspection Report concludes that evidence of past on-site releases have not been identified and all waste appears to be managed properly.
January 1990	EPA notifies Southgate Laundry that the site will not be considered for the EPA Superfund Program and is referred to the State of Washington for further consideration.
February 1991	Ecology notifies Southgate Laundry that the site has been selected for a site hazard assessment.
August 1991	Ecology site hazard assessment of the Southgate Laundry facility is completed and receives a ranking of 3 out of 5.
November 1992	Ecology conducts a site investigation and soil sampling event at Southgate Laundry.
February 1993	Ecology issues a Notice of Potential Liability for the Release of Hazardous Substances to Noel Canning Corporation for the Southgate Laundry site.
May 1994	Ecology conducts a site investigation and soil sampling event at Southgate Laundry.
August 1994	Ecology reissues a Notice of Potential Liability for the Release of Hazardous Substances to Noel Canning Corporation for the Southgate Laundry site based on findings from the 1994 site investigation and soil sampling.
January 1996	Ecology issues an Agreed Order to Noel Corporation to conduct a Remedial Investigation.
Relevant documents are included in Appendix B.	

2.5 GROUNDWATER SUPPLIES AND WELLS

Two water supply wells are located on the west side of the Southgate Shopping Center (Figure 2). Well 1 provides irrigation water for the Southgate Shopping Center landscaping. Well 2 is currently unused and was originally installed to provide refrigeration cooling for the supermarket adjacent to the wells. Both wells are completed at an interval of approximately 30 to 60 feet below ground surface. Well logs are provided in Appendix C.

3.0 METHODS

This section describes the methods and procedures used to conduct the Southgate Laundry Soil Vapor Assessment. All work conducted during the Soil Vapor Assessment was completed in accordance with the Yakima Railroad Area (YRRA) work plan for remedial investigation activities (Ecology 1996) and Maxim's standard operating procedures (Appendix D).

To achieve objectives listed in Section 1.1 of this report, Maxim personnel collected 22 samples from soil below and adjacent to the Southgate Laundry facility on March 22, 1996. This section describes the borehole configuration, our rational for borehole location and depth, and sample collection procedures. This section also describes procedures employed for sample analysis, equipment decontamination and site safety precautions.

3.1 SAMPLE COLLECTION AND ANALYSIS

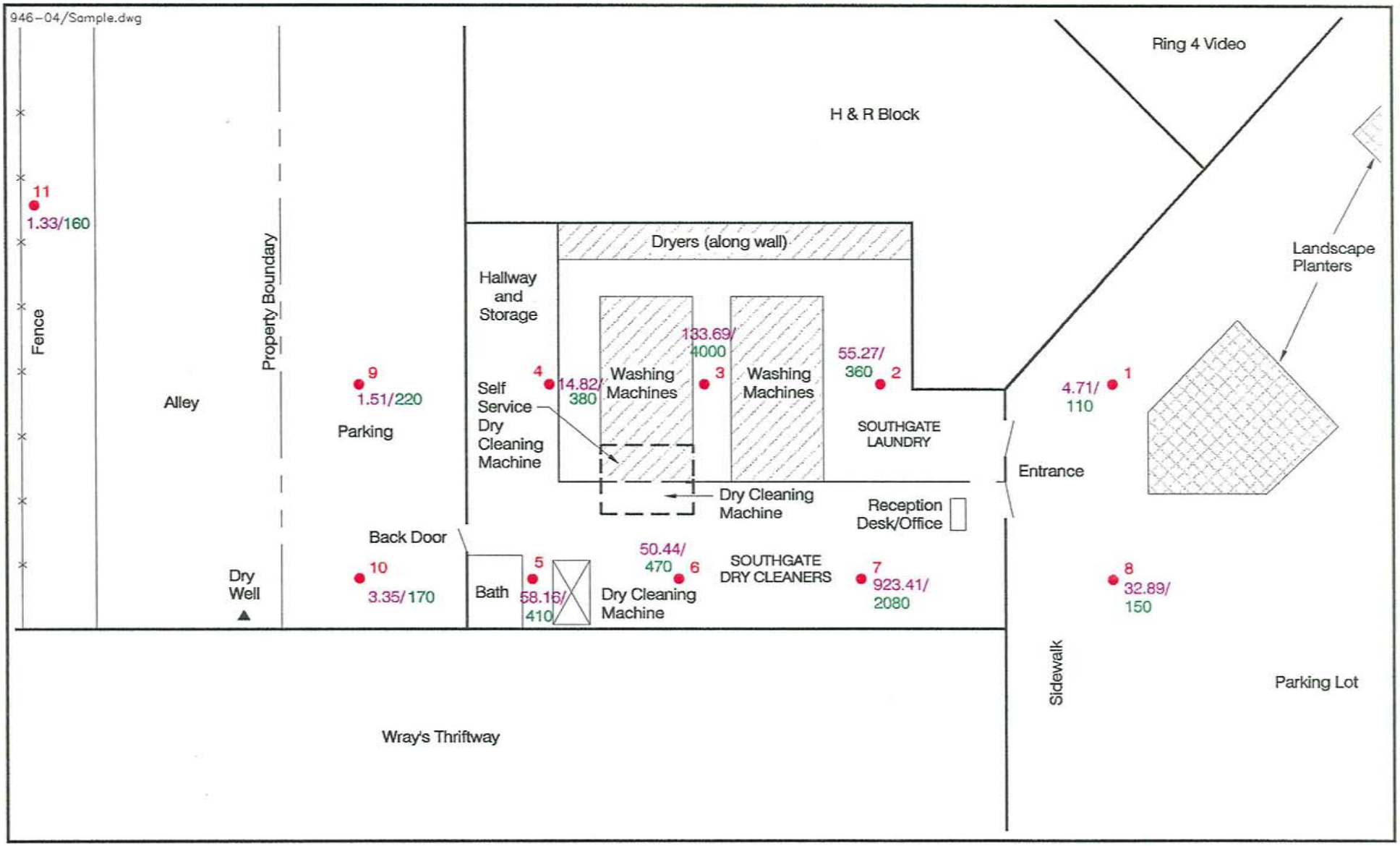
Maxim personnel directed the collection of eleven soil vapor samples and eleven soil material samples for analysis (Table 2). Soil vapor samples were collected from depths ranging from 0.5 to 8.0 feet below ground surface. Soil material samples were collected from depths of 0.5 to 8.5 feet below ground surface.

3.1.1 Borehole and Sample Location Rationale

Soil vapor sample locations were selected to achieve two goals: (1) to delineate the lateral extent of target volatile organic compounds (VOCs) in the vadose zone, and (2) identify potential source areas. Soil vapor samples were analyzed on-site to facilitate selection of appropriate soil boring locations. Maxim personnel directed borehole coring and sample collection depths to further delineate the extent of VOCs in the subsurface. To accomplish these objectives, Maxim personnel directed the collection of 11 soil vapor samples from locations plotted on a 20-foot grid system throughout the facility and adjacent parking areas. Soil vapor samples were collected from material underlying the facility, from material underlying the asphalt parking lot and concrete sidewalk east of the facility, and from soil underlying the asphalt parking lot west of the facility (Table 2). Soil vapor sample collection locations are shown on Figure 3.

TABLE 2
SUMMARY OF BOREHOLE AND SAMPLE COLLECTION DATA
SOIL VAPOR ASSESSMENT
SOUTHGATE LAUNDRY

SAMPLE ID	SAMPLE DEPTH	BOREHOLE LOCATION	SAMPLE MEDIUM
SG-1	5.5	Sidewalk east of the Southgate Laundry	soil gas
SM-1	6.0	Sidewalk east of the Southgate Laundry	soil
SG-2	4.5	Inside Southgate Laundry facility	soil gas
SM-2	2.0	Inside Southgate Laundry facility	soil
SG-3	5.5	Inside Southgate Laundry facility	soil gas
SM-3	1.5	Inside Southgate Laundry facility	soil
SG-4	4.5	Inside Southgate Laundry facility	soil gas
SM-4	2.0	Inside Southgate Laundry facility	soil
SG-5	3.0	Inside Southgate Laundry facility	soil gas
SM-5	2.0	Inside Southgate Laundry facility	soil
SG-6	4.0	Inside Southgate Laundry facility	soil gas
SM-6	2.0	Inside Southgate Laundry facility	soil
SG-7	0.5	Inside Southgate Laundry facility in confined space between two concrete floors	soil gas
SM-7	0.5	Inside Southgate Laundry facility/floor dirt	soil
SG-8	7.0	Parking lot east of the Southgate Laundry	soil gas
SM-8	8.5	Parking lot east of the Southgate Laundry	soil
SG-9	7.5	Parking area west of the Southgate Laundry	soil gas
SM-9	5.0	Parking area west of the Southgate Laundry	soil
SG-10	8.0	Parking area west of the Southgate Laundry	soil gas
SM-10	6.0	Parking area west of the Southgate Laundry	soil
SG-11	7.5	Background sample approx. 45 feet west of the Southgate Laundry	soil gas
SM-11	5.0	Background sample approx. 45 feet west of the Southgate Laundry	soil



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Facility Map Showing Sample Locations
Southgate Laundry
Yakima, Washington
FIGURE 3

3.1.2 Sample Depth and Soil Sample Rationale

Sample collection depths for soil vapor were determined by the depth-of-refusal for the sample drive point. Soil vapor samples were collected at depths ranging from four to eight feet below ground surface with the exception of Sample SG-7 which was collected in the confined space between two concrete slabs.

Soil material samples were collected to facilitate comparison with soil vapor sample results. Soil material samples were collected from either the same borehole or from a borehole adjacent to each soil vapor sample location. Both soil material and soil vapor samples were collected from the same borehole at locations that required drilling through an indoor concrete floor. Soil material samples collected from these boreholes were collected from a location that was angle-drilled from the original borehole to obtain an undisturbed sample. The rationale for collecting soil material samples in addition to the soil vapor samples was to determine:

1) what kind of correlation exists between soil material and soil vapor at the site, and

2) to provide additional information for developing an appropriate sampling and analysis plan to conduct a YRRA Soil/Groundwater Investigation and Analysis.

Soil material sample depths ranged from 2.0 to 8.0 feet below ground surface with the exception of S-7 which was collected from inside the Southgate facility. Soil material samples were collected at shallower depths than soil vapor samples to provide additional information regarding the source of soil vapor contamination.

3.1.3 Soil Vapor and Material Sampling Procedures

Soil vapor and material samples were collected using a small-diameter drive point. Sample collection was conducted using a Transglobal Environmental Geosampling (TEG) Strataprobe™ unit. The Strataprobe is a direct-push hydraulic and percussion drive-point sampling system. Discrete soil samples were collected using a retractable piston sampler with a split spoon. A two-inch diameter coring tube was driven to depth-of-refusal. Samples were collected in disposable clear plastic liners. Once removed from the sampler, the sleeves of the liner were capped and transported to a mobile laboratory for analysis. Soil vapor samples were collected using a steel vapor tip. Soil vapor was

withdrawn from a continuous, inert 1/8-inch nylaflow tube using a small calibrated syringe. The first three volumes of the sample tube were discarded to flush the tube before sample collection. Twenty cubic centimeters of in-situ soil vapor was then withdrawn from the syringe, logged and immediately transferred to a mobile lab for analysis.

Decontamination procedures were followed before sample collection at each location. All external probe parts, drive rod and samplers were cleaned of excess dirt and moisture before sampling. Nondisposable soil samplers and drive rods were washed before reuse. Internal vapor sampling nylaflow tubing and sampling ports were flushed with ambient air between samples. Tubing was replaced when water, dirt, or any material was observed in the tubing and when concentrations greater than 100 parts per million by volume (ppmv) were detected in the previous sample.

3.1.4 Soil Vapor and Material Analytical Procedures

Sample analysis was conducted through the use of a mobile laboratory. The mobile lab is certified by the Washington Department of Ecology to analyze for organics, metals, hazardous waste characteristics using EPA-approved methods. Soil vapor samples were analyzed for a suite of 14 halogenated hydrocarbons plus benzene, toluene, ethylbenzene and xylenes (BTEX) by gas chromatography. Soil material samples were analyzed for a suite of 15 halogenated hydrocarbons plus BTEX. All constituents of analysis are listed in Appendix G. Extracts and gas from each sample were directly injected into a Shimadzu 14A gas chromatograph equipped with a 30-meter Restek Rtx-5 megabore capillary column, a 105 meter Restek 502.2 capillary column, a photoionization detector and a Hall electrolytic detector following EPA Methods 601/8010 and 602/8020. Data from the gas chromatographs were integrated and plotted by Shimadzu CR501 Data Processors. Separate chromatographs were printed for each detector. The resulting chromatograms were inspected at the end of each run and the data were entered into an IBM compatible computer for on-site processing and evaluation.

3.1.5 Background Samples

One soil sample was collected from a 5.0-foot depth and one vapor sample was collected at 7.5 feet below ground surface at sample location 11 (Figure 3) to determine background concentrations of chlorinated compounds in the native soil. Sample location 11 is approximately 45 feet west of the facility. The soil and vapor background samples were collected and analyzed in accordance with field and analytical procedures described in this section.

3.1.6 Applicability and Limitations of Equipment Used

The percussion-driven, small diameter drive point of the Strataprobe is designed to collect soil, groundwater and soil vapor samples to depths of fifty feet in most types of soil. Compared to conventional boring methods, the use of a small-diameter drive point unit such as the Strataprobe significantly reduces cost, time, and hazardous waste associated with subsurface site investigations. The advantages of using the Strataprobe include: reduced cuttings, continuous coring, ability to sample discrete intervals for soil vapor, disposable split spoon liners, easy decontamination procedures, and more flexibility in choice of sample locations. The limitations of using the smaller drive-point unit include: less driving capacity than a conventional drill rig so depth of borehole is limited by the nature of the subsurface material, the sample interval is longer (less discrete) due to a smaller diameter borehole sampler.

A mobile laboratory was used to analyze samples at the site as they were collected. TEG's on-site analyses capabilities include fuels, solvents, fixed gases, metals and pesticides. The laboratory used for this project is certified for analysis of hazardous materials by EPA methods and by the Washington Department of Ecology. Advantages of using an on-site mobile laboratory include: rapid turn-around time for sample results which assists in sample location selection, better quality control over chain-of-custody maintenance, and direct communication with the chemical analyst to facilitate interpretation of results. Disadvantages include: mobilization costs may be greater than analytical costs at a stationary laboratory depending on the number of samples, and mobile labs tend to have a more limited suite of analytical capabilities than stationary labs.

3.1.7 Quality Control/Quality Assurance

Field and sample handling procedures were conducted in accordance with the *Yakima Railroad Area Work Plan* (Ecology 1996) and Maxim SOPs (Appendix D). Three Quality Assurance/Quality Control (QA/QC) samples were collected for the soil vapor analysis: two duplicates and one method blank. Two duplicates and a method blank were also collected for soil material analysis. A chain-of-custody was maintained from sample collection to laboratory analysis and is included in Appendix G.

All soil vapor and soil material samples were analyzed on-site as described in Section 3.1.3 of this document. All soil vapor samples were analyzed to a method detection level (MDL) of 25 parts per billion (ppb) with the exception of 1,1-dichloroethene which had an MDL of 100 ppb. Soil samples were analyzed to a MDL of 0.05 mg/kg (50 ppb). A complete list of sample analytes are provided in the laboratory reports (Appendix G). The TEG Northwest laboratory quality assurance and quality control procedures are conducted following the guidelines and objectives which meet or exceed certification/accreditation requirements of Washington Department of Ecology. The Quality Control Program is a consistent set of procedures which assures data quality though the use of appropriate blanks, replicate analyses, surrogate spikes, and matrix spikes and the use of reference standards that meet or exceed EPA standards. Method-specific QA/QC procedures are included in Appendix G.

Analytical results of soil vapor samples were reported in units of parts per billion. These values have been converted to micrograms per liter (μg/L) as required by the YRRA Work Plan (Ecology 1996). The method for conversion from parts per billion to μg/L is described in Appendix H.

3.2 SITE SAFETY PRECAUTIONS

Before initiating investigative activities at the site, Maxim personnel developed a site safety plan that addressed all safety aspects of potential contaminants and site operations. The plan contained information concerning known or suspected hazards, routine and special safety procedures to be followed, and other instructions for safeguarding the health of field personnel. A utility survey was conducted prior to beginning work at the site. All on-site personnel were required to wear appropriate personal protective equipment including hard hats, hearing protection, safety glasses, disposable nitrile gloves and a

half-mask respirator with a high-efficiency particulate air (HEPA) and solvent filter during the initial part of the investigation and during exposure to contents in the concrete vault.

All field personnel had received the OSHA 40-hour Hazardous Material Protection Training or an 8-hour refresher course within 12 months of the site investigation and were briefed concerning potential site-specific hazards before field work began. Individuals in the work area were cleared for respirator use and fit tested for a respirator on-site and in accordance with OSHA requirements. Hand and face washing was required prior to eating, drinking, or smoking after entering an area containing suspected hazardous substances.

4.0 RESULTS

This section presents the results of our Soil Vapor Assessment of the Southgate Laundry site. Analytical results from this investigation are presented in this section. The estimated lateral extent of soil contamination is also described.

4.1 SOIL VAPOR ASSESSMENT

Four constituents of analysis were detected in soil vapor samples collected from the Southgate Laundry site (Table 3). PCE was consistently detected in all vapor samples. Concentrations of PCE ranged from approximately 15 to 130 μg/L in vapor collected from material underlying the facility at a depth of 3 to 5.5 feet. Vapor samples containing the highest concentrations of PCE were extracted from boreholes drilled into material underlying the Southgate facility. Soil vapor samples containing the lowest concentrations of PCE were extracted from material underlying the parking lot west of the facility (Figure 3). The background soil vapor sample contained 1.33 μg/L PCE.

The highest measured concentration of PCE (923 μg/L) and its breakdown products Trichloroethene and cis-1,2 Dichloroethene was present in a vapor sample collected from borehole Number 7 (SG-7) in a space between two concrete floors of the Laundry facility. This indicates that PCE releases that may have occurred in the Southgate Laundry facility have not been contained by the concrete floor of the facility. The presence of high concentrations of PCE in a confined space below the facility provides a source of contamination to utility corridors such as the sewer line that is located below the center of the facility (Figure 2).

TABLE 3
ANALYTES DETECTED IN SOIL MATERIAL AND SOIL VAPOR SAMPLES
SOIL VAPOR ASSESSMENT
SOUTHGATE LAUNDRY
YAKIMA, WASHINGTON

Sample Identification	Depth [1] (feet)	Soil Vapor (µg/L)	Measured Analyte
SG-1	5.5	4.71	PCE[2]
SG-2	4.5	55.27	PCE
SG-3	5.5	133.69	PCE
SG-4	4.5	14.82	PCE
SG-5	3.0	58.16	PCE
SG-6	4.0	50.44	PCE
SG-7	0.5	923.41	PCE
			Trichloroethene
			cis-1,2 Dichloroethene
			Carbon Tetrachloride
SG-8	7.0	32.49	PCE
SG-9	7.5	1.51	PCE
SG-10	8.0	3.35	PCE
SG-11	7.5	1.33	PCE

1 feet below asphalt or concrete floor
2 PCE = Tetrachloroethylene

4.2 SOIL MATERIAL ASSESSMENT

Results of soil material analysis are provided in Table 4. One constituent of analysis (PCE) was detected in all soil material samples collected from the site. Concentrations of PCE ranged from approximately 360 to 4,000 µg/kg in material samples collected from soil underlying the facility at depths of 1.5 to 2.0 feet below the concrete floor. A high concentration of PCE (2,080 µg/kg) was measured in sample S-7 collected from soil material adjacent to the self-service dry cleaning machine in the location of an historical release. Soil material samples containing the highest concentrations of PCE were collected from soil underlying the center of the facility. Soil material samples containing

the lowest concentrations of PCE were extracted from material underlying the parking lot east of the facility (Figure 3). The background soil sample contained 160 μg/kg PCE.

TABLE 4
ANALYTES DETECTED IN SOIL MATERIAL SAMPLES
SOIL VAPOR ASSESSMENT
SOUTHGATE LAUNDRY
YAKIMA, WASHINGTON

Sample Identification	Depth [1] (feet)	Soil Material (μg/kg)	Measured Analyte
S-1	6.0	110	PCE
S-2	2.0	360	PCE
S-3	1.5	3,990	PCE
S-4	2.0	380	PCE
S-5	2.0	300	PCE
S-6	2.0	330	PCE
S-7	0.5	2,080	PCE
S-8	8.5	150	PCE
S-9	5.0	220	PCE
S-10	6.0	170	PCE
S-11	5.0	160	PCE

1 feet below asphalt or concrete floor
2 PCE = Tetrachloroethylene
Recommended clean-up level for PCE in soil is 80 μg/kg (Ecology)

4.3 CORRELATION BETWEEN SOIL VAPOR AND SOIL MATERIAL SAMPLE RESULTS

Soil material samples were collected and analyzed to determine if there was a correlation between soil vapor and soil material in PCE concentration. Results of both soil vapor and soil material analysis are shown in Figure 3. Vapor and material sample results did not closely correlate in that the concentration of PCE in one could not be used to accurately predict the concentration in another. However, in all locations where soil vapor contained a concentration of PCE greater than 50 μg/L, the soil also contained relatively high concentrations of PCE (greater than 250 μg/kg).

5.0 SUMMARY AND CONCLUSIONS

The following statements summarize the findings of the Site History and Soil Vapor Assessment of the Southgate Laundry in Yakima, Washington.

Site History

The Southgate Laundry facility has been in business as a dry cleaning business since 1978. In 1978, release of PCE near the self-serve dry cleaning machine was recorded.

Extent of PCE Contamination

Soil underlying, and in the vicinity of the Southgate Laundry facility contains measurable concentrations of PCE in soil vapor at three to five feet below ground surface, and in soil material at two feet below ground surface.

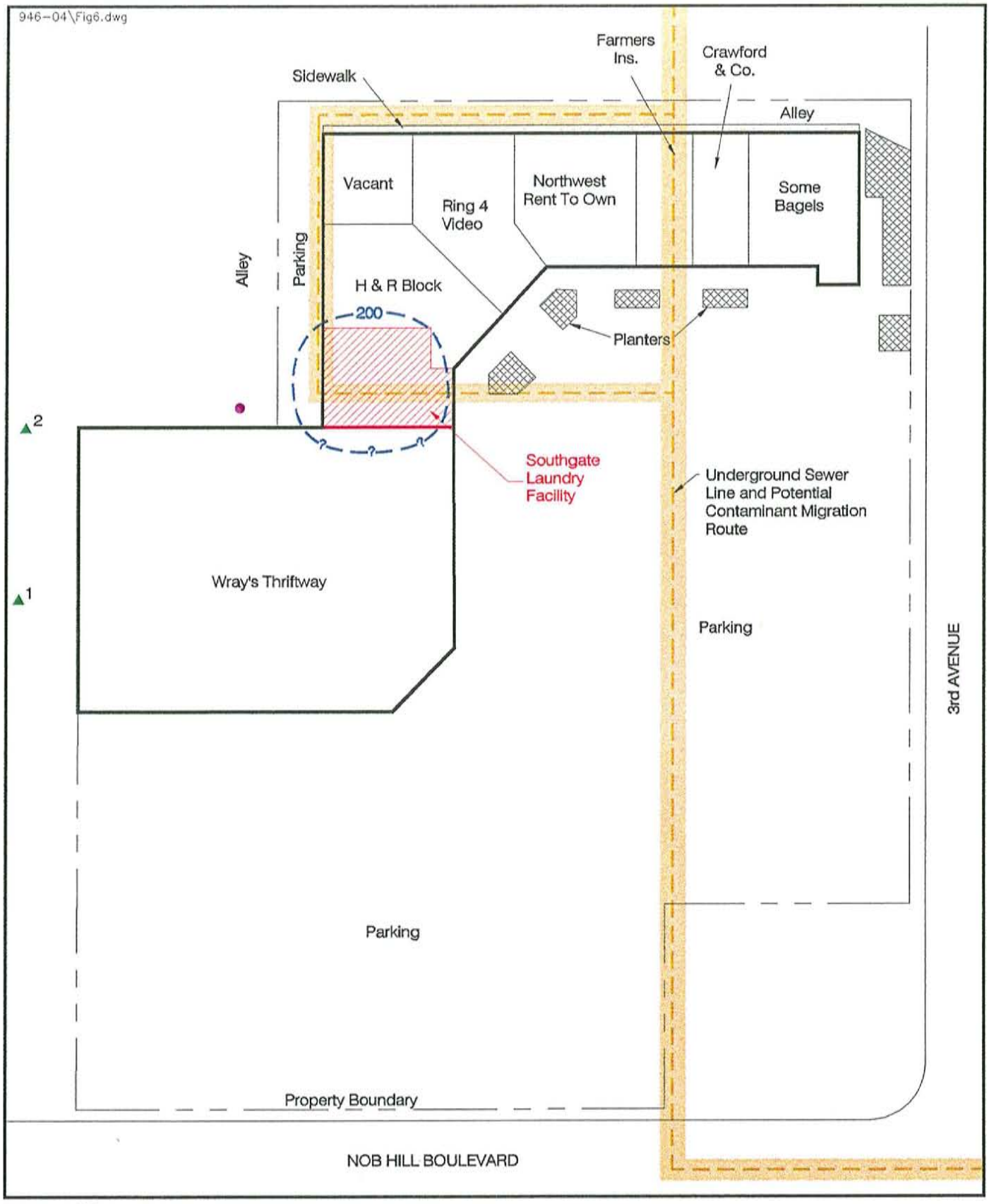
The lateral boundary of subsurface PCE contamination at a depth of two feet and at concentrations greater than 100 μg/kg is estimated to be as shown in Figure 4. Subsurface utility corridors are also potential migration routes for liquids and vapors containing PCE (Figure 4).

Nature of PCE Contamination

The highest concentrations of PCE in soil vapor and soil material were measured in samples collected at the center of the facility, near the removed self-service dry cleaning machines (Borehole 3, Figure 3) and from soil vapor and soil material collected at the front of the facility between the two concrete slabs (Borehole 7, Figure 3).

Potential Sources of PCE Contamination

Soil material sample analysis indicates that the source of PCE contamination in soil vapor underlying the Southgate Laundry facility is likely to be from the ground surface and that areas having higher PCE concentrations in soil vapor correlate roughly with areas of higher PCE concentrations in soil material. A potential source of PCE contamination is historic uncontrolled solvent release(s) from dry cleaning operations at the Southgate Laundry facility.



N

0 Feet 60

MAXIM 946.04

- Dry Well
- Water Supply Well
- Isopleth of PCE Concentration at 200 µg/kg in Soil (dashed where inferred)

Estimated Lateral Extent of PCE Contamination in the Vadose Zone
Southgate Laundry
Yakima, Washington
FIGURE 4

6.0 RECOMMENDATIONS

1. **Submit this report to the Washington Department of Ecology.**

2. **Conduct a Soil/Groundwater Investigation and Analysis in accordance with the YRRA Work Plan.** Delineate the lateral and vertical extent of contamination in the soil and groundwater and identify contaminant source(s). The investigation should include the following elements:

   - Collect soil vapor samples in areas underlying the Wray Thriftway and H & R Block facilities to further delineate the lateral extent of contamination in the subsurface.

   - Collect and analyze soil samples underlying the area south of the Southgate Laundry to delineate the lateral extent of contamination.

   - Collect and analyze soil samples directly underlying the Southgate Laundry to delineate vertical extent of contamination

   - Investigate the presence of PCE vapors in utility corridor of sewer line.

   - Investigate the quality of groundwater underlying and downgradient from the Southgate Laundry facility to delineate lateral extent of contamination (if any) to groundwater and to further identify the source of contamination.

7.0 LIMITATIONS

This work was performed in accordance with the generally accepted practices of other consultants undertaking similar studies at this time and in the same geographical area. In completing this project, Maxim observed the degree of care and skill generally exercised by other consultants operating under similar circumstances and conditions. Maxim's findings and conclusions must be considered not as scientific certainties, but as opinions based on our professional judgement concerning the significance of the data gathered during the course of the evaluation. Other than this, no warranty is expressed or implied.

This study and report has been prepared on behalf of and for the exclusive use of Noel Corporation, solely for use in environmental evaluation of the Southgate Laundry site in Yakima, Washington. This report and the findings contained herein shall not, in whole or in part, be disseminated or conveyed to any other party, nor used by any other party in whole or in part, without the prior written consent of the Noel Corporation.

Report Prepared by:

Alice Stanley
Environmental Scientist

Report Reviewed by:

Rachel Tauman
Office Manager

8.0 REFERENCES

Ecology 1996. Agreed Order No. DE 95TC-C239 to Rodger Noel, President of Noel Corporation, and William L. Weigand, Jr., Attorney for Noel Corporation, by the State of Washington, Department of Ecology, January 5, 1996. Includes Yakima Railroad Area Work Plan by reference.

Ecology 1993. Model Toxics Control Act Soil Cleanup Standards WAC 173-340-740 (2) Table 2.

EPA 1986. *Test Methods for Evaluating Solid Waste*, EPA Guidance Document SW-846.

Kim, 1996. Personal communication between Mr. Sam Kim, Manager Southgate Laundry, with Ms. Rachel Tauman, Maxim Technologies, Inc., Yakima, Washington.

Pitz, Charles F. 1989, Memorandum to John Osborn, U.S. EPA, Region 10, transmitting a Screening Site Inspection report for the Southgate Laundry Site conducted by Ecology and Environment, Inc. January 31, 1989.

Roeder, Rick 1994, Letter to Noel Canning Corporation from Rick Roeder, Site Manager, Yakima Railroad Area, Toxics Cleanup Program, Washington Department of Ecology. August 1, 1994.

Slagle, 1996. Personal communication between Mr. Gary Slagle, Manager Noel Corporation, with Ms. Rachel Tauman, Maxim Technologies, Inc., Yakima, Washington.

APPENDIX A

GLOSSARY OF TERMS

TECHNICAL TERMS AND ACRONYMS

BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
Ecology	Washington State Department of Ecology
EPA	Environmental Protection Agency
µg/L	micrograms per liter
µg/Kg	micrograms per kilogram
OSHA	Occupational Safety and Health Act
PCE	Perchloroethylene Perchlorethylene Perk Tetrachloroethylene Tetrachloroethylene
PPB	parts per billions
PPM	parts per million
QA/QC	Quality Assurance/Quality Control
RCRA	Resource Conservation and Recovery Act
SSI	Site Screening Study conducted by the EPA
VOC	Volatile Organic Compounds
YRRA	Yakima Railroad Area

APPENDIX B

DOCUMENTATION OF REGULATORY ACTIONS REGARDING THE SOUTHGATE LAUNDRY

ecology and environment, inc.
101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
International Specialists in the Environment

MEMORANDUM

DATE: November 29, 1989

TO: John Osborn, FIT-RPO, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Charles F. Pitz, FIT-PM, E & E, Seattle CFP

SUBJ: Revised HRS Score
Southgate Laundry and Dry Cleaners
Yakima, Washington

REF: TDD F10-8806-04
PAN FWA0585SA

CC: William Glasser, HWD-SM, USEPA, Region 10
Andrew Hafferty, AFITOM, E & E, Seattle

Ecology and Environment, Inc. conducted a Screening Site Inspection (SSI) at the Southgate Laundry and Cry Cleaners site in Yakima, Washington, on January 31, 1989. At the time of this inspection, no evidence of past on-site release or disposal of hazardous substances was identified. All wastes, including hazardous wastes, generated in the past during normal site operations have been handled and disposed of properly. Due to the lack of a viable waste quantity, no revised HRS score package was prepared for the Southgate Laundry and Dry Cleaners site.

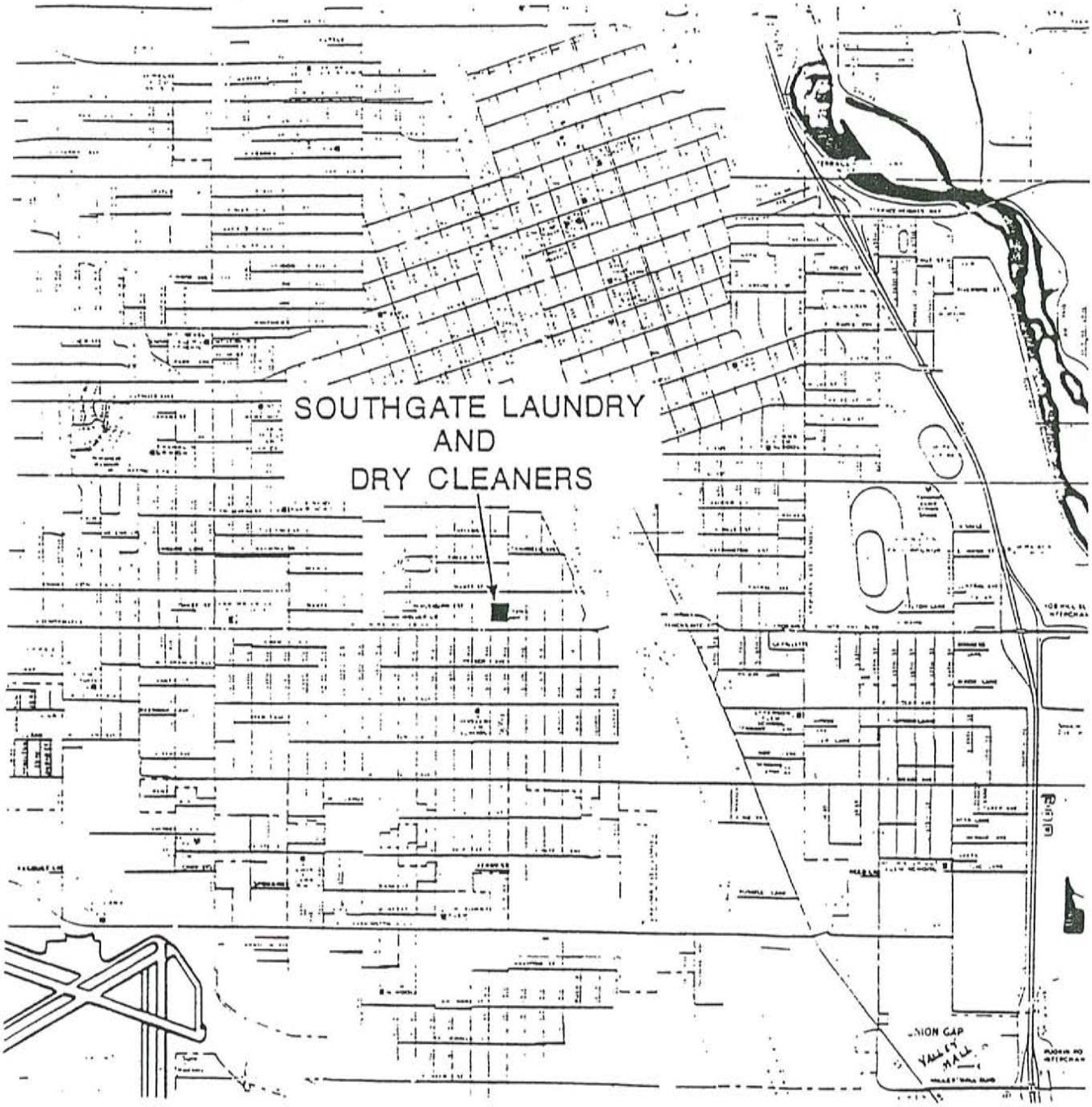
CFP:rls

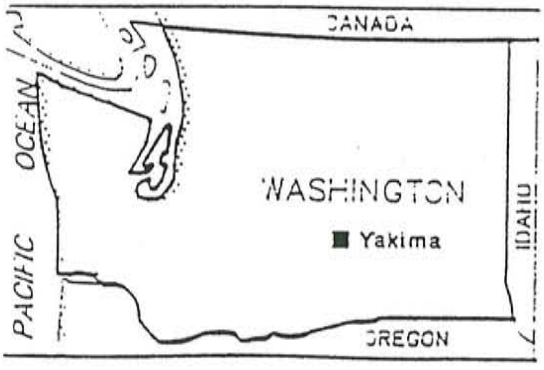
The Southgate Laundry and Dry Cleaners uses an estimated 400 gallons of tetrachloroethene (PCE) drycleaning solvent per year. Feedstock solvents are delivered approximately twice monthly by a Seattle supplier. New solvents are pumped from the suppliers truck to a 55-gallon steel drum located inside the building. This drum, which is covered by a bolted steel lid, is located on a wooden loft approximately 8 feet above the drycleaning machine. When it is necessary to replenish the drycleaning machine solvent reservoir, solvents are pumped from the drum. The feedstock drum was perched with its base partially over the edge of the loft at the time of the inspection, and no spill-containment features were present.

When clothing is drycleaned at the Southgate Laundry, PCE solvents in the solvent reservoir of the drycleaning washer are pumped first through a consecutive series of six carbon-core filters located in the loft. The filtered PCE then is pumped back to the washing machine, where it is used to dryclean clothing. The majority of the PCE eventually is returned to the reservoir during a spin-out cycle in the washer. After the clothes have been washed, the PCE that remains in the clothing is heated and driven off as vapor in a reclaiming machine (essentially equivalent to a dryer). The vapors from the reclaimer are run through a cooling coil chamber, which reliquifies the incoming vapors, and subsequently separates any wastewater from the PCE. The reclaimed PCE eventually returns to the reservoir. Those vapors that are able to bypass the condenser chamber reportedly are trapped further downline in a carbon-bed stripper located in the loft. At the end of each working day, steam heat is reportedly used to revaporize any PCE trapped in the stripper. This vapor then is chilled and condensed and the reclaimed PCE once again returns to the solvent reservoir on the washer.

The only wastes that reportedly are generated on site include spent filters and the wastewater that has been separated from the reclaimed PCE. The spent filters (approximately 18 to 20 per year) are thrown out as refuse for eventual disposal in the local landfill. The wastewater that is separated from the reclaimed PCE is collected and disposed of in the city sewer system. Reportedly, the volume of wastewater generated each year is very small (less than 3 gallons), dependent upon the original amount added to dilute the PCE in the washer. There is no record of any analysis ever being performed on either the filters or the wastewater for PCE content.

At the time of the inspection, it was noted that PCE vapors were abnormally strong throughout the facility, particularly in the vicinity of the drycleaning work area. It is probable that the volume of PCE consumed each year by the business, in large part, can be accounted for by volatilization loss into the work atmosphere. A loose fitting metal lid covers the solvent reservoir, providing a probable route for a





ecology & environment, inc.	
Job: F10-8806-04	Waste Site: WA 0585
Drawn by: B.T.	Date: March 15, 1989

FIGURE 1
LOCATION MAP
SOUTHGATE LAUNDRY AND DRY CLEANERS
Yakima, WA

POTENTIAL HAZARDOUS WASTE SITE — II. IDENTIFICATION

EPA — SITE INSPECTION REPORT — 01 STATE: MA — 02 SITE NUMBER: 0540194303

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

II. HAZARDOUS CONDITIONS AND INCIDENTS

___ A. GROUNDWATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 10,500 — 04 NARRATIVE DESCRIPTION

None known, observed, or suspected.

01 ___ B. SURFACE WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None known, observed, or suspected.

01 X C. CONTAMINATION OF AIR — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: > 50,000 — 04 NARRATIVE DESCRIPTION

Potential discharge of perchloroethylene vapors to atmosphere from dry cleaning operation.

___ D. FIRE/EXPLOSIVE CONDITIONS — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Perchloroethylene is not highly flammable or explosive.

01 X E. DIRECT CONTACT — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: unknown — 04 NARRATIVE DESCRIPTION

Perchloroethylene vapors seemed abnormally strong inside of building.

___ F. CONTAMINATION OF SOIL — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

03 AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

None known or observed. Entire area around site has probably been paved since 1976 (shopping center).

___ G. DRINKING WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None known or observed. Site is located in area of city that is predominantly served by city water supply.

01 X H. WORKER EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

WORKERS POTENTIALLY AFFECTED: 7 — 04 NARRATIVE DESCRIPTION

Perchloroethylene fumes in work area seemed abnormally strong, may pose chronic health hazard to employees. Employees also handle clothing damp with perchloroethylene during dry cleaning, indicating potential dermal exposure.

X I. POPULATION EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: >50,000 — 04 NARRATIVE DESCRIPTION

Small potential for exposure to perchloroethylene for the local population via air emissions, and for worker exposure via excessive fumes in business.

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

___A. 10^{-6} - 10^{-8} cm/sec ___B. 10^{-4} - 10^{-6} cm/sec ___C. 10^{-4} - 10^{-3} cm/sec X D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

___A. IMPERMEABLE (Less than 10^{-6} cm/sec) ___B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) X C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) ___D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
> 750 (ft)	none (ft)	unknown	

06 NET PRECIPITATION	07 ONE-YEAR 24-HOUR RAINFALL	08 SLOPE: SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-22 (in)	0.88 (in)	< 3 %	east-southeast	< 3 %

09 FLOOD POTENTIAL
SITE IS IN 100-500 YEAR FLOODPLAIN

10
N/A SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5-acre minimum)

ESTUARINE	OTHER
A. > 5 (mi)	B. > 1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
N/A (mi)
ENDANGERED SPECIES: none

13 LAND USE IN VICINITY
DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	PRIME AG LAND	AG LAND
A. < 0.1 (mi)	B. < 0.1 (mi)	C. ___ (mi)	D. ~ 0.7 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site lies on a gently sloping floodplain approximately 2 miles west of the Yakima River.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. Ecology Well Logs.
2. USGS 7.5 Minute Topographic Quadrangles: Yakima East, Yakima West, photo revised 1974.
3. Climatic Atlas of U.S., 1968, NOAA.
4. Precipitation Frequency Atlas of the Western U.S., 1973, Vol IX, NOAA.
5. Soil Survey of the Yakima County Area, Washington, SCS, 1985.
6. U.S. Army Corps of Engineers, 1978, Yakima Valley Regional Water Management Study, Vol. IV.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

II. CURRENT OWNER(S)				PARENT COMPANY (If applicable)			
01 NAME Verlyn Hoff		02 D+B NUMBER		08 NAME N/A		09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) 1220 South 24th Avenue		04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE	
05 CITY Yakima	06 STATE WA	07 ZIP CODE 98902		12 CITY	13 STATE	14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	
01 NAME		02 D+B NUMBER		08 NAME		09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)		11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		12 CITY	13 STATE	14 ZIP CODE	

III. PREVIOUS OWNER(S) (List most recent first)				IV. REALTY OWNER(S) (If applicable; list most recent first)			
01 NAME Murphy Still		02 D+B NUMBER		01 NAME Noel Canning Corporation		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1001 South 1st Street		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		05 CITY Yakima	06 STATE WA	07 ZIP CODE 98901	
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE	07 ZIP CODE	
01 NAME		02 D+B NUMBER		01 NAME		02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)		04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE		05 CITY	06 STATE	07 ZIP CODE	

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. E & E Screening Site Inspection, January 31, 1989, Southgate Laundry and Dry Cleaning.

I. PAST RESPONSE ACTIVITIES (Continued)

01 ___R. BARRIER WALLS CONSTRUCTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___S. CAPPING/COVERING 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___T. BULK TANKAGE REPAIRED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___U. GROUT CURTAIN CONSTRUCTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___V. BOTTOM SEALED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___W. GAS CONTROL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___X. FIRE CONTROL 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___Y. LEACHATE TREATMENT 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___Z. AREA EVACUATED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___1. ACCESS TO SITE RESTRICTED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___2. POPULATION RELOCATED 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

01 ___3. OTHER REMEDIAL ACTIVITIES 02 DATE _____ 03 AGENCY _____
04 DESCRIPTION
None

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

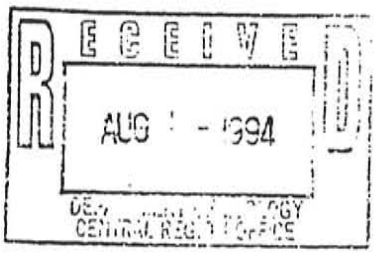
1. E & E Screening Site Inspection, January 31, 1989, Southgate Laundry and Dry Cleaning.

MANCHESTER ENVIRONMENTAL LABORATORY

7411 Beach Drive E , Port Orchard Washington 98366

CASE NARRATIVE

July 28, 1994



Subject: Southgate/YRRA

Samples: 94 - 188045

Case No. DOE-103X

Officer: Rick Roeder

By: Dickey D. Huntamer
Organics Analysis Unit

VOLATILE ORGANIC ANALYSIS

ANALYTICAL METHODS:

Volatile organic compounds were analyzed using Manchester modification of the EPA SW 846 Method 8260 purge-trap procedure with capillary GC/MS analysis. Normal QA/QC procedures were performed on the samples except for matrix spikes.

BLANKS:

Low levels of the common laboratory solvents acetone and methylene chloride were detected in the laboratory blanks The EPA five times rule was applied to all target compounds which were found in the blank. Compounds that were found in the sample and in the blank were considered real and not the result of contamination if the levels in the sample are greater than or equal to five times the amount of compounds in the associated method blank.

SURROGATES:

Surrogate recoveries were within acceptable limits for water samples.

HOLDING TIMES:

The water sample was analyzed within the recommended 14 day holding time.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:

No matrix spikes were analyzed with this sample.

ANALYTICAL COMMENTS:

No analytical problems were encountered in the analysis. The data is acceptable for use as qualified.

DATA QUALIFIER CODES:

U	-	The analyte was not detected at or above the reported value.
J	-	The analyte was positively identified. The associated numerical value is an estimate.
UJ	-	The analyte was not detected at or above the reported estimated result.
REJ	-	The data are unusable for all purposes.
EXP	-	The result is equal to the number before EXP times 10 to the power of the number after EXP. As an example 3EXP6 equals 3×10^6.
NAF	-	Not analyzed for.
N	-	For organic analytes there is evidence the analyte is present in this sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
E	-	This qualifier is used when the concentration of the associated value exceeds the known calibration range.
*	-	The analyte was present in the sample. (Visual Aid to locate detected compound on report sheet.)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188040 Description: SOUTHGATE1 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Sediment Result	Units
Carbon Tetrachloride	1.1U	ug/kg
Acetone	10.8U	ug/kg
Chloroform	1.1U	ug/kg
Benzene	1.1U	ug/kg
1,1,1-Trichloroethane	1.1U	ug/kg
Bromomethane	1.1U	ug/kg
Chloromethane	1.1U	ug/kg
Dibromomethane	1.1U	ug/kg
Bromochloromethane	1.1U	ug/kg
Chloroethane	1.1U	ug/kg
Vinyl Chloride	1.1U	ug/kg
Methylene Chloride	7.1UJ	ug/kg
Carbon Disulfide	1.1UJ	ug/kg
Bromoform	5.4U	ug/kg
Bromodichloromethane	1.1U	ug/kg
1,1-Dichloroethane	1.1U	ug/kg
1,1-Dichloroethene	7.0 *	ug/kg
Trichlorofluoromethane	1.1U	ug/kg
Methane, Dichlorodiflu+	1.1U	ug/kg
1,2-Dichloropropane	1.1U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.2U	ug/kg
Ethene, trichloro-	1.6 *	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.2U	ug/kg
1,2,3-Trichlorobenzene	1.1UJ	ug/kg
Hexachlorobutadiene	1.1UJ	ug/kg
Naphthalene	1.1U	ug/kg
o-XYLENE	0.21J*	ug/kg
2-Chlorotoluene	1.1U	ug/kg
1,2-Dichlorobenzene	1.1U	ug/kg
1,2,4-Trimethylbenzene	1.1U	ug/kg
1,2-Dibromo-3-chloropr+	10.8U	ug/kg
1,2,3-Trichloropropane	5.4U	ug/kg
Tert-Butylbenzene	1.1U	ug/kg
Isopropylbenzene (Cume+	1.1U	ug/kg
p-Isopropyltoluene	1.1UJ	ug/kg
Ethylbenzene	0.44J*	ug/kg
BENZENE, ETHENYL-(STYR+	1.1U	ug/kg
BENZENE, PROPYL-	1.1U	ug/kg
Butylbenzene	1.1UJ	ug/kg
4-Chlorotoluene	1.1UJ	ug/kg
1,4-Dichlorobenzene	1.1UJ	ug/kg
1,2-Dibromoethane (EDB)	2.2U	ug/kg
1,2-Dichloroethane	1.1U	ug/kg
4-Methyl-2-Pentanone(M+	10.8U	ug/kg

VOA - PP Scan *** Continued ***	Sediment Result	Units
1,3,5-Trimethylbenzene	1.1U	ug/kg
Bromobenzene	1.1U	ug/kg
Toluene	2.5 *	ug/kg
Chlorobenzene	0.82J*	ug/kg
1,2,4-Trichlorobenzene	1.1UJ	ug/kg
Dibromochloromethane	1.1U	ug/kg
Tetrachloroethene	1650 *	ug/kg
Sec-Butylbenzene	1.1U	ug/kg
1,3-Dichloropropane	1.1U	ug/kg
Cis-1,2-Dichloroethene	1.1U	ug/kg
trans-1,2-Dichloroethe+	2.0 *	ug/kg
1,3-Dichlorobenzene	1.1UJ	ug/kg
1,1-Dichloropropene	1.1U	ug/kg
2-Hexanone	10.8UJ	ug/kg
2,2-Dichloropropane	1.1UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.1U	ug/kg
Total Xylenes	1.3 *	ug/kg
m p-XYLENE	1.1 *	ug/kg
cis-1,3-Dichloropropene	1.1U	ug/kg
trans-1,3-Dichloroprop+	2.2UJ	ug/kg
p-BROMOFLUOROBENZENE	84	% Recov
FLUOROBENZENE	100	% Recov
TOLUENE-D8	112	% Recov
1,2-DICHLOROBENZENE-D4	96	% Recov
d4-1,2-Dichloroethane	104	% Recov

VOA - PP Scan Matrix Spike #1	Sediment Result	Units
Carbon Tetrachloride	98	% Recov
Acetone	80	% Recov
Chloroform	98	% Recov
Benzene	105	% Recov
1,1,1-Trichloroethane	97	% Recov
Bromomethane	101	% Recov
Chloromethane	105	% Recov
Dibromomethane	99	% Recov
Bromochloromethane	99	% Recov
Chloroethane	97	% Recov
Vinyl Chloride	100	% Recov
Methylene Chloride	99	% Recov
Carbon Disulfide	82	% Recov
Bromoform	90	% Recov

VOA - PP Scan *** Continued *** Matrix Spike #1	Sediment Result	Units
Bromodichloromethane	94	% Recov
1,1-Dichloroethane	98	% Recov
1,1-Dichloroethene	97	% Recov
Trichlorofluoromethane	103	% Recov
Methane, Dichlorodiflu+	100	% Recov
1,2-Dichloropropane	101	% Recov
2-Butanone	102	% Recov
1,1,2-Trichloroethane	98	% Recov
Ethene, trichloro-	98	% Recov
ETHANE, 1,1,2,2-TETRAC+	96	% Recov
1,2,3-Trichlorobenzene	83	% Recov
Hexachlorobutadiene	96	% Recov
Naphthalene	85	% Recov
o-XYLENE	98	% Recov
2-Chlorotoluene	98	% Recov
1,2-Dichlorobenzene	100	% Recov
1,2,4-Trimethylbenzene	96	% Recov
1,2-Dibromo-3-chloropr+	96	% Recov
1,2,3-Trichloropropane	100	% Recov
Tert-Butylbenzene	100	% Recov
Isopropylbenzene (Cume+	100	% Recov
p-Isopropyltoluene	98	% Recov
Ethylbenzene	97	% Recov
BENZENE, ETHENYL-(STYR+	95	% Recov
BENZENE, PROPYL-	101	% Recov
Butylbenzene	96	% Recov
4-Chlorotoluene	102	% Recov
1,4-Dichlorobenzene	96	% Recov
1,2-Dibromoethane (EDB)	96	% Recov
1,2-Dichloroethane	99	% Recov
4-Methyl-2-Pentanone(M+	107	% Recov
1,3,5-Trimethylbenzene	100	% Recov
Bromobenzene	99	% Recov
Toluene	99	% Recov
Chlorobenzene	98	% Recov
1,2,4-Trichlorobenzene	87	% Recov
Dibromochloromethane	93	% Recov
Tetrachloroethene	121	% Recov
Sec-Butylbenzene	98	% Recov
1,3-Dichloropropane	96	% Recov
Cis-1,2-Dichloroethene	99	% Recov
trans-1,2-Dichloroethe+	96	% Recov
p-BROMOFLUOROBENZENE	98	% Recov
FLUOROBENZENE	100	% Recov

(Continued on next page)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188040 Description: SOUTHGATE1 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan *** Continued *** Matrix Spike #1	Sediment Result	Units
1,3-Dichlorobenzene	96	% Recov
1,1-Dichloropropene	101	% Recov
2-Hexanone	97	% Recov
2,2-Dichloropropane	97	% Recov
Ethane, 1,1,1,2-Tetrac+	92	% Recov
Total Xylenes	98	% Recov
TOLUENE-D8	101	% Recov
1,2-DICHLOROBENZENE-D4	102	% Recov
cis-1,3-Dichloropropene	91	% Recov
trans-1,3-Dichloroprop+	90	% Recov
1,2-DICHLOROETHANE-D4	98	% Recov
m p-XYLENE	98	% Recov

VOA - PP Scan Matrix Spike #2	Sediment Result	Units
Carbon Tetrachloride	95	% Recov
Acetone	125	% Recov
Chloroform	95	% Recov
Benzene	104	% Recov
1,1,1-Trichloroethane	98	% Recov
Bromomethane	96	% Recov
Chloromethane	96	% Recov
Dibromomethane	101	% Recov
Bromochloromethane	96	% Recov
Chloroethane	90	% Recov
Vinyl Chloride	94	% Recov
Methylene Chloride	100	% Recov
Carbon Disulfide	82	% Recov
Bromoform	90	% Recov
Bromodichloromethane	95	% Recov
1,1-Dichloroethane	94	% Recov
1,1-Dichloroethene	96	% Recov
Trichlorofluoromethane	95	% Recov
Methane, Dichlorodiflu+	91	% Recov
1,2-Dichloropropane	101	% Recov
2-Butanone	104	% Recov
1,1,2-Trichloroethane	101	% Recov
Ethene, trichloro-	97	% Recov
ETHANE, 1,1,2,2-TETRAC+	100	% Recov
1,2,3-Trichlorobenzene	89	% Recov
Hexachlorobutadiene	94	% Recov
Naphthalene	96	% Recov

VOA - PP Scan *** Continued *** Matrix Spike #2	Sediment Result	Units
o-XYLENE	98	% Recov
2-Chlorotoluene	96	% Recov
1,2-Dichlorobenzene	98	% Recov
1,2,4-Trimethylbenzene	93	% Recov
1,2-Dibromo-3-chloropr+	93	% Recov
1,2,3-Trichloropropane	99	% Recov
Tert-Butylbenzene	97	% Recov
Isopropylbenzene (Cume+	96	% Recov
p-Isopropyltoluene	94	% Recov
Ethylbenzene	94	% Recov
BENZENE, ETHENYL-(STYR+	94	% Recov
BENZENE, PROPYL- Butylbenzene	96	% Recov
4-Chlorotoluene	94	% Recov
1,4-Dichlorobenzene	99	% Recov
1,2-Dibromoethane (EDB)	97	% Recov
1,2-Dichloroethane	99	% Recov
4-Methyl-2-Pentanone(M+	110	% Recov
1,3,5-Trimethylbenzene	97	% Recov
Bromobenzene	96	% Recov
Toluene	96	% Recov
Chlorobenzene	98	% Recov
1,2,4-Trichlorobenzene	91	% Recov
Dibromochloromethane	92	% Recov
Tetrachloroethene	115	% Recov
Sec-Butylbenzene	94	% Recov
1,3-Dichloropropane	98	% Recov
Cis-1,2-Dichloroethene	95	% Recov
trans-1,2-Dichloroethe+	97	% Recov
p-BROMOFLUOROBENZENE	99	% Recov
FLUOROBENZENE	100	% Recov
1,3-Dichlorobenzene	94	% Recov
1,1-Dichloropropene	97	% Recov
2-Hexanone	98	% Recov
2,2-Dichloropropane	91	% Recov
Ethane, 1,1,1,2-Tetrac+	93	% Recov
Total Xylenes	97	% Recov
TOLUENE-D8	102	% Recov
1,2-DICHLOROBENZENE-D4	102	% Recov
cis-1,3-Dichloropropene	93	% Recov
trans-1,3-Dichloroprop+	94	% Recov
1,2-DICHLOROETHANE-D4	99	% Recov
m p-XYLENE	97	% Recov

VOA - PP Scan Duplicate #1	Sediment Result	Units
Carbon Tetrachloride	NAF	ug/kg
Acetone	NAF	ug/kg
Chloroform	NAF	ug/kg
Benzene	NAF	ug/kg
1,1,1-Trichloroethane	NAF	ug/kg
Bromomethane	NAF	ug/kg
Chloromethane	NAF	ug/kg
Dibromomethane	NAF	ug/kg
Bromochloromethane	NAF	ug/kg
Chloroethane	NAF	ug/kg
Vinyl Chloride	NAF	ug/kg
Methylene Chloride	NAF	ug/kg
Carbon Disulfide	NAF	ug/kg
Bromoform	NAF	ug/kg
Bromodichloromethane	NAF	ug/kg
1,1-Dichloroethane	NAF	ug/kg
1,1-Dichloroethene	NAF	ug/kg
Trichlorofluoromethane	NAF	ug/kg
Methane, Dichlorodiflu+	NAF	ug/kg
1,2-Dichloropropane	NAF	ug/kg
2-Butanone	NAF	ug/kg
1,1,2-Trichloroethane	NAF	ug/kg
Ethene, trichloro-	NAF	ug/kg
ETHANE, 1,1,2,2-TETRAC+	NAF	ug/kg
1,2,3-Trichlorobenzene	NAF	ug/kg
Hexachlorobutadiene	NAF	ug/kg
Naphthalene	NAF	ug/kg
o-XYLENE	NAF	ug/kg
2-Chlorotoluene	NAF	ug/kg
1,2-Dichlorobenzene	NAF	ug/kg
1,2,4-Trimethylbenzene	NAF	ug/kg
1,2-Dibromo-3-chloropr+	NAF	ug/kg
1,2,3-Trichloropropane	NAF	ug/kg
Tert-Butylbenzene	NAF	ug/kg
Isopropylbenzene (Cume+	NAF	ug/kg
p-Isopropyltoluene	NAF	ug/kg
Ethylbenzene	NAF	ug/kg
BENZENE, ETHENYL-(STYR+	NAF	ug/kg
BENZENE, PROPYL- Butylbenzene	NAF	ug/kg
4-Chlorotoluene	NAF	ug/kg
1,4-Dichlorobenzene	NAF	ug/kg
1,2-Dibromoethane (EDB)	NAF	ug/kg
1,2-Dichloroethane	NAF	ug/kg
4-Methyl-2-Pentanone(M+	NAF	ug/kg

(Continued on next page)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188040 Description: SOUTHGATE1 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan *** Continued *** Duplicate #1	Sediment Result	Units
1,3,5-Trimethylbenzene	NAF	ug/kg
Bromobenzene	NAF	ug/kg
Toluene	NAF	ug/kg
Chlorobenzene	NAF	ug/kg
1,2,4-Trichlorobenzene	NAF	ug/kg
Dibromochloromethane	NAF	ug/kg
Tetrachloroethene	1650 *	ug/kg
Sec-Butylbenzene	NAF	ug/kg
1,3-Dichloropropane	NAF	ug/kg
Cis-1,2-Dichloroethene	NAF	ug/kg
trans-1,2-Dichloroethe+	NAF	ug/kg
1,3-Dichlorobenzene	NAF	ug/kg
1,1-Dichloropropene	NAF	ug/kg
2-Hexanone	NAF	ug/kg
2,2-Dichloropropane	NAF	ug/kg
Ethane, 1,1,1,2-Tetrac+	NAF	ug/kg
Total Xylenes	NAF	ug/kg
m p-XYLENE	NAF	ug/kg
cis-1,3-Dichloropropene	NAF	ug/kg
trans-1,3-Dichloroprop+	NAF	ug/kg
p-BROMOFLUOROBENZENE	95	% Recov
FLUOROBENZENE	98	% Recov
TOLUENE-D8	100	% Recov
1,2-DICHLOROBENZENE-D4	101	% Recov
1,2-DICHLOROETHANE-D4	91	% Recov

Tent Ident - VOA Sca	Sediment Result	Units
CYCLOTETRASILOXANE, OC+	18.7NJ*	ug/kg
ETHANE, 1-BROMO-2-FLUO+	0.94NJ*	ug/kg

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188041 Description: SOUTHGATE2 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Sediment Result	Units
Carbon Tetrachloride	1.0U	ug/kg
Acetone	10.2U	ug/kg
Chloroform	1.0U	ug/kg
Benzene	1.0U	ug/kg
1,1,1-Trichloroethane	1.0U	ug/kg
Bromomethane	1.0U	ug/kg
Chloromethane	1.0U	ug/kg
Dibromomethane	1.0U	ug/kg
Bromochloromethane	1.0U	ug/kg
Chloroethane	1.0U	ug/kg
Vinyl Chloride	1.0U	ug/kg
Methylene Chloride	6.1UJ	ug/kg
Carbon Disulfide	1.0UJ	ug/kg
Bromoform	5.1U	ug/kg
Bromodichloromethane	1.0U	ug/kg
1,1-Dichloroethane	1.0U	ug/kg
1,1-Dichloroethene	6.9 *	ug/kg
Trichlorofluoromethane	1.0U	ug/kg
Methane, Dichlorodiflu+	1.0U	ug/kg
1,2-Dichloropropane	1.0U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.0U	ug/kg
Ethene, trichloro-	0.49J*	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.0U	ug/kg
1,2,3-Trichlorobenzene	1.0UJ	ug/kg
Hexachlorobutadiene	1.0UJ	ug/kg
Naphthalene	1.0U	ug/kg
o-XYLENE	0.21J*	ug/kg
2-Chlorotoluene	0.91J*	ug/kg
1,2-Dichlorobenzene	1.2J*	ug/kg
1,2,4-Trimethylbenzene	1.0U	ug/kg
1,2-Dibromo-3-chloropr+	10.2U	ug/kg
1,2,3-Trichloropropane	5.1U	ug/kg
Tert-Butylbenzene	1.0U	ug/kg
Isopropylbenzene (Cume+	1.0U	ug/kg
p-Isopropyltoluene	1.0U	ug/kg
Ethylbenzene	0.23J*	ug/kg
BENZENE, ETHENYL-(STYR+	1.0U	ug/kg
BENZENE, PROPYL-	1.0U	ug/kg
Butylbenzene	1.0UJ	ug/kg
4-Chlorotoluene	1.0UJ	ug/kg
1,4-Dichlorobenzene	0.16J*	ug/kg
1,2-Dibromoethane (EDB)	2.0U	ug/kg
1,2-Dichloroethane	1.0U	ug/kg
4-Methyl-2-Pentanone(M+	10.2U	ug/kg

VOA - PP Scan *** Continued ***	Sediment Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/kg
Bromobenzene	1.0U	ug/kg
Toluene	1.3 *	ug/kg
Chlorobenzene	2.0 *	ug/kg
1,2,4-Trichlorobenzene	1.0UJ	ug/kg
Dibromochloromethane	1.0U	ug/kg
Tetrachloroethene	19.2 *	ug/kg
Sec-Butylbenzene	1.0U	ug/kg
1,3-Dichloropropane	1.0U	ug/kg
Cis-1,2-Dichloroethene	1.0U	ug/kg
trans-1,2-Dichloroethe+	1.8 *	ug/kg
1,3-Dichlorobenzene	0.31J*	ug/kg
1,1-Dichloropropene	1.0U	ug/kg
2-Hexanone	10.2UJ	ug/kg
2,2-Dichloropropane	1.0UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/kg
Total Xylenes	0.86J*	ug/kg
m p-XYLENE	0.65J*	ug/kg
cis-1,3-Dichloropropene	1.0U	ug/kg
trans-1,3-Dichloroprop+	2.0UJ	ug/kg
p-BROMOFLUOROBENZENE	92	% Recov
FLUOROBENZENE	102	% Recov
TOLUENE-D8	98	% Recov
1,2-DICHLOROBENZENE-D4	104	% Recov
d4-1,2-Dichloroethane	108	% Recov

Tent Ident - VOA Sca	Sediment Result	Units
CYCLOTETRASILOXANE, OC+	1.9NJ*	ug/kg
ETHANE, 1-BROMO-2-FLUO+	1.0NJ*	ug/kg

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188042 Description: SOUTHGATE3 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Sediment Result	Units
Carbon Tetrachloride	1.0U	ug/kg
Acetone	10.5U	ug/kg
Chloroform	1.0U	ug/kg
Benzene	1.0U	ug/kg
1,1,1-Trichloroethane	0.44J*	ug/kg
Bromomethane	1.0U	ug/kg
Chloromethane	1.0U	ug/kg
Dibromomethane	1.0U	ug/kg
Bromochloromethane	1.0U	ug/kg
Chloroethane	1.0U	ug/kg
Vinyl Chloride	1.0U	ug/kg
Methylene Chloride	8.8UJ	ug/kg
Carbon Disulfide	1.0UJ	ug/kg
Bromoform	5.2U	ug/kg
Bromodichloromethane	1.0U	ug/kg
1,1-Dichloroethane	1.0U	ug/kg
1,1-Dichloroethene	13.6 *	ug/kg
Trichlorofluoromethane	0.36J*	ug/kg
Methane, Dichlorodiflu+	1.0U	ug/kg
1,2-Dichloropropane	1.0U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.1U	ug/kg
Ethene, trichloro-	1.1 *	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.1U	ug/kg
1,2,3-Trichlorobenzene	1.0UJ	ug/kg
Hexachlorobutadiene	1.0UJ	ug/kg
Naphthalene	1.0U	ug/kg
o-XYLENE	1.0U	ug/kg
2-Chlorotoluene	1.0U	ug/kg
1,2-Dichlorobenzene	1.0U	ug/kg
1,2,4-Trimethylbenzene	1.0U	ug/kg
1,2-Dibromo-3-chloropr+	10.5U	ug/kg
1,2,3-Trichloropropane	5.2U	ug/kg
Tert-Butylbenzene	1.0U	ug/kg
Isopropylbenzene (Cume+	1.0U	ug/kg
p-Isopropyltoluene	1.0UJ	ug/kg
Ethylbenzene	1.0U	ug/kg
BENZENE, ETHENYL-(STYR+	1.0U	ug/kg
BENZENE, PROPYL-	1.0U	ug/kg
Butylbenzene	1.0UJ	ug/kg
4-Chlorotoluene	1.0UJ	ug/kg
1,4-Dichlorobenzene	1.0UJ	ug/kg
1,2-Dibromoethane (EDB)	2.1U	ug/kg
1,2-Dichloroethane	1.0U	ug/kg
4-Methyl-2-Pentanone(M+	10.5U	ug/kg

VOA - PP Scan *** Continued ***	Sediment Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/kg
Bromobenzene	1.0U	ug/kg
Toluene	0.67J*	ug/kg
Chlorobenzene	0.65J*	ug/kg
1,2,4-Trichlorobenzene	1.0UJ	ug/kg
Dibromochloromethane	1.0U	ug/kg
Tetrachloroethene	29.5 *	ug/kg
Sec-Butylbenzene	1.0U	ug/kg
1,3-Dichloropropane	1.0U	ug/kg
Cis-1,2-Dichloroethene	0.36J*	ug/kg
trans-1,2-Dichloroethe+	3.2 *	ug/kg
1,3-Dichlorobenzene	1.0UJ	ug/kg
1,1-Dichloropropene	1.0U	ug/kg
2-Hexanone	10.5UJ	ug/kg
2,2-Dichloropropane	1.0UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/kg
Total Xylenes	1.0U	ug/kg
m p-XYLENE	1.0U	ug/kg
cis-1,3-Dichloropropene	1.0U	ug/kg
trans-1,3-Dichloroprop+	2.1UJ	ug/kg
p-BROMOFLUOROBENZENE	88	% Recov
FLUOROBENZENE	99	% Recov
TOLUENE-D8	101	% Recov
1,2-DICHLOROBENZENE-D4	106	% Recov
d4-1,2-Dichloroethane	110	% Recov

Tent Ident - VOA Sca	Sediment Result	Units
CYCLOTETRASILOXANE, OC+	7.8NJ*	ug/kg
ETHANE, 1-BROMO-2-FLUO+	0.89NJ*	ug/kg

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188043 Description: SOUTHGATE4 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Sediment Result	Units
Carbon Tetrachloride	1.1U	ug/kg
Acetone	11.5U	ug/kg
Chloroform	1.1U	ug/kg
Benzene	0.48J*	ug/kg
1,1,1-Trichloroethane	1.1U	ug/kg
Bromomethane	1.1U	ug/kg
Chloromethane	1.1U	ug/kg
Dibromomethane	1.1U	ug/kg
Bromochloromethane	1.1U	ug/kg
Chloroethane	1.1U	ug/kg
Vinyl Chloride	1.1U	ug/kg
Methylene Chloride	10.9UJ	ug/kg
Carbon Disulfide	1.1UJ	ug/kg
Bromoform	5.7U	ug/kg
Bromodichloromethane	1.1U	ug/kg
1,1-Dichloroethane	1.1U	ug/kg
1,1-Dichloroethene	25.2 *	ug/kg
Trichlorofluoromethane	0.51J*	ug/kg
Methane, Dichlorodiflu+	2.2 *	ug/kg
1,2-Dichloropropane	1.1U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.3U	ug/kg
Ethene, trichloro-	2.1 *	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.3U	ug/kg
1,2,3-Trichlorobenzene	1.1UJ	ug/kg
Hexachlorobutadiene	1.1UJ	ug/kg
Naphthalene	1.1U	ug/kg
o-XYLENE	1.1U	ug/kg
2-Chlorotoluene	1.1U	ug/kg
1,2-Dichlorobenzene	1.1UJ	ug/kg
1,2,4-Trimethylbenzene	1.1U	ug/kg
1,2-Dibromo-3-chloropr+	11.5U	ug/kg
1,2,3-Trichloropropane	5.7U	ug/kg
Tert-Butylbenzene	1.1U	ug/kg
Isopropylbenzene (Cume+	1.1U	ug/kg
p-Isopropyltoluene	1.1UJ	ug/kg
Ethylbenzene	1.1U	ug/kg
BENZENE, ETHENYL-(STYR+	1.1U	ug/kg
BENZENE, PROPYL-	1.1U	ug/kg
Butylbenzene	1.1U	ug/kg
4-Chlorotoluene	1.1UJ	ug/kg
1,4-Dichlorobenzene	1.1UJ	ug/kg
1,2-Dibromoethane (EDB)	2.3U	ug/kg
1,2-Dichloroethane	1.1U	ug/kg
4-Methyl-2-Pentanone(M+	11.5U	ug/kg

VOA - PP Scan *** Continued ***	Sediment Result	Units
1,3,5-Trimethylbenzene	1.1U	ug/kg
Bromobenzene	1.1U	ug/kg
Toluene	0.57J*	ug/kg
Chlorobenzene	0.22J*	ug/kg
1,2,4-Trichlorobenzene	1.1UJ	ug/kg
Dibromochloromethane	1.1U	ug/kg
Tetrachloroethene	1680 *	ug/kg
Sec-Butylbenzene	1.1U	ug/kg
1,3-Dichloropropane	1.1U	ug/kg
Cis-1,2-Dichloroethene	1.1U	ug/kg
trans-1,2-Dichloroethe+	4.2 *	ug/kg
1,3-Dichlorobenzene	1.1UJ	ug/kg
1,1-Dichloropropene	1.1U	ug/kg
2-Hexanone	11.5UJ	ug/kg
2,2-Dichloropropane	1.1UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.1U	ug/kg
Total Xylenes	1.1U	ug/kg
m p-XYLENE	1.1U	ug/kg
cis-1,3-Dichloropropene	1.1U	ug/kg
trans-1,3-Dichloroprop+	2.3UJ	ug/kg
p-BROMOFLUOROBENZENE	74	% Recov
FLUOROBENZENE	103	% Recov
TOLUENE-D8	127	% Recov
1,2-DICHLOROBENZENE-D4	101	% Recov
d4-1,2-Dichloroethane	73	% Recov

VOA - PP Scan Duplicate #1	Sediment Result	Units
Carbon Tetrachloride	NAF	ug/kg
Acetone	NAF	ug/kg
Chloroform	NAF	ug/kg
Benzene	NAF	ug/kg
1,1,1-Trichloroethane	NAF	ug/kg
Bromomethane	NAF	ug/kg
Chloromethane	NAF	ug/kg
Dibromomethane	NAF	ug/kg
Bromochloromethane	NAF	ug/kg
Chloroethane	NAF	ug/kg
Vinyl Chloride	NAF	ug/kg
Methylene Chloride	NAF	ug/kg
Carbon Disulfide	NAF	ug/kg
Bromoform	NAF	ug/kg

VOA - PP Scan *** Continued *** Duplicate #1	Sediment Result	Units
Bromodichloromethane	NAF	ug/kg
1,1-Dichloroethane	NAF	ug/kg
1,1-Dichloroethene	NAF	ug/kg
Trichlorofluoromethane	NAF	ug/kg
Methane, Dichlorodiflu+	NAF	ug/kg
1,2-Dichloropropane	NAF	ug/kg
2-Butanone	NAF	ug/kg
1,1,2-Trichloroethane	NAF	ug/kg
Ethene, trichloro-	NAF	ug/kg
ETHANE, 1,1,2,2-TETRAC+	NAF	ug/kg
1,2,3-Trichlorobenzene	NAF	ug/kg
Hexachlorobutadiene	NAF	ug/kg
Naphthalene	NAF	ug/kg
o-XYLENE	NAF	ug/kg
2-Chlorotoluene	NAF	ug/kg
1,2-Dichlorobenzene	NAF	ug/kg
1,2,4-Trimethylbenzene	NAF	ug/kg
1,2-Dibromo-3-chloropr+	NAF	ug/kg
1,2,3-Trichloropropane	NAF	ug/kg
Tert-Butylbenzene	NAF	ug/kg
Isopropylbenzene (Cume+	NAF	ug/kg
p-Isopropyltoluene	NAF	ug/kg
Ethylbenzene	NAF	ug/kg
BENZENE, ETHENYL-(STYR+	NAF	ug/kg
BENZENE, PROPYL-	NAF	ug/kg
Butylbenzene	NAF	ug/kg
4-Chlorotoluene	NAF	ug/kg
1,4-Dichlorobenzene	NAF	ug/kg
1,2-Dibromoethane (EDB)	NAF	ug/kg
1,2-Dichloroethane	NAF	ug/kg
4-Methyl-2-Pentanone(M+	NAF	ug/kg
1,3,5-Trimethylbenzene	NAF	ug/kg
Bromobenzene	NAF	ug/kg
Toluene	NAF	ug/kg
Chlorobenzene	NAF	ug/kg
1,2,4-Trichlorobenzene	NAF	ug/kg
Dibromochloromethane	NAF	ug/kg
Tetrachloroethene	1680 *	ug/kg
Sec-Butylbenzene	NAF	ug/kg
1,3-Dichloropropane	NAF	ug/kg
Cis-1,2-Dichloroethene	NAF	ug/kg
trans-1,2-Dichloroethe+	NAF	ug/kg
1,3-Dichlorobenzene	NAF	ug/kg
1,1-Dichloropropene	NAF	ug/kg

(Continued on next page)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188043 Description: SOUTHGATE4 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan *** Continued *** Duplicate #1	Sediment Result	Units
2-Hexanone	NAF	ug/kg
2,2-Dichloropropane	NAF	ug/kg
Ethane, 1,1,1,2-Tetrac+	NAF	ug/kg
Total Xylenes	NAF	ug/kg
m p-XYLENE	NAF	ug/kg
cis-1,3-Dichloropropene	NAF	ug/kg
trans-1,3-Dichloroprop+	NAF	ug/kg
p-BROMOFLUOROBENZENE	95	% Recov
FLUOROBENZENE	100	% Recov
TOLUENE-D8	101	% Recov
1,2-DICHLOROBENZENE-D4	102	% Recov
1,2-DICHLOROETHANE-D4	91	% Recov

Tent Ident - VOA Sca	Sediment Result	Units
CYCLOTETRASILOXANE, OC+	4.6NJ*	ug/kg
BENZOIC ACID, 2-[(TRIM+	12.9NJ*	ug/kg

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188044 Description: SOUTHGATE5 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Sediment Result	Units
Carbon Tetrachloride	0.086J*	ug/kg
Acetone	10.4U	ug/kg
Chloroform	1.0U	ug/kg
Benzene	0.59J*	ug/kg
1,1,1-Trichloroethane	1.2 *	ug/kg
Bromomethane	1.0U	ug/kg
Chloromethane	1.0U	ug/kg
Dibromomethane	1.0U	ug/kg
Bromochloromethane	1.0U	ug/kg
Chloroethane	1.0U	ug/kg
Vinyl Chloride	1.0U	ug/kg
Methylene Chloride	16.5 *	ug/kg
Carbon Disulfide	1.0UJ	ug/kg
Bromoform	5.2U	ug/kg
Bromodichloromethane	1.0U	ug/kg
1,1-Dichloroethane	1.0U	ug/kg
1,1-Dichloroethene	27.3 *	ug/kg
Trichlorofluoromethane	0.91J*	ug/kg
Methane, Dichlorodiflu+	4.6 *	ug/kg
1,2-Dichloropropane	1.0U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.1U	ug/kg
Ethene, trichloro-	7.5 *	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.1U	ug/kg
1,2,3-Trichlorobenzene	1.0UJ	ug/kg
Hexachlorobutadiene	1.0UJ	ug/kg
Naphthalene	1.0U	ug/kg
o-XYLENE	1.0U	ug/kg
2-Chlorotoluene	1.0U	ug/kg
1,2-Dichlorobenzene	1.0U	ug/kg
1,2,4-Trimethylbenzene	1.0U	ug/kg
1,2-Dibromo-3-chloropr+	10.4U	ug/kg
1,2,3-Trichloropropane	5.2U	ug/kg
Tert-Butylbenzene	1.0U	ug/kg
Isopropylbenzene (Cume+	1.0U	ug/kg
p-Isopropyltoluene	1.0UJ	ug/kg
Ethylbenzene	1.0U	ug/kg
BENZENE, ETHENYL-(STYR+	1.0U	ug/kg
BENZENE, PROPYL-	1.0U	ug/kg
Butylbenzene	1.0UJ	ug/kg
4-Chlorotoluene	1.0UJ	ug/kg
1,4-Dichlorobenzene	1.0UJ	ug/kg
1,2-Dibromoethane (EDB)	2.1U	ug/kg
1,2-Dichloroethane	1.0U	ug/kg
4-Methyl-2-Pentanone(M+	10.4U	ug/kg

VOA - PP Scan *** Continued ***	Sediment Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/kg
Bromobenzene	1.0U	ug/kg
Toluene	1.6 *	ug/kg
Chlorobenzene	1.5 *	ug/kg
1,2,4-Trichlorobenzene	1.0UJ	ug/kg
Dibromochloromethane	1.0U	ug/kg
Tetrachloroethene	2300 *	ug/kg
Sec-Butylbenzene	1.0U	ug/kg
1,3-Dichloropropane	1.0U	ug/kg
Cis-1,2-Dichloroethene	1.0U	ug/kg
trans-1,2-Dichloroethe+	4.0 *	ug/kg
1,3-Dichlorobenzene	1.0UJ	ug/kg
1,1-Dichloropropene	1.0U	ug/kg
2-Hexanone	10.4UJ	ug/kg
2,2-Dichloropropane	1.0UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/kg
Total Xylenes	1.0U	ug/kg
m p-XYLENE	1.0U	ug/kg
cis-1,3-Dichloropropene	1.0U	ug/kg
trans-1,3-Dichloroprop+	2.1UJ	ug/kg
p-BROMOFLUOROBENZENE	84	% Recov
FLUOROBENZENE	102	% Recov
TOLUENE-D8	126	% Recov
1,2-DICHLOROBENZENE-D4	92	% Recov
d4-1,2-Dichloroethane	105	% Recov

VOA - PP Scan Duplicate #1	Sediment Result	Units
Carbon Tetrachloride	NAF	ug/kg
Acetone	NAF	ug/kg
Chloroform	NAF	ug/kg
Benzene	NAF	ug/kg
1,1,1-Trichloroethane	NAF	ug/kg
Bromomethane	NAF	ug/kg
Chloromethane	NAF	ug/kg
Dibromomethane	NAF	ug/kg
Bromochloromethane	NAF	ug/kg
Chloroethane	NAF	ug/kg
Vinyl Chloride	NAF	ug/kg
Methylene Chloride	NAF	ug/kg
Carbon Disulfide	NAF	ug/kg
Bromoform	NAF	ug/kg

VOA - PP Scan *** Continued *** Duplicate #1	Sediment Result	Units
Bromodichloromethane	NAF	ug/kg
1,1-Dichloroethane	NAF	ug/kg
1,1-Dichloroethene	NAF	ug/kg
Trichlorofluoromethane	NAF	ug/kg
Methane, Dichlorodiflu+	NAF	ug/kg
1,2-Dichloropropane	NAF	ug/kg
2-Butanone	NAF	ug/kg
1,1,2-Trichloroethane	NAF	ug/kg
Ethene, trichloro-	NAF	ug/kg
ETHANE, 1,1,2,2-TETRAC+	NAF	ug/kg
1,2,3-Trichlorobenzene	NAF	ug/kg
Hexachlorobutadiene	NAF	ug/kg
Naphthalene	NAF	ug/kg
o-XYLENE	NAF	ug/kg
2-Chlorotoluene	NAF	ug/kg
1,2-Dichlorobenzene	NAF	ug/kg
1,2,4-Trimethylbenzene	NAF	ug/kg
1,2-Dibromo-3-chloropr+	NAF	ug/kg
1,2,3-Trichloropropane	NAF	ug/kg
Tert-Butylbenzene	NAF	ug/kg
Isopropylbenzene (Cume+	NAF	ug/kg
p-Isopropyltoluene	NAF	ug/kg
Ethylbenzene	NAF	ug/kg
BENZENE, ETHENYL-(STYR+	NAF	ug/kg
BENZENE, PROPYL-	NAF	ug/kg
Butylbenzene	NAF	ug/kg
4-Chlorotoluene	NAF	ug/kg
1,4-Dichlorobenzene	NAF	ug/kg
1,2-Dibromoethane (EDB)	NAF	ug/kg
1,2-Dichloroethane	NAF	ug/kg
4-Methyl-2-Pentanone(M+	NAF	ug/kg
1,3,5-Trimethylbenzene	NAF	ug/kg
Bromobenzene	NAF	ug/kg
Toluene	NAF	ug/kg
Chlorobenzene	NAF	ug/kg
1,2,4-Trichlorobenzene	NAF	ug/kg
Dibromochloromethane	NAF	ug/kg
Tetrachloroethene	2300 *	ug/kg
Sec-Butylbenzene	NAF	ug/kg
1,3-Dichloropropane	NAF	ug/kg
Cis-1,2-Dichloroethene	NAF	ug/kg
trans-1,2-Dichloroethe+	NAF	ug/kg
1,3-Dichlorobenzene	NAF	ug/kg
1,1-Dichloropropene	NAF	ug/kg

(Continued on next page)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188044 Description: SOUTHGATE5 Source: Sediment (General)

Begin Date: 94/05/05 :

VOA - PP Scan *** Continued *** Duplicate #1	Sediment Result	Units
2-Hexanone	NAF	ug/kg
2,2-Dichloropropane	NAF	ug/kg
Ethane, 1,1,1,2-Tetrac+	NAF	ug/kg
Total Xylenes	NAF	ug/kg
m p-XYLENE	NAF	ug/kg
cis-1,3-Dichloropropene	NAF	ug/kg
trans-1,3-Dichloroprop+	NAF	ug/kg
p-BROMOFLUOROBENZENE	96	% Recov
FLUOROBENZENE	98	% Recov
TOLUENE-D8	102	% Recov
1,2-DICHLOROBENZENE-D4	100	% Recov
1,2-DICHLOROETHANE-D4	90	% Recov

Tent Ident - VOA Sca	Sediment Result	Units
CYCLOTETRASILOXANE, OC+	13.7NJ*	ug/kg
ETHANE, 1-BROMO-2-FLUO+	2.0NJ*	ug/kg

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Laboratory: Ecology, Manchester

Sample No: 94 188045 Description: SOUTHGATE/DECON Source: Water (General)

Begin Date: 94/05/05 :

VOA - PP Scan	Water-Total Result	Units
Carbon Tetrachloride	1.0U	ug/l
Acetone	2.2UJ	ug/l
Chloroform	1.3 *	ug/l
Benzene	1.0U	ug/l
1,1,1-Trichloroethane	0.40J*	ug/l
Bromomethane	2.0U	ug/l
Chloromethane	1.0U	ug/l
Dibromomethane	1.0U	ug/l
Bromochloromethane	1.0U	ug/l
Chloroethane	2.0U	ug/l
Vinyl Chloride	1.0U	ug/l
Methylene Chloride	2.0U	ug/l
Carbon Disulfide	1.0U	ug/l
Bromoform	1.0U	ug/l
Bromodichloromethane	1.0U	ug/l
1,1-Dichloroethane	1.0U	ug/l
1,1-Dichloroethene	1.0U	ug/l
Trichlorofluoromethane	1.0U	ug/l
Methane, Dichlorodiflu+	1.0U	ug/l
1,2-Dichloropropane	1.0U	ug/l
2-Butanone	1.0U	ug/l
1,1,2-Trichloroethane	1.0U	ug/l
Ethene, trichloro-	1.0U	ug/l
ETHANE, 1,1,2,2-TETRAC+	1.0U	ug/l
1,2,3-Trichlorobenzene	1.0U	ug/l
Hexachlorobutadiene	1.0U	ug/l
Naphthalene	1.0U	ug/l
o-XYLENE	1.0U	ug/l
2-Chlorotoluene	1.0U	ug/l
1,2-Dichlorobenzene	1.0U	ug/l
1,2,4-Trimethylbenzene	1.0U	ug/l
1,2-Dibromo-3-chloropr+	1.0U	ug/l
1,2,3-Trichloropropane	1.0U	ug/l
Tert-Butylbenzene	1.0U	ug/l
Isopropylbenzene (Cume+	1.0U	ug/l
p-Isopropyltoluene	1.0U	ug/l
Ethylbenzene	1.0U	ug/l
BENZENE, ETHENYL-(STYR+	1.0U	ug/l
BENZENE, PROPYL-	1.0U	ug/l
Butylbenzene	1.0U	ug/l
4-Chlorotoluene	1.0U	ug/l
1,4-Dichlorobenzene	1.0U	ug/l
1,2-Dibromoethane (EDB)	1.0U	ug/l
1,2-Dichloroethane	1.0U	ug/l
4-Methyl-2-Pentanone(M+	1.0U	ug/l

VOA - PP Scan *** Continued ***	Water-Total Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/l
Bromobenzene	1.0U	ug/l
Toluene	1.0U	ug/l
Chlorobenzene	1.0U	ug/l
1,2,4-Trichlorobenzene	1.0U	ug/l
Dibromochloromethane	1.0U	ug/l
Tetrachloroethene	1.2 *	ug/l
Sec-Butylbenzene	1.0U	ug/l
1,3-Dichloropropane	1.0U	ug/l
Cis-1,2-Dichloroethene	1.0U	ug/l
trans-1,2-Dichloroethe+	1.0U	ug/l
1,3-Dichlorobenzene	0.020J*	ug/l
1,1-Dichloropropene	1.0U	ug/l
2-Hexanone	1.0U	ug/l
2,2-Dichloropropane	1.0U	ug/l
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/l
Total Xylenes	3.0U	ug/l
m p-XYLENE	2.0U	ug/l
cis-1,3-Dichloropropene	0.53U	ug/l
trans-1,3-Dichloroprop+	0.47U	ug/l
p-BROMOFLUOROBENZENE	96	% Recov
FLUOROBENZENE	102	% Recov
TOLUENE-D8	103	% Recov
1,2-DICHLOROBENZENE-D4	102	% Recov
1,2-DICHLOROETHANE-D4	108	% Recov

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Blank ID: ibs4139

VOA - PP Scan Blank #1	Sediment Result	Units
Carbon Tetrachloride	1.0U	ug/kg
Acetone	10.0U	ug/kg
Chloroform	1.0U	ug/kg
Benzene	1.0U	ug/kg
1,1,1-Trichloroethane	1.0U	ug/kg
Bromomethane	1.0U	ug/kg
Chloromethane	1.0U	ug/kg
Dibromomethane	1.0U	ug/kg
Bromochloromethane	1.0U	ug/kg
Chloroethane	1.0U	ug/kg
Vinyl Chloride	1.0U	ug/kg
Methylene Chloride	1.1J*	ug/kg
Carbon Disulfide	0.61J*	ug/kg
Bromoform	5.0U	ug/kg
Bromodichloromethane	1.0U	ug/kg
1,1-Dichloroethane	1.0U	ug/kg
1,1-Dichloroethene	1.0U	ug/kg
Trichlorofluoromethane	1.0U	ug/kg
Methane, Dichlorodiflu+	1.0U	ug/kg
1,2-Dichloropropane	1.0U	ug/kg
2-Butanone	REJ	ug/kg
1,1,2-Trichloroethane	2.0U	ug/kg
Ethene, trichloro-	1.0U	ug/kg
ETHANE, 1,1,2,2-TETRAC+	2.0U	ug/kg
1,2,3-Trichlorobenzene	1.0UJ	ug/kg
Hexachlorobutadiene	1.0UJ	ug/kg
Naphthalene	1.0U	ug/kg
o-XYLENE	1.0U	ug/kg
2-Chlorotoluene	1.0U	ug/kg
1,2-Dichlorobenzene	1.0U	ug/kg
1,2,4-Trimethylbenzene	1.0U	ug/kg
1,2-Dibromo-3-chloropr+	10.0U	ug/kg
1,2,3-Trichloropropane	5.0U	ug/kg
Tert-Butylbenzene	1.0U	ug/kg
Isopropylbenzene (Cume+	1.0U	ug/kg
p-Isopropyltoluene	1.0UJ	ug/kg
Ethylbenzene	1.0U	ug/kg
BENZENE, ETHENYL-(STYR+	1.0U	ug/kg
BENZENE, PROPYL-	1.0U	ug/kg
Butylbenzene	1.0UJ	ug/kg
4-Chlorotoluene	1.0UJ	ug/kg
1,4-Dichlorobenzene	1.0UJ	ug/kg
1,2-Dibromoethane (EDB)	2.0U	ug/kg
1,2-Dichloroethane	1.0U	ug/kg
4-Methyl-2-Pentanone(M+	10.0U	ug/kg

VOA - PP Scan *** Continued *** Blank #1	Sediment Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/kg
Bromobenzene	1.0U	ug/kg
Toluene	0.045J*	ug/kg
Chlorobenzene	1.0U	ug/kg
1,2,4-Trichlorobenzene	1.0UJ	ug/kg
Dibromochloromethane	1.0U	ug/kg
Tetrachloroethene	5.0U	ug/kg
Sec-Butylbenzene	1.0U	ug/kg
1,3-Dichloropropane	1.0U	ug/kg
Cis-1,2-Dichloroethene	1.0U	ug/kg
trans-1,2-Dichloroethe+	1.0U	ug/kg
1,3-Dichlorobenzene	1.0UJ	ug/kg
1,1-Dichloropropene	1.0U	ug/kg
2-Hexanone	10.0UJ	ug/kg
2,2-Dichloropropane	1.0UJ	ug/kg
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/kg
Total Xylenes	1.0U	ug/kg
m p-XYLENE	1.0U	ug/kg
cis-1,3-Dichloropropene	1.0U	ug/kg
trans-1,3-Dichloroprop+	2.0UJ	ug/kg
p-BROMOFLUOROBENZENE	94	% Recov
FLUOROBENZENE	102	% Recov
TOLUENE-D8	101	% Recov
1,2-DICHLOROBENZENE-D4	105	% Recov
d4-1,2-Dichloroethane	91	% Recov

(Sample Complete)

Project: DOE-103X SOUTHGATE/YRRA Officer: RMR Account: J1K1Y

Blank ID: vbw4133

VOA - PP Scan Blank #1	Water-Total Result	Units
Carbon Tetrachloride	1.0U	ug/l
Acetone	1.3J*	ug/l
Chloroform	0.031J*	ug/l
Benzene	0.055J*	ug/l
1,1,1-Trichloroethane	1.0U	ug/l
Bromomethane	2.0U	ug/l
Chloromethane	1.0U	ug/l
Dibromomethane	1.0U	ug/l
Bromochloromethane	1.0U	ug/l
Chloroethane	2.0U	ug/l
Vinyl Chloride	1.0U	ug/l
Methylene Chloride	0.35J*	ug/l
Carbon Disulfide	1.0U	ug/l
Bromoform	1.0U	ug/l
Bromodichloromethane	1.0U	ug/l
1,1-Dichloroethane	1.0U	ug/l
1,1-Dichloroethene	1.0U	ug/l
Trichlorofluoromethane	1.0U	ug/l
Methane, Dichlorodiflu+	1.0U	ug/l
1,2-Dichloropropane	1.0U	ug/l
2-Butanone	0.19J*	ug/l
1,1,2-Trichloroethane	1.0U	ug/l
Ethene, trichloro-	1.0U	ug/l
ETHANE, 1,1,2,2-TETRAC+	1.0U	ug/l
1,2,3-Trichlorobenzene	0.70J*	ug/l
Hexachlorobutadiene	0.69J*	ug/l
Naphthalene	0.55J*	ug/l
o-XYLENE	1.0U	ug/l
2-Chlorotoluene	1.0U	ug/l
1,2-Dichlorobenzene	0.13J*	ug/l
1,2,4-Trimethylbenzene	1.0U	ug/l
1,2-Dibromo-3-chloropr+	1.0U	ug/l
1,2,3-Trichloropropane	1.0U	ug/l
Tert-Butylbenzene	1.0U	ug/l
Isopropylbenzene (Cume+	1.0U	ug/l
p-Isopropyltoluene	1.0U	ug/l
Ethylbenzene	0.035J*	ug/l
BENZENE, ETHENYL-(STYR+	1.0U	ug/l
BENZENE, PROPYL-	1.0U	ug/l
Butylbenzene	0.12J*	ug/l
4-Chlorotoluene	1.0U	ug/l
1,4-Dichlorobenzene	1.0U	ug/l
1,2-Dibromoethane (EDB)	1.0U	ug/l
1,2-Dichloroethane	1.0U	ug/l
4-Methyl-2-Pentanone(M+	1.0U	ug/l

VOA - PP Scan *** Continued *** Blank #1	Water-Total Result	Units
1,3,5-Trimethylbenzene	1.0U	ug/l
Bromobenzene	1.0U	ug/l
Toluene	0.037J*	ug/l
Chlorobenzene	0.14J*	ug/l
1,2,4-Trichlorobenzene	0.60J*	ug/l
Dibromochloromethane	1.0U	ug/l
Tetrachloroethene	0.039J*	ug/l
Sec-Butylbenzene	1.0U	ug/l
1,3-Dichloropropane	1.0U	ug/l
Cis-1,2-Dichloroethene	1.0U	ug/l
trans-1,2-Dichloroethe+	1.0U	ug/l
1,3-Dichlorobenzene	1.0U	ug/l
1,1-Dichloropropene	1.0U	ug/l
2-Hexanone	1.0U	ug/l
2,2-Dichloropropane	1.0U	ug/l
Ethane, 1,1,1,2-Tetrac+	1.0U	ug/l
Total Xylenes	0.050J*	ug/l
m p-XYLENE	0.050J*	ug/l
cis-1,3-Dichloropropene	0.53U	ug/l
trans-1,3-Dichloroprop+	0.47U	ug/l
p-BROMOFLUOROBENZENE	94	% Recov
FLUOROBENZENE	102	% Recov
TOLUENE-D8	102	% Recov
1,2-DICHLOROBENZENE-D4	102	% Recov
1,2-DICHLOROETHANE-D4	105	% Recov

(Sample Complete)

MANCHESTER ENVIRONMENTAL LABORATORY
7411 Beach Drive E , Port Orchard Washington 98366

CASE NARRATIVE

July 7, 1994

Subject: Southgate/YRRA

Samples: 94 - 188045

Case No. DOE-103X

Officer: Rick Roeder

By: Dickey D. Huntamer
Organics Analysis Unit

VOLATILE ORGANIC ANALYSIS

ANALYTICAL METHODS:

Volatile organic compounds were analyzed using Manchester modification of the EPA SW 846 Method 8260 purge-trap procedure with capillary GC/MS analysis. Normal QA/QC procedures were performed on the samples except for matrix spikes.

BLANKS:

Low levels of the common laboratory solvents acetone and methylene chloride were detected in the laboratory blanks The EPA five times rule was applied to all target compounds which were found in the blank. Compounds that were found in the sample and in the blank were considered real and not the result of contamination if the levels in the sample are greater than or equal to five times the amount of compounds in the associated method blank.

SURROGATES:

Surrogate recoveries were within acceptable limits for water samples.

HOLDING TIMES:

The water sample was analyzed within the recommended 14 day holding time.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:

No matrix spikes were analyzed with this sample.

ANALYTICAL COMMENTS:

No analytical problems were encountered in the analysis. The data is acceptable for use as qualified.

DATA QUALIFIER CODES:

U	-	The analyte was not detected at or above the reported value.
J	-	The analyte was positively identified. The associated numerical value is an estimate.
UJ	-	The analyte was not detected at or above the reported estimated result.
REJ	-	The data are unusable for all purposes.
EXP	-	The result is equal to the number before EXP times 10 to the power of the number after EXP. As an example 3EXP6 equals 3×10^6.
NAF	-	Not analyzed for.
N	-	For organic analytes there is evidence the analyte is present in this sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
E	-	This qualifier is used when the concentration of the associated value exceeds the known calibration range.
*	-	The analyte was present in the sample. (Visual Aid to locate detected compound on report sheet.)

*** Lab Analysis Report ***

Transaction #: 07019409 Seq #: 01 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188045 Alternate Keys:

Samp Matrix: (10) Water-Total Units: (11) ug/l %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total:
Date Extracted: Date Analyzed: 940513 # Days to Ext/Anal: 0/ 8

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/l	1.0U
2	74873	Chloromethane	ug/l	1.0U
3	75014	Vinyl Chloride	ug/l	1.0U
4	74839	Bromomethane	ug/l	2.0U
5	75003	Chloroethane	ug/l	2.0U
6	75694	Trichlorofluoromethane	ug/l	1.0U
7	75354	1,1-Dichloroethene	ug/l	1.0U
8	67641	Acetone	ug/l	2.2UJ
9	75150	Carbon Disulfide	ug/l	1.0U
10	75092	Methylene Chloride	ug/l	2.0U
11	156605	trans-1,2-Dichloroethene	ug/l	1.0U
12	75343	1,1-Dichloroethane	ug/l	1.0U
13	594207	2,2-Dichloropropane	ug/l	1.0U
14	156592	Cis-1,2-Dichloroethene	ug/l	1.0U
15	78933	2-Butanone	ug/l	1.0U
16	74975	Bromochloromethane	ug/l	1.0U
17	67663	Chloroform	ug/l	1.3
18	71556	1,1,1-Trichloroethane	ug/l	0.40J
19	563586	1,1-Dichloropropene	ug/l	1.0U
20	56235	Carbon Tetrachloride	ug/l	1.0U
21	71432	Benzene	ug/l	1.0U
22	107062	1,2-Dichloroethane	ug/l	1.0U
23	79016	Ethene, trichloro-	ug/l	1.0U
24	78875	1,2-Dichloropropane	ug/l	1.0U
25	74953	Dibromomethane	ug/l	1.0U
26	75274	Bromodichloromethane	ug/l	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/l	0.53U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/l	1.0U
29	108883	Toluene	ug/l	1.0U
30	10061026	trans-1,3-Dichloropropene	ug/l	0.47U
31	79005	1,1,2-Trichloroethane	ug/l	1.0U
32	127184	Tetrachloroethene	ug/l	1.2
33	142289	1,3-Dichloropropane	ug/l	1.0U
34	591786	2-Hexanone	ug/l	1.0U
35	124481	Dibromochloromethane	ug/l	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/l	1.0U
37	108907	Chlorobenzene	ug/l	1.0U
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/l	1.0U
39	100414	Ethylbenzene	ug/l	1.0U
40	-1330207	m p-XYLENE	ug/l	2.0U
41	95476	o-XYLENE	ug/l	1.0U
42	1330207	Total Xylenes	ug/l	3.0U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/l	1.0U
44	75252	Bromoform	ug/l	1.0U
45	98828	Isopropylbenzene (Cumene)	ug/l	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/l	1.0U
47	108861	Bromobenzene	ug/l	1.0U
48	96184	1,2,3-Trichloropropane	ug/l	1.0U
49	103651	BENZENE, PROPYL-	ug/l	1.0U
50	95498	2-Chlorotoluene	ug/l	1.0U

(continued on next page)

Transaction #: 07019409 Seq #: 01 (51) VOA - PP Scan

mple No.: 94 188045 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/l	1.0U		
52	106434	4-Chlorotoluene	ug/l	1.0U		
53	98066	Tert-Butylbenzene	ug/l	1.0U		
54	95636	1,2,4-Trimethylbenzene	ug/l	1.0U		
55	135988	Sec-Butylbenzene	ug/l	1.0U		
56	541731	1,3-Dichlorobenzene	ug/l	0.020J		
57	99876	p-Isopropyltoluene	ug/l	1.0U		
58	106467	1,4-Dichlorobenzene	ug/l	1.0U		
59	95501	1,2-Dichlorobenzene	ug/l	1.0U		
60	104518	Butylbenzene	ug/l	1.0U		
61	96128	1,2-Dibromo-3-chloropropane	ug/l	1.0U		
62	120821	1,2,4-Trichlorobenzene	ug/l	1.0U		
63	87683	Hexachlorobutadiene	ug/l	1.0U		
64	91203	Naphthalene	ug/l	1.0U		
65	87616	1,2,3-Trichlorobenzene	ug/l	1.0U		
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	108	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	102	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	103	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	96	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr)	PR

*** Lab Analysis Report ***

Transaction #: 07019410 Seq #: 01 (51) VOA - PP Scan
roj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Blank ID : vbw4133
Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (10) Water-Total Units: (11) ug/l %Slds: NAR
QA Code: (LBK1) Lab Blank Sample #1 Peaks Total:
ate Extracted: Date Analyzed: 940513 # Days to Ext/Anal: 0/ 8

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/l	1.0U
2	74873	Chloromethane	ug/l	1.0U
3	75014	Vinyl Chloride	ug/l	1.0U
4	74839	Bromomethane	ug/l	2.0U
5	75003	Chloroethane	ug/l	2.0U
6	75694	Trichlorofluoromethane	ug/l	1.0U
7	75354	1,1-Dichloroethene	ug/l	1.0U
8	67641	Acetone	ug/l	1.3J
9	75150	Carbon Disulfide	ug/l	1.0U
10	75092	Methylene Chloride	ug/l	0.35J
11	156605	trans-1,2-Dichloroethene	ug/l	1.0U
12	75343	1,1-Dichloroethane	ug/l	1.0U
13	594207	2,2-Dichloropropane	ug/l	1.0U
14	156592	Cis-1,2-Dichloroethene	ug/l	1.0U
15	78933	2-Butanone	ug/l	0.19J
16	74975	Bromochloromethane	ug/l	1.0U
17	67663	Chloroform	ug/l	0.031J
18	71556	1,1,1-Trichloroethane	ug/l	1.0U
19	563586	1,1-Dichloropropene	ug/l	1.0U
20	56235	Carbon Tetrachloride	ug/l	1.0U
21	71432	Benzene	ug/l	0.055J
22	107062	1,2-Dichloroethane	ug/l	1.0U
23	79016	Ethene, trichloro-	ug/l	1.0U
24	78875	1,2-Dichloropropane	ug/l	1.0U
25	74953	Dibromomethane	ug/l	1.0U
26	75274	Bromodichloromethane	ug/l	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/l	0.53U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/l	1.0U
29	108883	Toluene	ug/l	0.037J
30	10061026	trans-1,3-Dichloropropene	ug/l	0.47U
31	79005	1,1,2-Trichloroethane	ug/l	1.0U
32	127184	Tetrachloroethene	ug/l	0.039J
33	142289	1,3-Dichloropropane	ug/l	1.0U
34	591786	2-Hexanone	ug/l	1.0U
35	124481	Dibromochloromethane	ug/l	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/l	1.0U
37	108907	Chlorobenzene	ug/l	0.14J
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/l	1.0U
39	100414	Ethylbenzene	ug/l	0.035J
40	-1330207	m p-XYLENE	ug/l	0.050J
41	95476	o-XYLENE	ug/l	1.0U
42	1330207	Total Xylenes	ug/l	0.050J
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/l	1.0U
44	75252	Bromoform	ug/l	1.0U
45	98828	Isopropylbenzene (Cumene)	ug/l	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/l	1.0U
47	108861	Bromobenzene	ug/l	1.0U
48	96184	1,2,3-Trichloropropane	ug/l	1.0U
49	103651	BENZENE, PROPYL-	ug/l	1.0U
50	95498	2-Chlorotoluene	ug/l	1.0U

Transaction #: 07019410 Seq #: 01 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/l	1.0U		
52	106434	4-Chlorotoluene	ug/l	1.0U		
53	98066	Tert-Butylbenzene	ug/l	1.0U		
54	95636	1,2,4-Trimethylbenzene	ug/l	1.0U		
55	135988	Sec-Butylbenzene	ug/l	1.0U		
56	541731	1,3-Dichlorobenzene	ug/l	1.0U		
57	99876	p-Isopropyltoluene	ug/l	1.0U		
58	106467	1,4-Dichlorobenzene	ug/l	1.0U		
59	95501	1,2-Dichlorobenzene	ug/l	0.13J		
60	104518	Butylbenzene	ug/l	0.12J		
61	96128	1,2-Dibromo-3-chloropropane	ug/l	1.0U		
62	120821	1,2,4-Trichlorobenzene	ug/l	0.60J		
63	87683	Hexachlorobutadiene	ug/l	0.69J		
64	91203	Naphthalene	ug/l	0.55J		
65	87616	1,2,3-Trichlorobenzene	ug/l	0.70J		
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	105	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	102	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	102	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	94	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr)	PR

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TELEPHONE RECORD

Date 5/4/94

Time 2:45 ☐ a.m. ☒ p.m.

☐ CALLED BY
☒ CALLED

Mr./Ms. Pete Hobbs Telephone 575-6077

Address City of Yakima –
Wastewater Pretreatment Prgm.

Representing

Project Southgate Laundry – Yakima RR Area

Discussed Southgate has an account w/ city for pretreatment program. They are scheduled to have effluent sampled in 2 weeks. As far as Pete knows they don't Q to a dry well or storm sewer, but he hasn't been there to check.
I told him we will be sampling there tomorrow, any suggestions on likely places to find contam.? No, Pete couldn't think of any. Please keep him informed as the city might have an enforcement action against Southgate in future.

Signed Martha Maggi

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TELEPHONE RECORD

Date 4/28/94

Time 11:20 ☒ a.m. ☐ p.m.

☐ CALLED BY
☒ CALLED

Mr./Ms. Gary Slagle

Telephone 248-1313 X292

Address

Representing Nord Canning Corp. - Southgate Laundry

Project Yakima RR Area - Southgate

Discussed I told Gary we planned to sample Thursday 5/5/94. We plan to use a power hammer to break through asphalt, take samples of patd.

Gary would like to be present. I will contact him by Weds. 5/4 at the latest re: time of sampling.

Gary can be reached at 952-6914 almost at all times

Signed Mariano Maggi

ECY 010-46(b) Rev 8/91

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TELEPHONE RECORD

Date 4/20/94

Time 11 15 ☒ a.m. ☐ p.m.

☒ CALLED BY
☐ CALLED

(Mr./Ms.) Larry Estes - VP/Sec, Noel Telephone 248-1313

Address Noel Canning Corp - Nopsico

Representing Southgate Laundry - property owner

Project Yakima RR area

Discussed He returned my call. I notified Mr. Estes of our plan to obtain more soil samples at S. Gate laundry since the samples previously taken were stated to be off site by his atty's. He was unaware of the letter the atty. had sent us.

Referred me to Gary Slagle (same ph #) X292 construction manager. I explained we want to sample May 2nd week. Gary explained that no one from Noel was w/ our samplers; Noel rec'd letter out of the blue. When Gary asked shop operator where sample was taken, he indicated in the street. Gary says that the entire property is asphalt paved. To sample property we would have to punch through.

Current operator = Sam Kim 248-0924, speaks little English. Gary said we can call him - I will see if Rick wants to sample through asphalt.

Signed Martha Maggi

NCC

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

106 South 6th Ave. • Yakima, Washington 98902-3387 • (509) 575-2490

August 1, 1994

CERTIFIED MAIL
Z 744 399 566

Noel Canning Corporation
P.O. Box 111
Yakima, WA 98907-0111

Dear Sir:

RE: Notice of Potential Liability for the Release of Hazardous Substances Under the Model Toxics Control Act - Southgate Laundry, Yakima, WA

Chapter 70.105D RCW, the Model Toxics Control Act (Act), requires the Department of Ecology (Ecology) to provide written notice to all persons it believes to be potentially liable for the release of hazardous substances.

The hazardous substance in this case is a volatile organic compound called perchloroethylene (PCE). It is also known by the name tetrachloroethylene. Releases have been occurring over a number of years in Yakima by numerous businesses. Contamination has spread through the ground water to cover an area in horizontal extent of approximately six square miles. This area is known as the Yakima Railroad Area (YRRA). The material poses a threat to human health and the environment. Each responsible party is liable, strictly, jointly and severally for cleanup.

It is Ecology's understanding that Noel Canning Corporation is an owner of the Southgate Laundry site located at the corner of 3rd Avenue and Nob Hill Blvd. in the Southgate Shopping Center (parcel # 18132514543), Yakima, Washington, and that credible evidence exists indicating that a release (or threatened release) of a hazardous substance has occurred at this site. The evidence supporting these findings is as follows:

Five samples taken by Ecology on May 5, 1994, and analyzed at the WDOE/USEPA Manchester Laboratory found the following 22 volatile organic compounds in the soil at the Southgate Laundry site:

1,1-Dichloroethene	trans-1,2-Dichloroethene
Ethene, trichloro-	Toluene
Tetrachloroethylene (PCE)	Chlorobenzene

RECEIVED AUG 0 3 1994

ethylbenzene	p-Xylene
o-Xylene	Total Xylenes
Carbon Disulfide	2-Chlorotoluene
1,3-Dichlorobenzene	1,4-Dichlorobenzene
1,2-Dichlorobenzene	cis-1,2-Dichloroethene
1,1,1-Trichloroethane	Methane, Dichlorodifluoro-
Trichlorofluoromethane	Benzene
Methylene Chloride	Carbon Tetrachloride

As a result of this evidence, Noel Canning Corporation has been identified as a person potentially liable for the release of PCE and other contaminants at the site located at 3rd Avenue and Nob Hill Blvd. in the Southgate Shopping Center, Yakima, Washington.

Under the Act, you have 30 calendar days from the receipt of this letter to submit written comments to Ecology on your proposed status as a potentially liable person (PLP). Following a review of those comments, Ecology will make a final written determination of your status. In the interest of expediting this process without admitting liability, you may wish to accept your status as a Potentially Liable Person by waiving your right to the 30 days notice and comment period. This may be accomplished by sending a letter containing this information to Ecology.

If you are aware of any other persons who may be potentially liable for the release at this site, Ecology encourages you to provide us with their identity and the reason you believe they are potentially liable.

To date, Ecology has notified fifty-four (54) additional persons that they are potentially liable for the release of PCE in Yakima. These 54 persons are included with this letter as Attachment A. Ecology suggests you contact these other persons on Attachment A to discuss how you can jointly work together to most efficiently cleanup this site.

Ecology has conducted or intends to conduct the following actions at the site:

1. An Enforcement Order (Order No. DE 92TC-C108) has been issued to the persons listed above, requiring that they implement an interim action by providing bottled water to residents of the potentially affected vicinity who obtain drinking water from wells in the area. To date, nearly 1100 residences are participating in this bottled water program. It is likely that Ecology will amend this Order to include additional persons if a final determination is made that they are PLPs.

2. Ecology has also, in cooperation with the Cities of Yakima and Union Gap, worked on the implementation of a long-term interim action via the installation of a municipal water system. This will result in residents in the area having a permanent supply of uncontaminated drinking water. Costs for this action will ultimately be the responsibility of the PLPs.

3. A Remedial Investigation/Feasibility Study (RI/FS) and cleanup will ultimately be necessary to determine what cleanup options are feasible for this facility and the overall Yakima Railroad Area.

Ecology's policy is to work cooperatively with persons to ensure an efficient, prompt, and effective cleanup of hazardous waste sites. Cooperating with Ecology in planning or conducting remedial actions at the site is not an admission of guilt or liability. A number of administrative options are available to assist persons in fulfilling their options under the Model Toxics Control Act. These options are discussed in Chapter 70.105D RCW and WAC 173-340, copies of which are enclosed (in the same book).

If you have questions, please feel free to contact me at (509) 454-7837.

Sincerely,

Rick Roeder

Rick Roeder
Site Manager
Toxics Cleanup Program

RMR:dk

g:\dickb\sothgate.plp

cc: Tony Grover, WDOE-CRO
Tony Valero, WDOE-CRO

Enclosures: Chapter 70.105D RCW
Chapter 173-340 WAC

MANCHESTER ENVIRONMENTAL LABORATORY

7411 Beach Drive E , Port Orchard Washington 98366

CASE NARRATIVE

July 7, 1994

Subject: Southgate/YRRA

Samples: 94 - 188040 to -188044

Case No. DOE-103X

Officer: Rick Roeder

By: Dickey D. Huntamer
Organics Analysis Unit

VOLATILE ORGANIC ANALYSIS

ANALYTICAL METHODS:

Volatile organic compounds were analyzed using Manchester modification of the EPA SW 846 Method 8260 purge-trap procedure with capillary GC/MS analysis. Normal QA/QC procedures were performed on the samples.

BLANKS:

Low levels of the common laboratory solvents acetone and methylene chloride were detected in the laboratory blanks The EPA five times rule was applied to all target compounds which were found in the blank. Compounds that were found in the sample and in the blank were considered real and not the result of contamination if the levels in the sample are greater than or equal to five times the amount of compounds in the associated method blank.

SURROGATES:

Surrogate recoveries were within acceptable limits for soil samples. One surrogate, toluene-d8,was high in sample -188043. Since all other surrogates were acceptable no qualifiers were added to the results.

HOLDING TIMES:

The samples were analyzed within the recommended 14 day holding time.

MATRIX SPIKE AND MATRIX SPIKE DUPLICATE:

Matrix spike recoveries and Relative Percent Differences (RPD) were acceptable for all compounds except acetone.

ANALYTICAL COMMENTS:

No analytical problems were encountered in the analysis. The data is acceptable for use as qualified.

DATA QUALIFIER CODES:

U	-	The analyte was not detected at or above the reported value.
J	-	The analyte was positively identified. The associated numerical value is an estimate.
UJ	-	The analyte was not detected at or above the reported estimated result.
REJ	-	The data are unusable for all purposes.
EXP	-	The result is equal to the number before EXP times 10 to the power of the number after EXP. As an example 3EXP6 equals 3×10^6.
NAF	-	Not analyzed for.
N	-	For organic analytes there is evidence the analyte is present in this sample.
NJ	-	There is evidence that the analyte is present. The associated numerical result is an estimate.
E	-	This qualifier is used when the concentration of the associated value exceeds the known calibration range.
*	-	The analyte was present in the sample. (Visual Aid to locate detected compound on report sheet.)

*** Lab Analysis Report ***

==> Transaction #: 06249409 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (51) VOA - PP Scan

Instrument: (????????) Unspecified

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040		940505	SOUTHGATE1			
02	94188041		940505	SOUTHGATE2			
03	94188042		940505	SOUTHGATE3			
04	94188043		940505	SOUTHGATE4			
05	94188044		940505	SOUTHGATE5			

Record Type: TRNIN3 Date Verified: 7/11/94 By: D. Hobbs

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 5-JUL-94 10:45:00 Status: E Batch: (In CUR DB)

*** Lab Analysis Report ***

Transaction #: 06249409 Seq #: 01 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total: ____
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	1.1U
2	74873	Chloromethane	ug/kg	1.1U
3	75014	Vinyl Chloride	ug/kg	1.1U
4	74839	Bromomethane	ug/kg	1.1U
5	75003	Chloroethane	ug/kg	1.1U
6	75694	Trichlorofluoromethane	ug/kg	1.1U
7	75354	1,1-Dichloroethene	ug/kg	7.0
8	67641	Acetone	ug/kg	10.8U
9	75150	Carbon Disulfide	ug/kg	1.1UJ
10	75092	Methylene Chloride	ug/kg	7.1UJ
11	156605	trans-1,2-Dichloroethene	ug/kg	2.0
12	75343	1,1-Dichloroethane	ug/kg	1.1U
13	594207	2,2-Dichloropropane	ug/kg	1.1UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	1.1U
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.1U
17	67663	Chloroform	ug/kg	1.1U
18	71556	1,1,1-Trichloroethane	ug/kg	1.1U
19	563586	1,1-Dichloropropene	ug/kg	1.1U
20	56235	Carbon Tetrachloride	ug/kg	1.1U
21	71432	Benzene	ug/kg	1.1U
22	107062	1,2-Dichloroethane	ug/kg	1.1U
23	79016	Ethene, trichloro-	ug/kg	1.6
24	78875	1,2-Dichloropropane	ug/kg	1.1U
25	74953	Dibromomethane	ug/kg	1.1U
26	75274	Bromodichloromethane	ug/kg	1.1U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.1U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	10.8U
29	108883	Toluene	ug/kg	2.5
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.2UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.2U
32	127184	Tetrachloroethene	ug/kg	1650
33	142289	1,3-Dichloropropane	ug/kg	1.1U
34	591786	2-Hexanone	ug/kg	10.8UJ
35	124481	Dibromochloromethane	ug/kg	1.1U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.2U
37	108907	Chlorobenzene	ug/kg	0.82J
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.1U
39	100414	Ethylbenzene	ug/kg	0.44J
40	-1330207	m p-XYLENE	ug/kg	1.1
41	95476	o-XYLENE	ug/kg	0.21J
42	1330207	Total Xylenes	ug/kg	1.3
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.1U
44	75252	Bromoform	ug/kg	5.4U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.1U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.2U
47	108861	Bromobenzene	ug/kg	1.1U
48	96184	1,2,3-Trichloropropane	ug/kg	5.4U
49	103651	BENZENE, PROPYL-	ug/kg	1.1U
50	95498	2-Chlorotoluene	ug/kg	1.1U

(continued on next page)

Transaction #: 06249409 Seq #: 01 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.1U		
52	106434	4-Chlorotoluene	ug/kg	1.1UJ		
53	98066	Tert-Butylbenzene	ug/kg	1.1U		
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.1U		
55	135988	Sec-Butylbenzene	ug/kg	1.1U		
56	541731	1,3-Dichlorobenzene	ug/kg	1.1UJ		
57	99876	p-Isopropyltoluene	ug/kg	1.1UJ		
58	106467	1,4-Dichlorobenzene	ug/kg	1.1UJ		
59	95501	1,2-Dichlorobenzene	ug/kg	1.1U		
60	104518	Butylbenzene	ug/kg	1.1UJ		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	10.8U		
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.1UJ		
63	87683	Hexachlorobutadiene	ug/kg	1.1UJ		
64	91203	Naphthalene	ug/kg	1.1U		
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.1UJ		
66	17070070	d4-1,2-Dichloroethane	% Recov	104	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	100	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	112	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	84	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	96	(Surr)	PR

*** Lab Analysis Report ***

Transaction #: 06249409 Seq #: 02 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188041 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total: 0/ 14
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal:

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	1.0U
2	74873	Chloromethane	ug/kg	1.0U
3	75014	Vinyl Chloride	ug/kg	1.0U
4	74839	Bromomethane	ug/kg	1.0U
5	75003	Chloroethane	ug/kg	1.0U
6	75694	Trichlorofluoromethane	ug/kg	1.0U
7	75354	1,1-Dichloroethene	ug/kg	6.9
8	67641	Acetone	ug/kg	10.2U
9	75150	Carbon Disulfide	ug/kg	1.0UJ
10	75092	Methylene Chloride	ug/kg	6.1UJ
11	156605	trans-1,2-Dichloroethene	ug/kg	1.8
12	75343	1,1-Dichloroethane	ug/kg	1.0U
13	594207	2,2-Dichloropropane	ug/kg	1.0UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	1.0U
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.0U
17	67663	Chloroform	ug/kg	1.0U
18	71556	1,1,1-Trichloroethane	ug/kg	1.0U
19	563586	1,1-Dichloropropene	ug/kg	1.0U
20	56235	Carbon Tetrachloride	ug/kg	1.0U
21	71432	Benzene	ug/kg	1.0U
22	107062	1,2-Dichloroethane	ug/kg	1.0U
23	79016	Ethene, trichloro-	ug/kg	0.49J
24	78875	1,2-Dichloropropane	ug/kg	1.0U
25	74953	Dibromomethane	ug/kg	1.0U
26	75274	Bromodichloromethane	ug/kg	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.0U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	10.2U
29	108883	Toluene	ug/kg	1.3
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.0UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.0U
32	127184	Tetrachloroethene	ug/kg	19.2
33	142289	1,3-Dichloropropane	ug/kg	1.0U
34	591786	2-Hexanone	ug/kg	10.2UJ
35	124481	Dibromochloromethane	ug/kg	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.0U
37	108907	Chlorobenzene	ug/kg	2.0
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.0U
39	100414	Ethylbenzene	ug/kg	0.23J
40	-1330207	m p-XYLENE	ug/kg	0.65J
41	95476	o-XYLENE	ug/kg	0.21J
42	1330207	Total Xylenes	ug/kg	0.86J
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.0U
44	75252	Bromoform	ug/kg	5.1U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.0U
47	108861	Bromobenzene	ug/kg	1.0U
48	96184	1,2,3-Trichloropropane	ug/kg	5.1U
49	103651	BENZENE, PROPYL-	ug/kg	1.0U
50	95498	2-Chlorotoluene	ug/kg	0.91J

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*** Lab Analysis Report ***

Transaction #: 06249409 Seq #: 02 (51) VOA - PP Scan

Sample No.: 94 188041 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.0U		
52	106434	4-Chlorotoluene	ug/kg	1.0UJ		
53	98066	Tert-Butylbenzene	ug/kg	1.0U		
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.0U		
55	135988	Sec-Butylbenzene	ug/kg	1.0U		
56	541731	1,3-Dichlorobenzene	ug/kg	0.31J		
57	99876	p-Isopropyltoluene	ug/kg	1.0U		
58	106467	1,4-Dichlorobenzene	ug/kg	0.16J		
59	95501	1,2-Dichlorobenzene	ug/kg	1.2J		
60	104518	Butylbenzene	ug/kg	1.0UJ		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	10.2U		
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.0UJ		
63	87683	Hexachlorobutadiene	ug/kg	1.0UJ		
64	91203	Naphthalene	ug/kg	1.0U		
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.0UJ		
66	17070070	d4-1,2-Dichloroethane	% Recov	108	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	102	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	98	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	92	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	104	(Surr)	PR

Transaction #: 06249409 Seq #: 03 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188042 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total: ____
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	1.0U
2	74873	Chloromethane	ug/kg	1.0U
3	75014	Vinyl Chloride	ug/kg	1.0U
4	74839	Bromomethane	ug/kg	1.0U
5	75003	Chloroethane	ug/kg	1.0U
6	75694	Trichlorofluoromethane	ug/kg	0.36J
7	75354	1,1-Dichloroethene	ug/kg	13.6
8	67641	Acetone	ug/kg	10.5U
9	75150	Carbon Disulfide	ug/kg	1.0UJ
10	75092	Methylene Chloride	ug/kg	8.8UJ
11	156605	trans-1,2-Dichloroethene	ug/kg	3.2
12	75343	1,1-Dichloroethane	ug/kg	1.0U
13	594207	2,2-Dichloropropane	ug/kg	1.0UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	0.36J
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.0U
17	67663	Chloroform	ug/kg	1.0U
18	71556	1,1,1-Trichloroethane	ug/kg	0.44J
19	563586	1,1-Dichloropropene	ug/kg	1.0U
20	56235	Carbon Tetrachloride	ug/kg	1.0U
21	71432	Benzene	ug/kg	1.0U
22	107062	1,2-Dichloroethane	ug/kg	1.0U
23	79016	Ethene, trichloro-	ug/kg	1.1
24	78875	1,2-Dichloropropane	ug/kg	1.0U
25	74953	Dibromomethane	ug/kg	1.0U
26	75274	Bromodichloromethane	ug/kg	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.0U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	10.5U
29	108883	Toluene	ug/kg	0.67J
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.1UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.1U
32	127184	Tetrachloroethene	ug/kg	29.5
33	142289	1,3-Dichloropropane	ug/kg	1.0U
34	591786	2-Hexanone	ug/kg	10.5UJ
35	124481	Dibromochloromethane	ug/kg	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.1U
37	108907	Chlorobenzene	ug/kg	0.65J
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.0U
39	100414	Ethylbenzene	ug/kg	1.0U
40	-1330207	m p-XYLENE	ug/kg	1.0U
41	95476	o-XYLENE	ug/kg	1.0U
42	1330207	Total Xylenes	ug/kg	1.0U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.0U
44	75252	Bromoform	ug/kg	5.2U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.1U
47	108861	Bromobenzene	ug/kg	1.0U
48	96184	1,2,3-Trichloropropane	ug/kg	5.2U
49	103651	BENZENE, PROPYL-	ug/kg	1.0U
50	95498	2-Chlorotoluene	ug/kg	1.0U

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Transaction #: 06249409 Seq #: 03 (51) VOA - PP Scan

Sample No.: 94 188042 (continued from previous page)

Line	Par #	Parameter Description	Units	Value	
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.0U	
52	106434	4-Chlorotoluene	ug/kg	1.0UJ	
53	98066	Tert-Butylbenzene	ug/kg	1.0U	
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.0U	
55	135988	Sec-Butylbenzene	ug/kg	1.0U	
56	541731	1,3-Dichlorobenzene	ug/kg	1.0UJ	
57	99876	p-Isopropyltoluene	ug/kg	1.0UJ	
58	106467	1,4-Dichlorobenzene	ug/kg	1.0UJ	
59	95501	1,2-Dichlorobenzene	ug/kg	1.0U	
60	104518	Butylbenzene	ug/kg	1.0UJ	
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	10.5U	
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.0UJ	
63	87683	Hexachlorobutadiene	ug/kg	1.0UJ	
64	91203	Naphthalene	ug/kg	1.0U	
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.0UJ	
66	17070070	d4-1,2-Dichloroethane	% Recov	110	(Surr) PR
67	462066	FLUOROBENZENE	% Recov	99	(Surr) PR
68	2037265	TOLUENE-D8	% Recov	101	(Surr) PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	88	(Surr) PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	106	(Surr) PR

*** Lab Analysis Report ***

Transaction #: 06249409 Seq #: 04 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188043 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total: ____
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	2.2
2	74873	Chloromethane	ug/kg	1.1U
3	75014	Vinyl Chloride	ug/kg	1.1U
4	74839	Bromomethane	ug/kg	1.1U
5	75003	Chloroethane	ug/kg	1.1U
6	75694	Trichlorofluoromethane	ug/kg	0.51J
7	75354	1,1-Dichloroethene	ug/kg	25.2
8	67641	Acetone	ug/kg	11.5U
9	75150	Carbon Disulfide	ug/kg	1.1UJ
10	75092	Methylene Chloride	ug/kg	10.9UJ
11	156605	trans-1,2-Dichloroethene	ug/kg	4.2
12	75343	1,1-Dichloroethane	ug/kg	1.1U
13	594207	2,2-Dichloropropane	ug/kg	1.1UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	1.1U
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.1U
17	67663	Chloroform	ug/kg	1.1U
18	71556	1,1,1-Trichloroethane	ug/kg	1.1U
19	563586	1,1-Dichloropropene	ug/kg	1.1U
20	56235	Carbon Tetrachloride	ug/kg	1.1U
21	71432	Benzene	ug/kg	0.48J
22	107062	1,2-Dichloroethane	ug/kg	1.1U
23	79016	Ethene, trichloro-	ug/kg	2.1
24	78875	1,2-Dichloropropane	ug/kg	1.1U
25	74953	Dibromomethane	ug/kg	1.1U
26	75274	Bromodichloromethane	ug/kg	1.1U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.1U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	11.5U
29	108883	Toluene	ug/kg	0.57J
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.3UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.3U
32	127184	Tetrachloroethene	ug/kg	1680
33	142289	1,3-Dichloropropane	ug/kg	1.1U
34	591786	2-Hexanone	ug/kg	11.5UJ
35	124481	Dibromochloromethane	ug/kg	1.1U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.3U
37	108907	Chlorobenzene	ug/kg	0.22J
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.1U
39	100414	Ethylbenzene	ug/kg	1.1U
40	-1330207	m p-XYLENE	ug/kg	1.1U
41	95476	o-XYLENE	ug/kg	1.1U
42	1330207	Total Xylenes	ug/kg	1.1U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.1U
44	75252	Bromoform	ug/kg	5.7U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.1U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.3U
47	108861	Bromobenzene	ug/kg	1.1U
48	96184	1,2,3-Trichloropropane	ug/kg	5.7U
49	103651	BENZENE, PROPYL-	ug/kg	1.1U
50	95498	2-Chlorotoluene	ug/kg	1.1U

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Transaction #: 06249409 Seq #: 04 (51) VOA - PP Scan

Sample No.: 94 188043 (continued from previous page)

Line	Par #	Parameter Description	Units	Value	
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.1U	
52	106434	4-Chlorotoluene	ug/kg	1.1UJ	
53	98066	Tert-Butylbenzene	ug/kg	1.1U	
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.1U	
55	135988	Sec-Butylbenzene	ug/kg	1.1U	
56	541731	1,3-Dichlorobenzene	ug/kg	1.1UJ	
57	99876	p-Isopropyltoluene	ug/kg	1.1UJ	
58	106467	1,4-Dichlorobenzene	ug/kg	1.1UJ	
59	95501	1,2-Dichlorobenzene	ug/kg	1.1UJ	
60	104518	Butylbenzene	ug/kg	1.1U	
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	11.5U	
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.1UJ	
63	87683	Hexachlorobutadiene	ug/kg	1.1UJ	
64	91203	Naphthalene	ug/kg	1.1U	
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.1UJ	
66	17070070	d4-1,2-Dichloroethane	% Recov	73	(Surr) PR
67	462066	FLUOROBENZENE	% Recov	103	(Surr) PR
68	2037265	TOLUENE-D8	% Recov	127	(Surr) PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	74	(Surr) PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	101	(Surr) PR

*** Lab Analysis Report ***

Transaction #: 06249409 Seq #: 05 (51) VOA - PP Scan PE # : J1K1Y
Proj Code : DOE-103X SOUTHGATE/YRRA

Sample No.: 94 188044 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total: 0/ 14
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal:

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	4.6
2	74873	Chloromethane	ug/kg	1.0U
3	75014	Vinyl Chloride	ug/kg	1.0U
4	74839	Bromomethane	ug/kg	1.0U
5	75003	Chloroethane	ug/kg	1.0U
6	75694	Trichlorofluoromethane	ug/kg	0.91J
7	75354	1,1-Dichloroethene	ug/kg	27.3
8	67641	Acetone	ug/kg	10.4U
9	75150	Carbon Disulfide	ug/kg	1.0UJ
10	75092	Methylene Chloride	ug/kg	16.5
11	156605	trans-1,2-Dichloroethene	ug/kg	4.0
12	75343	1,1-Dichloroethane	ug/kg	1.0U
13	594207	2,2-Dichloropropane	ug/kg	1.0UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	1.0U
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.0U
17	67663	Chloroform	ug/kg	1.0U
18	71556	1,1,1-Trichloroethane	ug/kg	1.2
19	563586	1,1-Dichloropropene	ug/kg	1.0U
20	56235	Carbon Tetrachloride	ug/kg	0.086J
21	71432	Benzene	ug/kg	0.59J
22	107062	1,2-Dichloroethane	ug/kg	1.0U
23	79016	Ethene, trichloro-	ug/kg	7.5
24	78875	1,2-Dichloropropane	ug/kg	1.0U
25	74953	Dibromomethane	ug/kg	1.0U
26	75274	Bromodichloromethane	ug/kg	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.0U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	10.4U
29	108883	Toluene	ug/kg	1.6
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.1UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.1U
32	127184	Tetrachloroethene	ug/kg	2300
33	142289	1,3-Dichloropropane	ug/kg	1.0U
34	591786	2-Hexanone	ug/kg	10.4UJ
35	124481	Dibromochloromethane	ug/kg	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.1U
37	108907	Chlorobenzene	ug/kg	1.5
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.0U
39	100414	Ethylbenzene	ug/kg	1.0U
40	-1330207	m p-XYLENE	ug/kg	1.0U
41	95476	o-XYLENE	ug/kg	1.0U
42	1330207	Total Xylenes	ug/kg	1.0U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.0U
44	75252	Bromoform	ug/kg	5.2U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.1U
47	108861	Bromobenzene	ug/kg	1.0U
48	96184	1,2,3-Trichloropropane	ug/kg	5.2U
49	103651	BENZENE, PROPYL-	ug/kg	1.0U
50	95498	2-Chlorotoluene	ug/kg	1.0U

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Transaction #: 06249409 Seq #: 05 (51) VOA - PP Scan

Sample No.: 94 188044 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.0U		
52	106434	4-Chlorotoluene	ug/kg	1.0UJ		
53	98066	Tert-Butylbenzene	ug/kg	1.0U		
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.0U		
55	135988	Sec-Butylbenzene	ug/kg	1.0U		
56	541731	1,3-Dichlorobenzene	ug/kg	1.0UJ		
57	99876	p-Isopropyltoluene	ug/kg	1.0UJ		
58	106467	1,4-Dichlorobenzene	ug/kg	1.0UJ		
59	95501	1,2-Dichlorobenzene	ug/kg	1.0U		
60	104518	Butylbenzene	ug/kg	1.0UJ		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	10.4U		
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.0UJ		
63	87683	Hexachlorobutadiene	ug/kg	1.0UJ		
64	91203	Naphthalene	ug/kg	1.0U		
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.0UJ		
66	17070070	d4-1,2-Dichloroethane	% Recov	105	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	102	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	126	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	84	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	92	(Surr)	PR

Washington State Department of Ecology
*** ab Analysis Report ***

==> Transaction #: 06249410 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (51) VOA - PP Scan

Instrument: (????????) Unspecified

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040	LBK1	940505	SOUTHGATE1			

Record Type: TRNIN3 Date Verified: 7/1/94 By: D. Hunter

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 5-JUL-94 10:45:00 Status: E Batch: (In CUR DB)

*** Lab Analysis Report ***

Transaction #: 06249410 Seq #: 01 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Blank ID : ibs4139
Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LBK1) Lab Blank Sample #1 Peaks Total: ____
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	1.0U
2	74873	Chloromethane	ug/kg	1.0U
3	75014	Vinyl Chloride	ug/kg	1.0U
4	74839	Bromomethane	ug/kg	1.0U
5	75003	Chloroethane	ug/kg	1.0U
6	75694	Trichlorofluoromethane	ug/kg	1.0U
7	75354	1,1-Dichloroethene	ug/kg	1.0U
8	67641	Acetone	ug/kg	10.0U
9	75150	Carbon Disulfide	ug/kg	0.61J
10	75092	Methylene Chloride	ug/kg	1.1J
11	156605	trans-1,2-Dichloroethene	ug/kg	1.0U
12	75343	1,1-Dichloroethane	ug/kg	1.0U
13	594207	2,2-Dichloropropane	ug/kg	1.0UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	1.0U
15	78933	2-Butanone	ug/kg	REJ
16	74975	Bromochloromethane	ug/kg	1.0U
17	67663	Chloroform	ug/kg	1.0U
18	71556	1,1,1-Trichloroethane	ug/kg	1.0U
19	563586	1,1-Dichloropropene	ug/kg	1.0U
20	56235	Carbon Tetrachloride	ug/kg	1.0U
21	71432	Benzene	ug/kg	1.0U
22	107062	1,2-Dichloroethane	ug/kg	1.0U
23	79016	Ethene, trichloro-	ug/kg	1.0U
24	78875	1,2-Dichloropropane	ug/kg	1.0U
25	74953	Dibromomethane	ug/kg	1.0U
26	75274	Bromodichloromethane	ug/kg	1.0U
27	10061015	cis-1,3-Dichloropropene	ug/kg	1.0U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	10.0U
29	108883	Toluene	ug/kg	0.045J
30	10061026	trans-1,3-Dichloropropene	ug/kg	2.0UJ
31	79005	1,1,2-Trichloroethane	ug/kg	2.0U
32	127184	Tetrachloroethene	ug/kg	5.0U
33	142289	1,3-Dichloropropane	ug/kg	1.0U
34	591786	2-Hexanone	ug/kg	10.0UJ
35	124481	Dibromochloromethane	ug/kg	1.0U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	2.0U
37	108907	Chlorobenzene	ug/kg	1.0U
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	1.0U
39	100414	Ethylbenzene	ug/kg	1.0U
40	-1330207	m p-XYLENE	ug/kg	1.0U
41	95476	o-XYLENE	ug/kg	1.0U
42	1330207	Total Xylenes	ug/kg	1.0U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	1.0U
44	75252	Bromoform	ug/kg	5.0U
45	98828	Isopropylbenzene (Cumene)	ug/kg	1.0U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	2.0U
47	108861	Bromobenzene	ug/kg	1.0U
48	96184	1,2,3-Trichloropropane	ug/kg	5.0U
49	103651	BENZENE, PROPYL-	ug/kg	1.0U
50	95498	2-Chlorotoluene	ug/kg	1.0U

*** Lab Analysis Report ***

Transaction #: 06249410 Seq #: 01 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	1.0U		
52	106434	4-Chlorotoluene	ug/kg	1.0UJ		
53	98066	Tert-Butylbenzene	ug/kg	1.0U		
54	95636	1,2,4-Trimethylbenzene	ug/kg	1.0U		
55	135988	Sec-Butylbenzene	ug/kg	1.0U		
56	541731	1,3-Dichlorobenzene	ug/kg	1.0UJ		
57	99876	p-Isopropyltoluene	ug/kg	1.0UJ		
58	106467	1,4-Dichlorobenzene	ug/kg	1.0UJ		
59	95501	1,2-Dichlorobenzene	ug/kg	1.0U		
60	104518	Butylbenzene	ug/kg	1.0UJ		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	10.0U		
62	120821	1,2,4-Trichlorobenzene	ug/kg	1.0UJ		
63	87683	Hexachlorobutadiene	ug/kg	1.0UJ		
64	91203	Naphthalene	ug/kg	1.0U		
65	87616	1,2,3-Trichlorobenzene	ug/kg	1.0UJ		
66	17070070	d4-1,2-Dichloroethane	% Recov	91	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	102	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	101	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	94	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	105	(Surr)	PR

*** Lab Analysis Report ***

=> Transaction #: 06249411 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (51) VOA - PP Scan

Instrument: (KIRK) GC/MS, HP 5890II/5971 (EPA)

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040	LBK2	940505	SOUTHGATE1			

Record Type: TRNIN3 Date Verified: 7/11/94 By: D. Hunter

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 5-JUL-94 10:45:00 Status: E Batch: (In CUR DB)

Transaction #: 06249411 Seq #: 01 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Blank ID : vbs4144
Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LBK2) Lab Blank Sample #2 Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	400UJ
2	74873	Chloromethane	ug/kg	400U
3	75014	Vinyl Chloride	ug/kg	400U
4	74839	Bromomethane	ug/kg	800U
5	75003	Chloroethane	ug/kg	800U
6	75694	Trichlorofluoromethane	ug/kg	400U
7	75354	1,1-Dichloroethene	ug/kg	400U
8	67641	Acetone	ug/kg	715J
9	75150	Carbon Disulfide	ug/kg	400U
10	75092	Methylene Chloride	ug/kg	160J
11	156605	trans-1,2-Dichloroethene	ug/kg	400U
12	75343	1,1-Dichloroethane	ug/kg	400U
13	594207	2,2-Dichloropropane	ug/kg	400UJ
14	156592	Cis-1,2-Dichloroethene	ug/kg	400U
15	78933	2-Butanone	ug/kg	144J
16	74975	Bromochloromethane	ug/kg	400U
17	67663	Chloroform	ug/kg	400U
18	71556	1,1,1-Trichloroethane	ug/kg	400UJ
19	563586	1,1-Dichloropropene	ug/kg	400U
20	56235	Carbon Tetrachloride	ug/kg	400UJ
21	71432	Benzene	ug/kg	400U
22	107062	1,2-Dichloroethane	ug/kg	400U
23	79016	Ethene, trichloro-	ug/kg	400U
24	78875	1,2-Dichloropropane	ug/kg	400U
25	74953	Dibromomethane	ug/kg	400U
26	75274	Bromodichloromethane	ug/kg	400U
27	10061015	cis-1,3-Dichloropropene	ug/kg	212U
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	400U
29	108883	Toluene	ug/kg	400U
30	10061026	trans-1,3-Dichloropropene	ug/kg	188UJ
31	79005	1,1,2-Trichloroethane	ug/kg	400U
32	127184	Tetrachloroethene	ug/kg	400U
33	142289	1,3-Dichloropropane	ug/kg	400U
34	591786	2-Hexanone	ug/kg	400UJ
35	124481	Dibromochloromethane	ug/kg	400U
36	106934	1,2-Dibromoethane (EDB)	ug/kg	400U
37	108907	Chlorobenzene	ug/kg	39.6J
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	400U
39	100414	Ethylbenzene	ug/kg	400U
40	-1330207	m p-XYLENE	ug/kg	800U
41	95476	o-XYLENE	ug/kg	400U
42	1330207	Total Xylenes	ug/kg	1200U
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	400U
44	75252	Bromoform	ug/kg	400U
45	98828	Isopropylbenzene (Cumene)	ug/kg	400U
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	400U
47	108861	Bromobenzene	ug/kg	400U
48	96184	1,2,3-Trichloropropane	ug/kg	400U
49	103651	BENZENE, PROPYL-	ug/kg	400U
50	95498	2-Chlorotoluene	ug/kg	400U

Transaction #: 06249411 Seq #: 01 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	400U		
52	106434	4-Chlorotoluene	ug/kg	400UJ		
53	98066	Tert-Butylbenzene	ug/kg	400U		
54	95636	1,2,4-Trimethylbenzene	ug/kg	400U		
55	135988	Sec-Butylbenzene	ug/kg	400U		
56	541731	1,3-Dichlorobenzene	ug/kg	400UJ		
57	99876	p-Isopropyltoluene	ug/kg	400U		
58	106467	1,4-Dichlorobenzene	ug/kg	2.4J		
59	95501	1,2-Dichlorobenzene	ug/kg	400U		
60	104518	Butylbenzene	ug/kg	400UJ		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	400U		
62	120821	1,2,4-Trichlorobenzene	ug/kg	400U		
63	87683	Hexachlorobutadiene	ug/kg	400U		
64	91203	Naphthalene	ug/kg	220J		
65	87616	1,2,3-Trichlorobenzene	ug/kg	120J		
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	97	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	101	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	100	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	96	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr)	PR

*** Lab Analysis Report ***

==> Transaction #: 06249412 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (51) VOA - PP Scan

Instrument: (KIRK) GC/MS, HP 5890II/5971 (EPA)

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188043	LDP1	940505	SOUTHGATE4			
02	94188044	LDP1	940505	SOUTHGATE5			
03	94188040	LMX1	940505	SOUTHGATE1			
04	94188040	LMX2	940505	SOUTHGATE1			
05	94188040	LDP1	940505	SOUTHGATE1			

Record Type: TRNIN3 Date Verified: 7/7/94 By: D. Hunter

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 6-JUL-94 16:19:34 Status: E Batch: (In CUR DB)

Transaction #: 06249412 Seq #: 01 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188043 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LDP1) Lab Duplicate Sample #1 Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	NAF
2	74873	Chloromethane	ug/kg	NAF
3	75014	Vinyl Chloride	ug/kg	NAF
4	74839	Bromomethane	ug/kg	NAF
5	75003	Chloroethane	ug/kg	NAF
6	75694	Trichlorofluoromethane	ug/kg	NAF
7	75354	1,1-Dichloroethene	ug/kg	NAF
8	67641	Acetone	ug/kg	NAF
9	75150	Carbon Disulfide	ug/kg	NAF
10	75092	Methylene Chloride	ug/kg	NAF
11	156605	trans-1,2-Dichloroethene	ug/kg	NAF
12	75343	1,1-Dichloroethane	ug/kg	NAF
13	594207	2,2-Dichloropropane	ug/kg	NAF
14	156592	Cis-1,2-Dichloroethene	ug/kg	NAF
15	78933	2-Butanone	ug/kg	NAF
16	74975	Bromochloromethane	ug/kg	NAF
17	67663	Chloroform	ug/kg	NAF
18	71556	1,1,1-Trichloroethane	ug/kg	NAF
19	563586	1,1-Dichloropropene	ug/kg	NAF
20	56235	Carbon Tetrachloride	ug/kg	NAF
21	71432	Benzene	ug/kg	NAF
22	107062	1,2-Dichloroethane	ug/kg	NAF
23	79016	Ethene, trichloro-	ug/kg	NAF
24	78875	1,2-Dichloropropane	ug/kg	NAF
25	74953	Dibromomethane	ug/kg	NAF
26	75274	Bromodichloromethane	ug/kg	NAF
27	10061015	cis-1,3-Dichloropropene	ug/kg	NAF
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	NAF
29	108883	Toluene	ug/kg	NAF
30	10061026	trans-1,3-Dichloropropene	ug/kg	NAF
31	79005	1,1,2-Trichloroethane	ug/kg	NAF
32	127184	Tetrachloroethene	ug/kg	1680
33	142289	1,3-Dichloropropane	ug/kg	NAF
34	591786	2-Hexanone	ug/kg	NAF
35	124481	Dibromochloromethane	ug/kg	NAF
36	106934	1,2-Dibromoethane (EDB)	ug/kg	NAF
37	108907	Chlorobenzene	ug/kg	NAF
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	NAF
39	100414	Ethylbenzene	ug/kg	NAF
40	-1330207	m p-XYLENE	ug/kg	NAF
41	95476	o-XYLENE	ug/kg	NAF
42	1330207	Total Xylenes	ug/kg	NAF
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	NAF
44	75252	Bromoform	ug/kg	NAF
45	98828	Isopropylbenzene (Cumene)	ug/kg	NAF
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	NAF
47	108861	Bromobenzene	ug/kg	NAF
48	96184	1,2,3-Trichloropropane	ug/kg	NAF
49	103651	BENZENE, PROPYL-	ug/kg	NAF
50	95498	2-Chlorotoluene	ug/kg	NAF

(continued on next page)

Transaction #: 06249412 Seq #: 01 (51) VOA - PP Scan

Sample No.: 94 188043 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	NAF		
52	106434	4-Chlorotoluene	ug/kg	NAF		
53	98066	Tert-Butylbenzene	ug/kg	NAF		
54	95636	1,2,4-Trimethylbenzene	ug/kg	NAF		
55	135988	Sec-Butylbenzene	ug/kg	NAF		
56	541731	1,3-Dichlorobenzene	ug/kg	NAF		
57	99876	p-Isopropyltoluene	ug/kg	NAF		
58	106467	1,4-Dichlorobenzene	ug/kg	NAF		
59	95501	1,2-Dichlorobenzene	ug/kg	NAF		
60	104518	Butylbenzene	ug/kg	NAF		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	NAF		
62	120821	1,2,4-Trichlorobenzene	ug/kg	NAF		
63	87683	Hexachlorobutadiene	ug/kg	NAF		
64	91203	Naphthalene	ug/kg	NAF		
65	87616	1,2,3-Trichlorobenzene	ug/kg	NAF		
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	91	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	100	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	101	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	95	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr)	PR

Transaction #: 06249412 Seq #: 02 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188044 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LDP1) Lab Duplicate Sample #1 Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	NAF
2	74873	Chloromethane	ug/kg	NAF
3	75014	Vinyl Chloride	ug/kg	NAF
4	74839	Bromomethane	ug/kg	NAF
5	75003	Chloroethane	ug/kg	NAF
6	75694	Trichlorofluoromethane	ug/kg	NAF
7	75354	1,1-Dichloroethene	ug/kg	NAF
8	67641	Acetone	ug/kg	NAF
9	75150	Carbon Disulfide	ug/kg	NAF
10	75092	Methylene Chloride	ug/kg	NAF
11	156605	trans-1,2-Dichloroethene	ug/kg	NAF
12	75343	1,1-Dichloroethane	ug/kg	NAF
13	594207	2,2-Dichloropropane	ug/kg	NAF
14	156592	Cis-1,2-Dichloroethene	ug/kg	NAF
15	78933	2-Butanone	ug/kg	NAF
16	74975	Bromochloromethane	ug/kg	NAF
17	67663	Chloroform	ug/kg	NAF
18	71556	1,1,1-Trichloroethane	ug/kg	NAF
19	563586	1,1-Dichloropropene	ug/kg	NAF
20	56235	Carbon Tetrachloride	ug/kg	NAF
21	71432	Benzene	ug/kg	NAF
22	107062	1,2-Dichloroethane	ug/kg	NAF
23	79016	Ethene, trichloro-	ug/kg	NAF
24	78875	1,2-Dichloropropane	ug/kg	NAF
25	74953	Dibromomethane	ug/kg	NAF
26	75274	Bromodichloromethane	ug/kg	NAF
27	10061015	cis-1,3-Dichloropropene	ug/kg	NAF
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	NAF
29	108883	Toluene	ug/kg	NAF
30	10061026	trans-1,3-Dichloropropene	ug/kg	NAF
31	79005	1,1,2-Trichloroethane	ug/kg	NAF
32	127184	Tetrachloroethene	ug/kg	2300
33	142289	1,3-Dichloropropane	ug/kg	NAF
34	591786	2-Hexanone	ug/kg	NAF
35	124481	Dibromochloromethane	ug/kg	NAF
36	106934	1,2-Dibromoethane (EDB)	ug/kg	NAF
37	108907	Chlorobenzene	ug/kg	NAF
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	NAF
39	100414	Ethylbenzene	ug/kg	NAF
40	-1330207	m p-XYLENE	ug/kg	NAF
41	95476	o-XYLENE	ug/kg	NAF
42	1330207	Total Xylenes	ug/kg	NAF
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	NAF
44	75252	Bromoform	ug/kg	NAF
45	98828	Isopropylbenzene (Cumene)	ug/kg	NAF
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	NAF
47	108861	Bromobenzene	ug/kg	NAF
48	96184	1,2,3-Trichloropropane	ug/kg	NAF
49	103651	BENZENE, PROPYL-	ug/kg	NAF
50	95498	2-Chlorotoluene	ug/kg	NAF

*** Lab Analysis Report ***

Transaction #: 06249412 Seq #: 02 (51) VOA - PP Scan

Sample No.: 94 188044 (continued from previous page)

Line	Par #	Parameter Description	Units	Value	
51	108678	1,3,5-Trimethylbenzene	ug/kg	NAF	
52	106434	4-Chlorotoluene	ug/kg	NAF	
53	98066	Tert-Butylbenzene	ug/kg	NAF	
54	95636	1,2,4-Trimethylbenzene	ug/kg	NAF	
55	135988	Sec-Butylbenzene	ug/kg	NAF	
56	541731	1,3-Dichlorobenzene	ug/kg	NAF	
57	99876	p-Isopropyltoluene	ug/kg	NAF	
58	106467	1,4-Dichlorobenzene	ug/kg	NAF	
59	95501	1,2-Dichlorobenzene	ug/kg	NAF	
60	104518	Butylbenzene	ug/kg	NAF	
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	NAF	
62	120821	1,2,4-Trichlorobenzene	ug/kg	NAF	
63	87683	Hexachlorobutadiene	ug/kg	NAF	
64	91203	Naphthalene	ug/kg	NAF	
65	87616	1,2,3-Trichlorobenzene	ug/kg	NAF	
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	90	(Surr) PR
67	462066	FLUOROBENZENE	% Recov	98	(Surr) PR
68	2037265	TOLUENE-D8	% Recov	102	(Surr) PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	96	(Surr) PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	100	(Surr) PR

*** Lab Analysis Report ***

Transaction #: 06249412 Seq #: 03 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (94) % Recov %Slds: NAR
QA Code: (LMX1) Lab Mtrx Spike #1 (% Rec Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	% Recov	100
2	74873	Chloromethane	% Recov	105
3	75014	Vinyl Chloride	% Recov	100
4	74839	Bromomethane	% Recov	101
5	75003	Chloroethane	% Recov	97
6	75694	Trichlorofluoromethane	% Recov	103
7	75354	1,1-Dichloroethene	% Recov	97
8	67641	Acetone	% Recov	80
9	75150	Carbon Disulfide	% Recov	82
10	75092	Methylene Chloride	% Recov	99
11	156605	trans-1,2-Dichloroethene	% Recov	96
12	75343	1,1-Dichloroethane	% Recov	98
13	594207	2,2-Dichloropropane	% Recov	97
14	156592	Cis-1,2-Dichloroethene	% Recov	99
15	78933	2-Butanone	% Recov	102
16	74975	Bromochloromethane	% Recov	99
17	67663	Chloroform	% Recov	98
18	71556	1,1,1-Trichloroethane	% Recov	97
19	563586	1,1-Dichloropropene	% Recov	101
20	56235	Carbon Tetrachloride	% Recov	98
21	71432	Benzene	% Recov	105
22	107062	1,2-Dichloroethane	% Recov	99
23	79016	Ethene, trichloro-	% Recov	98
24	78875	1,2-Dichloropropane	% Recov	101
25	74953	Dibromomethane	% Recov	99
26	75274	Bromodichloromethane	% Recov	94
27	10061015	cis-1,3-Dichloropropene	% Recov	91
28	108101	4-Methyl-2-Pentanone(MIBK)	% Recov	107
29	108883	Toluene	% Recov	99
30	10061026	trans-1,3-Dichloropropene	% Recov	90
31	79005	1,1,2-Trichloroethane	% Recov	98
32	127184	Tetrachloroethene	% Recov	121
33	142289	1,3-Dichloropropane	% Recov	96
34	591786	2-Hexanone	% Recov	97
35	124481	Dibromochloromethane	% Recov	93
36	106934	1,2-Dibromoethane (EDB)	% Recov	96
37	108907	Chlorobenzene	% Recov	98
38	630206	Ethane, 1,1,1,2-Tetrachloro-	% Recov	92
39	100414	Ethylbenzene	% Recov	97
40	-1330207	m p-XYLENE	% Recov	98
41	95476	o-XYLENE	% Recov	98
42	1330207	Total Xylenes	% Recov	98
43	100425	BENZENE, ETHENYL-(STYRENE)	% Recov	95
44	75252	Bromoform	% Recov	90
45	98828	Isopropylbenzene (Cumene)	% Recov	100
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	% Recov	96
47	108861	Bromobenzene	% Recov	99
48	96184	1,2,3-Trichloropropane	% Recov	100
49	103651	BENZENE, PROPYL-	% Recov	101
50	95498	2-Chlorotoluene	% Recov	98

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Transaction #: 06249412 Seq #: 03 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value	
51	108678	1,3,5-Trimethylbenzene	% Recov	100	
52	106434	4-Chlorotoluene	% Recov	102	
53	98066	Tert-Butylbenzene	% Recov	100	
54	95636	1,2,4-Trimethylbenzene	% Recov	96	
55	135988	Sec-Butylbenzene	% Recov	98	
56	541731	1,3-Dichlorobenzene	% Recov	96	
57	99876	p-Isopropyltoluene	% Recov	98	
58	106467	1,4-Dichlorobenzene	% Recov	96	
59	95501	1,2-Dichlorobenzene	% Recov	100	
60	104518	Butylbenzene	% Recov	96	
61	96128	1,2-Dibromo-3-chloropropane	% Recov	96	
62	120821	1,2,4-Trichlorobenzene	% Recov	87	
63	87683	Hexachlorobutadiene	% Recov	96	
64	91203	Naphthalene	% Recov	85	
65	87616	1,2,3-Trichlorobenzene	% Recov	83	
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	98	(Surr) PR
67	462066	FLUOROBENZENE	% Recov	100	(Surr) PR
68	2037265	TOLUENE-D8	% Recov	101	(Surr) PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	98	(Surr) PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr) PR

Transaction #: 06249412 Seq #: 04 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (94) % Recov %Slds: NAR
QA Code: (LMX2) Lab Mtrx Spike #2 (% Rec Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	% Recov	91
2	74873	Chloromethane	% Recov	96
3	75014	Vinyl Chloride	% Recov	94
4	74839	Bromomethane	% Recov	96
5	75003	Chloroethane	% Recov	90
6	75694	Trichlorofluoromethane	% Recov	95
7	75354	1,1-Dichloroethene	% Recov	96
8	67641	Acetone	% Recov	125
9	75150	Carbon Disulfide	% Recov	82
10	75092	Methylene Chloride	% Recov	100
11	156605	trans-1,2-Dichloroethene	% Recov	97
12	75343	1,1-Dichloroethane	% Recov	94
13	594207	2,2-Dichloropropane	% Recov	91
14	156592	Cis-1,2-Dichloroethene	% Recov	95
15	78933	2-Butanone	% Recov	104
16	74975	Bromochloromethane	% Recov	96
17	67663	Chloroform	% Recov	95
18	71556	1,1,1-Trichloroethane	% Recov	98
19	563586	1,1-Dichloropropene	% Recov	97
20	56235	Carbon Tetrachloride	% Recov	95
21	71432	Benzene	% Recov	104
22	107062	1,2-Dichloroethane	% Recov	99
23	79016	Ethene, trichloro-	% Recov	97
24	78875	1,2-Dichloropropane	% Recov	101
25	74953	Dibromomethane	% Recov	101
26	75274	Bromodichloromethane	% Recov	95
27	10061015	cis-1,3-Dichloropropene	% Recov	93
28	108101	4-Methyl-2-Pentanone(MIBK)	% Recov	110
29	108883	Toluene	% Recov	96
30	10061026	trans-1,3-Dichloropropene	% Recov	94
31	79005	1,1,2-Trichloroethane	% Recov	101
32	127184	Tetrachloroethene	% Recov	115
33	142289	1,3-Dichloropropane	% Recov	98
34	591786	2-Hexanone	% Recov	98
35	124481	Dibromochloromethane	% Recov	92
36	106934	1,2-Dibromoethane (EDB)	% Recov	99
37	108907	Chlorobenzene	% Recov	98
38	630206	Ethane, 1,1,1,2-Tetrachloro-	% Recov	93
39	100414	Ethylbenzene	% Recov	94
40	-1330207	m p-XYLENE	% Recov	97
41	95476	o-XYLENE	% Recov	98
42	1330207	Total Xylenes	% Recov	97
43	100425	BENZENE, ETHENYL-(STYRENE)	% Recov	94
44	75252	Bromoform	% Recov	90
45	98828	Isopropylbenzene (Cumene)	% Recov	96
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	% Recov	100
47	108861	Bromobenzene	% Recov	96
48	96184	1,2,3-Trichloropropane	% Recov	99
49	103651	BENZENE, PROPYL-	% Recov	96
50	95498	2-Chlorotoluene	% Recov	96

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Transaction #: 06249412 Seq #: 04 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value	
51	108678	1,3,5-Trimethylbenzene	% Recov	97	
52	106434	4-Chlorotoluene	% Recov	99	
53	98066	Tert-Butylbenzene	% Recov	97	
54	95636	1,2,4-Trimethylbenzene	% Recov	93	
55	135988	Sec-Butylbenzene	% Recov	94	
56	541731	1,3-Dichlorobenzene	% Recov	94	
57	99876	p-Isopropyltoluene	% Recov	94	
58	106467	1,4-Dichlorobenzene	% Recov	97	
59	95501	1,2-Dichlorobenzene	% Recov	98	
60	104518	Butylbenzene	% Recov	94	
61	96128	1,2-Dibromo-3-chloropropane	% Recov	93	
62	120821	1,2,4-Trichlorobenzene	% Recov	91	
63	87683	Hexachlorobutadiene	% Recov	94	
64	91203	Naphthalene	% Recov	96	
65	87616	1,2,3-Trichlorobenzene	% Recov	89	
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	99	(Surr) PR
67	462066	FLUOROBENZENE	% Recov	100	(Surr) PR
68	2037265	TOLUENE-D8	% Recov	102	(Surr) PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	99	(Surr) PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	102	(Surr) PR

Transaction #: 06249412 Seq #: 05 (51) VOA - PP Scan
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LDP1) Lab Duplicate Sample #1 Peaks Total: ____
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

Line	Par #	Parameter Description	Units	Value
1	75718	Methane, Dichlorodifluoro-	ug/kg	NAF
2	74873	Chloromethane	ug/kg	NAF
3	75014	Vinyl Chloride	ug/kg	NAF
4	74839	Bromomethane	ug/kg	NAF
5	75003	Chloroethane	ug/kg	NAF
6	75694	Trichlorofluoromethane	ug/kg	NAF
7	75354	1,1-Dichloroethene	ug/kg	NAF
8	67641	Acetone	ug/kg	NAF
9	75150	Carbon Disulfide	ug/kg	NAF
10	75092	Methylene Chloride	ug/kg	NAF
11	156605	trans-1,2-Dichloroethene	ug/kg	NAF
12	75343	1,1-Dichloroethane	ug/kg	NAF
13	594207	2,2-Dichloropropane	ug/kg	NAF
14	156592	Cis-1,2-Dichloroethene	ug/kg	NAF
15	78933	2-Butanone	ug/kg	NAF
16	74975	Bromochloromethane	ug/kg	NAF
17	67663	Chloroform	ug/kg	NAF
18	71556	1,1,1-Trichloroethane	ug/kg	NAF
19	563586	1,1-Dichloropropene	ug/kg	NAF
20	56235	Carbon Tetrachloride	ug/kg	NAF
21	71432	Benzene	ug/kg	NAF
22	107062	1,2-Dichloroethane	ug/kg	NAF
23	79016	Ethene, trichloro-	ug/kg	NAF
24	78875	1,2-Dichloropropane	ug/kg	NAF
25	74953	Dibromomethane	ug/kg	NAF
26	75274	Bromodichloromethane	ug/kg	NAF
27	10061015	cis-1,3-Dichloropropene	ug/kg	NAF
28	108101	4-Methyl-2-Pentanone(MIBK)	ug/kg	NAF
29	108883	Toluene	ug/kg	NAF
30	10061026	trans-1,3-Dichloropropene	ug/kg	NAF
31	79005	1,1,2-Trichloroethane	ug/kg	NAF
32	127184	Tetrachloroethene	ug/kg	1650
33	142289	1,3-Dichloropropane	ug/kg	NAF
34	591786	2-Hexanone	ug/kg	NAF
35	124481	Dibromochloromethane	ug/kg	NAF
36	106934	1,2-Dibromoethane (EDB)	ug/kg	NAF
37	108907	Chlorobenzene	ug/kg	NAF
38	630206	Ethane, 1,1,1,2-Tetrachloro-	ug/kg	NAF
39	100414	Ethylbenzene	ug/kg	NAF
40	-1330207	m p-XYLENE	ug/kg	NAF
41	95476	o-XYLENE	ug/kg	NAF
42	1330207	Total Xylenes	ug/kg	NAF
43	100425	BENZENE, ETHENYL-(STYRENE)	ug/kg	NAF
44	75252	Bromoform	ug/kg	NAF
45	98828	Isopropylbenzene (Cumene)	ug/kg	NAF
46	79345	ETHANE, 1,1,2,2-TETRACHLORO-	ug/kg	NAF
47	108861	Bromobenzene	ug/kg	NAF
48	96184	1,2,3-Trichloropropane	ug/kg	NAF
49	103651	BENZENE, PROPYL-	ug/kg	NAF
50	95498	2-Chlorotoluene	ug/kg	NAF

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Transaction #: 06249412 Seq #: 05 (51) VOA - PP Scan

Sample No.: 94 188040 (continued from previous page)

Line	Par #	Parameter Description	Units	Value		
51	108678	1,3,5-Trimethylbenzene	ug/kg	NAF		
52	106434	4-Chlorotoluene	ug/kg	NAF		
53	98066	Tert-Butylbenzene	ug/kg	NAF		
54	95636	1,2,4-Trimethylbenzene	ug/kg	NAF		
55	135988	Sec-Butylbenzene	ug/kg	NAF		
56	541731	1,3-Dichlorobenzene	ug/kg	NAF		
57	99876	p-Isopropyltoluene	ug/kg	NAF		
58	106467	1,4-Dichlorobenzene	ug/kg	NAF		
59	95501	1,2-Dichlorobenzene	ug/kg	NAF		
60	104518	Butylbenzene	ug/kg	NAF		
61	96128	1,2-Dibromo-3-chloropropane	ug/kg	NAF		
62	120821	1,2,4-Trichlorobenzene	ug/kg	NAF		
63	87683	Hexachlorobutadiene	ug/kg	NAF		
64	91203	Naphthalene	ug/kg	NAF		
65	87616	1,2,3-Trichlorobenzene	ug/kg	NAF		
66	17060070	1,2-DICHLOROETHANE-D4	% Recov	91	(Surr)	PR
67	462066	FLUOROBENZENE	% Recov	98	(Surr)	PR
68	2037265	TOLUENE-D8	% Recov	100	(Surr)	PR
69	460004	p-BROMOFLUOROBENZENE	% Recov	95	(Surr)	PR
70	2199691	1,2-DICHLOROBENZENE-D4	% Recov	101	(Surr)	PR

*** Lab Analysis Report ***

==> Transaction #: 06249413 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (52) Tent Ident - VOA Scan (GCMS)

Instrument: (????????) Unspecified

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040		940505	SOUTHGATE1			
02	94188041		940505	SOUTHGATE2			
03	94188042		940505	SOUTHGATE3			
04	94188043		940505	SOUTHGATE4			
05	94188044		940505	SOUTHGATE5			

Record Type: TRNIN3 Date Verified: 7/6/94 By: D. Hunter

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 29-JUN-94 17:51:38 Status: E Batch: (In CUR DB)

Transaction #: 06249413 Seq #: 01 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total:
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	762492	ETHANE, 1-BROMO-2-FLUORO-	ug/kg	0.94NJ
2	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	18.7NJ

*** Lab Analysis Report ***

Transaction #: 06249413 Seq #: 02 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188041 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total:
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	762492	ETHANE, 1-BROMO-2-FLUORO-	ug/kg	1.0NJ
2	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	1.9NJ

Transaction #: 06249413 Seq #: 03 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188042 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total:
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	762492	ETHANE, 1-BROMO-2-FLUORO-	ug/kg	0.89NJ
2	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	7.8NJ

Transaction #: 06249413 Seq #: 04 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Sample No.: 94 188043 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: ( ) Unspecifed Peaks Total:
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	4.6NJ
2	3789853	BENZOIC ACID, 2-[(TRIMETHYLS	ug/kg	12.9NJ

ransaction #: 06249413 Seq #: 05 (52) Tent Ident - VOA Scan (GCMS)
oj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

ample No.: 94 188044 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
A Code: ( ) Unspecifed Peaks Total:
ate Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	762492	ETHANE, 1-BROMO-2-FLUORO-	ug/kg	2.0NJ
2	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	13.7NJ

*** Lab Analysis Report ***

==> Transaction #: 06249414 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (52) Tent Ident - VOA Scan (GCMS)

Instrument: (????????) Unspecified

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040	LBK1	940505	SOUTHGATE1			

Record Type: TRNIN3 Date Verified: 7/6/94 By: D. Kenaga

Transaction Status: Edited Transaction...First Printing...Unverified.

Processed: 29-JUN-94 17:51:38 Status: E Batch: (In CUR DB)

*** Lab Analysis Report ***

Transaction #: 06249414 Seq #: 01 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

Blank ID : ibs4139
Sample No.: 94 188040 Alternate Keys:

Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LBK1) Lab Blank Sample #1 Peaks Total:
Date Extracted: Date Analyzed: 940519 # Days to Ext/Anal: 0/ 14

Line	Par #	Parameter Description	Units	Value
1	556672	CYCLOTETRASILOXANE, OCTAMETH	ug/kg	0.99NJ

*** Lab Analysis Report ***

==> Transaction #: 06249415 Laboratory: (WE) Ecology, Manchester Lab

Work Group: (52) Tent Ident - VOA Scan (GCMS)

Instrument: (KIRK) GC/MS, HP 5890II/5971 (EPA)

Method: (EP2-624) GC/MS Purge and Trap Scan

Chemist: (LAB) Lab (General R/O) Hours Worked: _____

Project: DOE-103X SOUTHGATE/YRRA Prg Ele#: J1K1Y

Prj Off: Roeder, Rick DOE Analysis Due: 940506 Revised Due:

*** Sample Records in Transaction ***

Seq#	Sample #	QA	Date/Time	Description	Alternate Keys		
01	94188040	LBK2	940505	SOUTHGATE1			

Record Type: TRNIN3 Date Verified: 7/6/94 By: D. Graves

Transaction Status: Edited Transaction...First Printing...Unverified.

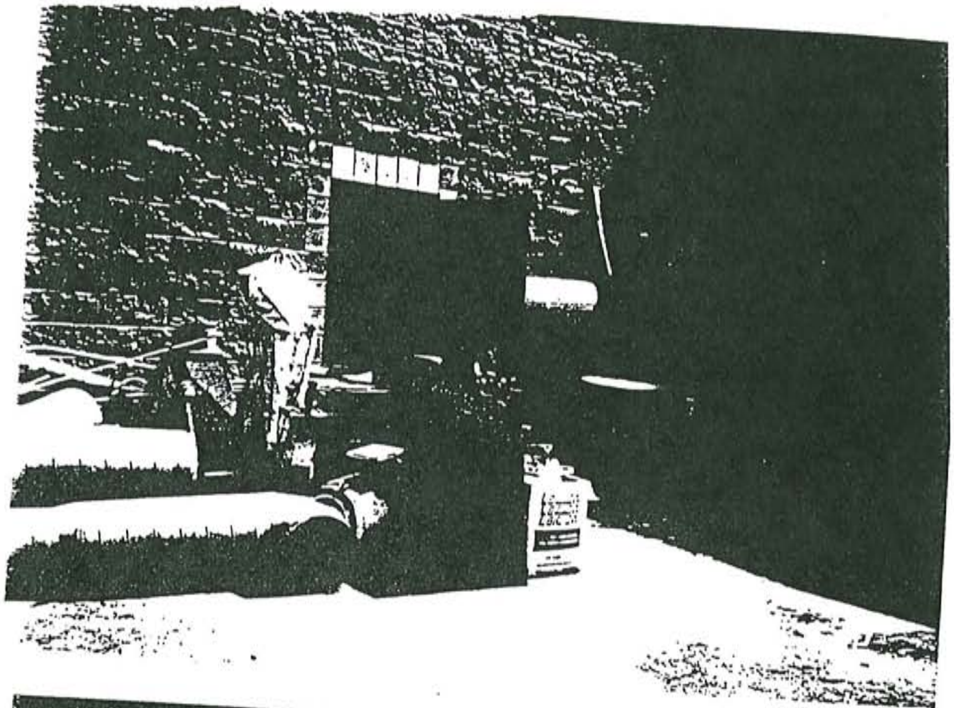
Processed: 29-JUN-94 17:51:38 Status: E Batch: (In CUR DB)

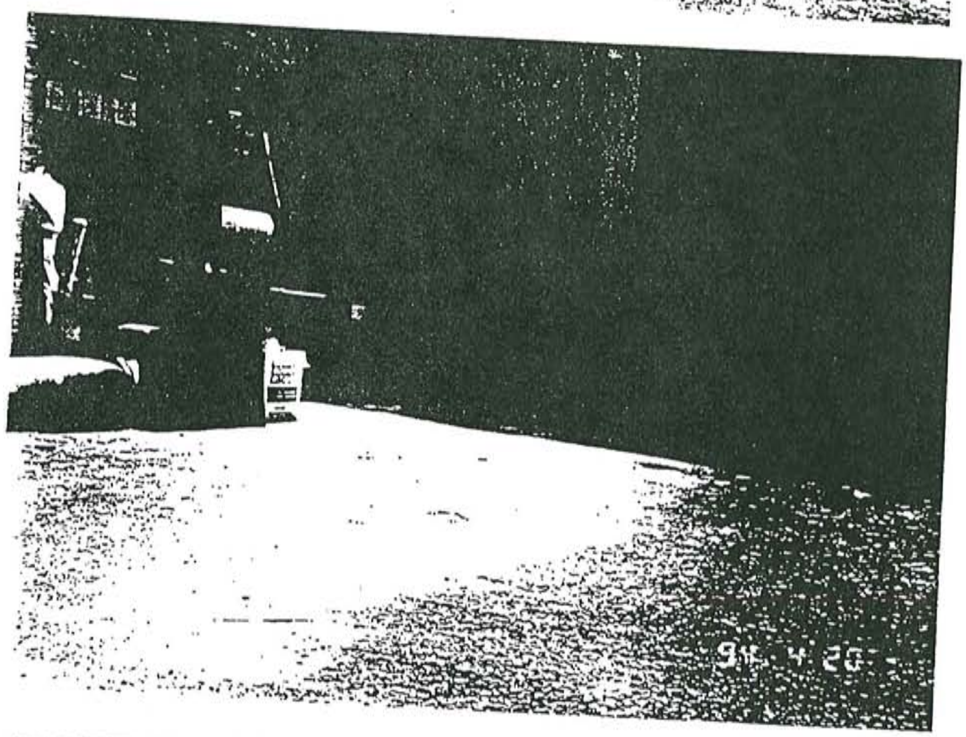
Transaction #: 06249415 Seq #: 01 (52) Tent Ident - VOA Scan (GCMS)
Proj Code : DOE-103X SOUTHGATE/YRRA PE # : J1K1Y

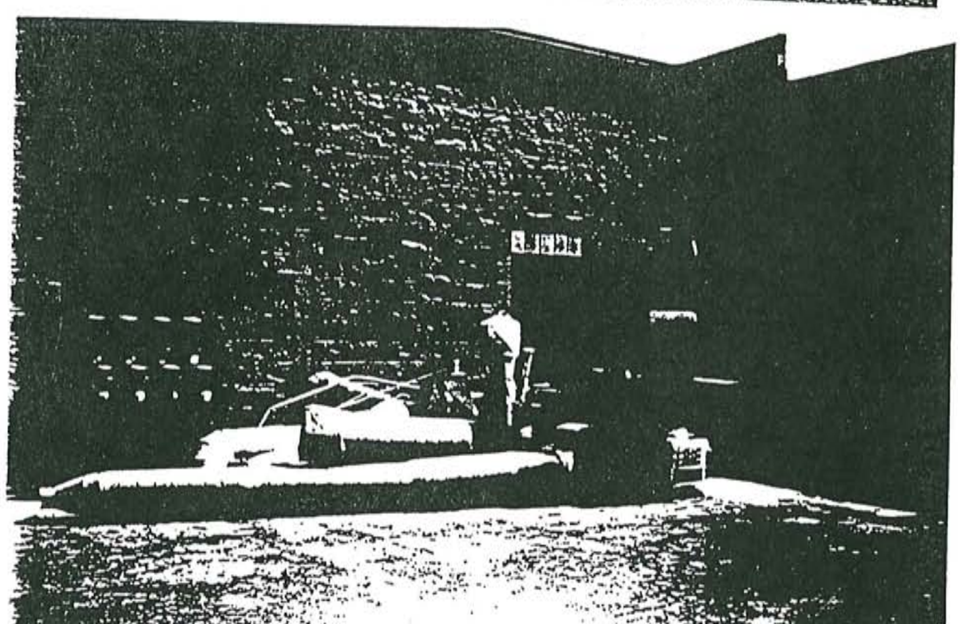
Blank ID : vbs4144
Sample No.: 94 188040 Alternate Keys:

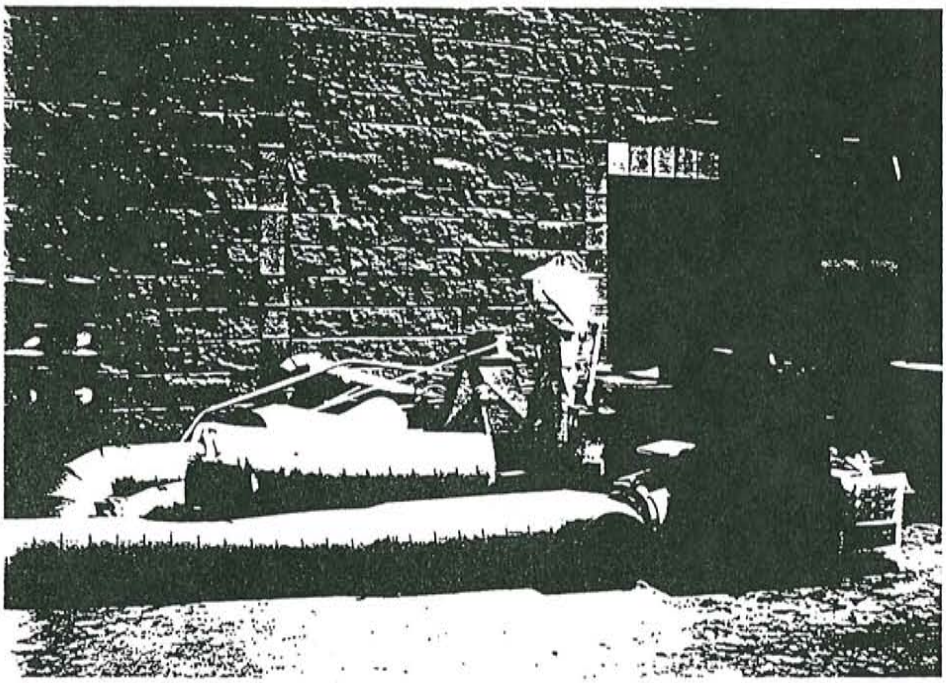
Samp Matrix: (40) Sediment Units: (22) ug/kg %Slds: NAR
QA Code: (LBK2) Lab Blank Sample #2 Peaks Total:
Date Extracted: Date Analyzed: 940524 # Days to Ext/Anal: 0/ 19

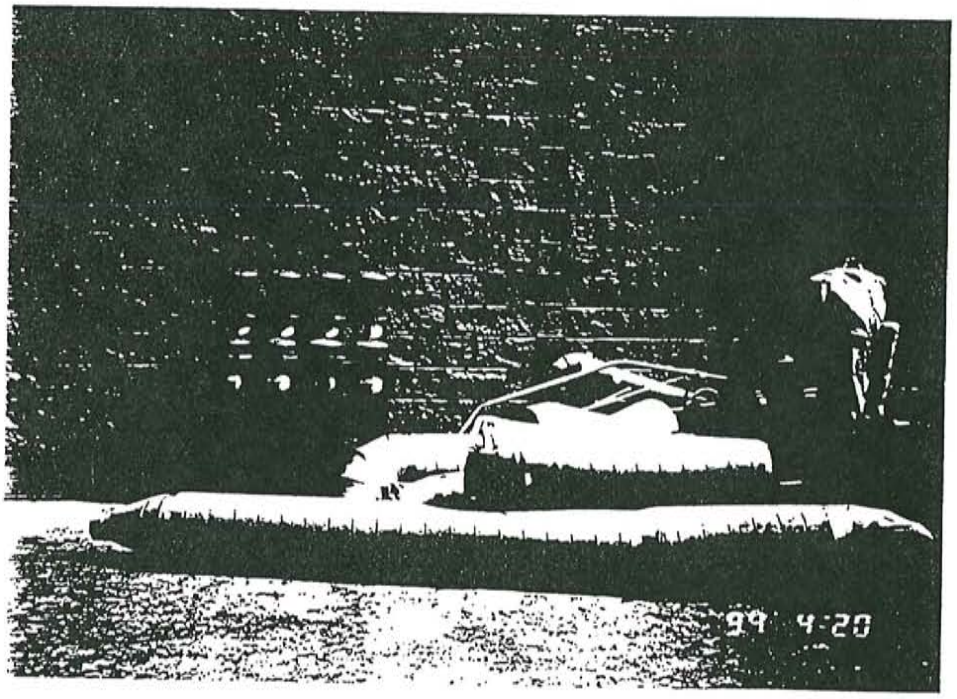
Line	Par #	Parameter Description	Units	Value










99 4-20

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
106 South 6th Ave. • Yakima, Washington 98902-3387 • (509) 575-2490

February 26, 1993

CERTIFIED MAIL
P 868 668 783

Noel Canning Corporation
P.O. Box 111
Yakima, WA 98907

Dear Mr. Noel:

RE: Notice of Potential Liability for the Release of Hazardous Substances Under the Model Toxics Control Act - Parcel #18132514417, Corner of 3rd Avenue and Nob Hill Blvd., Yakima, WA (Southgate Laundry site)

Chapter 70.105D RCW, the Model Toxics Control Act (Act), requires the Department of Ecology (Ecology) to provide written notice to all persons it believes to be potentially liable for the release of hazardous substances.

The hazardous substance in this case is the volatile organic compound perchloroethylene (PCE). Releases have been occurring over a number of years by a variety of businesses. Contamination has spread through the ground water to cover an area in horizontal extent of approximately two square miles. This area is known as the Yakima Railroad Area (YRRA). The material poses a threat to human health and the environment. Each responsible party is liable, strictly, jointly and severally for cleanup.

It is Ecology's understanding that the Noel Canning Corporation is an owner of Parcel Number 18132514417, located in Yakima, Washington (commonly known as Southgate Laundry or 2 Hr Cleaners), and that credible evidence exists indicating that a release (or threatened release) of a hazardous substance has occurred at this site. The evidence supporting these findings is as follows:

A soil sample taken on November 12, 1992 on the site detected perchloroethylene (PCE) at a concentration of 29 parts per billion. Documentation regarding this sample is contained in the document Investigation of Potentially Liable Parties (PLPs), Soil and Ground Water Contamination, Yakima Railroad Area, Yakima, Washington prepared by the Department of Ecology, February, 1993.

As a result of this evidence, Noel Canning Corporation has been identified as a person potentially liable for the release of PCE and other contaminants at parcel number 18132514543, also known as the corner of 3rd Avenue and Nob Hill Boulevard, Yakima, Washington.

Under the Act, you have 30 calendar days from the receipt of this letter to submit written comments to Ecology on your proposed status as a potentially liable person (PLP). Following a review of those comments, Ecology will make a final written determination of your status. In the interest of expediting this process without admitting liability, you may wish to accept your status as a Potentially Liable Person by waiving your right to the 30 days notice and

comment period. This may be accomplished by sending a letter containing this information to Ecology.

If you are aware of any other persons who may be potentially liable for the release at this site, Ecology encourages you to provide us with their identity and the reason you believe they are potentially liable.

To date, Ecology has notified the following additional persons that they are potentially liable for the release of PCE in Yakima:

1. U-Haul Company of Inland Northwest
   1108 South First Street
   Yakima, Washington 98901

2. Paxton Sales Corporation
   108 West Mead Avenue
   Yakima, Washington 98902

3. Nu-Way Cleaners
   801 South Third Avenue
   Yakima, Washington 98902

4. Frank Wear Cleaners
   106 South Third Avenue
   Yakima, Washington 98902

5. Cameron-Yakima, Incorporated
   1414 South First Street
   Yakima, Washington 98901

6. CMX Corporation
   206 West Mead Avenue
   Yakima, Washington 98902

7. Yakima County
   128 North Second Street
   Yakima, Washington 98901

8. Hahn Motor Company
   P.O. Box 382
   Yakima, Washington 98907-0382

9. Burlington Northern Railroad Company
   9401 Indian Creek Parkway
   Overland Park, Kansas 66201-9136

Ecology suggests you contact these other persons to discuss how you can jointly work together to most efficiently cleanup this site.

If you are aware of any other persons who may be potentially liable at this site, Ecology encourages you to provide us with their identity and the reason you believe they could be potentially liable.

Ecology has conducted or intends to conduct the following actions at the site:

1. An Enforcement Order (Order No. DE 92TC-C108) has been issued to the persons listed above, requiring that they implement an interim action by providing bottled water to residents of the potentially affected vicinity who obtain drinking water from wells in the area. To date, approximately 1000 residences are participating in this bottled water program. It is likely that Ecology will amend this Order to include additional persons if a final determination is made that they are PLPs.

2. Ecology has also, in cooperation with the Cities of Yakima and Union Gap, worked on the implementation of a long-term interim action via the installation of a municipal water system. This will result in residents in the area having a permanent supply of uncontaminated drinking water. Costs for this action will ultimately be the responsibility of the PLPs.

3. A Remedial Investigation/Feasibility Study (RI/FS) and cleanup will ultimately be necessary to determine what cleanup options are feasible for this facility and the overall Yakima Railroad Area.

Ecology's policy is to work cooperatively with persons to ensure an efficient, prompt, and effective cleanup of hazardous waste sites. Cooperating with Ecology in planning or conducting remedial actions at the site is not an admission of guilt or liability. A number of administrative options are available to assist persons in fulfilling their options under the Model Toxics Control Act. These options are discussed in Chapter 70.105D RCW and WAC 173-340, copies of which are enclosed (in the same book).

If you have questions, please feel free to contact me at (509) 454-7837.

Sincerely,

Rick Roeder

Rick Roeder
Site Manager
Toxics Cleanup Program

RMR:vw
g:sgate_la\sgate_pl.ltr

Enc: Chapter 70.105D RCW
Chapter 173-340 WAC

cc: Tony Grover, WDOE-CRO
Tony Valero, WDOE-CRO

LAW OFFICES
LYON, WEIGAND, SUKO AND GUSTAFSON, P.S.
LYON LAW OFFICES - 222 NORTH THIRD STREET
MAILING ADDRESS: P.O. BOX 1689
YAKIMA, WASHINGTON 98907-1689

ROBERT M. BOGGS
J. ERIC GUSTAFSON
CHARLES R. LYON
RANDALL L. OMMEN*
LONNY R. SUKO
WM. L. WEIGAND, JR.

*ALSO MEMBER OREGON BAR

TELEPHONE
(509) 248-7220
TELECOPIER
(509) 575-1883

March 19, 1993

MR RICK ROEDER
DEPARTMENT OF ECOLOGY
106 SOUTH 6TH AVE
YAKIMA WA 98902-3387

Re: The Noel Corporation -- Southgate Laundry Site

Dear Mr. Roeder:

We write as attorneys for The Noel Corporation, successor in interest to Noel Canning Corporation, in response to your letter of February 26, 1993, regarding the Southgate Laundry Site. Please be advised that The Noel Corporation as owner of the Southgate Shopping Center which is located at the corner of 3rd Avenue and Nob Hill Blvd. denies any liability whatsoever for any alleged release of hazardous substances. The Noel Corporation further denies any violation of RCW Chapter 70.105D.

Additionally, please be advised that after investigation it has been determined that the soil sample taken by your office on November 12, 1992, and referred to in your letter of February 26, 1993, has been determined to have been taken at least 20 feet west of the shopping center's westerly property line. The sample as we are advised was apparently taken within the right of way for South 4th Avenue.

Very truly yours,

William L. Weigand

WLW:kdp
cc: Larry Estes
Gary Slagle

kdp\wlw\noel.roe

CONSENT FOR ACCESS TO PROPERTY

Name: Ms. Verlin Hoff
Southgate Laundry
1020 South Third Avenue
Yakima, WA 98902

Site Address: Southgate Laundry
1020 South Third Avenue
Yakima, WA 98902

I give my consent to the employees, agents, and contractors of the Department of Ecology to enter and have access to my property at the above address, at reasonable times for the following purposes: inspecting, surveying, staking subsurface utility locations; drilling of holes for subsurface soil, water, and gas investigations; taking of air, water, and soil samples; and reviewing and copying written materials pertinent to the release of hazardous substances at the site.

Verlyn Hoff
Signature

Verlyn Hoff
Name

July 28, 1992
Date

Please mail to:

Dr. A.J. Gonzalez
Department of Ecology
Central Regional Office
106 South 6th Avenue
Yakima, WA 98902-3387

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

July 6, 1992

CERTIFIED MAIL
P 868 668 720

Ms. Verlin Hoff
Southgate Laundry
1020 South Third Avenue
Yakima, WA 98902

RE: Property Access Pursuant To The Model Toxics Control Act
(Ch.70.105D RCW)

Dear Ms. Hoff:

Under the Model Toxics Control Act (Ch.70.105D RCW) the Department of Ecology (Department) is authorized to enter property, to review documents, and to conduct investigations and cleanup of hazardous waste sites. Unless earlier access is granted by owner or operator of a facility, the Department is required to provide owners and operators with an advanced notice by mail, explaining the need and intent to access property.

Ecology intends to begin a field investigation at the Southgate Laundry site aimed at collecting soil samples for organic contaminants analysis of the type detected in soils of the Yakima Railroad Area. During this field investigation, Ecology employees and/or contractors plan to take soil samples, survey the property, take photographs, and photocopy written documents from your files.

If samples are taken, you or your contractors may obtain split samples for independent analysis as long as this does not interfere with the Department's activities. The Department will make sampling results available as soon as it is reasonably possible. We anticipate the preliminary field inspection will be conducted during the first half of July 1992, and the field exploration and sample collection will occur sometime toward the end of July or the beginning of August 1992. We also anticipate the actual field work will take approximately two days.

The Toxics Cleanup Program wishes to pursue this action in a cooperative manner to ensure an efficient, prompt, and effective investigation of the site(s). Please be aware that it is not our intention to disrupt the ongoing operations at your site(s) and we will make every effort to avoid doing so.

In preparation for the Department's entry to your facility, please complete the enclosed consent form and send it to the Department of Ecology office indicated above by July 9, 1992. If you cannot be present at the time of the field investigations, please designate an appropriate contact person

STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

106 South 6th Ave. • Yakima, Washington 98902-3387 • (509) 575-2490

June 22, 1992

CERTIFIED MAIL
P 868 668 706

s. Amber Roberts
outhgate Laundry
1020 South Third Avenue
akima, WA 98902

RE: Property Access Pursuant To The Model Toxics Control Act
(Ch.70.105D RCW)

ear Ms. Roberts:

nder the Model Toxics Control Act (Ch.70.105D RCW) the Department of
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In preparation for the Department's entry to your facility, please complete
he enclosed consent form and send it to the Department of Ecology office
ndicated above by July 1, 1992. If you cannot be present at the time of
he field investigations, please designate an appropriate contact person

FILE COPY

WASHINGTON RANKING METHOD

ROUTE SCORES SUMMARY AND RANKING CALCULATION SHEET

Site name: Southgate Laundry Region: CRO

City, county: Yakima, Yakima

This site was ranked on August 12, 1991, based on quintile values from 259 assessed/scored sites.

Pathway	Route Score(s)	Quintile Group number(s)
SW-HH	3.8	1
Air-HH	56.0	5
GW-HH	18.0	1
Sed-HH	—	
SW-En	3.8	1
Air-En	NS	—
Sed-En		

Priority scores:

$\frac{H^2 + 2M + L}{8}$: $\frac{25 + 2 + 1}{8} = 28/8 = 3.5 \rightarrow 4$

$\frac{H^2 + 2L}{7}$: $\frac{1 + 0}{7} = 1/7 = 1$

Use the matrix presented to the right, along with the two priority scores, to determine the site ranking. N/A refers to where there is no applicable pathway.

Human Health \ Environment	5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	(3)	4
3	1	2	3	4	4	5
2	2	3	4	4	5	5
1	2	3	4	5	5	5
N/A	3	4	5	5	5	5

DRAFT / (FINAL)

Matrix ("bin") Ranking: 3, or _____ No Further Action

CONFIDENCE LEVEL: The relative position of this site within this bin is:

____ almost into the next higher bin.
__X__ right in the middle, unlikely to ever change.
____ almost into the next lower bin.

rev. 8/91

R INE GREGOIRE
Director

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3601 W. Washington • Yakima, Washington 98903-1164 • (509) 575-2800

February 28, 1991

Amber Roberts
Southgate Laundry
1020 South 3rd Avenue
Yakima, WA 98902

Dear Ms. Roberts:

The State of Washington Department of Ecology has selected the following site, which we believe to be owned by you, for a site hazard assessment:

Southgate Laundry
1020 South 3rd Avenue
Yakima, Washington

A site hazard assessment is performed by this office under Washington's Model Toxics Control Act (MTCA). Generally speaking, the site hazard assessment activity has the purpose of determining if a release of contaminants has occurred, and evaluating the seriousness of any such release. The assessment gathers sufficient data (maps, well logs, samples, etc.) to identify hazardous materials and handling as might lead to a release, and identifies various pathways and potential effects of a release.

The site hazard assessment may result in the ranking of the site under the Washington Ranking Method (WARM). This ranking system is the means of prioritizing hazardous substance sites for cleanup.

If Ecology determines through site hazard assessment that cleanup is warranted, the site will be ranked and you will be notified promptly of both the status and the ranking score.

Field work on this site could begin as early as March, 1991 and will, in any case, be completed by July, 1991. (This site will actually only require a few days of field work, but we do not presently have a sufficiently rigid schedule to describe the dates any more precisely.) The contractor chosen to carry out these assignments will be a professional and will be considerate of your day-to-day operation. However, I need to get from you any information you wish to provide as to how we may proceed without interfering with your activities. I would like to minimize any possible inconveniences.

Field work could require the need to do subsurface investigation. In that event, there will be a need to move in machinery such as a drill rig to make site borings. I won't have a detailed work plan and precise time schedule for several weeks, but we can certainly discuss general considerations and procedure. You can reach me by telephone at the Ecology office in Yakima (509) 454-4326, or by writing:

Department of Ecology
801 Summitview Avenue, Suite 1
Yakima, Washington 98902

It is important that you contact me within the next two weeks so that those arrangements can be made which present the fewest problems and inconveniences. If I do not hear from you in the next two weeks, I will assume that you have no questions or problems with access if field work is required.

I look forward to hearing from you.

Sincerely,

Robert D. Swackhamer

Robert D. Swackhamer
Toxics Cleanup Program

RDS:vw

WASHINGTON STATE DEPARTMENT OF ECOLOGY

TELEPHONE REPORT

Call From: Amber Roberts
Daughter of Owner
Southgate Laundry

Date: 3/25/91

Time: 9:45 am pm (circle)

Phone No.:

Call To: Bob SwackHamer

Subject: Site SHA Access Letter

Summary: 1. Informed Ms. Roberts that field work (such as well drilling) would not be conducted as part of SHA.

2. Ms. Roberts stated that she would be cooperative, but did not think Ecology should spend money on drilling, what is doing some simpler preliminary work, since there is little chance of contamination.

3. The site has an above ground stainless storage tank and uses a 55-gal drum for storage. Both sit on concrete inside the building, Ms. Roberts said.

Signature Robert D. Swackhamer

Date 3/25/91

ECY 010-46(a)

United States
Environmental Protecti
Agency

Region 10
1200 Sixth Avenue
Seattle WA 98101

Alaska
Idaho
Oregon
Washington

VII/9

EPA

JAN 11 1990

Reply to
Attn of: HW-093

Amber Roberts
1020 South 3rd Avenue
Yakima, Washington 98902

Dear Mr. Roberts:

The U.S. Environmental Protection Agency (EPA), through its contractor, Ecology and Environment (E & E), has completed the site inspection of Southgate Laundry. A copy of the report is enclosed.

Based on this site inspection and other pertinent information, EPA finds it appropriate to defer to state authority for further consideration. Accordingly, EPA does not anticipate further investigation under the Federal Superfund Program.

If you have any questions, I can be reached at (206)442-7215.

Sincerely,

William J. Glasser, R.S., M.P.H.
Environmental Protection Specialist
Superfund Response & Investigations Section

Enclosure

cc: Michael Spencer, Ecology
Bob Kievit, EPA-WOO
Don Steinmetz, Yakima County Health District
Clar Pratt, Ecology-CRO

ecology and environment, inc.
101 YESLER WAY, SEATTLE, WASHINGTON, 98104, TEL. 206/624-9537
International Specialists in the Environment

MEMORANDUM

DATE: November 29, 1989

TO: John Osborn, FIT-RPO, USEPA, Region 10

THRU: Jeffrey Villnow, FITOM, E & E, Seattle

FROM: Charles F. Pitz, FIT-PM, E & E, Seattle CFP

SUBJ: Revised HRS Score
Southgate Laundry and Dry Cleaners
Yakima, Washington

REF: TDD F10-8806-04
PAN FWA0585SA

CC: William Glasser, HWD-SM, USEPA, Region 10
Andrew Hafferty, AFITOM, E & E, Seattle

Ecology and Environment, Inc. conducted a Screening Site Inspection (SSI) at the Southgate Laundry and Cry Cleaners site in Yakima, Washington, on January 31, 1989. At the time of this inspection, no evidence of past on-site release or disposal of hazardous substances was identified. All wastes, including hazardous wastes, generated in the past during normal site operations have been handled and disposed of properly. Due to the lack of a viable waste quantity, no revised HRS score package was prepared for the Southgate Laundry and Dry Cleaners site.

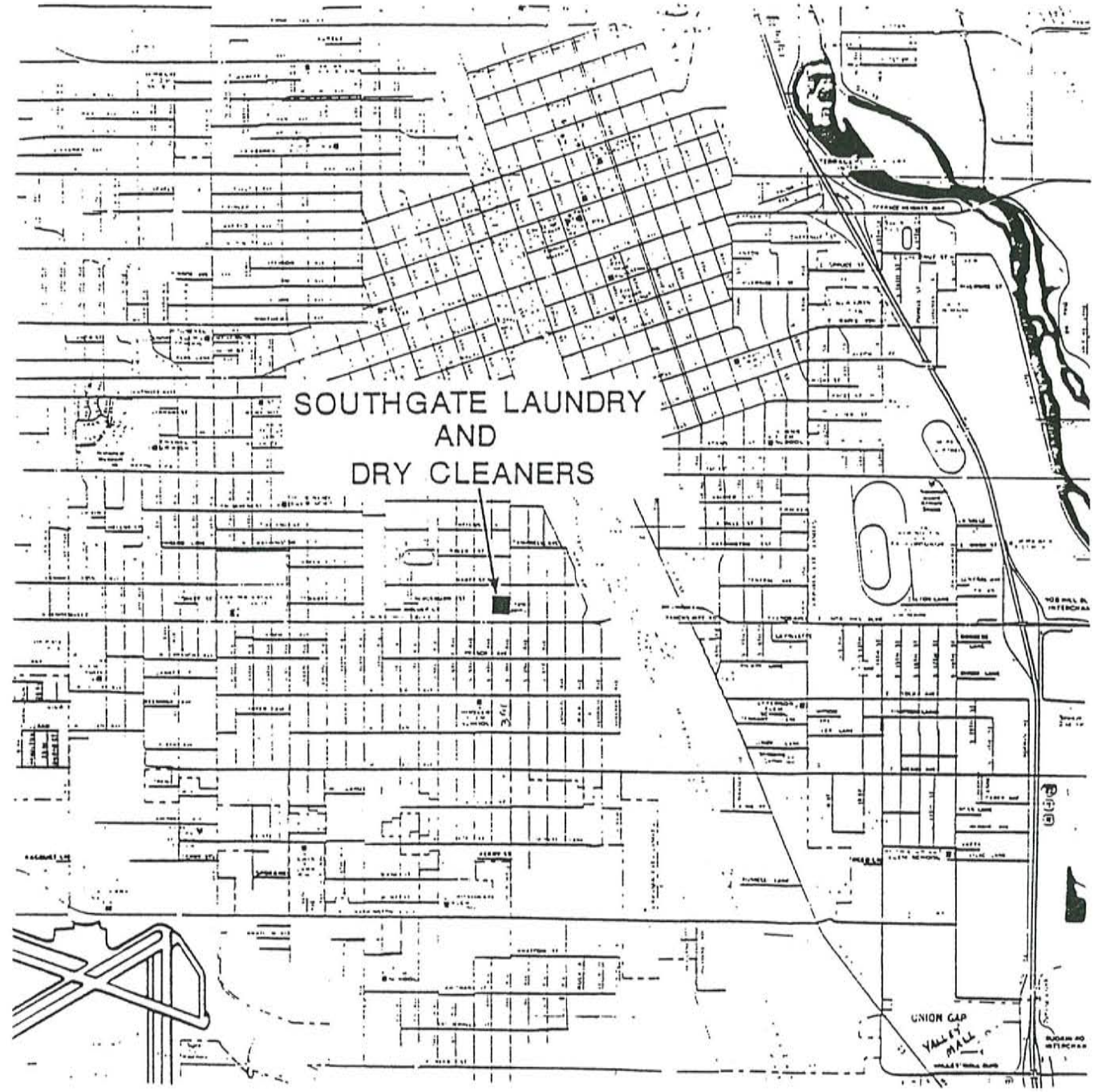
CFP:rls

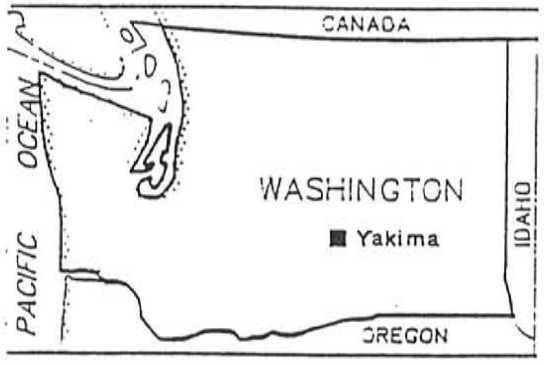
The Southgate Laundry and Dry Cleaners uses an estimated 400 gallons of tetrachloroethene (PCE) drycleaning solvent per year. Feedstock solvents are delivered approximately twice monthly by a Seattle supplier. New solvents are pumped from the suppliers truck to a 55-gallon steel drum located inside the building. This drum, which is covered by a bolted steel lid, is located on a wooden loft approximately 8 feet above the drycleaning machine. When it is necessary to replenish the drycleaning machine solvent reservoir, solvents are pumped from the drum. The feedstock drum was perched with its base partially over the edge of the loft at the time of the inspection, and no spill-containment features were present.

When clothing is drycleaned at the Southgate Laundry, PCE solvents in the solvent reservoir of the drycleaning washer are pumped first through a consecutive series of six carbon-core filters located in the loft. The filtered PCE then is pumped back to the washing machine, where it is used to dryclean clothing. The majority of the PCE eventually is returned to the reservoir during a spin-out cycle in the washer. After the clothes have been washed, the PCE that remains in the clothing is heated and driven off as vapor in a reclaiming machine (essentially equivalent to a dryer). The vapors from the reclaimer are run through a cooling coil chamber, which reliquifies the incoming vapors, and subsequently separates any wastewater from the PCE. The reclaimed PCE eventually returns to the reservoir. Those vapors that are able to bypass the condenser chamber reportedly are trapped further downline in a carbon-bed stripper located in the loft. At the end of each working day, steam heat is reportedly used to revaporize any PCE trapped in the stripper. This vapor then is chilled and condensed and the reclaimed PCE once again returns to the solvent reservoir on the washer.

The only wastes that reportedly are generated on site include spent filters and the wastewater that has been separated from the reclaimed PCE. The spent filters (approximately 18 to 20 per year) are thrown out as refuse for eventual disposal in the local landfill. The wastewater that is separated from the reclaimed PCE is collected and disposed of in the city sewer system. Reportedly, the volume of wastewater generated each year is very small (less than 3 gallons), dependent upon the original amount added to dilute the PCE in the washer. There is no record of any analysis ever being performed on either the filters or the wastewater for PCE content.

At the time of the inspection, it was noted that PCE vapors were abnormally strong throughout the facility, particularly in the vicinity of the drycleaning work area. It is probable that the volume of PCE consumed each year by the business, in large part, can be accounted for by volatilization loss into the work atmosphere. A loose fitting metal lid covers the solvent reservoir, providing a probable route for a





ecology & environment, inc.	
Job: F10-8806-04	Waste Site: WA 0585
Drawn by: B.T.	Date: March 15, 1989

FIGURE 1
LOCATION MAP
SOUTHGATE LAUNDRY AND DRY CLEANERS
Yakima, WA

POTENTIAL HAZARDOUS WASTE SITE

EPA — SITE INSPECTION REPORT

PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION

01 STATE: MA | 02 SITE NUMBER: D040184368

II. HAZARDOUS CONDITIONS AND INCIDENTS

___A. GROUNDWATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: ~10,500 — 04 NARRATIVE DESCRIPTION

None known, observed, or suspected.

___B. SURFACE WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None known, observed, or suspected.

01 X C. CONTAMINATION OF AIR — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: > 50,000 — 04 NARRATIVE DESCRIPTION

Potential discharge of perchloroethylene vapors to atmosphere from dry cleaning operation.

___D. FIRE/EXPLOSIVE CONDITIONS — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

Perchloroethylene is not highly flammable or explosive.

X E. DIRECT CONTACT — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

POPULATION POTENTIALLY AFFECTED: unknown — 04 NARRATIVE DESCRIPTION

Perchloroethylene vapors seemed abnormally strong inside of building.

___F. CONTAMINATION OF SOIL — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

AREA POTENTIALLY AFFECTED: _____ (Acres) — 04 NARRATIVE DESCRIPTION

None known or observed. Entire area around site has probably been paved since 1976 (shopping center).

___G. DRINKING WATER CONTAMINATION — 02 ___ OBSERVED (DATE: _____) ___ POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

None known or observed. Site is located in area of city that is predominantly served by city water supply.

X H. WORKER EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

WORKERS POTENTIALLY AFFECTED: 7 — 04 NARRATIVE DESCRIPTION

Perchloroethylene fumes in work area seemed abnormally strong, may pose chronic health hazard to employees. Employees also handle clothing damp with perchloroethylene during dry cleaning, indicating potential dermal exposure.

01 X I. POPULATION EXPOSURE/INJURY — 02 ___ OBSERVED (DATE: _____) X POTENTIAL ___ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: >50,000 — 04 NARRATIVE DESCRIPTION

Small potential for exposure to perchloroethylene for the local population via air emissions, and for worker exposure via excessive fumes in business.

II. ENVIRONMENTAL INFORMATION

PERMEABILITY OF UNSATURATED ZONE (Check one)

___A. 10^{-6} - 10^{-8} cm/sec ___B. 10^{-4} - 10^{-6} cm/sec ___C. 10^{-4} - 10^{-3} cm/sec X D. GREATER THAN 10^{-3} cm/sec

2 PERMEABILITY OF BEDROCK (Check one)

___A. IMPERMEABLE (Less than 10^{-6} cm/sec) ___B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) X C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) ___D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

3 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH	
> 750 (ft)	none (ft)	unknown	

6 NET PRECIPITATION	07 ONE-YEAR 24-HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
-22 (in)	0.88 (in)	< 3 %	east-southeast	< 3 %

9 FLOOD POTENTIAL
SITE IS IN 100-500 YEAR FLOODPLAIN

10
N/A SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5-acre minimum)
ESTUARINE: A. > 5 (mi) OTHER: B. > 1 (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)
N/A (mi)
ENDANGERED SPECIES: none

13 LAND USE IN VICINITY
DISTANCE TO:

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS; NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS PRIME AG LAND	AGRICULTURAL LANDS AG LAND
A. < 0.1 (mi)	B. < 0.1 (mi)	C. ___ (mi)	D. ~ 0.7 (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The site lies on a gently sloping floodplain approximately 2 miles west of the Yakima River.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. Ecology Well Logs.
2. USGS 7.5 Minute Topographic Quadrangles: Yakima East, Yakima West, photo revised 1974.
3. Climatic Atlas of U.S., 1968, NOAA.
4. Precipitation Frequency Atlas of the Western U.S., 1973, Vol IX, NOAA.
5. Soil Survey of the Yakima County Area, Washington, SCS, 1985.
6. U.S. Army Corps of Engineers, 1978, Yakima Valley Regional Water Management Study, Vol. IV.

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

II. IDENTIFICATION
01 STATE: WA | 02 SITE NUMBER: D040134368

I. CURRENT OWNER(S)			PARENT COMPANY (If applicable)		
01 NAME Everlyn Hoff	02 D+B NUMBER		08 NAME N/A	09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.) 1220 South 24th Avenue	04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	11 SIC CODE	
05 CITY Yakima	06 STATE WA	07 ZIP CODE 98902	12 CITY	13 STATE	14 ZIP CODE
01 NAME	02 D+B NUMBER		08 NAME	09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
01 NAME	02 D+B NUMBER		08 NAME	09 D+B NUMBER	
03 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	04 SIC CODE		10 STREET ADDRESS (P.O. BOX, RFD #, ETC.)	11 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

II. PREVIOUS OWNER(S) (List most recent first)			IV. REALTY OWNER(S) (If applicable; list most recent first)		
01 NAME Murphy Still	02 D+B NUMBER		01 NAME Noel Canning Corporation	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.) Unknown	04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.) 1001 South 1st Street	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	05 CITY Yakima	06 STATE WA	07 ZIP CODE 98901
01 NAME	02 D+B NUMBER		01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
01 NAME	02 D+B NUMBER		01 NAME	02 D+B NUMBER	
03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE		03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. E & E Screening Site Inspection, January 31, 1989, Southgate Laundry and Dry Cleaning.

VI. PAST RESPONSE ACTIVITIES (Continued)

___R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
01 DESCRIPTION
None

01 ___S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

01 ___3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
None

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. E & E Screening Site Inspection, January 31, 1989, Southgate Laundry and Dry Cleaning.

ATTACHMENT A
Yakima Railroad Area PLP's

U-Haul Company
1122 South First Street
Yakima, WA 98901
Contact: John Michael, President

Paxton Sales Corporation
108 West Mead Avenue
Yakima, WA 98902
Contact: Kenneth Paxton

Frank Wear Cleaners
106 South 3rd Avenue
Yakima, WA 98902
Contact: G.A. Stoffers

Nu-Way Dry Cleaners
801 South Third Street
Yakima, WA 98902
Contact: Wallace Munly

Cameron-Yakima, Inc.
1414 South First Street
Yakima, WA 98901
Contact: Eric Egbers

Yakima County
128 North 2nd Street
Yakima, WA 98901
Contact: Dan Hesse/Terry Austin

Hahn Motor Company
1201 South First Street
P.O. Box 382
Yakima, WA 98907
Contact: Richard Hahn

Burlington Northern Railroad Co.
2200 First Interstate Center
999 Third Avenue
Seattle, WA 98104-1105
Contact: Bruce Sheppard

Agri-Tech, Inc.
6 E. Washington Avenue
Yakima, WA 98902
Contact: Robert Coffelt

Fifth Wheel Truck Repair
307 E Arlington
Yakima, WA 98907
Contact: Richard Hahn

Westco Martinizing
812 Summitview
Yakima, WA 98902
Contact: William F. Winkle

Robert S. Williams
842 Nylarol
Moscow, ID 83843

Merced Laundry
106 W Main Street
Merced, CA 95340

Applied Solar Energy Corporation
P O Box 1212
City of Industry, CA 91749

Dolphin, Inc.
P O Box 6514
Phoenix, AZ 85005

Gainey Ranch Water Reclamation Plant
7283 E Mountain View
Scottsdale, AZ 95261

Westwood Gateway II
11100 Santa Monica Blvd
Los Angeles, CA 90025

SnyderGeneral Corp
3710 Thanksgiving Tower
Dallas, TX 75201

Colt Site/City of Santa Barbara
315 State Street
Santa Barbara, CA 90101

Tosco Refining Company
Suite 1100, 2300 Clayton Road
Concord, CA 94520-2100

BP Chemicals (HITCO) Inc.
200 Public Square, 39-g
Cleveland, OH 44114

Arrowhead Products
4411 Katella Ave
Los Alamitos, CA 90720

Rho-Chem Inc
425 S Isis Ave
Inglewood, CA 90301

Douglas Aircraft Company
3855 Lakewood Blvd
Long Beach, CA 90846

Hewlett-Packard Company
300 Hanover Street
Palo Alto, CA 94304-1185

Ashland Chemical Inc.
10505 S Painter Avenue
Santa Fe Spring, CA 90670

H.B. Fuller Company
6925 Central Avenue
Newark, CA 94560

ITT
1000 Wilson Boulevard
Arlington, VA 22209

Parker-Hannifin Corporation
17325 Euclid Avenue
Cleveland, OH 44112

Arrow Transportation, Inc.
12328 Woodruff Ave
Downey, CA 90241

Xerox Coporation
Xerox Square
Rochester, NY 24644

Zep Manufacturing
2970 Corvin Dr
Santa Clara, CA 95051

Safety-Kleen Corp.
1000 S. I Street
Reedley, CA 93654

T P Industrial, Inc.
535 E Alondra Boulevard
Gardena, CA 90248

BFM Energy, Inc.
2040 E Dyer Road
San Ana, CA 92705

Evergreen Oil Inc.
6880 Smith Ave
Newark, CA 94560

Southern California Edison Co.
7300 Fenwick Ln
Westminster, CA 92683

Air Products & Chemicals, Inc.
1969 Palomar Oaks Way
Carlsbad, CA 92009

Jones Chemicals Inc.
985 Montague Expressway
Milpitas, CA 95035

Stuart-Ironsides
6715 Mckinley Ave
Los Angeles, CA 90001

Chevron U.S.A. Inc.
1020 Berryessa Rd
San Jose, CA 95133

Chem-Tech Systems, Inc.
3650 E 26th Street
Cernon, CA 90023

MCF Systems Atlanta, Inc.
5353 Snapfinger Woods Dr
Decatur, GA 30035

GAST Manufacturing Corp
2300 Hwy M-139
Benton Harbor, MI 49022

Lomac, Inc.
5025 Evanston Ave
Muskegon, MI 49442

Du-Wel Products, Inc.
P. O. Box 160
Bangor, MI 49013

Water Reclamation Plant
301 NW 37th Street
Rochester, MN 55901

Sherwin Williams Art
27254 Lorain
North Olmstead, OH 44070

TRW Inc., Ross Gear Division
1103 Baddour Parkway
Lebanon, TN 37088

Burlington Environmental Inc.
625 S 32nd Street
Washougal, WA 98671

Sol-Pro Inc.
P O Box 1781
Tacoma, WA 98401-1781

Charles R. Larsen, AAG
Department of Justice
P O Box 7857
Madison, WI 53707-7857

A.A.D. Distribution
& Dry Cleaning Services, Inc.
2306 E 38th Street
Vernon, CA 90058

Arrow Transportation
457 E 18th
Tacoma, WA 98404

Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

In the Matter of Remedial Action by:	)	AGREED ORDER
	)	
NOEL CORPORATION	)	No. DE 95TC-C239
	)	

Effective Dat: Jan. 5, 1996

TO: Rodger Noel, President
Noel Corporation
1001 South 1st Street
Yakima Washington 98901

William L. Weigand, Jr.
Attorney for Noel Corporation
P O Box 1689
Yakima Washington 98907

I. Jurisdiction

This Agreed Order ("Order") is issued pursuant to the authority of Revised Code of Washington (RCW) 70.105D.050(1).

II. Findings of Fact

The Department of Ecology (Ecology) makes the following Findings of Fact, without admission of such facts by Noel Corporation.

2.1. Noel Corporation owns the property ("the Facility") at 1020 South Third Street in Yakima, Washington. The Yakima County Assessor's parcel number of this property is 18132514543. This parcel is commonly known as Southgate Laundry.

2.2 Tetrachloroethylene (PCE) has been found in the near surface soil at the Southgate Facility at levels up to 2300 ug/kg(Department of Ecology soil samples of May 5, 1994.)

2.3 PCE is widely prevalent throughout the shallow Yakima Basin aquifer. The Washington Department of Health Advisory Level for drinking water is 4 ppb for PCE. The United States Environmental Protection Agency Maximum Contaminant Level for drinking water in 5 ppb for PCE.

2.4 The water table in the Yakima area typically occurs at depths between 8 feet and 30 feet below ground surface. Wells exist in the Yakima Basin which withdraw water used for drinking from this shallow unconfined aquifer. The area contains deep, very well-drained soils formed in mixed alluvium. These soils have moderate to high permeabilities in the surface layers and very high permeabilities in the substratum.

2.5 The foregoing information in item 2.2 through item 2.4 is contained in the following documents:

(a) Science Applications International Corporation. April 1989. "Preliminary Assessment Report, Frank Wear Cleaners." Prepared for Washington Department of Ecology.

(b) Ecology and Environment, Inc. December 10, 1989. "Final Report for Yakima Soil Gas Study, Yakima, Washington." Prepared for United States Environmental Protection Agency, Region 10.

(c) Department of Ecology letter to William Weigand, Jr. December 9, 1994.

III.

Ecology Determinations

3.1. The Noel Corporation is an "owner or operator" as defined in RCW 70.105D.020(6) of a "Facility" as defined in RCW 70.105D.020(3).

3.2. The Facility is known as Southgate Laundry and is located at 1020 South 3rd Avenue, in Yakima, Washington.

3.3. The substances found at the Facility as described in Section 2 are "hazardous substances" as defined in RCW 70.105D.020(5).

3.4. Based on the presence of these hazardous substances at the Facility and all factors known to Ecology, there is a release or threatened release of hazardous substances from the facility, as defined in RCW 70.105D.020(10).

3.5. By letter dated October 24, 1991, Ecology notified Noel Corporation of its status as a "potentially liable person" under RCW 70.105D.040 after notice and opportunity for comment.

3.6. Pursuant to RCW 70.105D.030(1) and 70.105D.050, Ecology may require potentially liable persons to investigate or conduct other remedial actions with respect to the release or threatened release of hazardous substances, whenever it believes such action to be in the public interest.

3.7. Based on the foregoing findings of facts, Ecology believes the remedial action required by this Order is in the public interest.

IV.

Work to be Performed

Based on the foregoing Facts and Determinations, it is hereby ordered that Noel Corporation take the following remedial actions and that these actions be conducted in accordance with Chapter 173-340 WAC unless otherwise specifically provided for herein.

4.1 Noel Corporation shall conduct a Remedial Investigation (RI) as described in the enclosed Work Plan. The Work Plan is hereby incorporated into this Order by reference and is an integral and enforceable part of the Order.

4.2 The RI shall be based on the results of an Ecology approved Site History and Soil Vapor Assessment (as described in the Work Plan) submitted by Noel Corporation.

4.3 The results and analyses for the RI shall be submitted to Ecology for acceptance per Submittal Timelines in Figure 5 of the Work Plan. The Submittal Timelines for completion of the RI phases is hereby incorporated into this Order by reference and is an integral and enforceable part of the Order.

4.4 With Ecology's acceptance of the RI, Noel Corporation will submit to Ecology within 60 days a Scope of Work for a Feasibility Study (FS). This Scope of Work shall meet the requirements of WAC 173-340-350.

4.5 Upon Ecology approval of the FS Scope of Work, Noel Corporation shall commence FS activities as per Scope of Work.

4.6 In addition to the above, a monthly progress report on the RI must be submitted to Ecology by the last day of each month until the project is completed.

4.7 In accordance with WAC 173-340-840(5), groundwater sampling data shall be submitted according to Attachment A of the Work Plan: SITE DESCRIPTION AND SAMPLE DATA SUBMITTAL REQUIREMENTS. These submittals shall be provided to Ecology as required under the Submittal Timelines in provision 4.3.

4.8 Noel Corporation may choose to undertake Interim Actions to address known PCE contamination. Such Interim Actions must be proposed by the Noel Corporation to Ecology for review and approval. Any such actions will be limited to soil remediation though soil removal and proper disposal.

V.

Terms and Conditions of Order

5.1. Definitions Unless otherwise specified, the definitions set forth in Chapter 70.105D RCW and Chapter 173-340 WAC shall control the meanings of the terms used in this Order.

5.2. Public Notices RCW 70.105D.030(2)(a) requires that, at a minimum, this Order be subject to concurrent public notice. Ecology shall be responsible for providing such public notice and reserves the right to modify or withdraw any provisions of this Order should public comment disclose facts or considerations which indicate to Ecology that the Order is inadequate or improper in any respect.

5.3. Remedial Action Costs Noel Corporation shall pay to Ecology costs incurred by Ecology pursuant to this Order. These costs shall include work performed by Ecology or its contractors for investigations, remedial actions, and Order preparation, oversight and administration. For work performed prior to 11/30/95 the amount $3,958.61 shall be paid to Ecology within 30 days of the effective date of this Order. For work commencing on and thereafter, Ecology costs shall include costs of direct

activities and support costs of direct activities as defined in WAC 173-340-550(2), and interest charges for delayed payments, as defined in WAC 173-340-550(4).

Noel Corporation shall pay the required amount within ninety (90) days of receiving from Ecology an itemized statement of costs that includes a summary of costs incurred, an identification of involved staff, and the amount of time spent by involved staff members on the project. A general description of work performed will be provided upon request. Itemized statements shall be prepared quarterly. Failure to pay Ecology's costs within 90 days of receipt of the itemized statement of costs will result in interest charges.

5.4. Designated Project Coordinators
The project coordinator for Ecology is:

Mr. Rick Roeder
Department of Ecology
106 South Sixth Avenue
Yakima, WA 98902-3387

The project coordinator for Noel Corporation is:

Mr. Gary Slagle
1001 South 1st Street
Yakima, Washington 98901

The project coordinator(s) shall be responsible for overseeing the implementation of this Order. To the maximum extent possible, communications between Ecology and Noel Corporation, and all documents, including reports, approvals, and other correspondence concerning the activities performed pursuant to the terms and conditions of this Order, shall be directed through the project coordinator(s). Should Ecology or Noel Corporation change project coordinator(s), written notification shall be provided to Ecology or Noel Corporation at least ten (10) calendar days prior to the change.

5.5. Performance All work performed pursuant to this Order shall be under the direction and supervision, as necessary, of a professional engineer or hydrogeologist, or similar expert, with appropriate training, experience and expertise in hazardous waste site investigation and cleanup. Noel Corporation shall notify Ecology as to the identity of such engineer(s) or hydrogeologist(s), and of any contractors and subcontractors to

be used in carrying out the terms of this Order, in advance of their involvement at the Site. Noel Corporation shall provide a copy of this Order to all agents, contractors and subcontractors retained to perform work required by this Order and shall ensure that all work undertaken by such agents, contractors, and subcontractors will be in compliance with this Order.

Except where necessary to abate an emergency situation, Noel Corporation shall not perform any remedial actions at Noel Corporation site outside that required by this Order unless Ecology concurs, in writing, with such additional remedial actions.

5.6 Access Ecology or any Ecology authorized representative shall have the authority to enter and freely move about the Site at all reasonable times for the purposes of, inter alia: inspecting records, operation logs, and contracts related to the work being performed pursuant to this Order; reviewing the progress in carrying out the terms of this Order; conducting such tests or collecting samples as Ecology or the project coordinator may deem necessary; using a camera, sound recording, or other documentary type equipment to record work done pursuant to this Order; and verifying the data submitted to Ecology by Noel Corporation. By signing this Agreed Order, Noel Corporation agrees that this Order constitutes reasonable notice of access, and agrees to allow access to the Site at all reasonable times for purposes of overseeing work performed under this Order. Ecology shall allow split or replicate samples to be taken by Noel Corporation during an inspection unless doing so interferes with Ecology's sampling. Noel Corporation shall allow split or replicate samples to be taken by Ecology and shall provide seven (7) days notice before any sampling activity.

5.7. Public Participation Noel Corporation shall prepare and/or update a public participation plan for the site. Ecology shall maintain the responsibility for public participation at the site. Noel Corporation shall help coordinate and implement public participation for the site.

5.8. Retention of Records Noel Corporation shall preserve in a readily retrievable fashion, during the pendency of this Order and for ten (10) years from the date of completion of the work performed pursuant to this Order, all records, reports, documents, and underlying data in its possession relevant to this

Order. Should any portion of the work performed hereunder be undertaken through contractors or agents of Noel Corporation, then Noel Corporation agrees to include in their contract with such contractors or agents a record retention requirement meeting the terms of this paragraph.

5.9 Dispute Resolution Noel Corporation may request Ecology to resolve disputes which may arise during the implementation of this Order. Such requests shall be in writing and directed to the signatory, or his/her successor(s), to this Order. Ecology resolution of the dispute shall be binding and final. Noel Corporation is not relieved of any requirement of this Order during the pendency of the dispute and remains responsible for timely compliance with the terms of the Order unless otherwise provided by Ecology in writing.

5.10 Reservation of Rights/No Settlement This Agreed Order is not a settlement under Chapter 70.105D RCW. Ecology's signature on this Order in no way constitutes a covenant not to sue or a compromise of any Ecology rights or authority. Ecology will not, however, bring an action against Noel Corporation to recover remedial action costs paid to and received by Ecology under this Agreed Order. In addition, Ecology will not take additional enforcement actions against Noel Corporation to require those remedial actions required by this Agreed Order, provided Noel Corporation complies with this Agreed Order.

Ecology reserves the right, however, to require additional remedial actions at the Site should it deem such actions necessary.

Ecology also reserves all rights regarding the injury to, destruction of, or loss of natural resources resulting from the releases or threatened releases of hazardous substances from Noel Corporation site.

In the event Ecology determines that conditions at the Site are creating or have the potential to create a danger to the health or welfare of the people on the Site or in the surrounding area or to the environment, Ecology may order Noel Corporation to stop further implementation of this Order for such period of time as needed to abate the danger.

5.11 Transference of Property No voluntary or involuntary conveyance or relinquishment of title, easement, leasehold, or other interest in any portion of the Site shall be consummated by Noel Corporation without provision for continued implementation of all requirements of this Order and implementation of any remedial actions found to be necessary as a result of this Order.

Prior to transfer of any legal or equitable interest Noel Corporation may have in the Site or any portions thereof, Noel Corporation shall serve a copy of this Order upon any prospective purchaser, lessee, transferee, assignee, or other successor in such interest. At least thirty (30) days prior to finalization of any transfer, Noel Corporation shall notify Ecology of the contemplated transfer.

5.12 Compliance with Other Applicable Laws All actions carried out by Noel Corporation pursuant to this Order shall be done in accordance with all applicable federal, state, and local requirements.

VI.

Satisfaction of this Order

The provisions of this Order shall be deemed satisfied upon Noel Corporation's receipt of written notification from Ecology that the Noel Corporation has completed the remedial activity required by this Order, as amended by any modifications, and that all other provisions of this Agreed Order have been complied with.

VII.

Enforcement

7.1. Pursuant to RCW 70.105D.050, this Order may be enforced as follows:

A. The Attorney General may bring an action to enforce this Order in a state or federal court.

B. The Attorney General may seek, by filing an action, if necessary, to recover amounts spent by Ecology for investigative and remedial actions and Orders related to the Site.

C. In the event Noel Corporation refuses, without sufficient cause, to comply with any term of this Order, Noel Corporation will be liable for:

(1) up to three times the amount of any costs incurred by the state of Washington as a result of its refusal to comply; and

(2) civil penalties of up to $25,000 per day for each day it refuses to comply.

D. This Order is not appealable to the Washington Pollution Control Hearings Board. This Order may be reviewed only as provided under Section 6 of Chapter 70.105D RCW.

Effective date of this Order: _____

NOEL CORPORATION

By _____
Mr. Rodger Noel, President
Noel Corporation

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

By _____
Mr. Anthony W. Grover
Section Manager
Toxics Cleanup Program
Central Regional Office

AWG:RR:fs

(g:rick\s_gate\sg.ao

APPENDIX C

WELL LOGS

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT Appli. 7582

PUMP WELL
WELL LOG

No...../.....-.....

Date June 16, 1965

Record by Driller

Source Driller's Record

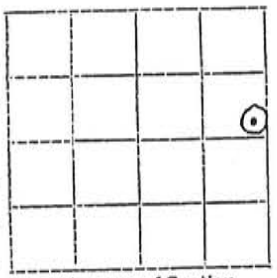


Diagram of Section

Location: State of WASHINGTON

County Yakima

Area

Map

SE¼SE¼ NE¼ sec. 25 T. 13 N., R. 18 E.

Drilling Co. Riebe Well Drilling

Address 1503 East Lenox Avenue, Yakima, Wash.

Method of Drilling Cable Date June 15, 1965

Owner Southgate Super Duper for B.C.Ooms & D.H.

Address 401 W. Lenox St., Yakima, Wn. Fosshage

Land surface, datum ..... ft. above / below .....

CORRELATION	MATERIAL	(feet) From	(feet) To
	(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)		
	Commercial heat exchange (cooling) for refrigerating machines		
	DIMS: 8" x 62'		
	Surface soil, sand, gravel and boulders	0	18
	Cement gravel	18	22
	River rock, sand and gravel	22	35
	1st water 22'		
	Cement gravel	35	42
	Sand, gravel and boulders (wtr)	42	53
	Hardpan	53	62
	Sand, gravel and rock	62	63
	Casing: 8" from 0-60'6"		

Turn up

Sheet ..... of ..... sheets

13/18-25H
File number

WELL LOG.—Continued pump well No. A 7582

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Depth forward	———	
	Perforated from 30-60'		
	SWL: 22' on 6/15/65		
	Yield: 220 gpm with 1½' DD after 4 hrs.		
	Recovery data:		
	Time - 0, Water level - 23.5'		
	" .01, " - 22		
	DATE: 6/16/65		
	Temp: 56		
	Pump: Peerless Pump Co., 7½ h.p., deep well turbine		

S. F. No. 7449—OS—6-61—2M.

STATE OF WASHINGTON
DEPARTMENT OF CONSERVATION
AND DEVELOPMENT

DISCHARGE WELL Appli. 7582

WELL LOG No...../.....-.....

Date June 16, 1965.

Record by Driller

Source Driller's Record

Location: State of WASHINGTON

County Yakima

Area

Map

SE¼SE¼ NE¼ sec. 25 T. 13 N., R. 18 E.

Diagram of Section

Drilling Co. Riebe Well Drilling

Address 1503 East Lenox Avenue, Yakima, Wash.

Method of Drilling Cable Date June 15, 1965

Owner Southgate Super Duper for B.C.Coms & D.H. Fosshage

Address 401 W. Lenox St., Yakima, Wn.

Land surface, datum ..... ft. above / below

CORRELATION	MATERIAL	(feet) From	(feet) To
	Commercial heat exchange (cooling) for refrigerating machines		
	RECHARGE WELL		
	DIMS: 6" x 61'		
	Surface soil, sand, gravel and boulders	0	15
	Cement gravel	15	20
	Water sand, gravel and boulders (water)	20	50
	Hardpan	50	55
	Water sand, gravel and boulders	55	61
	Casing: 6" from 0-60'7"		
	Perforated from 20-60'		

(Transcribe driller's terminology literally but paraphrase as necessary, in parentheses. If material water-bearing, so state and record static level if reported. Give depths in feet below land-surface datum unless otherwise indicated. Correlate with stratigraphic column, if feasible. Following log of materials, list all casings, perforations, screens, etc.)

Turn up

Sheet ..... of ..... sheets

13/18-25H 2
File number

WELL LOG.—Continued 12" recharge well No. A7562

CORRELATION	MATERIAL	THICKNESS (feet)	DEPTH (feet)
	Depth forward	———	
	SWL: 19' on 6/15/65		
	Temp: 56°		
	Pump: NONE		

S. F. No. 7449—OS—6-61—2M.

APPENDIX D

MAXIM STANDARD OPERATING PROCEDURES

STANDARD OPERATING PROCEDURES (SOPs)

MAXIM TECHNOLOGIES, INC.

Revision Dates Noted

TABLE OF CONTENTS

STANDARD OPERATING PROCEDURE

FIELD FORMS

All pertinent field investigations and sampling information shall be recorded on a field form during each day of the field effort and at each sample site. The field crew leader shall be responsible for ensuring that sufficient detail is recorded on the field forms. No general rules can specify the extent of information that must be entered on the field form. However, field forms shall contain sufficient information so that someone can reconstruct all field activity without relying on the memory of the field crew. All entries shall be made in indelible ink weather conditions permitting. Each day's or site's entries will be initialed and dated at the end by the author.

At a minimum, entries on the field sheet or in field notebook shall include:

- Date and time of starting work and weather conditions.
- Names of field crew leader and team members
- Project name and type
- Description of site conditions and any unusual circumstances.
- Location of sample site, including map reference, if relevant
- Equipment ID numbers
- Details of actual work effort, particularly any deviations from the field work plan or standard operating procedures
- Field observations
- Any field measurements made (e.g., pH)

For sampling efforts, specific details for each sample should be recorded using Maxim's standardized field forms. Surface water and groundwater field forms contain fill-in-the-blank type information in order that all pertinent information shall be recorded. In addition to the items listed above, the following information is recorded on field forms during sampling efforts:

- Time and date samples were collected
- Number and type (natural, duplicate, QA/QC) of samples collected
- Analysis requested
- Sampling method, particularly deviations from standard operating procedures

Strict custody procedures shall be maintained with the field forms. Field forms shall remain with the field team at all times, while being used in the field. Upon completion of the field effort, photocopies of the original field forms will be made and used as working documents; original field forms shall be filed in an appropriately secure manner.

STANDARD OPERATING PROCEDURE

EQUIPMENT DECONTAMINATION

The purpose of this section is to describe general decontamination procedures for field equipment in contact with mine/mill tailings, soil, or water. During field sampling activities, sampling equipment will become contaminated after it is used. Sampling equipment must be decontaminated between sample collection points if it is not disposable. Field personnel must wear disposable latex or vinyl gloves while decontaminating equipment at the project site. Change gloves between every sample. Every precaution must be taken by personnel to prevent contaminating themselves with the wash water and rinse water used in the decontamination process.

Table A-1 lists equipment and liquids necessary to decontaminate field equipment.

The following should be done in order to complete thorough decontamination:

1. Set up the decontamination zone upwind from the sampling area to reduce the chances of windborne contamination.

2. Visually inspect sampling equipment for contamination; use stiff brush to remove visible material.

3. The general decontamination sequence for field equipment includes: wash with Liquinox or an equivalent degreasing detergent; deionized water rinse; 10% dilute nitric acid rinse; deionized water rinse; rinse with sample water three times.

4. Rinse equipment with methanol in place of the nitric rinse if sampling for organic contamination. Follow with a deionized water rinse.

5. Decontaminated equipment that is to be used for sampling organics should be wrapped in aluminum foil if not used immediately.

6. Clean the outside of sample container after filling sample container.

Alternatively, field equipment can be decontaminated by steam cleaning, rinsing with 10% dilute nitric acid, and rinsing with deionized water.

All disposable items (e.g., paper towels, latex gloves) should be deposited into a garbage bag and disposed of in a proper manner. Contaminated wash water does not have to be collected, under most circumstances.

If vehicles used during sampling become contaminated, wash both inside and outside as necessary.

TABLE A-1. EQUIPMENT LIST FOR DECONTAMINATION

- 5-gallon plastic tubs
- 5-gallon plastic water-container
- 5-gallon carboy DI water
- 1-gallon cube of 10% HNO_3
- 1-gallon container or spray bottle of 10% Methanol or pesticide grade acetone for organics
- Liquinox (soap)
- Hard bristle brushes
- Garbage bags
- Latex gloves
- Squeeze bottles
- Paper Towels

STANDARD OPERATING PROCEDURE

SAMPLE DOCUMENTATION

Sample documentation is an important step to ensure the laboratory, project manager, and field personnel are informed on the status of field samples. Depending on the specifics required for each project, a number of forms will need to be filled out. Most sample documentation forms are preprinted carbonless triplicates, enabling copies to be filed or mailed from labs or offices. The forms will be completed by field personnel, who have custody of the samples. The office copy will be kept in the project file and subsequent copies sent to the laboratory, or other designated parties. The responsibility for the completion of these forms will be with each field crew leader. It is important the field crew leader is certain field personnel are familiar with the completion process for filling out forms, and the expected information is included.

Potential documents to be completed clearly in ink for each sample generated include:

- Field Form
- Chain-of-Custody
- Custody Seal

If working on Superfund activities, the following additional forms will also be prepared:

- EPA Sample Tags
- SAS Packing Lists
- Sample Identification Matrix Forms
- Organic Traffic Report (if applicable)
- Inorganic Traffic Report (if applicable)

STANDARD OPERATING PROCEDURE

QC SAMPLES

Quality Control (QC) samples are submitted along with natural samples to provide supporting laboratory data to validate laboratory results. QC samples are submitted blind, and do not have any unique identifying codes that would enable the lab or others to bias these samples in any way. Usually, the time or sampling location is modified in a way which will separate blank and standard samples from the rest of the sample train. QC samples are identified only on field forms and in field notebooks. The following codes are typically used:

N - Natural Sample	Soil, water, air, or other of interest material from a field site
SP - Split Sample	A portion of a natural sample collected for independent analysis; used in calculating laboratory precision
D - Duplicate Sample	Two samples taken from the same media under similar conditions; also used to calculate precision
BB - Bottle Blank	Deionized water collected in sample bottle; used to detect contamination sampling containers
CCB - Cross Contamination	Deionized water run through decontaminated equipment and analyzed for Blank residual contamination and deionized water contamination
BFS - Blind Field Standard	Certified materials of known concentration; used to determine laboratory accuracy
TB - Travel or Trip Blank	Inert material (deionized water or diatomaceous earth) included in sample cooler; sent by the lab, the sample is used to determine if contamination by volatiles is present during collection or shipping

In general, selected QC samples will be inserted into the sample train within a group of twenty samples. Unless otherwise specified, QC samples will be prepared in the field. Deionized water blanks will be collected from carboys and cubitainers used in the field. An exception to field preparation of QC samples is the preparation of some blind field standards. Since the concentration of analytes in the sample is to be mixed according to specific manufacturer's instructions, field conditions may not provide the needed laboratory atmosphere. This is especially true for volatile organic compounds, which need to be prepared just before analyzing. Under these circumstances, standards will be shipped to the laboratory for preparation, keeping the concentration or manufacturer's QC Lot Number as blind as possible.

The number and types of samples submitted for each group of natural samples will be determined by the project manager and others, including state or Federal agencies, and will be defined in the project work plan. Each field crew leader will be responsible for all QC samples prepared by that crew.

Methods for computing data validation statements can be found in EPA documents or obtained from the Maxim laboratory.

STANDARD OPERATING PROCEDURE

SOIL SAMPLE COLLECTION

This SOP describes the field equipment and sampling methods for surface and subsurface sampling of soil material. Methods explained in this SOP may be different from those identified in the project specific Sampling and Analysis Plan (SAP) and the project specific SAP should be referenced for additions or deletions to the methods noted below. All sampling equipment should be cleaned before arriving on site.

FIELD EQUIPMENT

- Sharp shooter and clean-out shovel
- Stainless steel mixing bowl and sampling trowel
- Dilute (10%) hydrochloric acid
- Hand lens (10) power
- Steel tape (10 foot)
- pH and electrical conductivity meters (if required)
- Munsel color book (if required)
- No. 10 sampling screen
- Field forms and field book
- Bucket augers

SURFACE SAMPLING

Surface soil/tailings samples are collected from the surface to a depth of one inch unless otherwise specified in the project specific SAP. Sufficient sample will be collected for the analysis that will be performed but generally this will be on the order of one gallon. Soil samples will be collected in either wide mouth glass jars or resealable polyethylene bags (ziplock or equivalent).

Samples should be described according to the procedures outlined in the Unified Soil Classification System (USCS; method ASTM D2487) or the Soil Conservation Service (SCS) classification system. Soil texture should be classified by either the USCS or U.S. Department of Agriculture (USDA) classification. Descriptions shall be recorded in field books or on standard morphological description logs as provided in the SAP.

Samples should be collected from an area of approximately six square feet by digging up the top inch with the sampling trowel and placed in the mixing bowl. The sample should be screened with the 10 mesh sieve if coarse fragments are to be excluded from the sample. If a sod or duff layer is present, this layer should be pealed back to the top of the mineral soil.

The sample placed in the mixing bowl shall be well mixed and then a portion of the sample placed in the sample container. To select a sample from the mixing bowl, quarter the sample in the bowl and place an equal volume of soil from each quarter in the sample container. When sampling soil for organics, the samples should not be mixed.

All equipment used in the sampling of surface soils will be decontaminated using the procedures in SOP-11. All necessary paperwork will be filled out in accordance with SOP-12.

SUBSURFACE SAMPLING

Subsurface sampling will be completed using a bucket auger, split spoon sampler, or hand dug or backhoe excavated pits. Sampling procedures for each type of equipment is described below. Sample collection, homogenation, and transfer to sampling containers should follow the same procedures as outlined for collection of surface samples.

Bucket Auger

1. Arrive on-site equipped with stainless steel auger rod and several sizes of stainless steel bucket augers (e.g. 2-inch, 4-inch, 6-inch, etc.).

2. Bucket auger holes can be drilled as one size or in a telescoping manner if contamination between sample intervals is a concern. If a single sized, advance the bucket auger to the desired sampling interval depth and empty the contents of the auger in a stainless steel mixing bowl. For the telescoping method, advance the largest auger to an approximate depth of three feet, collecting specified depth increment samples as the auger is advanced. Install temporary decontaminated PVC casing with a diameter slightly smaller than the borehole to keep the hole open and reduce possible cross-contamination between depth intervals. Using the next size smaller bucket auger, repeat the process.

3. Select sample intervals for packaging for laboratory analysis in accordance with procedures described in the SAP.

4. Fill out appropriate paper work and bottle labels as necessary prior to leaving site.

5. Decontaminate all equipment between sample locations.

Split Spoon Sampler

1. Arrive on-site equipped with at least two standard 1.4 inch inside diameter split spoon samplers. If geotechnical information is desired, a 140 pound drive hammer is required.

2. Install sampler into borehole and advance to the desired depth with the 140 pound drop hammer or equivalent means. Record number of blow counts to complete sampling over each 18-inch interval, as necessary. Retrieve sampler and place on work table. Using the other sampler, repeat this sequence.

3. Record lithology and percent recovery from cores retrieved from split spoon sampler.

4. Based upon the project work plan or sampling and analysis plan, composite like core intervals by mixing in stainless steel bowl in a similar manner as described for surface sampling. When sampling for organics, the sample should not be mixed.

5. Decontaminate sampling equipment between each interval sampled if required by the SAP. Decontaminate sampling equipment between sampling sites.

Backhoe or Hand Dug Excavations

1. Locate the site to be sampled and insure that equipment can safely access the site. Minimize off road travel to prevent off site damage to surrounding vegetation.

2. Orient excavation to maximize use of the angle of the sun to illuminate the pit for photographs. Place excavated material a sufficient distance from the excavation.

3. Excavate to the prescribed depth. If the pit exceeds five feet in depth, OSHA construction standards for shoring or sloping must be observed to prevent accidental burials. Sampling personnel should enter the pit with care during and after excavation.

4. Soil profile descriptions shall be made from a hand cleaned surface along the pit wall. Complete profile descriptions and take photographs before pit is sampled.

5. Soil samples shall be collected from depth intervals specified in the SAP. When a depth interval is sampled, an equal volume of soil should be collected from the entire interval exposed on the pit wall. Soil samples will be collected with the stainless steel trowel and mixing bowl according to methods described for surface soil sampling. When sampling for organics, the sample should not be mixed.

6. After sampling is completed, the pit should be backfilled with excavated material in the reverse order that it was excavated so that topsoil material is returned to the top of the pit. When backfilling is complete the area should be cleaned-up to its original condition.

7. Decontaminate sampling equipment between sampling sites. Excavation equipment should be cleaned between sites with water (where possible) or with a shovel to remove accumulated dirt and mud.

STANDARD OPERATING PROCEDURE

FIELD MEASUREMENT OF SOIL FIELD PARAMETERS

1. Obtain soil sample in accordance with SOP-22.

2. Prepare mixture of 1:1 ratio of soil (dry weight basis) to deionized water in a glass beaker. A 10 gram sample of soil should be weighed and placed in a clean 50 ml glass beaker or plastic cup. Since the density of soil generally ranges from 1.3 to 1.5 grams per cubic centimeter, an equivalent volume of soil can be added to the beaker if a scale is not available. Add 10 ml of deionized water to the beaker and stir with a glass rod or plastic spoon.

3. Allow the sample to equilibrate for 10 minutes or until the suspension settles. For samples with high clay content, this period may be up to 30 minutes.

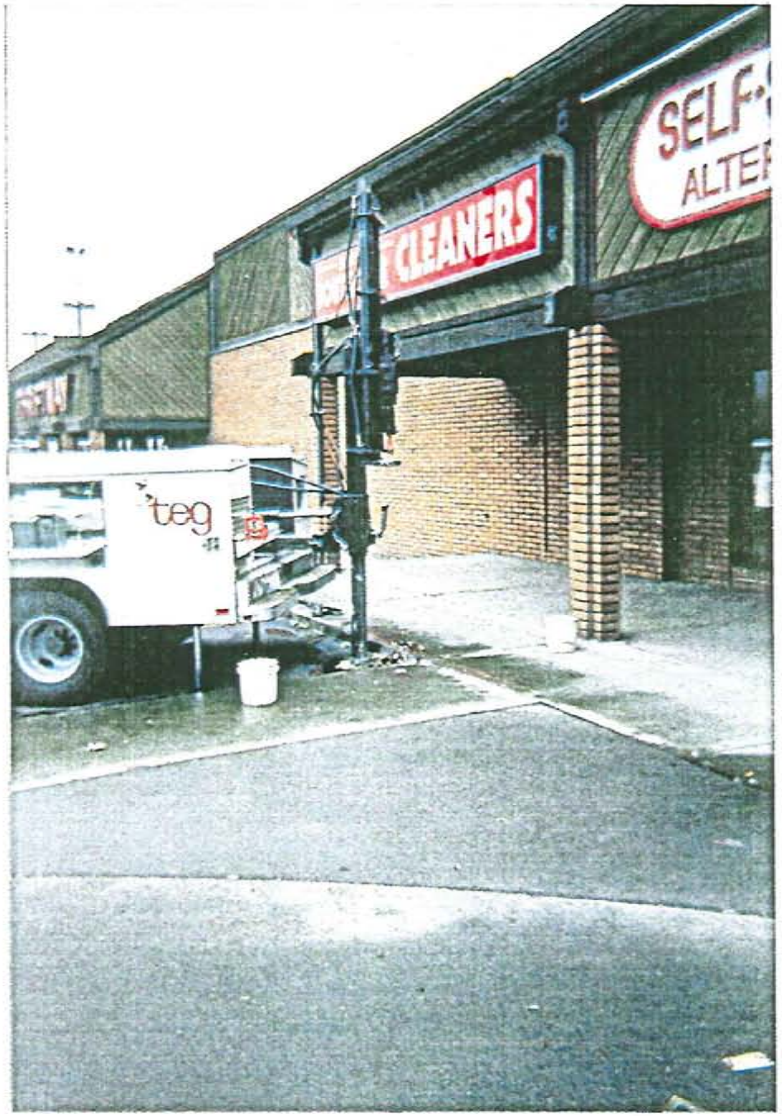
4. Insert calibrated pH or electrical conductivity probes into the supernatant solution above the soil and obtain field measurements in accordance with SOP 05 and SOP 06.

5. Record all collected data on standardized field forms or in the field book as required by the SAP.

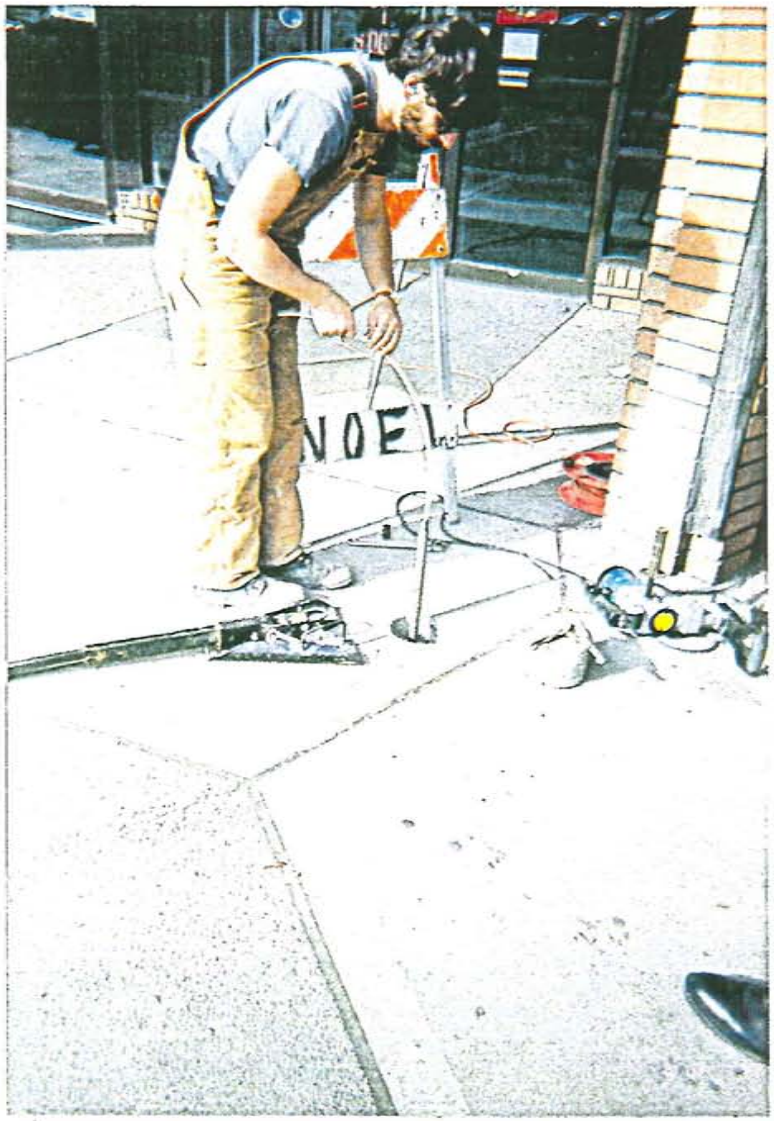
6. Rinse our beaker with deionized water between samples.

APPENDIX E

PHOTOGRAPHS OF FIELD ACTIVITIES



Strataprobe drive point unit at Borehole No. 8



Soil Vapor Collection at Borehole No. 1

APPENDIX F

LABORATORY ANALYTICAL REPORTS

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil Vapor

	MDL	Blank	#1	#2	#3	#4	#5
DATE	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96
	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
1,1 Dichloroethene	100	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	25	nd	nd	nd	nd	nd	nd
trans-1,2 Dichloroethene	25	nd	nd	nd	nd	nd	nd
Benzene	25	nd	nd	nd	nd	nd	nd
Trichloroethene	25	nd	nd	nd	33	nd	nd
Toluene	25	nd	nd	nd	nd	nd	nd
Tetrachloroethene	25	nd	684	8020	19400	2150	8440
Chlorobenzene	25	nd	nd	nd	nd	nd	nd
Ethylbenzene	25	nd	nd	nd	nd	nd	nd
Total Xylenes	25	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	25	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	25	nd	nd	nd	nd	nd	nd
Chloroform	25	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	25	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	25	nd	nd	nd	nd	nd	nd
Tetrachloroethane	25	nd	nd	nd	nd	nd	nd
Methylene Chloride	25	nd	nd	nd	nd	nd	nd

"nd" Indicates Not Detected at the listed MDL.
"int" Indicates that Interference Peaks prevent determination.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil Vapor

	MDL	Eq. Blank	#6	#7	#8	#9	#10
DATE	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96	03/22/96
	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv	ppbv
1,1 Dichloroethene	100	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	25	nd	nd	44	nd	nd	nd
trans-1,2 Dichloroethene	25	nd	nd	nd	nd	nd	nd
Benzene	25	nd	nd	nd	nd	nd	nd
Trichloroethene	25	nd	nd	94	nd	nd	nd
Toluene	25	nd	nd	nd	nd	nd	nd
Tetrachloroethene	25	nd	7320	134000	4730	219	486
Chlorobenzene	25	nd	nd	nd	nd	nd	nd
Ethylbenzene	25	nd	nd	nd	nd	nd	nd
Total Xylenes	25	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	25	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	25	nd	nd	nd	nd	nd	nd
Chloroform	25	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	47	nd	nd	nd
1,1,1 Trichloroethane	25	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	25	nd	nd	nd	nd	nd	nd
Tetrachloroethane	25	nd	nd	nd	nd	nd	nd
Methylene Chloride	25	nd	nd	nd	nd	nd	nd

"nd" Indicates Not Detected at the listed MDL.
"int" Indicates that Interference Peaks prevent determination.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil Vapor

	MDL 03/22/96	#10 Dup 03/22/96	#11 03/22/96	#11 Dup 03/22/96
DATE				
	ppbv	ppbv	ppbv	ppbv
1,1 Dichloroethene	100	nd	nd	nd
cis-1,2 Dichloroethene	25	nd	nd	nd
trans-1,2 Dichloroethene	25	nd	nd	nd
Benzene	25	nd	nd	nd
Trichloroethene	25	nd	nd	nd
Toluene	25	nd	nd	nd
Tetrachloroethene	25	318	193	194
Chlorobenzene	25	nd	nd	nd
Ethylbenzene	25	nd	nd	nd
Total Xylenes	25	nd	nd	nd
1,1 Dichloroethane	25	nd	nd	nd
1,2 Dichloroethane	25	nd	nd	nd
Chloroform	25	nd	nd	nd
Carbon Tetrachloride	25	nd	nd	nd
1,1,1 Trichloroethane	25	nd	nd	nd
1,1,2 Trichloroethane	25	nd	nd	nd
Tetrachloroethane	25	nd	nd	nd
Methylene Chloride	25	nd	nd	nd

"nd" Indicates Not Detected at the listed MDL.
"int" Indicates that Interference Peaks prevent determination.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Method Blank	Soil #1	Soil #2	Soil #3	Soil #4	Soil #5
Date		03/25/96	03/25/96	03/25/96	03/25/96	03/25/96	03/25/96
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Vinylchloride	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	0.11	0.36	3.99	0.38	0.30
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		92	88	91	89	86	89

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Soil #5 Dup	Soil #6	Soil #6 Dup	Soil #7	Soil #8	Soil #9
Date		03/25/96	03/25/96	03/25/96	03/25/96	03/25/96	03/25/96
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Vinylchloride	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	0.41	0.33	0.47	2.08	0.15	0.22
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd
m,p-Xylene	0.05	nd	nd	nd	nd	nd	nd
o-Xylene	0.05	nd	nd	nd	nd	nd	nd
Dichloromethane	0.05	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		93	81	86	87	92	96

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

SOUTHGATE SHOPPING CENTER PROJECT
Yakima, Washington
MAXIM Technologies, Inc.

Specific Halogenated Hydrocarbons and BTEX (Mod. EPA 8010/8020) in Soil

Sample-Number	MDL	Soil #10	Soil #11	2.5 ppm MS	2.5 ppm MSD
Date		03/25/96	03/25/96	03/25/96	03/25/96
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Vinylchloride	0.05	nd	nd	--	--
1,1 Dichloroethene	0.05	nd	nd	2.35	2.49
Trans-1,2 Dichloroethene	0.05	nd	nd	2.42	2.53
Cis-1,2 Dichloroethene	0.05	nd	nd	2.29	2.30
Benzene	0.05	nd	nd	2.28	2.37
Trichloroethene	0.05	nd	nd	2.24	2.38
Toluene	0.05	nd	nd	2.22	2.24
Tetrachloroethene	0.05	0.17	0.16	2.35	2.23
Ethylbenzene	0.05	nd	nd	2.23	2.32
m,p-Xylene	0.05	nd	nd	4.41	4.39
o-Xylene	0.05	nd	nd	2.26	2.11
Dichloromethane	0.05	nd	nd	2.63	2.71
1,1 Dichloroethane	0.05	nd	nd	2.60	2.34
1,2 Dichloroethane	0.05	nd	nd	2.35	2.38
Chloroform	0.05	nd	nd	2.44	2.45
Carbon Tetrachloride	0.05	nd	nd	2.56	2.47
1,1,1 Trichloroethane	0.05	nd	nd	2.22	2.23
1,1,2 Trichloroethane	0.05	nd	nd	2.21	2.27
1,1,1,2-Tetrachloroethane	0.05	nd	nd	2.34	2.30
1,1,2,2-Tetrachloroethane	0.05	nd	nd	2.29	2.23
Spike Recovery (%)		87	97	--	--

"nd" Indicates Not Detected at the listed detection limit.

"int" Indicates that interference peaks prevent determination.

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: SOUTHGATE LAUNDRY

ADDRESS: Third & Nob Hill Blvd

PHONE (509) 577-8592 FAX: (509) 577-8520

CLIENT PROJECT #: _____ PROJECT MANAGER: RACHEL TAUNAN

DATE: 22 March 1996 PAGE 1 OF 2

PROJECT NAME: Southgate Laundry

LOCATION: YAKIMA, WA

COLLECTOR: TEG DATE OF COLLECTION 3/14-20, 1996

Sample Number	Depth	Time	Sample Type	Container Type	VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH 8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
Southgate #1	5.5	0910	Soil Gas	Glass Vial	X															PCE 684 DCE ~~ND~~		
#2	4.5	0950	Soil Gas		X															PCE 8020 DCE ND		
#3	5.5	1020	Soil Gas		X															← PCE 19400 DCE 1240 TCE 33		
#4	4.5	10:55	Soil Gas		X															PCE 2150 DCE ND		
#5	3.0	11:20	Soil Gas		X															PCE 8440 DCE 124		
#6	4.0	11:40	Soil Gas		X															PCE 7.2 (HD)		
#7	0.5	12:20	Soil Gas		X															← PCE 135000 DCE ~~ND~~ TCE 82		
BLANK		12:20	AIR		X															PCE ND		
#2	7'	1:30	Soil Gas		X															PCE 4730 ~~DCE ND~~ TCE NA		
#9	7.5'	1500	Soil Gas		X															PCE 219		
#10	8.0'	1540	Soil Gas		X															PCE 486		
#11	7.5	1640	Soil Gas		X															PCE 193		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Rachel Taunan	March 22 1996	Eric Custer	March 22 96
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

☐ TEG DISPOSAL @ $2.00 each ☐ Return ☐ Pickup

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

MDL gas 25 ppb

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: SOUTHGATE LAUNDRY
ADDRESS: 72nd & Nob Hill
PHONE (509) 577-2592 FAX: (509) 572-8520
CLIENT PROJECT #: PROJECT MANAGER: P. TAUMAN

DATE: March 22 1996 PAGE 2 OF 2
PROJECT NAME: Southgate LAUNDRY
LOCATION: YAKIMA, WA
COLLECTOR: TEG DATE OF COLLECTION March 22 96

Sample Number	Depth	Time	Sample Type	Container Type	ANALYSES: VOA 601/8010	VOA 602/8020	VOA 624/8240	Semi Vol 625/8270	TPH 418.1	TPH 8015 (gasoline)	TPH (8015 (diesel)	TPH 8015 (g & d)	PAH 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number of Containers	Laboratory Note Number
#7 Soil	0.5	12:30	Soil	JAR 4oz	X																	
#8 Soil	8.5	1:05	Soil	JAR 4oz	X																	
#1 Soil	6.1	2:10	Soil	JAR 4oz	X																	
#9 Soil	5.0	15:30	Soil	Jar 4oz	X																	
#10 Soil	6.0	15:55	Soil	Jar 4oz	X																	
#11 Soil	5.0	16:50	Soil	Jar 4oz	X																	
#2 Soil	2	17:20	Soil	Jar 4oz	X																	
#3 Soil	1.5	17:40	Soil	Jar 4oz	X																	
#4 Soil	2.0	18:00	Soil	JAR 407	X																	
#5 Soil	2.0	18:00	Soil	JAR 407	X																	
#6 Soil	2.0	18:20	Soil	JAR 407	X																	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Rachel Tauman	March 22/96	Eric Coster	
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE DISPOSAL INSTRUCTIONS

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SAMPLE RECEIPT	
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CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

MDL 0.05 mg/kg

GENERAL ANALYTICAL PROCEDURES

TEG Laboratories follow methods specified by the EPA and modified methods set by each state. The following is a general summary of those methods.

SAMPLE PREPARATION

Waters:

Separate water aliquots are extracted for TPH analysis of fuel compounds (Gasoline and Diesel) by liquid-liquid extraction with either Freon 113 or Methylene Chloride using a modified EPA Method 3510. If a purge & trap is required, a Tekmar LSC-2000 is used. For volatile aromatics and chlorinated hydrocarbons (EPA 601 and 602), water samples are purged of volatiles using the Tekmar LSC-2000 following EPA Method 5030.

Soils:

Soil samples are extracted with Freon 113, Methanol, or Methylene Chloride for TPH analysis of fuel compounds (Hydrocarbon Identification, Gasoline, and Diesel) by hand-shaking and sonification following EPA, CA-DOHS, OR-DEQ, or WA-DOE approved protocols. For volatile aromatic and chlorinated hydrocarbon compounds (EPA 8010 and 8020), Methanol is used as the solvent.

GAS CHROMATOGRAPHY

Total Fuel Hydrocarbons; WTPH-G; WTPH-D:

An aliquot of the extract is injected on-column into a Shimadzu 14A gas chromatograph equipped with a 30 meter Restek Rtx-5 megabore capillary column and measured by a flame ionization detector (FID), following a modification of EPA Method 8015. The Shimadzu 14A is set up with double injectors, twin 30 meter columns, and two FIDs.

Volatile Aromatic (BTEX) & Chlorinated Hydrocarbons:

Extracts are directly injected or the purge & trap is backflushed into a Shimadzu 14A gas chromatograph equipped with a 30 meter Restek Rtx-5 megabore capillary column, a 105 meter Restek 502.2 capillary column, a photoionization detector (PID) and a Hall electrolytic detector following EPA Methods 601/8010 and 602/8020.

DATA ACQUISITION

Data from the gas chromatographs are integrated and plotted by Shimadzu CR501 Data Processors. Separate chomatograms are printed for each detector. The resulting chromatograms are inspected at the end of each run, and the data are entered into an IBM-compatible computer for on-site processing and evaluation.

QA/QC FOR ANALYTICAL METHODS

GENERAL

The TEG Northwest Laboratory quality assurance and quality control (QA/QC) procedures are conducted following the guidelines and objectives which meet or exceed certification/accreditation requirements of California DOHS, Washington DOE, and Oregon DEQ. The Quality Control Program is a consistent set of procedures which assures data quality through the use of appropriate blanks, replicate analyses, surrogate spikes, and matrix spikes, and with the use of reference standards that meet or exceed EPA standards.

When analyses are taking place on-site with the mobile lab, the need for Field Blanks or Travel/Trip Blanks is eliminated. If there is going to be a delay before sample preparation for analysis, the sample is stored at 4° C.

ANALYTICAL METHODS

TEG Northwest Labs use analytical methodologies which are in substantial conformity with U. S. Environmental Protection Agency (EPA), Washington DOE, and Oregon DEQ methodologies. When necessary and appropriate due to the nature or composition of the sample, TEG may use variations of the methods which are consistent with recognized standards or variations used by the industry and government laboratories.

Purgeable Volatile Halocarbons
(Chlorinated Hydrocarbons, EPA 601/8010,8021)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

Purgeable Volatile Aromatics
(BTEX, EPA 602/8020)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day if more than 10 samples have been run. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. At least 1 method blank is run per day.

TPH-Gasoline, TPH-Diesel
(Gasoline and/or Diesel, Modified EPA 8015)

A blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The standard is rerun at the end of the day. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 135%. A duplicate sample is run at a rate of 1 per 10 samples (or a matrix spike sample is prepared and analyzed). At least 1 method blank is run per 10 samples analyzed.

TPH-Heavy Fuel Hydrocarbons
(EPA 418.1)

Calibration plot values must produce a best fit line, with known values deviating from the plot by less than 10%. Prior to sample run, a blank, a calibration standard, and a method blank are run. One method blank per 10 samples is prepared. A sample duplicate is prepared for each 10 samples to be run per day.

PCBs, Polychlorinated Biphenyls
(EPA 8080)

A method blank and a calibration standard are run at the beginning of the day. The standard must be within 15% of the continuing calibration curve value. The check standard may be re-run at the end of the day if numerous samples have been analyzed. All samples are prepared with a surrogate spike, and the recovery must be between 65% and 130%. Samples which measure outside of the linear range of the calibration curve must be carefully diluted to fall into the upper range of the linear calibration. A duplicate sample is run at a rate of 1 per 10 samples (or a matrix spike sample is prepared and analyzed.

APPENDIX G

METHODOLOGY FOR VAPOR SAMPLE RESULTS UNIT CONVERSION

TETRACHLOROETHYLENE IN AIR

CONVERSION CALCULATIONS

Convert parts per billion (ppb) Tetrachlorethylene to micrograms per liter (μg/L)

NIOSH Pocket Guide to Chemical Hazards: 1 ppm tetrachlorethylene = 6.89 mg/m^3

10^3 ppb = 1 ppm

1 m^3 = 10^3 L

10^3 μg = 1 mg

$$\mu g/l = (ppb)\ (\frac{ppb}{10^3 ppb})\ (\frac{6.89 mg/m^3}{ppm})\ (\frac{m^3}{10^3 L})(\frac{10^3 \mu g}{mg})\ (\mu g/L)$$

Multiply concentration in parts per billion by 6.89 X 10^{-3} to obtain concentration in micrograms per liter.