REPORT OF

REMEDIAL INVESTIGATION AND INTERIM ACTION REMEDIATION FRANK WEAR CLEANERS FACILITY 106 SOUTH THIRD AVENUE YAKIMA, WASHINGTON

PROJECT NO. 5609500618-04

Prepared for:

Mr. Greg Stoffers, Owner
Frank Wear Cleaners
106 South Third Avenue
Yakima, Washington 98902
(509) 248-0310

Prepared By:

MAXIM TECHNOLOGIES, INC.,
Engineering and Environmental Consultants
370 Benjamin Lane
Boise, ID 83704
(208) 377-2100
(208) 376-5349 FAX

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

APPENDICES

1.0 INTRODUCTION

This report presents the findings of a Remedial Investigation and Interim Remedial Action program conducted at Frank Wear Cleaners in Yakima, Washington. Frank Wear Cleaners has been identified as a Yakima Railroad Area (YRRA) Potential Liable Party (PLP), and entered into an Agreed Order for a Remedial Investigation (RI), with the Washington Department of Ecology (Ecology). This report provides documentation concerning the presence of volatile organic compounds beneath the site at the time of this investigation.

1.1 OBJECTIVES AND SCOPE OF WORK

The objectives of this program were to characterize the nature and extent of volatile organic compound (VOC) contamination in soils and groundwater beneath the subject property and to identify any areas warranting interim remedial action. The primary objectives of this program were as follows:

- Characterize groundwater quality beneath the site;
- Evaluate groundwater quality over a one year period; and
- Evaluate soil conditions in areas of concern identified by previous investigations.

This report was prepared in accordance with the YRRA Work Plan for Remedial Investigations. The YRRA was established by Ecology in response to the discovery of tetrachloroethylene (PCE) in the shallow aquifer beneath portions of the Cities of Yakima and Union Gap and Yakima County. The scope of work conducted to complete a Remedial Investigation and Interim Remedial Action at the site is presented below.

- Development of work plan for submittal to Ecology (including revisions to Agreed Order requirements);
- Characterization of groundwater by installation of four monitoring wells;
- Characterization of soil by collection of soil samples from test pits and shallow borings;
- Interim Remedial action entailing excavation and disposal of PCE contaminated soil;
- Groundwater monitoring, four rounds of quarterly sampling in February, April, September, and December of 1995; and
- Reporting via interim report completed in May 1995 and this final report.

1.2 BACKGROUND INFORMATION

The Frank Wear Cleaners site is located at 106 South Third Avenue near the intersection of South Third Avenue and West Chestnut Street in Yakima, Washington. It is situated within the northeast quarter of the southeast quarter of Section 24, Township 13 north, Range 18 east of the Willamette Meridian, Yakima County, Washington (Figure 1). The site is bounded by South Third Avenue on the east, an alley to the west, and a parking lot for the Eagles Club to the north. A.W. Anderson and Sons furniture store forms the southern boundary.

The subject property covers approximately 6,300 square feet and is used by Frank Wear Cleaners for a retail dry cleaning business. The property consists of an approximately 2,800 square foot building with associated sheds, parking lots and other facilities (Figure 2). The subject property has been used as a dry cleaning business since at least the 1940s. Previous operations included the use of several petroleum underground storage tanks which were reportedly removed in 1990 (Grey Stoffers, personal communication, 1996).

Utilities at the site include water, sanitary sewer, electrical, and natural gas. Potable water supplies and sanitary sewer services are provided by the City of Yakima. A water line is located east of the site along South Third Avenue. A sewer line is located west of the site beneath the alley. Natural gas services are provided by Cascade Natural Gas. Electrical utilities are provided by Pacific Power and Light.

1.3 GEOLOGY AND SOILS

The city of Yakima is located in the western part of the Columbia Basin within the Yakima Fold Belt (YFB). The YFB is a series of anticlinal ridges and synclinal valleys in the western and central parts of the Basin. Structural trends range from northwest to northeast but are predominantly east-west. Two predominant anticlines, Umtanum and Yakima ridges, extend across the entire fold belt. Most of the anticlinal ridges are associated with faults. Although the faults are rarely exposed, nearly all the steep forelimbs of the asymmetrical anticlines are faulted.

Most of the rocks exposed in the western part of the Columbia Basin are the Columbia River Basalt Group (CRBG). The CRBG is Miocene in age and covers approximately 164,000 square kilometers of eastern Washington, Oregon and western Idaho with tholeiitic flood basalt flows. Intercalated with, and in some places overlying the CRBG, are sedimentary rocks of the Ellensburg Formation. Additional younger sedimentary rocks (Miocene-Pleistocene) include the Ringold Formation, Snipes Mountain conglomerate, Thorp Gravel, the Hanford Formation (cataclysmic Pleistocene flood deposits), and other localized strata. Most post-CRBG sediments are confined to the synclinal valleys of the YFB. The sedimentary record is incomplete but is the direct reflection of the structural development of the Columbia Basin. The Thorp Gravel river terrace deposits record the post-CRBG history of the upper Yakima River. Except for local deposits (the "Plio-Pleistocene unit" and "early Palouse soil"), there is a hiatus in the stratigraphic record between the end of the Ringold and Thorp Gravel deposition, and the Pleistocene deposits. Pleistocene to Holocene sediments overlying the CRBG include flood gravels and slackwater

sediments of the Hanford Formation and terrace gravels of the Columbia, Snake, and Yakima Rivers (Reidel, S.P. et al, 1994).

In the YRRA the underlying localized strata are the Yakima Gravels. These gravels directly overly the Ellensburg Formation. The Yakima Gravels are locally derived open framework alluvial and colluvial deposits which range in thickness between 0 and 100 feet. The gravels are a laterally discontinuous strata common on basin margins and uplifted ridges (Reidel, S. P. et al, 1994).

The predominant soil type at the site has been classified as Naches Loam by the United States Department of Agriculture. This soil formed in old alluvium on stream terraces and in valleys (USDA, 1985). The soil profile at the site consists of clayey sandy silt and silty gravel to 10 feet below grade surface (BGS). Because of extensive fill and disturbances to the soil, it was not possible to determine soil horizons. The silty gravels are underlain by basalt cobbles and gravels. The finer fractions decrease with depth. Topography at the site is generally flat. Elevations at the site range between 1,060 and 1,065 feet above mean sea level.

1.4 HYDROGEOLOGY

The annual precipitation in the Yakima area averages about 7 to 9 inches (USDA, 1985). The nearest surface water is the southeasterly flowing Yakima River. The Yakima River is located about 1 mile east of the site while the Naches River is approximately 1-1/2 miles to the north.

Groundwater elevations fluctuate seasonally due to the effects of localized recharge created by seepage losses from irrigation canals. During the winter the water table is present at a depth of about 20 to 23 feet BGS, while from spring through autumn the water table is between 12 to 18 feet BGS. The direction of groundwater flow also fluctuates from almost due South to Easterly.

1.5 PREVIOUS INVESTIGATIONS

In 1994 and early 1995, prior to Maxim's involvement on the subject property, a site history, local well survey and soil vapor assessment was conducted by AGRA Earth and Environmental (Agra 1994 and 1995). These investigations identified areas of historic "still bottoms" disposal on the west side of the property and elevated PCE concentrations in soil gas samples collected along the north wall of the main building. The results of these investigations were used to develop the scope of work for this program.

2.0 FIELD INVESTIGATIONS

The scope of services for this program was presented to Mr. Gregory Stoffers of Frank Wear Cleaners in proposals dated February 10 and August 12, 1995. Included within the specified services were the excavation and sampling of test pits, soil sampling beneath the floor slab in the building interior and shed, drilling of four monitoring wells and quarterly groundwater monitoring. The excavation of PCE contaminated soil from the exterior of the facility was an addition to the scope of work that resulted from the identification of elevated PCE levels in soil during the April, 1995, sampling program.

2.1 GROUNDWATER CHARACTERIZATION

Four groundwater monitoring wells (MW-1, MW-2, MW-3 and MW-4) were drilled in February, 1995, to a total depth of 35 feet (Figure 2). The wells were located in an attempt to provide one upgradient and three down gradient wells, however, on-site access limitations and lack of access approval from adjacent property owners precluded preferred locations for an upgradient well. While MW-1 is near the upgradient edge of the property, it is not a truly upgradient well.

The drilling contractor, R&R Drilling, installed the wells using an ODEX air rotary drill rig. The wells were cased using two-inch diameter flush-threaded PVC, and completed from 10 to 35 feet BGS using factory slotted PVC screen. The annular space between the borehole and the screened section was backfilled with inert silica sand. The annular space above this sand filter pack was backfilled with granular bentonite. The wells were completed at the surface by setting a flush mount protective cover in concrete around the well casing. Well completion details are provided on the geologic logs in Appendix 1. After completion, each monitoring well was developed using a stainless steel bailer to remove drilling debris and to ensure adequate hydraulic communication between the aquifer and the monitoring well.

Quarterly groundwater sampling and laboratory analysis was conducted in February, April, September, and December of 1995. In each monitoring event, the static water level in the wells was determined using a decontaminated electric well probe. An adequate volume of groundwater was then removed from each well to ensure that the water being sampled was representative of the formation water. The volume of water purged prior to sampling was equivalent to three well bore volumes, or less if temperature, Ph, and specific conductance measurements indicated a steady state condition had been achieved.

Groundwater samples were collected using disposable bailers or a decontaminated stainless steel bailer. The water samples were transferred to 40 milliliter vials and preserved with hydrochloric acid. The sample vials were placed in an ice-filled cooler and shipped or hand delivered to the laboratory. Sound Analytical Services Inc. was used for the February, 1995 monitoring event and the samples were analyzed by EPA Method 8240. The full GC/MS VOC scan was used initially to analyze for a wider range of compounds so that potential contaminants of concern could be identified. Transglobal Environmental Geosciences Northwest, Inc. (TEG) was used for subsequent monitoring events and analysis of volatile organics (VOC) by EPA Method 8010/8020 was selected due to the limited compounds of concern and the lower detection limit. In each sampling event, a duplicate groundwater sample was provided to the analytical laboratory for the purpose of quality assurance/quality control.

2.2 SOIL CHARACTERIZATION

The soil characterization program entailed sampling activities in three areas: around the property and surrounding properties (Exterior Sampling); inside the main building (Building Interior Sampling) and inside the shed (Shed Sampling). These sampling programs were conducted in April and September, 1995. Sample locations were selected to evaluate the following potential source areas in the vicinity of the subject property: still bottoms disposal on the west side of property; drain lines and dry cleaning machine areas inside the building; and storage areas in the shed.

2.2.1 Exterior Sampling

The Exterior Sampling program entailed 11 test pits (TP-1 through TP-11) excavated on April 20 and 21, 1995 under the direction of Maxim. The test pits were located on the subject property, the Eagles parking lot to the north and the Anderson Furniture property to the south (Figure 3).

Twenty seven soil samples were collected from the 11 test pits and analyzed on-site by TEG's mobile laboratory for VOCs by EPA Method 8010/8020. An additional three samples were also analyzed for total petroleum hydrocarbons (TPH) as diesel by EPA Method WTPH-D. The TPH analyses were conducted in one test pit due to the discovery of diesel fuel in addition to PCE. Because of extensive sloughing into the test pits, most of the samples were collected between 0.5 and 8 feet BGS, however, two samples were collected at 12 feet BGS. Two samples (TP 4 @ 12' and TP 6 @ 14') were collected from soils that sloughed into the excavation. They are not considered representative of natural conditions in the excavation wall.

An on-site laboratory (provided by TEG) was used to provide the capability to analyze numerous soil samples for better delineation of the source area(s) and provide real time results so that additional samples could be collected in areas with elevated concentrations.

2.2.2 Building Interior Sampling

The Building Interior sampling program entailed the collection of three soil samples near the plumbing access trench (C-1, C-2 and C-3) in April, 1995 and 26 soil samples from 19 locations around the interior of the main building (CH-1 through CH-13, CH-24, CH-25 and CH-26) in September, 1995. Sample locations are presented on Figure 4. The locations along the plumbing access trench were selected based on evaluation of the results from a previous soil gas investigation. The CH sample locations were selected using a 15 ft. square grid with modifications based on the results of the previous soil gas program and the location of potential source areas (i.e., plumbing access trench, dry cleaning machine, washing machine etc.,). Samples were collected using a "strata probe" at depths ranging from 2-4 ft BGS (the maximum depth feasible).

The "strata probe" entails a coring device that is manually driven into the soil beneath the concrete slab to collect soil samples. It includes a split spoon sampler similar to those used during hollowstem auger drilling. Samples were analyzed by TEG's mobile laboratory for VOCs by EPA Method 8010/8020 and additional samples locations were identified based on preliminary analysis of the results. Two air samples were collected during the Interior sampling program to evaluate conditions inside the buildings from a Health and Safety standpoint. This data is included in Appendix 2 but is not discussed again in this report.

2.2.3 Shed Sampling

The Shed sampling program entailed the collection of 12 soil samples from 10 locations (CH-14 through CH-23) around the interior of the storage shed located on the west side of the property (Figure 5). Sample locations were selected based on a 10 ft. square grid within the shed to provide coverage of most of the building. Samples were collected using a "strata probe" at

depths of between 1 and 4 ft. BGS. Samples were analyzed by TEG's mobile laboratory for VOCs by EPA Method 8010/8020.

2.3 INTERIM REMEDIAL ACTION

Based on the results of soil samples collected from Test Pit 6 in April, 1995 during the Exterior Sampling program, an interim remedial action was evaluated, designed and implemented. Maxim conducted an evaluation of remedial alternatives relative to the following criteria (per WAC 173-340-360(5)(d)):

- Overall protectiveness of human health and the environment;
- Long term effectiveness;
- Short term effectiveness;
- Permanent reduction of toxicity, mobility and volume;
- Ability to implement;
- Cleanup costs; and
- Community concerns.

Removal of impacted soils was identified as the most effective means of addressing the impacted areas. The following treatment/disposal methods were considered in conjunction with the proposed site use:

- Thermal desorption;
- Off site disposal (landfill); and
- Soil washing.

Thermal desorption and soil washing were considered less feasible for the project conditions for the following reasons: First, removal options with treatment or disposal are preferable over in-situ treatment methods where the impacted soil will be disturbed during demolition and excavation activities; Second, the time required to complete the alternative methods did not meet the project timetable; and Third, the site is too small to enable the installation of remedial equipment. Therefore, the remediation method chosen was excavation.

On September 6, 7 and 8, 1995, approximately 610 tons of soil were removed from the west side of the facility where PCE contamination had been detected during field investigations in April, 1995. The extent of the excavation is shown on Figure 6. Twenty three conformational soil samples (TP6-1 through TP6-8, TP7, TP10 and TP10A) were collected from 10 locations. Samples were collected at three foot depth intervals in selected locations as excavation proceeded, to evaluate whether the impacted soils were removed from this area (Figure 6). Samples were collected from between 3 and 12 ft. BGS. It should be noted that because they were collected from a similar location the confirmation samples collected from Test Pits 7 and 10 were given similar sample numbers (i.e., TP-7 and TP-10) to those collected during the Exterior Sampling program because they were collected from similar locations.

TEG's mobile laboratory was used to analyze samples from the excavation to guide the removal of soil and define the limits of the excavation. The turnaround time for EPA Method 8010/8020 was about 1 hour, which provided near "real time" sample analysis. This allowed segregation

of soil for appropriate handling procedures. Excavated soils were placed in separate stockpiles and, after evaluating laboratory analysis results, the stockpiles were segregated as follows:

- Soils with PCE above Model Toxics Control Act (MTCA) Method B/protective of groundwater cleanup levels of 0.08 mg/kg were placed in dump trucks and transported to Rabanco landfill; and

- Soils with concentrations below MTCA Method B/protective of groundwater levels for PCE were used for backfill after the excavation was complete.

The soil was transported to Rabanco landfill in Roosevelt, Washington for disposal. The soil was transported by Rabanco's subcontractors on September 6, 1995.

3.0 RESULTS

Field investigation results presented in this report include analytical data from soil samples collected inside and outside of buildings on the site, groundwater data from four wells collected during four quarterly monitoring events, interim remedial action data, groundwater elevation data and geologic logs.

3.1 GROUNDWATER CHARACTERIZATION RESULTS

The results of the groundwater characterization program include geologic and hydrogeologic data from four monitoring wells and water quality data from four quarterly monitoring events (February, April, September and December, 1995). These data are evaluated in order to establish groundwater flow directions and VOC concentrations in the vicinity of the subject property. Laboratory reports are presented in Appendix 2.

The borings completed on the site encountered relatively consistent hydrogeologic conditions with predominantly silty, sandy gravels from the ground surface to their total depth (35 ft.), with groundwater intercepted at approximately 20 ft. BGS (in February 1995). Boring logs showing geologic conditions and well completion details are presented in Appendix 1 and an East-West cross-section is provided on Figure 7.

Static water level measurements were recorded in all four wells during each quarterly sampling event (Table 1). Groundwater contour maps of each event are presented on Figures 8 through 11 and a hydrograph of all four wells for 1995 is presented on Figure 12. The highest water levels occurred in late summer and the lowest water levels occurred in late winter or early spring. Flow directions varied from southerly to easterly over the year with a more easterly component evident during the summer months. Both of these observations are consistent with the model of irrigation system seepage losses impacting water levels in the shallow aquifer. Gradients varied from 0.008 to 0.025 feet per feet with the steeper gradients occurring in the summer months. This observation is also to be expected given the localized recharge from the irrigation system.

Groundwater quality analysis results for the four quarterly monitoring events are summarized in Table 1. All compounds reported at below method detection limits are not included in the Table. Evaluation of VOC analyses for the four monitoring wells indicate that concentrations above

method detection limits of PCE, trichloroethene (TCE), and 1,2 Dichloroethene (1,2 DCE) are present in the vicinity of the subject property. The predominant compound appears to be PCE with its transformation products TCE and 1,2 DCE being observed sporadically. Concentrations of PCE for each of the four quarterly monitoring events are presented on Figure 13 along with the groundwater flow direction for that event. Figure 14 presents a graph of PCE concentrations for the four monitoring events.

Evaluation of this data indicates that VOC concentrations fluctuated dramatically over the course of the year in all four wells, with ranges from 5 ug/l to over 1,000 ug/l in the same well (MW-3). TCE and 1,2 DCE concentrations appear to mirror the fluctuations of PCE, although they frequently were reported at below method detection limits. Comparison of the VOC data and groundwater flow directions (Figure 13) indicates that concentrations in MW-2 and MW-3 were higher when flow directions were southerly, while concentrations were higher in MW-1 with an easterly flow direction.

TABLE 1
Frank Wear Cleaners
Summary of Water Level Data and Groundwater Analyses

Well No.	Elevation of Measuring Point (ft)	Depth to Groundwater (ft)	Elevation of Water Table (ft)	PCE (µg/l)[1]	TCE (µg/l)	1,2 DCE (µg/l)	Chloroform (µg/l)	Date Collected
MW-1	1062.90	21.76	1041.14	66.0	1.6	ND[4]	2.0	2-22-95[2]
		19.11	1043.79	1140.0	7.0	1.6	ND	4-20-95[3]
		13.25	1049.65	23.9	ND	ND	ND	9-06-95[3]
		20.91	1041.99	298.0	46.3	17.9	ND	12-26-95[3]
MW-2	1063.59	21.34	1042.25	210.	23.0	4.9	3.6	2-22-95[2]
		16.72	1046.87	109.0	2.0	ND	ND	4-20-95[3]
		11.71	1051.88	8.8	ND	ND	ND	9-06-95[3]
		21.59	1042.00	605.0	4.2	1.3	ND	12-26-95[3]
MW-3	1061.17	22.66	1038.51	150.0	6.5	3.8	ND	2-22-95[2]
		17.92	1044.89	5.0	ND	ND	ND	4-20-95[3]
		12.58	1048.59	11.5	ND	ND	ND	9-06-95[3]
		21.34	1039.83	1080.0	4.7	3.1	ND	12-26-95[3]
MW-4	1060.93	21.96	1038.97	1.7	ND	ND	ND	2-22-95[2]
		17.91	1043.02	18.0	ND	ND	ND	4-20-95[3]
		13.79	1047.14	6.0	ND	ND	ND	9-06-95[3]
		20.55	1040.38	332.0	48.3	16.6	ND	12-26-95[3]

Notes:
1 Groundwater sample results are reported in micrograms per liter (µg/L) which is equivalent to parts per billion.
2 Groundwater samples analyzed by EPA Method 8240.
3 Groundwater samples analyzed by EPA Method 8021.
4 ND = Compounds not detected at method detection level (5 µg/L for 8240 and 1 µg/L for 8010).
PCE = Tetrachloroethene
TCE = Trichloroethene
1,2 DCE = 1,2 Dichloroethene

All wells reported VOCs during each event, which implies either that none of the existing four wells are truly upgradient, or there is an off-site source contributing to any source that may exist on the subject property. The PCE fluctuations in MW-2 may be the result of the source of the VOCs being north of the well (i.e., PCE moves more easterly during the summer), or the influx of water from irrigation losses is diluting the VOC impacts.

Evaluation of Figure 14 indicates that the concentration of VOCs in MW-2, MW-3 and MW-4 behaved similarly during all four monitoring events while MW-1 showed a dramatic increase in PCE concentrations in April, 1995, that was not seen in the other wells. This increase coincides with a more easterly groundwater flow direction in April. The concentration in all four wells increased significantly in December, 1995, probably the result of less dilution effects from irrigation losses.

3.2 SOIL CHARACTERIZATION RESULTS

The results of the soil characterization program entail test pit logs, observations and analytical data from soil samples collected for the Exterior Sampling, Building Interior and Shed Interior sampling programs. Laboratory reports are presented in Appendix 2.

3.2.1 Exterior Sampling Program Results

Analytical results for the 30 soil samples collected from 11 test pits are presented in Tables 2 and 3. Twenty-seven samples were analyzed for PCE and 3 samples were analyzed for TPH-diesel. Of the 25 valid samples (TP 4@ 12' and TP 6@ 14' are suspect due to soil sloughing) 18 reported PCE below detection limits (ND), and seven reported PCE concentrations between 0.28 mg/kg and 3.02 mg/kg, which is above the MTCA Method B/Protective of Groundwater level of 0.08 mg/kg.

Soil samples from Test Pits 2, 3, 4, 5, 8 and 11 reported concentrations below detection limits. Elevated PCE concentrations were reported on the Eagles property to the north (TP-7 and TP-10) ranging from 0.3 to 0.76 mg/kg. These samples were collected adjacent to the portion of the subject property where still bottoms were reportedly used for dust abatement.

Evaluation of soil results from TP-6 identified TPH-diesel concentrations of 11,600 mg/kg (above the MTCA Method A cleanup level of 200 mg/kg) at 7 feet BGS (Figure 3) as well as 1260 mg/kg PCE. Elevated PCE and diesel concentrations appear to be associated with the former diesel UST previously removed from that location. The reason for the PCE and diesel association is unclear. Besides this one location, the highest PCE concentrations were reported at 0.5 feet BGS. These elevated concentrations, between 0.33 and 3.02 mg/kg, appear to be associated with visual evidence of staining caused by disposal of still bottoms found between 0 and 0.5 feet BGS.

TABLE 2
Frank Wear Cleaners - Remedial Investigation
Exterior Soil Sampling Analyses

Location	Property	Sample Number	Depth (ft. BGS)[1]	PCE (mg/kg)[2,3]	Date Collected
Test Pit - 1	Frank Wear	TP-1 @ 0.5	0.5	1.36	4-20-95
		TP-1 @ 6.0	6.0	0.73	4-20-95
Test Pit - 2	Frank Wear	TP-2 @ 3.5	3.5	ND[4]	4-21-95
		TP-2 @ 5.0	5.0	ND	4-21-95
Test Pit - 3	Anderson Furn.	TP-3 @ 6.0	6.0	ND	4-20-95
		TP-3 @ 12.0	12.0	ND	4-20-95
Test Pit - 4	Anderson Furn.	TP-4 @ 1.0	1.0	ND	4-20-95
		TP-4 @ 6.0	6.0	ND	4-20-95
		TP-4 @ 12.0	12	ND[5]	
Test Pit - 5	Eagles Parking Lot	TP-5 @ 5.0	5.0	ND	4-21-95
		TP-5 @ 7.0	7.0	ND	4-21-95
Test Pit - 6	Frank Wear	TP-6 @ 0.5	0.5	3.02	4-20-95
		TP-6 @ 6.0	6.0	0.28	4-20-95
		TP-6 @ 7.0*	7.0	1260.0	4-20-95
		TP-6 @ 12.0	12.0	ND	4-20-95
		TP-6 @ 14.0	14	ND[5]	
Test Pit - 7	Eagles Parking Lot	TP-7 @ 0.5	0.5	0.76	4-20-95
		TP-7 @ 6.0	6.0	0.30	4-20-95
		TP-7 @ 11.0	11.0	ND	4-20-95
Test Pit - 8	Eagles Parking Lot	TP-8 @ 1.0	1.0	ND	4-21-95
		TP-8 @ 5.0	5.0	ND	4-21-95
		TP-8 @ 9.5	9.5	ND	4-21-95
Test Pit - 9	Frank Wear	TP-9 @ 1.5	1.5	ND	4-20-95
Test Pit - 10	Eagles Parking Lot	TP-10 @ 5.0	5.0	0.33	4-21-95
		TP-10 @ 6.5	6.5	ND	
Test Pit - 11	Eagles Parking Lot	TP-11 @ 5.0	5.0	ND	4-21-95
		TP-11 @ 8.0	8.0	ND	4-21-95

Notes: 1 Sample locations are characterized by area and depth from which the sample was obtained (below ground surface in feet).
2 Soil sample results are reported as a dry weight basis in milligrams per kilogram (mg/kg) which is equivalent to parts per million.
3 Soil samples analyzed by EPA Method 8010 by TEG mobile laboratory
4 ND = Compounds not detected at method detection level (0.05 mg/kg).
5 Samples of sloughed soil - not representative of excavation wall conditions.
A < sign indicates concentrations, if present, were below practical method detection limits.
PCE = Tetrachloroethene
* = Sample from zone of diesel fuel contamination.

The Test Pit 6 area was the focus of the interim remedial action which removed 310 tons of PCE impacted soil. Sampling conducted during the remedial action reported PCE concentrations above the MTCA Method B/Protective of Groundwater Level of 0.08 mg/kg, to be limited to portions

of Test Pit 6 (Figure 3). The elevated PCE concentrations were confined to depths of 10 feet or less BGS. Current soil conditions in this area are best represented by the post excavation confirmation sampling results presented in Section 3.3.

TABLE 3
Frank Wear Cleaners - Remedial Investigation
Exterior TPH Soil Sample Analyses

Location	Property	Sample Number	Depth (ft. BGS[1])	Diesel Fuel (mg/kg[2])	Heavy Oil[3] (mg/kg)	Date Collected
Test Pit-6	Frank Wear (rear)	TP-6 @ 3.0	3.0	ND[4]	ND	4-24-95
Test Pit-6	Frank Wear (rear)	TP-6 @ 6.0	6.0	ND	41.0	4-24-95
Test Pit-6	Frank Wear (rear)	TP-6 @ 7.0	7.0	11600.0	ND	4-24-95

Notes: [1] Sample locations are characterized by area and depth from which the sample was obtained (below ground surface in feet).
[2] Soil sample results are reported as a dry weight basis in milligrams per kilogram (mg/kg) which is equivalent to parts per million.
[3] Soil samples analyzed by WTPH-D/WTPH-D-Extended
[4] ND = Compounds not detected at method detection level (10.0 mg/kg for Diesel Fuel and 20.0 mg/kg for Heavy Oil).

3.2.2 Building Interior Sampling Program Results

Analytical results for the 29 soil samples collected from 19 strata probe borings located within the building interior are presented in Table 4 and on Figure 4. These samples were analyzed for VOCs using TEG's mobile laboratory. Of the 29 samples, 20 reported PCE below detection limits, and the other nine reported PCE concentrations between 0.08 mg/kg and 1.81 mg/kg, (equal to or above the MTCA Method B/Protective of Groundwater level of 0.08 mg/kg). The elevated PCE concentrations were primarily reported near the plumbing access trench along the north side of the building and in the vicinity of the dry cleaning machine.

All nine samples that reported PCE were collected from 1 to 2 ft. BGS and in six of those locations another sample was collected at 3 to 4 ft. BGS in the same boring or immediately adjacent in another boring. All six of these deeper samples reported PCE at below method detection limits.

TABLE 4
Frank Wear Cleaners - Remedial Investigation
Building Interior Soil Sample Analyses

Core Hole No.	Depth (ft)	PCE (mg/kg)[2,3]	Date Analyzed
C-1	1	0.62	4/20/95
C-2	1	0.14	4/20/95
C-3	1	0.24	4/20/95
CH-1	3	ND[4]	9/6/95
CH-2	2	ND	9/6/95
	3	ND	9/6/95
CH-3	2	ND	9/6/95
CH-4	2	ND	9/6/95
	3.5	ND	9/7/95
	4	ND	9/6/95
CH-5	2	ND	9/7/95
CH-6	2	ND	9/7/95
CH-7	2 4 6	ND ND ND	9/7/95
CH-8	2 3	ND ND	9/7/95
CH-9	2	0.27	9/7/95
	4	ND	9/8/95
CH-10	2 3.5	ND ND	9/8/95
CH-11	2	0.08	9/8/95
CH-12	2	0.12	9/8/95
CH-13	2 4	0.11 ND	9/8/95
CH-24	2	0.21	9/12/95
	3.5	ND	9/12/95
CH-25	2	1.81	9/12/95
CH-26	2	ND	9/12/95

Notes: 1 Sample locations are characterized by area and depth from which the sample was obtained (below ground surface in feet).
2 Soil sample results are reported as a dry weight basis in milligrams per kilogram (mg/kg) which is equivalent to parts per million.
3 Soil samples analyzed by EPA Method 8010 by TEG mobile laboratory
4 ND = Compounds not detected at method detection level (0.05 mg/kg).
PCE = Tetrachloroethene

3.2.3 Shed Sampling Program Results

Analytical results for the 12 soil samples collected from 10 strata probe borings located within the shed are presented in Table 5 and on Figure 5. These samples were analyzed for VOCs using TEG's mobile laboratory. Eleven of the 12 samples reported PCE below detection limits. CH-18 @ 3' BGS reported 0.08 mg/lg PCE, equal to the MTCA Method B Protective of Groundwater Level.

TABLE 5
Frank Wear Cleaners - Remedial Investigation
Shed Soil Sample Analyses

Core Hole No.	Depth (ft)[1]	PCE (mg/kg)[2,3]	Date Analyzed
CH-14	2	ND[4]	9/8/95
CH-15	2	ND	9/8/95
CH-16	1	ND	9/8/95
CH-17	1	ND	9/8/95
CH-18	2 3	ND 0.08	9/8/95
CH-19	1.5	ND	9/8/95
CH-20	2 4	ND ND	9/8/95
CH-21	1.5	ND	9/8/95
CH-22	1	ND	9/8/95
CH-23	1.5	ND	9/8/95

Notes: [1] Sample locations are characterized by depth below the concrete floor.
[2] Soil sample results are reported as a dry weight basis in milligrams per kilogram (mg/kg) which is equivalent to parts per million.
[3] Soil samples analyzed by EPA Method 8010/8020 by TEG mobile laboratory
[4] ND = Compounds not detected at method detection level (0.05 mg/kg).
PCE = Tetrachloroethene

3.3 INTERIM REMEDIAL ACTION RESULTS

The interim remedial action removed 310 tons of PCE impacted soil from the west side of the property in the vicinity of Test Pit 6 (Figure 6). A total of 610 tons of soil was excavated, approximately 300 tons of which was placed back into the excavation after sample results showed it did not pose a concern relative to VOC concentrations. The remaining 310 tons were disposed of at the Rabanco landfill near Roosevelt, Washington. Except for sample TP-6 @ 7 ft., all of the soil samples collected were below Rabanco's maximum PCE acceptance level of 6.0 mg/kg. The excavation was backfilled with imported fill and on-site soils previously removed from the excavation.

Only three of the 23 conformational soil samples collected from the excavation reported concentrations of PCE above method detection limits (TP6-1 @ 6, TP6-1 @ 10 ft. and TP6-2 @ 6 ft.). All of the soils represented by these three positive reports were removed and subsequent samples collected at greater depths reported ND (TP6-1 @ 12 ft and TP6-2 @ 10 ft.). Results of confirmation soil samples collected during and after removal of the impacted soil are presented on Figure 6 and Table 6.

A ruptured 4 inch wastewater sewer line was encountered at 7-9 ft BGS in the middle of test Pit 6 during the remedial action. This is the southern of the two sewer lines that service Frank Wear Cleaners (Figure 6) and it transports wastewater from the washing machine, while the other is the primary sewer line.

TABLE 6
Frank Wear Cleaners - Interim Remedial Action
Confirmation Soil Sample Analyses

Test Pit No.	Depth (ft)[1]	PCE (mg/kg)[2,3]	Date Analyzed
TP6-1	6	0.12	9/6/95
	10	0.19	9/6/95
	12	ND[4]	9/6/95
TP6-2	6	0.09	9/6/95
	10	ND	9/6/95
TP6-3	6	ND	9/6/95
TP6A-4	3	ND	9/6/95
	6	ND	9/6/95
	10	ND	9/6/95
TP6-5	6	ND	9/6/95
	10	ND	9/6/95
TP6-6	6	ND	9/6/95
	10	ND	9/6/95
TP6-8	2	ND	9/6/95
TP7[5]	3	ND	9/7/95
	6	ND	9/7/95
	9	ND	9/7/95
TP10[5]	3	ND	9/7/95
	6	ND	9/7/95
	9	ND	9/7/95
TP10A	3	ND	9/7/95
	6	ND	9/7/95
	9	ND	9/7/95

Notes:
1 Sample locations are characterized by area and depth from which the sample was obtained (below ground surface in feet).
2 Soil sample results are reported as a dry weight basis in milligrams per kilogram (mg/kg) which is equivalent to parts per million.
3 Soil samples analyzed by EPA Method 8010 by TEG mobile laboratory
4 ND = Compounds not detected at method detection level (0.05 mg/kg).
5 TP7 and TP10 were collected from similar locations as the Building Exterior samples collected on 4/20/95 with the same sample names.
PCE = Tetrachloroethene

4.0 DISCUSSION

The data presented in the preceding sections is summarized here and overall conclusions relative to the nature and extent of PCE impacts on the subject property are presented.

The presence of PCE in groundwater on the subject property has been confirmed, however, it is not clear how significant a contributor the PCE impacted soil identified by this program is to the problem. While high levels of PCE were observed in one soil sample in Test Pit 6 at a depth of 7 ft. BGS, subsequent sampling during excavation of this area showed ND of PCE at 6 ft. BGS or less in six of eight locations. The other two locations (TP6-2 and TP6-1) reported ND of PCE at 10 and 12 ft. BGS, respectively. All of the Building Interior soil samples collected at depths of greater than 3 ft. BGS reported ND of PCE, even in locations where shallower samples contained PCE. PCE impacted soil appears to be limited, in the majority of the areas sampled, to within several feet of the ground surface. Only soils in the vicinity of the TP6-1 samples (Figure 3) appear to have been impacted to sufficient depth to potentially impact groundwater. Soils near the other seven sampling locations in the interim remedial action excavation were not impacted beyond 6 ft. BGS. The elevated TPH-diesel result reported in Test Pit 6 appears to have been an isolated impact, perhaps resulting from the UST previously removed in the area.

The interim remedial action effectively removed PCE impacted soils from the vicinity of Test Pit 6 on the west side of the subject property. This is the only area where PCE impacted soils have been shown to extend to sufficient depth to impact groundwater. No ongoing contribution of PCE to groundwater from the subject property is apparent, based on the existing data.

Evaluation of data from the test pits completed around the property and adjacent properties indicates soil impacts were limited to the west side of the subject property. Residual concentrations of PCE remain in soil in the vicinity of the interior plumbing access trench, the dry cleaning machine and elsewhere beneath the building. The extent of these impacts have not been established, however, where deeper samples have been collected the presence of PCE has been restricted to within one or two feet of the ground surface.

Only one out of 12 soil samples in the Shed reported PCE above ND (CH-18 @ 4'). This may be the result of the sample being adjacent to the historic still bottoms disposal area rather than a release in the Shed. This is supported by the 11 other samples collected 1-2 feet BGS in the Shed that reported ND PCE. The single low PCE concentration and extensive ND data in the area indicates this result is of limited concern.

Water levels measured during the four 1995 quarterly monitoring events ranged from 11.7 to 21.59 ft BGS in MW-2 (20 ft. west of TP6). This indicates that the PCE impacted soil, that previously existed near TP6-1, may have been in contact with groundwater for perhaps one or two months of the year.

All four of the monitoring wells installed for this program have reported concentrations of PCE. Given the groundwater flow directions observed during the last year and the proximity of MW-2 to an area of impacted soil, it does not appear that a true upgradient well exists for this property. Site access limitations and off-site land owner denial of access precluded installation of an upgradient well. Therefore, the impacts from the Frank Wear property cannot be separated from other potential off-site sources. A potential source area that is in contact with groundwater for

only several months a year and a highly variable groundwater flow direction may account for some of the variability in PCE concentrations in groundwater.

Given the lack of upgradient groundwater data and the limited contact between impacted soil and groundwater, it is not possible to conclusively establish whether the subject property is currently having a significant impact on PCE concentrations in groundwater. Insufficient data exists to identify whether additional sources of PCE exist on the site and/or what contribution is coming from off-site sources.

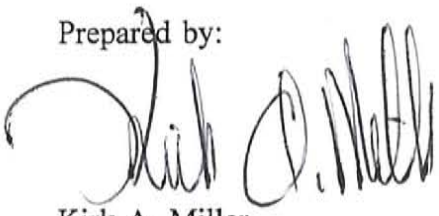
5.0 RECOMMENDATIONS

Based on the findings of this investigation Maxim recommends the installation of an off-site upgradient well and a down gradient well south of the Anderson Furniture property boundary. The down gradient well is designed to help evaluate the dramatic fluctuations in PCE concentrations in groundwater and to fill the large distance between wells MW 1 and 2 and MW 3 and 4. Evaluation of water quality data from these wells will allow a more complete assessment of the impact of past PCE releases from the subject property on groundwater.

6.0 LIMITATIONS

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

Prepared by:



Kirk A. Miller
Boise Branch Manager

KAM/kv

7.0 REFERENCES

AGRA, 1994., *Site History Frank Wear Cleaners.*

AGRA, 1995., *Soil Vapor Survey 106 South Third Avenue Yakima, Washington.*

Reidel, S.P., Campbell, N.P., Echt, K.R., and Lindsey, K.A., *Late Cenozoic Structure and Stratigraphy of South-Central Washington.*, 1994., Washington Division of Geology and Earth Resources., Bulletin 80. p.159-180.

Roeder, 1995., *Personal Communication., Mr. Rick Roeder., Washington State Department of Ecology - Central Region, Yakima, Washington.*, with Rachel Tauman., Maxim Technologies, Yakima, Washington., 1995.

Stoffers, 1995., *Personal Communication., Mr. Greg Stoffers, Owner Frank Wear Cleaners* with Rachel Tauman., Maxim Technologies, Inc., Yakima Washington., 1995

Stoffers, 1996., *Personal Communication., Mr. Greg Stoffers, Owner Frank Wear Cleaners* with Kirk Miller, Maxim Technologies, Inc., Boise, Idaho., 1996

USDA,. 1985. United States Department of Agriculture Soil Conservation Service., *Soil Survey of Yakima County Area, Washington.*, 1985.

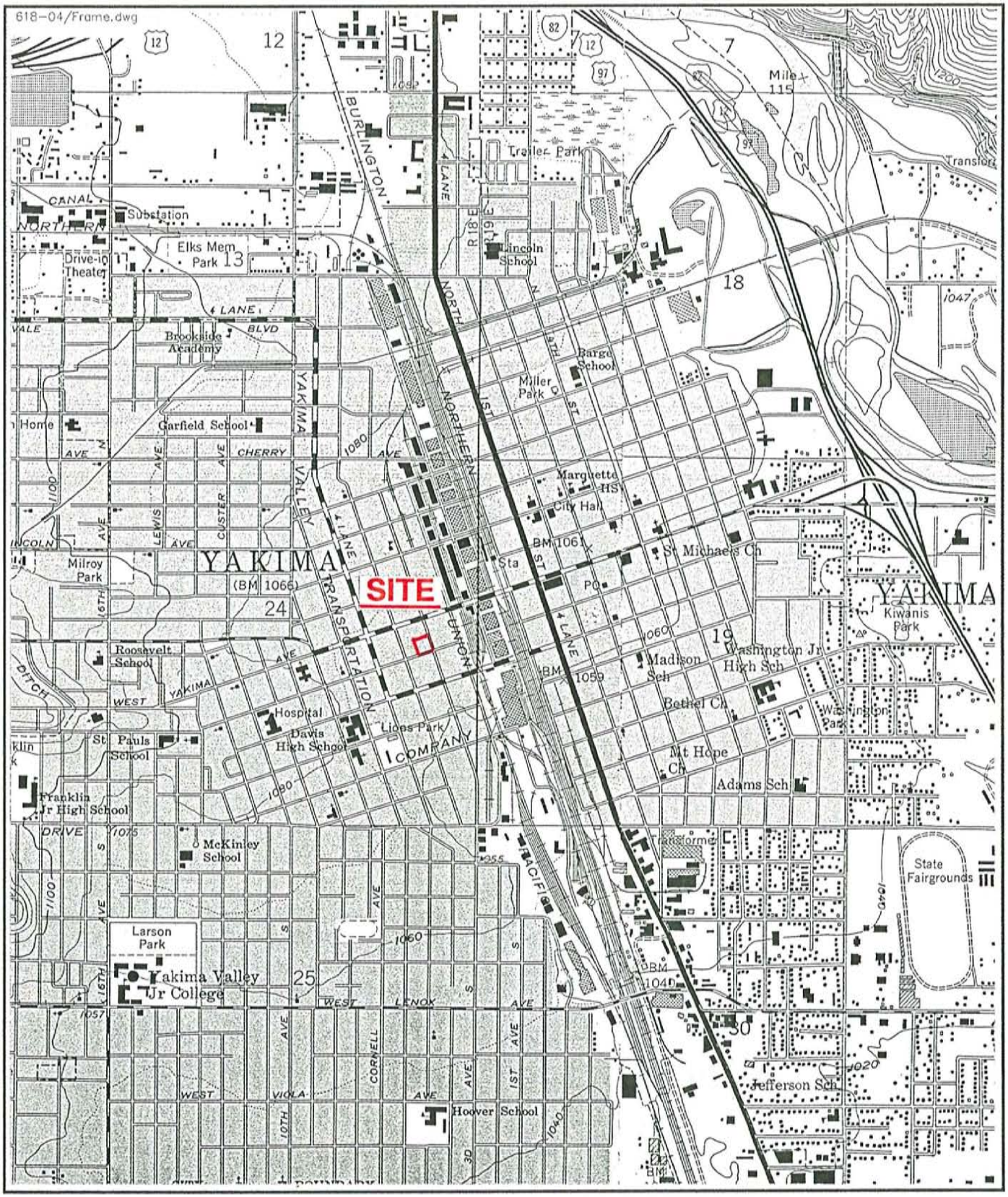
WAC 173-303., 1991., *Dangerous Waste Regulations.*, Washington State Department of Ecology, Olympia, Washington., p. 173.

WAC 173-340., 1991., *The Model Toxic Control Act Cleanup Regulation.*, Washington State Department of Ecology., Olympia, Washington., p.133.

WDOE., 1991., *Washington State Department of Ecology Information/Fact Sheet., Yakima Railroad Area.*, Washington State Department of Ecology., Central Region., Yakima, Washington.

WDOE., 1992., *Washington State Department of Ecology Model Toxic Control Act Summary of Cleanup Level Methods.*, Washington State Department of Ecology., Olympia, Washington.

WDOE., 1992., *Statistical Guidance for Ecology Site Managers.*, Washington State Department of Ecology., Olympia, Washington.



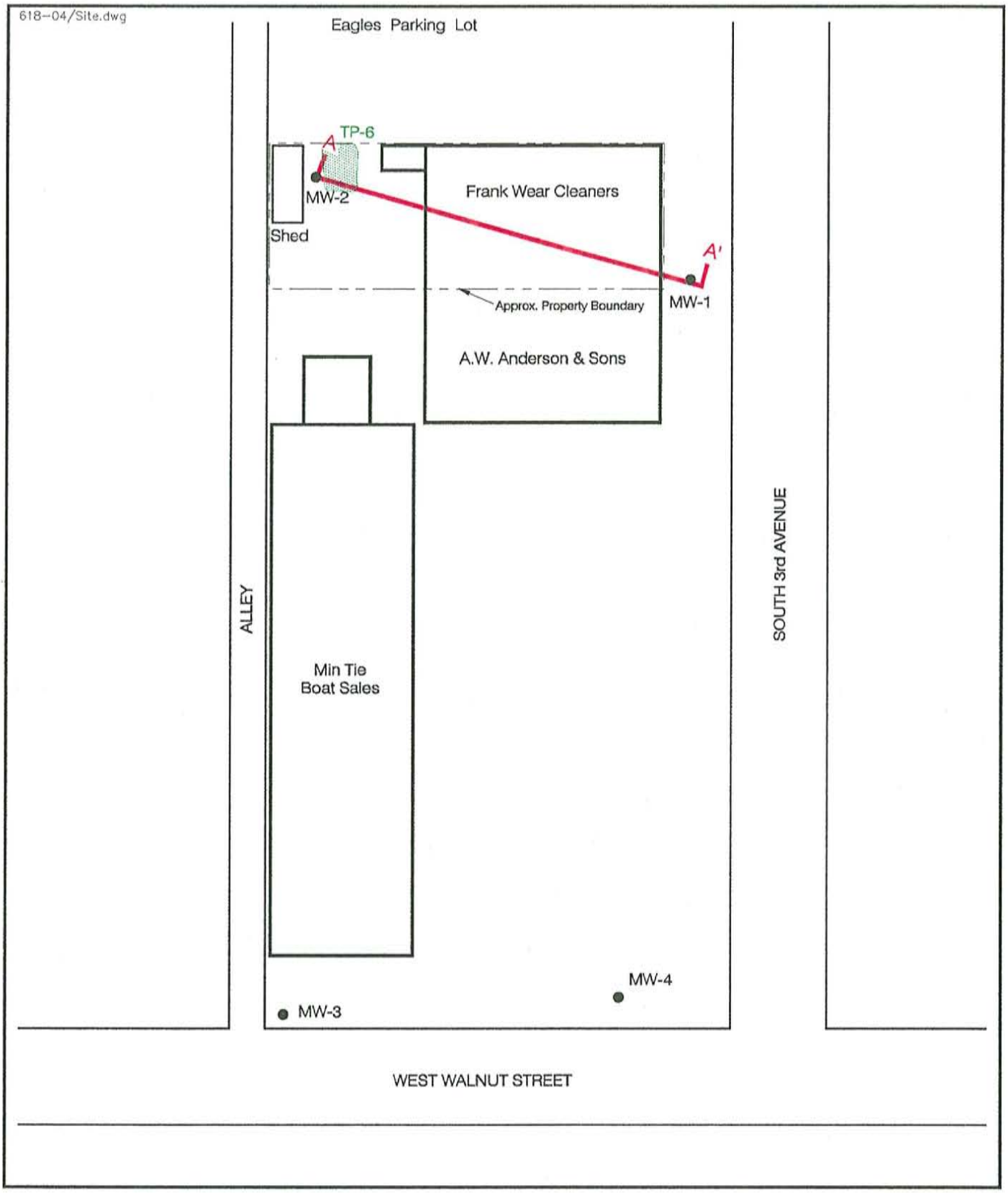
N

0 Feet 2000

From USGS 7.5' Yakima West Quad

MAXIM 618.04

Location Map
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 1



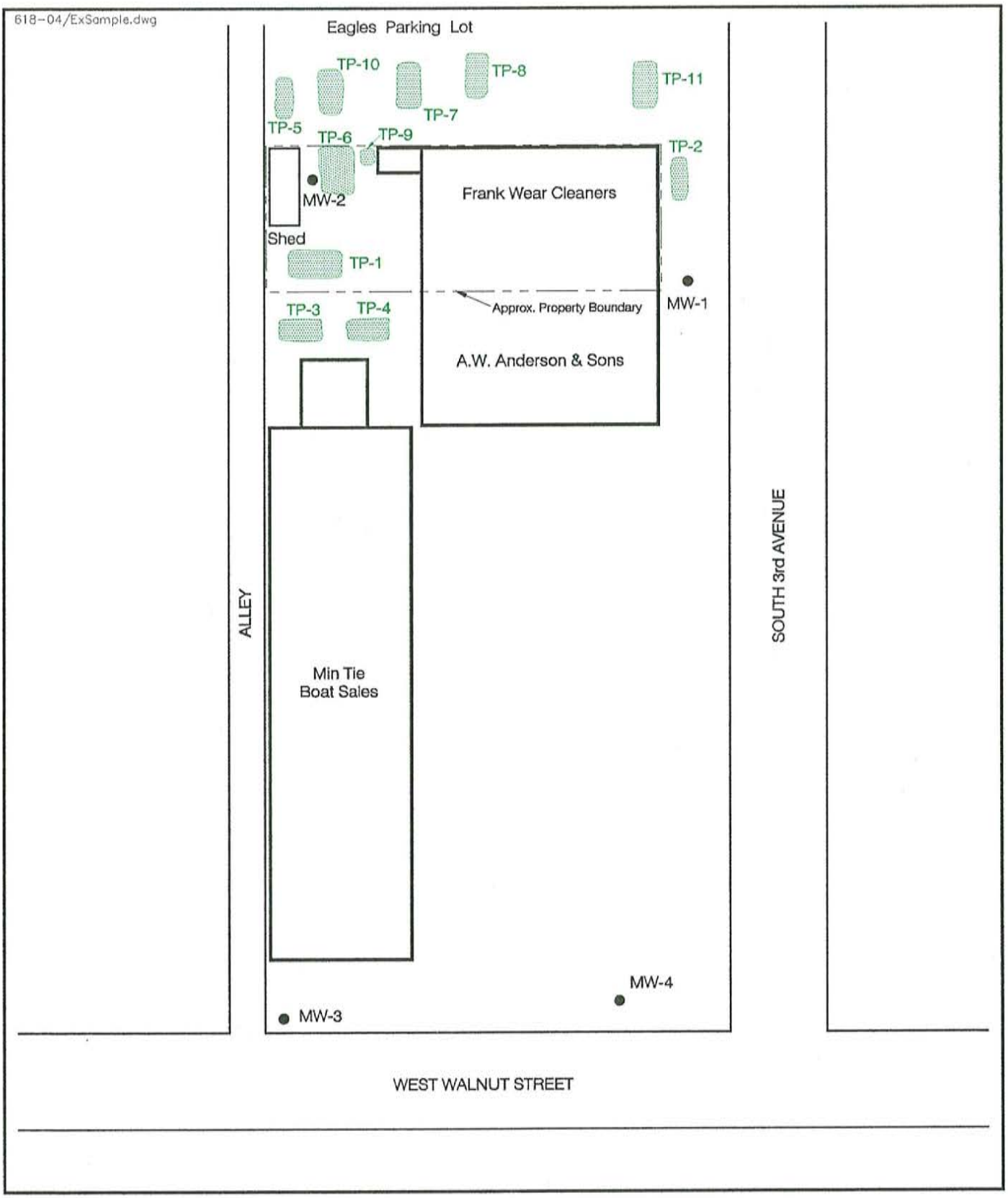
● Monitoring Well

N

0 Feet 50

MAXIM 618.04

Site Map
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 2



N

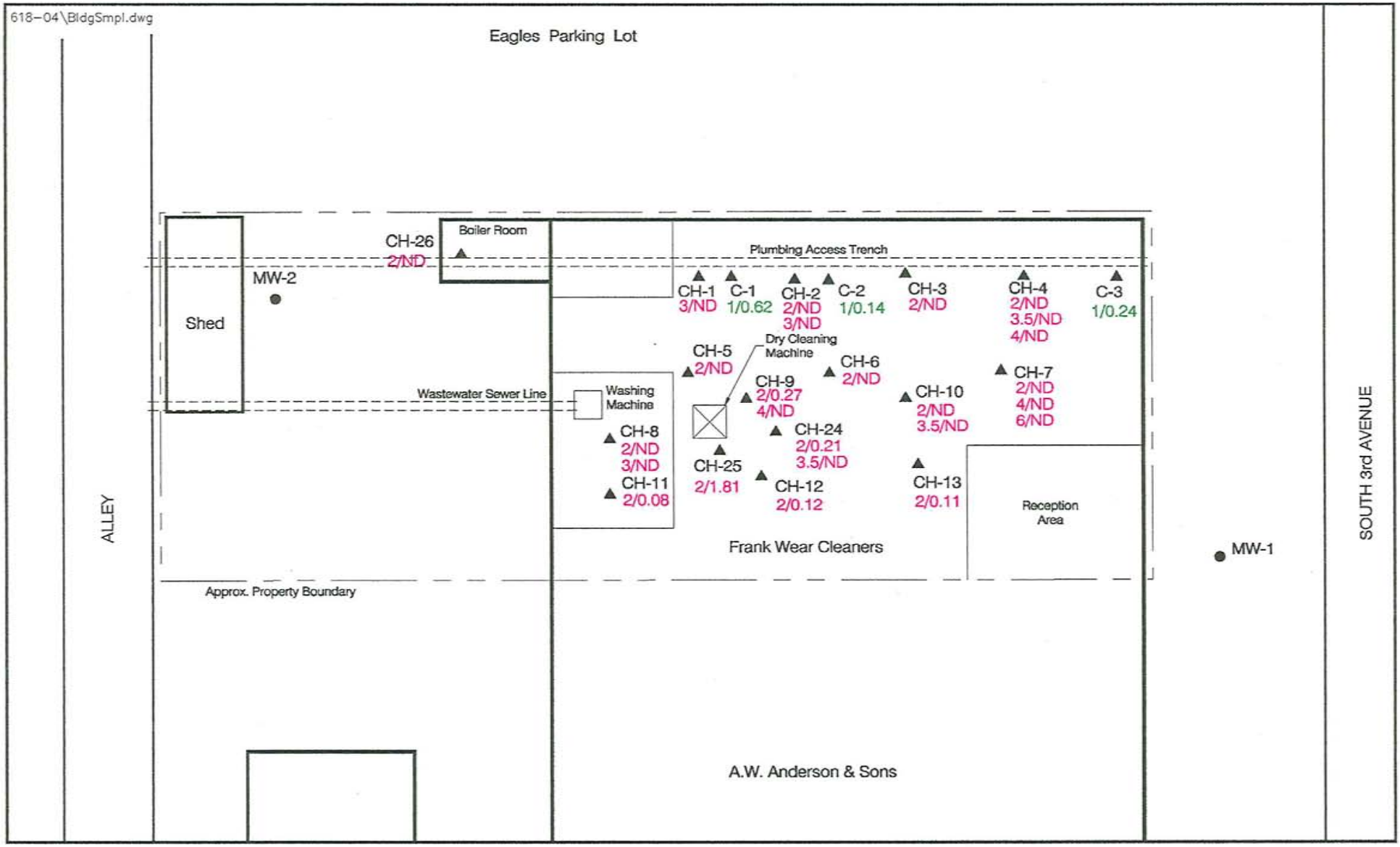
0 Feet 50

● Monitoring Well

Test Pit

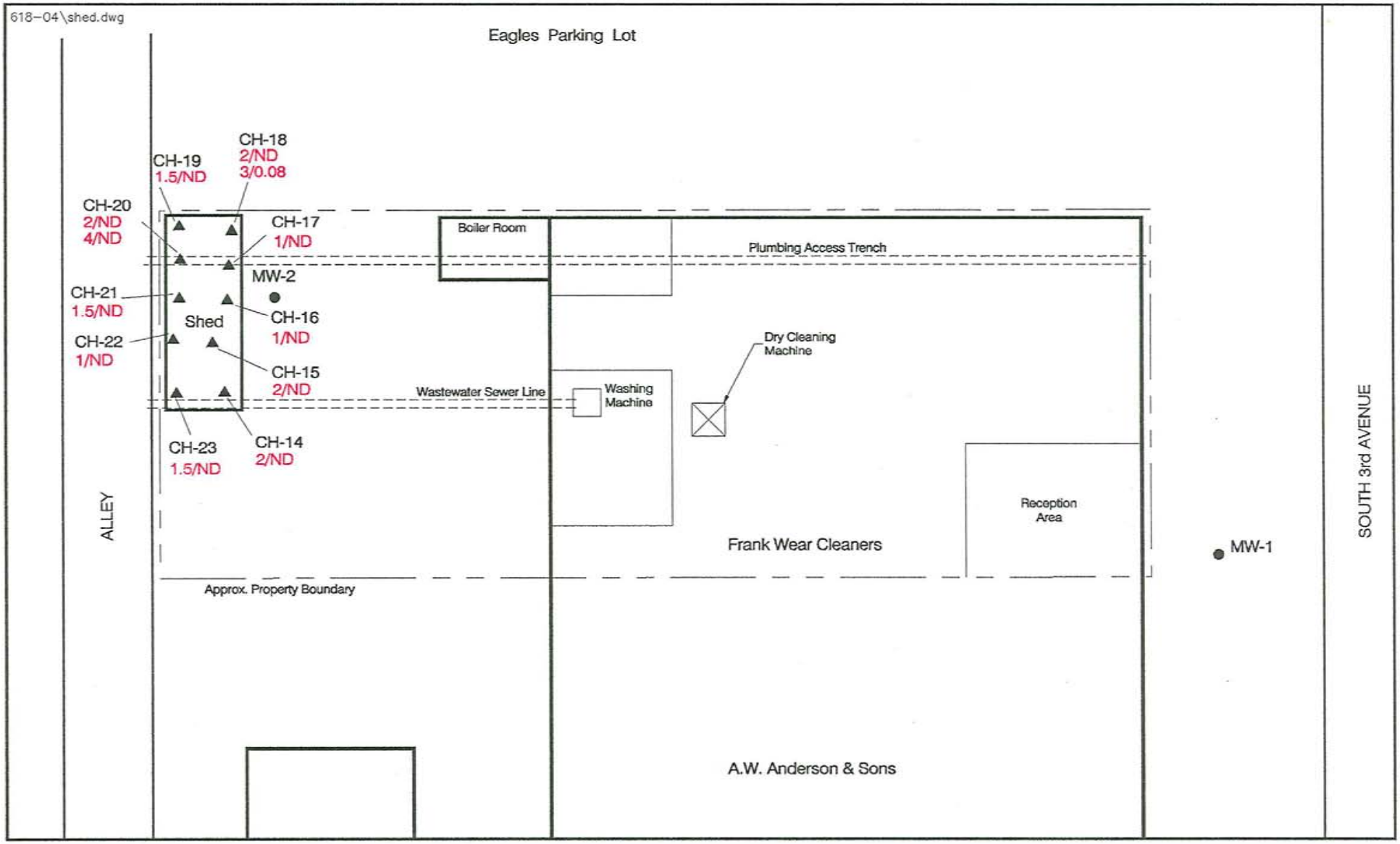
Exterior Sampling Locations
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 3

MAXIM 618.04



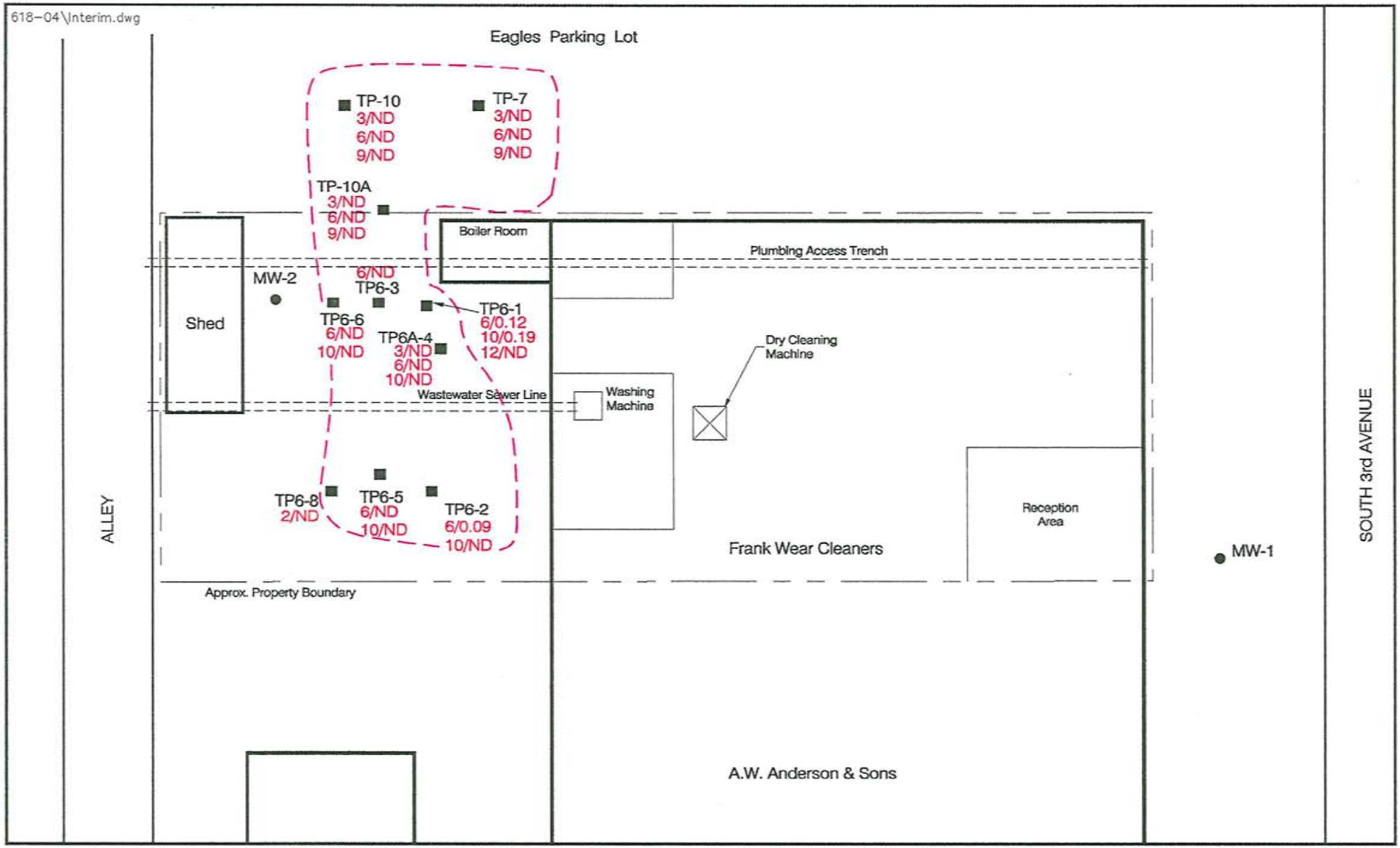
MAXIM 618.04

Building Interior Sampling Locations
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 4



MAXIM 618.04

Shed Sampling Locations
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 5

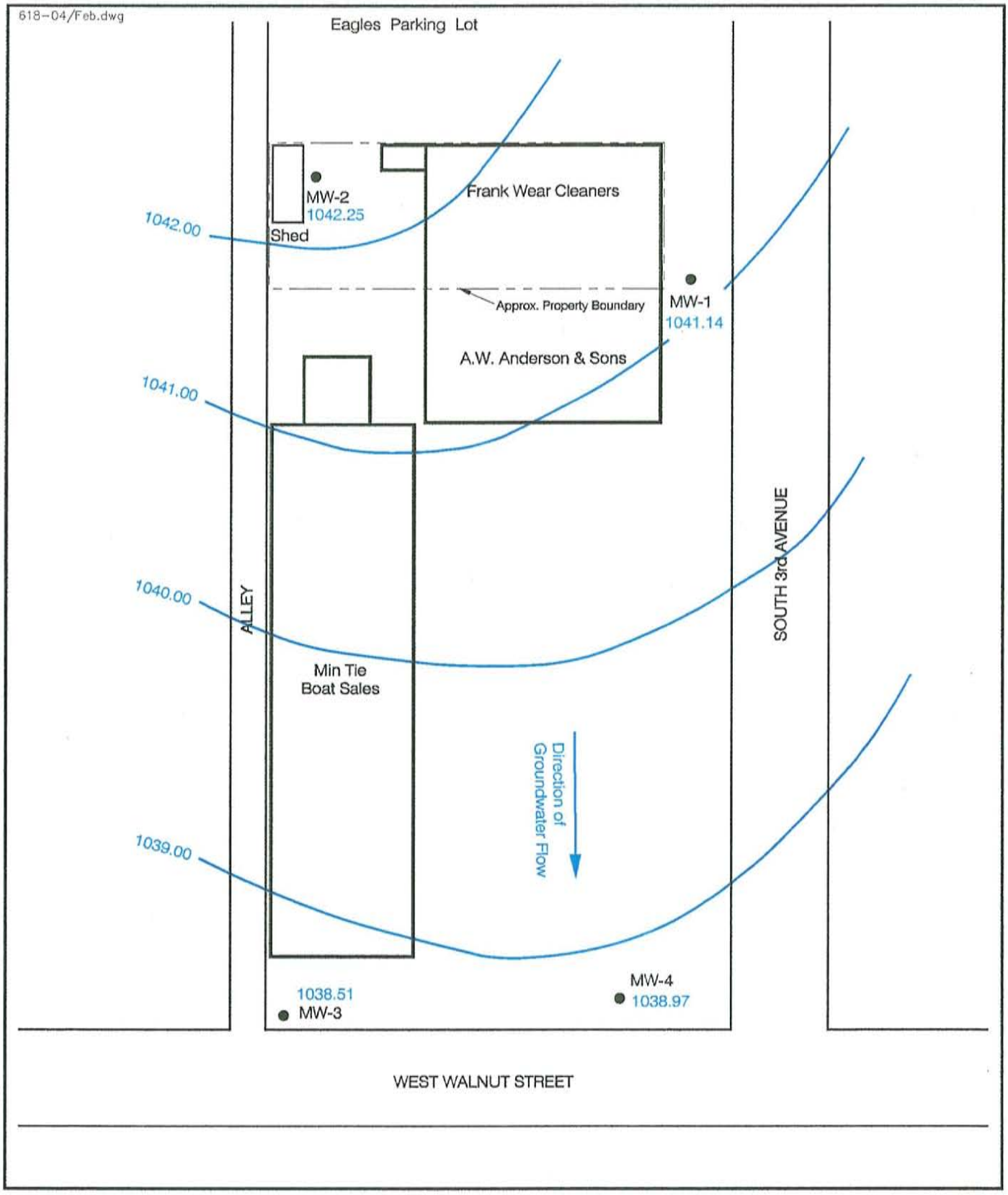


MAXIM 618.04

Interim Remedial Action
Confirmation Soil Sampling
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 6

Geologic Cross-Section
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 7

MAXIM 618.04



February 22, 1995

N

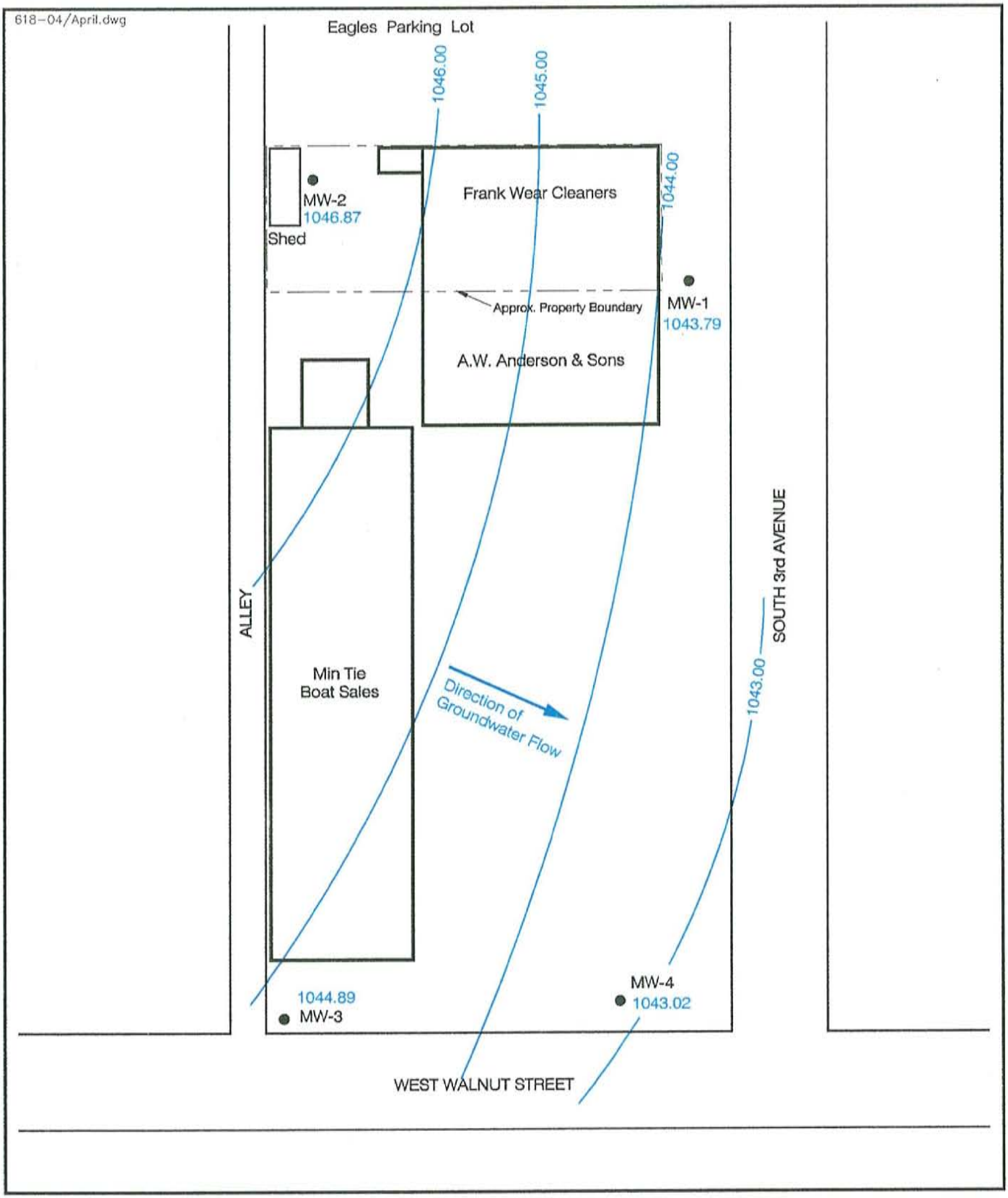
0 Feet 50

Monitoring Well
Groundwater Elevation (feet)

Equipotential Line (feet)

Groundwater Gradient
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 8

MAXIM 618.04



April 20, 1995

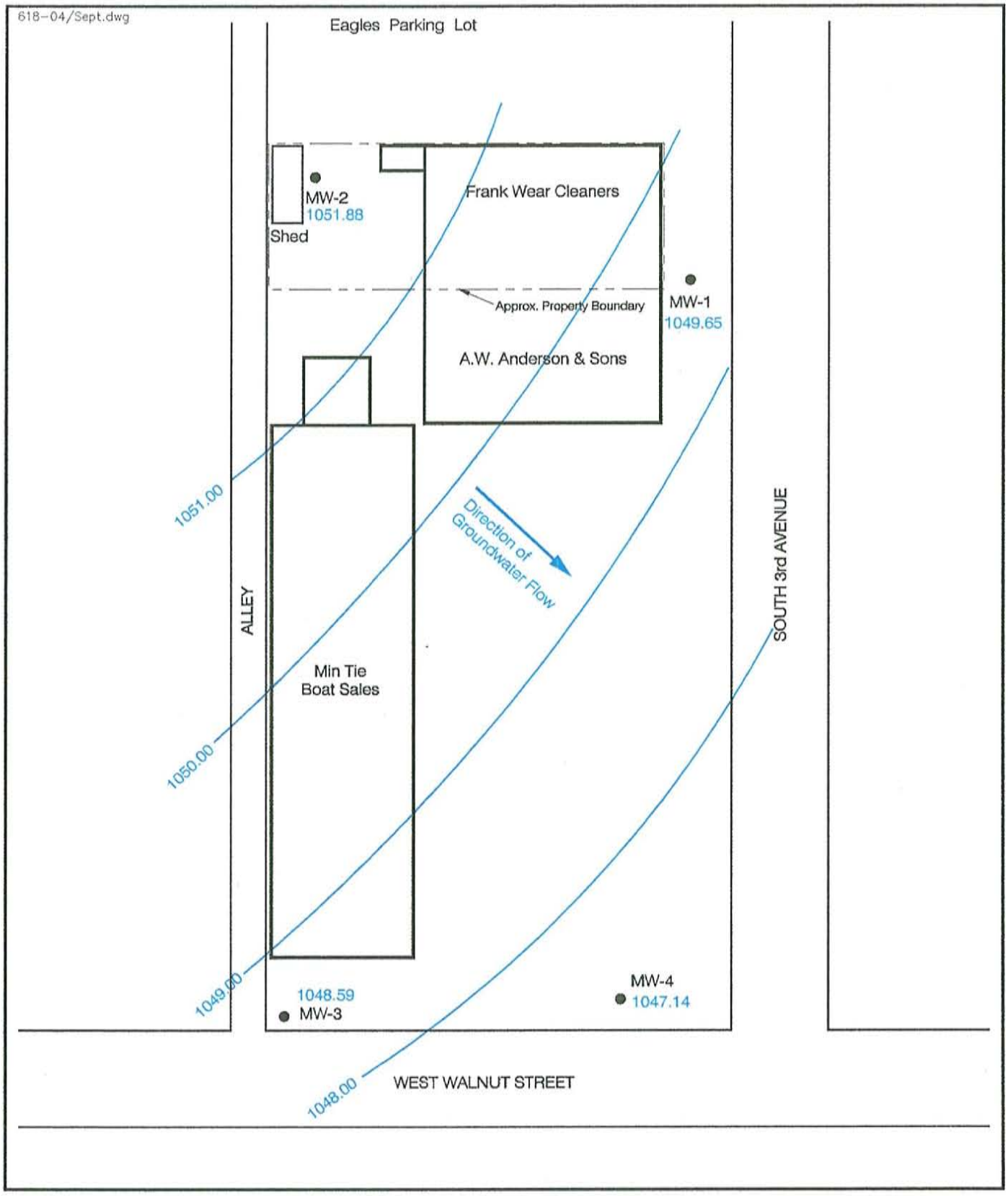
0 Feet 50

Monitoring Well
Groundwater Elevation (feet)

Equipotential Line (feet)

MAXIM 618.04

Groundwater Gradient
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 9



September 6, 1995

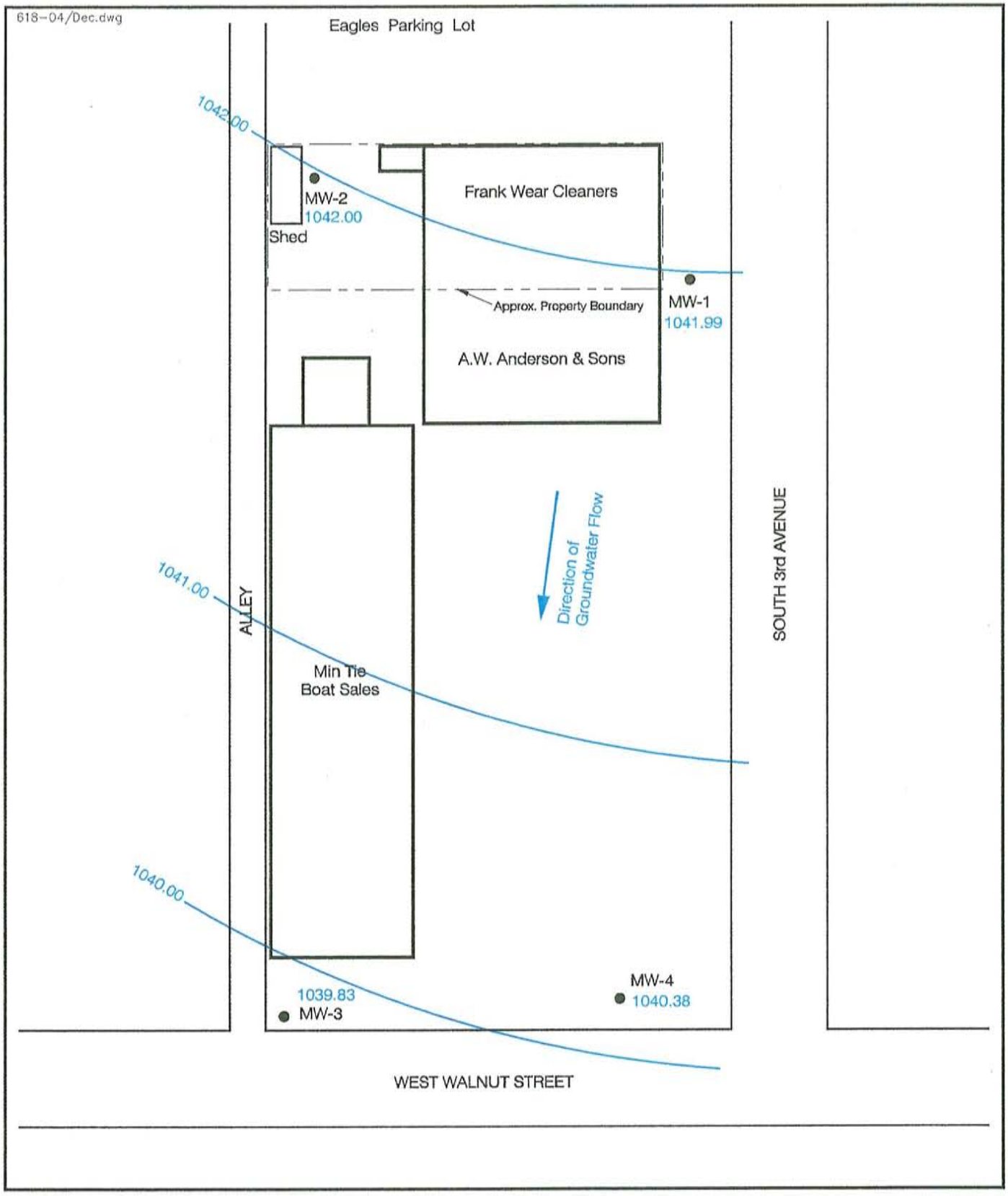
0 Feet 50

Monitoring Well
Groundwater Elevation (feet)

Equipotential Line (feet)

Groundwater Gradient
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 10

MAXIM 618.04



December 26, 1995

0 Feet 50

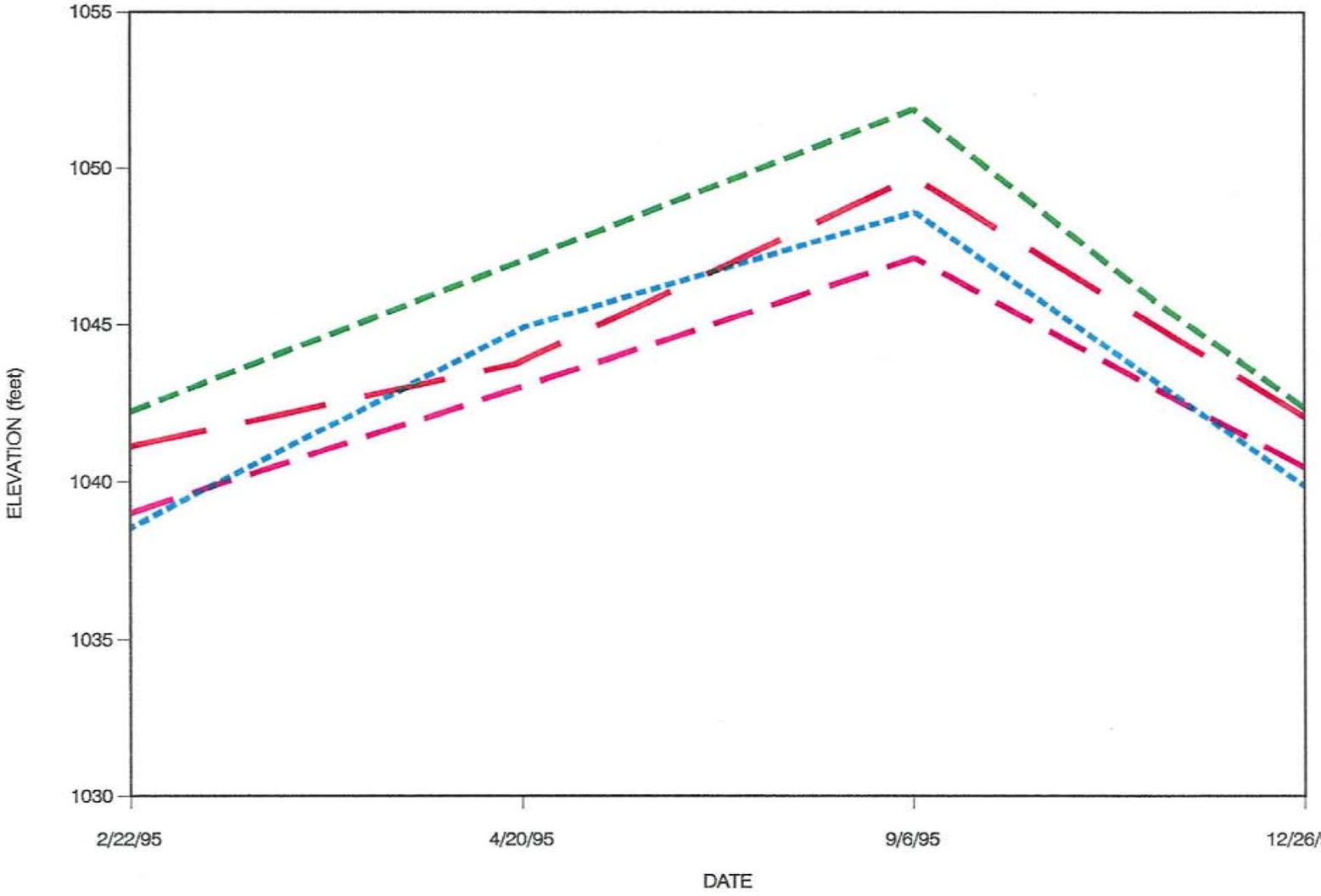
Monitoring Well
Groundwater Elevation (feet)

Equipotential Line (feet)

Groundwater Gradient
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 11

MAXIM 618.04

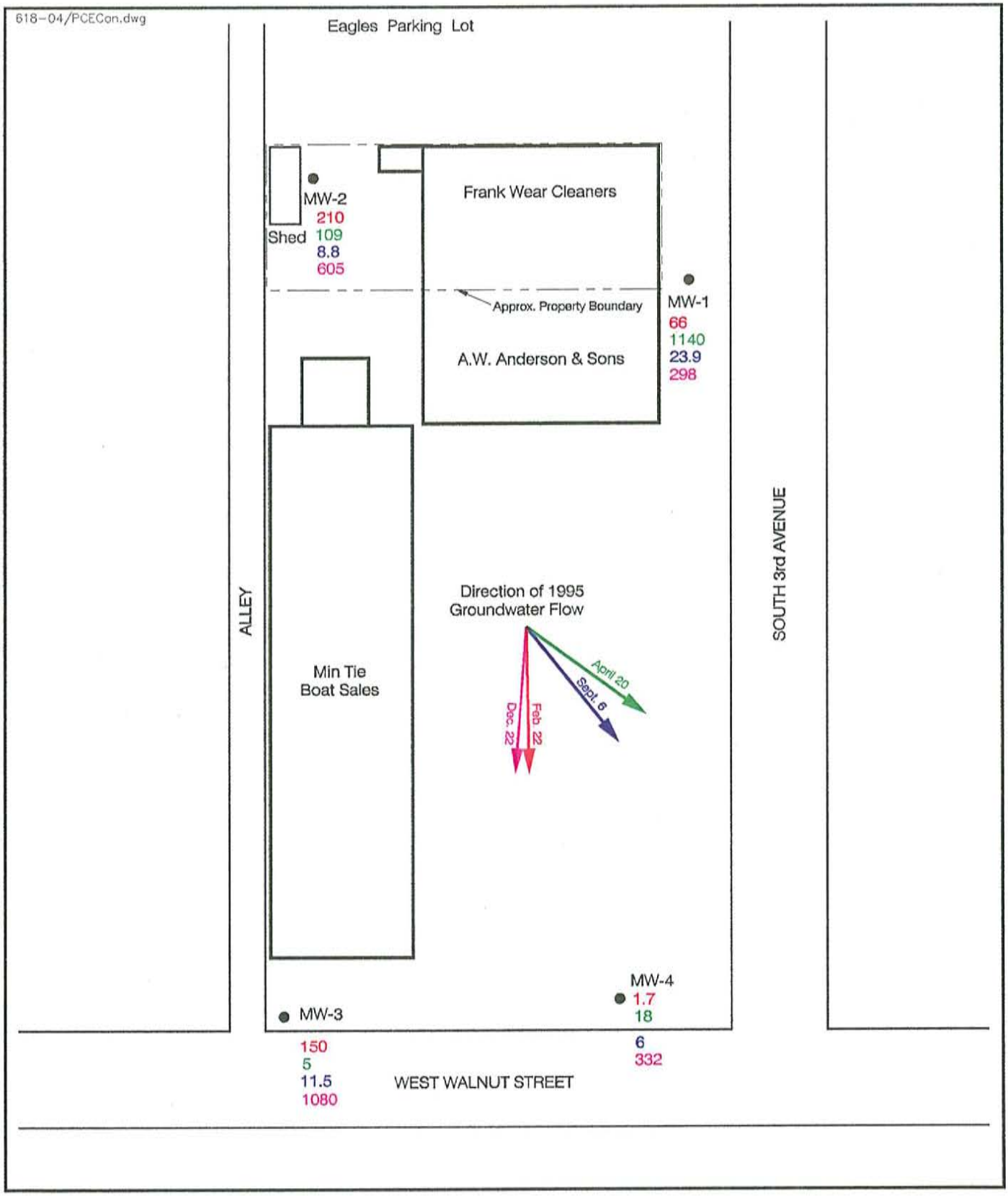
618-04\WTable.dwg



MW-1
MW-2
MW-3
MW-4

1995 Hydrograph of Water Levels
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 12

MAXIM 618.04



N

0 Feet 50

● Monitoring Well

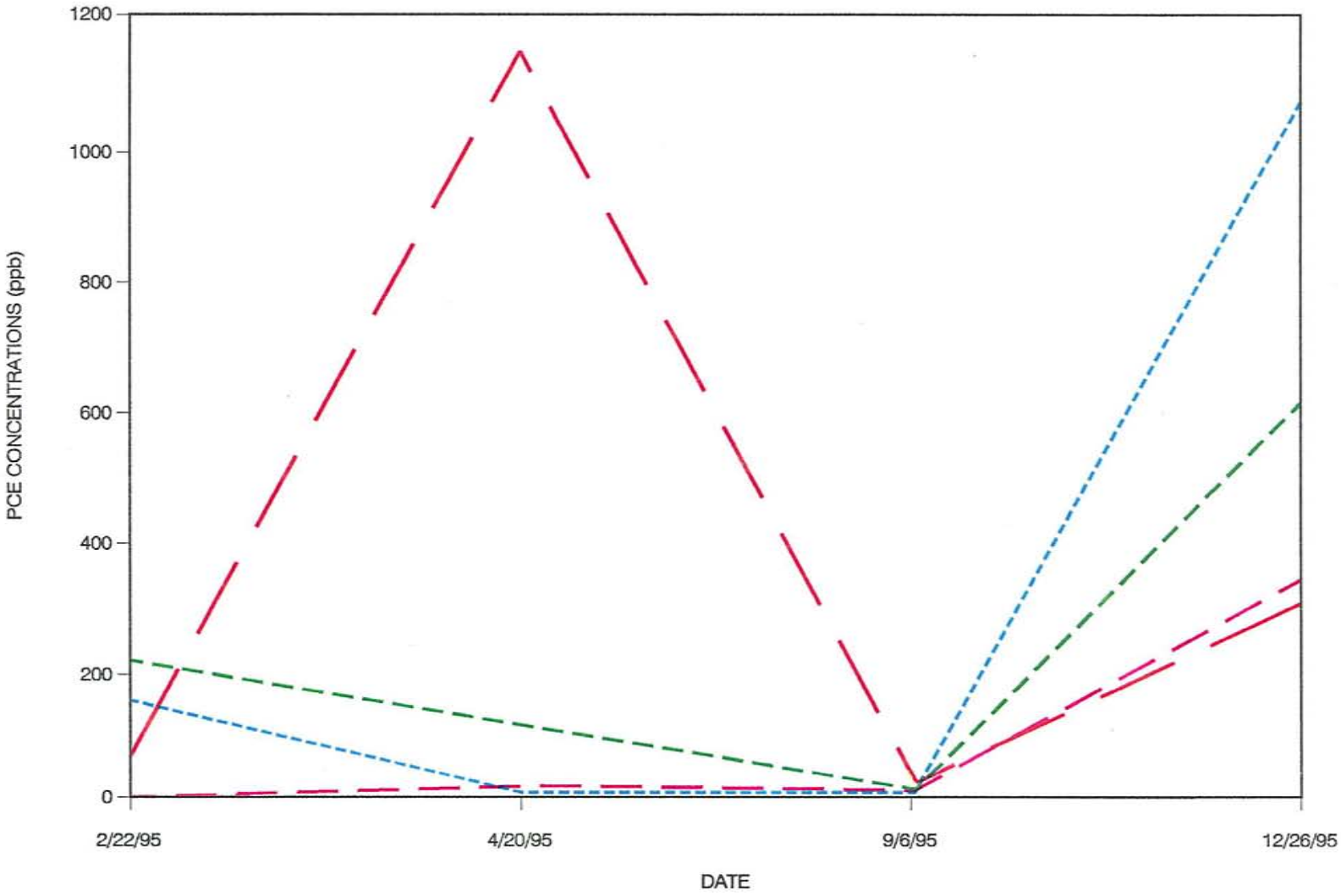
1995 PCE Concentration (ppb)

210	February 22
109	April 20
8,8	September 6
605	December 26

1995 PCE Concentrations
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 13

MAXIM 618.04

618-04\PCE.dwg



MW-1
MW-2
MW-3
MW-4

1995 PCE Concentrations Graph
Frank Wear Cleaners
106 South 3rd Avenue
Yakima, Washington
FIGURE 14

MAXIM 618.04

APPENDIX 1

GEOLOGIC AND WELL CONSTRUCTION LOGS

BORING LOG

PROJECT: FRANK WEAR CLEANERS
YAKIMA, WASHINGTON

JOB NO.: 195-1906 BORING NO: MW-1 PAGE: 1 of 1

LOCATION: 106 SOUTH 3RD AVENUE (NE 1/4, SE 1/4, S 24, T 13 N, R 18 E of the W.M.)

TYPE: MONITORING WELL SOIL: ROTARY ODEX ROCK: N/A

DRILLED BY: R & R DRILLING PUYALLUP, WASHINGTON LOGGED BY: RACHEL TAUMAN

ELEVATION: SURFACE - 0 ft. GROUNDWATER - 20.0 ft. BGS.

DATE: STARTED - 2/16/95 COMPLETED - 2/16/95

CASING: SLOT SIZE - .020 DIAMETER - 2" SCH 40 PVC

DEPTH IN FEET	CLASSIFICATION AND DESCRIPTION	USCS meod.	GEOLOGIC ORIGIN	N or CR	SAMPLE NO.	SAMPLE TYPE	ORGANIC VAPOR PID (ppm)	ORGANIC VAPOR Meth. (ppm)	WELL COMPLETION
0	Silty sandy GRAVEL; slightly moist; very dense; non-plastic; brown-black (SM).	SM							Flush Mount Conc. Bent.
5				>50					Sand
10				>50					
15				>50					▼
20	Silty sandy GRAVEL; wet; very dense; non-plastic; brown-black (SM). Groundwater at 20 ft. BGS.	SM		>50					
25									
30									
35	Base of boring at approximately 35 ft. BGS.								

BORING LOG

PROJECT: FRANK WEAR CLEANERS
YAKIMA, WASHINGTON

JOB NO.: 195-1906 BORING NO: MW-2 PAGE: 1 of 1

LOCATION: 106 SOUTH 3RD AVENUE (NE 1/4, SE 1/4, S 24, T 13 N, R 18 E of the W.M.)

TYPE: MONITORING WELL SOIL: ROTARY ODEX ROCK: N/A

DRILLED BY: R & R DRILLING PUYALLUP, WASHINGTON LOGGED BY: RACHEL TAUMAN

ELEVATION: SURFACE - 0 ft. GROUNDWATER - 20.0 ft. BGS.

DATE: STARTED - 2/15/95 COMPLETED - 2/15/95

CASING: SLOT SIZE - .020 DIAMETER - 2" SCH 40 PVC

DEPTH IN FEET	CLASSIFICATION AND DESCRIPTION	SYMBOL	GEOLOGIC ORIGIN	N or CR	SAMPLE NO.	SAMPLE TYPE	ORGANIC VAPOR PID (ppm)	ORGANIC VAPOR [illegible] (ppm)	WELL COMPLETION
0	Silty sandy GRAVEL; slightly moist; very dense; non-plastic; brown-black (SM).	SM							Flush Mount Conc. Bent.
5				>50					Sand
10				>50					
15				>50					
20	Silty sandy GRAVEL; wet; very dense; non-plastic; brown-black (SM). Groundwater at 20 ft. BGS.	SM		>50					
25									
30									
35	Base of boring at approximately 35 ft. BGS.								

BORING LOG

PROJECT: FRANK WEAR CLEANERS
YAKIMA, WASHINGTON

JOB NO.: 195-1906 BORING NO: MW-3 PAGE: 1 of 1

LOCATION: 106 SOUTH 3RD AVENUE (NE 1/4, SE 1/4, S 24, T 13 N, R 18 E of the W.M.)

TYPE: MONITORING WELL SOIL: ROTARY ODEX ROCK: N/A

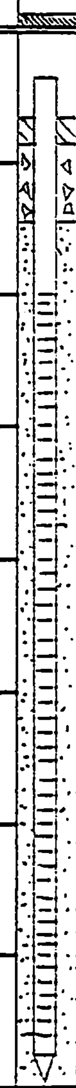
DRILLED BY: R & R DRILLING PUYALLUP, WASHINGTON LOGGED BY: RACHEL TAUMAN

ELEVATION: SURFACE - 0 ft. GROUNDWATER - 20.0 ft. BGS.

DATE: STARTED - 2/13/95 COMPLETED - 2/13/95

CASING: SLOT SIZE - .020 DIAMETER - 2" SCH 40 PVC

DEPTH IN FEET	CLASSIFICATION AND DESCRIPTION	USCS SYMBOL	GEOLOGIC ORIGIN	N or CR	SAMPLE NO.	SAMPLE TYPE	ORGANIC VAPOR PID (ppm)	ORGANIC VAPOR [illegible] (ppm)	WELL COMPLETION
0	Silty sandy GRAVEL; slightly moist; very dense; non-plastic; brown-black (SM).	SM							Flush Mount Conc. Bent.
5				>50					Sand
10				>50					
15				>50					
20	Silty sandy GRAVEL; wet; very dense; non-plastic; brown-black (SM). Groundwater at 20 ft. BGS.	SM		>50					
25									
30									
35	Base of boring at approximately 35 ft. BGS.								



BORING LOG

PROJECT: FRANK WEAR CLEANERS
YAKIMA, WASHINGTON

JOB NO.: 195-1906 BORING NO: MW-4 PAGE: 1 of 1

LOCATION: 106 SOUTH 3RD AVENUE (NE 1/4, SE 1/4, S 24, T 13 N, R 18 E of the W.M.)

TYPE: MONITORING WELL SOIL: ROTARY ODEX ROCK: N/A

DRILLED BY: R & R DRILLING PUYALLUP, WASHINGTON LOGGED BY: RACHEL TAUMAN

ELEVATION: SURFACE - 0 ft. GROUNDWATER - 20.0 ft. BGS.

DATE: STARTED - 2/14/95 COMPLETED - 2/14/95

CASING: SLOT SIZE - .020 DIAMETER - 2" SCH 40 PVC

DEPTH IN FEET	CLASSIFICATION AND DESCRIPTION	SYMBOL	GEOLOGIC ORIGIN	N or CR	SAMPLE NO.	SAMPLE TYPE	ORGANIC VAPOR PID (ppm)	ORGANIC VAPOR Mapk (ppm)	WELL COMPLETION
0	Silty sandy GRAVEL; slightly moist; very dense; non-plastic; brown-black (SM).	SM							Flush Mount Conc. Bent.
5				>50					Sand
10				>50					
15				>50					
20	Silty sandy GRAVEL; wet; very dense; non-plastic; brown-black (SM). Groundwater at 20 ft. BGS.	SM		>50					
25									
30									
35	Base of boring at approximately 35 ft. BGS.								

TEST PIT LOG

PROJECT: Frank Wear Cleaners Phase II - Remedial Investigation

JOB NO.: 195-1906 TEST PIT NO: Test Pit - 6 PAGE: 1 of 1

LOCATION: 106 South 3rd Avenue, Yakima, Washington

DRILL TYPE: Backhoe SOIL: Yes ROCK: No

DRILLED BY: Russell Crane Service, Yakima, Washington LOGGED BY: Rachel Tauman

ELEVATION: SURFACE - N/A GROUNDWATER - Not Encountered

DATE: STARTED - 4-19-95 COMPLETED - 4-19-95

CASING: DIAMETER - N/A SLOT SIZE - N/A

DEPTH IN FEET	CLASSIFICATION AND DESCRIPTION	SYMBOL	GEOLOGIC ORIGIN	N or CR	SAMPLE NO.	SAMPLE TYPE	ORGANIC VAPOR PID (ppm)	ORGANIC VAPOR Hnu (ppm)	CROSS SECTION
0	Soot from dry cleaners, 3 layers. (Still bottoms)	GM	Fill						
1									
2	Boulders and cobbles (60-70% sand and 30% gravel).		Fill						
3									
4									
5									
6	Diesel fuel from former underground storage tank. Boulders and cobbles 70% sand and 30% gravel).		Fill						
7									
8									
9									
10	Native materials encountered at approximately 10 feet below ground surface.		Native						
11									
12									
13									
14	Base of excavation at approximately 14 feet below ground surface. Groundwater not encountered.								
15									
16									

APPENDIX 2

LABORATORY REPORTS

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 360-459-4670
Fax: 360-459-3432

March 14, 1995

Rachel Tauman
Huntingdon Engineering & Environmental, Inc.
2214 North 4th Ave.
Pasco, WA 98036

Re: Frank Wear Cleaners

Dear Ms. Tauman:

Enclosed please find the original and one copy of the data report for analyses conducted off-site March 3, 1995 for samples from Frank Wear Cleaners in Washington. There were four water samples analyzed for VOCs by EPA Method 8240. An invoice for this analytical work is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to Huntingdon Engineering & Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
(President)

MAK:pk
Enclosure
tl/frankwr.clr

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest
Client ID:	MW-1
Lab ID:	46608-01
Date Received:	2/24/95
Date Prepared:	3/1/95
Date Analyzed:	3/1/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
1,2-Dichloroethane-d4	89		76	114
Toluene-d8	98		88	110
Bromofluorobenzene	106		86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	ND	5	
Chloroform	2	5	J
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	1.6	5	J
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for 46608-01 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	66	5	
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest
Client ID:	MW-2
Lab ID:	46608-02
Date Received:	2/24/95
Date Prepared:	3/1/95
Date Analyzed:	3/1/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	High
1,2-Dichloroethane-d4	88		76	114
Toluene-d8	106		88	110
Bromofluorobenzene	91		86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	4.9	5	J
Chloroform	3.6	5	J
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	23	5	
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for 46608-02 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	210	5	
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest
Client ID:	MW-3
Lab ID:	46608-03
Date Received:	2/24/95
Date Prepared:	3/2/95
Date Analyzed:	3/2/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	High
1,2-Dichloroethane-d4	86		76	114
Toluene-d8	112	X9	88	110
Bromofluorobenzene	106		86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	3.8	5	J
Chloroform	ND	5	
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	6.5	5	
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for 46608-03 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	150	5	
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Client Name	TEG Northwest
Client ID:	MW-4
Lab ID:	46608-04
Date Received:	2/24/95
Date Prepared:	3/1/95
Date Analyzed:	3/1/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	Recovery Limits High
1,2-Dichloroethane-d4	89		76	114
Toluene-d8	98		88	110
Bromofluorobenzene	70	X9	86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	ND	5	
Chloroform	ND	5	
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	ND	5	
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for 46608-04 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	1.7	5	J
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - A2482
Date Received:	-
Date Prepared:	3/1/95
Date Analyzed:	3/1/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	High
1,2-Dichloroethane-d4	88		76	114
Toluene-d8	109		88	110
Bromofluorobenzene	100		86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	ND	5	
Chloroform	ND	5	
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	ND	5	
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for A2482 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	ND	5	
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Lab ID:	Method Blank - A2503
Date Received:	-
Date Prepared:	3/2/95
Date Analyzed:	3/2/95
% Solids	-

Volatile Organics by USEPA Method 8240

Surrogate	% Recovery	Flags	Recovery Limits Low	High
1,2-Dichloroethane-d4	89		76	114
Toluene-d8	108		88	110
Bromofluorobenzene	103		86	115

Analyte	Result (ug/L)	PQL	Flags
Chloromethane	ND	10	
Bromomethane	ND	10	
Vinyl Chloride	ND	10	
Chloroethane	ND	10	
Methylene Chloride	ND	5	
Acetone	ND	5	
Carbon Disulfide	ND	5	
1,1-Dichloroethene	ND	5	
1,1-Dichloroethane	ND	5	
1,2-Dichloroethene (total)	ND	5	
Chloroform	ND	5	
1,2-Dichloroethane	ND	5	
2-Butanone (MEK)	ND	5	
1,1,1-Trichloroethane	ND	5	
Carbon Tetrachloride	ND	5	
Vinyl Acetate	ND	5	
Bromodichloromethane	ND	5	
1,2-Dichloropropane	ND	5	
cis-1,3-Dichloropropene	ND	5	
Trichloroethene	ND	5	
Dibromochloromethane	ND	5	
1,1,2-Trichloroethane	ND	5	
Benzene	ND	5	
trans-1,3-Dichloropropene	ND	5	
Bromoform	ND	5	
4-Methyl-2-pentanone (MIBK)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Volatile Organics by USEPA Method 8240 data for A2503 continued...

Analyte	Result (ug/L)	PQL	Flags
2-Hexanone	ND	5	
Tetrachloroethene	ND	5	
1,1,2,2-Tetrachloroethane	ND	5	
Toluene	ND	5	
Chlorobenzene	ND	5	
Ethylbenzene	ND	5	
Styrene	ND	5	
Xylenes (total)	ND	5	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	A2482
Date Prepared:	3/1/95
Date Analyzed:	3/1/95
QC Batch ID:	A2482

Volatile Organics by USEPA Method 8240

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
1,1-Dichloroethene	0	50	37	74	37	74	0.0	
Trichloroethene	0	50	43	86	40	80	7.2	
Benzene	0	50	41	82	40	80	2.5	
Toluene	0	50	48	96	41	82	16.0	
Chlorobenzene	0	50	42	84	42	84	0.0	

SOUND ANALYTICAL SERVICES, INC.

Blank Spike/Blank Spike Duplicate Report

Lab ID:	A2503
Date Prepared:	3/2/95
Date Analyzed:	3/2/95
QC Batch ID:	A2503

Volatile Organics by USEPA Method 8240

Compound Name	Blank Result (ug/L)	Spike Amount (ug/L)	BS Result (ug/L)	BS % Rec.	BSD Result (ug/L)	BSD % Rec.	RPD	Flag
1,1-Dichloroethene	0	50	41	82	39	78	5.0	
Trichloroethene	0	50	47	94	49	98	4.2	
Benzene	0	50	48	96	50	100	4.1	
Toluene	0	50	48	96	55	110	14.0	
Chlorobenzene	0	50	48	96	52	104	8.0	

SOUND ANALYTICAL SERVICES, INC.

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

DATA QUALIFIERS AND ABBREVIATIONS

J: The analyte was analyzed for and positively identified, but the associated numerical value is an estimated quantity.

B1: This analyte was also detected in the associated method blank. The reported sample results have been adjusted for moisture, final exract volume, and/or dilutions performed during extract preparation. The analyte concentration was evaluated prior to sample preparation adjustments, and was determined not to be significantly higher than the associated method blank (less than ten times the concentration reported in the blank).

B2: This analyte was also detected in the associated method blank. However, the analyte concentration in the sample was determined to be significantly higher than the method blank (greater than ten times the concentration reported in the blank).

E: The concentration of this analyte exceeded the instrument calibration range.

D: The reported result for this analyte is calculated based on a secondary dilution factor.

X1: Contaminant does not appear to be "typical" product. Elution pattern suggests it may be _____ .

X2: Contaminant does not appear to be "typical" product. Further testing is suggested for identification.

X3: Identification and quantification of peaks was complicated by matrix interference; GC/MS confirmation is recommended.

X4: RPD for duplicates outside advisory QC limits. Sample was re-analyzed with similar results.

X4a: RPD for duplicates outside advisory QC limits due to analyte concentration near the method practical quantitation limit/detection limit.

X5: Matrix spike was diluted out during analysis.

X6: Recovery of matrix spike outside advisory QC limits. Sample was re-analyzed with similar results.

X7: Recovery of matrix spike outside advisory QC limits. Matrix interference is indicated by blank spike recovery data.

X7a: Recovery and/or RPD values for MS/MSD outside advisory QC limits due to high contaminant levels.

X8: Surrogate was diluted out during analysis.

X9: Surrogate recovery outside advisory QC limits due to matrix composition.

N: See analytical narrative.

ND: Not Detected

PQL: Practical Quantitation Limit

MCL: Maximum Contaminant Level

FRANK WEAR CLEANERS

Project or Site Name

195 - 1906

Project Number

JUSTIN BOLLES

Sampler Name (Printed)

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- [x] Chen-Northern, Inc., Division
- [ ] Thomas-Hartig & Associates, Inc., Division
- [ ] Schaefer Dixon Associates, Inc., Division
- [ ] Herzog Associates, Inc., Division

RACHEL TAUMAN

Contact or Report to

HUNTINGDON TRI-CITIES, WA

Contact Address or Location

Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED: EPA 8240	NOTES	LAB NUMBER
2-22-95	5:30P	MW-1	GRAB	H_2O	4 VOA	X		
2-22-95	4:30P	MW-2	GRAB	H_2O	4 VOA	X		
2-22-95	5:00P	MW-3	GRAB	H_2O	4 VOA	X		
2-22-95	5:20P	MW-4	GRAB	H_2O	4 VOA	X		

	Date	Time	Received by:
Relinquished by:	2-23-95	9:30A	FEDERAL EXPRESS
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

Remarks:

teg

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY,

CHAIN-OF-CUSTODY RECORD

P.O. #: _____

CLIENT: TEG

ADDRESS: 6604 Martin Way E Oly Wa

PHONE: 360-459-4670 FAX: 360-459-

CLIENT PROJECT #: NW950224-1 PROJECT MANAGER: Mike Korosec

DATE: 2/24/95 PAGE 1 OF 1

TEG PROJECT #: Frank Wear Cleaners

LOCATION: _____

COLLECTOR: _____ DATE OF COLLECTION: 2/22/95

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)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
MW-1		1730	H_2O	40ml Vial			X														4	
MW-2		1630	"	"			X														4	
MW-3		1700	"	"			X														4	
MW-4		1720	"	"			X														4	

RELINQUISHED BY: (Signature) _____ DATE/TIME 2/24/95 1700 RECEIVED BY: (Signature) _____ DATE/TIME 2-24-95 1800

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:

Normal TAT

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 360-459-4670
Fax: 360-459-3432

April 26, 1995

Rachel Tauman
Huntingdon Engineering and Environmental, Inc.
2214 North 4th Ave.
Pasco, WA 98036

Dear Ms. Tauman:

Please find enclosed the data report for analyses conducted April 20, 21 and 24, 1995, for soil and water samples from the Frank Wear Cleaners Project in Yakima, Washington. The soils and waters were analyzed for Specific Halogenated Hydrocarbons by EPA Method 8010, and Diesel and Oil by WTPH-D and WTPH-D Extended.

The results of the analysis are summarized in the attached table. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for this analytical work is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical services to Huntingdon Engineering & Environmental for this project. If you have any further questions about the data report, please give me a call. It was a pleasure working with you on this project, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
President

tl/huntingd.ltr

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 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.

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

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.

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.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Water

Sample-Number	MDL	Method Blank	MW-1	MW-2	MW-2 Dup.	MW-3	MW-4
Date		04/21/95	04/21/95	04/21/95	04/21/95	04/21/95	04/21/95
	ug/l						
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	1	nd	2	nd	nd	nd	nd
Trichloroethene	1	nd	7	2	2	nd	nd
Cis Dichloropropene	1	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	1	nd	nd	nd	nd	nd	nd
Tetrachloroethene	1	nd	1140	109	78	5	18
1,1 Dichloroethane	1	nd	<50	<50	<50	nd	nd
1,2 Dichloroethane	1	nd	<50	<50	<50	nd	nd
Chloroform	1	nd	<50	<50	<50	nd	nd
Carbon Tetrachloride	1	nd	<50	<50	<50	nd	nd
1,1,1 Trichloroethane	1	nd	<50	<50	<50	nd	nd
1,1,2 Trichloroethane	1	nd	<50	<50	<50	nd	nd
Tetrachloroethane	1	nd	<50	<50	<50	nd	nd
Spike Recovery (%)		120	128	123	110	109	118

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	Method Blank	TP#1 @ 0.5	TP#1 @ 6	TP#3 @ 6	TP#3 @12	TP#4 @ 6	TP#4 @ 12
Date	mg/kg	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Cis Dichloropropene	0.05	nd	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.05	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	1.36	0.73	nd	nd	nd	nd
1,3 Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd
1,4 Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichlorobenzene	0.05	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		106	106	105	108	113	124	126

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	TP#6 @ 0.5	TP#6 @ 6	TP#6 @ 6 Dup	TP#6 @ 12	TP#6 @ 14	TP#7 @ 0.5
Date		04/20/95	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95
	mg/kg						
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis Dichloropropene	0.05	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	3.02	0.28	0.22	nd	nd	0.76
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
Spike Recovery (%)		103	116	108	106	110	99

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Drain 1, 2+3 labled C-1, 2+3 in text KAM.

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	TP#7 @ 6	TP#7 @ 11	TP#9 @ 1.5	TP#9 @ 1.5 Dup	Drain 1	Drain 2
Date	mg/kg	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95	04/20/95
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis Dichloropropene	0.05	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	0.30	nd	nd	nd	0.62	0.14
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
Spike Recovery (%)		98	108	117	109	102	103

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	Method Blank	TP#2 @3.5	TP#2 @5	TP#5 @ 5	TP#5 @ 7	TP#8 @ 1
Date		04/21/95	04/21/95	04/21/95	04/21/95	04/21/95	04/21/95
	mg/kg						
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis Dichloropropene	0.05	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	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
Spike Recovery (%)		107	106	105	121	111	97

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	TP#8 @ 5	TP#8 @ 9.5	TP#8 @ 9.5 Dup	TP#10 @ 5	TP#10 @ 6.5	TP#11 @ 5
Date		04/21/95	04/21/95	04/21/95	04/21/95	04/21/95	04/21/95
	mg/kg						
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd
Cis Dichloropropene	0.05	nd	nd	nd	nd	nd	nd
Trans Dichlorpropene	0.05	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	0.33	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
Spike Recovery (%)		106	97	101	90	102	102

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Specific Halogenated Hydrocarbons (EPA 8010) in Soil

Sample-Number	MDL	Method Blank	TP#6 @ 7 Dup
Date		04/24/95	04/24/95
	mg/kg		
1,1 Dichloroethene	0.05	nd	<1.00
1,2 Dichloroethene	0.05	nd	<1.00
Trichloroethene	0.05	nd	5.73
Cis Dichloropropene	0.05	nd	<1.00
Trans Dichlorpropene	0.05	nd	<1.00
Tetrachloroethene	0.05	nd	1260.00
1,1 Dichloroethane	0.05	nd	--
1,2 Dichloroethane	0.05	nd	--
Chloroform	0.05	nd	--
Carbon Tetrachloride	0.05	nd	--
1,1,1 Trichloroethane	0.05	nd	--
1,1,2 Trichloroethane	0.05	nd	--
Spike Recovery (%)		118	int

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR CLEANERS
Yakima, Washington
Huntingdon Engineering and Environmental, Inc.
Project No. 195-1906

Diesel & Oil in Soil by WTPHD/WTPHD-Extended

Sample Number		Date	Percent Recovery	Diesel mg/kg	Heavy Oil mg/kg
Meth. Blank		04/24/95	94	nd	nd
TP#6 @ 3		04/24/95	88	nd	nd
TP#6 @ 6		04/24/95	108	nd	41
TP#6 @ 7		04/24/95	int	11600	nd
MDL				10	20

"nd" Indicates not detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

TEG — TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY

CHAIN-OF-CUSTODY RECORD

P.O. #:

CLIENT: Huntingdon
ADDRESS:
PHONE: FAX:
CLIENT PROJECT #: 195-1906 PROJECT MANAGER: Rachel Tauman

DATE: 4-21-95 PAGE 1 OF 1
TEG PROJECT #: NW950420-1
LOCATION: Frank Wear
COLLECTOR: Rachel Tauman DATE OF COLLECTION: 4-21

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)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
TP#2@5	5'	0905	soil	4oz jar	X																1	
TP#2@3.5	3.5'	6915	"	"	X																1	
TP#8@5	5'	1030	"	"	X																1	
TP#8@1.0'	1.0	1045	"	"	X																1	
TP#8@9.5	9.5'	1055	"	"	X																1	
TP#5@5'	5'	1145	"	"	X																1	
TP#10@5'	5'	1220	"	"	X																1	
TP#10@6.5'	6.5'	1222	"	"	X																1	
TP#11@5'	5'	1310	"	"	X																1	
TP#11@8'	8'	1325	"	"	X																1	
TP#5@7	7'	1200	"	"	X																1	

RELINQUISHED BY: (Signature) Rachel Tauman DATE/TIME
RECEIVED BY: (Signature) [illegible] DATE/TIME 4-21-95
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	11
CHAIN OF CUSTODY SEALS Y/N/NA	NA (circled)
SEALS INTACT? Y/N/NA	NA (circled)
RECEIVED GOOD COND./COLD	Y
NOTES:	

LABORATORY NOTES:

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY, teg

CHAIN-OF-CUSTODY RECORD

P.O. #:

CLIENT: Huntingdon

ADDRESS:

PHONE: FAX:

CLIENT PROJECT #: 195-1906 PROJECT MANAGER: Rachel Tauman

DATE: 4-20-95 PAGE 1 OF 2

TEG PROJECT #: NW950420-1

LOCATION: Frank Wear Dry Cleaner

COLLECTOR: Rachel Tauman DATE OF COLLECTION: 4-20-95

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)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	OTEXTD	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
TP#3@6'	6'	0910	soil	4oz jar	X	X																1	
TP#3@12'	12'	0930	"	"	X	X																1	
Drain #1		0940	"	"	X	X																1	
Drain #2		0945	"	"	X	X																1	
Drain #3		0950	"	"	X	X																1	
TP#4@6'	6'	1035	"	"	X	X																1	
TP#4@12'	12'	1045	"	"	X	X																1	
TP#1@0.5	0.5'	1150	"	"	X	X																1	
TP#1@6	6'	1205	"	"	X	X																1	
TP#6@6	6'	1230	"	"	X														X			2	
TP#6@0.5	0.5	1234	"	"	X	X																1	
TP#6@3	3'	1240	"	"															X			2	
TP#6@7	7'	1245	"	"															X			1	
TP#7@0.5	0.5'	1400	"	"	X																	1	
TP#9@6	6'	1405	"	"	X														A[illegible]			1	
MW-1		1316	H_2O	40ml VOA	X																	2	
MW-2		1330	H_2O	40ml VOA	X																	2	
MW-3		1340	H_2O	40ml VOA	X																	2	

RELINQUISHED BY: (Signature) Rachel Tauman DATE/TIME RECEIVED BY: (Signature) DATE/TIME 4-20-95 1800

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 23

CHAIN OF CUSTODY SEALS Y/N/NA

SEALS INTACT? Y/N/NA

RECEIVED GOOD COND./COLD Y

NOTES:

LABORATORY NOTES:

teg

TRANSGLOBAL ENVIRONMENTAL GEOCHEMISTRY,

CHAIN-OF-CUSTODY RECORD

P.O. #: _____

CLIENT: Huntingdon

ADDRESS: _____

PHONE: _____ FAX: _____

CLIENT PROJECT #: 195-1906 PROJECT MANAGER: Rachel Tauman

DATE: 4-20-95 PAGE 2 OF 2

TEG PROJECT #: NW950420-1

LOCATION: Frank Wear Dry Cleaner

COLLECTOR: Rachel Tauman DATE OF COLLECTION: 4-20-95

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)	PNA 610/8100	PEST/PCBs 8080	HEX CHROME	ORGANIC LEAD	TOTAL LEAD	pH	ASBESTOS	FIELD NOTES	Total Number Of Containers	Laboratory Note Number
MW-4		1350	H_2O	40 mL VOA	X																2	
TP#7@11'	11'	1430	Soil	4oz jar	X																1	
TP#6@12'	12'	1530	Soil	"	X																1	
TP#6@14	14'	1600		"	X																1	
TP#9@15	15	1605		"	X																1	

RELINQUISHED BY: (Signature) Rachel Tauman DATE/TIME

RECEIVED BY: (Signature) DATE/TIME 4-20-95 1600

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	6
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	Y
NOTES:	

LABORATORY NOTES:

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST, INC.

7110 38th Drive SE
Lacey, Washington 98503

Mobile Environmental Laboratories
Environmental Sampling Services

Telephone: 360-459-4670
Fax: 360-459-3432

September 12, 1995

Rachel Tauman
Maxim Technologies
201 E. D Street
Yakima, WA 98901

Dear Ms. Tauman:

Please find enclosed the data reports for on-site collection and analyses of soil and water samples conducted September 6, 7 and 8, 1995, at the Frank Wear Dry Cleaners Project in Yakima, Washington. Additional samples were analyzed off-site September 11 and 12, 1995. The soils and waters were analyzed for Specific Halogenated Hydrocarbons and BTEX by Modified EPA Method 8010/8020.

The results of the analyses are summarized in the attached tables. All soil values are reported on a dry weight basis. Applicable detection limits and QA/QC data are included. An invoice for these services is also enclosed.

TEG Northwest appreciates the opportunity to have provided analytical and geosampling services to Maxim Technologies for this project. It was a pleasure working with you, and we are looking forward to the next opportunity to work together.

Sincerely,

Michael A. Korosec
President

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 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 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.

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.

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	Method Blank	TP6-1 6'	TP6-2 6'	TP6-2 6'-Dup	TP6-3 6'	CH-1 3'	TP6A-#4 3'	TP6A-#4 6'
Date	mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	0.12	0.09	0.10	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		92	90	102	91	89	100	120	117

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	TP6A-#4 10'	TP6-#1 10'	TP6-#2 10'	CH-2 2'	CH-2 3'	CH-3 2'	TP6-#5 6'	TP6-#5 10'
Date	mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	0.19	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		116	91	91	117	98	119	97	80

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	CH-4 2'	TP6-#6 6'	TP6-#6 6'-Dup	TP6-#6 10'	TP6-#1 12'	TP-#7 12'	TP6-#8 2'	CH-4 4'
Date	mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg	09/06/95 mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		83	87	105	88	84	90	80	87

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	TP10A 3'	TP10A 6'	TP10A 9'	CH-4 3.5'	CH-5 2'	CH-6 2'	CH-7 2'	CH-8 2'
Date		09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		83	104	93	90	84	107	92	105

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	Method Blank	Well #1	Well #2	Well #2 Dup	Well #3	Well #4
Date		09/07/95	09/07/95	09/07/95	09/07/95	09/07/95	09/07/95
	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l	ug/l
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Benzene	5	nd	nd	nd	nd	nd	nd
Trichloroethene	1	nd	nd	nd	nd	nd	nd
Toluene	5	nd	nd	nd	nd	nd	nd
Tetrachloroethene	1	nd	23.9	8.8	10.6	11.5	6.0
Ethylbenzene	5	nd	nd	nd	nd	nd	nd
Total Xylenes	5	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Recovery (%)		112	95	120	108	85	95

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

	MDL	CH-9 2'	Method Blank	CH-9 4'	CH-10 2'	CH-11 2'	CH-11 2'-Dup	CH-12 2'
Date		09/07/95	09/08/95	09/08/95	09/08/95	09/08/95	09/08/95	09/08/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	0.27	nd	nd	nd	0.08	0.08	0.12
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		82	82	113	89	106	97	102

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

	MDL	CH-13 2'	CH-14 2'	CH-15 2'	CH-16 1'	CH-17 1'	CH-18 2'	CH-19 1.5'
Date		09/08/95	09/08/95	09/08/95	09/08/95	09/08/95	09/08/95	09/08/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	0.11	nd	nd	nd	nd	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		82	108	119	120	83	82	105

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

	MDL	Method Blank	CH-7 4'	CH-7 6'	CH-8 3'	CH-10 3.5'	CH-13 4'	CH-18 3'	CH-20 2'
Date		09/11/95	09/11/95	09/11/95	09/11/95	09/12/95	09/12/95	09/12/95	09/12/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	nd	nd	nd	nd	0.08	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		92	91	104	94	108	100	100	98

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

FRANK WEAR DRY CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

Air Samples collected for personnel safety XAM

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

	MDL	CH-20 2'-Dup	CH-24 0'	CH-24 2'	CH-24 3.5'	CH-25 2'	CH-26 2'	CH-30 0'
Date		09/12/95	09/12/95	09/12/95	09/12/95	09/12/95	09/12/95	09/12/95
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
1,1 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
trans-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
cis-1,2 Dichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Benzene	0.05	nd	nd	nd	nd	nd	nd	nd
Trichloroethene	0.05	nd	nd	nd	nd	nd	nd	nd
Toluene	0.05	nd	nd	nd	nd	nd	nd	nd
Tetrachloroethene	0.05	nd	nd	0.21	nd	1.81	nd	nd
Ethylbenzene	0.05	nd	nd	nd	nd	nd	nd	nd
Total Xylenes	0.05	nd	0.10	nd	nd	nd	nd	nd
1,1 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Chloroform	0.05	nd	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2 Trichloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,1,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
1,1,2,2 Tetrachloroethane	0.05	nd	nd	nd	nd	nd	nd	nd
Recovery (%)		94	106	94	82	95	100	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: Maxim Technologies

ADDRESS: [illegible]

PHONE 509 577 8592. FAX:

CLIENT PROJECT #: PROJECT MANAGER: Rachel Tallman

DATE: 9/6/95 PAGE 1 OF 2

PROJECT NAME: Frank Wear Cleaners

LOCATION: Yakima, WA

COLLECTOR: Rachel Tallman, Kevin VandeHey DATE OF COLLECTION 9/6

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
TP6-#1	6'		Soil	4oz jar	X	X															1	
TP6-#2	6'		Soil	4 oz jar	X	X															1	
TP6-#3	6'		Soil	4oz jar	X	X															1	
CH-1	8'		Soil	4oz jar	X	X															1	
TP6-#1	10'		Soil	4oz jar	X	X															1	
TP6-#2	10'		Soil	4oz jar	X	X															1	
TP6A #4	3'		Soil	4oz jar	X	X															1	
TP6A #4	6'		Soil	4oz jar	X	X															1	
TP6A #4	10'		Soil	4oz jar	X	X															1	
CH-2	2'		Soil	4oz jar	X	X															1	
CH-2	3'		Soil	4oz jar	X	X															1	
~~CH-2~~	~~3'~~	~~[illegible]~~	~~Soil~~	~~4oz jar~~	~~X~~	~~X~~															~~1~~	
CH-3	3'		Soil	4oz jar	X	X															1	
CH-4	2'		Soil	4oz jar	X	X															1	
CH-4	4'		Soil	4oz jar	X	X															1	
CH-4	5.5'		Soil	4oz jar	X	X															1	
TP5 #5	6'		Soil	4oz jar	X	X															1	
TP5 #5	10'		Soil	4oz jar	X	X															1	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Rachel Tallman			15:00 9/06
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:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Maxim Technologies

ADDRESS:

PHONE Fax 577-8592 FAX:

CLIENT PROJECT #: PROJECT MANAGER: Rachel Tamura

DATE: 9/6/95 PAGE 2 OF 2

PROJECT NAME: Frank Wear Cleaners

LOCATION: Yakima, Wa.

COLLECTOR: Rachel Tamura / Kevin Underhill DATE OF COLLECTION 9/6

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
CH-5	2'		Soil	4oz. jar	X	X															1	
CH-6	2'		Soil	4oz. jar	X	X															1	
CH-7	2'		Soil	4oz. jar	X	X															1	
CH-7	4'		Soil	4oz. jar	X	X															1	
CH-7	6'		Soil	4oz. jar	X	X															1	
TP6 #1	12'		Soil	4oz. jar	X	X															1	
TP6 #7	12'		Soil	4oz. jar	X	X															1	
TP6 #8	2'		Soil	4oz. jar	X	X															1	
CH8	2'		Soil	4oz. jar	X	X															1	
CH8	3'		Soil	4oz. jar	X	X															1	
CH9	2'		soil	4oz. jar	X	X															1	
CH9	4'		Soil	4oz. jar	X	X															1	
CH10	2'		soil	4oz. jar	X	X															1	
CH10	35'		Soil	4oz. jar	X	X															1	
TP6 #6	6'		Soil	4oz. jar	X	X															1	
TP6 #6	10'		soil	4oz. jar	X	X															1	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
			18:00 9/6
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:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Maxim Technologies

ADDRESS:

PHONE 509-577-8500 FAX:

CLIENT PROJECT #: PROJECT MANAGER: Rachel Tamucci

DATE: 9/6/95 PAGE 1 OF 2

PROJECT NAME: Frank Wear Cleaners

LOCATION: Yakima, Wa

COLLECTOR: Rachel / Kevin Tamucci, Vandehey DATE OF COLLECTION 9/7.

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
CH11	2'		Soil	4oz jar	X	X															1	
TP7 -	3'		Soil	4oz jar	X	X															1	
TP7	6'		Soil	4oz jar	X	X															1	
TP7	9'		Soil	4oz jar	X	X															1	
TP8/10	3'		Soil	4oz jar	X	X															1	
TP8/10	6'		Soil	4oz jar	X	X															1	
TP10	9'		Soil	4oz jar	X	X															1	
TP10A	3'		Soil	4oz jar	X	X															1	
TP10A	6'		Soil	4oz jar	X	X															1	
TP 10A	9'		Soil	4oz jar	X	X															1	
CH12 -	2'		Soil	4oz jar	X	X															1	
CH13 -	2'		Soil	4oz jar	X	X															1	
CH13 -	4'		Soil	4oz jar	X	X															1	
CH14 -	2'		Soil	4oz jar	X	X															1	
CH15	2'		Soil	4oz jar	X	X															1	
CH16	1'		Soil	4oz jar	X	X															1	
CH17	1'		Soil	4oz jar	X	X															1	
CH18	2'		Soil	4oz jar	X	X															1	

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
Rachel Tamucci			15:00
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
			9/7/95

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	

LABORATORY NOTES:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: Maxim Technologies.

ADDRESS:

PHONE 509-577-8500 FAX:

CLIENT PROJECT #: PROJECT MANAGER: Rachel Tamburg.

DATE: 9/6/95 PAGE 2 OF 2

PROJECT NAME: Frank Wear Cleaners

LOCATION: Yakima, Wa.

COLLECTOR: Rachel Tamburg / Kevin Uncle Hess DATE OF COLLECTION 9/7.

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
CH19	3'		Soil	4oz	X	X															1	
CH19	1.5'		Soil	4oz	X	X															1	
CH20	.4'		Soil	4oz	X	X															1	
CH20	2'		Soil	4oz	X	X															1	
CH21	1.5'		Soil	4oz	X	X																
CH22	1'		Soil	4 oz.	X	X																
CH23	1.5'		Soil	4 oz	X	X																

RELINQUISHED BY (Signature) DATE/TIME RECEIVED BY (Signature) DATE/TIME

Rahul Tamburg 9/7/95 17:00.

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:

teg TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES

CHAIN-OF-CUSTODY RECORD

CLIENT: MAXIM TECH

ADDRESS:

PHONE FAX:

CLIENT PROJECT #: PROJECT MANAGER:

DATE: PAGE OF

PROJECT NAME: FRANK WEAR CLEANERS

LOCATION: YAKIMA WA

COLLECTOR: ERICA KUSTER DATE OF COLLECTION 9/8/95

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
CH-24	0'	1600	SOIL	4OZ JAR	X															Concrete drillings		
CH-24	2'	1615			X																	
CH-24	3.5'	1630			X																	
CH-25	2'	1645			X																	
CH-26	2'	1700	↓	↓	X																	
CH-30	0'	1700	SOIL	4OZ JAR	X															Field Blank		

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
R. Taiman	9/8/95	Erica Kuster	9/8/95 1730
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:

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- ☐ Chen-Northern, Inc., Division
- ☐ Thomas-Hartig & Associates, Inc., Division
- ☐ Schaefer Dixon Associates, Inc., Division
- ☐ Herzog Associates, Inc., Division

Frank Water Cleaners
Project or Site Name

Project Number

Bryan Mull
Sampler Name (Printed)

Rachel Tauman
Contact or Report to

Phone 509-577-8592
Contact Address or Location

Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED	NOTES	LAB NUMBER
9-6-95	2 00	Well 1		Water	2 VOA	X		
9-6-95	2 15	Well 2		Water	2 VOA	X		
9-6-95	2 30	Well 3		Water	2 VOA	X		
9-6-95	2 45	Well 4		Water	2 VOA	X		

Relinquished by:	Date 9-6-95	Time 2 45	Received by:	Remarks:
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	
Relinquished by:	Date	Time	Received by:	

TRANSGLOBAL ENVIRONMENTAL GEOSCIENCES NORTHWEST INC.

FRANK WEAR CLEANERS PROJECT
Yakima, Washington
MAXIM Technologies

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

Sample-Number	MDL	Method Blank	MW-1	MW-2	MW-3	MW-3 Dup	MW-4
Date	ug/l	12/27/95 ug/l	12/27/95 ug/l	12/27/95 . ug/l	12/27/95 ug/l	12/27/95 ug/l	12/27/95 ug/l
Vinylchloride	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Trans-1,2 Dichloroethene	1	nd	nd	nd	nd	nd	nd
Cis-1,2 Dichloroethene	1	nd	17.9	1.3	3.1	3.3	16.6
Benzene	1	nd	nd	nd	nd	nd	nd
Trichloroethene	1	nd	46.3	4.2	4.7	4.7	48.3
Toluene	1	nd	nd	nd	nd	nd	nd
Tetrachloroethene	1	nd	298	605	1080	1080	332
Ethylbenzene	1	nd	nd	nd	nd	nd	nd
m,p-Xylene	1	nd	nd	nd	nd	nd	nd
o-Xylene	1	nd	nd	nd	nd	nd	nd
Dichloromethane	1	nd	nd	nd	nd	nd	nd
1,1 Dichloroethane	1	nd	nd	nd	nd	nd	nd
1,2 Dichloroethane	1	nd	nd	nd	nd	nd	nd
Chloroform	1	nd	nd	nd	nd	nd	nd
Carbon Tetrachloride	1	nd	nd	nd	nd	nd	nd
1,1,1 Trichloroethane	1	nd	nd	nd	3.5	3.4	nd
1,1,2 Trichloroethane	1	nd	nd	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1	nd	nd	nd	nd	nd	nd
Spike Recovery (%)		91	98	103	104	96	98

"nd" Indicates Not Detected at the listed detection limit.
"int" Indicates that interference peaks prevent determination.

CHAIN OF CUSTODY RECORD

Huntingdon
Consulting Engineers Environmental Scientists

- ☐ Chen-Northern, Inc., Division
- ☐ Thomas-Hartig & Associates, Inc., Division
- ☐ Schaefer Dixon Associates, Inc., Division
- ☐ Herzog Associates, Inc., Division

Frank Wear Cleaners
Project or Site Name

Project Number

Rob Farrell
Sampler Name (Printed)

Rachel Tauwen
Contact or Report to

PO Box 2887 Yakima, WA 98907
Contact Address or Location

Rob Farrell
Sampler Signature

DATE COLLECTED	TIME COLLECTED	SAMPLE LOCATION OR DESCRIPTION	COMP OR GRAB	SAMPLE MATRIX	NO. OF CONTAINERS	ANALYSIS REQUIRED 8010 8020	NOTES	LAB NUMBER
12-26-95	1150	MW-3	Grab	H_2O	2	X X	PCE	
	1250	MW-4						
	1405	MW-2						
	1500	MW-1						

Relinquished by: Rob Farrell	Date 12-26-95	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date	Time	Received by:

Remarks:

8010/8020