AGENCY DRAFT
REMEDIATION ACTIVITY SUMMARY REPORT

Former Wolfkill Yard Property

205 West Fir Street

Mount Vernon, Washington

Ecology Facility ID: #4755451

Submitted to:

Washington State Department of Ecology
Bellevue, Washington

Prepared for:

Skagit Farmers Supply

Prepared by:

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May 7, 2013

Project No. 1915171670

EXECUTIVE SUMMARY

On behalf of Skagit Farmers Supply, AMEC Environment & Infrastructure, Inc. (AMEC), has prepared this Remediation Activity Summary Report for use by Washington State Department of Ecology (Ecology). Skagit Farmers Supply has occupied the property at 205 West Fir Street, Mount Vernon, Washington (Site) for 15 years. The Site was previously owned by Wolfkill Feed & Fertilizer for more than 33 years. The Site is zoned M2. Land uses in areas zoned M2 are primarily industrial, with commercial uses.

The purpose of this Remediation Activity Summary Report is to document multiple site assessment phases conducted at the Site for the purpose of receiving a No Further Action opinion from Ecology. Assessment activities have been conducted to adequately characterize the nature and extent of constituents of concern (COCs) and to monitor the attenuation of the COCs.

Environmental impairment of the Site was first discovered during a subsurface petroleum hydrocarbon investigation following the removal of four underground storage tanks (USTs) in 1990. Subsequently, additional assessment activities were conducted on the Site in January 1999 and May 2002. Skagit Farmers Supply conducted two additional groundwater investigations in February 2011 and February 2013.

Skagit Farmers Supply entered Ecology's Voluntary Cleanup Program (VCP) in 2011 and the application was finalized in 2012.

Comparison of detected concentrations of COCs to cleanup levels has identified five COCs that were previously present. These five COCs and the media affected by these COCs are listed below.

SITE COCs

COC	Soil	Groundwater
Total petroleum hydrocarbons	X	X
Benzene	X	X
Toluene		X
Ethylbenzene	X	X
Total xylenes	X	X

The contaminated soil was excavated and removed in 1989 and recent groundwater sampling activities from wells in 2011 and 2013 confirm that the COCs are no longer present at the Site.

During site assessment activities, soil samples were collected from 31 locations in 1989 and groundwater samples were collected from three monitoring wells on multiple occasions. This data

collection effort has adequately characterized the nature and extent of COCs in soil and groundwater at the Site.

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AGENCY DRAFT
REMEDIATION ACTIVITY SUMMARY REPORT
Former Wolfkill Yard Property
Mount Vernon, Washington

1.0 INTRODUCTION

AMEC Environment & Infrastructure, Inc. (AMEC), has prepared this Remediation Activity Summary Report on behalf of Skagit Farmers Supply for the property located at 205 West Fir Street, Mount Vernon, Washington (Site) (Figure 1). The Washington State Department of Ecology (Ecology) has assigned the Site a Facility/Site Database identification number of 4755451.

This report summarizes the results of multiple phases of investigation conducted at the Site. Media sampled during sampling activities have included soil and groundwater. In total, soil samples have been collected from 31 locations in 1989. Groundwater samples have been collected from three monitoring wells on multiple occasions.

1.1 OBJECTIVE STATEMENT

In accordance with Washington Administrative Code (WAC) 173-340-350, this report presents data from the Site for the purpose of receiving a No Further Action opinion from Ecology.

On January 18, 2013, Ecology provided an opinion letter requesting one additional sampling event (which was conducted in February 2013) and a summary report. This report provides the analytical data from the February 2013 sampling event and summarizes past activities at the Site.

1.2 LOCATION AND DESCRIPTION

The Site is located ¼ mile east of the Skagit River in the northwest portion of the business district of the city of Mount Vernon in Skagit County, Washington (Figure 1). The Site and adjacent properties are zoned industrial (M2) or general commercial (C2). The Site is bounded by the Mount Vernon Street Depot immediately to the west, West Fir Street to the south, Burlington Northern Santa Fe railroad lines to the east, and property owned by the City of Mount Vernon to the north. The Site covers approximately 1.28 acres of land. The Site comprises four contiguous parcels, P26114, P26132, P26134, and P26161.

1.3 PROPERTY HISTORY AND CURRENT USE

Wolfkill Feed & Fertilizer occupied the Site for over 33 years and used the Site to sell feed and fertilizer. In 1989, four diesel and gasoline underground storage tanks (USTs) located on the Site

were removed. Soil was removed from the excavation until concentrations of constituents of concern (COCs) were below Ecology's clean-up guidelines. The location of samples taken at the final limits of excavation are shown on Figure 2. Three groundwater monitoring wells were installed around the perimeter of the excavation in 1990. The title of the property was transferred from Wolfkill Feed and Fertilizer to Skagit Farmers Supply in 1998. The Site is currently a vacant lot covered in asphalt.

2.0 PHYSICAL CHARACTERISTICS OF THE SITE

2.1 SURFACE TOPOGRAPHY AND SURFACE WATER HYDROLOGY

The property lies at an elevation of 15 feet above mean seal level and is generally flat. Due to the presence of asphalt pavement on the Site, surface water is anticipated to sheet flow. The nearest body of water, the Skagit River, is located approximately ¼ mile west of the Site. Surface water is discharged through Mount Vernon's stormwater system. The water may drain to a stormwater feature located on the northeast side of the property, then flow to a storm drain that discharges southwest toward an outfall located near the Skagit River.

2.2 ECOLOGICAL CONDITIONS

The Site is located in the Lower Skagit Watershed. The Skagit River is the main drainage feature within the Skagit watershed, and is located ¼ mile west of the Site. A dense mix of industrial and commercial development separates the Skagit River from the Site.

A review of an aerial photograph provided by Google Earth Pro indicates that natural areas in the Site vicinity consist of small patches of vegetation scattered throughout the surrounding properties. Vegetation on the Site is minimal due to extensive asphalt-paved ground surfaces. Consequently, wildlife habitat within the Site appears marginal. The nearest greenbelt is more than ¼ mile west of the Site, west of the Interstate 5 corridor, along the river.

AMEC completed a Simplified Terrestrial Ecological Evaluation in accordance with WAC 173-340-7492(2)(a)(ii) to assess the Site's potential to pose a significant threat to terrestrial ecological receptors. The completed evaluation indicates that ecological screening criteria do not apply to the Site due to the estimated size of the Site (approximately 1.28 acres), types of contaminants (generally insoluble and immobile), and poor/absent habitat for wildlife. A copy of the completed evaluation is presented in Appendix A.

2.3 GEOLOGY

According to the U.S. Geological Survey Mount Vernon 7 ½' quadrangle, the surficial deposits in the vicinity of the property are underlain by Quaternary age alluvium deposits (Qal). The alluvium deposits are typically "fluvial sand, silt, and gravel with minor lacustrine deposits exposed along the modern Skagit River. The deposits are well-sorted and stratified, generally with subrounded and rounded clasts derived largely from metamorphic and plutonic rocks found in the upper part of its drainage basin" (Deither and Whetten 1981). The subsurface at the Site generally consists of silty sand overlying silty sands with gravel, and overlying clayey silts, based on boring logs from the monitoring well installation (Appendix B).

2.4 HYDROGEOLOGIC CONDITIONS

In order to characterize the Site's hydrogeologic conditions, water level measurements were collected from three monitoring wells installed on the perimeter of the excavation. Groundwater elevations measured in Site monitoring wells are summarized on Figure 3.

In addition, groundwater has been encountered at the Site at depths as shallow as 3.74 feet below ground surface (bgs), and as deep as 7.5 feet bgs. Seasonal variation in depth to groundwater observed in individual monitoring wells has ranged from 3.74 to 5.9 feet in MW-1, 4.71 to 7.5 feet in MW-2 and 4.87 to 5.95 feet in MW-3. Seasonal high groundwater levels generally were measured in January and low groundwater occurred in May.

The groundwater potentiometric surface generally has been highest in monitoring well MW-3, in the northwest portion of the Site. The groundwater potentiometric surface slopes to the northeast in January/February and the potentiometric surface slopes to the southwest in May. Based on previous investigations, the groundwater flow direction may reverse during the seasons due to the proximity of the Skagit River. The average hydraulic gradient is 0.004 vertical feet per horizontal foot (ft/ft).

3.0 PREVIOUS INVESTIGATIONS

One previous soil sampling event and five groundwater monitoring events have been conducted at the Site. Sections 3.1 through 3.5 list the deliverables in which these sampling events were documented, and summarize the work scope for each deliverable.

3.1 SUBSURFACE PETROLEUM HYDROCARBON INVESTIGATION, 1990)

This subsurface petroleum hydrocarbon report (RZA, 1990) provided the results of 1) soil sampling and analysis for soil in the area of the excavation conducted in 1989, and 2) installation of three groundwater monitoring wells (MW-1, MW-2, and MW-3), collection of water level measurements and samples, and analysis that were conducted in February 1990.

3.2 GROUNDWATER STATUS REPORT, JANUARY 1999

This report provided the results of groundwater level measurements, sampling, and analysis conducted in January 1999 for monitoring wells MW-1, MW-2, and MW-3 (AGRA, 1999).

3.3 GROUNDWATER STATUS REPORT, MAY 2002

This report provided the results of groundwater level measurements, sampling, and analysis conducted in May 2002 for monitoring wells MW-1, MW-2, and MW-3 (AMEC, 2002).

3.4 GROUNDWATER STATUS REPORT, FEBRUARY 2011

This report provided the results of groundwater level measurements, sampling, and analysis conducted in February 2011 for monitoring wells MW-1 and MW-2. Well MW-3 could not be located (AMEC, 2011).

3.5 GROUNDWATER STATUS REPORT, FEBRUARY 2013

This report provided the results of groundwater level measurements, sampling, and analysis conducted in February 2013 for monitoring wells MW-1 and MW-2 (AMEC, 2013).

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4.0 REGULATORY FRAMEWORK

Skagit Farmers Supply entered Ecology's Voluntary Cleanup Program (VCP) in 2011 and the application was finalized in 2012. Ecology assigned Mr. John Bails as Project Manager for the project.

This Remediation Activity Summary Report, in combination with the previously prepared and submitted reports listed above, is intended to document the Site characterization. Discussion of the nature and extent of COCs within the Site included herein includes all sampling events. Data tables containing sample testing results are included in Tables 1 through 3.

4.1 DEVELOPMENT OF CLEANUP LEVELS

This section describes the process used in selecting cleanup levels. The purpose of cleanup levels is to allow for comparison of concentrations detected in soil and groundwater samples against a cleanup standard. Where a detected concentration for a particular analyte exceeds a cleanup level, that analyte is identified as a COC. The screening process allows analytes to be eliminated from consideration if not detected at a concentration exceeding the cleanup level.

4.1.1 Cleanup Level for Soil

In the Model Toxics Control Act (MTCA) (WAC Chapter 173-340), Ecology has developed Method A and Method B Soil Cleanup Levels (CULs) for unrestricted land use. As described in Section 2, the Site and all properties located adjacent to the Site are zoned M2 or C2. According to the City of Mount Vernon's Zoning Chart, typical land uses in areas zoned either M2 or C2 include industrial and commercial uses, subject to some limits (City of Mount Vernon, 2011a). Despite being industrial in nature, unrestricted land use CULs were selected as for the purpose of identifying soil COCs due to the commercial nature of the Site. MTCA Method A levels were selected, since the chemicals detected in soil are associated with a UST and the MTCA Method A values are protective of groundwater.

For each analyte, MTCA Method A Soil CULs for unrestricted land use were selected as the soil cleanup levels.

4.1.2 Cleanup Levels for Groundwater

AMEC conducted an online search for water wells located within a 1-mile radius of the Site. One water supply well was found on Ecology's online Well Log Database. However, the well is located approximately 5,000 feet due east and groundwater water flows to the northeast in the winter and southwest in the summer. Although groundwater within, and in the vicinity of, the Site is not used for potable purposes, the MTCA Method A CULs for groundwater were selected as preliminary

groundwater screening levels, because they are protective of the highest beneficial use for groundwater.

5.0 CHEMICALS ON THE SITE AND THEIR DISTRIBUTION

This section summarizes the detections of analytes that surpass screening levels. The following analytes were previously detected at concentrations surpassing cleanup levels at the Site and have been identified as soil COCs:

- Total petroleum hydrocarbons (TPH) (assumed to be gasoline range, as gasoline was detected when TPH speciation was undertaken)
- Benzene
- Ethylbenzene
- Total xylenes

The following analytes were previously detected at concentrations surpassing cleanup levels at the Site and have been identified as groundwater COCs:

- Total petroleum hydrocarbons
- Gasoline-range hydrocarbons
- Benzene
- Toluene
- Ethylbenzene
- Total xylenes

Sections 5.1 through 5.8 discuss the extent and concentrations of each analyte in soil and/or groundwater.

5.1 GASOLINE-RANGE HYDROCARBONS

Gasoline-range hydrocarbons were identified as a COC in groundwater (Table 1, Appendix C). The gasoline range hydrocarbon screening level is 800 micrograms per liter (µg/L), if benzene is present. The range of gasoline-range hydrocarbon concentrations in groundwater detected in Site monitoring wells are:

- MW-1 (1,290 µg/L to non-detect)
- MW-2 (564 µg/L to non-detect)
- MW-3 (non-detect)

February 1990 was the only monitoring event where the cleanup level was surpassed (in monitoring well MW-1). Since 1999, gasoline-range hydrocarbon concentrations have been below the cleanup levels and were non detect during the February 2011 and February 2013 monitoring events.

5.1 TOTAL HYDROCARBONS

Total petroleum hydrocarbons (TPH has been identified as a COC in both soil and groundwater (Tables 1 through 3, Appendix C). Figure 2 shows the TPH concentrations of samples taken at the final limits of the excavation. All soil was removed below cleanup screening levels. TPH surpassing the groundwater screening level of 1,000 µg/L was detected in monitoring wells MW-1 and MW-2 in 1990 (Table 1). TPH was non detect in MW-3 in 1990. For subsequent groundwater sampling events, TPH was speciated and results are reported in Section 5.2.

5.2 GASOLINE-RANGE HYDROCARBONS

Gasoline-range hydrocarbons were identified as a COC in groundwater (Table 1, Appendix C). The gasoline range hydrocarbon screening level is 800 micrograms per liter (µg/L), if benzene is present. The range of gasoline-range hydrocarbon concentrations in groundwater detected in Site monitoring wells are:

- MW-1 (1,290 µg/L to non-detect)
- MW-2 (564 µg/L to non-detect)
- MW-3 (non-detect)

February 1990 was the only monitoring event where the cleanup level was surpassed (in monitoring well MW-1). Since 1999, gasoline-range hydrocarbon concentrations have been below the cleanup levels and were non-detect during the February 2011 and February 2013 monitoring events.

5.3 TOTAL LEAD

Total lead was tested in groundwater from monitoring well MW-1 in January 1999 and in monitoring well MW-2 in January 1999 and May 2002 (Table 1, Appendix C). The total lead screening level is 15 µg/L and all samples have been non-detect except for a detection of 5.29 µg/L in MW-2 in January 1999.

5.4 BENZENE

Benzene has been identified as a COC in both soil and groundwater (Tables 1 through 3, Appendix C). All soil was removed below regulatory screening levels, except minor residual soil contamination remains at Boring B-2/MW-2, with concentration of 3.23 mg/kg.

The range of benzene concentrations in groundwater detected in the Site monitoring wells are:

- MW-1 (74 µg/L to non-detect)
- MW-2 (49 µg/L to non-detect)
- MW-3 (7 µg/L to non-detect)

No benzene was detected in the sampled monitoring wells in February 2011 or February 2013.

5.5 TOLUENE

Toluene has been identified as a COC in both soil and groundwater (Tables 1 through 3, Appendix C). Concentrations of toluene were below the soil screening level of 7 mg/kg. The only detection of toulene that exceeded the groundwater screening level of 40 µg/L was 150 µg/L in MW-2.

The range of toluene concentrations in groundwater detected in the Site monitoring wells are:

- MW-1 (11 µg/L to non-detect)
- MW-2 (150 µg/L to non-detect)
- MW-3 (3 µg/L to non-detect)

No toulene was detected in the sampled monitoring wells in February 2011 or February 2013.

5.6 ETHYLBENZENE

Ethylbenzene was identified as a COC in both soil and groundwater (Tables 1 through 3, Appendix C.). All soil was removed below regulatory screening levels, except minor residual soil contamination remains at Boring B-2/MW-2, with concentration of 16.6 mg/kg.

One sample from MW-2 had a detection of 177 µg/L in 1990, surpassing the groundwater screening level of 20 µg/L.

The range of ethylbenzene concentrations in groundwater detected in the Site monitoring wells are:

- MW-1 (18 µg/L to non-detect)
- MW-2 (177 µg/L to non-detect)
- MW-3 (non-detect)

No ethylbenzene was detected in the sampled monitoring wells in February 2011 or February 2013.

5.7 TOTAL XYLENES

Total xylenes have been identified as COCs in both soil and groundwater (Tables 1 through 3, Appendix C). All soil was removed below regulatory screening levels, except minor residual soil contamination remains at Boring B-2/MW-2, with concentration of 42.9 mg/kg.

Detections of total xylenes surpassing the groundwater screening level of 20 µg/L occurred in 1990 and 1999 at MW-1 (72 and 38.9 µg/L, respectively) and in 1990 at MW-2 and MW-3 (648 and 38 µg/L, respectively).

The ranges in ethylbenzene concentration detected in the Site monitoring wells are provided below.

- MW-1 (72 µg/L to non-detect)
- MW-2 (648 µg/L to non-detect)
- MW-3 (38 µg/L to non-detect)

No total xylenes were detected in the sampled monitoring wells in February 2011 or February 2013.

6.0 CONCLUSIONS

Multiple site assessment phases have been completed at the Site between December 1989 and February 2013. During site assessment activities:

- Soil samples were collected from 31 soil locations, and
- Groundwater samples were collected from the three monitoring wells during three different groundwater monitoring events and groundwater was collected from two monitoring wells during two additional groundwater monitoring events.

Per the Ecology letter dated January 18, 2013, Skagit Farmers Supply sampled MW-1 and MW-2 on February 14, 2013. Based on the non-detect analytical results from the monitoring event, a No Further Action opinion is requested from Ecology.

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7.0 REFERENCES

AGRA, 1999. Groundwater Status Report, January 21999. Wolfkill Feed and Fertilizer

AMEC, 2002. Groundwater Status Report, May 2002. Wolfkill Feed and Fertilizer.

AMEC, 2011. Groundwater Status Report, February 2011. Wolfkill Feed and Fertilizer.

AMEC, 2012. Groundwater Status Report, February 2013. Wolfkill Feed and Fertilizer.

City of Mount Vernon, 2011a, Zoning Map. City of Mount Vernon Community and Economic Development Department. May 31.

Dethier, D. and Whetten, J. 1981. Preliminary Geologic Map of the Mount Vernon 7 ½' Quadrangle, Skagit County, Washington. http://ngmdb.usgs.gov/Prodesc/proddesc_11871.htm Accessed April 2013.

RZA, 1990. Subsurface Petroleum Hydrocarbon Investigation, March 1990. Wolfkill Feed and Fertilizer.

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TABLE 1

GROUNDWATER ANALYTICAL RESULTS[1]

Former Wolfkill Yard Property
Mt. Vernon, Washington

Station ID / Sample ID / Constituent / Sample Date	MTCA Method A Cleanup Level	MW1 MW1 2/19/1990	MW1 MW1 1/26/1999	MW1 MW1 5/2/2002	MW1 MW1 2/14/2011	MW1 MW1 2/14/2013	DUP (MW-1) 2/14/2013	MW2 MW2 2/19/1990	MW2 MW2 1/26/1999	MW2 MW2 5/2/2002	DUP (MW-2) 5/2/2002	MW2 MW2 2/14/2011	MW2 DUP 2/14/2011	MW2 MW2 2/14/2013	MW3 MW3 2/19/1990	MW3 MW3 1/26/1999	MW3 MW3 5/2/2002	MW3 MW3 2/14/2011	MW3 MW3 2/14/2013
Volatile Organic Compounds (µg/L)																			
Benzene	5.0	**74**	**25.8**	**9.3**	U	U	U	**49**	U	U	U	U	U	U	**7**	U	U	NT	NT
Toluene	40.0	11	5.39	2.7	U	U	U	**150**	3.52	U	U	U	U	U	3	U	U	NT	NT
Ethylbenzene	20.0	U	18.0	6.3	U	U	U	**177**	4.02	U	U	U	U	U	U	U	U	NT	NT
Total Xylenes	20.0	**72**	**38.9**	5.7	U	U	U	**648**	7.40	U	U	U	U	U	**38**	U	U	NT	NT
Lead	15.0	NT	U	NT	NT	NT	NT	NT	5.29	U	U	NT	NT	NT	NT	NT	NT	NT	NT
Total Petroleum Hydrocarbons (µg/L)																			
TPH	1000*	**5,100**	NT	NT	NT	NT	NT	**23,000**	NT	NT	NT	NT	NT	NT	U	NT	NT	NT	NT
Gasoline Range TPH	800	NT	**1,290**	450	U	U	U	NT	564	U	U	U	U	U	NT	U	U	NT	NT
Diesel Range TPH	500	NT	U	U	NT	NT	NT	NT	290	U	U	NT	NT	NT	NT	250	U	NT	NT

Notes
1. Results in **BOLD** exceed MTCA Method A cleanup levels for groundwater.

Abbreviations
* = 1989 cleanup level for TPH
µg/L = micrograms per liter
NT = The analyte was not tested
U = The analyte was not detected at the reporting limit indicated

TABLE 2

EXCAVATION SOIL ANALYTICAL RESULTS[1]

Former Wolfkill Yard Property
Mt. Vernon, Washington

Station ID Sample # & Depth Constituent Sample Date	MTCA Method A Cleanup Level	S-1-4' 12/18/1989	S-2-5' 12/18/1989	S-3-5' 12/18/1989	S-4-4' 12/18/1989	S-5-4' 12/18/1989	S-6-4' 12/18/1989	S-7-5' 12/18/1989	S-1-5' 12/20/1989	S-2-5' 12/20/1989	S-3-5' 12/20/1989	S-4-5' 12/20/1989	S-5-5' 12/20/1989	S-6-4' 12/20/1989
Volatile Organic Compounds (mg/kg)														
Benzene	0.03	**0.07**	U	**0.07**	**0.08**	U	U	**0.11**	**0.11**	U	NT	U	NT	NT
Toluene	7	0.11	0.07	0.08	0.12	0.07	0.80	0.49	U	U	NT	U	NT	NT
Ethylbenzene	6	0.08	U	0.09	U	U	**6.62**	0.22	0.13	U	NT	U	NT	NT
Xylenes	9	0.33	0.07	0.14	0.28	0.13	**37.70**	1.54	0.87	U	NT	U	NT	NT
Total Petroleum Hydrocarbons (mg/kg)														
TPH	800*	U	6.3	12.7	10.8	14.4	**1,999**	27.2	14.0	7.9	10.2	10.7	U	13.2

TABLE 2

EXCAVATION SOIL ANALYTICAL RESULTS[1]

Former Wolfkill Yard Property
Mt. Vernon, Washington

Station ID / Sample # & Depth / Constituent / Sample Date	MTCA Method A Cleanup Level	S-7-5' 12/20/1989	S-8-5' 12/20/1989	S-9-5' 12/20/1989	S-10-5' 12/20/1989	S-11-5' 12/20/1989	S-12-5' 12/20/1989	S-13-5' 12/20/1989	S-14-5' 12/20/1989	S-1-6' 1/3/1990	S-2-6' 1/3/1990	S-3-6' 1/3/1990	S-15-5' 3/5/1990	S-16-4.5' 3/5/1990	S-17-5' 3/5/1990
Volatile Organic Compounds (mg/kg)															
Benzene	0.03	NT	NT	NT	NT	U	0.5	NT	U	NT	NT	NT	U	NT	NT
Toluene	7	NT	NT	NT	NT	U	U	NT	U	NT	NT	NT	U	NT	NT
Ethylbenzene	6	NT	NT	NT	NT	U	U	NT	U	NT	NT	NT	U	NT	NT
Xylenes	9	NT	NT	NT	NT	U	U	NT	0.11	NT	NT	NT	U	NT	NT
Total Petroleum Hydrocarbons (mg/kg)															
TPH	800*	5.8	U	U	**897**	5.6	14.3	10.5	U	321	15.5	**1,995**	6.0	5.2	35.1

Notes
1. Results in **BOLD** exceed MTCA Method A cleanup levels for soil.

Abbreviations
* = assumed to be gasoline
mg/kg = milligrams per kilogram
NT = The analyte was not tested
U = The analyte was not detected at the reporting limit indicated

TABLE 3

SOIL BORINGS ANALYTICAL RESULTS[1]

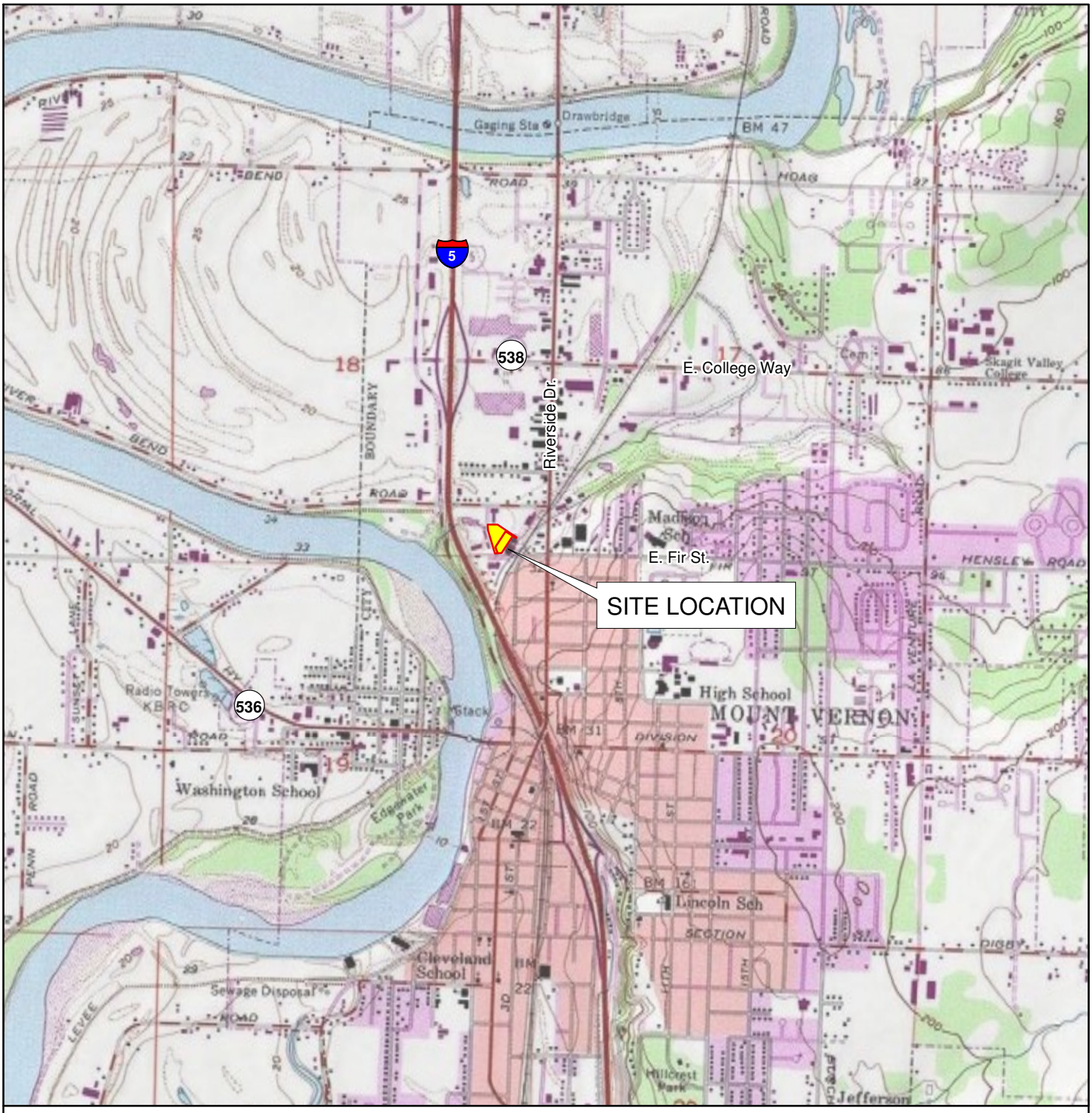
Former Wolfkill Yard Property
Mt. Vernon, Washington

Constituent / Station ID / Sample # & Depth / Sample Date	MTCA Method A Cleanup	B-1 S-1, 2.5' 2/20/1990	B-1 S-2, 7.5' 2/20/1990	B-2 S-2, 7.5' 2/20/1990	B-3 S-2, 7.5' 2/20/1990
Volatile Organic Compounds (mg/kg)					
Benzene	0.03	U	U	**3.25**	U
Toluene	7	U	U	3.17	U
Ethylbenzene	6	U	U	**16.6**	U
Total Xylenes	9	U	U	**42.9**	U
Total Petroleum Hydrocarbons (mg/kg)					
TPH	800*	18.4	12.0	305	15.6

Notes
1. Results in **BOLD** exceed MTCA Method A cleanup levels for soil.

Abbreviations
* = assumed to be gasoline
mg/kg = milligrams per kilogram
U = The analyte was not detected at the reporting limit indicated

FIGURES



Note: Base map from U.S.G.S. 24k

0 1,000 2,000 4,000 Feet

N

AMEC Environment & Infrastructure, Inc 600 University St., Suite 600 Seattle, Washington 98101	amec		CLIENT: Skagit Farmers Supply
TITLE: SITE LOCATION		DWN BY: APS	DATUM: NAD83	DATE: MAY 2013
PROJECT: FORMER WOLFKILL YARD 205 WEST FIR STREET MOUNT VERNON, WASHINGTON 98273		CHK'D BY: JB	REV. NO.: 1	PROJECT NO.: 1915171670
		PROJECTION: WA SP N Ft.	SCALE: 1 inch = 2,000 feet	FIGURE No.: 1

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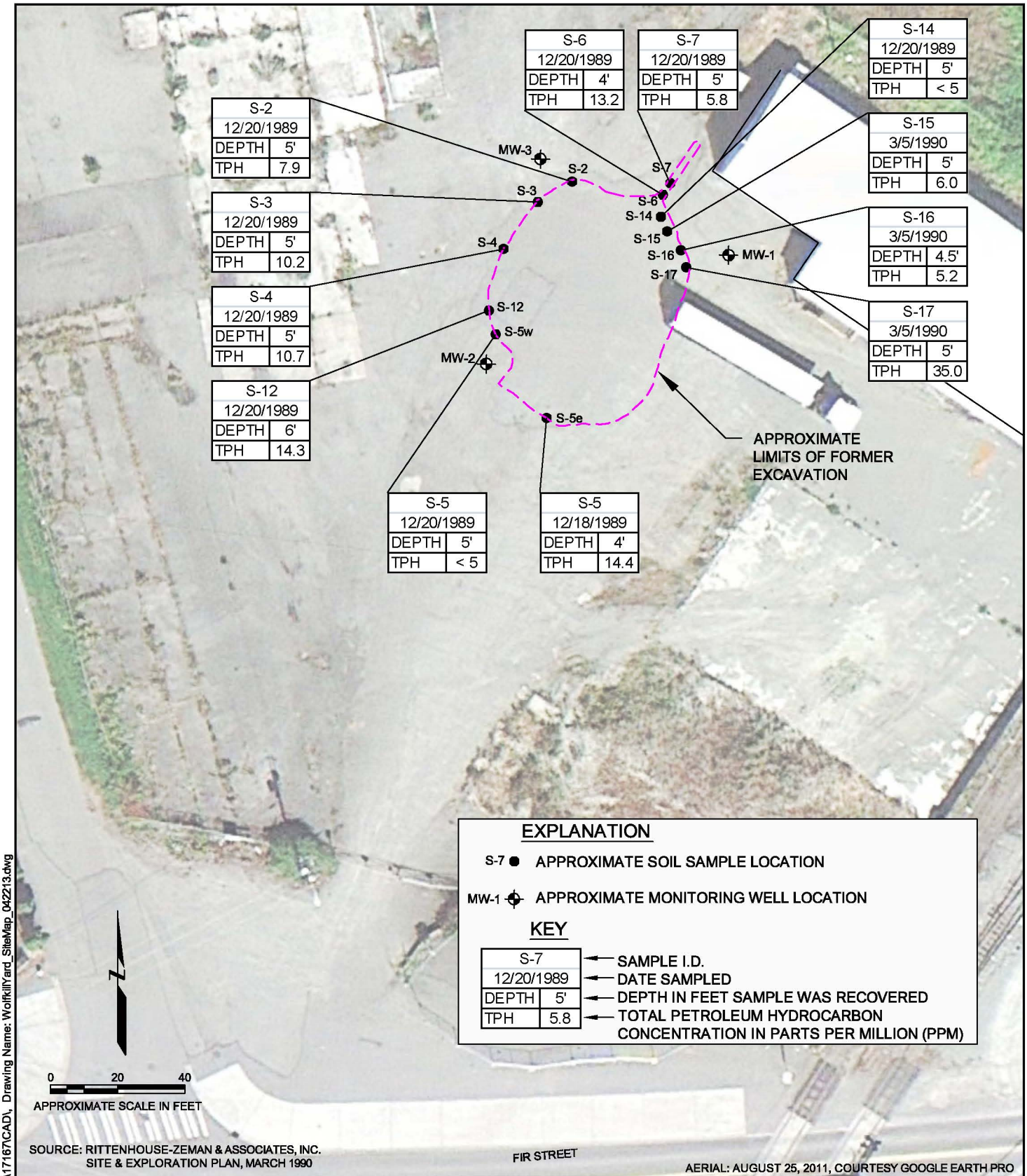

AMEC
Environment & Infrastructure, Inc.
600 University Street, Suite 600
Seattle, WA, U.S.A. 98101

CLIENT: Skagit Farmers Supply

TITLE: DETECTIONS OF TPH IN SITE SOIL

PROJECT: FORMER WOLFKILL YARD
205 WEST FIR STREET
MOUNT VERNON, WASHINGTON 98273

DWN BY:	DATUM:	DATE:
APS	NAD83 FT	05/07/13
CHK'D BY:	REV. NO.:	PROJECT NO:
LV	1	1915171670
PROJECTION:	SCALE:	FIGURE No.
WASP North	AS SHOWN	2

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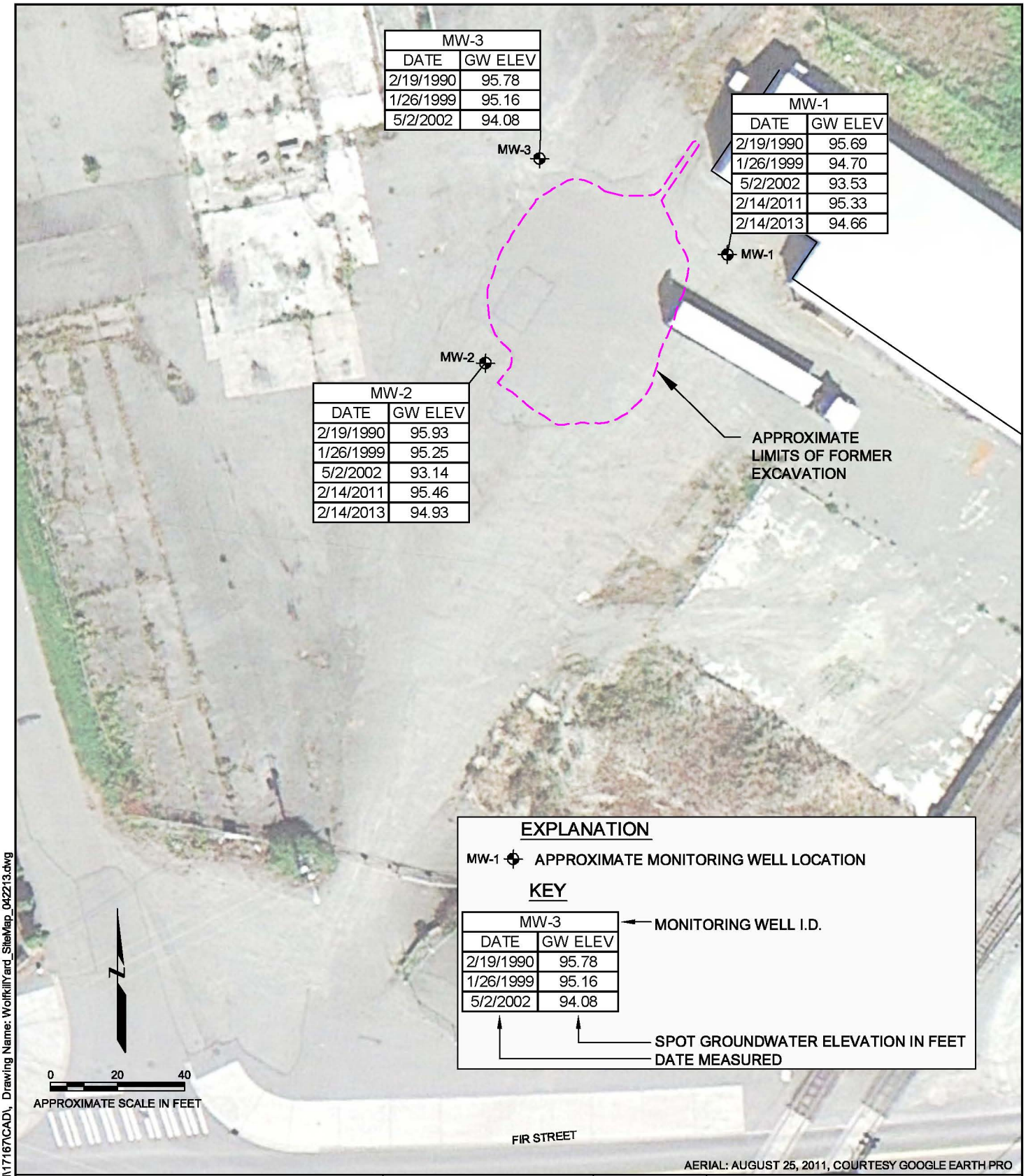

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AMEC
Environment & Infrastructure, Inc.
600 University Street, Suite 600
Seattle, WA, U.S.A. 98101

CLIENT: Skagit Farmers Supply

TITLE: GROUNDWATER SURFACE ELEVATIONS

PROJECT: FORMER WOLFKILL YARD
205 WEST FIR STREET
MOUNT VERNON, WASHINGTON 98273

DWN BY:	DATUM:	DATE:
APS	NAD83 FT	05/07/13
CHK'D BY:	REV. NO.:	PROJECT NO:
LV	1	1915171670
PROJECTION:	SCALE:	FIGURE No.
WASP North	AS SHOWN	3

APPENDIX A

Simplified Terrestrial Ecological Evaluation

Facility - 4755451 VCP Number - NW2353

Table 749-1
Simplified Terrestrial Ecological Evaluation – Exposure Analysis Procedure under WAC 173-340-7492(2)(a)(ii).[a]

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre). "Undeveloped land" means land that is not covered by existing buildings, roads, paved areas or other barriers that will prevent wildlife from feeding on plants, earthworms, insects or other food in or on the soil.	
1) From the table below, find the number of points corresponding to the area and enter this number in the box to the right.	
Area (acres) / Points 0.25 or less 4 0.5 5 1.0 6 1.5 7 2.0 8 2.5 9 3.0 10 3.5 11 4.0 or more 12	7
2) Is this an industrial or commercial property? See WAC 173-340-7490(3)(c). If yes, enter a score of 3 in the box to the right. If no, enter a score of 1.	3
3) Enter a score in the box to the right for the habitat quality of the site, using the rating system shown below[b]. (High = 1, Intermediate = 2, Low = 3)	3
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. See footnote c.	2
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	1
6) Add the numbers in the boxes on lines 2 through 5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified terrestrial ecological evaluation may be ended under WAC 173-340-7492 (2)(a)(ii).	9

Footnotes:

a It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score (1) for questions 3 and 4.

b **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:
Low: Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.
High: Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of Fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.
Intermediate: Area does not rate as either high or low.

c Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use by mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

9 > 7 therefore the simplified terrestrial ecological evaluation is ended. Mottag.

APPENDIX B

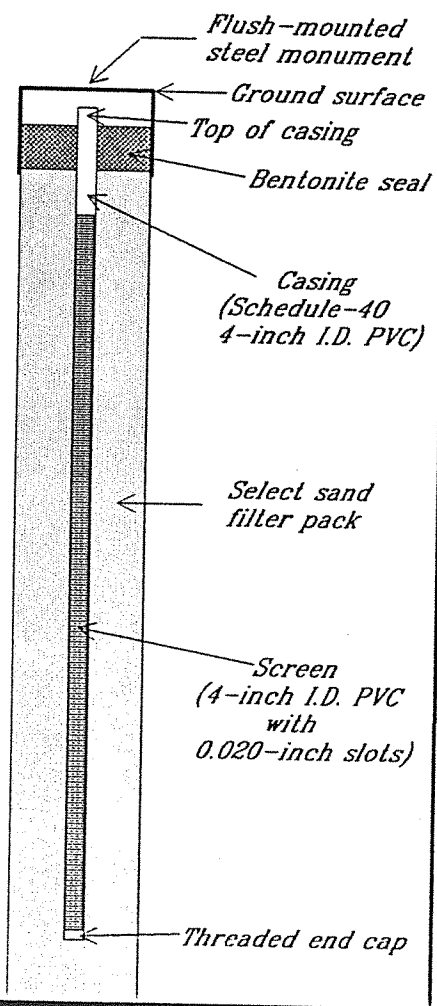
Soil Boring Logs

PROJECT *Wolfkill Yard* W.O. *W-6588* WELL NO. *MW-1*

Elevation reference: *100.00 feet*
Ground surface elevation: *99.69 feet* Casing elevation: *99.43 feet*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Asphalt*					
	Loose, moist, brown, silty fine SAND.		S-1	4	0	▽ 2/19/90
5	*becomes saturated*					
	gray with rust mottling		S-2	7	0	
10	*Loose to medium dense, saturated, gray, silty SAND.*					
	Medium dense, saturated, gray, silty SAND with gravel.		S-3	15	0	
15	*Very stiff, wet, tannish-gray, clayey SILT with some fine sand*					
			S-4	25	0	
20	*Boring terminated at 19 feet.*					
25						
30						

AS-BUILT DESIGN



TESTING

Well completed: *13 February 1990*

LEGEND

I 2-inch O.D. split-spoon sample

▽ 2/19/90 Observed groundwater level (2/19/90)

RZA
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

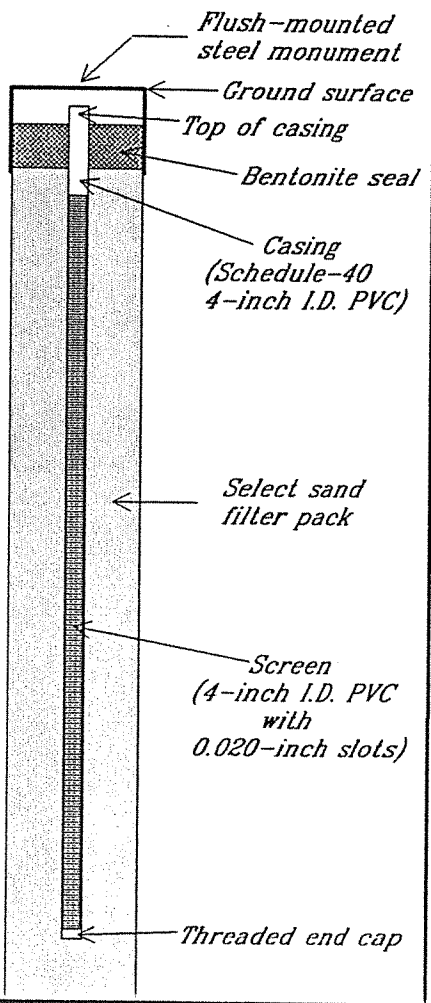
Drilling started: *13 February 1990* Drilling completed: *13 February 1990* Logged by: *JJP*

PROJECT *Wolfkill Yard* W.O. *W-6588* WELL NO. *MW-2*

Elevation reference: *100.00 feet*
Ground surface elevation: *101.13 feet* Casing elevation: *100.64 feet*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Asphalt*					
	Moist, dark brown, silty fine SAND with gravel and some coarse sand					
	Loose, moist, brown, silty fine SAND		S-1	5	0	
5	*becomes saturated*					▽ 2/19/90
	becomes gray; petroleum hydrocarbon odor		S-2	4	23	
10	*Dense, saturated, gray, coarse sandy GRAVEL, trace to some silt; no petroleum hydrocarbon odor*		S-3	36	0	
15	*Stiff, wet, tannish-gray, clayey SILT with some sand and trace gravel.*		S-4	13	0	
20	*Boring terminated at 19 feet.*					
25						
30						

AS-BUILT DESIGN



Well completed: *13 February 1990*

TESTING

LEGEND

I 2-inch O.D. split-spoon sample

▽ Observed groundwater level (2/19/90)

RZA
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

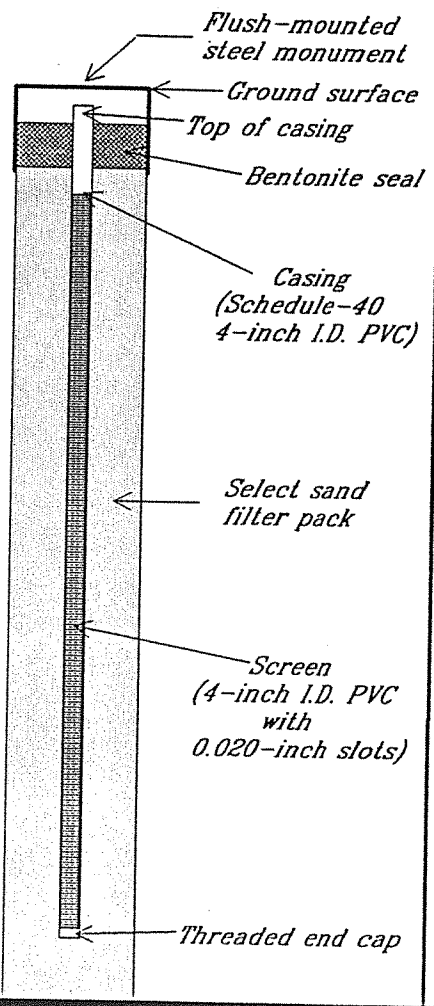
Drilling started: *13 February 1990* Drilling completed: *13 February 1990* Logged by: *MP*

PROJECT *Wolfkill Yard* W.O. *W-6588* WELL NO. *MW-3*

Elevation reference: *100.00 feet*
Ground surface elevation: *100.28 feet* Casing elevation: *100.03 feet*

DEPTH (feet)	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NUMBER	BLOW COUNTS	OVM READING	GROUND WATER
0	*Asphalt*					
	Very loose to loose, moist, brown, silty fine SAND; slight petroleum hydrocarbon odor.					
	some medium sand		S-1	4	0	
5	*becomes gray and saturated*					▽ 2/19/90
			S-2	7	0	
	Loose, saturated, grayish-tan, silty, fine SAND with fine sandy silt laminae; slight petroleum hydrocarbon odor.					
10	*Medium dense, saturated, tannish-gray, medium to coarse SAND with gravel, some silt, and some fine sand.*		S-3	17	0	
15	*Very stiff, saturated, tan, fine sandy SILT with some coarse sand and gravel and silty sand laminae.*					
	Very stiff, wet, tannish-gray with rust mottling, fine sandy SILT with some clay and trace coarse sand		S-4	23	0	
20	*Boring terminated at 19 feet.*					
25						
30						

AS-BUILT DESIGN



TESTING

Well completed: *14 February 1990*

LEGEND

I 2-inch O.D. split-spoon sample

▽ 2/19/90 Observed groundwater level (2/19/90)

RZA

RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
Geotechnical & Environmental Consultants
1400 140th Ave NE
Bellevue, Washington 98005

Drilling started: *14 February 1990* Drilling completed: *14 February 1990* Logged by: *EJP*

APPENDIX C

Laboratory Reports

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse-Zeman Date: December 20, 1989

Report On: Analysis of Soil Lab No.: 8991

IDENTIFICATION:
Samples Received on 12-19-89
Project No. W-6588 CN Liquidating

ANALYSIS:

Lab Sample No.	RUSH 1	RUSH 2	RUSH 3	RUSH 4
Client ID.	S-1-4'	S-2-5'	S-3-5'	S-4-4'
Matrix/Units	Soil mg/kg	Soil mg/kg	Soil mg/kg	Soil mg/kg
Benzene	0.07	< 0.05	0.07	0.08
Toluene	0.11	0.07	0.08	0.12
Ethyl Benzene	0.08	< 0.05	0.09	< 0.05
Xylenes	0.33	0.07	0.14	0.28
BTEX by EPA SW-846 Method 8020				
Total Petroleum Hydrocarbons by EPA Method 418.1	< 5.0	6.3	12.7	10.8

Continued . . .

SOUND ANALYTICAL SERVICES, INC.

Rittenhouse-Zeman
Project No. W-6588 CN Liquidating

Lab No. 8991
December 20, 1989

Lab Sample No.	RUSH 5	RUSH 6	RUSH 7
Client ID.	S-5-4'	S-6-4'	S-7-5'
Matrix/Units	Soil mg/kg	Soil mg/kg	Soil mg/kg
Benzene	< 0.05	< 0.05	0.11
Toluene	0.07	0.80	0.49
Ethyl Benzene	< 0.05	6.62	0.22
Xylenes	0.13	37.7	1.54
BTEX by EPA SW-846 Method 8020			
Total Petroleum Hydrocarbons by EPA Method 418.1	14.4	1,999	27.2

SOUND ANALYTICAL SERVICES

C. LARRY ZURAW

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 8991
Date: December 20, 1989
Client: Rittenhouse-Zeman

Client ID: S-7-5'
Matrix: Soil
Units: mg/kg

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	27.2	25.2	7.6	

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse-Zeman

Date: December 22, 1989

Report On: Analysis of Soil

Lab No.: 9042

IDENTIFICATION:

Samples Received on 12-21-89

Project No: W6588 CN Liquidators

ANALYSIS:

Lab Sample No.	Client Identification	Total Petroleum Hydrocarbons, mg/kg by EPA Method 418.1
RUSH 1	S-1-5'	14.0
RUSH 2	S-2-5'	7.9
RUSH 3	S-4-5'	10.7
RUSH 4	S-11-5'	5.6
RUSH 5	S-12-5'	14.3
RUSH 6	S-3-5'	10.2
RUSH 7	S-5-5'	< 5.0
RUSH 8	S-6-4'	13.2
RUSH 9	S-7-5'	5.8
RUSH 10	S-8-5'	< 5.0
RUSH 11	S-9-5'	< 5.0
RUSH 12	S-10-5'	897

Continued . . . .

SOUND ANALYTICAL SERVICES, INC.

Rittenhouse-Zeman
Lab No. 9042

December 22, 1989

Lab Sample Number	1	2	3	4	5
Client ID	S-1-5'	S-2-5'	S-4-5'	S-11-5'	S-12-6'
Matrix Units	Soil mg/kg	Soil mg/kg	Soil mg/kg	Soil mg/kg	Soil mg/kg
Benzene	0.11	< 0.05	< 0.05	< 0.05	0.05
Toluene	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Ethyl Benzene	0.13	< 0.05	< 0.05	< 0.05	< 0.05
Xylenes	0.87	< 0.05	< 0.05	< 0.05	0.14

BTEX by EPA SW-846 Method 8020

SOUND ANALYTICAL SERVICES

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SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 9042
Date: December 22, 1989
Client: Rittenhouse-Zeman

Client ID: 9042
Matrix: Soil
Units: mg/kg

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	897	842	6.3	

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse-Zeman Date: December 22, 1989

Report On: Analysis of Soil Lab No.: 9041

IDENTIFICATION:
Samples Received on 12-21-89
Project No: W6588 CN Liquidators

ANALYSIS:

Lab Sample No.	1	2
Client Identification	S-13-5'	S-14-5'
Matrix/Units	Soil mg/kg	Soil mg/kg
Benzene	NT	< 0.05
Toluene	NT	< 0.05
Ethyl Benzene	NT	< 0.05
Xylenes	NT	0.11
BTEX by EPA SW-846 Method 8020		
Total Petroleum Hydrocarbons by EPA Method 418.1	10.5	< 5.0

NT = NOT TESTED

SOUND ANALYTICAL SERVICES

C. LARRY ZURAW

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 9041
Date: December 22, 1989
Client: Rittenhouse-Zeman

Client ID: S-14-5'
Matrix: Soil
Units: mg/kg

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	< 5.0	< 5.0	----	

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse-Zeman Date: January 4, 1990

Report On: Analysis of Soil Lab No.: 9184

IDENTIFICATION:
Samples Received on 1-4-90
Project: W-6588 CN Liquidators

ANALYSIS:

Lab Sample No.	Client Identification	Total Petroleum Hydrocarbons, mg/kg by EPA Method 418.1
1	S-1	321
2	S-2	15.5
3	S-3	1,995

SOUND ANALYTICAL SERVICES

STAN P. PALMQUIST

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 9184
Date: January 4, 1990
Client: Rittenhouse-Zeman
Client ID: S-3
Matrix: Soil
Units: mg/kg

Compound	Sample(S)	Duplicate(D)	RPD*
Total Petroleum Hydrocarbons	1,995	1,978	0.9

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse - Zeman Date: February 20, 1990

Report On: Analysis of Soil Lab No.: 9900

IDENTIFICATION:
Samples Received on 2-15-90
Project: W-6588 Concrete NW/Wolfkill Fertilizer

ANALYSIS:

Lab Sample No.	1	2	3	4
Client ID:	B-1 S-1	B-1 S-2	B-2 S-2	B-3 S-2
Matrix/Units	Soil mg/kg	Soil mg/kg	Soil mg/kg	Soil mg/kg
Total Petroleum Hydrocarbons by EPA Method 418.1	18.4	12.0	305	15.6
Benzene	< 0.05	< 0.05	3.25	< 0.05
Toluene	< 0.05	< 0.05	3.17	< 0.05
Ethyl Benzene	< 0.05	< 0.05	16.6	< 0.05
Xylenes	< 0.05	< 0.05	42.9	< 0.05
BTEX by EPA SW-846 Method 8020				

SOUND ANALYTICAL SERVICES

C. LARRY ZURAW

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 9900
Date: February 20, 1990
Client: Rittenhouse-Zeman

Client ID: B-1 S-2
Matrix: Soil
Units: mg/kg

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	12.0	10.8	10.5	

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse - Zeman Date: February 22, 1990

Report On: Analysis of Water Lab No.: 9953

IDENTIFICATION:
Samples Received on 2-20-90
Project: W-6588 Wolfkill Fertilizer

ANALYSIS:

Lab Sample No.	1	2	3
Client ID:	MW-1	MW-2	MW-3
Matrix/Units	Water mg/l	Water mg/l	Water mg/l
Total Petroleum Hydrocarbons by EPA Method 418.1	5.1	23.0	< 5.0
Benzene	0.074	0.049	0.007
Toluene	0.011	0.150	0.003
Ethyl Benzene	< 0.001	0.177	< 0.001
Xylenes	0.072	0.648	0.038
BTEX by EPA SW-846 Method 8020			

SOUND ANALYTICAL SERVICES

STAN P. PALMQUIST

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 9953
Date: February 22, 1990
Client: Rittenhouse-Zeman

Client ID: MW-3
Matrix: Water
Units: mg/l

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	< 5.0	< 5.0	---	

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

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

Report To: Rittenhouse-Zeman Date: March 7, 1990

Report On: Analysis of Soil Lab No.: 10176

IDENTIFICATION:
Samples Received on 3-6-90
Project: W-6588 Wolfkill Fertilizer

ANALYSIS:

Lab Sample No. RUSH 1 Client ID: S-15

Parameter	Concentration, ppm
Total Petroleum Hydrocarbons by EPA Method 418.1	6.0
Benzene	< 0.05
Toluene	< 0.05
Ethyl Benzene	< 0.05
Xylenes	< 0.05

BTEX by EPA SW-846 Method 8020

Lab Sample No. RUSH 2 Client ID: S-16

Parameter	Concentration, ppm
Total Petroleum Hydrocarbons by EPA Method 418.1	5.2

Lab Sample No. RUSH 3 Client ID: S-17

Parameter	Concentration, ppm
Total Petroleum Hydrocarbons by EPA Method 418.1	35.1

SOUND ANALYTICAL SERVICES

STAN PALMQUIST

SOUND ANALYTICAL SERVICES, INC.

SPECIALIZING IN INDUSTRIAL & TOXIC WASTE ANALYSIS

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

QUALITY CONTROL REPORT

DUPLICATES

Lab No: 10176
Date: March 7, 1990
Client: Rittenhouse-Zeman

Client ID: S-17
Matrix: Soil
Units: ppm

Compound	Sample(S)	Duplicate(D)	RPD*	
Total Petroleum Hydrocarbons	35.1	32.2	8.6	

RPD = relative percent difference
= [(S - D) / ((S + D) / 2)] x 100

AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS

AGRA Earth & Environmental, Inc.
7477 SW Tech Center Drive
Portland, Oregon
USA 97223-8025
Tel (503) 639-3400
Fax (503) 620-7892

February 8, 1999

AGRA Earth & Environmental
11335 NE 122nd Way, Suite 100
Kirkland, WA 98034

Attention: Jeff Kaspar

Dear Mr. Kaspar

RE: Analytical Results For Project 9-91M-12700-0

Attached are the results for the samples submitted on January 29, 1999 from the above referenced project. For your reference, our project number associated with these samples is WA990067

The samples were analyzed for at the AGRA Earth & Environmental Portland Chemistry Laboratory. All analyses were conducted in accordance with applicable QA/QC guidelines. The results apply only to the samples submitted.

Please feel free to contact me if you have any questions regarding this report, or if I can be of any assistance in any other matter.

Respectfully submitted,

AGRA Earth & Environmental

Sean Gormley
Laboratory Manager

Project: Wolfkill Feedland Fertilizer
Project No.: 9-91M-12700-0
Project Manager: Jeff Kaspar
Sample Matrix: Water

Service Request No.: WA990067
Report Date: 2/4/99
Report No.: 99006701
C.O.C. No.: 02908

Gasoline Range Petroleum Hydrocarbons & BTEX
EPA Methods 5030/8021B and WDOE/ODEQ Method NWTPH-Gx
µg/L(ppb)

Sample Name:	MW-1	MW-2	MW-3	Lab Blank	**Method Reporting Limit**
Lab Code:	0067-1	0067-2	0067-3	0067-MB	
Gasoline:	1290	564	ND	ND	50
Benzene:	25.8	ND	ND	ND	0.50
Toluene:	5.39	3.52	ND	ND	0.50
Ethylbenzene:	18.0	4.02	ND	ND	0.50
Total Xylenes:	38.9	7.40	ND	ND	1.50
Sample Date:	1/28/99	1/28/99	1/28/99	2/2/99	
Analysis Date:	2/2/99	2/2/99	2/2/99	2/2/99	
Surrogate Recovery: (a,a,a-Trifluorotoluene):					**AEE Acceptance Limits**
Gasoline Analysis(FID):	109%	105%	98%	99%	66%-144%
BTEX Analysis(PID):	99%	98%	92%	93%	61%-130%

ND Not Detected

Signature of Chemist

QA/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Wolfkill Feedland Fertilizer
Project No.: 9-91M-12700-0
Project Manager: Jeff Kaspar
Sample Matrix: Water

Service Request No.: WA990067
Report Date: 2/4/99
Report No.: 99006702
C.O.C. No.: 02908

QC Data Report
Blank Spike Recoveries
Gasoline Range Petroleum Hydrocarbons & BTEX
EPA Methods 5030/8021B & WDOE/ODEQ Method NWTPH-G
ug/L(ppb)

Sample Name: / **Lab Code:**	Lab Blank 0067-MB	Spike Level (ug/L)	Blank Spike (BS)	Percent Recovery (BS)	Blank Spike Duplicate (BSD)	Percent Recovery (BSD)	Relative Percent Difference	AEE Acceptance Limits
Gasoline:	<50.0	1000	957	96	976	98	2	74%-109%
Benzene:	<0.50	20.0	19.9	100	20.6	103	3	72%-129%
Toluene:	<0.50	20.0	20.0	100	20.7	104	3	74%-124%
Ethylbenzene:	<0.50	20.0	18.7	94	19.4	97	4	71%-126%
Total Xylenes:	<1.50	60.0	60.1	100	62.2	104	3	77%-125%
Sample Date:	2/2/99	~	2/2/99	~	2/2/99	~	~	
Analysis Date:	2/2/99	~	2/2/99	~	2/2/99	~	~	
Surrogate Recovery (a,a,a-Trifluorotoluene):							**Control Limits**	
Gasoline Analysis(FID):	99%	~	108%	~	110%	~	66% - 144%	
BTEX Analysis(PID):	93%	~	95%	~	94%	~	61% - 130%	

ND Not Detected
Spike Source: Ultra Scientific RGO-601, Lot # M-0910
Spike Source: Accustandard WA-VPH Lot # A7060438

Signature of Chemist

QA/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Wolfkill Feedland Fertilizer
Project No.: 9-91M-12700-0
Project Manager: Jeff Kaspar
Sample Matrix: Water

Service Request No.: WA990067
Report Date: 2/4/99
Report No.: 99006703
C.O.C.: 02908

QC Data Report
Matrix Spike Recoveries
BTEX Compounds
EPA Methods 5030/8021B
ug/L (ppb)

Sample Name: / **Lab Code:**	Batch QC 0071-11	Spike Level (ug/L)	Matrix Spike (MS)	Percent Recovery (MS)	Matrix Spike Duplicate (DMS)	Percent Recovery (DMS)	AEE Acceptance Limits	Relative Percent Difference (RPD)
Benzene	<0.50	20.0	20.1	100	20.6	103	44%-162%	2
Toluene	<0.50	20.0	20.5	102	18.6	93	62%-139%	10
Ethylbenzene	<0.50	20.0	19.0	95	17.1	86	49%-146%	11
Total Xylenes	<1.50	60.0	60.5	101	43.0	72	46%-143%	34
Sample Date:	1/29/99	~	1/29/99	~	1/29/99	~	~	
Analysis Date:	2/2/99	~	2/2/99	~	2/2/99	~	~	
Surrogate Recovery:							**AEE Acceptance Limits**	
a,a,a-Trifluorotoluene:	93%	~	92%	~	93%	~	61% - 130%	
4-Bromofluorobenzene:	97%	~	94%	~	98%	~	72% - 120%	

ND Not Detected
Spike Source: Accustandard WA-VPH Lot # A7060438.

Signature of Chemist

QA/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Wolfkill Feedland Fertilizer
Project No.: 9-91M-12700-0
Project Manager: Jeff Kaspar
Sample Matrix: Water

Service Request No.: WA990067
Report Date: 2/4/99
Report No.: 99006705
C.O.C. No.: 02908

Semi-Volatile Petroleum Products
NWTPH-Dx
mg/L (ppm)

Sample Name	Lab Code	Sample Date	Extraction Date	Analysis Date	Diesel Result	Fuel/Lube Oil Result	Surrogate Recovery O-Terphenyl
MW-1	0067-1	1/28/99	2/2/99	2/4/99	<0.25	<0.50	76
MW-2	0067-2	1/28/99	2/2/99	2/4/99	0.29(a)	<0.50	88
MW-3	0067-3	1/28/99	2/2/99	2/4/99	0.25(a)	<0.50	89
Lab Blank	0037-MB	2/2/99	2/2/99	2/4/99	<0.25	<0.50	77

(a) Chromatographic evidence suggests the possible presence of highly weathered diesel.

Acceptance Criteria: 50%-150%

Signature of Chemist

QA/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

Project: Wolfkill Feedland Fertilizer
Project No.: 9-91M-12700-0
Project Manager: Jeff Kaspar
Sample Matrix: Water

Service Request No.: WA990067
Report Date: 2/8/99
Report No.: 99006706
C.O.C. No.: 0298

QC Data Report - Duplicate Summary
Semi-Volatile Petroleum Hydrocarbons
NWTPH-Dx
mg/L(ppm)

Sample Name: / **Lab Code:**	Batch QC 0066-1	Sample Duplicate	Relative Percent Difference
Diesel:	<0.25	<0.25	(a)
Fuel/Lube Oil:	<0.50	<0.50	(a)
Acceptance Limits:	~	~	<25
Sample Date:	1/28/99	1/28/99	~
Extraction Date:	2/2/99	2/2/99	~
Analysis Date:	2/4/99	2/4/99	~
Surrogate Recovery:			**Control Limits**
O-Terphenyl:	80%	79%	50%-150%

ND Not Detected

(a) Not applicable when sample concentration is less than the method reporting limit.

Signature of Chemist

QA/QC Review

AGRA
ENGINEERING GLOBAL SOLUTIONS

AGRA Earth & Environmental Portland Chemistry Laboratory
Sample Receipt Documentation Form

Project: Wolfhill Feed and Fertilizer	Cooler Temperatures 4.8 3.2 2.2 4.0 1.0
SR No.: WA990067	
Date: 1/29/99	
Time: 12:21	
Temperature of Cooler Upon Receipt (Record to the Right):	
Received By: PH	

Section One: Shipping/Delivery Issues

1.	Method of Sample Delivery: 1Z8E1 256 01 4000 1084 UPS			
2.	Airbill or Courier Receipt Number:			
3.	Is a copy of the airbill or courier receipt available to be placed in the job file?	(Yes)	No	NA

Section Two: Sample Custody Issues

4.	Are custody seals on the shipping container intact?	Yes	No	(NA)
5.	Is a COC or other sample transmittal document present?	(Yes)	No	NA
6.	Is the COC complete?	(Yes)	No	NA
7.	Are the sample seals intact?	Yes	No	(NA)
8.	Does the COC match the samples received?	(Yes)	No	NA

Section Three: Sample Integrity Issues

9.	Are all sample containers intact and not leaking?	(Yes)	No	NA
10.	Are all samples preserved properly?	(Yes)	No	NA
11.	Are all samples within holding time for the required tests?	(Yes)	No	NA
12.	*Were all samples received at the proper temperature?	(Yes)	No	NA
13.	Are samples for volatiles and other headspace sensitive parameters free of headspace or bubbles?	(Yes)	No	NA

Section Four: Sample Containers Received:

14.	4 oz. glass jars:	19.	2oz. amber (MeOH):
15.	8 oz. glass jars:	20.	Encore samplers:
16.	40ml VOA vials: 10	21.	500ml plastic:
17.	1 liter glass: 3	22.	1liter plastic: 3
18.	Other (describe):		

*Temperatures for: water and soil samples = 4°C-6°C, MeOH jars = 25°C, air = not required

~~* Contains listed on COC did not match what was~~ received for each sample SG 2/6/99

Reviewed By:

Laboratory Manager or Designee

AGRA Earth & Environmental
ENGINEERING GLOBAL SOLUTIONS

02908

AGRA
Earth & Environmental
11335 NE 122nd Way, Suite 100
Kirkland, Washington 98034-6918
Tel (206) 820-4669 Fax (206) 821-3914

CHAIN OF CUSTODY

PROJECT	Wolf Kill Feedlot Fertilizer	PROJECT No.	991m12700-0
CLIENT	AGRA	PHONE No.	(425)820-4669
PROJECT MANAGER	Jeffrey Kasper	PHONE No.	
SAMPLER'S NAME (please print)	Jeffrey Kasper	PHONE No.	
SAMPLER'S SIGNATURE			

ANALYSIS REQUESTED (circle, check box or write preferred method in box)

SAMPLE I.D.	DATE	TIME	MATRIX	PRESERVATIVE	CONTAINERS No.	CONTAINERS VOL.	BTEX by EPA 602 / 8020	WTPH-G	BTEX / WTPH-G	WTPH-HCID	WTPH-D / WTPH-D EXTENDED	TPH by EPA 8015 MODIFIED	WTPH-418.1 MODIFIED	TPH by EPA 418.1	GC / MS EPA 624 / 8240 or EPA 8260 Volatiles	GC / MS EPA 625 / 8270 Semi-volatiles	VOCs EPA 601 / 8010 or EPA 602 / 8020	PCBs EPA 608 / 8080	LEAD EPA 6010 / EPA 7421 Total / Dissolved	TOTAL METALS	TCLP				
1. MW-1	1/28/99	11:00	W	HCl in VOAs	2 VOAs				X		X														
2. MW-2	1/28/99	↓	W	↓	1 Liter Glass				X		X														
3. MW-3	1/28/99	11:70	W	↓	1 Liter Plastic				X		X														
4.																									
5.																									
6.																									
7.																									
8.																									
9.																									
10.																									

SAMPLE RECEIPT	LABORATORY	TURNAROUND TIME	SPECIAL INSTRUCTIONS / ADDITIONAL COMMENTS
TOTAL # CONTAINERS	SHIPPING I.D. / AIRBILL # UPS	☐ 8 HOUR	If gasoline range petroleum hydrocarbons are present please notify immediately.
CONDITION OF CONTAINERS	CARRIER	☐ 24 HOUR	
CONDITION OF SEALS	DOT DESIGNATION	☑ 1 WEEK	
		☐ 2 WEEK (standard)	
		☐ OTHER	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1. (Jeff Kasper) AGRA	1/28/99	1:30 PM	1.		
2.			2.		
3. ~~Dan Hines DH 1/29/99 AGRA~~	~~1/29/99~~ DH 1/29/99 1225		3. Dan Hines / AGRA	1/29/99	1225

PAGE 1 OF 2

AGRA Earth & Environmental, Inc. (7/94)

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Environmental Services Laboratory, Inc. E S L

17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520

February 11, 1999

Sean Gormley
AGRA Earth & Environmental
7477 SW Tech Center Drive

Portland, OR 97223-8025

TEL: (503)639-3400
FAX (503) 620-7892

RE: 9-91M-12700 Wolfeill Feedland Fertilizer Order No.: 9902043

Dear Sean Gormley,

Environmental Services Laboratory received 2 samples on 2/8/99 for the analyses presented in the following report.

The Samples were analyzed for the following tests:
ICP Metals (ICPMET)

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety, without the written approval from the Laboratory.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Kimberly Hill
Project Manager

Technical Review

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT:	AGRA Earth & Environmental	**Client Sample ID:**	MW1
Lab Order:	9902043	**Tag Number:**	
Project:	9-91M-12700 Wolfeill Feedland Fertilizer	**Collection Date:**	1/28/99
Lab ID:	9902043-01A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS		**ICPMET**				Analyst: jph
Lead	ND	0.005		mg/L	1	2/9/99

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT:	AGRA Earth & Environmental	**Client Sample ID:**	MW2
Lab Order:	9902043	**Tag Number:**	
Project:	9-91M-12700 Wolfeill Feedland Fertilizer	**Collection Date:**	1/28/99
Lab ID:	9902043-02A	**Matrix:**	AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
ICP METALS		ICPMET				Analyst: jph
Lead	0.00529	0.005		mg/L	1	2/9/99

Qualifiers:	ND - Not Detected at the Reporting Limit	S - Spike Recovery outside accepted recovery limits
	J - Analyte detected below quantitation limits	R - RPD outside accepted recovery limits
	B - Analyte detected in the associated Method Blank	E - Value above quantitation range
	* - Value exceeds Maximum Contaminant Level	

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT: AGRA Earth & Environmental
Work Order: 9902043
Project: 9-91M-12700 Wolfeill Feedland Fertilizer

QC SUMMARY REPORT
Method Blank

Sample ID: **MB-120** Batch ID: **120** Test Code: **ICPMET** Units: **mg/L** Analysis Date **2/9/99** Prep Date: **2/9/99**

Client ID: **9902043** Run ID: **ICP_990209A** SeqNo: **3513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	0.05									
Cadmium	ND	0.002									
Chromium	ND	0.005									
Copper	ND	0.005									
Iron	ND	0.01									
Lead	ND	0.005									
Nickel	ND	0.005									
Silver	ND	0.005									
Zinc	ND	0.005									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT: AGRA Earth & Environmental
Work Order: 9902043
Project: 9-91M-12700 Wolfeill Feedland Fertilizer

QC SUMMARY REPORT
Sample Matrix Spike

Sample ID: **9902034-01A MS** Batch ID: **120** Test Code: **ICPMET** Units: **mg/L** Analysis Date **2/9/99** Prep Date: **2/9/99**
Client ID: **9902043** Run ID: **ICP_990209A** SeqNo: **3514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.09	0.05	5	31.25	96.8%	80	120	0			
Cadmium	.4907	0.002	0.5	0	98.1%	80	120	0			
Chromium	.5302	0.005	0.5	0.03323	99.4%	80	120	0			
Copper	.5202	0.005	0.5	0.01124	101.8%	80	120	0			
Iron	2.073	0.01	2	0.2653	90.4%	80	120	0			
Lead	.4895	0.005	0.5	0	97.9%	80	120	0			
Nickel	.4955	0.005	0.5	0.005066	98.1%	80	120	0			
Silver	.4773	0.005	0.5	0	95.5%	80	120	0			
Zinc	.5705	0.005	0.5	0.3073	52.6%	80	120	0			H

Sample ID: **9902034-01A MSD** Batch ID: **120** Test Code: **ICPMET** Units: **mg/L** Analysis Date **2/9/99** Prep Date: **2/9/99**
Client ID: **9902043** Run ID: **ICP_990209A** SeqNo: **3515**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	36.02	0.05	5	31.25	95.2%	80	120	36.09	0.2%	20	
Cadmium	.4948	0.002	0.5	0	99.0%	80	120	0.4907	0.8%	20	
Chromium	.5346	0.005	0.5	0.03323	100.3%	80	120	0.5302	0.8%	20	
Copper	.5248	0.005	0.5	0.01124	102.7%	80	120	0.5202	0.9%	20	
Iron	2.075	0.01	2	0.2653	90.5%	80	120	2.073	0.1%	20	
Lead	.4934	0.005	0.5	0	98.7%	80	120	0.4895	0.8%	20	
Nickel	.5008	0.005	0.5	0.005066	99.1%	80	120	0.4955	1.1%	20	
Silver	.4808	0.005	0.5	0	96.2%	80	120	0.4773	0.7%	20	
Zinc	.5688	0.005	0.5	0.3073	52.3%	80	120	0.5705	0.3%	20	H

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT: AGRA Earth & Environmental
Work Order: 9902043
Project: 9-91M-12700 Wolfeill Feedland Fertilizer

QC SUMMARY REPORT

Laboratory Control Spike - generic

Sample ID: LCS-120 | Batch ID: 120 | Test Code: ICPMET | Units: mg/L | Analysis Date 2/9/99 | Prep Date: 2/9/99

Client ID: 9902043 | Run ID: ICP_990209A | SeqNo: 3512

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	4.921	0.05	5	0	98.4%	90	110	0			
Cadmium	.482	0.002	0.5	0	96.4%	90	110	0			
Chromium	.486	0.005	0.5	0	97.2%	90	110	0			
Copper	.5008	0.005	0.5	0	100.2%	90	110	0			
Iron	1.968	0.01	2	0	98.4%	90	110	0			
Lead	.4801	0.005	0.5	0	96.0%	90	110	0			
Nickel	.482	0.005	0.5	0	96.4%	90	110	0			
Silver	.4722	0.005	0.5	0	94.4%	90	110	0			
Zinc	.4984	0.005	0.5	0	99.7%	90	110	0			

Qualifiers:

ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

Environmental Services Laboratory

Date: *11-Feb-99*

CLIENT: AGRA Earth & Environmental
Work Order: 9902043
Project: 9-91M-12700 Wolfeill Feedland Fertilizer

QC SUMMARY REPORT
Initial Calibration Verification Standard

Sample ID: CCVLOW | Batch ID: 120 | Test Code: ICPMET | Units: mg/L | Analysis Date 2/9/99 | Prep Date:

Client ID: 9902043 | Run ID: ICP_990209A | SeqNo: 3511

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Cadmium	.5037	0.002	0.5	0	100.7%	90	110	0			
Chromium	.4908	0.005	0.5	0	98.2%	90	110	0			
Copper	.5034	0.005	0.5	0	100.7%	90	110	0			
Iron	.5185	0.01	0.5	0	103.7%	90	110	0			
Lead	.502	0.005	0.5	0	100.4%	90	110	0			
Nickel	.5038	0.005	0.5	0	100.8%	90	110	0			
Silver	.4916	0.005	0.5	0	98.3%	90	110	0			
Zinc	.5023	0.005	0.5	0	100.5%	90	110	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

Environmental Services Laboratory, Inc CHAIN OF CUSTODY

17400 SW Upper Boones Ferry Road • Suite 270 • Portland, OR 97224 • (503) 670-8520 • FAX (503) 670-9243

Company: AEE Project Manager: Sean Gormley LABORATORY # 9902043

Address: 7477 SW Tech Center Drive, Portland, OR 97223

Phone: 639-3400 Fax: 670-7892

SAMPLE DISPOSAL INSTRUCTIONS

ANALYSIS REQUEST

	SAMPLE ID	DATE	TIME	MATRIX	LAB ID	PETROLEUM HYDROCARBONS: NWTPH-HCID	NWTPH-GX	NWTPH-DX	8020M - BETX only	8270 SIMS PAHs	ORGANICS: Halogenated VOCs/GCMS	Aromatic VOCs/GCMS	8260 GCMS Volatiles	8270 GCMS Semivolatiles	8081 GC Pesticides/PCBs	8081m PCBs only	INORGANICS: RCRA Metals (8)	Priority Pollutant Metals (13)	Metals:	TCLP: TCLP Metals (8)	TCLP Volatiles 8260 ZH-EXT	TCLP Semivolatiles 8270	Total Pb	# OF CONTAINERS
01	MW1	1/25/99	11:00	W																			X	
02	MW2	↓	11:00	↓																			X	

PROJECT INFORMATION

PROJECT NUMBER: Wolfchill Feedlot

PROJECT NAME: 9-91M-12700

PURCHASE ORDER NUMBER:

ONGOING PROJECT? YES ☐ NO ☐

SAMPLE RECEIPT

TOTAL NUMBER OF CONTAINERS

COC SEALS INTACT? Y / N / NA

RECEIVED INTACT? Y / N

RECEIVED COLD? Y / N

PRIOR AUTHORIZATION REQUIRED FOR RUSH PROJECTS

TAT (NORMAL) 2 WKS (RUSH) ☐ 24 HR ☐ 48 HRS ☐ 72 HRS ☒ 1 WK

GREATER THAN 24 HR. NOTICE? YES ☐ NO ☐ (LAB USE ONLY)

SPECIAL INSTRUCTIONS:

Sampled by: Received via:

RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
SIGNATURE: Time 10:00	SIGNATURE: Time	SIGNATURE: Time
Printed Name: Date 2/5/99	Printed Name: Date	Printed Name: Date
Company:	Company:	Company:
RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
Signature: Time 1135	Signature: Time	Signature: Time
Printed Name: W. Matthew Heavener 2/8 Date	Printed Name: Date	Printed Name: Date
Company: ESL	Company:	ESL Inc.:

DISTRIBUTION: White, Canary - ESL, Pink - Originator

OnSite Environmental Inc.
Analytical Testing and Mobile Laboratory Services

May 13, 2002

Meg Strong
AMEC Earth & Environmental, Inc.
11335 NE 122nd Way, Suite 100
Kirkland, WA 98034

Re: Analytical Data for Project 2-91M-14404-0
Laboratory Reference No. 0205-024

Dear Meg:

Enclosed are the analytical results and associated quality control data for samples submitted on May 2, 2002.

The standard policy of OnSite Environmental Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

Case Narrative

Samples were collected on May 2, 2002. Samples were maintained at the laboratory at 4°C and followed SW846 analysis and extraction methods.

NWTPH Gx/BTEX Analysis

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

NWTPH Dx Analysis

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Total Lead by EPA 200.8 Analysis

Any QA/QC issues associated with this extraction and analysis will be indicated with a footnote reference and discussed in detail on the Data Qualifier page.

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Gx/BTEX

Date Extracted: 5-6-02
Date Analyzed: 5-6-02

Matrix: Water
Units: ug/L (ppb)

Client ID:	**MW-1**			**MW-2**		
Lab ID:	05-024-01			05-024-02		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**9.3**		1.0	**ND**		1.0
Toluene	**2.7**		1.0	**ND**		1.0
Ethyl Benzene	**6.3**		1.0	**ND**		1.0
m,p-Xylene	**3.6**		1.0	**ND**		1.0
o-Xylene	**2.1**		1.0	**ND**		1.0
TPH-Gas	**450**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	89%			89%		

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Gx/BTEX

Date Extracted: 5-6-02
Date Analyzed: 5-6-02

Matrix: Water
Units: ug/L (ppb)

Client ID:	**MW3**			**MW4**		
Lab ID:	05-024-03			05-024-04		
	Result	Flags	PQL	**Result**	Flags	PQL
Benzene	**ND**		1.0	**ND**		1.0
Toluene	**ND**		1.0	**ND**		1.0
Ethyl Benzene	**ND**		1.0	**ND**		1.0
m,p-Xylene	**ND**		1.0	**ND**		1.0
o-Xylene	**ND**		1.0	**ND**		1.0
TPH-Gas	**ND**		100	**ND**		100
Surrogate Recovery:						
Fluorobenzene	88%			86%		

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Gx/BTEX
METHOD BLANK QUALITY CONTROL

Date Extracted: 5-6-02
Date Analyzed: 5-6-02

Matrix: Water
Units: ug/L (ppb)

Lab ID: MB0506W2

	Result	Flags	PQL
Benzene	**ND**		1.0
Toluene	**ND**		1.0
Ethyl Benzene	**ND**		1.0
m,p-Xylene	**ND**		1.0
o-Xylene	**ND**		1.0
TPH-Gas	**ND**		100

Surrogate Recovery:
Fluorobenzene 87%

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Gx/BTEX
DUPLICATE QUALITY CONTROL

Date Extracted: 5-6-02
Date Analyzed: 5-6-02

Matrix: Water
Units: ug/L (ppb)

Lab ID:	05-024-02 **Original**	05-024-02 **Duplicate**	**RPD**	**Flags**
Benzene	**ND**	**ND**	NA	
Toluene	**ND**	**ND**	NA	
Ethyl Benzene	**ND**	**ND**	NA	
m,p-Xylene	**ND**	**ND**	NA	
o-Xylene	**ND**	**ND**	NA	
TPH-Gas	**ND**	**ND**	NA	
Surrogate Recovery:				
Fluorobenzene	89%	88%		

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Gx/BTEX
MS/MSD QUALITY CONTROL

Date Extracted: 5-6-02
Date Analyzed: 5-6-02

Matrix: Water
Units: ug/L (ppb)

Spike Level: 50.0 ppb

Lab ID:	05-033-04 **MS**	Percent Recovery	05-033-04 **MSD**	Percent Recovery	**RPD**	**Flags**
Benzene	**42.7**	**85**	**45.5**	**91**	6.3	
Toluene	**45.3**	**91**	**48.1**	**96**	6.1	
Ethyl Benzene	**46.1**	**92**	**49.1**	**98**	6.3	
m,p-Xylene	**45.4**	**91**	**48.1**	**96**	5.7	
o-Xylene	**46.0**	**92**	**48.9**	**98**	6.2	

Surrogate Recovery:

Fluorobenzene	85%		88%

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Dx

Date Extracted:	5-7-02
Date Analyzed:	5-8-02
Matrix:	Water
Units:	mg/L (ppm)

Client ID:	MW-1	MW-2	MW-3
Lab ID:	05-024-01	05-024-02	05-024-03
Diesel Range:	ND	ND	ND
PQL:	0.25	0.25	0.25
Identification:	---	---	---
Lube Oil Range:	ND	ND	ND
PQL:	0.40	0.40	0.40
Identification:	---	---	---
Surrogate Recovery			
o-Terphenyl:	100%	101%	100%
Flags:	Y	Y	Y

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Dx

Date Extracted:	5-7-02
Date Analyzed:	5-8-02
Matrix:	Water
Units:	mg/L (ppm)

Client ID:	MW-4
Lab ID:	05-024-04
Diesel Range:	ND
PQL:	0.25
Identification:	---
Lube Oil Range:	ND
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	86%
Flags:	Y

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Dx
METHOD BLANK QUALITY CONTROL

Date Extracted:	5-7-02
Date Analyzed:	5-8-02
Matrix:	Water
Units:	mg/L (ppm)
Lab ID:	MB0507W1
Diesel Range:	ND
PQL:	0.25
Identification:	---
Lube Oil Range:	ND
PQL:	0.40
Identification:	---
Surrogate Recovery	
o-Terphenyl:	108%
Flags:	Y

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

NWTPH-Dx
DUPLICATE QUALITY CONTROL

Date Extracted:	5-7-02
Date Analyzed:	5-8-02
Matrix:	Water
Units:	mg/L (ppm)

Lab ID:	05-021-01	05-021-01 DUP
Diesel Range:	ND	ND
PQL:	0.25	0.25
RPD:	N/A	
Surrogate Recovery		
o-Terphenyl:	84%	80%
Flags:	Y	Y

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

TOTAL LEAD
EPA 200.8

Date Extracted:	5-8-02
Date Analyzed:	5-9-02
Matrix:	Water
Units:	ug/L (ppb)

Client ID	Lab ID	Result	PQL
MW-2	05-024-02	**ND**	1.1
MW-4	05-024-04	**ND**	1.1

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	5-8-02
Date Analyzed:	5-9-02
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0508W2

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 5-8-02
Date Analyzed: 5-9-02

Matrix: Water
Units: ug/L (ppb)

Lab ID: 05-016-01

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.1	

Date of Report: May 13, 2002
Samples Submitted: May 2, 2002
Lab Traveler: 05-024
Project: 2-91M-14404-0

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 5-8-02
Date Analyzed: 5-9-02

Matrix: Water
Units: ug/L (ppb)

Lab ID: 05-016-01

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	110	**116**	105	**116**	105	0	

OnSite Environmental Inc.

DATA QUALIFIERS AND ABBREVIATIONS

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

D - Data from 1:____ dilution.

E - The value reported exceeds the quantitation range, and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

G - Insufficient sample quantity for duplicate analysis.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeniety. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

O - Hydrocarbons outside the defined gasoline range are present in the sample.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a silica gel cleanup procedure.

Y - Sample extract treated with an acid cleanup procedure.

Z -

ND - Not Detected at PQL
MRL - Method Reporting Limit
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

CHAIN OF CUSTODY

AMEC Earth & Environmental, Inc.
11335 N.E. 122nd Way, Suite 100 Tel (425) 820-4669
Kirkland, Washington 98034 Fax (425) 821-3914

05-024

PROJECT	PROJECT No.
Former Wolfkill - Mt Vernon	2-91M-14404-0
CLIENT	PHONE No.
Wolfkill	
PROJECT MANAGER	PHONE No.
Meg Strong	425 820 4669
SAMPLER'S NAME (please print)	PHONE No.
Meg Strong	
SAMPLER'S SIGNATURE	
Meg Strong	

SAMPLE I.D.	DATE	TIME	MATRIX	PRESERVATIVE	CONTAINERS No.	CONTAINERS VOL.	BTEX by EPA 602 / 8020	WTPH-G	BTEX / WTPH-G	WTPH-HCID	WTPH-D (WTPH-D EXTENDED)	TPH by EPA 8015 MODIFIED	WTPH-418.1 MODIFIED	TPH by EPA 418.1	GC / MS EPA 624 / 8240 or EPA 8260 Volatiles	GC / MS EPA 625 / 8270 Semi-volatiles	VOCs EPA 601 / 8010 or EPA 602/ / 8020	PCBs EPA 608 / 8080	LEAD EPA 6010 / EPA 7421 Total / Dissolved	TOTAL METALS	TCLP	TOTAL (LEAD)			
1. MW-1	5/2	12.15	H_2O	HCL	2	40			X																
2. MW-1		↓		HCL	2	500					X														
3. MW-2		3:00		HCL	2	40			X																
4. MW-2		↓		HCL	2	500					X														
5. MW2		~~2:55~~		NITRIC	1	500																X			
6. MW3		2:05		HCL	2	40			X																
7. MW3		↓		HCL	2	500					X														
8. MW4		—		HCL	2	40			X																
9. MW4		—		HCL	2	500					X														
10. MW4		—		NITRIC	1	500																X			

ANALYSIS REQUESTED (circle, check box, or write preferred method in box)

DUP 2,3

SAMPLE RECEIPT	LABORATORY	TURNAROUND TIME	SPECIAL INSTRUCTIONS / ADDITIONAL COMMENTS
TOTAL # CONTAINERS 18	SHIPPING I.D. / AIRBILL #	☐ 8 HOUR	
CONDITION OF CONTAINERS	CARRIER	☐ 24 HOUR	
CONDITION OF SEALS	DOT DESIGNATION	☐ 1 WEEK	
		☐ 2 WEEK (standard)	
		☐ OTHER	

RELINQUISH BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
1. Meg Strong	5/2/02	4:50	Laura Kent / ISE	5-2-02	4:55
2.					
3.					

PAGE_____OF_____

DISTRIBUTION: White, Yellow – Laboratory, Pink – Originator

February 25th, 2011

Ms. Meg Strong
AMEC Earth and Environmental
11810 North Creek Pkwy N.
Bothell, WA 98011

RE: Samples received from 205 West Fir Street, Mount Vernon, Washington

Dear Ms. Strong,

On February 15th we received 3 water samples from the above referenced project location. The samples were assigned our project #1102102. The project was identified as your MTVER project. The sample identification and requested analyses are outlined on the attached chain of custody records.

No abnormalities or nonconformances were observed during the analyses of the project samples. Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan

Rick Bagan
Laboratory Director

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/16/2011
		ALS JOB#:	1102102
		ALS SAMPLE#:	-01
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/15/2011
CLIENT PROJECT:	MTVER	COLLECTION DATE:	2/14/2011 15:10
CLIENT SAMPLE ID	MW1-021411	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2011	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2011	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**85.1**	02/15/2011	DLC
TFT	EPA-8021	**74.1**	02/15/2011	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE: ALS JOB#: ALS SAMPLE#:	2/16/2011 1102102 -02
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/15/2011
CLIENT PROJECT:	MTVER	COLLECTION DATE:	2/14/2011 14:05
CLIENT SAMPLE ID	MW2-021411	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2011	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2011	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**97.2**	02/15/2011	DLC
TFT	EPA-8021	**77.6**	02/15/2011	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE: ALS JOB#: ALS SAMPLE#:	2/16/2011 1102102 -03
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/15/2011
CLIENT PROJECT:	MTVER	COLLECTION DATE:	2/14/2011
CLIENT SAMPLE ID	Dup-021411	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2011	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2011	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2011	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**92.1**	02/15/2011	DLC
TFT	EPA-8021	**77.4**	02/15/2011	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/16/2011
		ALS JOB#:	1102102
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Leah Vigoren		
CLIENT PROJECT:	MTVER		

LABORATORY BLANK RESULTS

MBG-021111W

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/11/2011	DLC

MB-021111W

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	1.0	1	UG/L	02/11/2011	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/11/2011	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/11/2011	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/11/2011	DLC

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/16/2011
		ALS JOB#:	1102102
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Leah Vigoren		
CLIENT PROJECT:	MTVER		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 1485 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**87.0**			02/11/2011	DLC
TPH-Volatile Range - BSD	NWTPH-GX	**88.9**	**2**		02/11/2011	DLC

ALS Test Batch ID: 1485 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**92.7**			02/15/2011	DLC
Benzene - BSD	EPA-8021	**91.6**	**0**		02/14/2011	DLC
Toluene - BS	EPA-8021	**92.0**			02/15/2011	DLC
Toluene - BSD	EPA-8021	**91.3**	**0**		02/14/2011	DLC
Ethylbenzene - BS	EPA-8021	**89.7**			02/15/2011	DLC
Ethylbenzene - BSD	EPA-8021	**88.1**	**0**		02/14/2011	DLC
Xylenes - BS	EPA-8021	**94.3**			02/15/2011	DLC
Xylenes - BSD	EPA-8021	**93.5**	**0**		02/14/2011	DLC

APPROVED BY

Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

February 18, 2013

Ms. Leah Vigoren
AMEC Earth and Environmental
11810 North Creek Pkwy N.
Bothell, WA 98011

Dear Ms. Vigoren,

On February 14th, 4 samples were received by our laboratory and assigned our laboratory project number EV13020076. The project was identified as your MV (1915171670). The sample identification and requested analyses are outlined on the attached chain of custody record.

No abnormalities or nonconformances were observed during the analyses of the project samples.

Please do not hesitate to call me if you have any questions or if I can be of further assistance.

Sincerely,

ALS Laboratory Group

Rick Bagan
Laboratory Director

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS JOB#:	EV13020076
		ALS SAMPLE#:	-01
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/14/2013
CLIENT PROJECT:	MV (1915171670)	COLLECTION DATE:	2/14/2013 12:20:00 PM
CLIENT SAMPLE ID	MW1-021413	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/16/2013	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/16/2013	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/16/2013	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/16/2013	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/16/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**90.1**	02/16/2013	DLC
TFT	EPA-8021	**100**	02/16/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Environmental

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS JOB#:	EV13020076
		ALS SAMPLE#:	-02
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/14/2013
CLIENT PROJECT:	MV (1915171670)	COLLECTION DATE:	2/14/2013 1:05:00 PM
CLIENT SAMPLE ID	MW2-021413	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2013	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**86.1**	02/15/2013	DLC
TFT	EPA-8021	**101**	02/15/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS JOB#:	EV13020076
		ALS SAMPLE#:	-03
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/14/2013
CLIENT PROJECT:	MV (1915171670)	COLLECTION DATE:	2/14/2013 8:00:00 AM
CLIENT SAMPLE ID	Dup01-021413	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2013	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**94.2**	02/15/2013	DLC
TFT	EPA-8021	**106**	02/15/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

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ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS JOB#:	EV13020076
		ALS SAMPLE#:	-04
CLIENT CONTACT:	Leah Vigoren	DATE RECEIVED:	2/14/2013
CLIENT PROJECT:	MV (1915171670)	COLLECTION DATE:	2/14/2013 8:00:00 AM
CLIENT SAMPLE ID	Trip Blank	WDOE ACCREDITATION:	C601

DATA RESULTS

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/15/2013	DLC
Benzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/15/2013	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/15/2013	DLC

SURROGATE	METHOD	%REC	ANALYSIS DATE	ANALYSIS BY
TFT	NWTPH-GX	**96.9**	02/15/2013	DLC
TFT	EPA-8021	**108**	02/15/2013	DLC

U - Analyte analyzed for but not detected at level above reporting limit.

ADDRESS 8620 Holly Drive, Suite 100, Everett, WA 98208 | PHONE 425-356-2600 | FAX 425-356-2626
ALS Laboratory Group A Campbell Brothers Limited Company

CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS SDG#:	EV13020076
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Leah Vigoren		
CLIENT PROJECT:	MV (1915171670)		

LABORATORY BLANK RESULTS

MBG-021313W - Batch 3465 - Water by NWTPH-GX

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range	NWTPH-GX	U	50	1	UG/L	02/13/2013	DLC

MB-021313W - Batch 3465 - Water by EPA-8021

ANALYTE	METHOD	RESULTS	REPORTING LIMITS	DILUTION FACTOR	UNITS	ANALYSIS DATE	ANALYSIS BY
Benzene	EPA-8021	U	1.0	1	UG/L	02/13/2013	DLC
Toluene	EPA-8021	U	1.0	1	UG/L	02/13/2013	DLC
Ethylbenzene	EPA-8021	U	1.0	1	UG/L	02/13/2013	DLC
Xylenes	EPA-8021	U	3.0	1	UG/L	02/13/2013	DLC

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CERTIFICATE OF ANALYSIS

CLIENT:	AMEC Earth and Environmental 11810 North Creek Pkwy N. Bothell, WA 98011	DATE:	2/18/2013
		ALS SDG#:	EV13020076
		WDOE ACCREDITATION:	C601
CLIENT CONTACT:	Leah Vigoren		
CLIENT PROJECT:	MV (1915171670)		

LABORATORY CONTROL SAMPLE RESULTS

ALS Test Batch ID: 3465 - Water by NWTPH-GX

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
TPH-Volatile Range - BS	NWTPH-GX	**90.0**			02/13/2013	DLC
TPH-Volatile Range - BSD	NWTPH-GX	**85.3**	**5**		02/13/2013	DLC

ALS Test Batch ID: 3465 - Water by EPA-8021

SPIKED COMPOUND	METHOD	%REC	RPD	QUAL	ANALYSIS DATE	ANALYSIS BY
Benzene - BS	EPA-8021	**111**			02/13/2013	DLC
Benzene - BSD	EPA-8021	**108**	**3**		02/13/2013	DLC
Toluene - BS	EPA-8021	**110**			02/13/2013	DLC
Toluene - BSD	EPA-8021	**105**	**4**		02/13/2013	DLC
Ethylbenzene - BS	EPA-8021	**106**			02/13/2013	DLC
Ethylbenzene - BSD	EPA-8021	**102**	**4**		02/13/2013	DLC
Xylenes - BS	EPA-8021	**108**			02/13/2013	DLC
Xylenes - BSD	EPA-8021	**105**	**2**		02/13/2013	DLC

APPROVED BY

Laboratory Director

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ALS Laboratory Group A Campbell Brothers Limited Company

ALS Environmental
8620 Holly Drive, Suite 100
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Fax (425) 356-2626
http://www.alsglobal.com

Chain Of Custody/ Laboratory Analysis Request

ALS Job# (Laboratory Use Only)

EV13020076

Date 2.14.13 Page 1 Of 1

PROJECT ID: MW (1915171670)
REPORT TO COMPANY: AMEC
PROJECT MANAGER: Leah Ujcich
ADDRESS:
PHONE: FAX:
P.O. #: E-MAIL: Leah.Ujcich@AMEC.com
INVOICE TO COMPANY:
ATTENTION:
ADDRESS:

SAMPLE I.D.	DATE	TIME	TYPE	LAB#	NWTPH-HCID	NWTPH-DX	NWTPH-GX	BTEX by EPA-8021	MTBE by EPA-8021 ☐ EPA-8260 ☐	Halogenated Volatiles by EPA 8260	Volatile Organic Compounds by EPA 8260	EDB / EDC by EPA 8260 SIM (water)	EDB / EDC by EPA 8260 (soil)	Semivolatile Organic Compounds by EPA 8270	Polycyclic Aromatic Hydrocarbons (PAH) by EPA-8270 SIM ☐	PCB ☐ Pesticides ☐ by EPA 8081/8082	Metals-MTCA-5 ☐ RCRA-8 ☐ Pri Pol ☐ TAL ☐	Metals Other (Specify)	TCLP-Metals ☐ VOA ☐ Semi-Vol ☐ Pest ☐ Herbs ☐	OTHER (Specify)	NUMBER OF CONTAINERS	RECEIVED IN GOOD CONDITION?
1. MW1-021413	2.14.13	1220	W	1			X	X														
2. MW2-021413		1305	W	2			X	X														
3. Dup01-021413		—	W	3			X	X														
4. Trip Blank		—	W	4			X	X														
5.																						
6.																						
7.																						
8.																						
9.																						
10.																						

LABORATORY COPY

SPECIAL INSTRUCTIONS

SIGNATURES (Name, Company, Date, Time):

1. Relinquished By: AMEC 1452 2/14/13
   Received By: Shawn Robar ACS 2/14/13 14:52
2. Relinquished By:
   Received By:

TURNAROUND REQUESTED in Business Days*

Organic, Metals & Inorganic Analysis: 10 Standard | 5 | 3 | 2 | 1 | SAME DAY

Fuels & Hydrocarbon Analysis: 5 Standard | 3 | 1 | SAME DAY

OTHER:
Specify:

* Turnaround request less than standard may incur Rush Charges