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September 1, 2017

Seattle Land Use Co.
1100 Dexter Ave N - Suite 275
Seattle, WA 98109

Attention: Mr. Michael Pollard

Subject: Phase I & II Environmental Site Assessment
104 -124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Dear Mr. Pollard:
As you have authorized, ***Whitman Environmental Sciences, (WES)*** has conducted a Phase I Environmental Site Assessment of the above referenced property in order to meet due diligence requirements. The work also included a Phase II environmental site investigation of the site due to past uses of the property and neighboring sites that had a potential to result in recognized environmental conditions.

The enclosed final report summarizes the observations and data review performed during this assessment.

WES has been pleased to have the opportunity to be of service to you in this matter. If you have any questions regarding the information contained in this report, or if I may be of any further assistance, please feel free to contact me.

Respectfully submitted,

Whitman Environmental Sciences

Daniel S. Whitman
Principal

PHASE I & II ENVIRONMENTAL SITE ASSESSMENT

POTENTIAL REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON 98122

September 1, 2017
Project No. WES-1591

WHITMAN Environmental Sciences

PHASE I & II ENVIRONMENTAL SITE ASSESSMENT

POTENTIAL REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON

EXECUTIVE SUMMARY

Whitman Environmental Sciences (WES) was retained by Mr. Michael Pollard of the Seattle Land Use Co. to conduct a Phase I Environmental Site Assessment (ESA) on a property on the eastern side of 12th Avenue, extending from the intersection with E. Yesler Way to E. Fir Street, in the Yesler Terrace neighborhood of Seattle, Washington. The property consists of approximately 47,433 square feet of land developed with three older commercial buildings in generally poor condition. At the time of our site reconnaissance the buildings were in active use as a curtain manufacturing company, a restaurant, and an auto repair shop. There is also a vacant tenant space in the restaurant building and two portions of the property are used as parking lots.

During the course of this assessment, historical information identified a previous gas station on the northern part of the property and other historical site uses that would be considered potential sources of recognized environmental conditions. These included a former dry cleaner in the vacant tenant space and a former auto repair in the basement of the curtain manufacturing building. Surrounding area properties were also found to have had past uses that were potential sources of recognized environmental conditions with the potential to impact the subject properties. A Phase II site investigation was conducted, drilling 29 soil borings throughout the property.

This Phase I Environmental Assessment has been performed in accordance with the American Society for Testing and Materials (ASTM) E1527-2013 guidance, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process"; a work process intended to meet the requirements of the United Stated Environmental Protection Agency (EPA) “All Appropriate Inquiry” Final Rule (40 CFR Part 312). This ESA included a site reconnaissance, records review and interviews.

This assessment has revealed the following evidence of recognized environmental conditions in connection with the property:

- The properties have been developed since the 1920s with a variety of site uses, some of which inherently managed, used or disposed of hazardous or regulated materials. These include the current auto repair business at 1209 E. Fir Street, as well as a former gas station that operated on the northwestern portion of the property from about 1941 to 1989; a former auto repair that operated in the lower level of the building at 104 12th from about 1926 to the mid 1950s; a former screen printing shop and a dry cleaner that each operated in the currently vacant tenant space at 118 12th Avenue. The current and former site uses indicated site specific soil and groundwater sampling was warranted.

- Properties in the surrounding area were identified as potential sources of impacts to the subject site due to historical site uses or known conditions with the potential to migrate toward the properties. These include former dry cleaning facilities that were located at 113 12th Avenue and 160 12thAvenue; former service stations and auto repair facilities at 150

and 151 12th Avenue and a number of historical laundries and dry cleaners to the south of Yesler Way. The current and former uses of nearby properties indicated site specific soil and groundwater sampling was warranted.

- Site investigations identified fill soils over much of the property, apparently deposited from the original regrading of 12th Avenue during the early 20th century. These soils are relatively soft and contain organic topsoil deposits and debris. Groundwater was encountered at depths ranging from about three to 16 feet below the ground surface, with a general gradient to the southeast, approximating the local topography. Groundwater seepage was generally limited and variable, most likely consisting of discontinuous perched water conditions within the fill and sandier horizons in the underlying native soils.

- Soil samples collected as part of the Phase II site investigation identified five areas of the site where impacts by petroleum constituents or lead exceed current Washington State Model Toxics Control Act (MTCA) Method A cleanup criteria. Each of these distinct areas are relatively small, with estimated volumes ranging from approximately 100 to 800 cubic yards of contaminated soil. A total volume of 1,500 to 2,600 cubic yards of impacted soil is estimated, extending to a maximum depth of approximately 18 feet below the ground surface. Soils in these zones exceeded Washington State Model Toxics Control Act (MTCA) soil cleanup criteria for gasoline or motor oil-range petroleum hydrocarbons. One area included benzene, ethylbenzene and xylenes as petroleum constituents that exceeded cleanup levels. One area of fill soil near the center of the property contained lead at a concentration that exceeded MTCA Method A soil cleanup criteria.

- Groundwater samples taken during the Phase II site investigation encountered impacts by petroleum constituents and chlorinated solvents that exceed MTCA Method A groundwater cleanup criteria. Concentrations of gasoline-range total petroleum hydrocarbons exceeded the Method A cleanup level at three locations in the vicinities of the former gas station and basement auto repair. Diesel-range petroleum hydrocarbons were found to exceed the Method A cleanup level at five locations near the former gas station and basement auto repair. Benzene was encountered at two locations in the former gas station area.

  Detected chlorinated solvent compounds in groundwater included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2 dichloroethene and vinyl chloride. PCE is a common dry cleaning solvent and the other detected compounds are common degradation products that result from the breakdown of PCE in the environment. PCE was detected at two locations in the southeastern parking lot near Yesler Way, at concentrations of 3.1 ug/l and 12 ug/l, exceeding the 5 ug/l MTCA Method A cleanup criteria at one location. TCE was detected at three sampled locations at concentrations ranging from 1.6 ug/l to 17 ug/l, exceeding the MTCA Method A groundwater cleanup level of 5 ug/l in two samples from the southeastern parking lot. Vinyl chloride was encountered at five sampled locations across the site at concentrations ranging from 0.2 to 1.9 ug/l, at or above the MTCA Method A cleanup criteria of 0.2 ug/l. None of the reported detections of cis-1,2 dichloroethene exceeded the MTCA Method B standard formula value for that compound.

- Sub-slab soil vapors from below the 104 12th Avenue building contained trace levels of petroleum-related volatile compounds and several chlorinated solvents. Three detected compounds exceeded Washington State's draft sub-slab soil vapor screening levels; naphthalene, chloroform and bromodichloromethane. Of these compounds, only naphthalene would likely be associated with releases at the subject site. Chloroform and bromodichloromethane are both compounds that can be generated from municipally-treated drinking water.

- All of the detected soil and groundwater impacts are at depths which could be removed as part of an overall redevelopment of the property. A full cleanup action plan will be necessary to evaluate the most feasible approaches to removal and proper management of wastes, but it is likely this site could receive a site-wide determination of No Further Action from the Washington Department of Ecology after cleanup has been completed.

This summary is for introductory purposes only, and should be used only in conjunction with the full text of this report.

PHASE I & II ENVIRONMENTAL SITE ASSESSMENT

POTENTIAL REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON

September 1, 2017
Project No. WES-1591

Prepared for:

Seattle Land Use Co.
1100 Dexter Avenue N., Suite 275
Seattle, WA 98109

By:
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PHASE I & II ENVIRONMENTAL SITE ASSESSMENT

REDEVELOPMENT PROPERTY
104-124 12TH AVENUE & 1209 E. FIR STREET
SEATTLE, WASHINGTON

1.0 INTRODUCTION

Whitman Environmental Sciences was retained by Mr. Michael Pollard of the Seattle Land Use Co. to conduct a Phase I Environmental Site Assessment (ESA) on a property on the eastern side of 12th Avenue, extending from the intersection with E. Yesler Way to E. Fir Street, in the Yesler Terrace neighborhood of Seattle, Washington. The property consists of approximately 47,433 square feet of land developed with three older commercial buildings in generally poor condition. At the time of our site reconnaissance the buildings were in active use as a curtain manufacturing company, a restaurant, and an auto repair shop. There is also a vacant tenant space in the restaurant building and two portions of the property are used as parking lots.

The purpose of this ESA is to identify recognized environmental conditions in connection with the property. "Recognized environmental conditions" may be defined as the presence or likely presence of any hazardous substances or petroleum products in, on, or at a property: (1) due to release to the environment; (2) under conditions indicative of a release to the environment; or (3) under conditions that pose a material threat of a future release to the environment.

The term "recognized environmental conditions" includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include "de minimis" conditions that generally do not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

ASTM E1527-13 also uses the terms “historical recognized environmental conditions” and “controlled recognized environmental conditions”. Both terms indicate past releases of hazardous substances or petroleum products have been addressed to the satisfaction of the applicable regulatory authority. A “controlled recognized environmental condition” indicates hazardous substances or petroleum products have been allowed to remain in place subject to the implementation of required controls, such as physical or institutional controls to protect human health and the environment. Any historical or controlled recognized environmental conditions identified by the scope of work of this ESA are discussed in this report.

1.1 Limitations

A Phase I ESA conducted following the 2013 ASTM guidelines is considered suitable to meet the EPA standards of "all appropriate inquiry" for the purposes of CERCLA's landowner liability protections. However, no environmental assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Environmental conditions and regulations are subject to constant change and reinterpretation. Current conditions or regulatory status should not be assumed to represent conditions at some future time.

WES does not guarantee that the site is free of hazardous or potentially hazardous materials or conditions, or that latent or undiscovered conditions will not become evident in the future. This report represents the professional opinions and judgements of WES, prepared in accordance with

commonly practiced environmental assessment procedures. No other warranties, representations, or certifications are made.

WES obtained, reviewed, and evaluated information available from the property owner and local, state, or federal agencies. Regulatory database searches are limited to those facilities which have been identified and listed in the referenced government environmental regulatory files as of the reported dates. WES' conclusions, opinions, and recommendations are based, in part, on this information. Where possible, WES has made efforts to identify mistakes or insufficiencies in the information provided, but verification of all of the information provided is beyond the scope of a Phase I ESA.

1.2 User Reliance

This report was prepared for the exclusive use of the Seattle Land Use Company, their agents, assigns and lenders, specifically for evaluating the current conditions of this property. WES will not be responsible for the interpretation of its data or conclusions by others. ASTM guidance limits the time that this report may be considered a current assessment of the property. This report should be considered valid for a period of 180 days following the date of issue. After that time, ASTM guidance requires the report be reviewed and updated where appropriate.

2.0 SITE DESCRIPTION

2.1 Location, Legal Description and Zoning

The subject property is located in a mixed-use area in central Seattle, King County, Washington. The property and surrounding area are indicated in Figure 1, a Site Location Map, included in Appendix A. The site is bordered by E. Fir Street on the north, warehouses operated by the King County Archives to the east, E. Yesler Way on the south and 12th Avenue on the west. The property consists of four adjoining tax parcels totaling 47,433 square feet. Table 1 identifies the parcels which make up the subject property.

Table 1
Subject Property Parcels

Street Address	***King County Parcel ID***	***Approximate Area (Sq. ft.)***	***Current Owner /Taxpayer***
104 12th Avenue	806100-0025	10,000	Linda, Ralph and Wendy Capeluto
No address – Parking lot only	806100-0035	14,000	Linda, Ralph and Wendy Capeluto
110 12th Avenue	806100-0015	10,000	Van Huynh Luc
124 12th Avenue	806100-0005	13,433	Van Huynh Luc

The 124 12th Avenue parcel includes a gravel surfaced parking lot and a building addressed 1209 E. Fir Street.

The legal description of the property includes portions of Lots 1 through 8 and part of Lot 12 of Block 1 of the Struves Addition. A title report should be consulted for a complete legal description. The property is in the NE ¼ of Section 5, T. 24 N., R. 4 E. Willamette Meridian.

The site is currently zoned NC3-65 for neighborhood commercial uses with a 65-foot height limit. Current site uses do not represent the highest and best use of the properties under this zoning category. Single-purpose commercial buildings, mixed-use residential buildings or residential structures may be suitable uses under this zoning designation.

2.2 Site and Vicinity Characteristics

Figure 2, a Site Vicinity Map, indicates the shape of the property and its relationship to adjacent lands. The property is at the intersection of major arterials, with E. Yesler Way crossing east-west through the area and 12th Avenue crossing north-south. There are small scale commercial properties aligned along parts of 12th Avenue and major mixed-use residential developments are occurring in the surrounding area, replacing smaller scale low income housing and single family homes. To the south, across Yesler Way is an elementary school (Gatzert Elementary).

The site and surrounding area slope generally downward to the southeast from First Hill, a local high area that crests about 2,000 feet to the northwest.

2.3 Description of Site Development

Photographs of the current site developments and conditions are included in Appendix A.

2.3.1 Site Structures

There are currently three structures on the property, summarized below.

104 12th Avenue

The building addressed 104 12th Avenue is a two-story reinforced concrete building of about 10,000 square feet in area, built in 1926. The building has been used by the Seattle Curtain Manufacturing Co. since at least 1966. The building is outdated but remains in fair condition. The main entrance and truck dock is near the northwestern corner of the building along 12th Avenue. An entrance and truck ramp on the south side of the building, along Yesler, accesses the basement. The building has large work areas where cloth panels can be sewn, offices and storage areas. The basement is no longer used for manufacturing and consists of somewhat cluttered storage for materials and old equipment. The building is heated by a central gas-fired boiler enclosed in an isolated room in the basement. There are no reported or observed underground storage tanks associated with the building.

110-118 12th Avenue

The building at 110-118 12th Avenue is a one-story wood-framed multi-tenant structure with a walk-out basement or crawl-space accessed from the rear of the building. The building was constructed in 1940, has about 9,000 square feet of rental space and is in poor condition. It is currently divided into two tenant spaces, one of which houses an Ethiopian restaurant. The northern half of the building is vacant. In the past, this building has been divided into as many as five smaller spaces. Tenant history is discussed in Section 2.5 - Past Uses of the Property, below. The building does not have a central heating plant. There are no reported or observed underground storage tanks associated with the building.

1209 E. Fir Street

The building addressed 1209 E. Fir Street is located on the northern-most parcel of this property. The parcel itself is addressed 124 12th Avenue in current King County Assessor's records. It is an older auto repair garage of masonry block construction built in about 1949. There is a small office area and two garage bays used for auto repair. A storage room addition was built on the south end of the structure in about 1988. That addition is now used as a paint booth for auto body repairs. The building has no reported or observed below-ground hydraulic lifts or underground storage tanks. There is limited amount of paved parking on the east side of the building with a storm drain catch basin fitted with a crude oil/water separator.

2.3.2 Utilities

Utilities are available in the adjoining right-of-ways. There is currently gas servicing the 104 and 110 12th Avenue buildings from the 12th Avenue right-of-way. There are overhead electric service lines border the property on the south and west sides. Sanitary sewers have been available in this area since it was initially developed, so there is no reason to expect septic systems on the subject property. City water appears to have been available throughout the development history of the area, so no prior drinking water wells are known on or adjacent to the subject site.

2.3.3 Parking and Landscaping Areas

There are two separate parking areas on the property, a large paved parking lot in the southeastern portion of the property associated with the 104 12th Avenue building and a smaller gravel surfaced parking lot on the northwestern corner of the block. The lots are accessed from Yesler, 12th Avenue and E. Fir Street. The gravel parking lot in the northwestern part of the property was formerly a gas station, which was active from about 1941 to 1989. King County Assessor's records indicate the building burned and was then demolished. There is a large central area of the property that is undeveloped and overgrown with weeds, but there are no landscaped areas anywhere on the property.

2.4 Current Use of the Property

The site currently has three main uses; as a manufacturing facility for curtains, a restaurant and an auto repair. At the time of our site visit, all three of the site buildings were in active use. Seattle Curtain Manufacturing Co. operates with a relatively limited staff and only actively uses a small portion of the available space in their building at 104 12th Avenue. The building is cluttered with storage, but the uses are generally environmentally benign. The 110 12th Avenue building is currently only used as a restaurant. The auto repair building at 1209 E. Fir Street is relatively poorly maintained and cluttered with autos, parts and debris. Management of oil, paints and other wastes is relatively poor and the operator has been subject to several site inspections by the Washington Department of Ecology and Seattle King County Department of Health, as discussed further in Section 4.0, the Records Review section of this report.

2.5 Past Uses of the Property

Historical records, aerial photographs, King County records and commercial city directories provide some information about the development history on the property. Copies of some of the available references are included in Appendix B. The earliest readily ascertainable references to the property date to an 1893 Sanborn Fire Insurance Rate Map, which shows that by that date the street right-of-ways were laid out in approximately their current alignment and like many parts of the city, the street names were different than their current nomenclature. At that time Yesler Way was already known as Yesler Street, but 12th Avenue was identified as Kenney Street, and E. Fir Street was

known as Lake Street. Sections of all of these roads were shown to be "Not Opened" indicating unimproved right-of-ways. Undated street grading profiles obtained from the City of Seattle show the approximate current and former ground surface profiles for these surrounding streets. Adjacent to the property, 12th Avenue was filled by as much as 16 feet of soil, while a high area was removed from the areas to the north of Fir Street. This is consistent with the depth of poorly consolidated fill material found during our site investigations, discussed below.

By 1905 another Sanborn Map shows the property was still undeveloped, but street names were changed to the current system. Some development was occurring in the surrounding area, with several residential multi-unit buildings shown to the west of 12th Avenue.

King County Assessor's records show the two-story concrete building at 104 12th was the first development on the subject properties. It was constructed in 1926 and for much of its history was addressed 106-108 12th Avenue. The lower level has been accessed from Yesler and during much of its history has been separately addressed as 1206 Yesler. The earliest Assessor records note that the building was a combination of residential apartments and business.

An historical aerial photograph from 1937 still showed the building as the only development of the property. There was a possible billboard located on the corner of 12th & Fir St. and two footpaths crossing the property. Other than this, the remaining parcels of the subject site were undeveloped.

The earliest readily ascertainable commercial city directory located for this study was a 1928 H.C. Gray street directory which identified the addresses 106 12th Avenue and 1206 Yesler Way. At 106 12th, the directory identified Jerry G. Job Inc., with no information about the type of business. At 1206 Yesler, the directory called out J. M. Smith and Yesler Auto Paint Shop. Neither of these addresses appear in a 1931 Heiden's Seattle House and Street Directory, or 1934 Turner & Parr Numerical Street Address Directory of Seattle available at the Seattle Public Library.

The earliest photograph of the building is from Assessor's records, dated about 1937. The upper floor of the building was nondescript, with no signage. The lower floor along Yesler was painted with signs for an auto garage, for "Storage", "Washing", "Repairing" and "Auto Painting". Currently, there is still signage visible on the rear of the building for Yesler Garage (later painted over to be Modern Garage), addressed 1206 Yesler. It includes a Shell Oil logo and notes gasoline and motor oil.

A 1938 Polk's commercial city directory does not list the 12th Avenue address for the building. A 1939 Polk notes the 108 12th address to be vacant. By the date of a 1940 Polk, the 108 12th address is the home of the 12th Avenue Skating Rink. (In the upper floor of the building some of the floors remain as hardwood gymnasium style slats, from its history as a roller rink.) The 1206 Yesler address is identified as Coles Horticultural Products, fertilizer manufacturers. No other addresses associated with any of the properties were listed. By 1943, the 1206 Yesler address was vacant.

King County Assessor's records indicate the commercial building at 110-118 12th Avenue was built in 1940, immediately to the north of the 108 12th building. The upper floor, at street level was divided into small storefronts. The lower level is unfinished and may have been used for basic utilities, but does not appear to have been suitable for tenant uses. Soon after, a small service station was built on the northwestern corner of the property in 1941. It was a Maxwell Petroleum

gas station with a small auto repair building addressed 130 12th Avenue. It had a single pump island holding three gas pumps. It is unclear how many tanks were originally installed, but later records suggest up to six tanks may have been on the property, ranging from 1,000 to 4,000 gallons in capacity.

By the date of a 1942 Polk directory, the 104 12th Avenue address was first applied to the building at the southwestern corner of the property, listed as the location of B. Radinsky & Son, junk dealers. (Ben Radinsky is identified as an owner or contract purchaser in 1945 King County Assessor's records.) The 1942 Polk also identifies the Maxwell Petroleum station at 130 12th Avenue and has listings for the commercial building at 110-118 12th. The 110 12th space was noted to be vacant, but there was a beauty shop at 112, a drug store at 114, a florist at 116 12th and a grocery at 118 12th.

A 1946 aerial photograph shows the 104, 110-118 and service station buildings aligned along 12th Avenue. There may have been a shed or small structure behind the 110 12th Avenue building. The lot to the east of the 104 12th building remained undeveloped and had limited vegetation. The eastern portion of the northern lot that holds the current building at 1209 E. Fir appears to have been cleared and may have been prepared for construction. That building was reportedly completed in 1949.

A 1948-49 Polk directory lists the 104 12th address as Handcrest Inc. (Basket dealers) and the State Department of Social Security. The 110-118 addresses are all benign retail operations including a, café, florist, market and barber. The service station at 130 12th is identified as Higashi Bros. Mobil Serv.

A 1950 Sanborn Map shows the buildings along 12th Avenue but does not show the 1209 E. Fir garage. It identifies the 104 12th building as the Training Center for the Blind, with autos and general storage in the basement. It notes the 1206 Yesler address on the south side of the building. The 110-118 12th building was divided into five small tenant spaces and the service station is shown with three pumps, noting gas, oil and greasing.

In 1951, the 1206 Yesler address was listed to house Atlas Salvage and Surplus Foods. A 1953 aerial photograph shows the 1209 E. Fir building in place and that a paved parking lot had been constructed to the east of the 104 12th building. Assessor's notes in the property file called it the IGA parking lot, for a grocery store located in the lower level of the 104 12th Avenue building. A 1953 Polk lists the 1206 Yesler address as Food, Inc. and IGA Meats.

Polk directories dating from 1954 to 1963 list the tenants in the 104 12th address as Chamberlin's Handwovens (women's clothing), the Washington Training Center for the Blind and Handcrest Inc., all environmentally benign uses. Assessor's records include 1958 and 1964 photographs of the building that show the IGA grocery in the lower level of the building, with no distinct signage on the upper level space.

In the mid 1950s the 110-118 12th building remained in benign use and the service station was then identified as Herb's Texaco Service Station.

Polk directories from 1958, 1960 and 1961-62 noted the same tenants except that the space at 118 12th Avenue was a screen print shop. Screen printers use a variety of inks, solvents and cleaning

chemicals that are potential sources of recognized environmental conditions, if mismanaged. It should be noted that the tenant uses were most likely limited to the upper floor which is not in direct contact with the ground. By the date of a 1963 Polk, the screen printer had been replaced with Town & Country Venders, a vending machine company. The service station at that time was identified as K-S Associates.

Aerial photographs from 1961, 1965, 1969 and 1970 show the buildings relatively unchanged over that time. The southeastern parking lot appears to have not been used heavily. The open central part of the property behind the 110-118 building gradually became overgrown with vegetation. The service station at 130 12th and the adjacent service garage at 1209 E. Fir were surrounded by cars parking in a disorderly way and the ground around the service station building appeared darkened. In 1966 to 1970 the service station was listed in Polk directories as Pancho's Automotive gas station.

In 1966, the 104 12th building was occupied by the Seattle Curtain Manufacturing Co., who has remained in the building to this date. Until about 1980 the lower level of the building continued to be a grocery store under several names, including T&T Foods, IGA and Yesler Tom Boy Groceries. Eventually Seattle Curtain took over the whole building.

A 1966 Polk directory notes that the 118 12th address was occupied by Robertson's Laundry & Dry Cleaners. Robertson's remained at that address in Polk directories through the 1971-72 edition. In 1974, the address was the location of Zim Hill Baptist Church. In 1974, the service station was listed as vacant.

From 1976 to a 1987-88 edition, Polk directories show the service station at 130 12th Avenue as Frank's Twelfth Avenue Station, or Frank's Auto Repair. An aerial photograph from 1985 shows the service station lot filed with cars and debris in a disorderly manner. The service garage at 1209 E. Fir had a few cars near it, but appeared to be more organized. In a 1989 aerial photograph, the service station was removed and the lot appeared mostly empty. Assessor's records indicate the building was them demolished in July of that year. There is no information about tank removal as part of the demolition, but a 2014 ground penetrating radar (GPR) survey by Associated Environmental Group, Inc. found no evidence of underground tanks. The GPR survey identified a formerly excavated area near the center of the parking lot. This location may have been the former underground storage tank basin.

Since 1989, the site has remained relatively unchanged. There have been no other tenant changes that suggest other site uses with a potential to be sources of recognized environmental conditions. Polk directories from the late 1980s forward show some of the tenant spaces in the 110-118 12th building to have been occupied by individuals (possibly as residences) as well as restaurants and a food processor. The auto repair operations at the 1209 E. Fir garage have continued throughout that time and in about 1988 an addition to the south end of that building that now serves as a paint booth for auto body repair.

Identified Past Site Uses of Potential Concern

The site history identifies prior site uses on three of the four subject parcels that are potential sources of recognized environmental conditions. Auto repair and painting was conducted in the lower level of the 104 12th Avenue building. Later, that space was used for fertilizer manufacturing. The 118 12th Avenue tenant space was used for screen printing and as a dry cleaner. The northern parcel has previously held a gas station with underground storage tanks and has a building that has

a long-term history of auto repair that continues as of the date of this report. These noted site uses warrant additional investigation of soil and groundwater conditions, as discussed below.

2.6 Current and Past Uses of Adjoining Properties

The site is located in a mixed-use area, with commercial and institutional development along 12th, Yesler Way and on adjoining property to the east. The intersection of 12th and Yesler has been a minor commercial center since development began in the 1920s. There were a series of small storefront businesses located on the northwestern corner of that intersection, to the west of the subject property. Beginning in the 1920s it served as the Finnish Steam Baths, but was later a drug store, general merchandise market and Laundromat (from about 1963 to 1980).

More notable, there is a long history of dry cleaning operations at addresses located on the west side of 12th Avenue on the adjacent block, dating from about 1930 to about 2005. The businesses operated under the names Crane's Cleaners, Nu Way Cleaners and Dick's Central Cleaners, with address listings varying among 113, 115 and 117 12th Avenue. The most common address listed in commercial directories was 113 12th, and Assessor's records show that building as a long narrow commercial structure, while the 115 and 117 addresses appear to have been residences (possibly converted to commercial use). This site underwent cleanup by the Seattle Housing Authority in 2009-2010, in part using Federal brownfields grant money. The site was redeveloped as part of a mid-rise residential complex that occupies the southern portion of the adjoining block to the west of 12th Avenue. The cleanup was sufficient for the Washington Department of Ecology to make a determination that no further action would be required.

Other cleaners, service stations and auto repair were also historically located in the surrounding area. To the north and northwest, several addresses were identified in historical records as potential sources of recognized environmental conditions. At the northeastern and northwestern corners of the intersection of 12th and E. Fir Street, both properties had a history of use for service stations and auto repair. Further to the north on the adjacent block was another dry cleaner.

On the northeastern corner, addressed 150 12th Avenue, was a service station first built in 1925. It was named the 12th Avenue Service Station until at least 1961, and later was operated as auto repair shops Roy's Auto Rebuild, Paul's Body & Fender Shop and Gregory Auto Repair until at least 1981. It has since been redeveloped.

On the northwestern corner, addressed 151 12th, was Spencer's Service Station from at least 1936 to 1964. After that date it operated as an auto parts store, then as a radiator repair shop from about 1981 to at least 1994. That property underwent cleanup and was redeveloped in about 2012, receiving a no further action determination from the Department of Ecology.

Further north, at 160 12th Avenue was a laundry and dry cleaner that operated from at least 1928 to 1994. Identified as Peerless Laundry, Quality Laundry, Washrite Laundry, Shirts Inc., and Star Laundry, it has been identified by the Washington Department of Ecology as a confirmed contaminated site awaiting cleanup.

To the east is property owned by King County used as warehouses for the County archives. The warehouses were built in about 1954 on property that was previously a small 1940s housing project. There were five long narrow townhome buildings visible in aerial photographs from 1946 and 1953.

To the south is Gatzert Elementary School, built in 1989 on land that had previously been mostly single family residential properties. Some of the prior buildings were used as small storefronts, and included former laundries or dry cleaners, located at addresses of 1203, 1207, 1219, 1307, 1313 and 1317 Yesler Way. Based on the local topography and current redeveloped status, all of these locations would be considered downgradient of the subject property with respect to groundwater migration, so are not likely to be sources of recognized environmental conditions.

To the southwest at 101 Boren Avenue is a former service station (Lloyd's Rocket) that is identified as a leaking underground storage tank site awaiting cleanup. Based on it's relative location, it would also be considered downgradient or cross-gradient, so is not likely to be sources of recognized environmental conditions to the subject site.

Identified Past Uses of Off-Site Properties of Potential Concern
The businesses noted above are potential off-site sources of recognized environmental conditions. As discussed below, WES conducted additional records review of files at the Washington Department of Ecology and recommended additional site investigation both on the property and in surrounding right-of-ways to identify potential soil or groundwater contaminants.

3.0 USER PROVIDED INFORMATION

To complete this assessment WES was provided full access to the property and several prior environmental reports or data summaries regarding one or more of the subject lots. These documents include a 2016 Phase I Environmental Site Assessment of the 104 12th Avenue building, undated data summaries from a follow-up Phase II Site Investigation of the 104 12th building, a 2014 Phase II site investigation of the former service station area at the northwestern corner of the property, and a 2014 proposal for a Phase II assessment of the 110-124 12th Avenue properties that was never completed. The proposal included a summary of findings of a prior Phase I Assessment, but the full Phase I report was not made available to this current study for reference.

These documents were reviewed and information used to supplement the discussions throughout this report. The previously available reports are identified in Section 9.0 References of this report.

4.0 RECORDS REVIEW

To determine conditions and past uses of the property and vicinity, WES reviewed readily available sources of information including published environmental databases, U.S. Geological Survey (USGS) topographic maps, geologic and hydrogeologic references, current and historical Assessor's data, historical city directories and aerial photographs of the site and vicinity.

4.1 Environmental Database Review
As a part of this study, current federal and state environmental database listings were obtained directly from appropriate government agencies. Databases were reviewed on-line using the Department of Ecology's Facility/Site Search Database and "What's in My Neighborhood" on-line tool, as well as the U.S. Environmental Protection Agency's Envirofacts Multisystem Search and EnviroMapper systems. These databases include all standard environmental record sources required by current ASTM standard practices. Radius searches were conducted extending up to one mile of the subject property, identifying all facilities identified by regulatory programs in State

and EPA systems. Copies of pertinent data summaries and facility reports from the Ecology and EPA search engines are included in Appendix C. Some of the identified sites warranted additional file reviews to determine their status with Ecology. Information obtained from file reviews are noted in the following discussions and in Section 4.3, below.

The subject property is located on the southern slope of a topographic high (First Hill) that crests about 2,000 feet to the northwest of the site. As a result, only those identified sites in close proximity or higher elevation to the west, northwest or north would be considered potential sources of migrating contaminants that could impact the subject property. More distant sources are hydrogeologically isolated or downgradient of the subject property with respect to groundwater and contaminant migration. Based on this, WES used professional judgement to limit the search radii for some databases, as allowed under ASTM standard practices (ASTM E-1527, Section 8.1.2.1).

One address associated with the subject property was identified in the environmental databases. TD Auto Repair at 1209 E. Fir is listed on the Washington State Hazardous Sites List, having been identified by Ecology as a confirmed contaminated site after receiving complaints about illicit dumping. The agency completed a Site Hazard Assessment in 2001. Ecology's information is discussed further, below. The Hazardous Sites List is a subset of Ecology's Confirmed and Suspected Contaminated Sites List, discussed below.

The other parcels that make up the site are not identified in any environmental database. They are not confirmed or suspected contaminated sites, have had no reported releases of hazardous or regulated materials, have no registered underground storage tanks or any other regulated activities that brought the site to the attention of State or Federal environmental regulators. No record of any environmentally related liens or restrictive covenants were found during the course of this records search.

4.1.1 Standard Environmental Record Sources

The following standard environmental record sources were included in the databases searched:

- The United States Environmental Protection Agency's (USEPA) National Priorities List (NPL) within one mile of the subject property, and de-listed sites within ½-mile;

  No active or inactive NPL sites were identified within the approximate minimum search distance of the site.

- USEPA RCRA Corrective Action Sites (CORRACTS) List of sites undergoing corrective action for a release of hazardous wastes within one mile of the subject property;

  No RCRA CORRACTS sites were identified within the approximate minimum search distances of the site.

- State of Washington Confirmed and Suspected Contaminated Sites List (CSCSL), which includes all sites on Washington's Hazardous Sites List and Voluntary Cleanup Program sites within one mile of the subject site, and sites formally determined to require no further action within ½-mile;

One hundred ninety two Washington State confirmed or suspected contaminated sites were identified within the approximate search distance, including TD Auto Repair, on the north end of the subject property. A review of publicly available information from Ecology's file indicates the listing is based on two site inspection visits conducted in 1993 and 2001. During the 2001 visit, Ecology's inspector took three near-surface soil samples and had them analyzed for diesel and motor oil-range total petroleum hydrocarbons, volatile organic compounds and a list of metals. One of the three samples contained a concentration of 3,200 mg/kg of heavy oil and 1,000 mg/kg of lead, results that exceeded MTCA Method A cleanup levels. Although this sampling is the first indicator of potential pollutants, the scope of sampling was extremely limited. The Site Hazard Assessment Ecology uses to rank the priority of hazardous sites scored the site as a three on a scale of one to five, indicating it is a moderate priority for agency attention and resources.

Of the other identified sites, 83 have been granted No Further Action status by the Department of Ecology. Eleven of the identified sites are within ¼-mile of the subject property, (including TD Auto) and of those, four have been determined to require no further action, including two sites immediately adjacent to the subject property. These are the NuWay Cleaners site at 113 12th Avenue, redeveloped by the Seattle Housing Authority and B&B Auto Repair, at 151 12th Avenue. Both of these sites are on the west side of 12th and would be considered upgradient with respect to groundwater or contaminant migration. A review of file information from Ecology indicates the NuWay Cleaners remediation involved excavating about 6,000 tons of soil contaminated with petroleum and dry cleaning solvents. Groundwater impacts were initially identified, but post cleanup sampling of four on-site monitoring wells showed no detectable contaminants. The scope of groundwater monitoring was limited compared to the extent of cleanup that was conducted. No sampling was ever conducted in the right-of-way of 12th Avenue in the area between the NuWay Cleaners site and the subject property to demonstrate whether or not there were off-site impacts.

The B&B Auto site involved excavation of petroleum and metals contaminated soil. The property has been successfully redeveloped after receiving Ecology's determination that no further action would be required.

The remaining nearby sites are identified as Star Laundry, on the block to the north of the subject property; Lloyd's Rocket gas station, located about 250 feet to the southeast; the King County Youth Service Center at 12th & Alder Street about 750 feet to the north of the subject site, where a tetrachrloroethene (PCE) plume has been identified and an hydraulic oil spill has been reported; a Shell service station at 1262 S. Jackson, more than 900 feet to the south, and Armored Transport NW, at 1401 Yesler, about 1,000 feet to the southeast.

The Star Laundry site, located at 160 12th Avenue is a former dry cleaning facility that has been confirmed to have had releases to groundwater. According to publicly available records, the facility was reported to Ecology in 2015, although an earlier investigation in 2004 identified groundwater contamination by PCE, vinyl chloride and cis 1,2-dichloroethene. The source of contamination is apparently a former sump or tank in

the southeastern corner of the 160 12th Avenue building, where high concentrations have been reported. That location is about 150 feet north of the 1209 E. Fir St. building. According to a groundwater monitoring report, groundwater gradients at the Star property are to the northeast, which is in a direction away from the subject property. However, this does not agree with local topography which trends more to the southeast. Ecology has conducted a site hazard assessment and listed the property on the Hazardous Sites List. The site ranked three on a scale of one to five, indicating a moderate priority.

There is also a known plume of PCE further to the north, at 1211 Alder Street, at the King County Youth Services complex. This plume extends to the southeast beyond that property's boundary and the full extent remains unknown. The source area soil has been removed during redevelopment of that property. Based on the distance and the direction that this plume is noted to extend, it is not a likely source of recognized environmental conditions for the subject property.

The Lloyd's Rocket site, Armored Transport NW and Shell Station identified in the databases are to the south of the subject property. These relative locations would typically be considered downgradient with respect to groundwater migration, which would make them unlikely to be potential sources of recognized environmental conditions for the subject property.

None of the more distant identified sites are in proximity to the subject property or in relative locations that would make them be considered as potential sources of recognized environmental conditions for the subject property.

- USEPA CERCLIS (Superfund Information System) inventory of sites investigated for hazardous wastes under CERCLA, including sites determined to require no further action under federal programs (NFRAP), within ½-mile of the subject property;

  No CERCLIS or CERCLIS-NFRAP sites were identified within the approximate minimum search distance.

- State of Washington Leaking Underground Storage Tank Sites List, within ½-mile of the subject property;

  Twenty three leaking underground storage tank sites were identified within the approximate minimum search distance. All of these sites are also included on the Confirmed and Suspected Contaminated Sites list, discussed above. These include the NuWay Cleaners site, B&B Auto Repair and Lloyd's Rocket noted above. None of the more distant identified leaking underground storage tank sites are in relative positions that would make them likely sources of recognized environmental conditions to the subject property.

  It should be noted that the former on-site service station at 130 12th Avenue has not been identified to Ecology as a leaking underground storage tank site. A 2014 site investigation identified contamination by petroleum hydrocarbons, which should have triggered a reporting requirement. This report was apparently never made by the current owner.

- USEPA (US ACRES) and State of Washington Brownfield Sites, within ½-mile of the subject property;

  Three State or Federal Brownfield sites were identified within the approximate minimum search distance; the Seattle Housing Authority cleanup of the NuWay Cleaners site; an assessment grant for the Lloyd's Rocket site and a cleanup grant issued for a former service station property at 12th & Jefferson, about 1,500 feet to the north. Based on the relative location or regulatory status of these sites, they are not likely to be sources of recognized environmental conditions for the subject property.

- USEPA RCRIS inventory of hazardous waste treatment, storage or disposal (TSD) facilities within ½-mile of the subject property, large and small quantity hazardous waste generators or notifiers on the subject property or adjoining parcels, including sites that are no longer regulated;

  No RCRA TSD facilities were identified within the approximate minimum search distance. No hazardous waste generators were identified on the subject properties or adjoining parcels.

- USGS and State of Washington lists of Municipal Solid Waste Facilities, within ½-mile of the subject property;

  No solid waste facilities were identified by the referenced lists.

- State of Washington list of registered Underground Storage Tank (UST) Facilities on the subject property or adjoining parcels;

  No registered USTs were identified on the subject property or adjoining parcels. Tank registration requirements began in 1986, so the previous service station at 130 12th Avenue was most likely operating only as an auto repair shop by the time any associated underground storage tanks needed to be registered. It appears tanks were removed at the time the station was demolished, but there are no records to confirm this.

  It should be noted that heating oil tanks for on-site consumption are exempt from Federal registration requirements so if a heating oil tank is present on the site or adjoining property, it would not be identified in this database.

- State and Federal Institutional Control/Engineering Control Registries, for the subject property;

  The subject site was not identified on the referenced lists.

- US Emergency Response Notification System (ERNS) Database, for the subject property;

  No ERNS notifications were found for the subject site.

4.1.2 Database Review Conclusion

Review of environmental records identified TD Auto Repair as a potential source of recognized environmental conditions on the subject property. It is listed on the Department of Ecology's Hazardous Sites List based on inspections dating from 1993 and 2001. In addition, other sites were

identified in the surrounding area that may have the potential to impact the subject property by migration of contaminants with groundwater. The NuWay Cleaners site to the west, B&B Auto Repair to the northwest and Star Laundry site to the north have each been identified as sites with confirmed groundwater contamination in the past. The NuWay Cleaner and B&B Auto sites have been resolved to the satisfaction of the State, but in both cases, groundwater monitoring was limited to sampling within those property lines. There have not been investigations to determine whether or not contamination extended into adjacent right-of-ways. The Star Laundry site has confirmed groundwater contamination by dry cleaning solvents and has not been cleaned up. Although more distant, it is a potential source of migrating contaminants.

Based on these potential on-site and off-site sources, WES recommended a Phase II Site Investigation.

4.2 Prior Environmental Site Investigation Reports

At least two prior Phase I Environmental Site Assessments have been conducted on parts of the property, followed by Phase II Site Investigations. Data from the prior investigations is included in Appendix F.

2014 Cardno ATC Phase I ESA, 124 12th Avenue and 1209 E. Fir Street

In 2014, Cardno ATC evaluated the northern parcels including 110 12th Avenue, 124 12th Avenue and the shop addressed 1209 E. Fir Street. Although this report was not available for review as part of this current study, Cardno ATC prepared a March 28, 2014 proposal for a Phase II Site Investigation that summarized their Phase I findings. They identified the gravel parking lot as a former gas station and found records of five underground storage tanks, including four 1,000 gallon tanks and one 4,000 gallon tank. The found no records of tank removal. They identified the 1209 E. Fir building as an auto repair since at least 1949 and noted it appears in regulatory databases as “awaiting cleanup”. They noted oily water in an oil/water separator near the entrance to the 1209 E. Fir parking lot and surficial staining of floors in the building. They also identified a former dry cleaner in the 118 12th Avenue tenant space. They noted off-site potential sources of contamination to the north, northwest and west. These findings are consistent with the information developed during this current study. It does not appear that Cardno ATC was selected to conduct the Phase II investigation outlined in their proposal.

2014 AEG Phase II Site Investigation, 124 12th Avenue Parcel

Later in 2014, Associated Environmental Group, LLC (AEG) conducted a Phase II Site Investigation limited to the former service station area in the northwestern corner of the property. They conducted a ground penetrating radar (GPR) survey in an attempt to identify tanks and drilled six soil borings in the gravel parking lot, obtaining soil and groundwater samples for laboratory testing. The GPR survey did not find any remaining tanks, but appeared to locate a disturbed area in the central part of the property. This location is consistent with potential former tank locations based on the known layout of the building and pump island. Their soil sampling found three locations with detectable petroleum hydrocarbons or fuel-related volatile organic compounds. At two of those locations the reported concentrations exceeded Washington State Model Toxics Control Act (MTCA) Method A soil cleanup levels. Groundwater samples were obtained from five of the six borings. Two of those contained concentrations of gasoline-range total petroleum hydrocarbons (TPH-G), benzene, and xylenes. At both locations the reported benzene concentration exceeded MTCA Method A groundwater cleanup levels. At one location, the groundwater contained a very high concentration of TPH-G; 14,000 ug/l compared to a MTCA method A groundwater cleanup

level of 800 ug/l. The impacted soil and groundwater areas correspond to the former pump island area of the service station and the southern part of the parcel, adjacent to the suspected former tank area. Although these findings identified a reportable quantity release, the information was apparently not submitted by the property owner to the Department of Ecology, as required by law.

2016 Farallon Phase I and II Site Investigations, 104 12th Avenue Building and Parking Lot
In 2016, Farallon Consulting conducted a Phase I ESA and Phase II Site Investigation on the 104 12th Avenue building and adjacent parking lot to the east. The Phase I report and draft data summaries from the Phase II were made available for this current study. Farallon identified the prior building uses for auto repair and fertilizer manufacturing, as well as the off-site uses of adjacent properties as potential sources of recognized environmental conditions. They conducted a Phase II Site Investigation that drilled 12 soil borings and installed six groundwater monitoring wells on the two parcels. Soil and groundwater samples were analyzed for petroleum and solvent related volatile organic compounds. It is unclear if a final report of their findings was prepared. WES was provided with draft diagrams showing the sampled locations where soil or groundwater contained detectable contaminants, and a draft groundwater contour diagram indicating a general gradient to the southeast across the parking lot parcel.

Farallon reported concentrations of diesel and oil-range total petroleum hydrocarbons (TPH-D and TPH-O) in soil near a small oil/water separator in the southwestern corner of the building, and one sample from near the northwestern corner of the building containing a very low but detectable concentration of cis-1,2-dichloroethene (DCE). DCE is typically encountered as a daughter product of the breakdown of tetrachloroethene (PCE) in the environment. None of the detected soil concentrations exceeded MTCA soil cleanup criteria.

Groundwater samples were taken from soil borings using temporary screens and six permanently constructed monitoring wells. Farallon reported finding TPH-D and TPH-O exceeding MTCA Method A cleanup levels in a monitoring well installed near the oil/water separator in the southwest corner. That sample also contained a low but detectable concentration of DCE and 0.94 ug/l of vinyl chloride, another breakdown product of PCE. The reported level of vinyl chloride exceeds the MTCA Method A groundwater cleanup level of 0.2 ug/l. Vinyl chloride was also reported at 0.62 ug/l in a monitoring well in the northeastern corner of the parking lot. These were the only reported concentration of any detected groundwater contaminants that exceeded MTCA Method A cleanup levels.

2016 Med-Tox NW Hazardous Building Materials Survey, 104 12th Avenue
As part of their Phase I Farallon subcontracted Med-Tox NW to conduct a Hazardous Materials Building Survey of the 104 12th building. The survey checked for asbestos containing materials (ACM), lead paint, PCB-containing equipment and other hazardous or regulated substances. The study found confirmed ACM flooring in the first and second-floor restrooms and 9"x9" floor tile and mastic that are both ACM. The total quantity of each material was estimated to be less than 420 square feet. The study did not have access to the roof, so it was assumed to be ACM. The study identified lead based paints on the building interior and exterior surfaces. Fluorescent light fixtures were assumed to be PCB-containing and bulbs counted as Universal Wastes, requiring special handling. Several mercury-containing light switches were identified. This survey was suitable for a property transaction review but would most likely not be comprehensive enough to serve as a demolition-oriented survey that would be required by the Puget Sound Clean Air Agency (PSCAA) as part of their permitting process.

4.3 Physical Setting

A portion of the United States Geological Survey (USGS) 7.5 minute topographic maps of the area of the site are used as the base map for Figure 1. The site has an overall slope, but has been leveled in the northern and southern parts of the property. The site is at an elevation of about 220 feet above Mean Sea Level at the northwestern corner and about 200 feet in the parking lot in the southeastern part of the site. The surrounding area is also generally sloping to the southeast.

4.3.1 Flood Potential

The site is not within any Federal Emergency Management Agency (FEMA) defined flood plain.

4.3.2 Surface Water Bodies

There are no major surface water bodies on or immediately adjacent to the subject site. The closest body of surface water is Elliott Bay, approximately one mile to the west and at lower elevation.

4.3.3 Soil and Groundwater Conditions

The area of the site is characterized by glacial sediments deposited from the Frasier glaciation, ending approximately 13,000 years ago. Native soil should be expected to be dense silty and clayey sand sometimes interlayered with silty sand with gravels. Due to the prior grading in the area before the site was developed, there is extensive fill extending to depths of up to 19 feet, overlying buried topsoil. The fill is soft and poorly consolidated. Appropriate geotechnical investigation is recommended for any proposed future development.

Shallow groundwater was encountered during the prior site studies and site investigation discussed below, at depths ranging from two to 16 feet below the ground surface. Shallow groundwater was encountered within two feet below the floor slab of the lower level of the 104 12th Avenue building, but at depths of about 16 feet in the gravel parking lot in the northwestern corner of the property. Given the overall slope of the property, this suggests a groundwater gradient generally to the southeast, following local topography. A survey of the measuring points on the monitoring wells would be required to establish the relative elevations of groundwater at each location.

4.3.4 Seismic Potential

The Puget Sound area of western Washington State is seismically active. Adequate geotechnical investigation, foundation design and adherence to building codes can minimize the potential for earthquake related damages. The potential for seismic disturbance is not a recognized environmental condition as defined by ASTM standards, however, seismic events may cause releases of otherwise adequately managed hazardous materials. There are no observed larger scale sources of hazardous or regulated materials, such as tanks, pipelines or industrial operations in a position immediately upslope or upgradient from the site which would have the potential for releases under seismic disturbances.

4.3.5 Radon Potential

Parent rock materials of the sediments in the Puget Sound basin are basaltic. These materials do not typically contain elevated concentrations of thorium or other radioactive elements. The

area is considered to have low potential for radon hazards. Radon measurements summarized by the Washington Department of Health indicate that of 1,065 tests conducted in King County over a 16 year period, an average concentration of 0.60 picoCuries/Liter (pCi/L) was detected. Only four tests performed in King County over that time period detected concentrations in excess of 4 pCi/L, the level EPA recommends as an action level for radon concentrations.

The U.S. EPA classifies King County as Zone 3 for radon potential. EPA interprets this to mean these areas are predicted to have a indoor radon potential less then 2 pCi/L. Based on the number of tests conducted in King County, and the very low percentage of tests above EPA recommended action levels, testing for radon does not appear warranted. The potential for radon does not appear to present an environmental hazard. No radon testing is recommended.

4.3.6 Vapor Migration Potential

Releases of volatile contaminants to soil or groundwater on or near the subject site can result in migration of harmful vapors in the subsurface. Many State and Federal regulatory agencies have developed regulations or policies to address the potential for vapor intrusion into buildings near releases. The U.S. Environmental Protection Agency issued a final guidance document in 2015 Washington State has a draft guidance policy for assessing the potential for vapor intrusion, but does not yet have formalized State regulations.

The soil and groundwater concentrations of petroleum constituents identified by the 2014 AEG Phase II and the vinyl chloride reported by Farallon's 2016 draft Phase II data suggest a potential for subsurface migration of contaminant vapors that could intrude in the current site building. Based on this, WES conducted limited sub-slab soil gas sampling in the lower level of the 104 12th Avenue building, as part of the Phase II Investigation discussed below.

4.3.7 Physical Setting Conclusion

The reported soil and groundwater contaminants suggest a potential for vapor intrusion into existing structures on the property. WES recommended a limited soil vapor study in the 104 12th Avenue building, as discussed below. No other conditions of the site's physical setting suggest recognized environmental conditions.

4.4 Historical Use Information

Various sources of historical information are available to identify past uses of the site and surrounding properties. WES reviewed standard historical sources, including historical real estate records, city directories, aerial photographs, property tax information and Department of Ecology files on the site and surrounding area. Copies of some of the pertinent historical documents are included in Appendix B. This historical information is the basis for much of the discussion of the current and past uses of the site and surrounding area in Sections 2.5 and 2.6 of this report. Section 9.0 identifies the references used for this assessment.

Historical records identify a former service station on the northern end of the subject property, past uses of the lower level of the 104 12th Avenue building and a long history of auto repair in the 1209 E. Fir Street building. It is unclear whether or not there were underground storage tanks associated with the historical auto servicing in the lower level of the 104 12th building, or if underground storage tanks were removed from the former service station building when it was demolished in the late 1980s. These former site uses suggested a site investigation was warranted to identify associated contamination, if any.

4.5 Records Review Conclusion

WES reviewed published environmental databases, geologic references and standard historical sources to define historical site uses and conditions. Historical records indicate further site investigation was warranted. The Phase II site investigation was conducted, as addressed in Section 6.0 of this report. below.

5.0 PHASE I SITE RECONNAISSANCE

On April 3rd, 2017, Daniel Whitman of WES conducted a site reconnaissance on the subject property. The reconnaissance consisted of walkover survey of the site and surrounding properties and observations of the surrounding area from public right-of-ways.

5.1 Walkover Survey

During the walkover survey, WES visually and physically observed conditions of the property as a means of identifying recognized environmental conditions. All parts of the property were available for this review. Site conditions were photographed during the walkover survey. Site photographs are presented in Appendix A.

5.1.1 Site Observations

The following observations were made during the site walkover surveys:

Surface Access

The property is fenced or secured along most site boundaries. The parking lots can be secured by locking gates, but are generally open during the day. There are vehicle access drives from the bordering streets to the north, west and south sides. The 104 12th and 1209 Fir buildings have relatively obscure entries, or main doors that are not in common use. Employees enter the buildings through back entrances or the main garage doors.

Wooded Areas and Vegetation

The level of site development has not changed in many years. There is an undeveloped portion of the 110 12th Avenue parcel behind the building that is overgrown with weeds and brush. There are no wooded or landscaped areas.

Drainage Pathways and Erosion Plains

There are no drainage pathways or erosion features on the property.

Railroad Spurs

No railroad spurs were observed on or abutting the property.

Utilities, Storm Drains, Wells and Cisterns

All locally available municipal utilities are available in the area surrounding the site. There are overhead power lines paralleling Yesler Way and 12th Avenue, with small pole-mounted transformers located next to the 110 12th Avenue building. Transformers are the property and responsibility of Seattle City Light. Underground water, sewer and gas connections are available to the site. There is one catch-basin fitted with a simple oil/water separator in the parking lot east of the 1209 E. Fir building. There are no catch-basins in the southern parking lot or other

locations on the property. There are no known or reported drinking water wells or cisterns on the site or in the immediate surrounding area.

Buildings, Other Structures, Foundations and Ruins
As discussed above, there are three current buildings on the subject site, all in fair to poor condition. There are no ancillary structures. At the time of our site visit, the buildings were in active use, except for the vacant northern tenant space of the 110 12th building. There are no visible foundations or ruins from the former gas station in the northern parking lot.

Septic Systems
City supplied sanitary sewer has been available to this area since the time these buildings were originally constructed, so there is no reason to suspect historical septic systems. There is no visible evidence of any prior septic systems.

Transformers and Suspect PCB-Containing Equipment
No large scale transformers or other large equipment commonly suspected to contain PCBs were noted on the property.

Heavy Equipment, Tankers, Spray Rigs and Paint Booths
No heavy equipment, tankers, or spray rigs were observed on the subject site. The auto repair at 1209 E. Fir Street uses floor-mounted hydraulic lifts and has other tooling for auto repair. They also operate a paint booth with controlled ventilation, sized large enough to hold a common automobile for painting. The booth is in good condition.

Storage Containers and Drums
The auto repair business uses retail packaged auto maintenance chemicals in sealed containers. The largest packages are about five gallons in capacity. Products include oils, anti-freeze, brake fluid, lead-acid batteries, paints, thinner, solvent cleaners and other maintenance chemicals. All of these products appear to be moderately well managed. The company maintains a spill kit to collect inadvertent releases.

The restaurant in the 110 12th Avenue tenant space has a variety of cleaners and maintenance chemicals in institutional packaging. These appear relatively well maintained. The restaurant keeps two waste grease drums in the northern parking lot.

There are two collections of drums containing investigation-derived wastes from the prior 2014 and 2016 site investigations by others. These typically contain soil cuttings, purge water and wash water. There are approximately 16 55-gallon drums in the southern parking lot and three 30-gallon drums in the northern lot.

Smells of Chemical Gases, Petroleum Products or Foul Odors
No excessive smells of chemical gases, petroleum products or foul odors were noted on the subject site.

Landfill, Dumping, Disturbed Soils or Disposal Activities
There is a slope downward from the northern parking lot to the central part of the property that appears to consist mostly of fill soil. The fill contains visible brick and other debris. The northern parking lot appears to have been paved in the past, but the surface has mostly been removed

and is gravel surfaced. This may have been due to the disturbance of demolishing the former service station.

There are typical municipal waste dumpsters for routine recycling and solid waste handling, kept in the northern and southern parking lots. The southern lot is currently used for storage and waste management by a construction company that keeps a large construction waste container near the entry gate. No hazardous or regulated materials were observed in the waste disposal areas.

There is some limited dumping from the rear of the restaurant tenant space into the undeveloped central portion of the property. Wastes and debris have accumulated outside the rear of the building.

Surface Impoundments or Holding Ponds
No evidence of surface impoundments or man-made holding ponds was observed on the property.

Air Emissions or Wastewater Discharges
No evidence of air emissions or waste water discharges requiring an industrial wastewater discharge permit were observed on the subject site. The paint booth in 1209 E. Fir ventilates directly to outdoor air, which at times can lead to moderate paint odors on the property.

Industrial or Manufacturing Activities
The 104 12th Avenue building is used for curtain manufacturing, with large scale sewing equipment and stored supplies of material and curtain hardware. There is no observable management of hazardous or regulated materials as part of their manufacturing processes. No other evidence of current industrial or manufacturing activities was observed or reported on the subject site.

Sumps and Hydraulic Lifts/Equipment
Three sumps were identified on the property. There are two oil/water separators, one located in the lower level of the 104 12th Avenue building and a second in the parking lot to the east of 1209 E. Fir. The 104 12th separator was dry at the time of our site visit. There is also a sump that appears to collect drainage from the roof of the paint booth addition near the southeastern corner of the 1209 E. Fir building. This sump held relatively clear water at the time of our visit.

Above Ground or Underground Storage Tanks
There is no visible evidence of current above ground or underground storage tanks on the properties. Records indicate up to six underground tanks were at one time present at the former service station in the northwestern property corner, but there is no readily observable evidence that any remain on site.

A sign painted on the rear of the 104 12th Avenue building identifies the former auto repair that occupied the lower level of the building. It notes that the services included gasoline and motor oil. There is a potential that underground storage tanks may have been associated with that business, but there are no records that specifically identify underground tanks and no visual evidence or remaining features that suggest tanks.

Monitoring Wells, Piezometers or Remediation Activities
Six monitoring wells were observed on the 104 12th Avenue and adjacent parking lot parcels. These were installed as part of the 2016 site investigation conducted by Farallon Consulting. Additional patches to the floors and asphalt parking lot correspond to the locations of other soil borings drilled as part of that investigation. The existing monitoring wells were accessed and sampled as part of the Phase II investigation detailed below. There is no visible evidence of prior remediation on the subject property.

Stained or Discolored Soil
Minor evidence of stained or discolored soil was observed at the south end of the 1209 E. Fir building, where the ground surface slopes to the south. Additional minor staining was noted in the parking lots to the east and west of that building. No other staining or discolored soil was noted that would be indicative of recognized environmental conditions.

Leachate or Seeps
No evidence of leachate generation or seeps were observed on the subject property.

Chemically Distressed, Discolored or Stained Vegetation
No evidence of chemically distressed, discolored or stained vegetation was observed on the subject property.

Chemical Spills or Releases
No visible indications of chemical spills or releases were observed on the property.

Surface Water or Groundwater Contamination
No visible indications of surface water or groundwater contamination can be observed on the ground surface of the property.

Oil or Gas Exploration, Production or Refinery Activities
No indications of oil and gas exploration, production or refinery activities were observed on the subject site.

Farm Wastes
No evidence of residual farm wastes was observed on the subject site.

Misuse of Pesticides or Agricultural Chemicals
No evidence of prolonged or excessive use of pesticides, herbicides, fertilizers or other agricultural chemicals was observed on the subject site.

Other Known or Observed Sensitive Conditions
No other known or suspected environmentally sensitive conditions were observed on the subject site.

Off-site Sources of Discharges, Run-off or Migrating Contaminants
No off-site sources of discharges, run-off or evidence of migrating contaminants were noted on the property.

5.2 Surrounding Area Observations

The surrounding area properties consist of relatively new developments of mixed-use residential properties to the west and northwest, with rows of older single family homes to the west and northeast. Small scale businesses are located to the north and warehouses for the King County Archives are to the east. The Star Laundry property to the north is now occupied by a music studio and no longer has operations that manage hazardous or dangerous materials. To the south is a relatively recent elementary school and a restaurant/espresso stand on the former property of Lloyd's Rocket service station. There were no current observable conditions on sites in the surrounding area with the potential to be recognized environmental conditions for the subject property.

5.3 Site Reconnaissance Conclusions

WES has conducted a site reconnaissance of the property. This site reconnaissance included on-site observations of the property and observations of adjacent properties from the site or public thoroughfares. Evidence of recognized environmental conditions were observed during our site visit, including pre-existing monitoring wells as evidence of previous investigations, staining and debris in fill on the slope at the south end of 1209 E. Fir, and auto repair activities at the 1209 building.

This assessment did not address the potential for asbestos to be present in or on the site structures. The previously conducted hazardous building materials survey of the 104 12th Avenue building indicates there is relatively small quantities of asbestos-containing flooring in that building. It may be appropriate to sample the building roof in the future, since the survey did not have access and the report presumed it to be ACM. The survey did not include the 110-118 12th Avenue or 1209 E. Fir buildings. If these structures will be removed or significantly altered, a complete asbestos survey will be required before permits can be obtained. Any detected asbestos containing building materials will need to be removed in a controlled manner before disturbance by demolition or remodeling.

6.0 PHASE II SITE INVESTIGATION

As part of this site assessment, historical records identified several potential sources of recognized environmental conditions both on the site and in the surrounding area. WES conducted an environmental investigation of the site to identify and quantify soil and groundwater concentrations of common petroleum constituents and volatile organic compounds related to dry cleaning solvents. Three samples were also analyzed for a list of commonly encountered regulated metals. The field work for this study occurred in several separate work phases between April and August, 2017.

6.1 Soil and Groundwater Sampling

During the investigation, WES drilled 29 soil borings throughout the site and installed three additional permanent monitoring wells. A total of 46 soil samples were selected for laboratory analysis. Groundwater samples were obtained from 22 of the soil borings through temporary screens and all nine of the current and pre-existing monitoring wells. Three sub-slab soil vapor samples were taken from the 104 12th Avenue building.

The initial phase of drilling occurred on April 3rd through 5th, 2017. ESN Northwest, Inc., under subcontract to WES, drilled 13 borings on the southern parcels of the site to obtain soil and groundwater samples. WES and ESN returned on May 12th and 15th, 2017 to drill 11 additional

borings on the northern parcel. Three hand augered borings were drilled in the crawlspace beneath the 110-118 12th Avenue building on May 15th and August 4th.

The approximate boring locations are shown in Figure 3. Larger scale diagrams showing the boring locations on the southern and northen parcels are included as Figures 3A and 3B, respectively. The borings were drilled to depths of 8 to 25 feet below the ground surface. Daniel Whitman, a licensed geologist from WES, conducted all sampling for this project.

6.2 Field Drilling and Sampling Procedures

Due to access constraints, some of the borings were drilled using a small tractor-mounted Geoprobe rig, while others were conducted with larger, truck-mounted Geoprobes. These borings were drilled by direct-push methods, hydraulically driving a two to five-foot long sampler to obtain continuous soil samples throughout the drilled depth. Sample recovery was sometimes limited by loose or exceptionally dense soil conditions. The samplers were cleaned prior to each sampling attempt and were equipped with new acetate liners which isolated the sampled soil from contact with the body of the sampler.

Three borings were hand augered in the crawlspace beneath the 110-118 12th Avenue building where low ceilings and poor access prevented using drilling equipment. Disturbed but representative soil samples were obtained from the auger cuttings at distinct depths below the ground surface.

Representative portions of each sample were placed in laboratory prepared vials and glass jars with teflon-lined lids, chilled and held under chain-of-custody, following appropriate environmental sampling procedures. Additional portions of all samples were held for potential laboratory testing and soil classification reference.

At the final depth of each boring, it was checked for standing water in the borehole. Groundwater seepage was encountered in most of the borings. If no permanent monitoring well was planned for the boring, a 1-inch diameter factory-slotted PVC well screen was installed in the boring to allow groundwater sampling. The screen was purged to remove sediment using a peristaltic pump equipped with new polyethylene tubing. In most cases, recharge to the screen was sufficient to allow pumping until turbidity was reduced and relatively clear water could be obtained. Several of the boreholes produced very little recharge water and sampling was limited to small quantities of turbid water. After drilling and sampling was completed, these borings were sealed with bentonite and surficial asphalt or concrete patches were placed at the ground surface to match the surrounding surface.

Monitoring Well Installations

In three borings, permanent monitoring wells were installed. At borings WES-8 and BN-7, the borehole was expanded by driving a 4-inch diameter casing with a sacrificial steel tip to the planned well depth. In boring BN-10, hollow stem auger was used to provide a larger borehole due to soft soil conditions. In each of these borings a 2-inch diameter Schedule 40 PVC slotted well screen was installed, flush threaded to PVC riser pipe extending to the ground surface. The screen section was surrounded by a silica sand filter pack and a bentonite seal was installed to prevent surface water intrusion. A protective steel monument was installed in concrete at the ground surface.

The new monitoring wells were developed by surging and pumping to reduce sediment and improve communication with the surrounding formation. After allowing the wells to stand for several weeks, they were purged and sampled using a peristaltic pump equipped with new polyethylene tubing. Existing monitoring wells from the prior investigation of the 104 12th Avenue building were accessed and existing dedicated polyethylene tubing was removed and discarded. New poly tubing was installed and these wells were purged and sampled.

Sub-slab Soil Vapor Sampling
Three sub-slab soil vapor samples were obtained by drilling small diameter holes through the concrete floor and installing stainless steel sampling ports wrapped in silicone tubing into the holes. For each sample, the port seal was checked using ethanol, then attached to a teflon tubing manifold and laboratory-evacuated Summa canister. The manifold was purged of air, then the canister control valve was opened until the vacuum in the canister reached a pre-set level. The sample canisters were sealed and submitted to the laboratory immediately after sampling.

6.3 Field Observations
During drilling, the samples were reviewed for soil classification purposes and any field detectable evidence of soil and groundwater contamination, such as staining, odors, discoloration or liquid petroleum. Bore logs detailing the conditions encountered are included in Appendix D.

Shallow soils consisted of silty and clayey sand and silty clay with varying amounts of gravel and organic material, interpreted to be fill. This soil typically extended to depths of four to eight feet, but in some borings beneath the 104 12th Avenue building floor slabs, was limited to as little as one to two feet. In boring BN-11, near the top of the slope in the central part of the property, the fill extended to a depth of 19 feet. Below this layer, the borings encountered organic silty soils that may have been a former topsoil horizon, overlying relatively dense silt or clayey sands extending throughout the depths drilled. None of the borings encountered underground storage tanks or found soil conditions that suggested a former excavation where tanks would have been located.

There was evidence of discoloration or petroleum odors, sheens or staining at six of the borings. These borings were located in the southwestern and southeastern parts of the lower level of the 104 12th building (WES-1 and WES-2); near the former location of the service station pump island (BN-7); at the south end of the gravel parking lot presumed to be the former underground storage tank area (BN-9 and BN-10); and in the crawlspace beneath the 118 12th Avenue tenant space (HA-N).

6.4 Laboratory Testing of Environmental Samples
Based on the observed conditions, a program of laboratory testing was conducted on soil samples from each boring. A total of 46 soil samples, 31 groundwater samples and three sub-slab vapor samples were analyzed. All laboratory testing was completed within appropriate holding times and met the quality assurance/quality control requirements of the project. Sample analyses were completed with detection limits appropriate for comparison to applicable regulatory criteria.

Soil samples were selected for laboratory testing from soil intervals that had field observable indications of potential petroleum impacts, In most cases an underlying sample was also selected to evaluate the vertical extent of contamination. In borings with no field detectable odor or discoloration, soil samples were selected from the depths deemed most susceptible to impacts from the potential sources, or demonstrating conditions at important depths below the ground surface.

The selected sample depths are noted in Table 2. The selected samples were submitted to Friedman & Bruya, Inc., a Washington-state certified laboratory, for environmental analyses.

6.4.1 Laboratory Analyses

Soil Samples

Twelve selected soil samples were tested for total petroleum hydrocarbons (TPH) in the gasoline, diesel and motor oil-ranges by Washington method NWTPH-HCID. This test can identify the presence of hydrocarbons above a threshold detection limit, but cannot accurately quantify the findings. Any detection requires follow-up analysis in for the appropriate range of petroleum to compare the analytical result with Washington State Model Toxics Control Act (MTCA) soil cleanup criteria. Two of these samples required follow-up testing for detected oil-range petroleum hydrocarbons.

Eleven soil samples with possible field indications of petroleum impacts were analyzed for gasoline-range total petroleum hydrocarbons by Washington method NWTPH-G. These samples were also tested for the volatile organic compounds benzene, toluene, ethylbenzene and xylenes (BTEX), often associated with gasoline, using EPA Method 8021B, or a wider list of volatile organic compounds using EPA Method 8260C. This analysis can identify and quantify a list of 63 volatile organic compounds, including petroleum constituents, solvents associated with dry cleaning and related breakdown products. A total of twenty nine soil samples were analyzed by this method.

Nine soil samples were analyzed for diesel and motor oil-range total petroleum hydrocarbons by Washington method NWTPH-D (extended).

Three samples were analyzed for a list of five commonly encountered regulated metals; arsenic, cadmium, chromium, lead and mercury, by EPA Method 200.8.

The results of all laboratory testing of soil samples are summarized in Tables 2 and 2A. The tables include the MTCA soil cleanup criteria used to determine whether or not the sample results meet State requirements. The laboratory reports are included in Appendix E.

Groundwater Samples

All 31 groundwater samples taken in this study were analyzed for volatile organic compounds using EPA Method 8260C. Of these, 21 samples were also analyzed for gasoline-range total petroleum hydrocarbons by Washington method NWTPH-G. Twenty nine samples were tested for diesel and motor oil-range total petroleum hydrocarbons by Washington method NWTPH-D (extended).

The results of all laboratory testing of groundwater samples are summarized in Table 3. The table includes the MTCA groundwater cleanup criteria used to determine whether or not the sample results meet State requirements.

Soil Vapor Sample Analyses

The three sub-slab soil vapor samples were analyzed for a list of volatile organic compounds by EPA Method TO-15. This method can detect and quantify a list of 78 different volatile compounds at extremely low levels. The results are compared to screening levels outlined in Ecology's draft *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation*

and Remedial Action (Ecology Publication 09-09-047, with updated screening level tables in 2015).

The results of all laboratory testing of soil vapor samples are summarized in Table 4. The table includes the draft screening levels used to determine whether or not the sample results suggest vapor intrusion may occur due to the presence of sub-slab vapors.

6.5 Phase II Investigation Results and Conclusions

Soil Sample Results
This site investigation identified evidence of impacts to soil by petroleum at six of the tested locations that exceeded MTCA Method A soil cleanup criteria. One other sample evidenced lead at a concentration exceeding the MTCA Method A cleanup level.

The most commonly encountered contaminant was gasoline-range petroleum hydrocarbons (TPH-G), found in six samples from five different boring locations. These correspond to the former service station pump island location, the south end of the gravel parking lot, under the northern edge of the adjacent 118 12th Avenue tenant space and near the southeastern and southwestern corners of the 104 12th Avenue building. The highest reported TPH-G concentration was 730 mg/kg, units equivalent to parts per million (ppm). The MTCA Method A Cleanup level is 30 mg/kg for gasoline mixtures where benzene is present.

Motor oil-range TPH was found to exceed the MTCA Method A cleanup level at only one location, corresponding to the area of the service bay in the former service station (boring BN-8). The reported motor oil-range TPH concentration was 3,300 mg/kg, compared to a MTCA Method A cleanup level of 2,000 mg/kg.

Diesel-range TPH was detected at five locations, but did not exceed MTCA Method A cleanup levels. All of the diesel-range TPH detections were flagged by the laboratory to indicate that the chromatogram of the sample did not match that of the laboratory standard used to quantify diesel. They interpret the chromatograms to represent a combination of organic material that can be attributed to the observed soil types and breakdown products from the degradation of gasoline-range TPH in the environment.

Only two soil samples, taken from boring BN-7, near the pump island area of the former service station, evidenced volatile organic compounds above MTCA Method A cleanup levels. A sample from 12 feet below the ground surface contained ethylbenzene and xylenes, while a deeper sample from 17 feet contained benzene at a concentration of 0.033 mg/kg, slightly above the MTCA Method A cleanup level of 0.03 mg/kg. None of the soil samples contained detectable concentrations of any chlorinated volatile organic compounds that would indicate dry cleaning chemical releases to soil.

Lead was detected in a sample from boring BN-11, at the south end of the 1209 E. Fir building. The sample was fill soil taken from a depth of 12 feet below the ground surface, with a reported lead concentration of 330 mg/kg. The MTCA Method A cleanup level for lead is 250 mg/kg.

Figure 4 notes the boring locations where soil concentrations were detected exceeding MTCA Method A cleanup levels. Reported detections from the 2014 and 2016 site investigations have been included in this figure as an overall summary of known site conditions.

Groundwater Sample Results
Impacts to groundwater exceeding MTCA Method A cleanup levels were found in ten of the tested borings and monitoring wells. The most widespread groundwater contaminants at levels of concern were TPH-D, TPH-G, TPH-O and vinyl chloride. The locations where petroleum related compounds were detected generally correspond to the locations of former potential on-site sources. TPH-G and benzene were encountered in the former service station area in the northwestern part of the property. TPH-D was also found at some of these locations, and as with soil samples, the laboratory found the chromatograms did not match the laboratory standard for diesel, suggesting much of the reported concentration may be organic matter and degraded gasoline-range TPH. TPH-D and/or TPH-O were also identified in borings in the southern edge of the 104 12th Avenue building (borings WES-1 and WES-4) and in one boring beneath the 118 12th Avenue tenant space (HA-N).

Vinyl chloride is associated with the breakdown of tetrachloroethene (PCE) in the environment and appeared at low levels in three different areas of the site, two of which are not attributable to the suspected on-site sources. Vinyl chloride was found in groundwater samples from below the 118 12th Avenue tenant space where a dry cleaner was once located, but also in the southwestern corner of the 104 12th building and in the eastern half of the parking lot to the east of 104 12th.

Trichloroethene (TCE) and vinyl chloride were detected at levels exceeding MTCA Method A cleanup levels in borings WES-11 and WES-13 in the parking lot to the east of the 104 12th Avenue building. Tetrachloroethene (PCE) was also detected in the sample from boring WES-11 at a level exceeding its MTCA Method A cleanup level. Boring WES-11 is in the north-central part of the parking lot adjacent to one of the King County warehouses. Boring WES-13 is in the east-central part of that parking lot. These locations do not correspond to any previously identified on-site or off-site source area for these contaminants.

A variety of other petroleum related volatile organic compounds were also detected, but at concentrations below MTCA Method A cleanup levels (or Method B standard formula values, for those compounds not included in Method A tables).

Figure 5 notes the boring locations where groundwater concentrations were detected exceeding MTCA Method A cleanup levels. Reported detections from the 2014 and 2016 site investigations have been included in this figure as an overall summary of known site conditions.

Sub-Slab Soil Vapor Results
All three samples of sub-slab soil vapors contained a variety of volatile organic compounds related to petroleum. Two out of three samples also contained chloroform, PCE, methylene chloride or acetone. Of the detected compounds, only three were found at levels that exceed the draft screening levels used to evaluate the potential for vapor intrusion. The reported concentrations of naphthalene ranged from 3.1 to 6.9 ug/m^3 in all three samples, exceeding the screening level of 2.45 ug/m^3. Naphthalene is most commonly found as a component of gasoline and diesel fuels. Chloroform was reported in two of the three samples at concentrations of 5.8 and 96 ug/m^3, exceeding the screening level of 3.62 ug/m^3. Bromodichloromethane was detected in one sample at 5.1 ug/m^3, above the screening level of 2.25 ug/m^3. Both chloroform and bromodichloromethane are often associated with municipally-treated drinking water, occurring as a by-product of the chlorine disinfection process. This could suggest leaking water lines in the vicinity of the building.

These relatively low level detections suggest a limited potential for vapor intrusion and do not directly indicate the current buildings have degraded air quality. Additional interior air quality testing would be necessary to further evaluate the potential for vapor intrusion to be a factor in this building. Since redevelopment would remove all of the current structures, further testing is not warranted at this time.

6.6 Regulatory Considerations

The Model Toxics Control Act (MTCA), Chapter 173-340 WAC, is the Washington State law regarding releases of hazardous or regulated materials to the environment. The findings of this study likely represent reportable historical releases and the owner/operator of the property may have an obligation under Washington regulations to report the release to the Washington Department of Ecology within 90 days of the date of this report. Ecology will typically respond with an Early Notice form letter detailing their processes and will list the site on the Confirmed and Suspected Contaminated Sites List (CSCSL), a database of all impacted properties in the state. Cleanup can be conducted independently under MTCA and if a formal opinion is required from the agency, the site can be enrolled in the Voluntary Cleanup Program. The agency rarely undertakes any enforcement action against a site or property owner, if even the most basic reporting and cleanup planning efforts are conducted.

MTCA defines a contaminated "Site" as the property where the contamination originated as well as any adjoining or nearby properties that have been impacted by the contamination. Although the sources of petroleum related contaminants appear to be on the property, the source of at least some of the vinyl chloride, TCE and PCE remains unknown. With several other known dry cleaning sites in the surrounding area, it is possible that the property is being impacted by off-site sources. MTCA allows for independent property-specific cleanup, so the subject properties can be managed and remediated separately from any other nearby contaminated Sites.

Cleanup standards, as put forth in MTCA, consist of cleanup levels for contaminants of potential concern, point(s) of compliance, and applicable or relevant and appropriate requirements (ARARs). Under MTCA, three methods are available for establishing cleanup levels. Method A cleanup levels are concentrations listed in the regulation for a limited number of substances, intended for use at sites with relatively few contaminants and relatively routine cleanups. Method B cleanup levels are the universal cleanup criteria for Washington state that allows cleanup levels to be based on site-specific characteristics. Method C cleanup levels are intended for industrial sites with more limited exposure pathways and institutional controls that prevent public entry, so would not be applicable to this site.

For this property, Method A would likely be the most rigorous cleanup criteria, but would allow unrestricted future uses of the land. For a redevelopment that includes residential uses, Method A cleanup levels are appropriate.

The contaminants of potential concern for soil at this site are total petroleum hydrocarbons in the gasoline and motor oil-ranges, benzene, ethylbenzene, xylenes and lead. The extent of soil impacts appear to be relatively limited. Figures 6A and 6B note the estimated areas on the south and north portions of the property that would require cleanup to meet MTCA Method A cleanup levels. An total volume of approximately 1,500 to 2,600 cubic yards of petroleum and/or lead impacted soil is estimated in five separate areas of the site. This soil volume is a small fraction of the excavation that would be conducted to redevelop this property with a structure that included one or more levels of basement or below-grade parking.

For groundwater, the potential contaminants of concern include total petroleum hydrocarbons in the gasoline, diesel and motor oil-ranges, benzene, trichloroethene, tetrachloroethene, and vinyl chloride. Shallow groundwater at this site occurs in relatively limited discontinuous sandier zones within the soil. These "perched" conditions occur when surface water or rain percolating into the ground meets a layer of soil with more limited permeability. Pumping the groundwater out or in-situ groundwater remediation under these conditions is not likely to be effective and could take many years to reach acceptable cleanup levels. However, these relatively shallow groundwater bearing soil zones could be removed as part of an overall redevelopment excavation. A structure with below grade parking or basement levels should be equipped with an exterior wall drainage system to preclude further seepage from adjoining properties entering the site.

7.0 FINDINGS AND CONCLUSIONS

Whitman Environmental Sciences (WES) was retained by Mr. Michael Pollard of the Seattle Land Use Co. to conduct a Phase I Environmental Site Assessment (ESA) on a property on the eastern side of 12th Avenue, extending from the intersection with E. Yesler Way to E. Fir Street, in the Yesler Terrace neighborhood of Seattle, Washington. The property consists of approximately 47,433 square feet of land developed with three older commercial buildings in generally poor condition. At the time of our site reconnaissance the buildings were in active use as a curtain manufacturing company, a restaurant, and an auto repair shop. There is also a vacant tenant space in the restaurant building and two portions of the property are used as parking lots.

During the course of this assessment, historical information identified a previous gas station on the northern part of the property and other historical site uses that would be considered potential sources of recognized environmental conditions. These included a former dry cleaner in the vacant tenant space and a former auto repair in the basement of the curtain manufacturing building. Surrounding area properties were also found to have had past uses that were potential sources of recognized environmental conditions with the potential to impact the subject properties. A Phase II site investigation was conducted, drilling 29 soil borings throughout the property.

This Phase I Environmental Assessment has been performed in accordance with the American Society for Testing and Materials (ASTM) E1527-2013 guidance, "Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process"; a work process intended to meet the requirements of the United Stated Environmental Protection Agency (EPA) "All Appropriate Inquiry" Final Rule (40 CFR Part 312). This ESA included a site reconnaissance, records review and interviews.

This assessment has revealed the following evidence of recognized environmental conditions in connection with the property:

- The properties have been developed since the 1920s with a variety of site uses, some of which inherently managed, used or disposed of hazardous or regulated materials. These include the current auto repair business at 1209 E. Fir Street, as well as a former gas station that operated on the northwestern portion of the property from about 1941 to 1989; a former auto repair that operated in the lower level of the building at 104 12th from about 1926 to the mid 1950s; a former screen printing shop and a dry cleaner that each operated in the currently vacant tenant space at 118 12th Avenue. The current and former site uses indicated site specific soil and groundwater sampling was warranted.

- Properties in the surrounding area were identified as potential sources of impacts to the subject site due to historical site uses or known conditions with the potential to migrate toward the properties. These include former dry cleaning facilities that were located at 113 12th Avenue and 160 12thAvenue; former service stations and auto repair facilities at 150 and 151 12th Avenue and a number of historical laundries and dry cleaners to the south of Yesler Way. The current and former uses of nearby properties indicated site specific soil and groundwater sampling was warranted.

- Site investigations identified fill soils over much of the property, apparently deposited from the original regrading of 12th Avenue during the early 20th century. These soils are relatively soft and contain organic topsoil deposits and debris. Groundwater was encountered at depths ranging from about three to 16 feet below the ground surface, with a general gradient to the southeast, approximating the local topography. Groundwater seepage was generally limited and variable, most likely consisting of discontinuous perched water conditions within the fill and sandier horizons in the underlying native soils.

- Soil samples collected as part of the Phase II site investigation identified five areas of the site where impacts by petroleum constituents or lead exceed current Washington State Model Toxics Control Act (MTCA) Method A cleanup criteria. Each of these distinct areas are relatively small, with estimated volumes ranging from approximately 100 to 800 cubic yards of contaminated soil. A total volume of 1,500 to 2,600 cubic yards of impacted soil is estimated, extending to a maximum depth of approximately 18 feet below the ground surface. Soils in these zones exceeded Washington State Model Toxics Control Act (MTCA) soil cleanup criteria for gasoline or motor oil-range petroleum hydrocarbons. One area included benzene, ethylbenzene and xylenes as petroleum constituents that exceeded cleanup levels. One area of fill soil near the center of the property contained lead at a concentration that exceeded MTCA Method A soil cleanup criteria.

- Groundwater samples taken during the Phase II site investigation encountered impacts by petroleum constituents and chlorinated solvents that exceed MTCA Method A groundwater cleanup criteria. Concentrations of gasoline-range total petroleum hydrocarbons exceeded the Method A cleanup level at three locations in the vicinities of the former gas station and basement auto repair. Diesel-range petroleum hydrocarbons were found to exceed the Method A cleanup level at five locations near the former gas station and basement auto repair. Benzene was encountered at two locations in the former gas station area.

  Detected chlorinated solvent compounds in groundwater included tetrachloroethene (PCE), trichloroethene (TCE), cis-1,2 dichloroethene and vinyl chloride. PCE is a common dry cleaning solvent and the other detected compounds are common degradation products that result from the breakdown of PCE in the environment. PCE was detected at two locations in the southeastern parking lot near Yesler Way, at concentrations of 3.1 ug/l and 12 ug/l, exceeding the 5 ug/l MTCA Method A cleanup criteria at one location. TCE was detected at three sampled locations at concentrations ranging from 1.6 ug/l to 17 ug/l, exceeding the MTCA Method A groundwater cleanup level of 5 ug/l in two samples from the southeastern parking lot. Vinyl chloride was encountered at five sampled locations across the site at concentrations ranging from 0.2 to 1.9 ug/l, at or above the MTCA Method A cleanup criteria of 0.2 ug/l. None of the reported detections of cis-1,2 dichloroethene exceeded the MTCA Method B standard formula value for that compound.

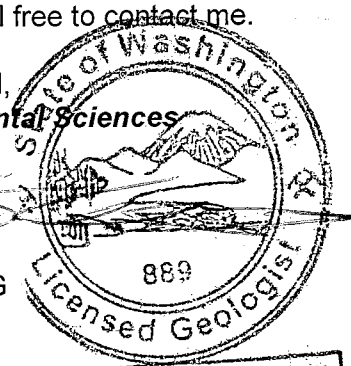
- Sub-slab soil vapors from below the 104 12th Avenue building contained trace levels of petroleum-related volatile compounds and several chlorinated solvents. Three detected compounds exceeded Washington State's draft sub-slab soil vapor screening levels; naphthalene, chloroform and bromodichloromethane. Of these compounds, only naphthalene would likely be associated with releases at the subject site. Chloroform and bromodichloromethane are both compounds that can be generated from municipally-treated drinking water.

- All of the detected soil and groundwater impacts are at depths which could be removed as part of an overall redevelopment of the property. A full cleanup action plan will be necessary to evaluate the most feasible approaches to removal and proper management of wastes, but it is likely this site could receive a site-wide determination of No Further Action from the Washington Department of Ecology after cleanup has been completed.

8.0 CLOSURE

Whitman Environmental Sciences has been pleased to be of service in this matter. If you have any questions regarding the information contained in this report, or if we may be of any further assistance, please feel free to contact me.

Respectfully submitted,
Whitman Environmental Sciences



Daniel S. Whitman, LG
Principal

"I declare to the best of my professional knowledge and belief that I meet the definition of an Environmental Professional as defined in §312.10 of 40 CFR 312. I have the specific qualifications based on education, training and experience to assess a property of the nature, history and setting of the subject property. I have developed and performed all of the appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312".

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TABLES

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	Depth (ft.)	Sample Location	Laboratory Analytical Results (mg/kg)		
			Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene Toluene Ethyl benzene Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)
104 12th Avenue - Interior of Seattle Curtain Co. Building					
WES-1	7.5'	6 ft. inside double doors in SE corner of basement	**Gasoline: 710** Diesel: 160[x] Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	sec-Butylbenzene 0.35 ND (all others)
	10'	Same	Gasoline: NA Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA
WES-2	6'	Adjacent to oil/water separator by entry ramp in SW corner of basement	**Gasoline: 390** Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	sec-Butylbenzene 0.086 ND (all others)
	7'	Same	Gasoline: NA Diesel: 340[x] Motor Oil: ND (<250)	NA	NA
	9'	Same	**Gasoline: 230** Diesel: 440[x] Motor Oil: ND (<250)	NA	NA
WES-3	7'	10 ft NW of WES-2, near oil/water separator	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-4	6'	In corridor through shelving area in S central part of basement	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	sec-Butylbenzene 0.11 ND (all others)

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	Depth (ft.)	Sample Location	Laboratory Analytical Results (mg/kg)		
			Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)	Benzene Toluene Ethyl benzene Xylenes (by EPA Methods 8021B or 8260C)	Other Volatile Organic Compounds (List of 58 Additional Compounds Detectable by the Laboratory Method.)
WES-5	6'	In shelving area corridor, NW of WES-1, near SE entry double doors	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-6	8'	In main corridor 30 ft. N of SE entry double doors	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-7	10'	Near NE corner of basement	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-8	11.5'	In N corridor, 25' W of WES-7	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-9	8'	I W central part of basement, near boiler room door	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
104 12th Avenue - Parking Lot East of Seattle Curtain Co. Building					
WES-10	7'	In S central part of parking lot	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-11	15'	In N central part of parking lot, adjacent to previous boring MW-5	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	Depth (ft.)	Sample Location	Laboratory Analytical Results (mg/kg)		
			Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	Benzene, Toluene, Ethyl benzene, Xylenes (by EPA Methods 8021B or 8260C)	Other Volatile Organic Compounds (List of 58 Additional Compounds Detectable by the Laboratory Method.)
WES-12	16'	In SW corner of parking lot	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
WES-13	12'	In E central part of parking lot	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
110 12th Avenue - Borings in Open Area in Central Property					
BN-1	9'	In SE corner of open area	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	15'	Same	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
BN-2	3'	Near SW corner of open area	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	13'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	***Depth (ft.)***	***Sample Location***	***Laboratory Analytical Results (mg/kg)***		
			Total Petroleum Hydrocarbons ***(by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Methods 8021B or 8260C)***	***Other Volatile Organic Compounds*** ***(List of 58 Additional Compounds Detectable by the Laboratory Method.)***
BN-3	7'	Outside rear entry to 110 12th Avenue bldg.	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	14.5'	Same	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
BN-4	7'	In E central part of open area, adjacent to Archives bldg.	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
Slope 1	2.5'	In NE part of property, fill slope down to open area	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA Metals analysis,	NA see Table 2
Slope 2	1.5'	In NE part of property, top of fill slope	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: 660	NA Metals analysis,	NA see Table 2
110 12th Avenue - Hand Auger Borings in Basement					
HA-N	2.5	In N. portion of building basement	***Gasoline: 730*** Diesel: 230[x] Motor Oil: ND (<250)	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	n-Propylbenzene 0.24 sec-Butylbenzene 0.60 ND (all other)
	9'	Same	Gasoline: 3.9 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	***Depth (ft.)***	***Sample Location***	***Laboratory Analytical Results (mg/kg)***		
			Total Petroleum Hydrocarbons ***(by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Methods 8021B or 8260C)***	***Other Volatile Organic Compounds*** ***(List of 58 Additional Compounds Detectable by the Laboratory Method.)***
HA-S	2.5'	In S portion of building basement	Gasoline: 7.0 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	6'	Same	Gasoline: 11 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	n-Propylbenzene 0.12 ND (all other)
HA-3	4'	In S portion of basement below 110 tenant space	Gasoline: ND (<2) Diesel: ND (<50) Motor Oil: ND (<250)	NA	ND (all)
1209 E. Fir Street - Borings East of Auto Repair Building					
BN-5	5'	In NE corner of parking lot, near oil/water separator	Gasoline: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	11'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA
	18'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	Depth (ft.)	Sample Location	Laboratory Analytical Results (mg/kg)		
			Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)
BN-6	1'	In S area of parking lot, near paint booth sump	Gasoline: 2.7 Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
	9'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA
	15'	Same	Gasoline: ND (<2) Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) Ethylbenzene: ND (<0.05) Xylenes: ND (<0.15)	ND (all)
124 12th Avenue - Borings at Former Service Station in NW Portion of Property					
BN-7	9'	NW corner of property - former location of gas station pump island	Gasoline: 14 Diesel: NA Motor Oil: NA	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: 0.082	NA
	12'	Same	***Gasoline: 780*** Diesel: NA Motor Oil: NA	Benzene: ND (<0.03) Toluene: ND (<0.05) ***Ethylbenzene: 6.8*** ***Xylenes: 59***	Isopropylbenzene: 2.6 n-Propylbenzene : 10 p-Isopropyltoluene: 0.56 sec-Butylbenzene: 1.2 1,2,4 Trimethylbenzene: 63 1,3,5 Trimethylbenzene: 20 Naphthalene: 4.9 ND (all other)
	17'	Same	Gasoline: 24 Diesel: NA Motor Oil: NA	***Benzene: 0.033*** Toluene: ND (<0.02) Ethylbenzene: 0.26 Xylenes: 2.0	NA
	19'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)	NA	NA

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	***Depth (ft.)***	***Sample Location***	***Laboratory Analytical Results (mg/kg)***		
			Total Petroleum Hydrocarbons ***(by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x)***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Methods 8021B or 8260C)***	***Other Volatile Organic Compounds*** ***(List of 58 Additional Compounds Detectable by the Laboratory Method.)***
BN-8	7'	N central part of property - former location of gas station service bay	Gasoline: ND (<20) Diesel: ND (<50) ***Motor Oil: 3,300***	NA	NA
	17'	Same	Gasoline: ND (<2) Diesel: NA Motor Oil: NA	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: ND (< 0.06)	NA
BN-9	12'	W central part of parking lot- likely former UST location	Gasoline: ND (<2) Diesel: NA Motor Oil: NA	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: ND (<0.02) Xylenes: ND (< 0.06)	NA
BN-10	15-20'	S end of parking lot - likely S of former UST location	***Gasoline: 490*** Diesel: 160[x] Motor Oil: ND (<250)	Benzene: ND (<0.02) Toluene: ND (<0.02) Ethylbenzene: 2.6 Xylenes: 0.44	Hexane: 5.1 Isopropylbenzene: 2.0 n-Propylbenzene : 8.5 p-Isopropyltoluene: 0.36 sec-Butylbenzene: 0.94 1,2,4 Trimethylbenzene: 3.5 1,3,5 Trimethylbenzene: 1.7 Naphthalene: 0.86 ND (all other)
BN-11	12'	At S end of 1209 Fir bldg, inside gate to open area	NA	NA Metals analysis only,	NA see Table 2
	20'	Same	Gasoline: ND (<20) Diesel: ND (<50) Motor Oil: ND (<250)		

TABLE 2
Summary of Soil Sample Organic Chemistry Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	Depth (ft.)	Sample Location	Laboratory Analytical Results (mg/kg)		
			Total Petroleum Hydrocarbons (by Method NWTPH-HCID or NWTPH-G and NWTPH-D(x))	**Benzene, Toluene, Ethyl benzene, Xylenes** (by EPA Methods 8021B or 8260C)	**Other Volatile Organic Compounds** (List of 58 Additional Compounds Detectable by the Laboratory Method.)
MTCA Soil Cleanup Criteria			**Gasoline:** 30 **If no benzene present:** 100 **Diesel or Motor Oil:** 2,000	Benzene: 0.03 Toluene: 7 Ethylbenzene: 6 Xylenes: 9	Hexane: 4,800 Isopropylbenzene: 8,000 n-Propylbenzene : 8,000 p-Isopropyltoluene: NV sec-Butylbenzene: 8,000 1,2,4 Trimethylbenzene: NV 1,3,5 Trimethylbenzene: 800 Naphthalene: 5 Other VOCs vary

Table 1 Notes:
ND (<XXX) - Parameter not detected at concentrations at or above the noted reporting limit.
NA - Sample not analyzed for the listed parameter.
Gasoline Range Total Petroleum Hydrocarbons by Method NWTPH-G.
Diesel and Motor Oil Range Total Petroleum Hydrocarbons by Method NWTPH-D(x).
$^{x-}$ Sample Chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons or organic material.
BTEX compounds as part of volatile organic analysis by EPA Method 8260C.
Volatile organic compounds by EPA Method 8260C for a list of 62 different volatile parameters. Detection limits vary.

MTCA Soil cleanup criteria per Chapter 173-340-740 WAC. Method A criteria presented where available. Otherwise, Method B standard formula values presented.

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 2A
Summary of Soil Sample Metals Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Sample I.D.	***Depth (ft.)***	***Sample Location***	***Laboratory Analytical Results (mg/kg)***
			Total Metals ***(by EPA Methods 8021B or 8260C)***
Slope 1	2.5'	In NE part of property, fill slope down to open area	Arsenic: 2.13 Cadmium ND (<1) Chromium 12.9 Lead: 2.2 Mercury: ND (<1)
Slope 2	1.5'	In NE part of property, top of fill slope	Arsenic: 3.91 Cadmium: 1.21 Chromium: 16.5 Lead: 243 Mercury: ND (<1)
BN-11	12'	At S end of 1349 Fir bldg, inside gate to open area	Arsenic: 4.30 Cadmium ND (<1) Chromium 17.5 ***Lead 330*** Mercury ND (<1)
MTCA Method A Soil Cleanup Criteria			***Arsenic: 20*** ***Cadmium 2*** ***Chromium 19**** ***Lead 250*** ***Mercury 2***

Table 2 Notes:
ND (<X) - Parameter not detected at concentrations at or above the noted reporting limit.
Total Metals by EPA Method 200.8

MTCA Method A Soil cleanup criteria per Chapter 173-340-740 WAC.

*Chromium Method A cleanup level for Cr VI. Test method determines total chromium, but cannot distinguish between Cr III and Cr VI valance states. If total concentration exceeds 19 mg/kg, further testing would be needed to evaluate whether or not Cr VI was present. MTCA Method A cleanup level for Cr III is 2,000 mg/kg

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 3
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene*** ***Toluene*** ***Ethyl benzene*** ***Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
104 12th Avenue - Interior of Seattle Curtain Manufacturing Co. Building				
WES-1-GW	4/3/2017	***Gasoline Range: 1,700*** ***Diesel: 690x*** Motor Oil: ND (<250)	Benzene: 0.42 Toluene: 6.7 Ethylbenzene: 2.2 Xylenes: 20.5	Isopropylbenzene : 1.2 n-Propylbenzene: 1.7 Naphthalene: 14 sec-Butylbenzene: 5.3 1,2,4-Trimethylbenzene: 12 1,3,5-Trimethylbenzene: 2.7 ND (all other)
WES-4-GW	4/3/2017	Gasoline Range: 560 ***Diesel: 1,000x*** ***Motor Oil: 680***	Benzene: ND (<0.35) Toluene: 3.6 Ethylbenzene: 1.5 Xylenes: 13.7	Naphthalene: 6.4 sec-Butylbenzene: 1.7 1,2,4-Trimethylbenzene: 9.0 1,3,5-Trimethylbenzene: 1.9 ND (all other)
WES-5-GW	4/3/2017	Gasoline Range: 220 Diesel: 460x Motor Oil: ND (<300)	Benzene: ND (<0.35) Toluene: 6.0 Ethylbenzene: 2.3 Xylenes: 21.3	n-Propylbenzene: 1.0 Naphthalene: 6.0 1,2,4-Trimethylbenzene: 14 1,3,5-Trimethylbenzene: 2.7 ND (all other)
WES-6-GW	4/3/2017	Gasoline Range: NA Diesel: 78x Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.4 Ethylbenzene: ND (<1) Xylenes: 5.7	cis-1,2-Dichloroethene: 3.9 Naphthalene: 1.4 1,2,4-Trimethylbenzene: 3.6 ND (all other)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
WES-7-GW	4/4/2017	Gasoline Range: NA Diesel: 56[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 4.0	Naphthalene: 1.1 1,2,4-Trimethylbenzene: 2.5 ND (all other)
WES-8-GW (Completed as MW-7)	6/30/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
WES-9-GW	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.6 Ethylbenzene: ND (<1) Xylenes: 7.6	Naphthalene: 1.5 1,2,4-Trimethylbenzene: 4.6 ND (all other)
104 12th Avenue - Parking Lot East of Seattle Curtain Co. Building				
WES-10-GW	4/5/2017	Gasoline Range: ND (<100) Diesel: 180[x] ***Motor Oil: 530***	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 3.7	1,2,4-Trimethylbenzene: 2.2 ND (all other)
WES-11-GW	4/5/2017	Gasoline Range: NA Diesel: NA Motor Oil: NA	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: 4.1	Acetone: 27 cis-1,2-Dichloroethene: 9.4 ***Tetrachloroethene: 12*** ***Trichloroethene: 17*** ***Vinyl Chloride: 0.39*** 1,2,4-Trimethylbenzene: 2.6 ND (all other)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
WES-12-GW	4/5/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<3)	Acetone: 29 ND (all other)
WES-13-GW	4/5/2017	Gasoline Range: NA Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 12 Tetrachloroethene: 3.1 ***Trichloroethene: 10*** ***Vinyl Chloride: 0.23*** ND (all other)
Pre-existing Monitoring Wells on 104 12th Avenue Property				
MW-1-GW	6/30/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Vinyl Chloride: 0.20 ND (all other)
MW-2-GW	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
MW-3-GW	4/3/2017	Gasoline Range: 110 Diesel: 400[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 2.5 Ethylbenzene: ND (<1) Xylenes: 7.9	Acetone: 11 Naphthalene: 4.7 ***Vinyl Chloride: 0.34*** 1,2,4-Trimethylbenzene: 4.9 1,3,5-Trimethylbenzene: 1.1 ND (all other)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
MW-4-GW	4/5/2017	Gasoline Range: NA Diesel: 67[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
MW-5-GW	4/5/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Acetone: 12 ND (all other)
MW-6-GW	4/4/2017	Gasoline Range: NA Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: 1.2 Ethylbenzene: ND (<1) Xylenes: 5.5	cis-1,2-Dichloroethene: 1.3 1,2,4-Trimethylbenzene: 3.4 ND (all other)
110 12th Avenue - Borings in Open Area in Central Property				
BN-1-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
BN-2-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
BN-3-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: 79[x] Motor Oil: ND (<250)	Benzene: 0.65 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
BN-4-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: ND (<50) Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
110 12th Avenue - Hand Auger Borings in Basement				
HA-N-GW	5/15/2017	Gasoline Range: 770 Diesel: 410[x] Motor Oil: ND (<250)	Benzene: 1.9 Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	cis-1,2-Dichloroethene: 5.3 Isopropylbenzene : 3.5 n-Propylbenzene: 12 Naphthalene: 14 sec-Butylbenzene: 9.9 Trichloroethene: 1.6 ***Vinyl chloride: 1.9*** ND (all other)
HA-S-GW	5/15/2017	Gasoline Range: 600 ***Diesel: 730[x]*** Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Isopropylbenzene : 9.3 n-Propylbenzene: 45 sec-Butylbenzene: 7.5 ND (all other)
HA-3-GW	8/7/2017	Gasoline Range: ND (<100) Diesel: 100[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
1209 E. Fir Street - Borings East of Auto Repair Building				
BN-5-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: 64[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
BN-6-GW	5/12/2017	Gasoline Range: ND (<100) Diesel: 100[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	Acetone: 11 ND (all other)
125 12th Avenue - Borings at Former Service Station in NW Portion of Property				
BN-7 (Completed as MW-8)	8/3/2017	***Gasoline Range: 3,200*** ***Diesel: 790[x]*** Motor Oil: ND (<250)	***Benzene: 11*** Toluene: ND (<1) Ethylbenzene: 71 Xylenes: 419	Isopropylbenzene: 12 n-Propylbenzene: 24 Naphthalene: 8.9 p-Isopropyltoluene: 1.1 sec-Butylbenzene: 1.8 1,2,4-Trimethylbenzene: 180 1,3,5-Trimethylbenzene: 59 ND (all other)
BN-8-GW	5/15/2017	***Gasoline Range: 1,300*** ***Diesel: 830[x]*** Motor Oil: ND (<250)	Benzene: 1.6 Toluene: 1.3 Ethylbenzene: 12 Xylenes: 6.9	Hexane: 1.1 Isopropylbenzene: 28 n-Propylbenzene: 39 Naphthalene: 2.1 sec-Butylbenzene: 1.5 1,2,4-Trimethylbenzene: 3.9 ND (all other)

TABLE 3 (Continued)
Summary of Groundwater Sample Analytical Results
104 - 124 12th Avenue & 1209 E. Fir Street, Seattle, Washington

Boring/ Sample I.D.	***Sample Date***	***Laboratory Analytical Results (ug/l)***		
		Total Petroleum Hydrocarbons ***(by Methods NWTPH-G & NWTPH-D(X))***	***Benzene Toluene Ethyl benzene Xylenes*** ***(by EPA Method 8260C)***	***Other Volatile Organic Compounds*** ***(by EPA Method 8260C)*** ***List of 58 Additional Compounds Detectable by the Laboratory Method.***
BN-9-GW	5/15/2017	Gasoline Range: ND (<100) Diesel: 120[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
BN-10-GW (Completed as MW-9)	8/3/2017	Gasoline Range: 500 Diesel: 270[x] Motor Oil: ND (<250)	***Benzene: 6.8*** Toluene: 1.3 Ethylbenzene: 6.3 Xylenes: 4.3	Hexane: 4.3 Isopropylbenzene: 7.2 n-Propylbenzene: 17 sec-Butylbenzene: 1.5 1,2,4-Trimethylbenzene: 1.3 1,3,5-Trimethylbenzene: 1.4 ND (all other)
BN-11-GW	5/15/2017	Gasoline Range: ND (<100) Diesel: 460[x] Motor Oil: ND (<250)	Benzene: ND (<0.35) Toluene: ND (<1) Ethylbenzene: ND (<1) Xylenes: ND (<1)	ND (all)
Washington State MTCA Groundwater Cleanup Criteria (ug/l)		***Gasoline: 800 (Benzene is present)*** ***Diesel or Motor Oil: 500 (combined)***	***Benzene: 5*** ***Toluene: 1,000*** ***Ethylbenzene: 700*** ***Xylenes: 1,000***	***Acetone: 7,200*** ***cis-1,2-Dichloroethene: 16*** ***Hexane: 480*** ***Isopropylbenzene: 800*** ***n-Propylbenzene: 800*** ***Naphthalene: 160*** ***p-Isopropyltoluene: NV*** ***sec-Butylbenzene: NV*** ***tert-Butylbenzene: NV*** ***Tetrachloroethene: 5*** ***Trichloroethene: 5*** ***Vinyl chloride: 0.2*** ***1,2,4-Trimethylbenzene: NV*** ***1,3,5-Trimethylbenzene: 80***

Table 3 Notes:
ND (<XXX) - Parameter not detected at concentrations at or above the noted reporting limit.
NA - Sample not analyzed for the listed parameter.
Gasoline Range Total Petroleum Hydrocarbons by Method NWTPH-G.
Diesel and Motor Oil Range Total Petroleum Hydrocarbons by Method NWTPH-D(x).
[x] - Indicates sample chromatogram does not resemble fuel standard used for analysis. Most likely carry over from gasoline range hydrocarbons.
BTEX compounds and other volatile organic compounds by EPA Method 8260C. All detected compounds summarized here. See laboratory report for full list of analyzed parameters.

MTCA Groundwater cleanup criteria per Chapter 173-340-720 WAC. Method A criteria presented where available. Method B standard formula values shown where no Method A criteria available. Method B standard formula values from Dept. of Ecology Cleanup Levels and Risk Calculation (CLARC) database. NV indicates no value available from CLARC.

Sample results exceeding applicable cleanup criteria are noted in ***Bold Italic***.

TABLE 4

Summary of Sub-Slab Soil Vapor Sample Analytical Results

104 12th Avenue, Seattle, Washington

Sample I.D.	***Sample Location***	***Laboratory Analytical Results (mg/kg)***
		Volatile Organic Compounds ***78 Compounds Detectable by the Laboratory Method - Only detected compounds on Ecology's screening list included here. See laboratory report for full results.***
SSVP--1	In NW corner of basement level of building, 9 ft from N and W walls	Benzene: 2.6 Ethylbenzene: 6.1 Hexane 33 Methylene chloride: 660 Methyl-ethyl-ketone: 16 ***Naphthalene: 3.1*** Toluene: 24 m,p - Xylene: 34 o - Xylene: 8.9 1,2,4 Trimethylbenzene: 9.7
SSVP-2	In NW area of basement level of building, 9' from N wall, 28' from W wall	Benzene: 2.0 ***Bromodichloromethane: 5.1*** ***Chloroform: 96*** Ethylbenzene: 6.9 Hexane 14 ***Naphthalene: 6.9*** Tetrachloroethene: 8.6 Toluene: 24 m - Xylene: 40 o - Xylene: 11 1,2,4 Trimethylbenzene: 19
SSVP-3	In NW area of basement level of building, 42' from N. wall, 9' from W wall	Benzene: 2.7 ***Chloroform: 5.8*** Dichlorodifluoromethane: 1.3 Ethylbenzene: 12 Hexane: 23 Methylene chloride: 220 Methyl-t butyl ether: 1.1 ***Naphthalene: 5.8*** Tetrachloroethene: 15 Toluene: 39 m - Xylene: 68 o - Xylene: 18 1,2,4 Trimethylbenzene: 25
Ecology Draft Sub-Slab Screening Levels		***Benzene: 10.7*** ***Bromodichloromethane: 2.25*** ***Chloroform: 3.62*** ***Dichlorodifluoromethane: 1,520*** ***Ethylbenzene: 15,200*** ***Hexane: 10,700*** ***Methylene chloride: 8,330*** ***Methyl-ethyl-ketone: 76,200*** ***Methyl-t butyl ether: 321*** ***Naphthalene: 2.45*** ***Tetrachloroethene: 321*** ***Toluene: 76,200*** ***m,p - Xylene: 1,520*** ***o - Xylene: 1,520*** ***1,2,4 Trimethylbenzene: 107***

Summary of Sub-Slab Soil Vapor Sample Analytical Results
104 12th Avenue, Seattle, Washington

Table 4 Notes:
Table shows detected compounds which have Ecology screening levels only, See laboratory report for full analytical results and parameter list.

Volatile organic compounds by EPA Method TO-15.

Screening levels from Ecology Publication 09-09-047, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action, with updated screening level table April 6, 2015.

Sample results exceeding applicable screening levels are noted in ***Bold Italic***.

APPENDIX A

Figures and Photographs

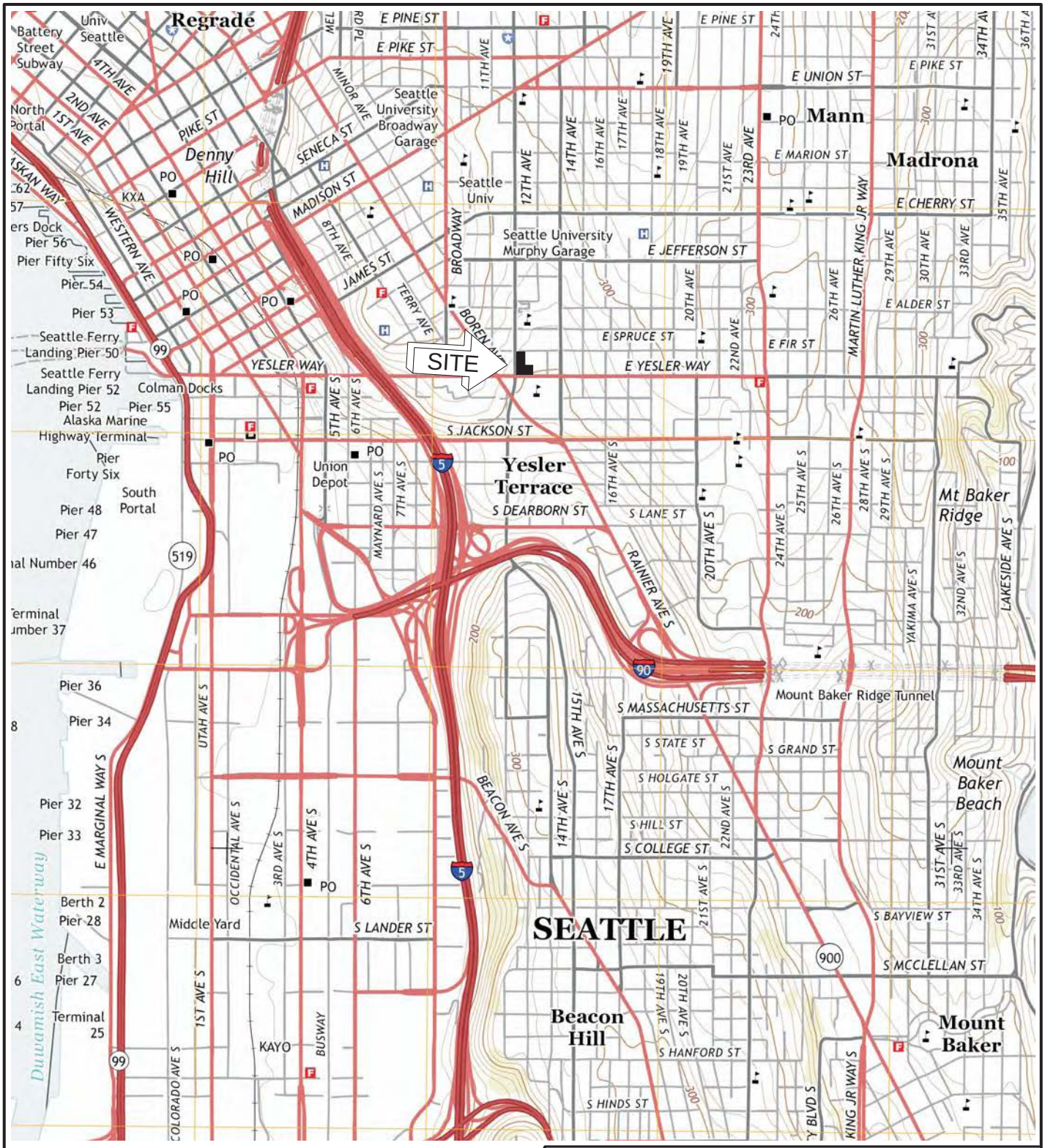
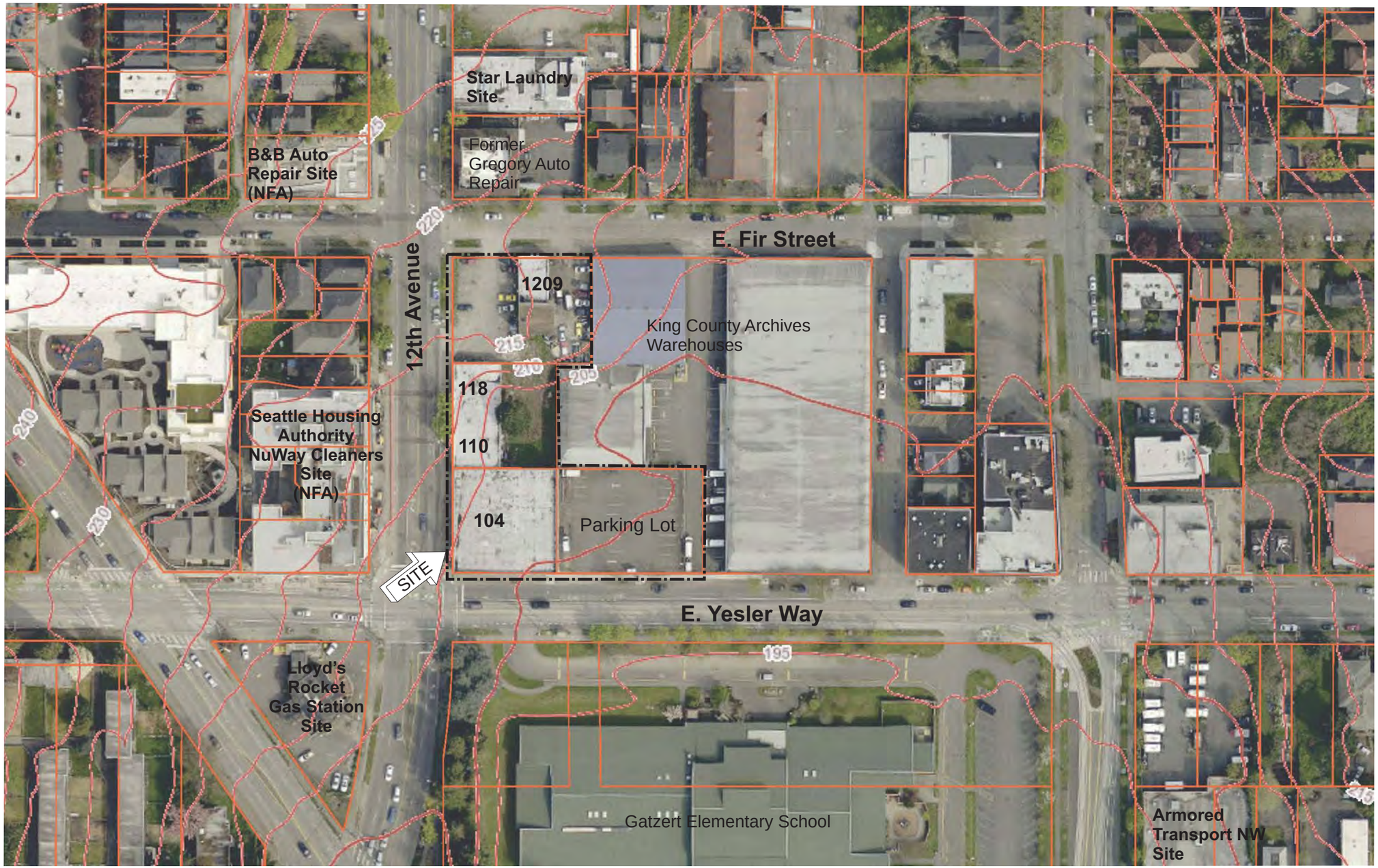


Figure 1 - Site Map

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	June 11, 2017
File ID.	1591F1

WHITMAN
Environmental Sciences



Legend

Approximate Property Line

Ground Surface Contours
(Elevations Noted)

Base Photo from King County IMap

North

0 100'

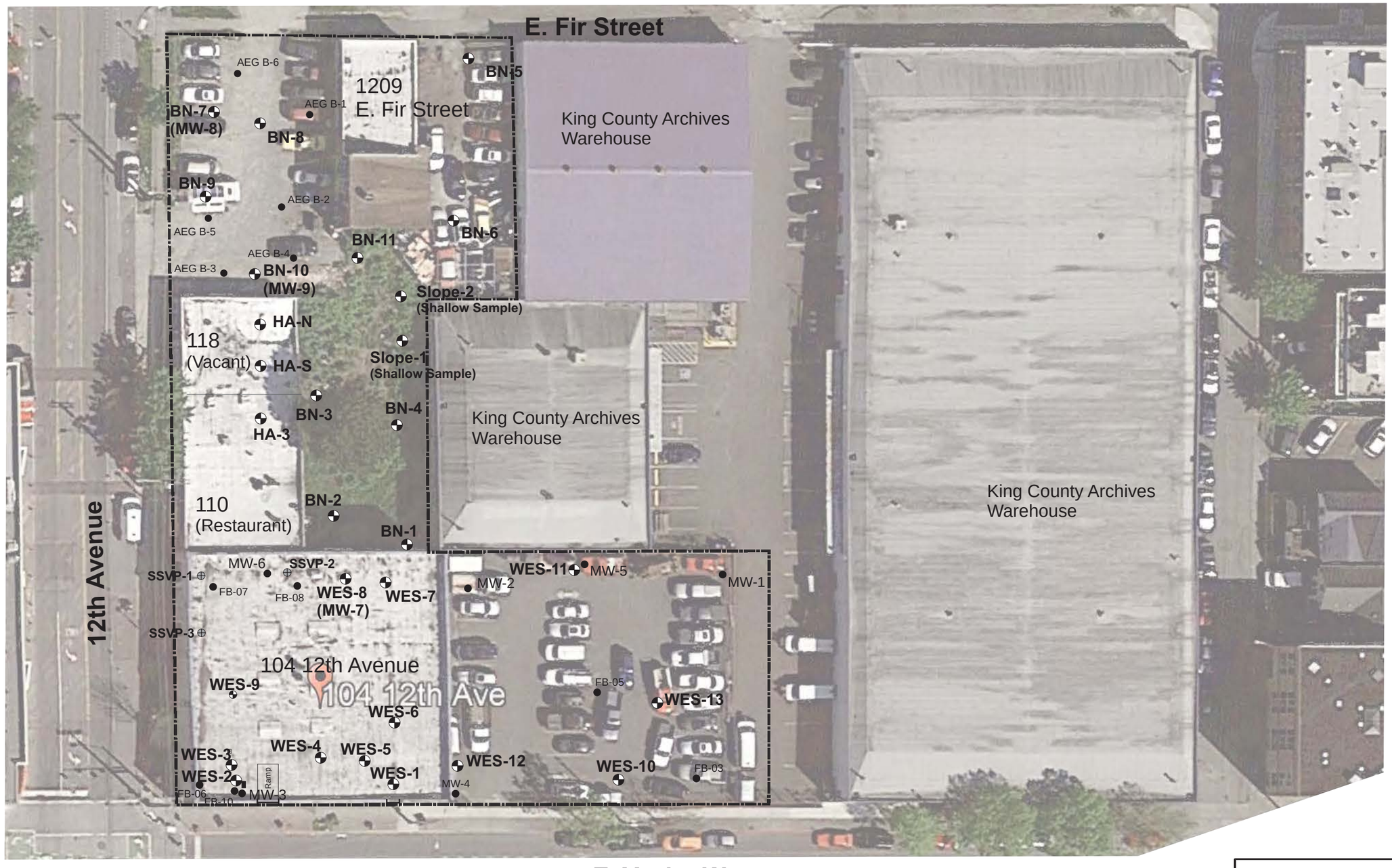
Scale 1" = Approx. 100 feet

Figure 2 - Site and Vicinity Plan

104-110 12th Avenue
Seattle, WA

Project No.	WES - 1591
Date	June 17, 2017
File ID.	1591F2

WHITMAN
Environmental Sciences



Legend

- Approximate Location of Current Soil Boring or Monitoring Well
- Approximate Location of Previously Drilled Soil Boring or Monitoring Well (2014-16)
- Approximate Location of Current Sub-Slab Soil Vapor Sample
- Approximate Property Boundary

0 40’

Scale 1" = Approx. 40 feet

North

Figure 3 - Soil Boring Location Plan

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591
Date	Aug 15, 2017
File ID.	1591F3

WHITMAN
Environmental Sciences

Legend

- Approximate Location of Current Soil Boring or Monitoring Well
- Approximate Location of Current Sub-Slab Soil Vapor Probe
- Approximate Location of Previously Drilled Soil Boring or Monitoring Well (Farallon, 2016)
- A\pproximate Site Boundary

North

0 25’

Scale 1" = Approx. 25 feet

Figure 3A - South Parcels Soil Boring Plan

Proposed Redevelopment Property
104-110 12th Avenue
Seattle, WA

Project No.	WES - 1591
Date	June 17, 2017
File ID.	1591F3A

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Approximate Location of Current Soil Borings

Approximate Location of 2104 Soil Borings by AEG

North

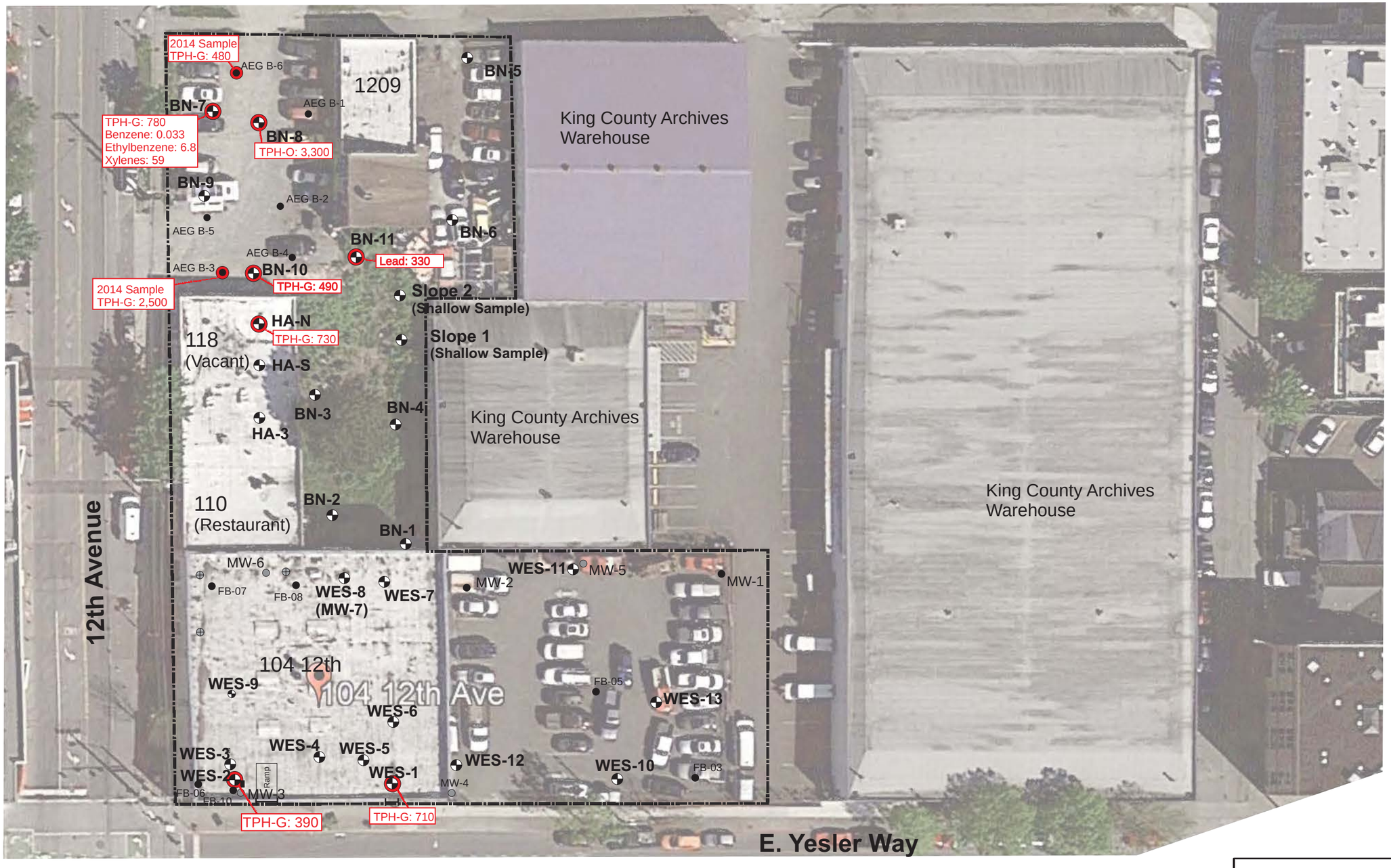
Base map from Google Earth.
Historical overlay from Seattle Public Library.

Figure 3B - North Parcel Soil Boring Locations

110 -130 12th Avenue &
1209 E. Fir
Seattle, Washington 98122

Project No.	WES - 1591A
Date	July 17, 2017
File ID.	1591AF3B

WHITMAN
Environmental Sciences



Legend

- Approximate Location of Current Soil Boring or Monitoring Well
- Approximate Location of Previously Drilled Soil Boring or Monitoring Well (2014-16)
- Investigation location where soil sample was not obtained or data not available
- Location with Soil Concentrations Above MTCA Method A Cleanup Level
- TPH-G: XXX / TPH-D: XXX — Parameter and concentration listed in mg/kg
- Approximate Property Boundary

0 40'

Scale 1" = Approx. 40 feet

North

Figure 4 - Sol Sample Locations

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591
Date	Aug 15, 2017
File ID.	1591F4

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Legend

- Approximate Location of Current Soil Boring or Monitoring Well
- Approximate Location of Previously Drilled Soil Boring or Monitoring Well (2014-16)
- Investigation location where groundwater sample was not obtained
- Location with Groundwater Concentrations of Above MTCA Method A Cleanup Level
- TPH-G: XXX / TPH-D: XXX — Parameter and concentration listed in ug/l
- Approximate Property Boundary

North

0 40’

Scale 1" = Approx. 40 feet

Figure 5 - Groundwater Sample Locations

Proposed Redevelopment Property
104-124 12th Avenue & 1209 E. Fir Street
Seattle, WA

Project No.	WES - 1591
Date	Aug 15, 2017
File ID.	1591F5

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Environmental Sciences

Legend

- Approximate Location of Current Soil Boring or Monitoring Well
- Approximate Location of Previously Drilled Soil Boring or Monitoring Well (2016)
- Location with Soil Concentrations of Petroleum Above MTCA Method A Cleanup Level
- Likely Areas of Soil Cleanup

North

0 25'

Scale 1" = Approx. 25 feet

Figure 6A - South Parcel
Estimated Soil Cleanup Areas

Proposed Redevelopment Property
104 12th Avenue
Seattle, WA

Project No.	WES - 1591
Date	July 17, 2017
File ID.	1591F6A

WHITMAN
Environmental Sciences

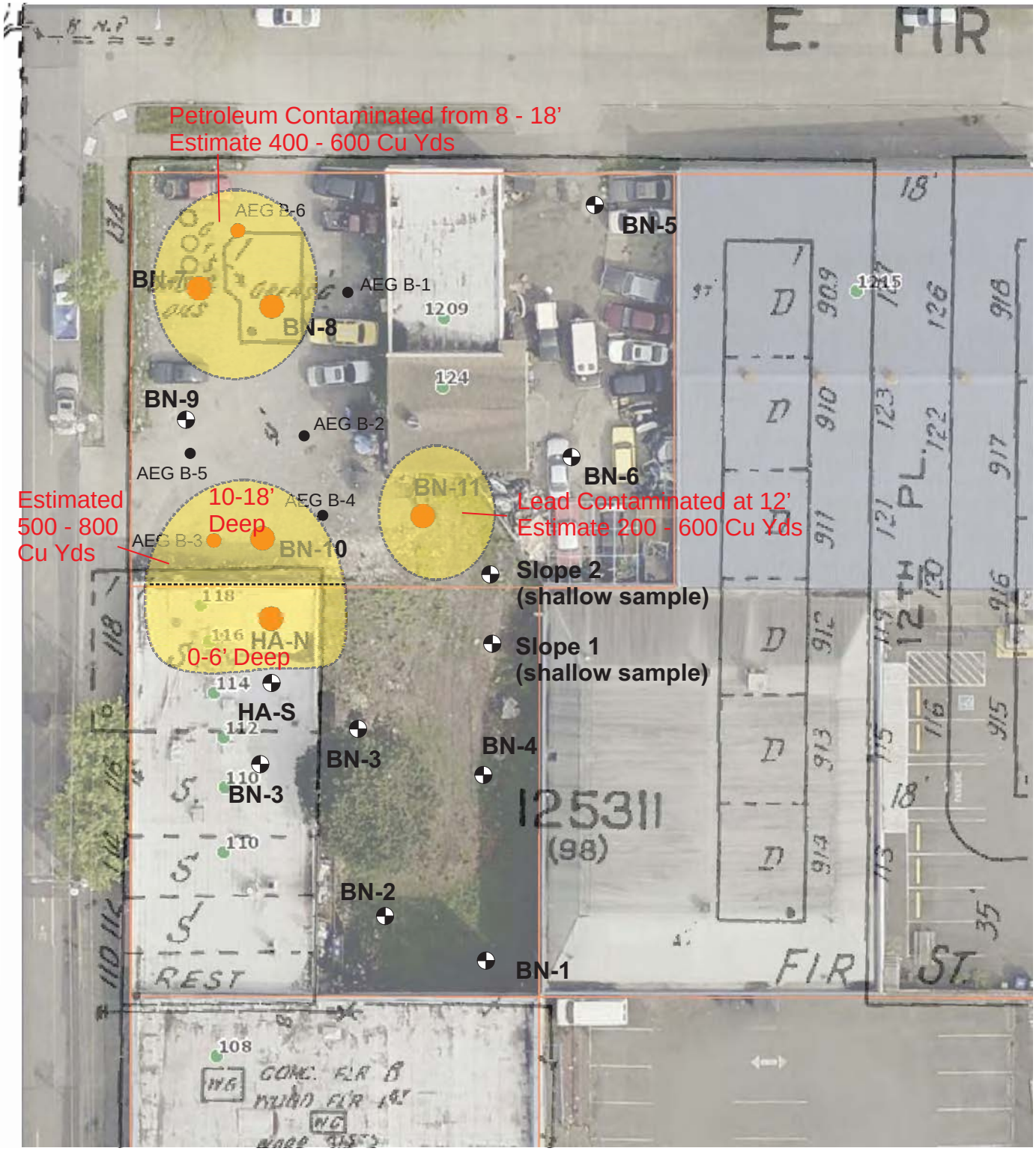

Figure 6B -North Parcel
Anticipated Soil Cleanup Areas

110 -130 12th Avenue &1209 E. Fir
Seattle, Washington 98122

Project No.	WES - 1591A
Date	July 17, 2017
File ID.	1591AF6B

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1.) View of the west side of the 104 12th Avenue building, with 110 12th building in the background. Awning covers the entry to restaurant at 110 12th.

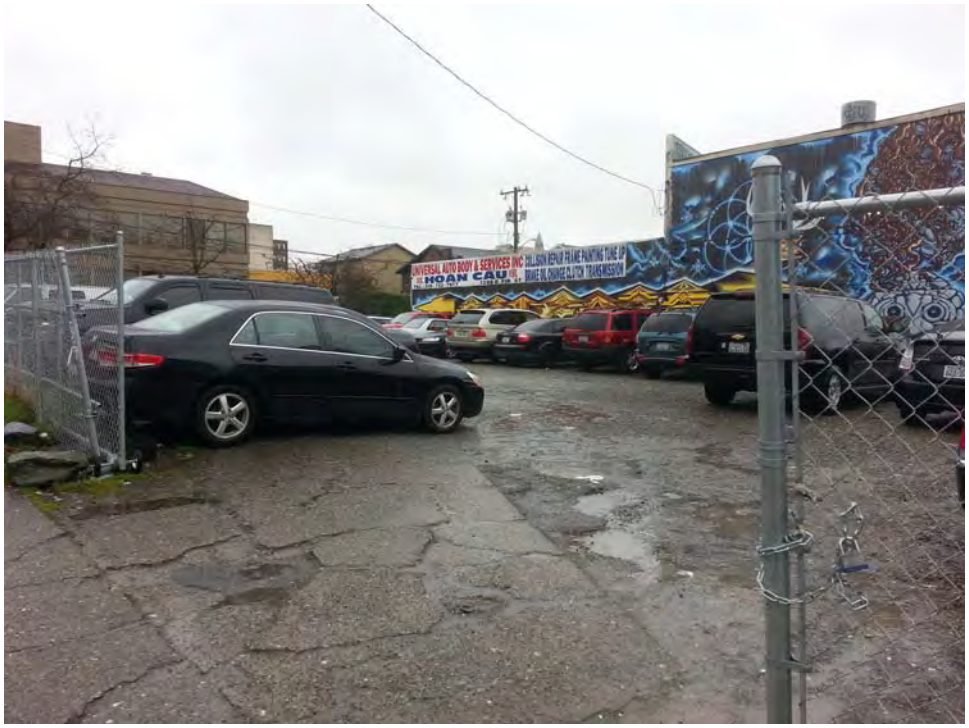
2.) View of the south side of thq 104 12th Avenue building, along Yesler Way.

3.) View of the paved parking lot to the east of the 104 12th Avenue building. Accessed from Yesler Way.

4.) View of the 104 12th Avenue building from the parking lot. Typical waste management dumpster and monitoring well visible on the pavement near the corner of the building.

5.) View of the restaurant at 110 12th Avenue.

6.) View of the vacant tenant space at 118 12th Avenue, part of the 110 12th building.



7.) View of the north parking lot at 124 12th Avenue, a former gas station.

8.) View of the auto repair shop at 1209 E. Fir Street and parking lot to the east of the building.

9.) View of investigation derived waste drums in the southern parking lot. Typically containing soil cuttings, purge water and decontamination wash water. Generated during 2016 site investigation by Farallon Consulting.

10.) View of the open area behind the 110 12th Avenue building, facing south.

11.) View of the basement storage and work areas of the 104 12th Avenue building.

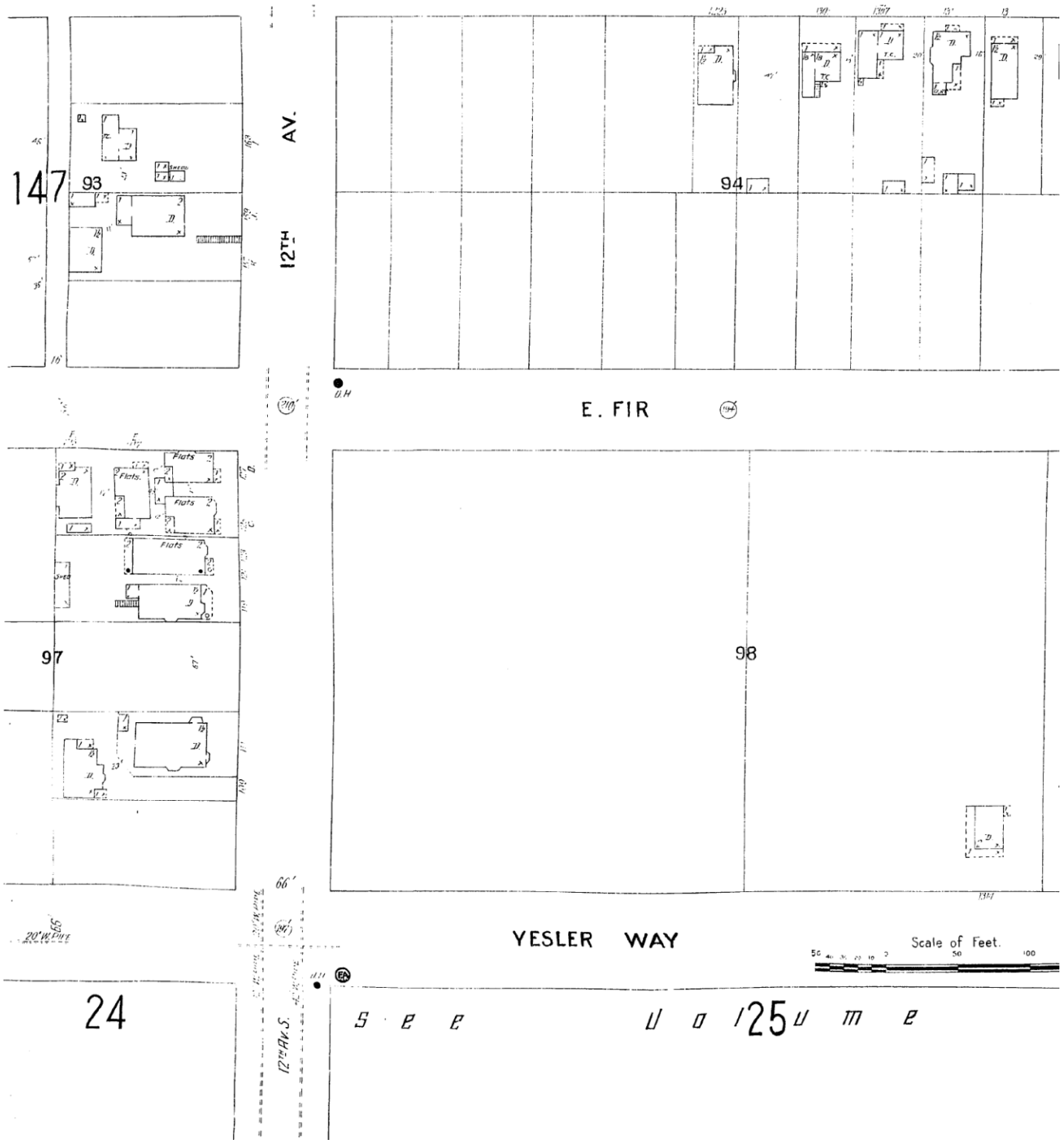
12.) View of the oil/water separator in the southwestern corner of the 104 12th Avenue building. Adjacent monitoring well installed in 2016 site investigation.

13.) View of the furnace in the basement of the 104 12th Avenue building.

14.) View of restaurant grease drums stored in the corner of the northern parking lot.

APPENDIX B

Historical References and Aerial Photographs



North

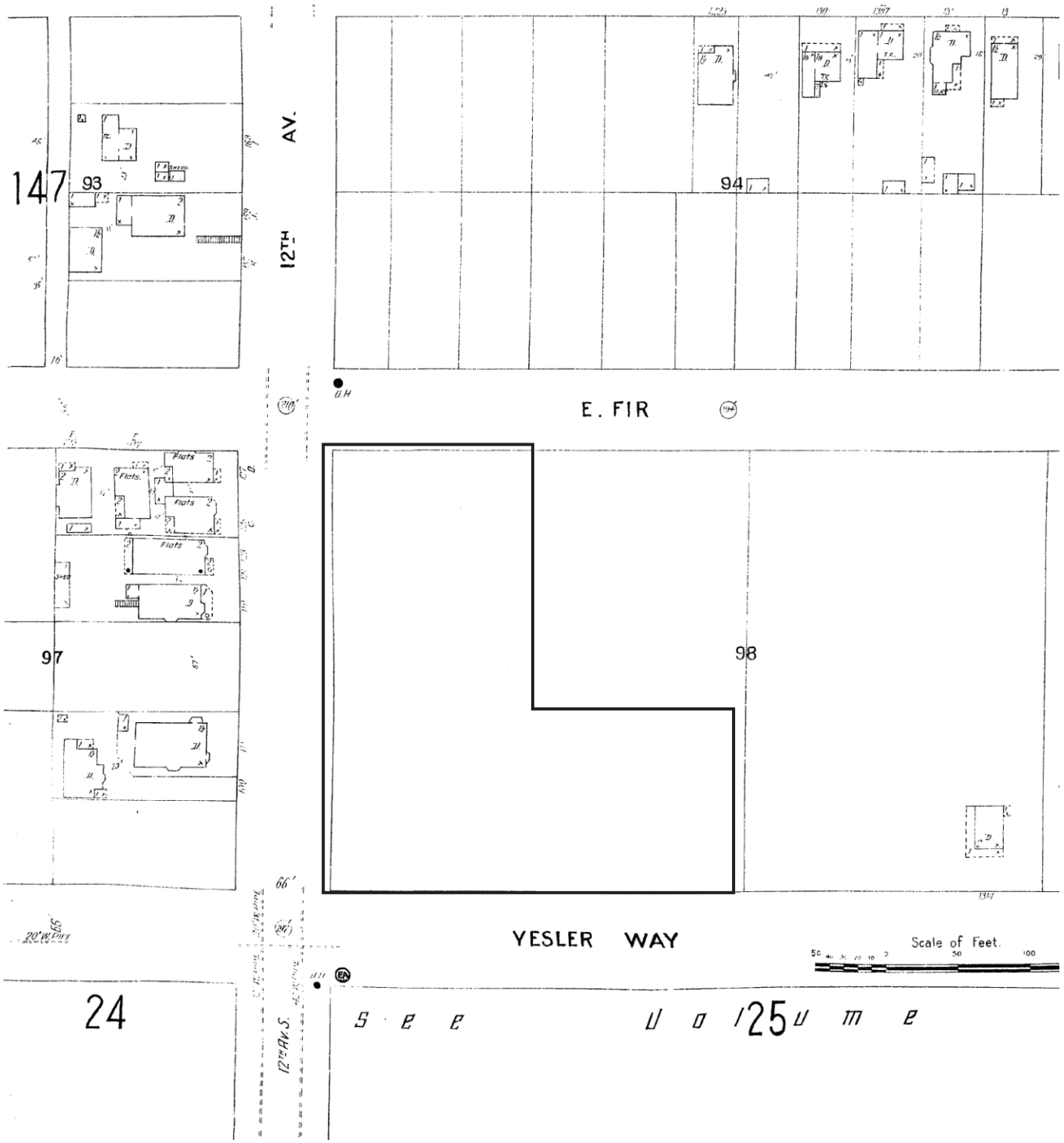
Historical Sanborn Map - 1893

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	Mar 11, 2017
File ID.	1591SM93

WHITMAN
Environmental Sciences

From Seattle Public Library



North

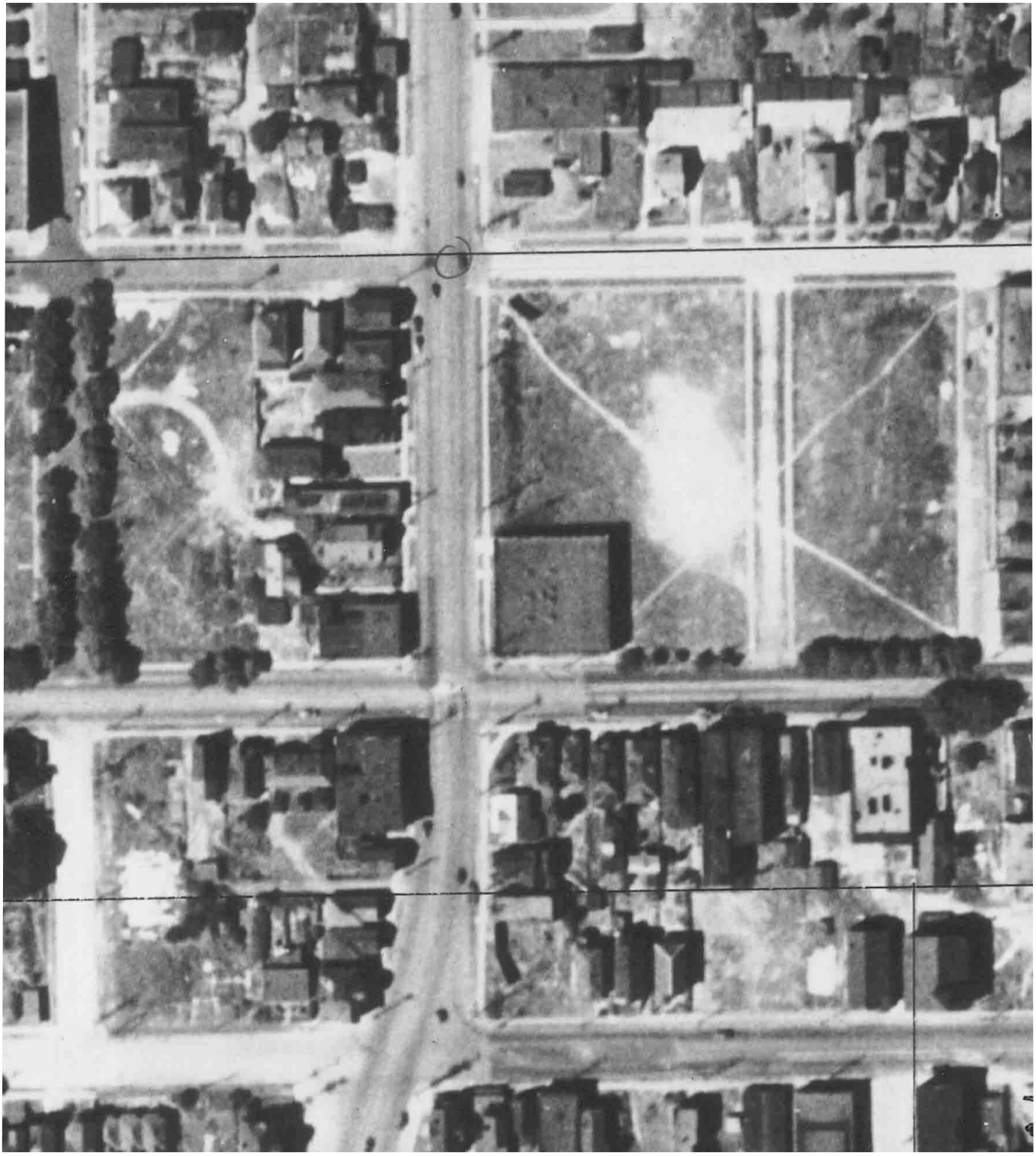
Historical Sanborn Map - 1905

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington 98122

Project No.	WES - 1591
Date	Mar 11, 2017
File ID.	1591SM05

WHITMAN
Environmental Sciences

From Seattle Public Library



North

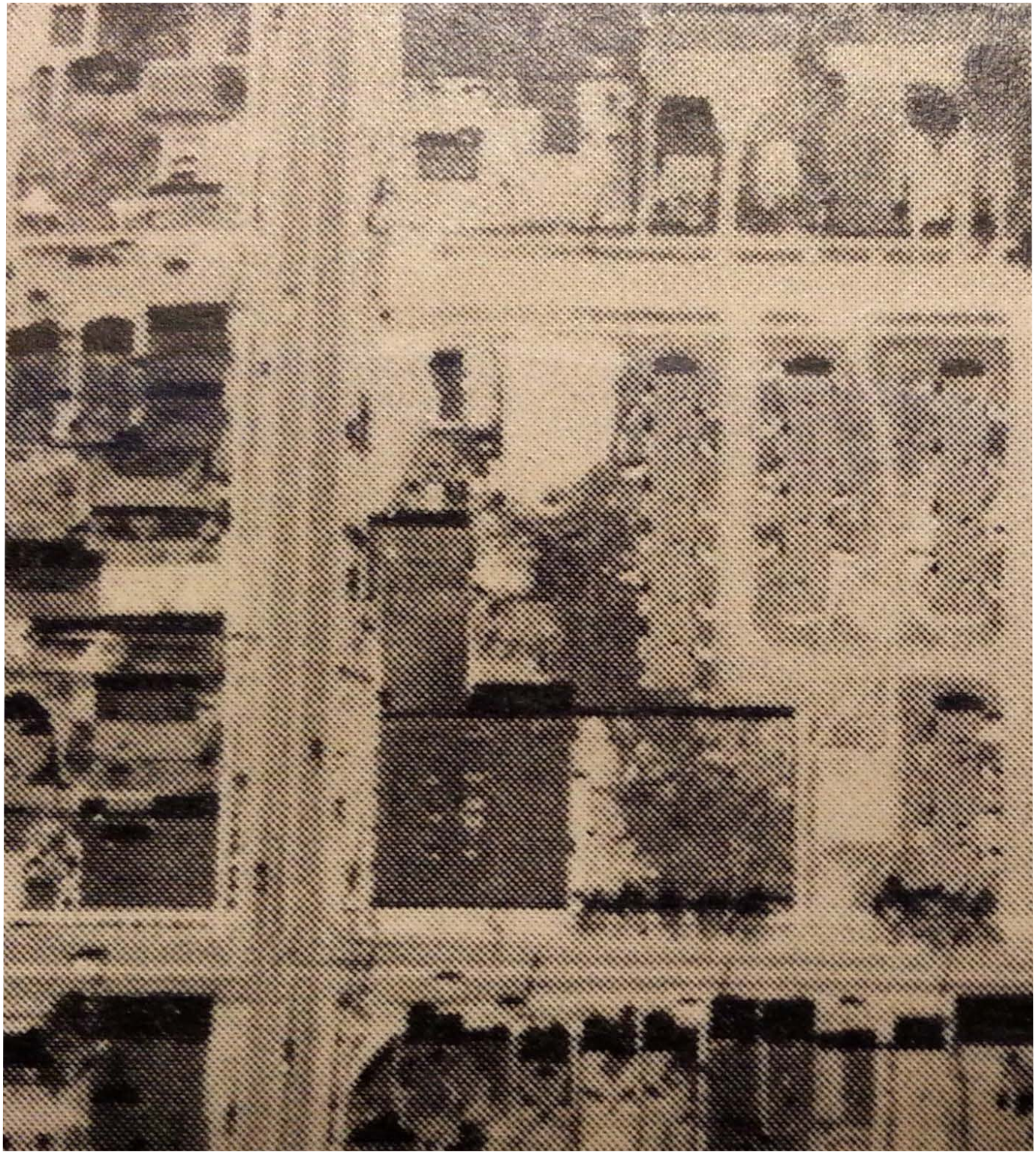
Historical Aerial Photograph - 1937

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP37

WHITMAN
Environmental Sciences

From King County Map Vault



North

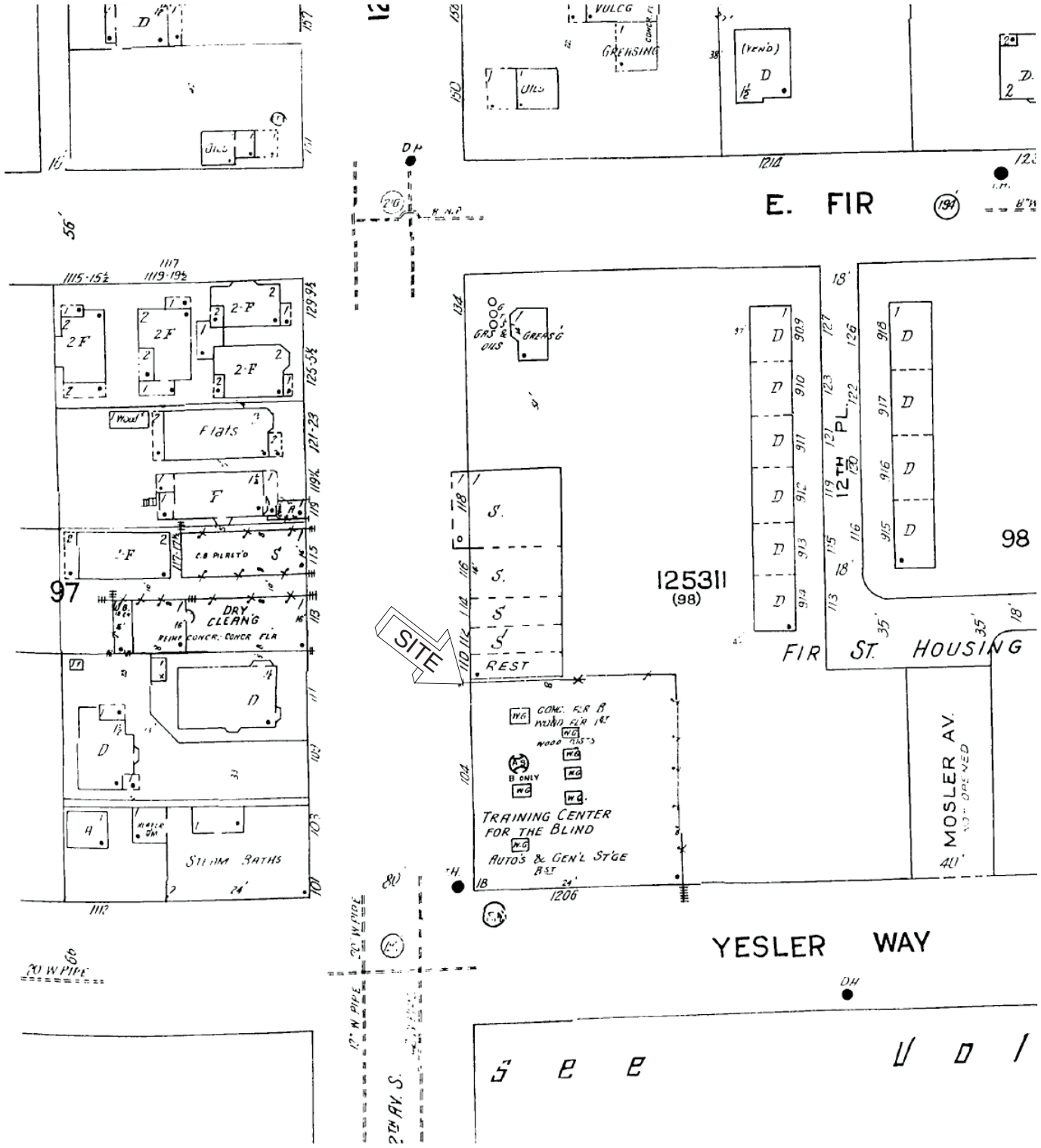
Historical Aerial Photograph - 1946

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP46

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

Historical Sanborn Map - 1950

104 12th Avenue
Seattle, Washington 98122

Project No.	WES - 1591
Date	Mar 11, 2017
File ID.	1591SM50

WHITMAN
Environmental Sciences

From Seattle Public Library

North

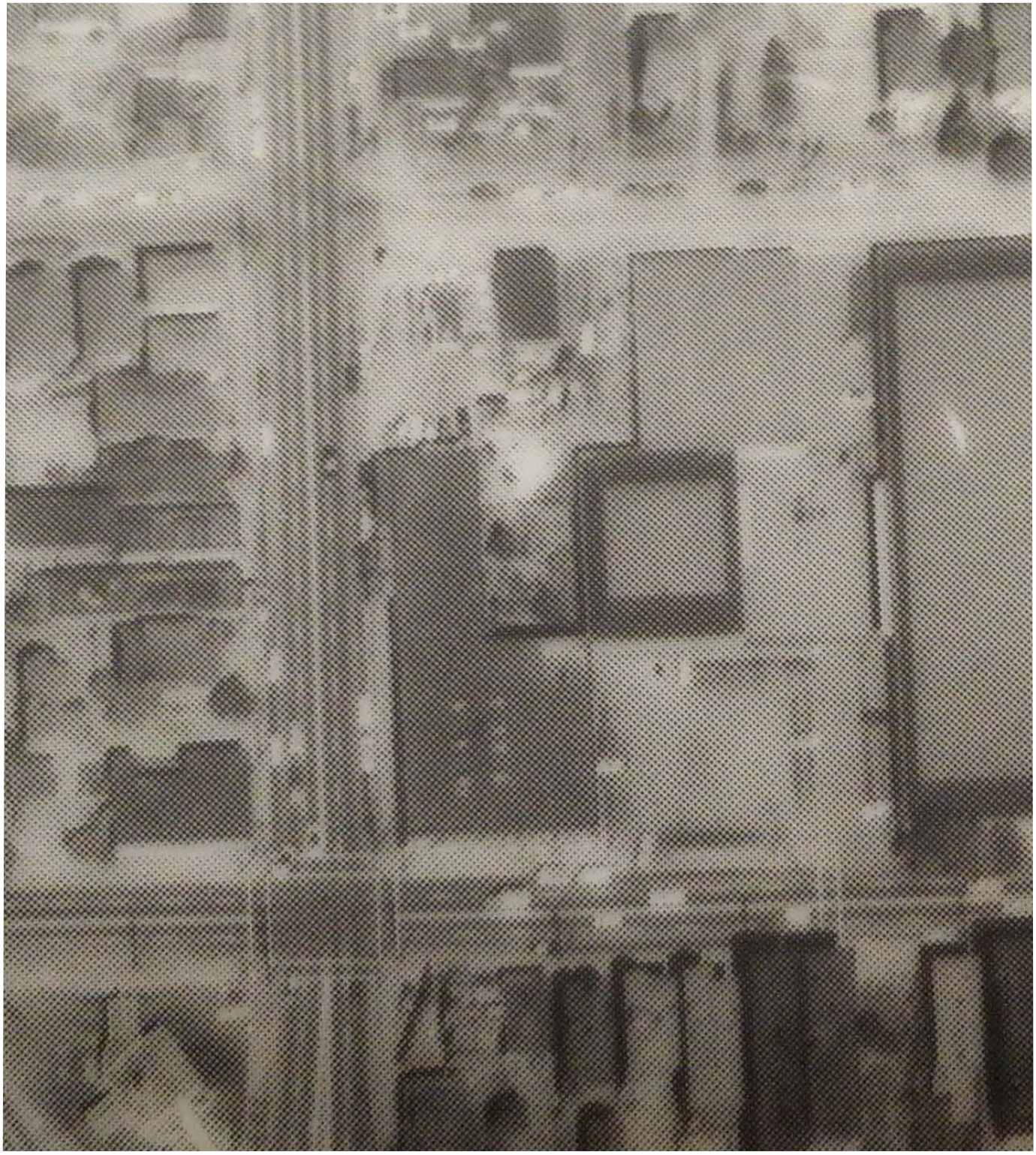
Historical Aerial Photograph - 1953

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP53

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

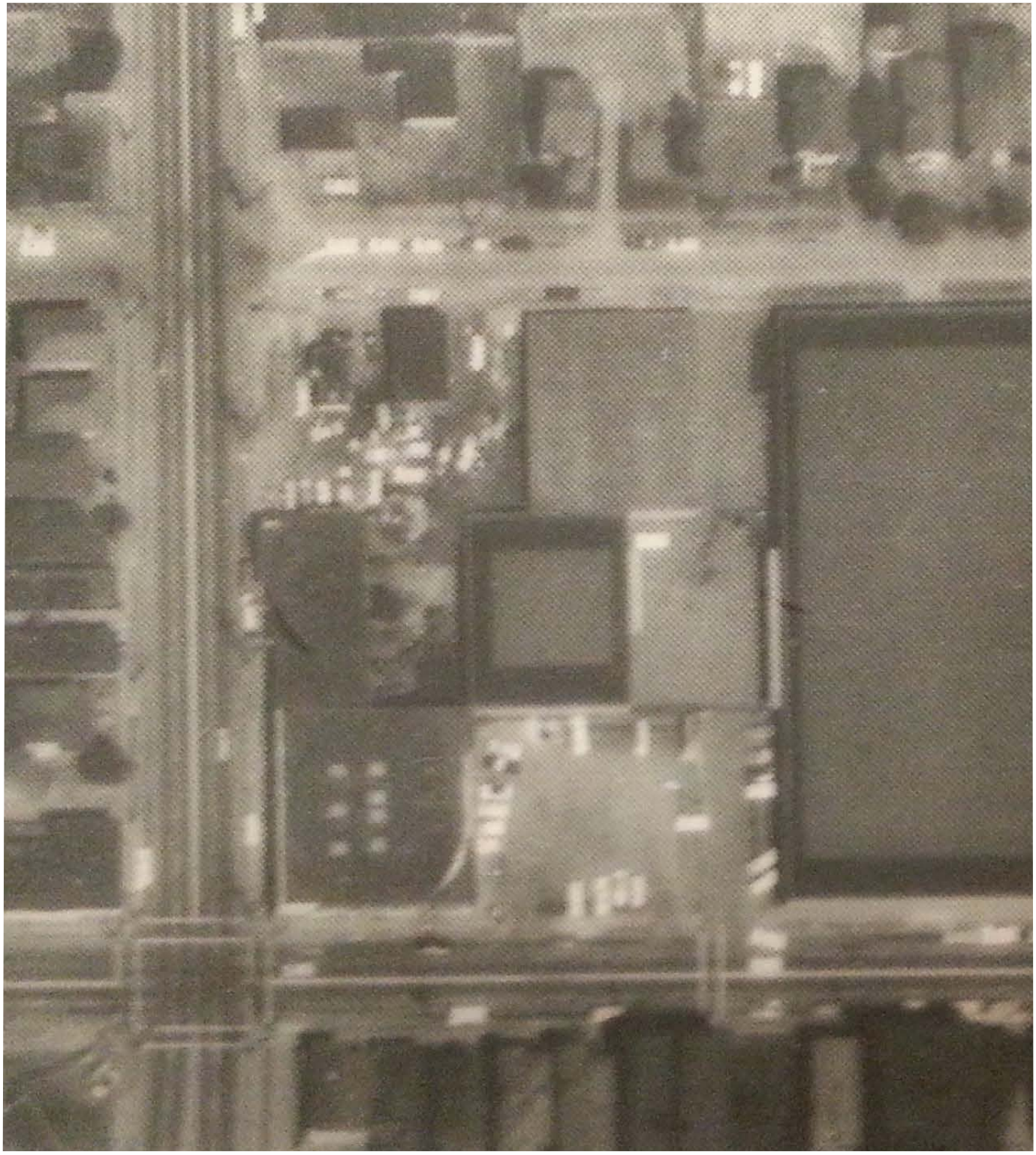
Historical Aerial Photograph - 1961

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP61

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

Historical Aerial Photograph - 1965

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP65

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection

North

From USGS Earth Explorer

Historical Aerial Photograph - 1969

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP69

WHITMAN
Environmental Sciences

North

Historical Aerial Photograph - 1970

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP70

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection

North

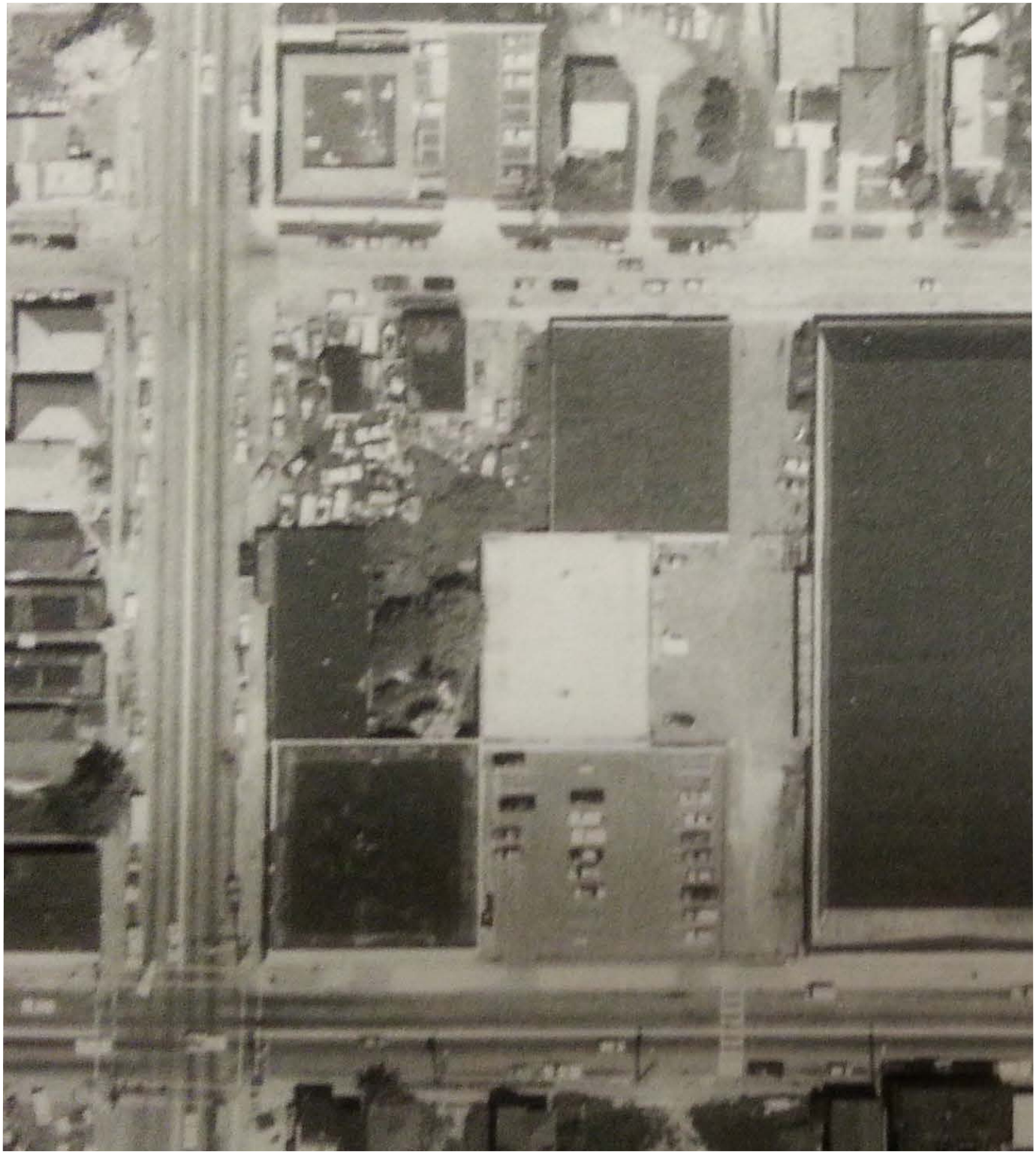
Historical Aerial Photograph - 1977

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP77

WHITMAN
Environmental Sciences

From USGS Earth Explorer



North

Historical Aerial Photograph - 1985

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP85

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection

North

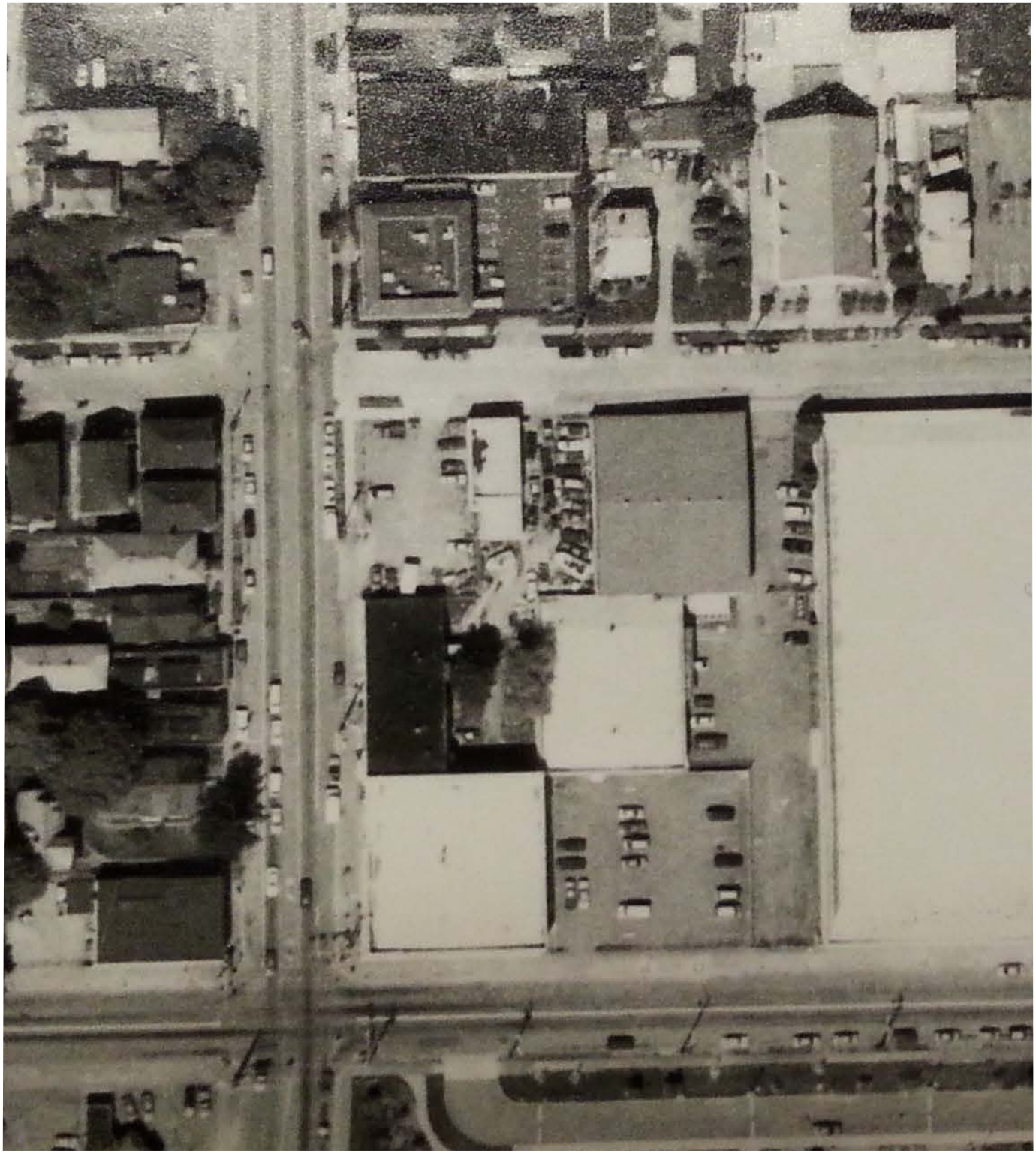
Historical Aerial Photograph - 1989

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP89

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

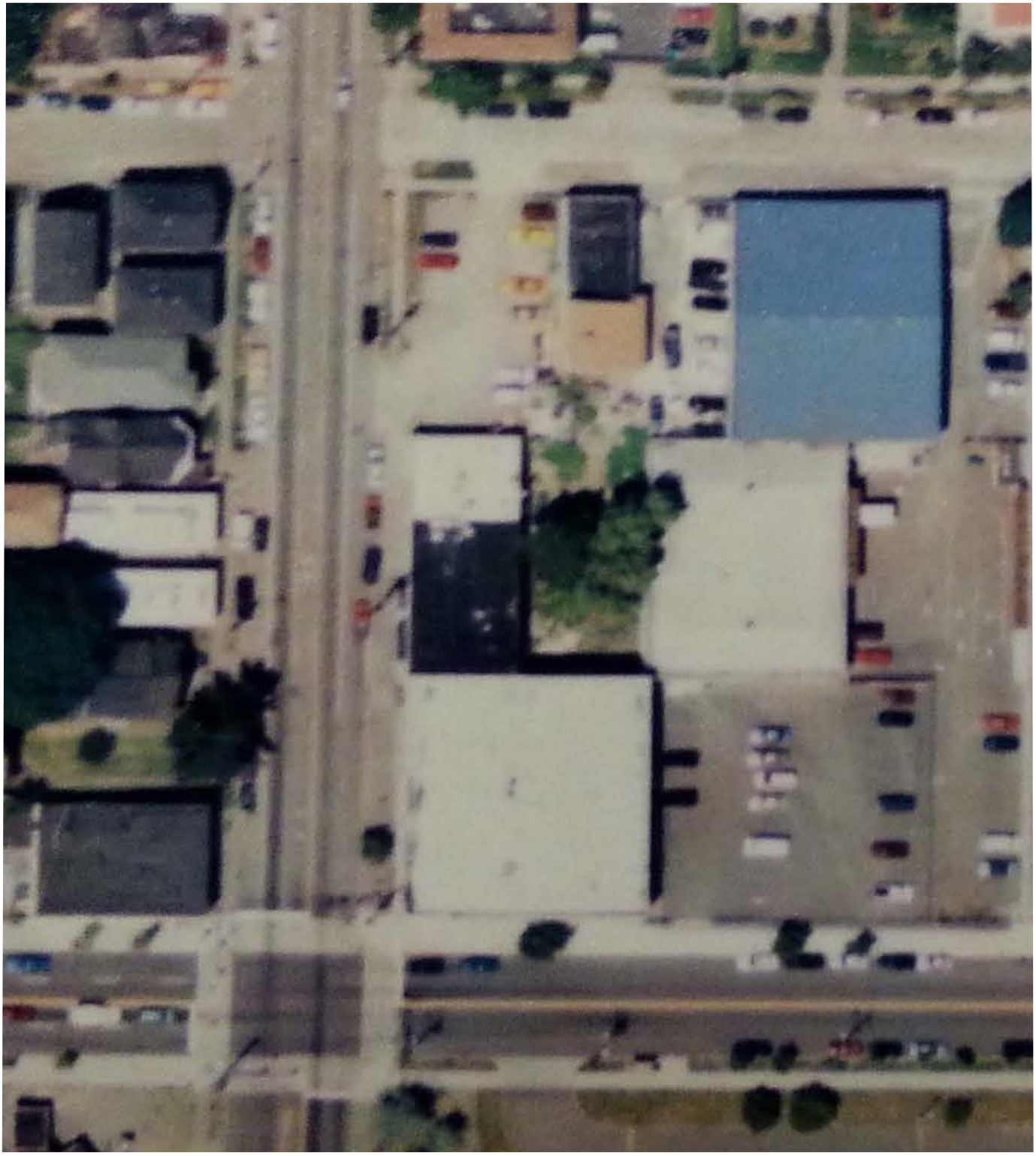
Historical Aerial Photograph - 1995

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP95

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

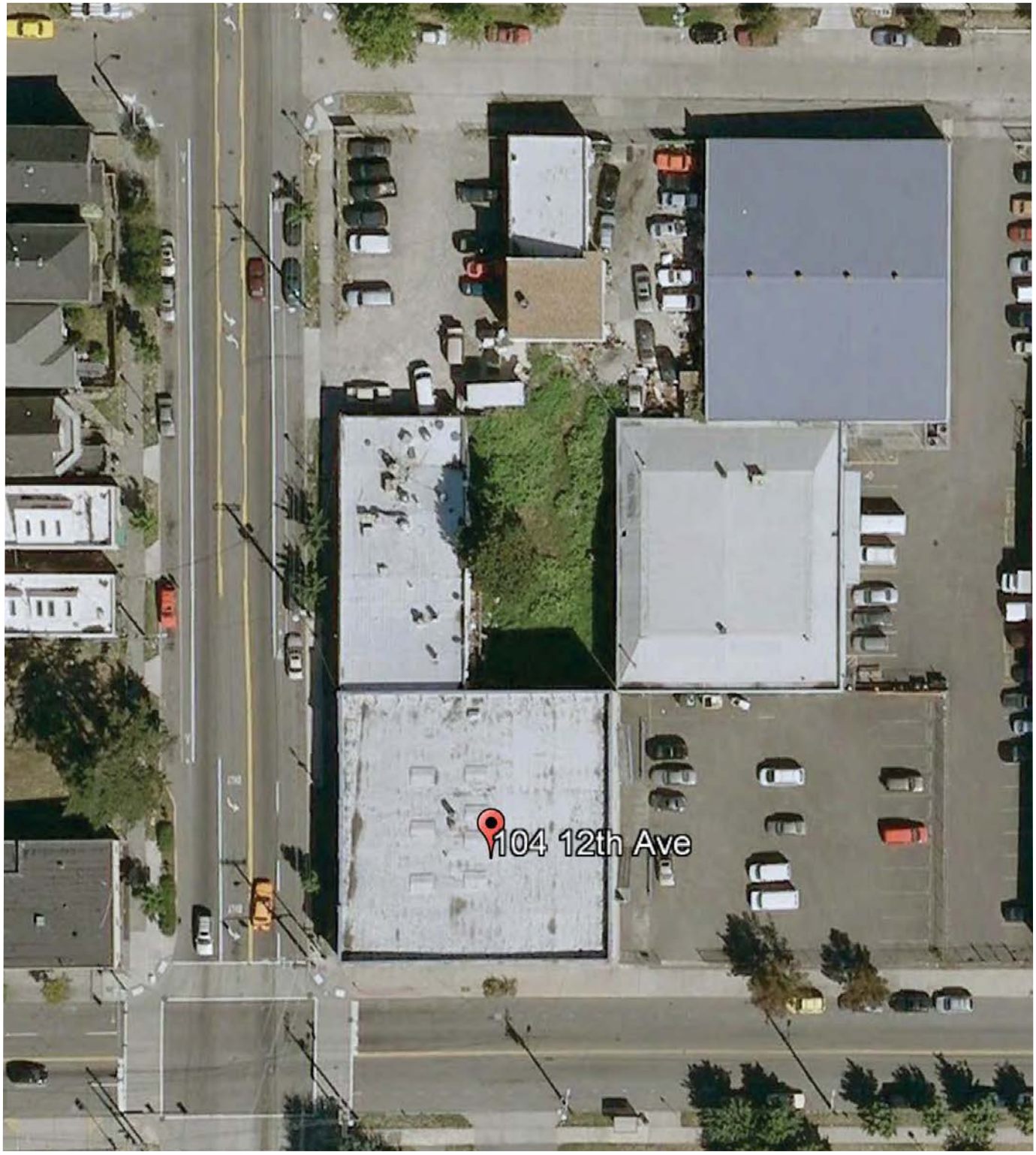
Historical Aerial Photograph - 2001

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1591AP01

WHITMAN
Environmental Sciences

From UW Suzzallo Library Collection



North

Historical Aerial Photograph - 2007

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP07

WHITMAN
Environmental Sciences

From King County Map Vault

North

Historical Aerial Photograph - 2015

104-124 12th Avenue & 1209 E. Fir Street
Seattle, Washington

Project No.	WES - 1591
Date	Jun 20, 2017
File ID.	1585AP

WHITMAN
Environmental Sciences

From Google Earth

Historical King County Assessor Records

3-15-71
HH

WF F 3-26-71 CN

100% UNF

0005

FOLIO 2393

PERMIT NO.

DATE

ADDITION Struves Add.
Section NE 5 Twp 24 Range 4 EWM. Block 1 Lot or 1&2 ...
Tax Lot ____ Tract ____

FOR REFERENCE ONLY

Address 1209 E. Fir

Fee Owner ____ Architect ____ Contractor ____

Zoning ____ Condition of Exterior F Interior F Foundation F Floor Plan: Good ____ Accept. ____ Poor ____

USE GARAGE
- 1 No. Stories
- No. Stores
- No. Rooms
- Basement
- No. Offices — Unit Sq. Ft.
- No. Apartmts.
- 1 rm. ☐ 2 rm. ☐ 3 rm. ☐ 4 rm. ☐ 5 rm. ☐ 6 rm. ☐

ROOF CONSTRUCTION
- X Frame-Joist
- Mill-Deck
- Rein. Conc. ____ GLB
- Steel Fr. ____ Metal Deck
- Trusses ____ Span
- Wood ____ Steel

FLOOR FINISHES
- Fir ☐ Maple
- Oak ☐ 2x6TG
- Lino ☐ 3x6TG
- 100% Cement ☐ Lgtwgt. Conc.
- Terrazzo
- Asphalt Tile ☐ Vinyl Tile
- or

☐ Tile ☐ Lino ☐ Form.
- Bath Floor
- Bath Walls
- Tub Recess
- Drain Bds.
- Vanities

PLUMBING
- 2 No. Fixtures
- 1 Toilets ____ Urinals
- Tubs Leg. or Pem.
- 1 Basins ____ Dr. Ftns.
- Sinks
- Washers ____ Dryers
- Showers (tub) (stall)
- H.W. Tanks ____ Ldy.Trays
- D-Washers ____ Disposals
- Sprinkler Sys.

Date Built 1949 Date Add. Built ____ ☐ Finished ☐ Unfinished ☐ Remodeled
Effective Age 22 Years Future Life ____ Years
Dep. for Cond. ____ Dep for Ob. ____ Dep. for Es. ____ Total ____

TYPE OF CONSTRUCTION
- Frame
- Metal-Prefab
- X Ordinary Masonry
- Mill Construction
- Class A Rein. Conc.
- Stru. Steel and Conc.
- Struct. Steel, Frame
- or

QUALITY-TYPE
Good Med. Cheap

FOUNDATION
- Mud Sill ☐ Post Pier
- X Conc. ☐ Brick
- Load Hgt. ☐ Piling

BASEMENT NONE
- Full ____ % Part.
- Sub-Basement
- Size
- Garage ☐ No. Cars
- Floors
- Plastered ☐ Pl. Bd.
- No. Apartments
- Service Rooms

FACTOR	ITEM	DIMENSIONS	SQ. FT. AREA	FACTOR	COST

ASSESSED VAL.

HEATING NHEQ
- Elec. ____ Oil ____ Gas
- H.W. ____ St. ____ H.A.
- B.Bd. ____ Suspended
- FHA ____ Pipeless
- A. Cond. ____ Wall Unit
- Comb. Unit ____ Custom
- Refrig. ____ Convector
- Heat Pump ____ Fireplace

YEAR	ASSESSED VALUE
	poor

MISC. TANKS, Etc.
HOISTS: Elec. Hydr.
SEE OVER

ELEVATORS
- Pass. ____ Frght.
- Auto. ____ Elec.
- Man. ____ Hydr.
- Doors-Auto ____ Man.
- Escalators
- Stops ____ Speed
- Cap'y.

DOCKS AND PIERS
- Hvy. ____ Med. ____ Lgt.
- Untrtd. Pile Tmbr.
- Conc. Piles & Bms.
- Trtd. Pile Tmbr.
- Paved
- Dolphins
- Deck

WIRING
- Knob & Tube
- Flex. Cable
- X Conduit
- Pwr. Wiring
- Range Wiring
- Outlets

EXTERIOR WALL CONST.
- Single ☐ Double
- Stud Walls
- Brick ____ Pil. ☐
- 100% Conc. BLK Pil. ☐
- Rein. Conc. Skeleton
- Str. Stl.-Frame
- Pre-Fab Metal
- Tilt-Up
- Filler Wall
- Curtain Wall

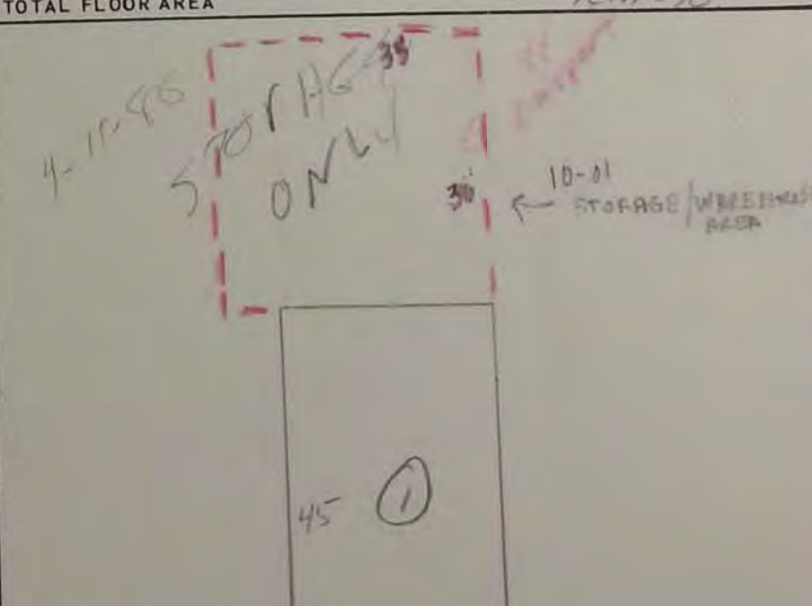
INTERIOR WALLS & CEILING
- Stud Wood Metal
- Plaster Dry Wall
- Acc. Tile Celotex
- Ceiled Plywood
- Solid Block
- Sound Proofed Lamin.
- Finished X Unfinished
- Painted Varnished

EXTERIOR FACING
- Siding
- Stucco ____ Shakes
- Marblecrete
- Brick ☐ Veneer
- Conc. ☒ Conc. Blk. 100%

INSULATION
- Exter. ____ Partitions
- Roof ____ Floor

C.Hgt.	GROUND FLOOR AREA
SB	TOTAL FLOOR AREA
B	
1	11
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	

1CM = 10'



FLOOR CONSTRUCTION

r Cond. _____ Dep for Ob. _____ Dep. for Es. _____ Total _____

OR	ITEM	DIMENSIONS	SQ FT AREA	FACTOR	COST

ASSESSED VAL.

. TANKS, Etc.	ELEVATORS	DOCKS AND PIERS	WIRING
ISTS: Elec. H.			

3-15-71
HH

WF-F 3-26-71 ON
100% UNF
0005
2 of 2

FOLIO 2393
PERMIT NO.
DATE

ADDITION Struves Add.
Section NE 5 Twp 24 Range 4 EWM. Block 1 Lot or 1&2 + N 33' of 12
Tax Lot Tract
Address 1209 E. Fir

FOR REFERENCE ONLY

Fee Owner
Architect
Contractor
Zoning
Condition of Exterior F Interior F Foundation F Floor Plan: Good Accept. Poor

USE GARAGE
1 No. Stories
No. Stores
No. Rooms
Basement
No. Offices Unit Sq. Ft.
No. Apartmts.
1 rm. ☐ 2 rm. ☐ 3 rm. ☐
4 rm. ☐ 5 rm. ☐ 6 rm. ☐

ROOF CONSTRUCTION
X Frame-Joist
Mill-Deck
Rein. Conc. GLB
Steel Fr. Metal Deck
Trusses Span
Wood Steel

FLOOR FINISHES
Fir ☐ Maple
Oak ☐ 2x6TG
Lino ☐ 3x6TG
100% Cement ☐ Lgtwgt. Conc.
Terrazzo
Asphalt Tile ☐ Vinyl Tile
or

☐ Tile ☐ Lino ☐ Form.
Bath Floor
Bath Walls
Tub Recess
Drain Bds.
Vanities

PLUMBING
2 No. Fixtures
1 Toilets Urinals
Tubs Leg. or Pem.
1 Basins Dr. Ftns.
Sinks
Washers Dryers
Showers (tub) (stall)
H.W. Tanks Ldy.Trays
D-Washers Disposals
Sprinkler Sys.

Date Built 1949 Date Add. Built ☐ Finished ☐ Unfinished ☐ Remodeled
Effective Age 22 Years Future Life Years
Dep. for Cond. Dep for Ob. Dep. for Es. Total

TYPE OF CONSTRUCTION
Frame
Metal-Prefab
X Ordinary Masonry
Mill Construction
Class A Rein. Conc.
Stru. Steel and Conc.
Struct. Steel, Frame
or

QUALITY-TYPE
Good Med. Cheap

FOUNDATION
Mud Sill ☐ Post Pier
X Conc. ☐ Brick
Load Hgt. ☐ Piling

BASEMENT NONE
Full % Part.
Sub-Basement
Size
Garage ☐ No. Cars
Floors

FACTOR | ITEM | DIMENSIONS | SQ. FT. AREA | FACTOR | COST

HEATING NHEQ
Elec. Oil Gas
H.W. St. H.A.
B.Bd. Suspended
FHA Pipeless
A. Cond. Wall Unit
Comb. Unit Custom
Refrig. Convector
Heat Pump Fireplace

YEAR	ASSESSED VALUE

ASSESSED VAL.

MISC. TANKS, Etc. | ELEVATORS | DOCKS AND PIERS | WIRING

BASEMENT NONE
Full ___ % Part.
Sub-Basement
Size ___
Garage ☐ No. Cars
___ Floors
Plastered ☐ Pl. Bd.
No. Apartments
Service Rooms

ASSESSED VAL.

MISC. TANKS, Etc.
HOISTS: Elec. Hydr.
SEE OVER

ELEVATORS
Pass. ___ Frght.
Auto. ___ Elec.
Man. ___ Hydr.
Doors-Auto ___ Man. ___
Escalators
___ Stops ___ Speed
Cap'y. ___

DOCKS AND PIERS
Hvy. ___ Med. ___ Lgt.
Untrtd. Pile Tmbr.
Conc. Piles & Bms.
Trtd. Pile Tmbr.
Paved
Dolphins
Deck

WIRING
Knob & Tube
Flex. Cable
X Conduit
Pwr. Wiring
Range Wiring
___ Outlets

EXTERIOR WALL CONST.
Single ☐ Double
Stud Walls
Brick ___ Pil. ☐
100% Conc. BLK Pil. ☐
Rein. Conc. Skeleton
Str. Stl.-Frame
Pre-Fab Metal
Tilt-Up
___ Filler Wall
___ Curtain Wall

INTERIOR WALLS & CEILING
Stud Wood Metal
Plaster Dry Wall
Acc. Tile Celotex
Ceiled Plywood
Solid Block
Sound Proofed Lamin.
Finished X Unfinished
Painted Varnished

EXTERIOR FACING
Siding
Stucco ___ Shakes
Marblecrete
Brick ☐ Veneer
Conc. ☒ Conc. Blk.
100%

INSULATION
Exter. ___ Partitions
Roof ___ Floor

FLOOR CONSTRUCTION
Joist ___ x ___ x ___ O.C.
Mill ___ Car Deck
X Conc. ___ Elev.
Steel ___ GLB.
or

INTERIOR TRIM
Fir ___ Birch
Mah. ___ Oak
Metal
Wood ___ Metal Doors
Wood ___ Metal Sash
Stained ___ Varnish
Painted ___ Unfin.

ROOF COVERING
Blt.-Up ___ Tar & Gr.
X Comp. ___ Metal
or

	C. Hgt.	GROUND FLOOR AREA
SB		TOTAL FLOOR AREA
B		
1	11	
2		
3		
4		
5		
6		
7		
8		
9		
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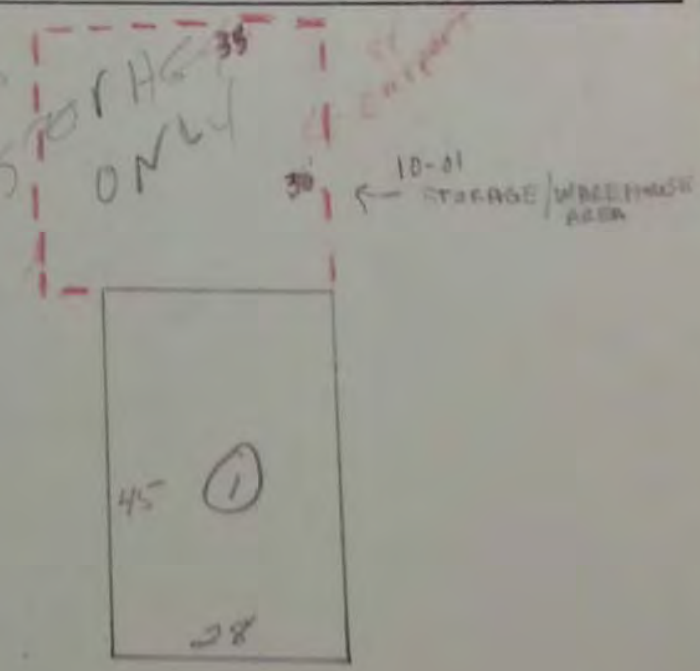
25		
26		



20M 11 '63

3-15-71
HH.

SS1-A 3-26-71 cw 100% SS w/B. 0005

FOLIO 2393

PERMIT NO.

DATE

ADDITION Struves Add 1&2

Section NE 5 Twp. 24 Range 4 EWM. Block ___ Lot or N2 & N 33' of 12

Tax Lot ___ Tract ___

Address 124 - 12th Ave

FOR REFERENCE ONLY

Fee Owner ___

Zoning ___ Architect ___ Contractor ___

Condition of Exterior F Interior F Foundation F Floor Plan: Good ___ Accept. ___ Poor ___

USE Service Station

1	No. Stories
	No. Stores
2	No. Rooms
	Basement — Unit Sq. Ft.
	No. Offices
	No. Apartmts.
	1 rm. ☐ 2 rm. ☐ 3 rm.
	4 rm. ☐ 5 rm. ☐ 6 rm.

ROOF CONSTRUCTION

X	Frame-Joist
	Mill-Deck
	Rein. Conc. ___ GLB
	Steel Fr. ___ Metal Deck
	Trusses ___ Span
	Wood ___ Steel

FLOOR FINISHES

	Fir	☐	Maple
	Oak	☐	2x6TG
	Lino	☐	3x6TG
100%	Cement	☐	Lgtwgt. Conc.
	Terrazzo		
	Asphalt Ti	☐	Vinyl Tile
or			

☐ Tile ☐ Lino ☐ Form.

	Bath Floor
	Bath Walls
	Tub Recess
	Drain Bds.
	Vanities

PLUMBING

5	No. Fixtures
2	Toilets ___ Urinals
	Tubs Leg. or Pem.
2	Basins ___ Dr. Ftns.
	Sinks
	Washers ___ Dryers
	Showers (tub) (stall)
	H.W. Tanks ___ Ldy.Trays
	D-Washers ___ Disposals
1	Dr. Fount.
	Sprinkler Sys.

TYPE OF CONSTRUCTION

X	Frame
	Metal-Prefab
	Ordinary Masonry
	Mill Construction
	Class A Rein. Conc.
	Stru. Steel and Conc.
	Struct. Steel, Frame
or	

QUALITY-TYPE

Good Med. Cheap

FOUNDATION

	Mud Sill ☐ Post Pier
X	Conc. ☐ Brick
	Load Hgt. ☐ Piling

BASEMENT NONE

	Full ___ % Part.
	Sub-Basement
	Size ___
	Garage ☐ No. Cars
	Floors

Date Built 1941 ... lt ___ ☐ Finished ☐ Remodeled

Effective Age 7 ... rs Future Life ___ ___ Years

Dep. for Cond. ___ Ob. ___ Dep. for Es. ___ Total ___

FACTOR	ITEM	DIMENSIONS	SQ. FT. AREA	FACTOR	COST
		X			
		X			
		X			
		X			
		TOTAL			
		LESS DEPRECIATION			
		DEPR. FULL VALUE			
		ASSESSED VAL.			

HEATING NHEQ

	Elec. ___ Oil ___ Gas
	H.W. ___ St. ___ H.A.
	B.Bd. ___ Suspended
	FHA ___ Pipeless
	A. Cond. ___ Wall Unit
	Comb. Unit ___ Custom
	Refrig. ___ Convector
	Heat Pump ___ Fireplace

YEAR	ASSESSED VALUE

MISC. TANKS, Etc. — HOISTS: Elec. Hydr.

ELEVATORS — Pass. Frght.

DOCKS AND PIERS — Hvy. Med. Lgt.

WIRING — Knob & Tube

Heat Pump ___ Fireplace

YEAR | **ASSESSED VALUE**

FOUNDATION
- Mud Sill ☐ Post Pier
- X Conc. ☐ Brick
- Load Hgr. ☐ Piling

BASEMENT None
- Full ___ % Part.
- Sub-Basement
- Size ___
- Garage ☐ No. Cars
- Floors
- Plastered ☐ Pl. Bd.
- No. Apartments
- Service Rooms

TOTAL
LESS DEPRECIATION
DEPR. FULL VALUE
ASSESSED VAL.

MISC. TANKS, Etc.
HOISTS: Elec. Hydr.
SEE OVER

ELEVATORS
- Pass. ___ Frght
- Auto. ___ Elec.
- Man. ___ Hydr.
- Doors-Auto ___ Man. ___
- Escalators
- ___ Stops ___ Speed
- Cap'y.

DOCKS AND PIERS
- Hvy. ___ Med. ___ Lgt
- Untrtd. Pile Tmbr.
- Conc. Piles & Bms
- Trtd. Pile Tmbr.
- Paved
- Dolphins
- Deck

WIRING
- Knob & Tube
- Flex. Cable
- X Conduit
- Pwr. Wiring
- Range Wiring
- ___ Outlets

EXTERIOR WALL CONST.
- Single ☐ Double
- 100% Stud Walls
- Brick ___ Pil. ☐
- Conc. ___ Pil. ☐
- Rein. Conc. Skeleton
- Str. Stl.-Frame
- Pre-Fab Metal
- Tilt-up
- ___ Filler Wall
- ___ Curtain Wall

INTERIOR WALLS & CEILING
- Stud Wood Metal
- Plaster Dry Wall
- Acc. Tile Celotex
- Ceiled X Plywood
- Solid Block
- Sound Proofed Lamin.
- Finished Unfinished
- X Painted Varnished

EXTERIOR FACING
- 100% Siding
- Stucco ___ Shakes
- Marblecrete
- Brick ☐ Veneer
- Conc. ☐ Conc. Blk.

INSULATION
- Exter. ___ Partitions
- Roof ___ Floor

FLOOR CONSTRUCTION
- Joist ___ x ___ x ___ O.C.
- Mill ___ Cor Deck
- X Conc. ___ Elev.
- Steel ___ SLB.
- or

INTERIOR TRIM
- Fir ___ Birch
- Mah. ___ Oak
- Metal
- Wood ___ Metal Doors
- Wood ___ Metal Sash
- Stained ___ Varnish
- Painted ___ Unfin.

ROOF COVERING
- Blt.-up ___ Tar & Gr.
- X Comp. ___ Metal
- or

C. Hgt.	
SB	
B	
1	
2	
3	
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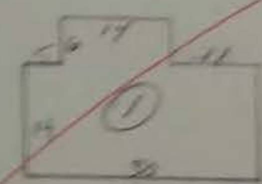
23	
24	
25	
26	

GROUND FLOOR AREA
TOTAL FLOOR AREA

Gone 7/89 burned then demo'd

14 / 6 / 84 14 / 26 / 420



DISTRICT 77A ADDITION STRUVE'S
Section 5 Twp. 24 Range 4 Ewm. 3093
PERMIT No. 341006 Block 1 Tract or Lot 1
DATE 11-4-40 AMT $2500 SHEET #1

Fee Owner
Condition of Exterior Good Interior Good Foundation Good Address of Property 124- 12TH AVE. Architect
USE GAS STATION Floor Plan: Good Accept Poor

USE		ROOF CONSTRUCTION		FLOOR FINISHES		PLUMBING	
1	No. Stories	X	Frame Lam ☐		Fir ☐ Maple	3	No. Fixtures
	No. Stores		Mill Construction		Oak ☐ 2" x 6" T&G	2	Toilets
	No. Rooms		Rein. Concrete		Lino. ☐ 2" x 6" T&G		Tubs, Leg or Pem.
	Basement		No. Trusses	X	Cement	2	Basins, Ped.
	No. Offices		Wood ☐ Steel		Terrazzo	1	FOUNTAIN
	No. Apartments		ROOFING MATERIAL		Rasselith		Urinals
	1 rm. ☐ 2 rm. ☐ 3 rm.		Tar and Gravel		Tile		Showers (Tub) (Stall)
	4 rm. ☐ 5 rm. ☐ 6 rm.	Or.	Paper	Or.			Laundry Trays

Tile ☐ Lino.
Baths ☐ Fl. ☐ Walls
Tile Total: Sq. Ft. ___ Floors; Sq. Ft. ___ Walls; Lin. Ft. ___ Dr. Bds.
Lino. Total: Sq. Ft. ___ Floors; Sq. Ft. ___ Walls; Lin. Ft. ___ Dr. Bds.
Kit's. ☐ Fl. ☐ Walls

H. W. Tank Fl. Drains ☐
Sprink. Sys. No. ___ Hds.

TYPE OF CONSTRUCTION

X	Frame
	Single ☐ Double
	Ordinary Masonry
	Mill Construction
	Class A Rein. Con.
	Stru. Steel and Con.
	Tile ☐ Brick
	Con. ☐ Rein. Con.

Good ___ Med. X Cheap ___

Date Built 1941 ☒ Finished ☐ Unfinished ☐ Remodeled
Effective Age ___ Years ___ Future Life ___ Years
Dep. For Cond. ___ Dep. For Ob. ___ Dep. For Ec. ___ Total 23%

HEATING

X	Stove
	Pipeless Furnace
	Gravity H. A.
	Air Cond., Fan
	Areola
	1-Pipe Steam
	2-Pipe St. or Vapor
	Hot Water
	Oil Burner
	Coal Stoker

REPRODUCTION COST Factor Make Up

Factor	Plus or Minus	Dimensions	S. F. Area	Factor	Cost

FOUNDATION

	Mud Sills
	Post and Pier
	Brick
X	Concrete
	Pile

BASEMENT

N	Full ☐ %
O	Sub-Basement
N	Size ___ x ___
E	Garage ☐ No. Cars
	___ Floors
	Plastered

WIRING

	Knobs & Tube
	Flex Cable
X	Conduit
	Power Wiring
2	FLOOD LIGHT POLES
12	No. Outlets

2000
1000
F.M-67

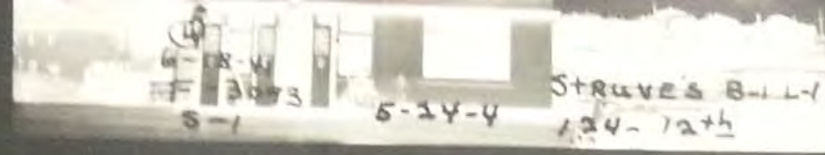
ELEVATORS

N Pass. ☐ Freight

Sup. Building A.V.

BASEMENT

- N — Full ☐ %
- O — Sub-Basement
- N — Size ___ x ___
- E — Garage ☐ No. Cars
- ___ Floors
- Plastered
- Living Rooms
- Service Rooms



Sup. Building A. V. ___ $ ___

Total ___ $ ___

- Power Wiring ___
- 2 — ~~Range Wiring~~ FLOOD LIGHT POLES
- 12 — No. Outlets

~~2000~~ 1000
F.M-G7 ~~1500~~
~~1122~~ 1500

ELEVATORS

- N — Pass. ☐ Freight
- O — Auto. ☐ Elec.
- N — Man. ☐ Hyd.
- E — ☐ Man.

~~1210~~

EXTERIOR WALL CONSTR.

- Single ☒ Double
- X — 2" x 4" Stud Walls
- 2" x 6" Stud Walls
- Brick Walls
- Brick With Pilasters
- Concrete Walls
- Con. With Pilasters
- Tile Walls
- Rein. Con. Skel.
- ___ Filler Walls
- Laminated Walls

EXTERIOR FACING

- X — Siding ☐ Shingles
- Shakes ☐ Stucco
- Brick Veneer
- ___ Kind
- Stone ☐ Cast S.
- Terra Cotta
- Struct. Glass
- ___ Trim

FLOOR CONSTRUCTION

- Joist Con. Size ___ x ___
- O. C. ___ In Bridg ___ ☐
- Mill Construction
- X — ~~Rein.~~ Con.

INTERIOR WALLS

- Stud and Plaster
- Lam. ☐ Plastered
- X — Ply Wood
- Ceiled
- Plaster Board
- X — Painted
- Stain ☐ Varnish
- Kalsomine
- Whitewashed
- Unfinished

INTERIOR TRIM

- X — Fir
- Mah. ☐ Oak
- Metal
- ___ Doors
- ___ Windows
- Stained
- Varnished
- Painted
- Unfinished

GAS STATIONS

- X — Frame
- Metal
- Masonry
- Plastered or Ceiled
- X — Floors Conc

SERVICE BUILDING

- Frame
- Metal
- Masonry
- Plastered or Ceiled
- 1 — Floors CATCH BASIN

TANKS, ETC., LIST

- 4 — 1000 Tank
- 1 — 4000 Tank
- 2 — LT STDS
- 2 — Hose wells
- X — Hoists: Elec. 1 Hyd.

DOCKS AND PIERS

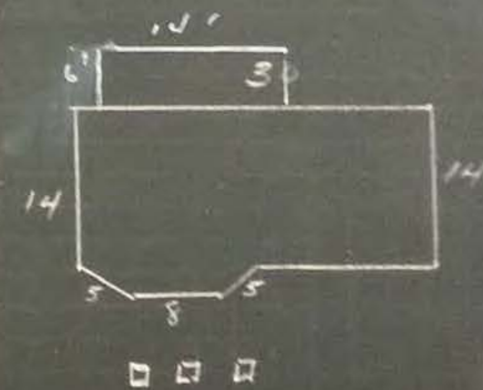
- Treated Piles and Timbers
- Untreated
- Treated Piles only
- Average Length
- Paved

C. H.

S.B., B, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22

GROUND FLOOR AREA ~~462~~ 543

TOTAL FLOOR AREA ___



	Other Buildings	Construction	Floor	Roof	Stories	Dimensions	S. F. Area	Factor	Value	% Dep.	Deprec.	Net Value
	Garage					x			$		$	$
						x			$		$	$
						x			$		$	$
						x			$		$	$

ction
. Con.
d Con.
Brick
Rein. Con.
Cheap
%
No. Cars
Floors

REPRODUCTION COST Factor Make Up

Factor	Plus or Minus	Dimensions	S. F. Area	Factor	Cost

Sup. Building A. V. $

Total $

SOS 12558

SPLIT VALUATION

~~SPLIT VALUATION~~ 80610 King Co. 0005

LIMITS	ROAD	SCHOOL	WATER	FIRE	TOTAL ACREAGE	TIMBER	IMPROVED	UNIMPROVED
O. L. Seattle-1 Code 1					Metro	806100-0005	4400	3100 0010

YEAR	AC.	LAND	BLDGS.	TOTAL	BY	DATE	REASON	FEE OWNER	DATE
1943		960	1290	2250			1941 Imp.	CARL HOFFMAN	3-4-36
1949		1270	1290	2510	mch	1-48	OK 1947	Al Strickland	8-16-40
1951		1220	2540 ②	3760	R.H.	7-49	New Imp.		
1955		1220	3200 ②	4420	J.H.	7-27-55	Bldg "A" Tank+Hoist Bldg "B" RV portfolio		
1956		2480	3200 ②	5680	F.P.	8-54	Merge.		
1957		2480	3400 ②	5880	DE	4/9/56	additions		
19			3050						
1958		2480	Bal. of A. V. See 0005-S	5530	EH(T)	5/13/57	Split Valu See 0005-S		E-3325
19			2750						
1960		2480	Bal. of A. V. See 0005-S	5230	L.M.	2/3/59	Paving - RV.		
19			2750						
1960		3530	Bal. of A. V. See 0005-S	6280	LL	5-29-59	RV		
1965		3,530	3,100	6,630	LE(M)	4-4-64	merge (Kill MH #0005-S)		M-1845
1965		4400	3100	7500	MB	5-12-64	RV		
1966		4400	2950 Bal. of A. V. See 0005-S	7350	LE(P)	6/4/65	Split-Value See MH #0005-S		N-3491
19									
1969		4400	2450	6850	DLQ	9-15-69	R.V.		
19			Bal. of A. V. See 0005-S						
1970		4400	2600	7000	LE(P)	7-1-70	Mrg-0005-0 & 0005-8 (No longer Split)		T-4894
19 71	L	8800 B	5200 T	14000*806100-0005-0 8/9					

F-2393

ADDITION Struves add

1 & 2 & W 33' of 12

Section 5 Twp. 24 N. Range 4 Ewm. Block 1 Tract or Lot No. 1

Permit No. 391654

Date 10-1948

Address of Property 1209-E-FIR

Fee Owner

Condition of Exterior G Interior G

USE Garage	BUILDINGS 1	PLUMBING		CON.
CONSTRUCTION Conc Block		No. FIXTURES 2		FLOORS
		GRADE		SERVICE BLDG.
FOUNDATION Conc	FLOORS Concrete	D. S. SEWER CONN.	ELEVATORS	CON.
BASEMENT		HEATING Stove		FLOORS
	INTERIOR WALL FINISH White Wash		CONVEYORS	
WALLS Conc Blks		WIRING Conduit		TANKS (List)
	PORCHES		EXTRA FEATURES	
EXTERIOR C Blks	YEAR BUILT 1949	FINISHED 1 UNFINISHED	REMODELED	SPRINKLER SYSTEM
	EFFECTIVE AGE	FUTURE LIFE	DEP. 10%	No. HEADS

FACTOR	ITEM	DIMENSIONS	S.F. AREA	FACTOR	COST

INTERIOR C Blks

ATTIC

ROOF Frame

Comp

FIREPLACE

TILEWORK Sq. Ft.

INTERIOR TRIM Fir

DOCKS AND PIERS

Length of Piles

Treated Piles and Timber

Untreated

Treated Piles Only

Paved

DIMENSIONS

SQ. FT. AREA

No. Stories

No. Stores

No. Rooms

~~1250~~ 1949

CEILING HEIGHTS

S.B.	1. 11	3.
B.	2.	4.

3200

~~1600~~

~~1700~~

REMARKS

Garage with 2-overhead doors not much else Gray 6/49

TELEPHONE Sq. Ft.

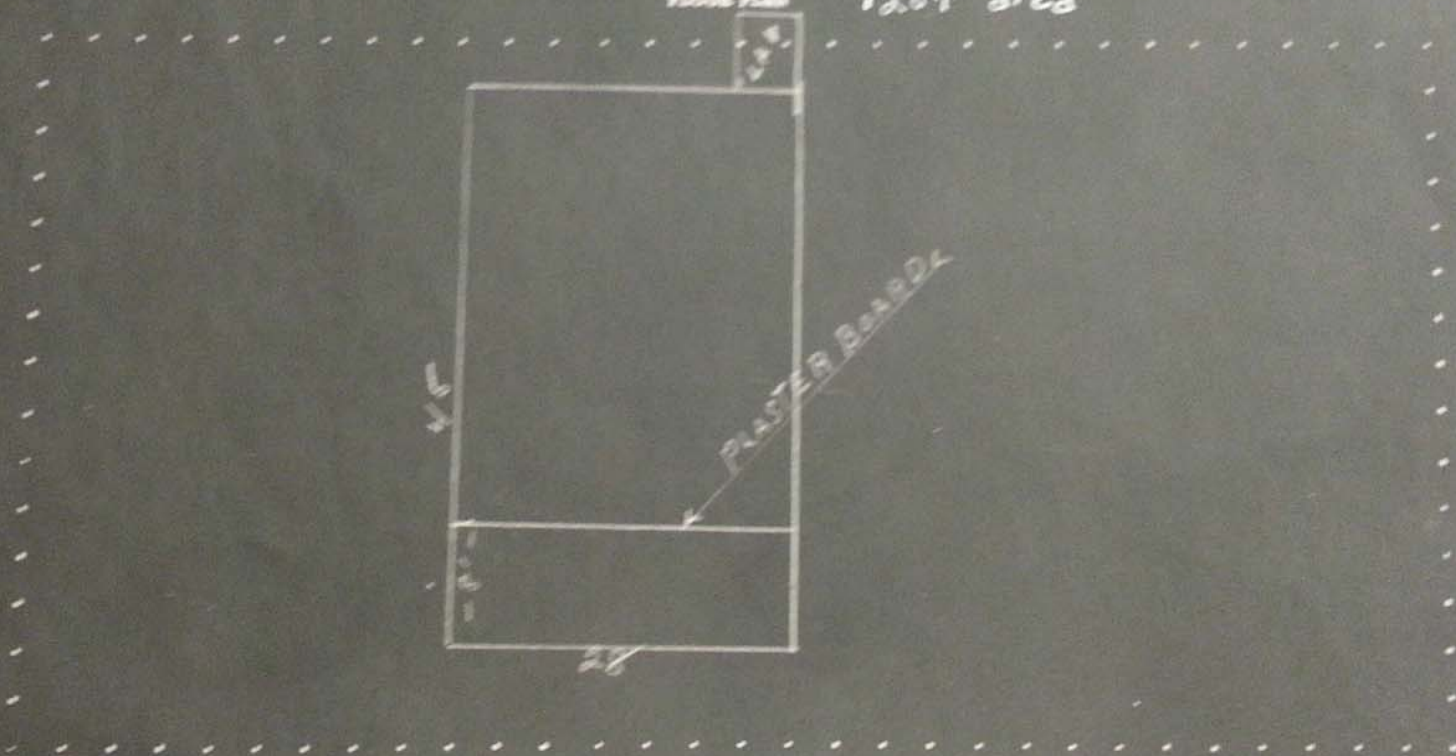
INTERIOR TRIM

CEILING HEIGHTS

REMARKS

Garage with overhead door not much else

FLOOR PLAN 1284 area



Appraised by ______ Date ______ Checked by ______ Date ______

1. DISTRICT 7A

LIMITS O.L.

CODE NO. 1

2. ADDITION STRUVES ADD. ~~STRUVES ADD.~~

SECTION TWP. N. RANGE EWM BLOCK 1 TRACT OR LOT NO. 1

DESCRIPTION

3. ADDRESS OF PROPERTY

4. FEE OWNER CARL HOFFMAN 8-4-36 CONTRACT PURCHASER

LAND INFORMATION

1. SIZE OF TRACT OR LOT X TOPOGRAPHY Level GRADE Below 6' FT. 2. STREET-ROAD Graded SURFACE Paved

ALLEY None 3. SIDEWALK Conc. SEWAGE Sewer WATER City PUMP DRAINAGE

4. LANDSCAPING None CONDITION Poor 5. TREND Static VALUE OF LOT $ FRONT STREET

FACTOR $ SIDE STREET FACTOR $ DEPTH FACTOR $ CREDIT

6. USE Res. Apt., Business 7. DISTRICT Poor-Old

LAND USE	SOIL TYPE	CROPS-TIMBER STAND	NO. ACRES	VALUE ACRE $	VALUE $

LAND SIZE X TOTAL $

C O	OWNER OR CONTRACT PURCHASER	DATE	FILE NO.	PRICE	MTGE	STAMP

DISTRICT:	ROAD	SCHOOL	WATER	FIRE

ASSESSED VALUE LAND

LOT	$
UNIMPROVED ACRES	$
IMPROVED ACRES	$
OTHER LANDS	$
TIMBER	$
TOTAL ASSESSED VALUE 50%	$
DATE	

REMARKS

ASSESSED VALUE — DECREASE OR INCREASE IN ASSESSED VALUATION — LAND

YEAR	AC.	LAND	DATE	BY	REASON	DECREASE	INCREASE
1938		960					
19							
19							
19							
19							
19							
19							
19							
19							
19							
19							

VACANT — KING COUNTY ASSESSOR — SEATTLE, WASHINGTON

FRAYN PRINTING CO. SEATTLE

RV1150-18

.15

100% S.C

3-15-71
HH

FOLIO 2393

PERMIT NO. 339705

DATE

ADDITION Struves Add — S1-B 3-26-71 cnl — 0015

NE Section 5 Twp 24 Range 4 EWM. Block 1 Lot or 3-4-4

Tax Lot ______ Tract ______

FOR REFERENCE ONLY

Address 110-116 12th Ave.

Fee Owner ______ Architect ______ Contractor ______

Zoning ______ Condition of Exterior F Interior F Foundation A Floor Plan: Good ______ Accept. ______ Poor ______

USE STORES

- 1 No. Stories
- 5 No. Stores
- 8 No. Rooms
- Basement
- No. Offices — Unit Sq. Ft.
- No. Apartmts.
- 1 rm. ☐ 2 rm. ☐ 3 rm. ☐ 4 rm. ☐ 5 rm. ☐ 6 rm. ☐

TYPE OF CONSTRUCTION

- X Frame
- Metal-Prefab
- Ordinary Masonry
- Mill Construction
- Class A Rein. Conc.
- Stru. Steel and Conc.
- Struct. Steel, Frame
- or

QUALITY-TYPE

Good ___ Med. X Cheap ___

FOUNDATION

- Mud Sill ☐ Post Pier
- X Conc. ☐ Brick
- Load Hgt. ☐ Piling

BASEMENT

- Full ___ X Part.
- Sub-Basement
- Size 18X28
- Garage ☐ No. Cars
- 100% conc Floors
- Plastered ☐ Pl. Bd.
- No. Apartments
- Service Rooms
- 100% UNF

EXTERIOR WALL CONST.

- Single ☒ Double
- 100% Stud Walls
- Brick ___ Pil. ☐
- Conc. ___ Pil. ☐
- Rein. Conc. Skeleton
- Str. Stl.-Frame
- Pre-Fab Metal
- Tilt-Up
- Filler Wall
- Curtain Wall

EXTERIOR FACING

- REM Siding
- 100% Lexile Stucco ___ Shakes
- Marblecrete
- Brick ☐ Veneer
- Conc. ☐ Conc. Blk.

ROOF CONSTRUCTION

- X Frame-Joist
- Mill-Deck
- Rein. Conc. ___ GLB
- Steel Fr. ___ Metal Deck
- Trusses ___ Span
- Wood ___ Steel

FLOOR FINISHES

- REM Fir ☐ Maple
- Oak ☐ 2x6TG
- 10% Lino ☐ 3x6TG
- Cement ☐ Lgtwgt. Conc.
- Terrazzo
- 60% Asphalt Tile ☐ Vinyl Tile
- or

☐ Tile ☐ Lino ☐ Form.

- Bath Floor
- Bath Walls
- Tub Recess
- Drain Bds.
- Vanities

Date Built 1940 Date Add. Built ______ ☐ Finished ☐ Unfinished ☐ Remodeled

Effective Age 30 Years Future Life ______ Years

Dep. for Cond. ______ Dep for Ob. ______ Dep. for Es. ______ Total ______

FACTOR | ITEM

ASSESSED VAL.

MISC. TANKS, Etc.

HOISTS: Elec. Hydr.

SEE OVER

ELEVATORS

- Pass. ___ Frght
- Auto. ___ Elec.
- Man. ___ Hydr.
- Doors-Auto ___ Man.
- Escalators
- Stops ___ Speed
- Cap'y.

DOCKS AND PIERS

- Hvy. ___ Med. ___ Lgt
- Untrtd. Pile Tmbr.
- Conc. Piles & Bms
- Trtd. Pile Tmbr.
- Paved
- Dolphins
- Deck

WIRING

- Knob & Tube
- Flex. Cable
- X Conduit
- Pwr. Wiring
- Range Wiring
- Outlets

PLUMBING

- 10 No. Fixtures
- 5 Toilets ___ Urinals
- Tubs Leg. or Pem.
- Basins ___ Dr. Fins.
- 5 Sinks
- Washers ___ Dryers
- Showers (tub) (stall)
- H.W. Tanks ___ Ldy. Trays
- D. Washers ___ Disposals
- Sprinkler Sys.

HEATING

- Elec. ___ Oil ___ X Gas
- H.W. ___ St. ___ H.A.
- B.Bd. 1 Suspended
- FHA ___ Pipeless
- A. Cond. ___ Wall Unit
- Comb. Unit ___ Custom
- Refrig. ___ Convector
- Heat Pump ___ Fireplace

YEAR	ASSESSED VALUE

Drug Store
Florist
Shack Church
(Pool Hall)

INTERIOR WALLS & CEILING

- Stud Wood Metal
- X Plaster DryWall
- Acc. Tile Celotex
- Ceiled Plywood
- Solid Block
- Sound Proofed Lamin.
- Finished Unfinished
- X Painted Varnished

INSULATION

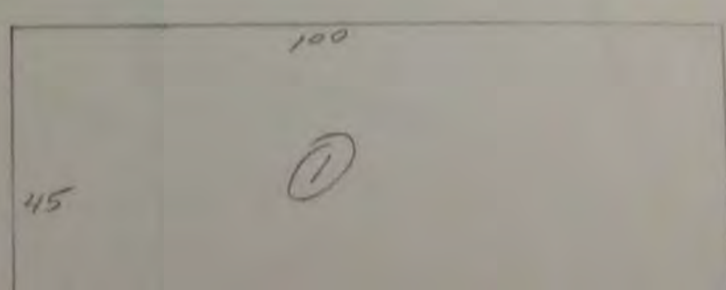
Partitions

	C.Hgt.
SB	
B	10
1	12
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	

GROUND FLOOR AREA

TOTAL FLOOR AREA 1 cm = 10'

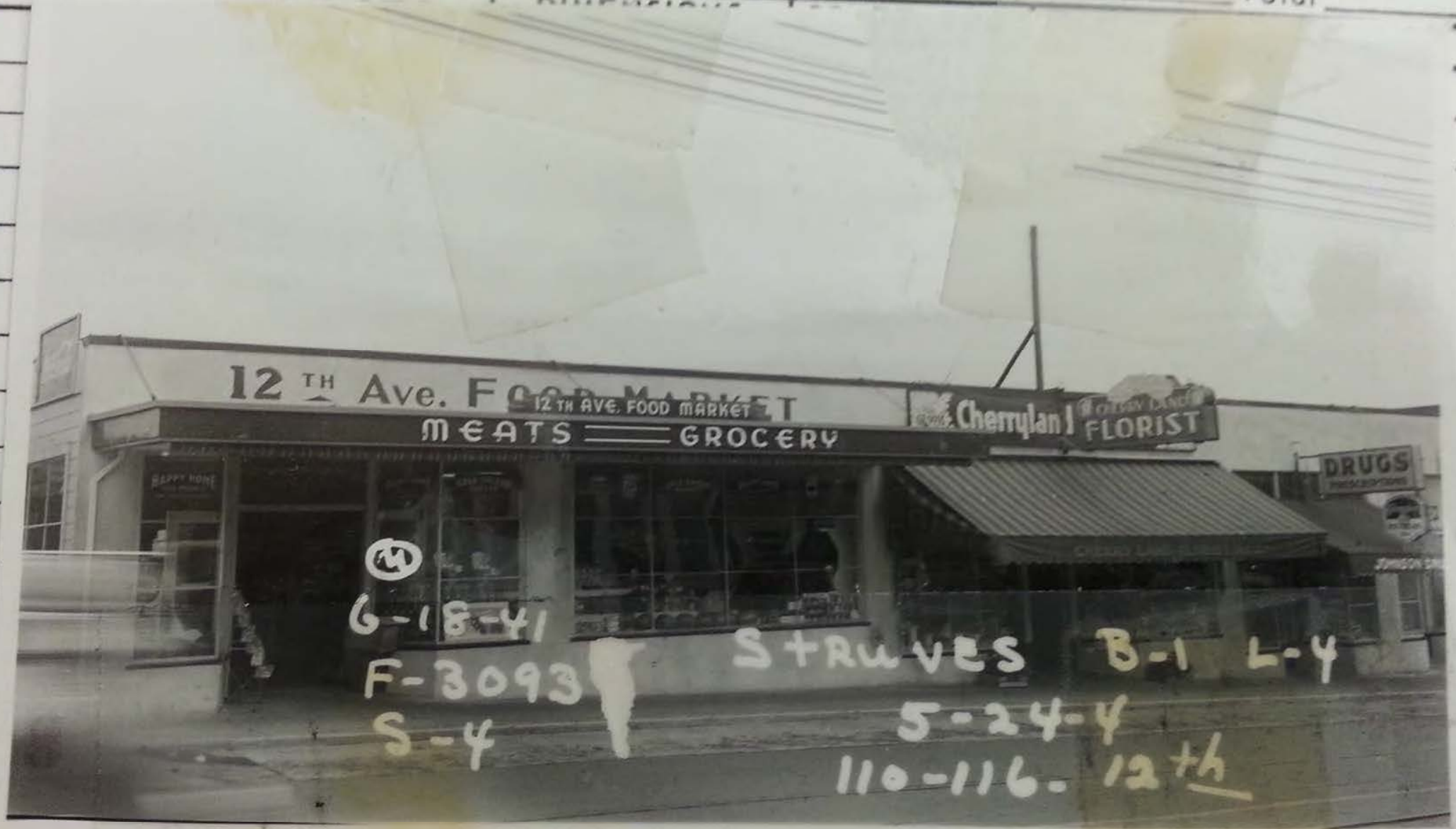
1/2 UPC



tive Age 30 Years Future Life Years

for Cond. Dep for Ob. Dep. for Es. Total

TOR | ITEM



ASSESSED VAL.

C. TANKS, Etc.	ELEVATORS	DOCKS AND PIERS	WIRING
DISTS: Elec. Hydr.	Pass. Frght	Hvy Med Lgt	Knob & Tube

RVI150-18

3 15-71 HH

S1-B (3-26-11 cN 100% S-C

FOLIO 2393

PERMIT NO. 339705

DATE

ADDITION Struves ADD 0015

Section NE 5 Twp 24 Range 4 EWM. Block 1 Lot or 344

Tax Lot ____ Tract ____

Address 110-116 12th Ave.

FOR REFERENCE ONLY

Fee Owner ____

Zoning ____ Condition of Exterior F Interior F Foundation A Floor Plan: Good ____ Accept. ____ Poor ____

Architect ____ Contractor ____

USE STORES

1	No. Stories
5	No. Stores
8	No. Rooms
	Basement Unit Sq. Ft.
	No. Offices
	No. Apartmts.
	1 rm. ☐ 2 rm. ☐ 3 rm.
	4 rm. ☐ 5 rm. ☐ 6 rm.

ROOF CONSTRUCTION

X	Frame-Joist ____
	Mill-Deck ____
	Rein. Conc. ____ GLB
	Steel Fr. ____ Metal Deck
	Trusses ____ Span
	Wood ____ Steel

FLOOR FINISHES

RF&T	Fir	☐	Maple
	Oak	☐	2x6TG
10%	Lino	☐	3x6TG
	Cement	☐	Lgtwgt. Conc.
	Terrazzo		
40%	Asphalt Tile	☐	Vinyl Tile

or

☐ Tile ☐ Lino ☐ Form.

	Bath Floor
	Bath Walls
	Tub Recess
	Drain Bds.
	Vanities
	____

PLUMBING

10	No. Fixtures
5	Toilets ____ Urinals
	Tubs Leg. or Pem.
	Basins ____ Dr. Ftns.
5	Sinks
	Washers ____ Dryers
	Showers (tub) (stall)
	H.W. Tanks ____ Ldy. Trays
	D-Washers ____ Disposals
	____
	Sprinkler Sys.

Date Built 1940 Date Add. Built ____ ☐ Finished ☐ Unfinished ☐ Remodeled

Effective Age 30 Years Future Life ____ Years

Dep. for Cond. ____ Dep for Ob. ____ Dep. for Es. ____ Total ____

TYPE OF CONSTRUCTION

X	Frame
	Metal-Prefab
	Ordinary Masonry
	Mill Construction
	Class A Rein. Conc.
	Stru. Steel and Conc.
	Struct. Steel, Frame

or

QUALITY-TYPE

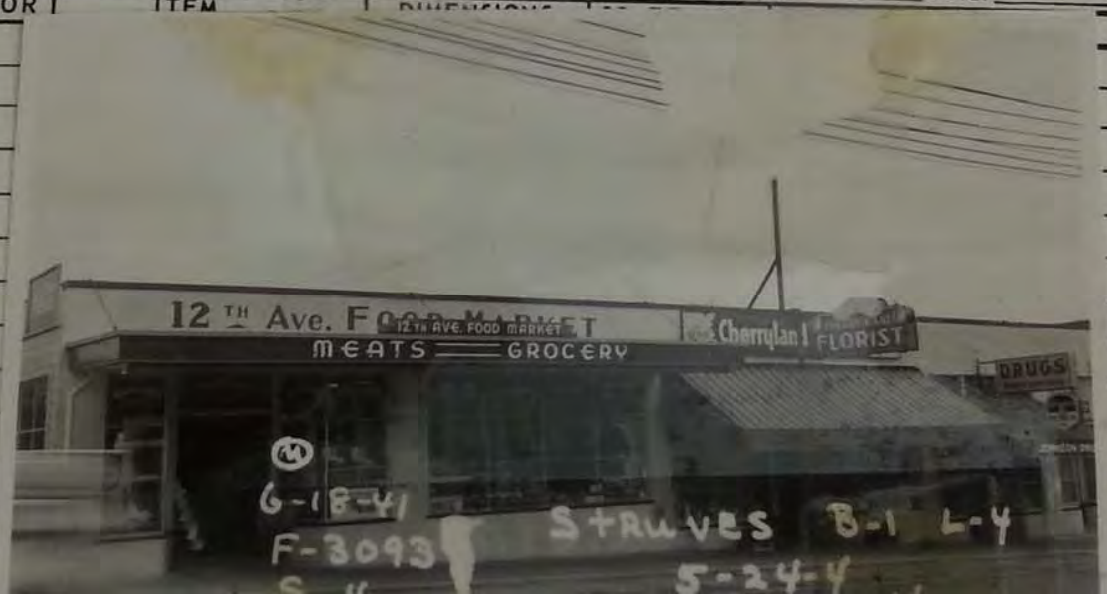
Good ____ Med. X Cheap

FOUNDATION

	Mud Sill ☐ Post Pier
X	Conc. ☐ Brick
	Load Hgt. ☐ Piling

BASEMENT

FACTOR	ITEM	DIMENSIONS



HEATING

	Elec. ____ Oil ____ X Gas
	H.W. ____ St. ____ H.A.
	B.Bd. 1 Suspended
	FHA ____ Pipeless
	A. Cond. ____ Wall Unit
	Comb. Unit ____ Custom
	Refrig. ____ Convector
	Heat Pump ____ Fireplace

YEAR	ASSESSED VALUE

QUALITY-TYPE

FOUNDATION

BASEMENT

EXTERIOR WALL CONST.

EXTERIOR FACING

FLOOR CONSTRUCTION

ROOF COVERING

MISC. TAXES, Etc.

ELEVATORS

DOCKS AND PIERS

WIRING

ASSESSED VAL.

YEAR	ASSESSED VALUE

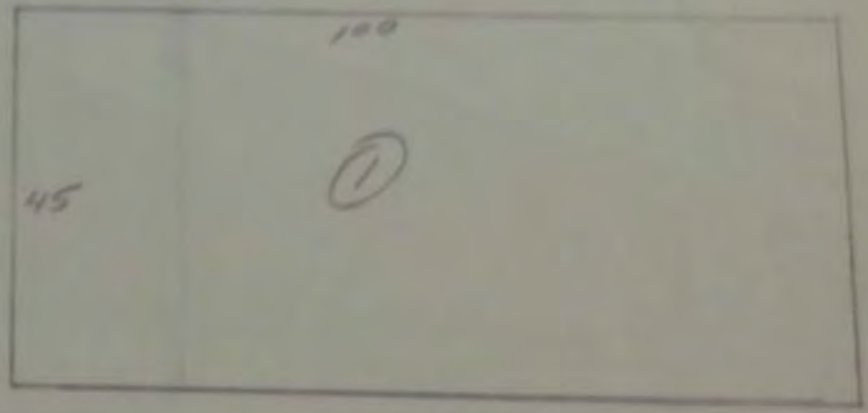
INTERIOR WALLS & CEILING

INSULATION

INTERIOR TRIM

GROUND FLOOR AREA

TOTAL FLOOR AREA



DISTRICT 17A ADDITION STRUVES ADD. 3093

Section 5 Twp. 24 Range 4 Ewm. Block 1 Tract or Lot 4 43.

PERMIT No. 339705 AM $7500

DATE AUG. 20. 1940 SHEET #4

Fee Owner Y. FUKUDA

Address of Property 110-116 12TH AVE Architect

Condition of Exterior Good Interior Good Foundation Good Floor Plan: Good Accept. Poor

USE STORES

1	No. Stories
3	No. Stores
8	No. Rooms
1	Basement
	No. Offices
	No. Apartments
	1 rm. ☐ 2 rm. ☐ 3 rm.
	4 rm. ☐ 5 rm. ☐ 6 rm.

TYPE OF CONSTRUCTION

✓	Frame
	Single ☒ Double
	Ordinary Masonry
	Mill Construction
	Class A Rein. Con.
	Stru. Steel and Con.
	Tile ☐ Brick
	Con. ☐ Rein. Con.

Good __ Med. X Cheap __

FOUNDATION

	Mud Sills
	Post and Pier
✓	Brick
	Concrete
	Pile

BASEMENT

	Full ☐ %
	Sub-Basement
X	Size 18 x 28
	Garage ☐ No. Cars
	Cement Floors
	Plastered
	Living Rooms
	Service Rooms

NONE

ROOF CONSTRUCTION

X	Frame Lam ☐
	Mill Construction
	Rein. Concrete
	No. Trusses
	Wood ☐ Steel

ROOFING MATERIAL

✓	Tar and Gravel
Or.	

FLOOR FINISHES

✓	Fir ☐ Maple
	Oak ☐ 2" x 6" T&G
X	Lino. 60% ☐ 3" x 6" T&G
	Cement
	Terrazzo
	Raecolith
Asph	Tile 20%
Or.	

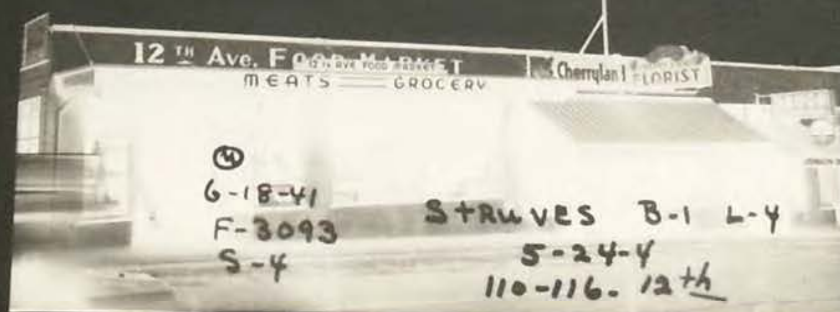
	Tile ☐ Lino.
	Baths ☐ Fl. ☐ Walls
Tile Total	Sq. Ft. __ Floors
	Sq. Ft. __ Walls
	Lin. Ft. __ Dr. Bds.
Lino. Total	Sq. Ft. __ Floors
	Sq. Ft. __ Walls
	Lin. Ft. __ Dr. Bds.
	Kit's. ☐ Fl. ☐ Walls

Date Built 1940 ☒ Finished ☐ Unfinished ☐ Remodeled

Effective Age __ Years __ Future Life __ Years

Dep. For Cond. 36 Dep. For Ob. __ Dep. For Es. 5 Total 41%

REPRODUCTION COST Factor Make Up



Assessed Value 50% $ 3750

Sup. Building A. V. $

8 Total $

Permit 7500.00

PLUMBING

	No. Fixtures
5	Toilets
	Tubs, Leg or Pem.
	Basins, Ped.
5	Sinks
	Urinals
	Showers (Tub) (Stall)
	Laundry Trays
	H. W. Tank Fl. Drains ☐
	Sprink. Sys. No. __ Hds.

HEATING

✓	Stove
	Pipeless Furnace
	Gravity H. A.
	Air Cond., Fan
1	Arcola Susp. Gas.
	1-Pipe Steam
	2-Pipe St. or Vapor
	Hot Water
	Oil Burner
	Coal Stoker

WIRING

	Knobe & Tube
	Flex Cable
X	Conduit
	Power Wiring
	Range Wiring
	No. Outlets

ELEVATORS

	Pass. ☐ Freight
	Auto. ☐ Elec.
	Man. ☐ Hyd.
	☐ Man.

NONE

7500
3750

4600
9200

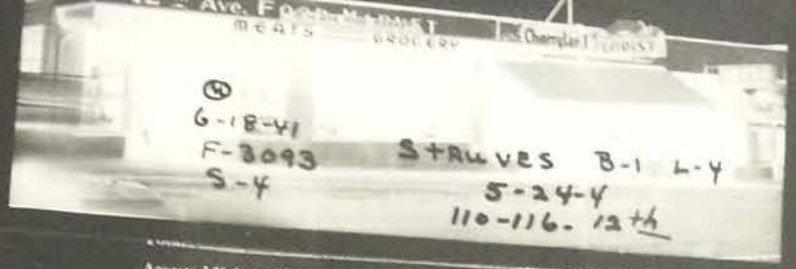
EXTERIOR WALL CONSTR.	INTERIOR WALLS	GAS STATIONS	C. H.	GROUND FLOOR AREA 4500
Single ☒ Double	✓ Stud and Plaster	Frame	S. B.	TOTAL FLOOR AREA

Concrete
Pile

BASEMENT

Full ☐ %
Sub-Basement
Size 18 . 28
Garage ☐ No. Cars
Cement Floors
Plastered
Living Rooms
Service Rooms

NONE



6-18-41
F-3093
S-4

STRUVES B-1 L-4
5-24-4
110-116. 12th

Assessed Value 50% $ 3750
Sup. Building A. V. $
Total $

Permit 1500 "

Oil Burner
Coal Stoker

WIRING

Knobe & Tube
Flex Cable
X Conduit
Power Wiring
Range Wiring
No. Outlets

ELEVATORS

Pass. ☐ Freight
Auto. ☐ Elec.
Man. ☐ Hyd.
☐ Man.

NONE

3750
4600
9200

EXTERIOR WALL CONSTR.

Single ☒ Double
X 2" x 4" Stud Walls
2" x 6" Stud Walls
Brick Walls
Brick With Pilasters
Concrete Walls
Con. With Pilasters
Tile Walls
Rein. Con. Skel.
Filler Walls
Laminated Walls

EXTERIOR FACING

Siding ☐ Shingles
Shakes ☐ Stucco
Brick Veneer
Kind
Stone ☐ Cast S.
Terra Cotta
Struct. Glass
Trim

FLOOR CONSTRUCTION

Joist Con. Size 2 x 14
O. C. 16" In Bridg ☐
Mill Construction
Rein. Con.

INTERIOR WALLS

Stud and Plaster
Lam. ☐ Plastered
Ply Wood
Ceiled
Plaster Board
Painted
Stain ☐ Varnish
Kalsomine
Whitewashed
Unfinished

INTERIOR TRIM

Fir
Mah. ☐ Oak
Metal
Doors
Windows
Stained
Varnished
Painted
Unfinished

GAS STATIONS

Frame
Metal
Masonry
Plastered or Ceiled
Floors

SERVICE BUILDING

Frame
Metal
Masonry
Plastered or Ceiled
Floors

TANKS, ETC., LIST

Hoists: Elect. Hyd.

DOCKS AND PIERS

Treated Piles and Timbers
Untreated
Treated Piles only
Average Length
Paved

C. H.	
S.B.	
B	10'
1	14-3"
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	
13	
14	
15	
16	
17	
18	
19	
20	
21	
22	

GROUND FLOOR AREA 4300
TOTAL FLOOR AREA

Other Buildings NONE.	Construction	Floor	Roof	Stories	Dimensions	S. F. Area	Factor	Value	% Dep.	Deprec.	Net Value
Garage					x			$		$	$
					x			$		$	$
					x			$		$	$
					x			$		$	$

3. ADDRESS OF PROPERTY
4. FEE OWNER
EWM
BLOCK 1
TRACT OR LOT NO. 4

505 12558

80610

0015

LIMITS	ROAD	SCHOOL	WATER	FIRE	TOTAL ACREAGE	TIMBER	IMPROVED	
Codel	Seattle-1				Metro 806100-0015	3500	4600 0010	

YEAR	AC.	LAND	BLDGS.	TOTAL	BY	DATE	REASON	FEE OWNER	DATE
1942		880	3750	4630			CK 1947		
1949		1000	3750	4750	McE	1-48			
1956		2000	3750	5750	F.P.	8-54	Rural	A.C. Strickland	8-16-40
1960		2000	4600	6600			Merge.		
1960		3500	4600	8100	Hm	3/3/59	Heat, R.V.		
1965		3500	4600	8100	LL	5-29-59	Rv		
19		3500	4600	8100	MB	5-12-64	Rv		
19 71	L	7000 B	9200 T	16200*806100-0015-0 8/9					
1972		10000	8970	18970			Rv-1		
19 72	L	7940 B	7122 T	15062*806100-0015-0 9/71					
19 73	L	10000 B	8970 T	18970*806100-0015-0 9/71					
19									
19									
19									
19									
19									
19									
19									
19									
19									
19									

1. DISTRICT 17A
LIMITS O.L.
CODE NO. 1

2. ADDITION STRUVES ADD. SECTION TWP N. RANGE EWM BLOCK 1 TRACT OR LOT NO. 4
DESCRIPTION

3. ADDRESS OF PROPERTY
4. FEE OWNER Mystic Estate (4) CONTRACT PURCHASER

LAND INFORMATION

1. SIZE OF TRACT OR LOT X TOPOGRAPHY Level GRADE Below 6' FT. 2. STREET-ROAD Graded SURFACE Paved
ALLEY None 3. SIDEWALK Conc. SEWAGE Sewer WATER City PUMP DRAINAGE
4. LANDSCAPING None CONDITION 5. TREND Static VALUE OF LOT $ FRONT STREET
FACTOR $ SIDE STREET FACTOR $ DEPTH FACTOR $ CREDIT
6. USE Res., Apt., Business 7. DISTRICT Poor-Old

LAND USE	SOIL TYPE	CROPS-TIMBER STAND	NO. ACRES	VALUE ACRE	VALUE
				$	$
					$
					$
					$
				TOTAL	$

O LAND SIZE X
C

OWNER OR CONTRACT PURCHASER	DATE	FILE NO.	PRICE	MTGE	STAMP

DISTRICT: ROAD	SCHOOL	WATER	FIRE

ASSESSED VALUE LAND

LOT $
UNIMPROVED ACRES $
IMPROVED ACRES $
OTHER LANDS $
TIMBER $
TOTAL ASSESSED VALUE 50% $
DATE
REMARKS

ASSESSED VALUE — DECREASE OR INCREASE IN ASSESSED VALUATION — LAND

YEAR	AC.	LAND	DATE	BY	REASON	DECREASE	INCREASE
1938		880					
19							
19							
19							
19							
19							
19							
19							
19							
19							
19							

3-16-71
K.A.

FM-1 3-24-71 20X40 OFF-O REM-SEAL

MI-0035

FOLIO 2393

PERMIT NO.

DATE

ADDITION STRUVES

Section N.E. 5 Twp 24 Range 4 E.W.M. Block 1 Lot or 5 & 6

Tax Lot Tract

Address 106-08 — 12TH AVE

FOR REFERENCE ONLY

Fee Owner RALPH CAPELUTO

Zoning Condition of Exterior A Interior F Foundation A Architect Contractor

Floor Plan: Good Accept. Poor

USE MFG & GROCERY

1	No. Stories
1	No. Stores
5	No. Rooms
	Basement
	No. Offices Unit Sq. Ft.
	No. Apartmts.
	1 rm. 2 rm. 3 rm.
	4 rm. 5 rm. 6 rm.

ROOF CONSTRUCTION

X	Frame-Joist
	Mill-Deck
	Rein. Conc. GLB
	Steel Fr. Metal Deck
	Trusses Span
	Wood Steel

FLOOR FINISHES

REM	Fir	Maple	
	Oak	2x6TG	
	Lino	3x6TG	
	Cement	Lgtwgt. Conc.	
	Terrazzo		
40%	Asphalt Tile	Vinyl Tile	
or			

Tile Lino Form.

	Bath Floor
	Bath Walls
	Tub Recess
	Drain Bds.
	Vanities

PLUMBING

17	No. Fixtures
1	Toilets Urinals
	Tubs Leg. or Pem.
1	Basins Dr. Fins.
2	Sinks
	Washers Dryers
	Showers (tub) (stall)
1	H.W. Tanks Ldy. Trays
	D-Washers Disposals
WET	Sprinkler Sys. 100x100 RENT

Date Built 1926 Date Add. Built Finished Unfinished Remodeled

Effective Age 44 Years Future Life Years

Dep. for Cond. Dep for Ob. Dep. for Es. Total

TYPE OF CONSTRUCTION

	Frame
	Metal-Prefab
X	Ordinary Masonry
	Mill Construction
	Class A Rein. Conc.
	Stru. Steel and Conc.
	Struct. Steel, Frame

QUALITY-TYPE

od Med. X Cheap

UNDATION

	Mud Sill Post Pier
X	Conc. Brick
	Load Hgt. Piling

EMENT 60X100 S-C

FACTOR | ITEM | DIMENSIONS | SQ FT

HEATING 100% ST. +60X1

	Elec. Oil X Gas
	H.W. X St. H.A.
	B.Bd. Suspended
	FHA Pipeless
	A. Cond. Wall Unit
	Comb. Unit Custom
	Refrig. Convector
	Heat Pump Fireplace

YEAR	ASSESSED VALUE

Mud Sill ☐ Post Pier
X Conc. ☐ Brick
Load Hgt. ☐ Piling

BASEMENT 60x100 S-C

X Full REM-SEM Part.
Sub-Basement
Size 100 X 100
Garage ☐ No. Cars
60x100 ... REM-CONC Floors
Plastered ☐ Pl. Bd.
No. Apartments
Service Rooms

EXTERIOR WALL CONST.

Single ☐ Double
Stud Walls
100% Brick SOLID Pil. ☐
Conc. ____ Pil. ☐
Rein. Conc. Skeleton
Str. Stl.-Frame
Pre-Fab Metal
Tilt-Up
____ Filler Wall
____ Curtain Wall

EXTERIOR FACING

Siding
100% (...) Stucco ____ Shakes
Marblecrete
REM Brick ☐ Veneer
Conc. ☐ Conc. Blk.

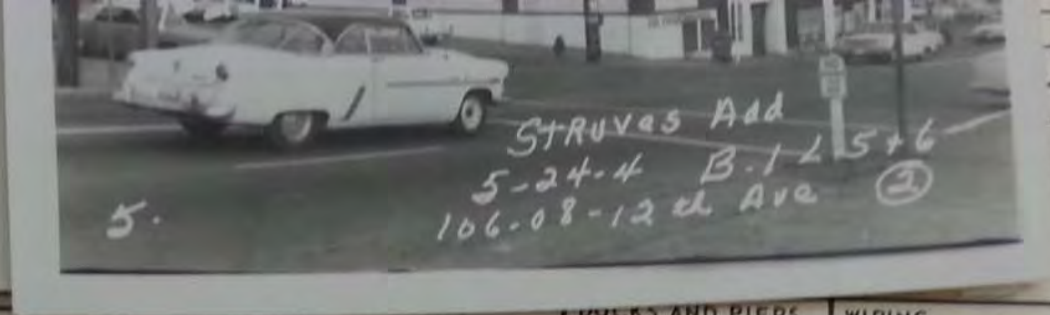
FLOOR CONSTRUCTION

Joist 2 x 12 x 16 O.C.
Mill ____ Car Deck
R-Conc. ____ Elev.
Steel ____ GLB.

or

ROOF COVERING

Blt.-Up X Tar.&Gr.



HOISTS: Elec. Hydr.

SEE OVER

INTERIOR WALLS & CEILING

X Stud X Wood Metal
X Plaster Dry Wall
Acc. Tile Celotex
Ceiled Plywood
Solid Block
Sound Proofed Lamin.
Finished Unfinished
X Painted Varnished

INSULATION UNK

Exter. ____ Partitions
Roof ____ Floor

INTERIOR TRIM

X Fir ____ Birch
Mah. ____ Oak
Metal
X Wood ____ Metal Doors
X Wood ____ Metal Sash

Pass. ____ Frght.
Auto. ____ Elec.
Man. ____ Hydr.
Doors-Auto ____ Man. ____
Escalators
Stops ____ Speed
Cap'y.

DOCKS AND PIERS

Hvy. ____ Med. ____ Lgt.
Untrtd. Pile Tmbr.
Conc. Piles & Bms.
Trtd. Pile Tmbr.
Paved
Dolphins
Deck

WIRING

Knob & Tube
Flex. Cable
X Conduit
Pwr. Wiring
Range Wiring
____ Outlets

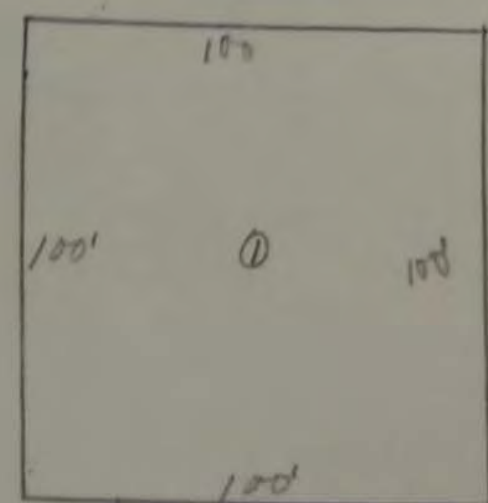
Heat Pump ____ Fireplace

YEAR	ASSESSED VALUE
	SEATTLE CURTAIN MFG CO + TOM BOY MKT

	C.Hgt.	GROUND FLOOR AREA
SB		TOTAL FLOOR AREA
B	12	HGT. 12'
1	12	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		

1CM=20

SEATTLE CURTAIN



4-21-80 OWNER OCCUPIED
SEATTLE CURTAIN MFG 1ST FLOOR – STORAGE & WAREHOUSING 1350FT

SMALL GRO STORE TO MOVE JUNE THIS YEAR OWNER
NEEDS THE SPACE RCA

2 STORY
FRAME
VENEER

BUILDING TYPE	CONSTRUCTION	SIZE	GRADE	AGE
GARAGE				
ST. FR.	WD. ST.	25 4/F		
5				

INCOME:
1ST. FL. OWNER OCCUPIED.
SEATTLE CURTAIN MFG.
BSMT. RENTED FOR
GROCERY @ $500.= PER MO.
3-16-71 M.H.

1 DISTRICT 1-A

LIMITS O.L.

CODE NO. 1

PERMIT NO.

2 ADDITION STRUVES ADD. NAME

SECTION TWP. N. RANGE EWM: BLOCK 1 TRACT OR LOT NO. 5 & 6.

DESCRIPTION

3 ADDRESS—PROPERTY 106-108-12th. Ave.

4 FEE OWNER W. G. NORRIS 3-9-25 CONT. PURCHASER

5 ARCHITECT CONTRACTOR

ORIG. COST $

6 BUILDING
Warehouse + Store
1 Story
1 Store
7½ Room
3 offices

BASEMENT Full
Conc. Floors
Conc. 12'

FOUNDATION
Concrete

ROOF
Tar & Gravel

STORE FRONTS
Plate Glass
Wood Sash
Brick Bulk Hd.

EXTERIOR
Brick-Solid
Ord. Mds. & mill

EXTRA FEATURES None Sprinklers - Bsmt area - 100%

CONSTRUCTION Masonery-Solid-Medium

MISCELLANEOUS Wiring Conduit - Power wiring - A.D.K. 57.

7 CONDITION: EXTERIOR Good INTERIOR Good FOUND. Good

8 MAIN SUPPORT COLUMN x FOOTING SPAN FT.

9 FIRST FLOOR JOIST INCH CENTERS BRIDGED

10 Finished BUILDING

11 GROSS INCOME $ EXPENSE $ NET INCOME $

12 DEPRECIATION: COND. 17 % OBSLSE. % ECON. SUIT. % TOTAL %

YEAR BUILT 1926 REMODELED No

EFFECTIVE AGE 10 YEARS FUTURE LIFE 50 YEARS

DIMENSIONS 100 x 100 x SQUARE FT. 10000 AREA CUBIC FT.

INTERIOR
Post & Beam
Plastered

FLOORS Asph. Tile 3/4 of Bsmt
Fir

FIRE PLACE
None

PLUMBING
17 Fixtures 7 Basins
7 Toilets 2 Sinks 1 Urinal

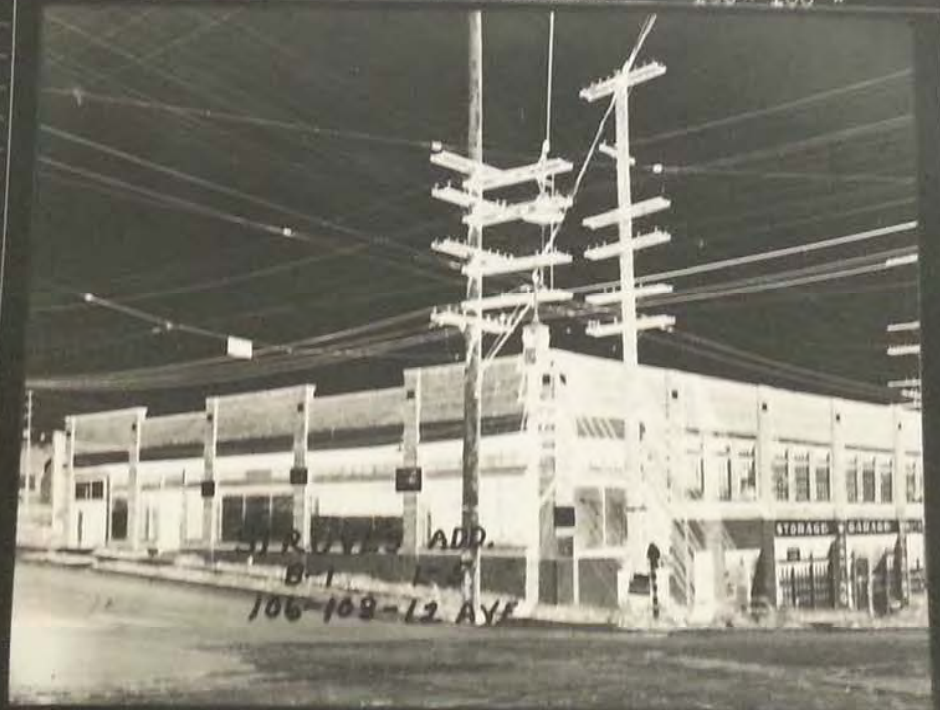
TILE WORK
None

WIRING
Conduit

HEATING Steam. Coal-Stoker
~~Hot-air~~ + Gas

ELEVATORS
None

CEILING—HEIGHT
Bsmt. 12'
1st. Flr. 12'



IMPROVEMENT VALUE 13,000

BUILDING $

DATE 8/12/37

LAND INFORMATION

1. SIZE x Level
Below 6'
2. STREET ROAD Graded
Paved
3. SIDEWALK Conc.
No Alley
4. LANDSCAPING None
5. TREND Static VALUE $
6. USE Res., Apt., Business
Poor-Old
7. DISTRICT

OTHER BUILDINGS	CONSTRUCTION	FLOOR	ROOF	STY.	DIMENSION	AREA	VALUE

FLOOR PLAN

WIRING
Conduit

HEATING Steam. Coal-Stoker
~~Hot air~~ & Gas

ELEVATORS
None

CEILING—HEIGHT
Bsmt. 12'
1st. Flr. 12'

Below 6'

2. STREET—ROAD Graded
Paved

3. SIDEWALK Conc.
No Alley

4. LANDSCAPING None

5. TREND Static VALUE $

6. USE Res., Apt., Business
Poor-old

7. DISTRICT

O

C	OTHER BUILDINGS	CONSTRUCTION	FLOOR	ROOF	STY.	DIMENSION	AREA	VALUE

O

C	OWNER OR CONTRACT PURCHASER	DATE	FILE NO	PRICE	MTGE.	STAMP
	BEN RABINSKY et al.	3-22-45	3457435		15000	

FLOOR PLAN 30'=1"

100'

100'

REMARKS

Also Lot 1 Struve's Add

10-25-38 - Bldg. Permit #329591 - Minor alterations only. No change in A.V.

PIGOTT-WASHINGTON PRINTING CO.

DIMENSIONS 100 x 100 x

ELEVATORS	DOCKS AND PIERS	WIRING

A.K.
11-7-58
F 2393

STRUVE'S
5-24-4 B-1 L-5+6
106-08 12th AVE.

1


HCS
10-30-64
T-2393
12 AVE
FOOD
Struves Add
5-24-4 B.1 L 5+6
5.
106-08-12th Ave
(2)

SOS 12952

80610 0025

LIMITS	ROAD	SCHOOL	WATER	FIRE	TOTAL ACREAGE	TIMBER	IMPROVED	UNIMPROVED
1 Seattle-1					Metro 806100-0025		4020	13000 0010

YEAR	AC.	LAND	BLDGS.	TOTAL	BY	DATE	REASON	FEE OWNER	DATE
1939		1460	5000	6460				C-E56365 - 836,500 Also 0035- Ralph Capelutto, etux	7/31/64
1945		1400	7000	8460	A.W.S.	6/46		OR 1947	
1949		2380	7000	9380	M.G.	1-48	Rural		
1956		3280	7000	10280	J.P.	8-54	merge.		
1960		3280	13000	16280	Jm	2/3/59	use, R.V.		
1960		4020	13000	17,020	LL	5-29-59	Rv		
1965		4120	13000	17020	mg	5-12-64	RV		
19 71	L	8040 B	26000 T	34040*806100-0025-0		8/9			
19 72		12500	31530	44030	MK	5-21-71	Rev-1		
19 72	L	9925 B	25035 T	34960*806100-0025-0		9/71			
19 73	L	12500 B	31530 T	44030*806100-0025-0		9/71			
19									
19									
19									
19									
9									
9									
9									
9									

FOLIO 2393.
PERMIT NO.
DATE

ADDITION Struves.
Section ___ Twp. ___ Range ___ Ewm. Block 1 Lot or Tract 7+8
Tax Lot ___
Address 1214 Yesler Way.

L. 7+8 + Por vac. St. Adj.

Fee Owner ___ Architect ___
Condition of Exterior ___ Interior ___ Foundation ___ Floor Plan: Good ___ Accept ___ Good ___

USE Parking
No. Stories
No. Stores
No. Rooms
Basement
No. Offices
No. Apartments
1 rm. ☐ 2 rm. ☐ e rm.
4 rm. ☐ 5 rm. ☐ 6 rm.

ROOF CONSTRUCTION
Frame Lam ☐
Mill Construction
Rein. Concrete
No. Trusses
Wood ☐ Steel

ROOFING MATERIAL
Tar and Gravel
Or

FLOOR FINISHES
Fir ☐ Maple
Oak ☐ 2"x6" T&G
Lino. ☐ 3"x6" T&G
Cement
Terrazzo
Raccolith
Tile
Or

Tile ☐ Lino.
Baths ☐ Fl. ☐ Walls
Tile Total: Sq. Ft. ___ Floors; Sq. Ft. ___ Walls; Lin. Ft. ___ Dr. Bds.
Lino Total: Sq. Ft. ___ Floors; Sq. Ft. ___ Walls; Lin. Ft. ___ Dr. Bds.
Kit's ☐ Fl. ☐ Walls

PLUMBING
No. Fixtures
Toilets
Tubs, Leg or Pem.
Basins, Ped.
Sinks
Urinals
Showers (Tub) (Stall)
Laundry Trays
H. W. Tank Fl. Drains ☐
Sprink. Sys. No. ___ Hds.

TYPE OF CONSTRUCTION
Frame
Single ☐ Double
Ordinary Masonry
Mill Construction
Class A Rein. Con.
Stru. Steel and Con
Tile ☐ Brick
Con. ☐ Rein. Con.
Good ___ Med. ___ Cheap ___

VOID
PAV. HAS NO VALUE

Date Built 1954. ☐ Finished ☐ Unfinished ☐ Remodeled
Effective Age ___ Years Future Life ___ Years
Dep. for Cond. ___ Dep. for Ob. ___ Dep. for Es. ___ Total ___

REPRODUCTION COST Factor Make Up

Factor	Plus or Minus	Dimensions	S. F. Area	Factor	Cost
$	Asphalt Paving	100 x 120	12000	$ .10	$ 1200
		x			$
		x			$
		x			$
		Pch. x			$
		Pch. x			$

no Per

Total ___ $
Less Depreciation ___ $
Total ___ $
Other Buildings ___ $
Total Value (Full) ___ $
Assessed Valuation 50% ___ $

HEATING
Stove
Pipeless Furnace
Gravity H. A.
Air Cond., Fan
Suspended Gas, Hot Water
Steam Heat
Hot Water
Oil Burner

Year	Assessed Value
1956	~~600~~ K55
'71	1200.

FOUNDATION
Mud Sills
Post and Pier
Brick
Concrete
Pile

BASEMENT
Full ☐ %
Sub-Basement
Size
Garage ☐ No. Cars
___ Floors
Plastered
Living Rooms
Service Rooms

TANKS, ETC., LIST
Hoists: Elec. ___ Hyd. ___

ELEVATORS
Pass. ☐ Freight
Auto. ☐ Elec.
Man. ☐ Hyd.
☐ Man.

DOCKS AND PIERS
Treated Piles, Timb
Untreated
Treated Piles only
Average Length
Paved

WIRING
Knobs & Tube
Flex. Cable
Conduit
Power Wiring
Range Wiring
No. Outlets

EXTERIOR WALL CONST.
Single ☐ Double

INTERIOR WALLS

C. H.

GROUND FLOOR AREA 12000

Mud Sills
Post and Pier
Brick
Concrete
Pile

BASEMENT

Full ☐ %
Sub-Basement
Size
Garage ☐ No. Cars
Floors
Plastered
Living Rooms
Service Rooms

EXTERIOR WALL CONST.

Single ☐ Double
2" x 4" Stud Walls
2" x 6" Stud Walls
Brick Walls
Brick with Pilasters
Concrete Walls
Con. with Pilasters
Tile Walls
Rein. Con. Skel.
Filler Walls
Laminated Walls

EXTERIOR FACING

Siding ☐ Shingles
Shakes ☐ Stucco
Brick Veneer
Kind
Stone ☐ Cast S.
Terra Cotta
Struct. Glass
Trim

FLOOR CONSTRUCTION

Joist Con. Size x
O.C. In Bridg. ☐
Mill Construction
Rein. Con.

Feb. x
Feb. x

Total $
Less Depreciation $
Total $
Other Buildings $
Total Value (Full) $
Assessed Valuation 50% $

no Pen

TANKS, ETC., LIST

Hoists: Elec. Hyd.

ELEVATORS

Pass. ☐ Freight
Auto. ☐ Elec.
Man. ☐ Hyd.
☐ Man.

DOCKS AND PIERS

Treated Piles, Timb.
Untreated
Treated Piles only
Average Length
Paved

WIRING

Knobe & Tube
Flex. Cable
Conduit
Power Wiring
Range Wiring
No. Outlets

Oil Burner

Year	Assessed Value
1956	600 1555
'71	1200

INTERIOR WALLS

Stud and Plaster
Lam. ☐ Plastered
Plywood
Ceiled
Plaster Board
Painted
Stain ☐ Varnish
Kalsomine
Whitewashed
Unfinished

INTERIOR TRIM

Fir
Mah. ☐ Oak
Metal
Doors
Windows
Stained
Varnished
Painted
Unfinished

C. H.

B 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

GROUND FLOOR AREA 12000

TOTAL FLOOR AREA

I.G.A. Parking Lot.

Other Buildings	Construction	Floor	Roof	Stories	Dimensions	S. F. Area	Factor	Value	% Dep.	Depree.	Net Value
Garage					x			$		$	$
					x			$		$	$
					x			$		$	$
					x			$		$	$

80610

0035

LIMITS	ROAD	SCHOOL	WATER	FIRE	SEWER	HOSPITAL	AIRPORT	FERRY
/ Seattle-1					Metro	806100-0035	4900	600 0010

YR	AC	LAND	BLDGS	TOTAL	BY	DATE	REASON	CD	FEE OWNER	DATE	FILE #	PRICE
1956		1950		1950	FP	8/54	Merge					
1956		1950	600	2550	Adm.	5/03/55	Parking - Lic. 54	C	Ralph Capeletto et ux	7/1/64	E563651	$56,500
1960		2100	600	2700	LL	5-29-59	RV					
1965		4911	600	5500	TMB	5-12-64	RV					
1971	L	9800	B	1200	T	11000*806100-0035-0	8/9					
1972		10500	B									
19 72	L	8337	B	0	T	8337*806100-0035-0	9/71					
19 73	L	10500	B	0	T	10500*806100-0035-0	9/71					
19												
19												
19												
19												
19												
19												

1. DISTRICT 19-A

OL

CODE NO.

2. ADDITION STRUVES ADD. 0035

SECTION ___ TWP. ___ N. RANGE ___ EWM ___ BLOCK 1 TRACT OR LOT NO. 7 & 8 & Por Vac ST Adj.

DESCRIPTION

3. ADDRESS OF PROPERTY ___ CONTRACT PURCHASER ~~COUNTY CONT. # 10045~~

4. FEE OWNER

LAND INFORMATION

1. SIZE OF TRACT OR LOT ___ x ___ TOPOGRAPHY Level GRADE On Grade FT. 2. STREET-ROAD Graded SURFACE Paved

ALLEY None 3. SIDEWALK Conc. SEWAGE Sewer WATER City PUMP ___ DRAINAGE ___

4. LANDSCAPING None CONDITION ___ 5. TREND Static VALUE OF LOT $ ___ FRONT STREET FACTOR $ ___ SIDE STREET FACTOR $ ___ DEPTH FACTOR $ ___ CREDIT ___

6. USE Res., Apt., Business 7. DISTRICT Poor-Old

LAND USE	SOIL TYPE	CROPS-TIMBER STAND	NO. ACRES	VALUE ACRE	VALUE
				$	$
					$
					$
					$
LAND SIZE TD# 30565		TOTAL			$

OWNER OR CONTRACT PURCHASER	DATE	FILE NO.	PRICE	MTGE.	STAMP
King Co. Tax Deed 12-14-40 No. 16127					
Ben Rodinsky - ETAL	9-28-48	2787-353	1500 —		

DISTRICT: ROAD	SCHOOL	WATER	FIRE

ASSESSED VALUE LAND

LOT $

UNIMPROVED ACRES $

IMPROVED ACRES $

OTHER LANDS $

TIMBER $

TOTAL ASSESSED VALUE 50% $

DATE

REMARKS

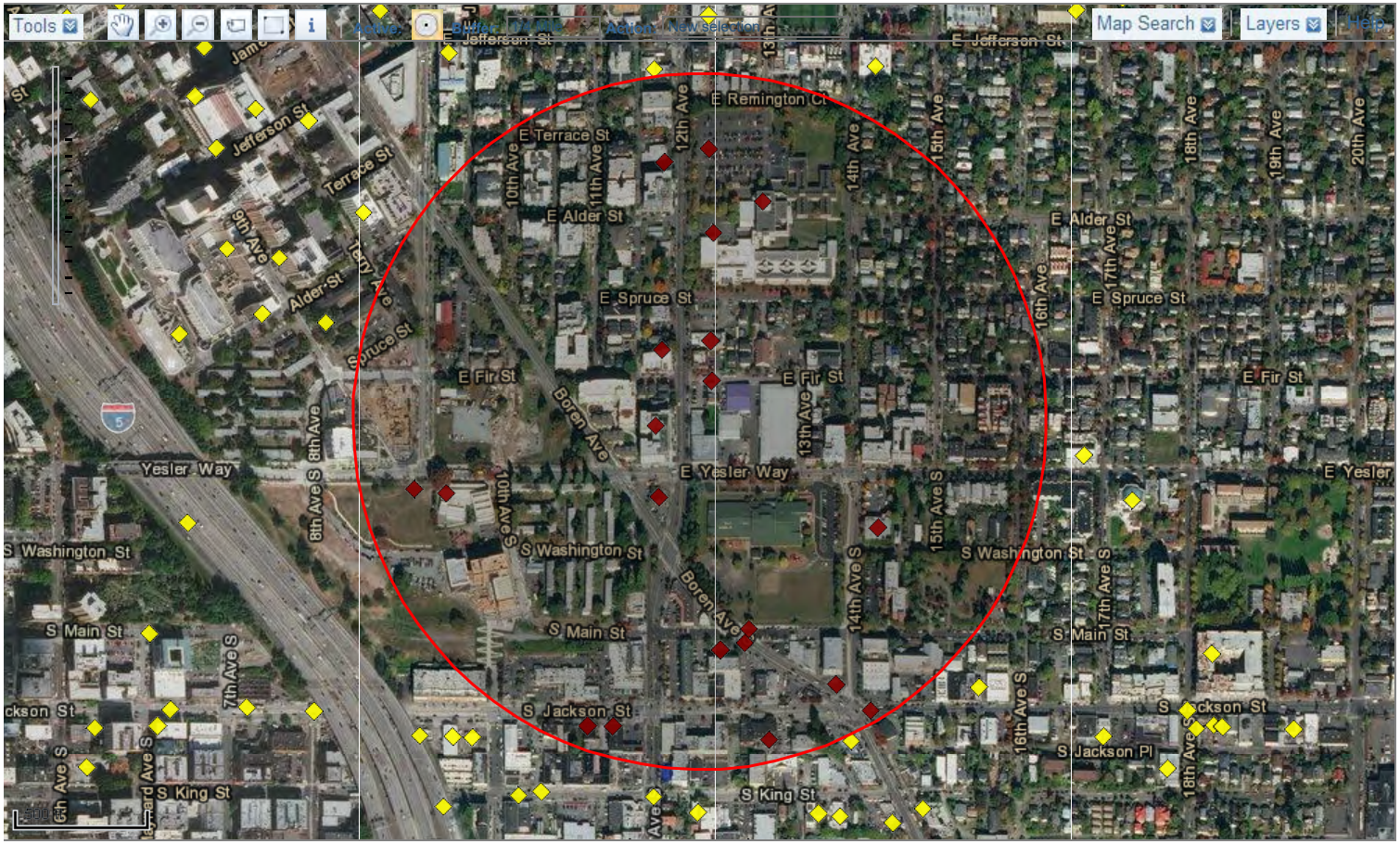
ASSESSED VALUE			DECREASE OR INCREASE IN ASSESSED VALUATION			LAND	
YEAR	AC.	LAND	DATE	BY	REASON	DECREASE	INCREASE
1938		~~600~~					
1942	EXEMPT	600			COUNTY CONT. # 10045	CX 1947	
1944		600	9-47	W		~~COUNTY CONT. 10045~~	
1949		900	1-48	mtt	Rural		1/6/49 mH.
1956		1950	8-54	JP.	Merge.		
19							
19							
19							
19							
19							
19							

FRAYN PRINTING CO. SEATTLE

ELEVATORS	DOCKS AND PIERS	WIRING

APPENDIX C

Environmental Database Records



Go back | Show Facility/Site(s)

Show Search Criteria | Edit Search Criteria | MapAll | Export

Facility Site records:

Id	Name	Address	City	State	ZIP
65919188	24 HOUR CAR WASH	1240 S MAIN ST	SEATTLE	WA	98144
15358781	Amtech Lighting Services	1617 S JACKSON ST	SEATTLE	WA	98144
72111871	Armored Transport of Seattle	1401 E YESLER WAY	SEATTLE	WA	98122
8906920	B & B AUTO REPAIR SEATTLE	151 12TH AVE	SEATTLE	WA	98122
63895799	BARRETT PROPERTY	416 RAINIER AVE S	SEATTLE	WA	98144
12233958	CANADIAN JUMBO INC	1212 S JACKSON	SEATTLE	WA	98144-2019
64778532	DAMM FINE PRINTING LTD TYPE CONNECTION	1240 S JACKSON ST	SEATTLE	WA	98144-2019
13726	H&I Automotive (Seatown Autoworks)	317 12TH AVE	SEATTLE	WA	98122
44336395	King Cnty Youth Services	1211 E ALDER ST	SEATTLE	WA	98122
6378	King Co. Children-Family Justice Center	300 12TH AVE E	SEATTLE	WA	98122
29398283	LLOYDS ROCKET & HEATING OIL CO	110 BOREN AVE S	SEATTLE	WA	98144
16451	PCE Plume 12th Ave & E Alder St	12TH AVE & E ALDER ST	SEATTLE	WA	98122
52851299	Rainier Oven Corp	1419 S JACKSON ST	SEATTLE	WA	98144
38732431	SEATTLE FARWEST SERVICE CORPORATION	1300 S MAIN ST	SEATTLE	WA	98144-2033
3520941	Seattle Housing Authority 12th Ave Brownfield Cleanup	113 12TH AVE	SEATTLE	WA	98122
17152938	Seattle Housing Authority Yesler Terr	903 E YESLER WAY	SEATTLE	WA	98122
1549	Shell SAP 174361	1262 S JACKSON ST	SEATTLE	WA	98144
979	Star Laundry	160 12TH AVE	SEATTLE	WA	98122
2501	TD AUTO BODY & REPAIR	1209 E FIR ST	SEATTLE	WA	98122
10691	Yesler Park	917 E YESLER WAY	SEATTLE	WA	98104

First Prev Page 1 of 1 (20 Items) Next Last

Facility/Site: 2501 TD AUTO BODY & REPAIR

Also known as: TD AUTO BODY & REPAIR

Address

1209 E FIR ST

SEATTLE WA 98122

Decimal Coordinates

Latitude: 47.60263

Longitude: -122.31632

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 37

Congressional District: 9

WRIA: 8

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ State Cleanup Site	TOXICS	(360) 407-7224		1/1/1900	

Industrial Codes (External Links Below)

No NAICS information is available for this facility site.

SIC Code	SIC Description
7532	TOP, BODY, UPHOLSTERY REPAIR SHOPS

Facility/Site: 979 Star Laundry

Also known as: Star Laundry

Address

160 12TH AVE

SEATTLE WA 98122

Decimal Coordinates

Latitude: 47.60304

Longitude: -122.31636

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 37

Congressional District: 9

WRIA: 8

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ State Cleanup Site	TOXICS	(360) 407-7224		5/27/2015	

Industrial Codes (External Links Below)

NAICS Code	NAICS Description
8123	Drycleaning and Laundry Services

No SIC information is available for this facility site.

Facility/Site: 3520941 Seattle Housing Authority 12th Ave Brownfield Cleanup

Also known as: BROWN PROPERTY, C Miller Property, Former Nu Way Cleaners, Nu Way Cleaners, SEATTLE HOUSING AUTHORITY, Seattle Housing Authority 12th Ave, Seattle Housing Authority 12th Ave Brownfield Cleanup, TURNER BEATTER PROPERTY

Address

113 12TH AVE

SEATTLE WA 98122

Decimal Coordinates

Latitude: 47.60216

Longitude: -122.31719

Geographic Information

Ecology Region: NWRO | Legislative District: 37 | WRIA: 8

County: King | Congressional District: 9 | Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ Underground Storage Tank	TOXICS	(360) 407-7224	619607	1/26/2009	1/26/2009
⊞ LUST Facility	TOXICS	(360) 407-7224	619607	1/26/2009	5/10/2010
⊞ Voluntary Cleanup Sites	TOXICS	(360) 407-7224	NW1733	2/7/2007	5/10/2010

Facility/Site: 8906920 B & B AUTO REPAIR SEATTLE

Also known as: 151 LOFTS, B & B AUTO REPAIR SEATTLE, B & B RADIATOR PROPERTY, FORMER GAS STATION, UPTOWN RADIATOR

Address

151 12TH AVE

SEATTLE WA 98122

Decimal Coordinates

Latitude: 47.60295

Longitude: -122.3171

Geographic Information

Ecology Region: NWRO

Legislative District: 37

WRIA: 8

County: King

Congressional District: 9

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ Voluntary Cleanup Sites	TOXICS	(360) 407-7224	NW2586	4/13/2012	12/10/2012
⊞ State Cleanup Site	TOXICS	(360) 407-7224		1/12/2009	
⊞ Underground Storage Tank	TOXICS	(360) 407-7224	619561	1/7/2009	1/7/2009

Facility/Site: 16451 PCE Plume 12th Ave & E Alder St

Also known as: PCE Plume 12th Ave & E Alder St

Address

12TH AVE & E ALDER ST

Seattle WA 98122

Decimal Coordinates

Latitude: 47.60504

Longitude: -122.31637

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 37

Congressional District: 9

WRIA: 8

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ State Cleanup Site	TOXICS	(360) 407-7224		1/31/2014	

Industrial Codes (External Links Below)

NAICS Code	NAICS Description
99999	Nonclassifiable Establishments

No SIC information is available for this facility site.

Facility/Site: 29398283 LLOYDS ROCKET & HEATING OIL CO

Also known as: LLOYDS ROCKET & HEATING OIL CO

Address

110 BOREN AVE S

SEATTLE WA 98144

Decimal Coordinates

Latitude: 47.60142

Longitude: -122.31716

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 37

Congressional District: 9

WRIA: 8

Tribal Land: No

Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ Voluntary Cleanup Sites	TOXICS	(360) 407-7224	NW1447	4/27/2005	5/29/2009
⊞ LUST Facility	TOXICS	(360) 407-7224	101554	8/18/1997	
⊞ Underground Storage Tank	TOXICS	(360) 407-7224	101554	2/3/1992	8/13/1997

Facility/Site: 13726 H&I Automotive (Seatown Autoworks)

Also known as: H&I Automotive (Seatown Autoworks)

Address

317 12TH AVE

SEATTLE WA 98122

Decimal Coordinates

Latitude: 47.6049

Longitude: -122.31708

Geographic Information

Ecology Region: NWRO

County: King

Legislative District: 37

Congressional District: 9

WRIA: 8

Tribal Land: No

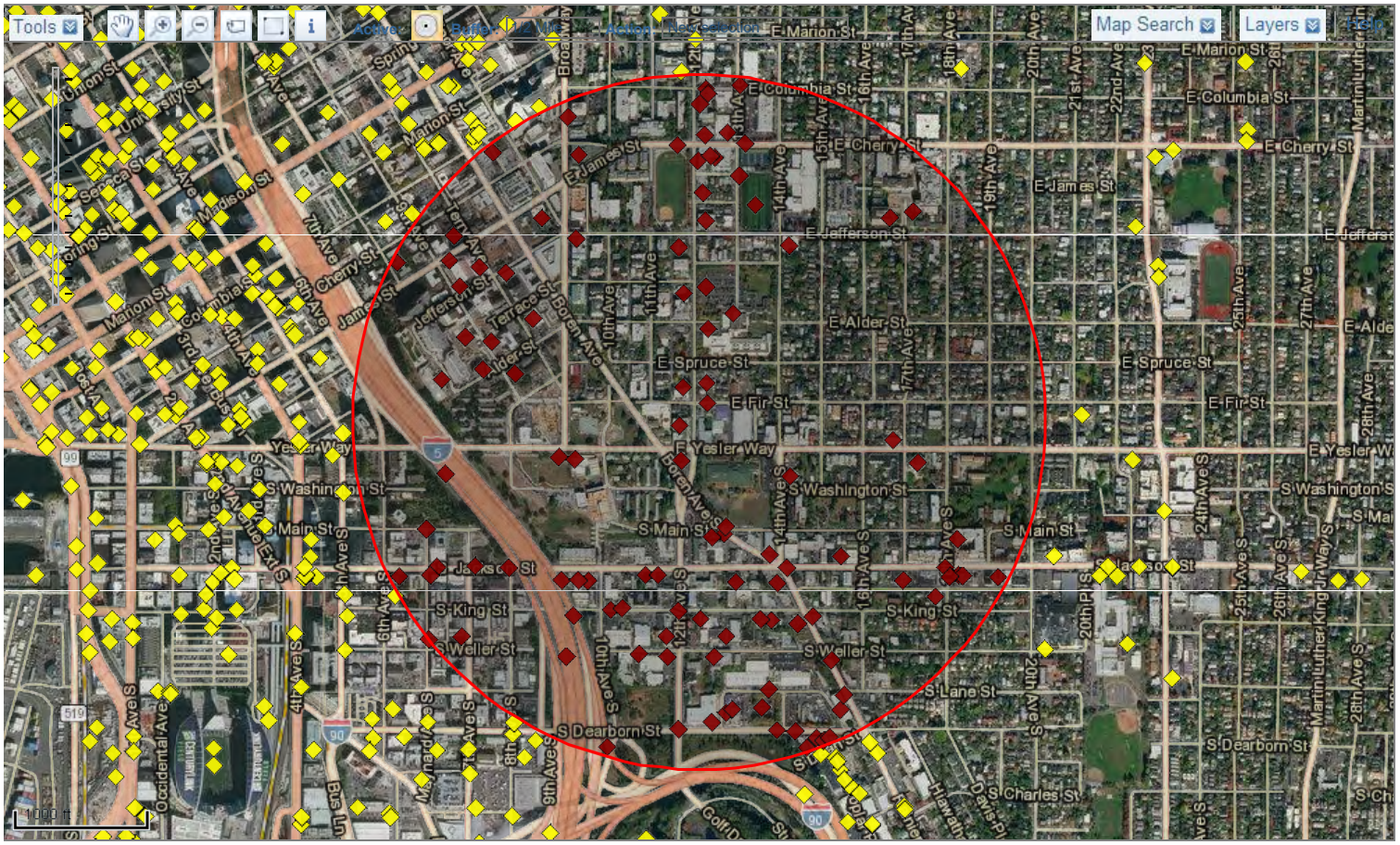
Ecology Interactions

Interaction Description	Ecology Program	Ecology Program Phone	Program ID	Start Date	End Date
⊞ Revised Site Visit Program	HAZWASTE	(360) 407-6736		7/20/2017	

Industrial Codes (External Links Below)

No NAICS information is available for this facility site.

No SIC information is available for this facility site.



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Facility Site records:

Id	Name	Address	City	State	ZIP
19039	1200 E Jefferson	500 12TH AVE	SEATTLE	WA	98122
33543891	12th & Columbia Site	734 12TH AVE	SEATTLE	WA	98122
15077	1800 S JACKSON ST THE MARK	1800 S JACKSON ST	SEATTLE	WA	98144
65919188	24 HOUR CAR WASH	1240 S MAIN ST	SEATTLE	WA	98144
99187287	7TH AVENUE SERVICE	701 S JACKSON ST	SEATTLE	WA	98104-3011
24328592	ACME POULTRY CO INC TRUCK PARKING LOT	1024 S KING ST	SEATTLE	WA	98104-3021
91367231	American Building Maintenance	1711 S JACKSON ST	SEATTLE	WA	98144
15358781	Amtech Lighting Services	1617 S JACKSON ST	SEATTLE	WA	98144
74176552	Anna Drycleaners Alteration	657 S JACKSON ST	SEATTLE	WA	98104
87631572	Armored Transport Maintenance	700 RAINIER AVE S	SEATTLE	WA	98122
72111871	Armored Transport of Seattle	1401 E YESLER WAY	SEATTLE	WA	98122
6363262	Art Process Inc	501 12TH AVE S	SEATTLE	WA	98144
89872857	AT&T WIRELESS DEARBORN	1200 S DEARBORN ST	SEATTLE	WA	98144-2727
18537	ATT MOBILITY INTERNATIONAL DISTRICT	1005 TERRACE ST	SEATTLE	WA	98104
8906920	B & B AUTO REPAIR SEATTLE	151 12TH AVE	SEATTLE	WA	98122
63895799	BARRETT PROPERTY	416 RAINIER AVE S	SEATTLE	WA	98144
24580	Benjamin Moore S King St	1213 S KING ST	SEATTLE	WA	98144
9261013	Boren & James LLC	515 MINOR AVE STE 220	SEATTLE	WA	98104
51738471	Briggs Technologies Seattle	1238 S WELLER ST	SEATTLE	WA	98144
88887148	Broadview Emergency Shelter	420 TERRY AVE	SEATTLE	WA	98104
19522386	Budd & Co Inc	800 RAINIER AVE S	SEATTLE	WA	98144
4278360	Bush Hotel Limited Partnership	621 S JACKSON ST	SEATTLE	WA	98114
12233958	CANADIAN JUMBO INC	1212 S JACKSON	SEATTLE	WA	98144-2019
93671832	CAPITOL HILL ARCO	427 12TH AVE	SEATTLE	WA	98122
18340	CHAUS COMPLETE AUTO REPAIR	509 RAINIER AVE S	SEATTLE	WA	98144
56363311	Chinatown Development Co	1000 S WELLER ST	SEATTLE	WA	98104
62127595	Colorgraphics Inc	1421 S DEAN ST	SEATTLE	WA	98144
16289192	CONTINENTAL BAKING CO SEATTLE	1924 S JACKSON ST	SEATTLE	WA	98144-2225
64778532	DAMM FINE PRINTING LTD TYPE CONNECTION	1240 S JACKSON ST	SEATTLE	WA	98144-2019
43134826	DEAN STRALEYS 9TH & JAMES BP	914 JAMES ST	SEATTLE	WA	98104
6258254	Dearborn Corporation Campus Goodwill	1400 S LANE ST & 1200-1590 S DEARBORN ST	SEATTLE	WA	98144
15032	Dearborn Public Storage	1200 S DEARBORN ST	SEATTLE	WA	98144
768540	Dynacare Northwest Inc 17th Ave	550 17TH AVE STE 200 & STE 300	SEATTLE	WA	98122

83489785	Eagle Pattern Mfg Co	913 S JACKSON	SEATTLE	WA	98104
36941286	EASTERN HOTEL	506 1/2 MAYNARD ST	SEATTLE	WA	98104
32253427	EF JOHNSON CO	1300 S WELLER ST	SEATTLE	WA	98144-2051
44447699	EXHAUST SPECIALTIES SEAN OBRIEN	502 RAINIER AVE S	SEATTLE	WA	98144-2039
19632	FIELD ROAST GRAIN MEAT CO	1440 S JACKSON AVE	SEATTLE	WA	98144
8474	First Hill Streetcar Project	BROADWAY FROM DENNY WAY TO YESLER	SEATTLE	WA	98104
25967363	FRED ROGERS BUILDING	200 TERRY AVE N	SEATTLE	WA	98104-2444
29898895	Freds Auto Repair	710 S JACKSON ST	SEATTLE	WA	98104
49374963	Goodwill Industries Seattle	1400 S LANE ST	SEATTLE	WA	98144
13726	H&I Automotive (Seatown Autoworks)	317 12TH AVE	SEATTLE	WA	98122
9062292	Happy Gardens Former	925 JAMES ST	SEATTLE	WA	98104
5264467	HERZOG GLASS INC	1300 S DEARBORN ST	SEATTLE	WA	98144
5304	HQ Building Supply	1423 S DEARBORN ST	SEATTLE	WA	98144
34239188	Interstate Brands Corp Wonder Bread	1805 S MAIN	SEATTLE	WA	98144
2323	JEFFERSON ST BUS BARN	1398 E JEFFERSON ST / 1323 E CHERRY ST	SEATTLE	WA	98122-5537
35763494	JERGENS PAINTING	415 18TH AVE S	SEATTLE	WA	98144-2128
99877721	King Cnty Medical Examiner	850 ALDER ST	SEATTLE	WA	98104-2499

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Facility/Site

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Facility Site records:

Id	Name	Address	City	State	ZIP
44336395	King Cnty Youth Services	1211 E ALDER ST	SEATTLE	WA	98122
6378	King Co. Children-Family Justice Center	300 12TH AVE E	SEATTLE	WA	98122
6335603	King County Facilities Management	905 JAMES ST	SEATTLE	WA	98104
16341	King County Medical Examiners Office	908 JEFFERSON ST	SEATTLE	WA	98104
58654921	LC Jergens Painting Co	417 18TH AVE S	SEATTLE	WA	98144
55217965	LEE POLETTI	1622 E YESLER WAY	SEATTLE	WA	98122
29398283	LLOYDS ROCKET & HEATING OIL CO	110 BOREN AVE S	SEATTLE	WA	98144
9743	Longston Hughes Performing Arts	104 17TH AVE S	SEATTLE	WA	98144
17768828	MacPherson Leather Co	519 12TH AVE S	SEATTLE	WA	98144
98573143	Marpac Construction LLC	1227 S WELLER	SEATTLE	WA	98144
7931888	Mastro Properties	510 RAINIER AVE S	SEATTLE	WA	98144
2148	METAL LAUNDRY INCORPORATED	614 12TH	SEATTLE	WA	98122
24714	Modera Jackson	1801 S JACKSON ST	SEATTLE	WA	98144
10370	NINTH & JEFFERSON BLDG U OF W	325 9TH AVE	SEATTLE	WA	98104-2499
2322525	NINTH & JEFFERSON BUILDING PROJECT	908 JEFFERSON ST	SEATTLE	WA	98104
24765	North Star Electric	1905 S JACKSON ST	SEATTLE	WA	98144
16637524	Pacific Northwest Research Foundation	720 BROADWAY	SEATTLE	WA	98122
16451	PCE Plume 12th Ave & E Alder St	12TH AVE & E ALDER ST	SEATTLE	WA	98122
9484912	Pearson Site 426 Broadway	412 414 416 418 420 426 BROADWAY AVE	SEATTLE	WA	98122
4192632	PLUM CREEK TIMBER COMPANY INC ENUMCLAW	844 ALDER ST	ENUMCLAW	WA	98022-2902
96153977	POKE CYCLE	550 12TH AVE	SEATTLE	WA	98122
1757	PSE Gas Relocations First Hill	BROADWAY FROM DENNY WAY TO YESLER	SEATTLE	WA	98104
19448436	PUROLATOR COURIER CORP UST 5561	923 S JACKSON ST	SEATTLE	WA	98104
21356218	Qwest Corporation W00291	1313 E COLUMBIA	SEATTLE	WA	98122
52851299	Rainier Oven Corp	1419 S JACKSON ST	SEATTLE	WA	98144
46281365	RALPHS CONCRETE	800 POPLAR PL S	SEATTLE	WA	98144
9877636	Ralphs Concrete Pumping Seattle	816 POPLAR PLACE S	SEATTLE	WA	98144
25422768	RS Auto Rebuild	1265 S KING ST	SEATTLE	WA	98144
6920324	Seattle City SDOT Jose Rizal Bridge	12TH AVE & DEARBORN ST JOSE RIZAL BRIDGE	SEATTLE	WA	98108
38732431	SEATTLE FARWEST SERVICE CORPORATION	1300 S MAIN ST	SEATTLE	WA	98144-2033
3520941	Seattle Housing Authority 12th Ave Brownfield Cleanup	113 12TH AVE	SEATTLE	WA	98122

17152938	Seattle Housing Authority Yesler Terr	903 E YESLER WAY	SEATTLE	WA	98122	
2110	Seattle Technical Finishing Inc	1005 S KING	SEATTLE	WA	98104	
86528832	SEATTLE UNIVERSITY AKA BLUE WHALE	610 13TH AVE	SEATTLE	WA	98122	
691519	Seattle University Columbia Sreet	1313 E COLUMBIA ST	SEATTLE	WA	98122	
5879559	Seattle University Onsite Composting	769 13TH AVE	SEATTLE	WA	98122	
16304	Seattle University The Douglas	1223 E CHERRY ST & 13TH AVE	SEATTLE	WA	98122	
45315582	SEATTLE UNIVERSITY UST 101157	14TH & CHERRY	SEATTLE	WA	98133-0000	
85865355	SEATTLE UNIVERSITY UST 101159	1323 E CHERRY	SEATTLE	WA	98133-0000	
64462698	SEATTLE UNIVERSITY UST 433797	1001 E JAMES WAY	SEATTLE	WA	98122-4340	
1549	Shell SAP 174361	1262 S JACKSON ST	SEATTLE	WA	98144	
98648877	Shell Station 121499	700 12TH AVE	SEATTLE	WA	98122	
64491717	Square D Co Seattle	830 CORWIN PL S	SEATTLE	WA	98124	
98547662	Stanley & Shirley Young Charitable Remai	1211 E CHERRY ST	SEATTLE	WA	98122	
979	Star Laundry	160 12TH AVE	SEATTLE	WA	98122	
1866	Swedish First Hill	1115 COLUMBIA ST	SEATTLE	WA	98104	
18768495	Swedish Medical Center Providence Campus	500 17TH AVE	SEATTLE	WA	98122	
57255289	Systi Matic Co Seattle	1041 S KING ST	SEATTLE	WA	98104	
2501	TD AUTO BODY & REPAIR	1209 E FIR ST	SEATTLE	WA	98122	
68254193	Triple Refurbishing Inc EPA	1218 E CHERRY ST	SEATTLE	WA	98122	

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Facility Site records:

Id	Name	Address	City	State	ZIP
75966125	TSUE CHONG CO INC	410 10TH AVE S	SEATTLE	WA	98104
74172157	UNOCAL 0166	1590 S DEARBORN ST	SEATTLE	WA	98144
73985266	UNOCAL 5473	401 RAINIER AVE S	SEATTLE	WA	98144
1949	Verizon Wireless WARE EAST JEFFERSON	1401 E JEFFERSON ST	SEATTLE	WA	98122
21268	Verizon Wireless WARE Pacific Rim	517 7TH AVE S	SEATTLE	WA	98104
25784892	WA DOT HERZOG GLASS INC	1300 S DEARBORN ST	SEATTLE	WA	98144
15199671	WA UW Harborview Medical Center	325 9TH AVE / 908 JEFFERSON ST	SEATTLE	WA	98104
5058656	WATERMARK PRESS INC	1407 S DEARBORN ST	SEATTLE	WA	98144
25588856	WELLER STREET ASSOC	12TH AVE S & S WELLER ST	SEATTLE	WA	98144
25955722	West Coast Printing Co	622 RAINIER AVE S	SEATTLE	WA	98144
68323253	Xcyte Therapies Broadway	720 BROADWAY STE 612	SEATTLE	WA	98122
10691	Yesler Park	917 E YESLER WAY	SEATTLE	WA	98104

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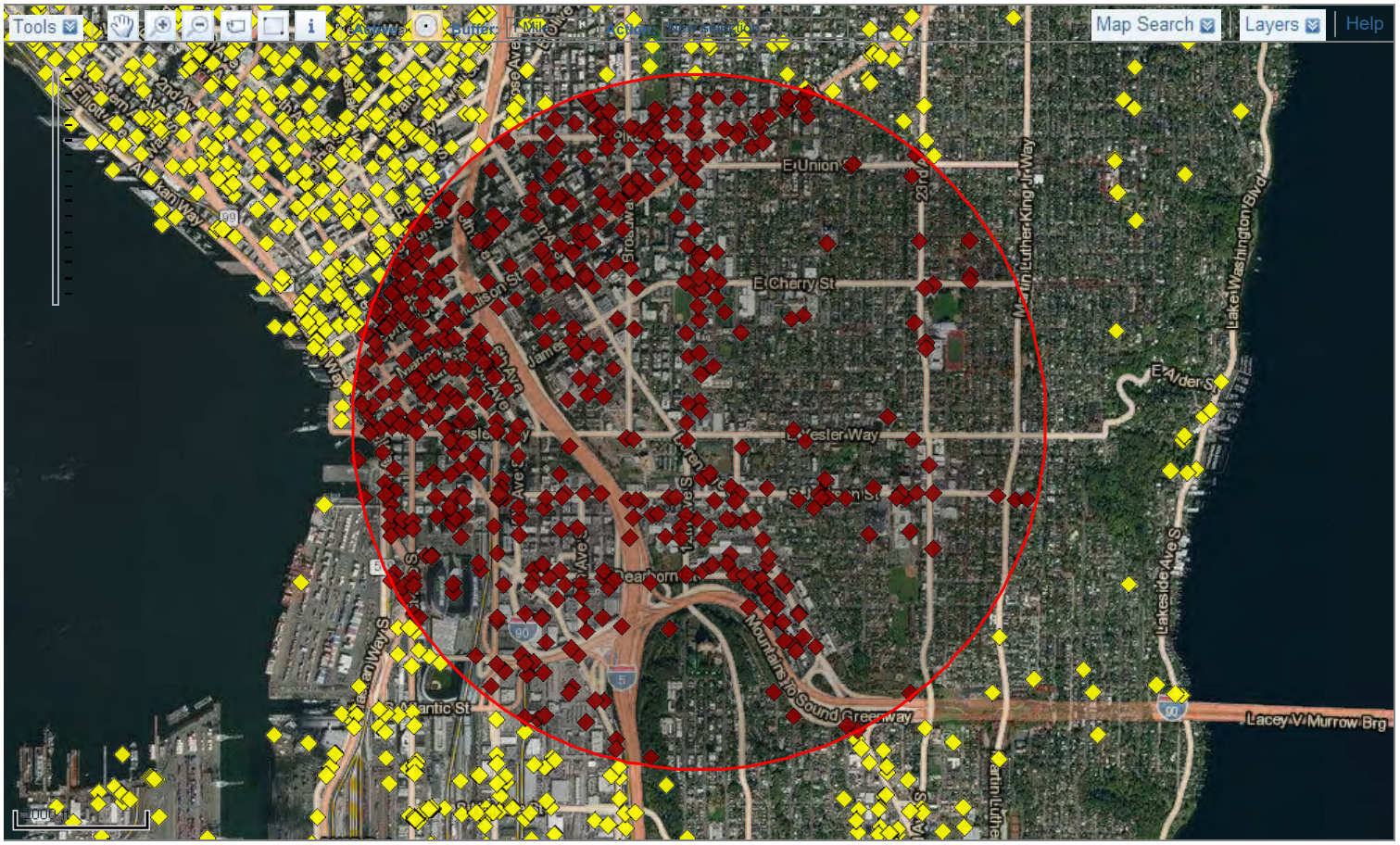

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EPA United States Environmental Protection Agency

Envirofacts

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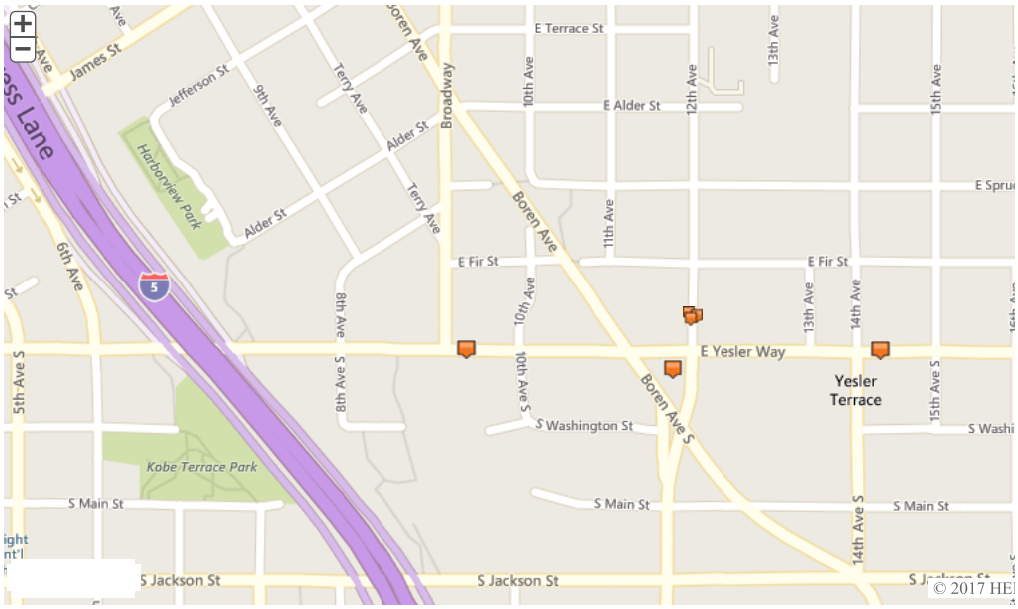

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- EF Overview
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- Multisystem Search User Guide
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The facility list below is based upon the facilities that are visible with the map above. To refine your search to a more targeted area of interest, please visit the Envirofacts Multisystem Search Form. To search Envirofacts via an interactive map, please view your results in EnviroMapper for Envirofacts

List of EPA-Regulated Facilities in Envirofacts

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Showing 1 to 7 of 7 entries Show 10 entries Search:

First | Previous | 1 | Next | Last

FACILITY INFORMATION	AFS	ACRES	BR	SEMS	GHG	PCS/ICIS	RADInfo	RCRAInfo	TRI	TSCA
ARMORED TRANSPORT OF SEATTLE *1401 E YESLER WAY SEATTLE, WA 98122* *Latitude: 47.60169 Longitude:*								***View Report***		

FACILITY INFORMATION	AFS	ACRES	BR	SEMS	GHG	PCS/ICIS	RADInfo
Compliance Report							
BEATTER/TURNER/MILLER *109-111 12TH AVENUE SOUTH SEATTLE, WA 98122* *Latitude: 47.601988 Longitude: -122.31678* Summary Report Facility Report Compliance Report		***View Report***					
FORMER NU WAY CLEANERS II *115 12TH AVENUE SEATTLE, WA 98122* *Latitude: 47.602093 Longitude: -122.316779* Summary Report Facility Report Compliance Report		***View Report***					
FORMER NU WAY CLEANERS III *117 12TH AVENUE SEATTLE, WA 98122* *Latitude: 47.602126 Longitude: -122.316779* Summary Report Facility Report Compliance Report		***View Report***					

FACILITY INFORMATION	AFS	ACRES	BR	SEMS	GHG	PCS/ICIS	RADInfo	RCRAInfo	TRI	TSCA
LLOYDS ROCKET GAS STATION SITE *110 BOREN AVE S SEATTLE, WA 98144* *Latitude: 47.6015 Longitude: -122.3171* Summary Report Facility Report Compliance Report		***View Report***								
NU WAY CLEANERS SITE *113 12TH AVE SEATTLE, WA 98122* *Latitude: 47.60206 Longitude: -122.31678* Summary Report Facility Report Compliance Report		***View Report***								
SEATTLE HOUSING AUTHORITY YESLER TERR *903 E YESLER WAY SEATTLE, WA 98122* *Latitude: 47.60171 Longitude: -122.32043* Summary Report Facility Report Compliance Report								***View Report***		

Showing 1 to 7 of 7 entries *Show* 10 ▼ *entries* *Search:*

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State of Washington

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11 cleanup sites within 0.25 mile
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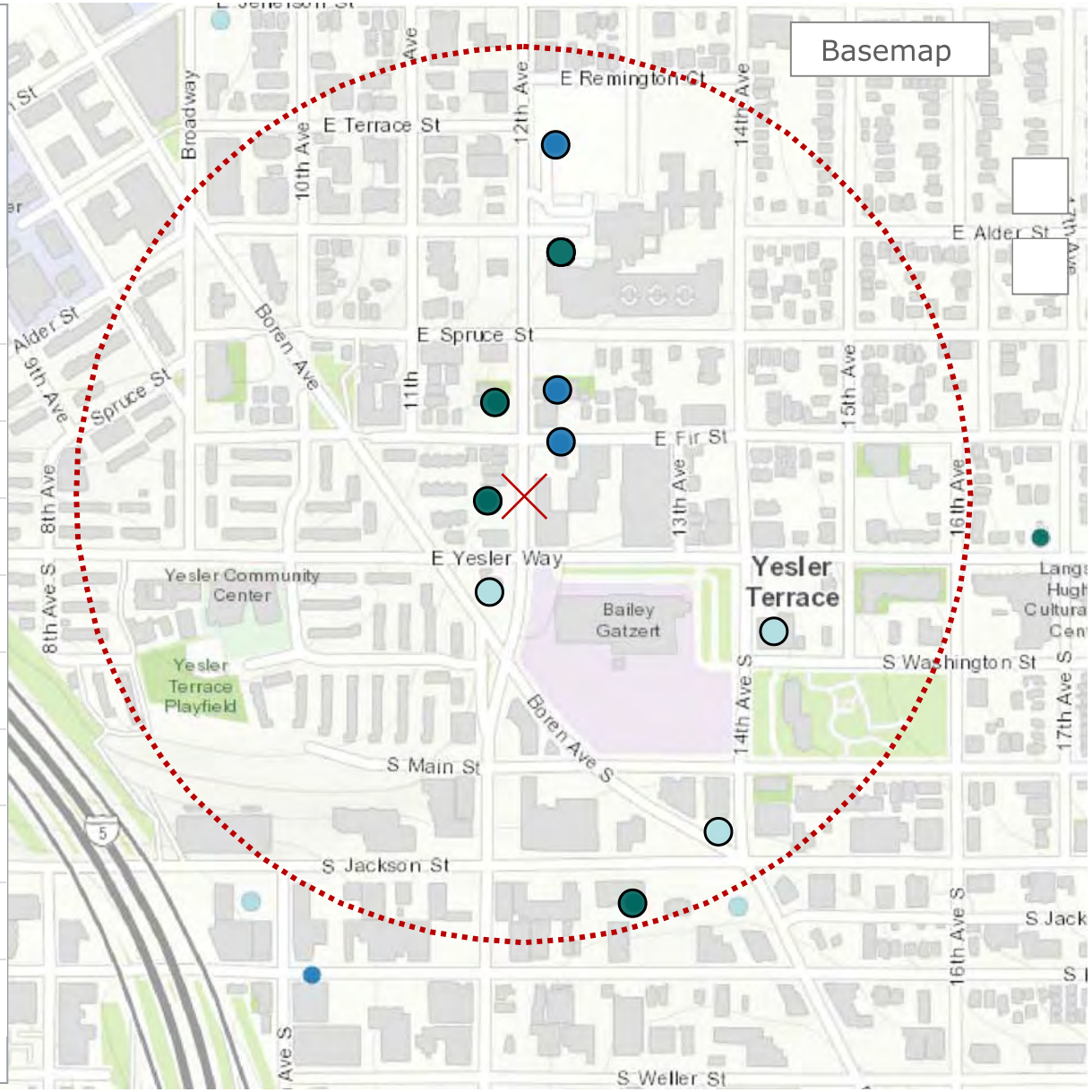
Filter Results

Site Name	Site Status
Seattle Housing Authority 12th Ave Brownfield Cleanup	No Further Action
TD AUTO BODY & REPAIR	Awaiting Cleanup
Barrett Property	No Further Action
Lloyds Rocket & Heating Oil Co	Cleanup Started
B & B Auto Repair Seattle	No Further Action
Armored Transport NW	Cleanup Started
Shell SAP 174361	Cleanup Started
King County Youth Services Alder Tower	No Further Action
King County Youth Services Hydraulic Spill	Cleanup Started
PCE Plume 12th Ave & E Alder St	Awaiting Cleanup



Clear Search

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State of Washington

What's In My Neighborhood

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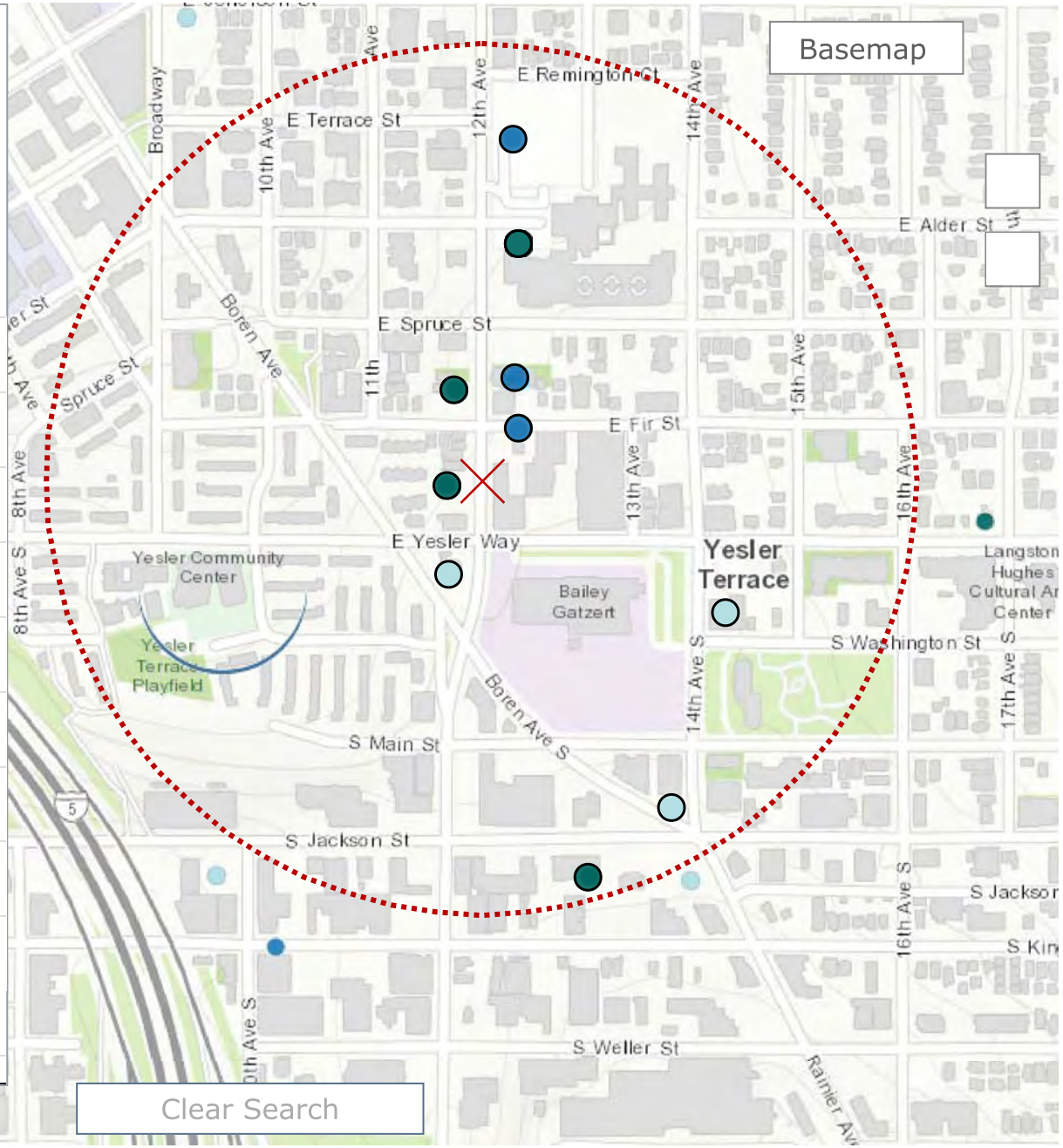
11 cleanup sites within 0.25 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
Seattle Housing Authority 12th Ave Brownfield Cleanup	No Further Action
TD AUTO BODY & REPAIR	Awaiting Cleanup
Barrett Property	No Further Action
Lloyds Rocket & Heating Oil Co	Cleanup Started
B & B Auto Repair Seattle	No Further Action
Armored Transport NW	Cleanup Started
Shell SAP 174361	Cleanup Started
King County Youth Services Alder Tower	No Further Action
King County Youth Services Hydraulic Spill	Cleanup Started
PCE Plume 12th Ave & E Alder St	Awaiting Cleanup
	Awaiting



KING COUNTY

SITE ID:	**TD AUTO BODY & REPAIR**	Cleanup Site ID: 2666	FS ID: 2501
	Alternate Name(s): TD AUTO BODY & REPAIR		

LOCATION:		WRIA: 9	Lat/Long:	47.524	-122.324	View Vicinity Map
Address:	1209 E FIR ST		Township	Range	Section	Legislative District: 11
	SEATTLE 98122		24N	4E	32	Congressional District: 9

STATUS:	**Awaiting Cleanup**	Rank: 3	View Site Web Page	View Site Documents
	Responsible Unit: Northwest	Site Manager: Musa, Donna	Statute: MTCA	
	Is Brownfield?	Has Environmental Covenant?	Is PSI Site?	
	NFA Received?	NFA Date:	NFA Reason:	

ASSOCIATED CLEANUP UNIT(s)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
1284	TD AUTO BODY & REPAIR	Upland	No Process	Awaiting Cleanup		N13426

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Site Discovery/Release Report Received	Completed	9/15/1993	9/15/1993			County Health-NW
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	2/9/1994	2/9/1994		Local Government	County Health-NW
CleanupSite		Early Notice Letter(s)	Completed	9/23/1994	9/23/1994			Northwest Region
CleanupSite		Site Hazard Assessment/Federal Site Inspection	Completed	9/11/2001	2/6/2001		Local Government	County Health-NW
CleanupSite		Hazardous Sites Listing/NPL	Completed	2/6/2001	2/6/2001			Northwest Region

AFFECTED MEDIA & CONTAMINANTS:

Media:

Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Conventional Contaminants, Organic		C	S			
Metals - Other		S	S			
Metals Priority Pollutants		S	S			
Non-Halogenated Solvents		S	S			
Petroleum Products-Unspecified		C	S			

Key:
B - Below Cleanup Level
C - Confirmed Above Cleanup Level
S - Suspected
R - Remediated
RA - Remediated-Above
RB - Remediated-Below

CSID 2666

SITE HAZARD ASSESSMENT
WORKSHEET 1
SUMMARY SCORE SHEET

Site Name/Location (Street, City, County, Section/Township/Range, Facility Site ID Number):

TD Auto Body & Repair
1209 East Fir Street
Seattle, WA 98122
King County
T-25N, R-4E, Sec-32
Facility Site ID#: 2501
Longitude: 122° 19′ 25.97"
Latitude: 47° 31′ 28.16"
Site assessed for February 26, 2002 update

Site Description (Include management areas, substances of concern, and quantities):

The TD Auto Body and Repair property located at 1209 East Fir Street Seattle, WA is an automotive repair and body shop business located in the Capitol Hill area of Seattle. The area consists of high-density buildings that contain small commercial businesses and a few residential properties. The area is served by municipal water and sewer systems.

The TD Auto Body and Repair property contains one building which houses the business work area, storage areas and offices. To the east of the site is another commercial business, to the west is a gravel parking area for a restaurant, to the north is East Fir Street and to the south is a sloping dirt area used for the collection of auto parts. All of the TD Auto Body and Repair property is covered by either cement or asphalt except for the dirt area on the south side of the site.

During the fall of 1993 the Washington State Department of Ecology (Ecology) received a complaint that personnel at TD Auto Body and Repair were dumping contaminated materials on the site. Ecology then referred the site to the King County Local Hazardous Waste Program (LHWP) for a site visit. The LHWP inspectors did notice some possibly contaminated soil at the site and reported their findings to Ecology. On September 8th 1994, Ecology listed the TD Auto Body and Repair property on the Integrated Site Information System (ISIS) list.

A site hazard assessment visit (SHA) was conducted by Carsten Thomsen and Yolanda King of the Public Health-Seattle & King County (PHSKC) on November 15, 2001. By the time that this visit took place, PHSKC had been unable to contact the site owner so very limited access to the property was available. During the visit some areas of stained soil were noticed on the site to the south of the building. A decision was then made to return to the site to collect soil samples for analysis.

On December 7, 2001 Carsten Thomsen and Yolanda King of the PHSKC met with the owner of the property and took three soil samples on the TD Auto Body & Repair site. All three samples were collected at depths ranging from six to ten inches. The three samples were collected on the soil slope located on the south side of the building. All of the samples were analyzed for Northwest Total Petroleum Hydrocarbons-Diesel Extended (NWTPH-Dx), Volatile Organic Compounds (VOC's) and total metals.

No VOC's were detected in any of the three samples. As shown in the table below, heavy oil was found in all three samples with sample #3 containing levels exceeding the Model Toxics Control Act (MTCA) Method A cleanup level of 2000 ppm. Lead was also found in all three samples with sample #3 containing levels exceeding the MTCA Method A cleanup level of 250 ppm.

	Heavy Oil (ppm)	Lead (ppm)
Sample #1	760	160
Sample #2	1700	120
Sample #3	**3200**	**1000**
MTCA Method A Cleanup Level	2000	250

On the basis of this SHA, completed by the PHSKC's Environmental Health Division, this site will be scored for the air and groundwater routes under the MTCA regulations. The surface water route will not be scored due to the layout of the site, which slopes to an enclosed area with no surface water escape.

Special Considerations (Include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site): N/A

ROUTE SCORES:

Surface Water/Human Health: NS

Surface Water/Environ.: NS

Air/Human Health: 27.5

Air/Environmental: NS

Ground Water/Human Health: 22.4

OVERALL RANK: 3

WORKSHEET 2
ROUTE DOCUMENTATION

1. SURFACE WATER ROUTE

List those substances to be considered for scoring: Source:

Due to conditions on the property this route will not be scored.

Explain basis for choice of substance(s) to be used in scoring.

List those management units to be considered for scoring: Source:

Explain basis for choice of unit to be used in scoring. Source:

2. AIR ROUTE

List those substances to be considered for scoring: Source: 2

Lead

Explain basis for choice of substance(s) to be used in scoring.

The above substance concentration is above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Soil contamination

Explain basis for choice of unit to be used in scoring. Source: 3

Soil is exposed to weather with no containment.

3. GROUND WATER ROUTE

List those substances to be considered for scoring: Source: 2

Lead, NWTPH-Heavy Oil

Explain basis for choice of substance(s) to be used in scoring.

All of the above substance concentrations are above MTCA Method A cleanup standards.

List those management units to be considered for scoring: Source: 3

Surface soil contamination.

Explain basis for choice of unit to be used in scoring.

Surface soil is exposed to weather with no containment.

WORKSHEET 3
AIR ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Introduction (WARM Scoring Manual) - Please review before scoring

1.2 Human Toxicity

Substance	Air Standard (ug/m^3)	Val.	Acute Toxicity (mg/m^3)	Val.	Chronic Toxicity (mg/kg/day)	Val.	Carcino-genicity WOE	PF*	Val.
1. Lead	0.05	10	ND	-	ND	-	B2	ND	-

*Potency Factor

Source: 1,2
Highest Value: 10 (Max.=10)
+2 Bonus Points? No
Final Toxicity Value: 10 (Max.=12)

1.3 Mobility (Use numbers to refer to above listed substances)

1.3.1 Gaseous Mobility
Vapor Pressure(s) (mmHg): 1= 9.5E+1 = 4; 2= 1.0E+1= 3; 3= 0; 4= 2.0E-03= 0; 5= 8.2E-02= 4 Source: Value: (Max.=4)

1.3.2 Particulate Mobility
Soil type: sandy clay loam Source:3
Erodibility: 56 Value: 1 (Max.=4)
Climatic Factor: 1 to 10

1.4 Highest Human Health Toxicity/Mobility Matrix Value (from Table A-7) equals **Final Matrix Value: 5** (Max.=24)

1.5 Environmental Toxicity/Mobility Source: 1,2,3

Substance	Non-human Mammalian Acute Inhal. Toxicity (mg/m^3)	Value	Mobility (mmHg)	Value	(Table A-7) Matrix Value
1.ND					

Highest Environmental Toxicity/Mobility Matrix Value (From Table A-7) equals **Final Matrix Value: NS** (Max.=24)

1.6 Substance Quantity: 600 square feet Source: 3 **Value: 4** (Max.=10)
Explain basis: 20'X30'=600 SQ ft

2.0 MIGRATION POTENTIAL

2.1 Containment: No cover. Discharge spills directly onto ground. Source: 3 **Value: 10** (Max.=10)

3.0 TARGETS

3.1 Nearest Population: < 1,000 feet Source: 3 **Value: 10** (Max.=10)

3.2 Distance to, and Name(s) of, Nearest Sensitive Environment(s) First Hill Park >2,000 to 3,000 feet Source: 6 **Value: 5** (Max.=7)

3.3 Population within 0.5 miles: pop.= sq root 4500 = 67 Source: 3 **Value: 67** (Max.=75)

4.0 RELEASE

Explain basis for scoring a release to air: No confirmed release. Source: 3 **Value: 0** (Max.=5)

WORKSHEET 4
GROUND WATER ROUTE

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

Substance	Drinking Water Standard (ug/l)	Val.	Acute Toxicity (mg/kg-bw)	Val.	Chronic Toxicity (mg/kg/day)	Val.	WOE	Carcino-genicity PF*	Val.
1.Lead	5	8	ND	-	0.0003	5	B2	ND	-
2.NWTPH-Heavy Oil	ND	-	ND	_	2	1	ND	ND	-

*Potency Factor

Source: 1,2
Highest Value: 8
(Max.=10)

+2 Bonus Points? no
Final Toxicity Value: 8
(Max.=12)

1.2 Mobility (Use numbers to refer to above listed substances)
Cations/Anions: 1=2 ; 2=NA; 3= Source:1 **Value: 2**
(Max.=3)

OR
Solubility(mg/l): 1= ; 2= ; 3= _

1.3 Substance Quantity: 1800 cu ft=67 cu yds Source: 3 **Value: 2**
Explain basis: 600 sq ft X 3ft depth= 1800 cu ft (Max.=10)

2.0 MIGRATION POTENTIAL

2.1 Containment Source: 3 **Value: 10**
Explain basis: spill/discharge to ground (Max.=10)

2.2 Net Precipitation: 18.7 inches Source: 5 **Value: 2**
(Max.=5)

2.3 Subsurface Hydraulic Conductivity: clayey sand Source: 3 **Value: 3**
(Max.=4)

2.4 Vertical Depth to Ground Water: 8 to 10 feet Source: 3 **Value: 8**
(Max.=8)

3.0 TARGETS

3.1 Ground Water Usage: not usable Source: 8 **Value: 1**
(Max.=10)

3.2 Distance to Nearest Drinking Water Well: >10,000ft Source: 8 **Value: 0**
(Max.=5)

3.3 Population Served within 2 Miles: pop.= = 0 Source: 8 **Value: 0**
(Max.=50)

3.4 Area Irrigated by (Groundwater) Wells
within 2 miles: 0.75 no.acres= Source: 7 **Value: 0**
0.75 =0.75 ( )= 0 (Max.=100)

4.0 RELEASE

Explain basis for scoring a release to ground Source: 3 **Value: 0**
water: none confirmed (Max.=5)

SOURCES USED IN SCORING

1. Washington Ranking Method Toxicological Database.
2. Analytical Results for TD Auto Body, Onsite Environmental, December 14, 2001.
3. Site Hazard Assessment, Public Health-Seattle & King County, December 7, 2001
4. National Weather Service Data.
5. Isopluvials of 2-year, 24-hour Precipitation, NOAA Atlas 2, Volume IX.
6. Sensitive Areas Coverage, King County Geographic Information System Data.
7. Washington State Department of Health Public Water Supply Listing.
8. Washington State Water Use Data.

KING COUNTY

SITE ID:	**Seattle Housing Authority 12th Ave Brownfield Cleanup**		Cleanup Site ID: 489		FS ID: 3520941
	Alternate Name(s):	BROWN PROPERTY, C Miller Property, Former Nu Way Cleaners, Nu Way Cleaners, SEATTLE HOUSING AUTHORITY, Seattle Housing Authority 12th Ave, Seattle Housing Authority 12th Ave Brownfield Cleanup, TURNER BEATTER PROPERTY			
LOCATION:		WRIA: 8	Lat/Long: 47.602	-122.317	View Vicinity Map
Address:	113 12TH AVE		Township	Range	Section / Legislative District: 37
	SEATTLE 98122		24N	4E	5 / Congressional District: 9
STATUS:	**No Further Action**	Rank:	View Site Web Page		View Site Documents
	Responsible Unit: Northwest	Site Manager: Myers, Dale R	Statute: MTCA		
	Is Brownfield? Yes	Has Environmental Covenant?	Is PSI Site?		
	NFA Received? Yes	NFA Date: 5/10/2010	NFA Reason: NFA-Voluntary Cleanup Program Review		

ASSOCIATED CLEANUP UNIT(s)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
2367	NU WAY CLEANERS	Upland	Voluntary Cleanup Program	No Further Action Required		547888

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Site Discovery/Release Report Received	Completed	2/16/2005	2/16/2005			Northwest Region
CleanupSite		Site Discovery/Release Report Received	Completed	2/16/2005	2/16/2005			Northwest Region
CleanupSite		Site Discovery/Release Report Received	Completed	2/16/2005	2/16/2005			Northwest Region
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	6/27/2005	6/27/2005		Ecology	Colburn, Gail
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	6/27/2005	6/27/2005		Ecology	Colburn, Gail
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	6/27/2005	6/27/2005		Ecology	Colburn, Gail
CleanupSite		Early Notice Letter(s)	Completed	7/5/2005	7/5/2005			Colburn, Gail
CleanupSite		Early Notice Letter(s)	Completed	7/5/2005	7/5/2005			Colburn, Gail
CleanupSite		Early Notice Letter(s)	Completed	7/8/2005	7/8/2005			Colburn, Gail
CleanupSite		Site Status Changed to NFA	Completed	5/10/2010	5/10/2010			Myers, Dale R
LUST		LUST - Notification	Completed	1/26/2009	1/26/2009			
LUST		LUST - Report Received	Completed	1/26/2009	1/26/2009			

LUST		LUST - Report Received	Completed	1/11/2010	1/11/2010			
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	3/6/2009				Myers, Dale R
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	5/9/2007	5/29/2007			Myers, Dale R
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	2/14/2007	4/17/2007			Myers, Dale R
VcpProject	NW1733	VCP Opinion on Cleanup Action	Completed	3/22/2010	4/19/2010			Myers, Dale R
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	1/23/2009				Myers, Dale R
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	6/29/2007				Myers, Dale R
VcpProject	NW1733	VCP Opinion on Interim Action	Completed	5/6/2009	5/27/2009			Myers, Dale R

AFFECTED MEDIA & CONTAMINANTS:

Media:

Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Halogenated Organics	C		C			
Non-Halogenated Solvents	C		C			
Petroleum Products-Unspecified	C		C			
Petroleum-Gasoline	R		R			

Key:
B - Below Cleanup Level
C - Confirmed Above Cleanup Level
S - Suspected
R - Remediated
RA - Remediated-Above
RB - Remediated-Below

CleanupSiteDetails2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

May 10, 2010

Mr. Mick Gamlam
Housing Authority City of Seattle
PO Box 19028
Seattle, WA 98109

Re: No Further Action at the following Site:

- **Site Name:** Seattle Housing Authority 12th Ave Brownfield Cleanup Site
- **Site Address:** 109 through 117 12th Avenue, Seattle
- **Facility/Site No.:** 3520941
- **VCP Project No.:** NW1733

Dear Mr. Gamlam:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Seattle Housing Authority 12th Ave Brownfield Cleanup Site facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Diesel range petroleum hydrocarbons & Stoddard Solvent in Soil;
- Tetrachloroethene, Trichloroethene, 1,1 Dichloroethene, (cis) 1,2- Dichloroethene, 1,2 Dichloropropane, Vinyl Chloride & Xylenes in Soil;

- Diesel range petroleum hydrocarbons & Stoddard Solvent in groundwater;
- Tetrachloroethene, Trichloroethene, 1,1 Dichloroethene, (cis) 1,2- Dichloroethene, 1,2 Dichloropropane, Vinyl Chloride & Xylenes in groundwater

Enclosure A includes a detailed description and diagram of the Site, as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. *Preliminary Subsurface Investigation 109 and 111 12th Ave*, dated July 8th 2004, written by Environmental Associates, Inc.

2. *Phase I Environmental Assessment 113 to 117 12th Ave,* dated October 29th 2004, written by Environmental Associates, Inc.

3. *Supplemental Subsurface Invest. 109 &111 12th Ave*, dated October 29th 2004, written by Environmental Associates, Inc.

4. *Phase I Environmental Assessment 109 & 111 12th Ave,* dated May 26th 2006, written by Environmental Associates, Inc.

5. *Phase II Environmental Assessment 113 to 117 12th Ave,* dated November 15th 2006, written by CDM.

6. *Draft Analysis of Brownfield Cleanup Alternatives, 109 through 117 12th Ave, Seattle Housing Authority Brownfield Cleanup Site,* dated February 9th 2007, written by GeoEngineers.

7. *Final Draft Cleanup Action Plan, Seattle Housing Authority Brownfield Cleanup Site,* dated May 4th 2007, written by GeoEngineers.

8. *Cleanup Action Report Seattle Housing Authority 12th Avenue Brownfield Cleanup Site,* dated January 12th, 2009, written by GeoEngineers.

9. *Groundwater Compliance Monitoring Report – 1st Quarter 2010*, dated March 22nd 2010, prepared by GeoEngineers

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at 425.649.7239.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that **no further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A.**

The nature and extent of this Site was fully characterized and described in the reports titled; *Draft Analysis of Brownfield Cleanup Alternatives, and Final Draft Cleanup Action Plan, Seattle Housing Authority Brownfield Cleanup Site.*

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

The cleanup standard selected for soil and groundwater at this Site was MTCA Method A table values for unrestricted land use. MTCA Method B cleanup levels for soil were used when Method A levels were not available. Standard point of compliance for soil and groundwater was established as throughout the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

The cleanup action selected for this Site was excavation and off-Site disposal of all contamination found on the Site, followed by compliance groundwater monitoring.

4. **Cleanup.**

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

During Site remedial activities conducted in 2008, approximately 6,081 tons of contaminated soil and approximately 105,000 gallons of water were removed from the Site. Confirmational soil samples were obtained from the final limits of the 2008 excavation. Chemicals of concern were either not detected in the samples or were detected at concentrations less than MTCA Method A cleanup levels.

Three compliance groundwater monitoring wells were installed in April 2009 following the cleanup action performed in 2008. Since April 2009 four consecutive quarterly groundwater monitoring events were performed. Chemicals of concern were either not detected in the samples or were detected at concentrations less than MTCA Method A cleanup levels during all four events.

It is Ecology's opinion that the remedial activities performed at the Site have met the substantive requirements of MTCA for the remediation of soil and groundwater.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List and Leaking Underground Storage Tank List.

Limitations of the Opinion

1. **Opinion does not settle liability with the state.**

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. **Opinion does not constitute a determination of substantial equivalence.**

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or

Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#NW1733).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 425.649.4446 or e-mail at damy461@ecy.wa.gov.

Sincerely,

Dale R. Myers
Site Manager
NWRO Toxics Cleanup Program

dm/kp

Enclosures (1): A – Description and Diagrams of the Site

cc: Ms. Dana Carlisle
GeoEngineers, Inc.
8410 154th Ave NE
Redmond, WA 98052

Dolores Mitchell VCP Financial Manager (without enclosures)

Enclosure A

Description and Diagrams of the Site

Site Description

The Site is comprised of four King County Tax Parcels (#982670-0270, -0275, -0295, and -0305) which covers a total of approximately 8,628 square feet of land and is located in a predominately residential and small commercial area of Seattle east of Interstate 5 and north of E Yesler Way.

9826700275 -
Legal description - YESLERS H L 1ST ADD BEG 14.63 FT N OF SE COR TH W 69.71 FT TH N 42 DEG 42 MIN W 15.76 FT TH N 34.85 FT TH E 81.33 FT TO NE COR TH S 45.49 FT TO BEG LESS ST

9826700295 -
Legal description - YESLERS H L 1ST ADD S 1/2 LESS ST

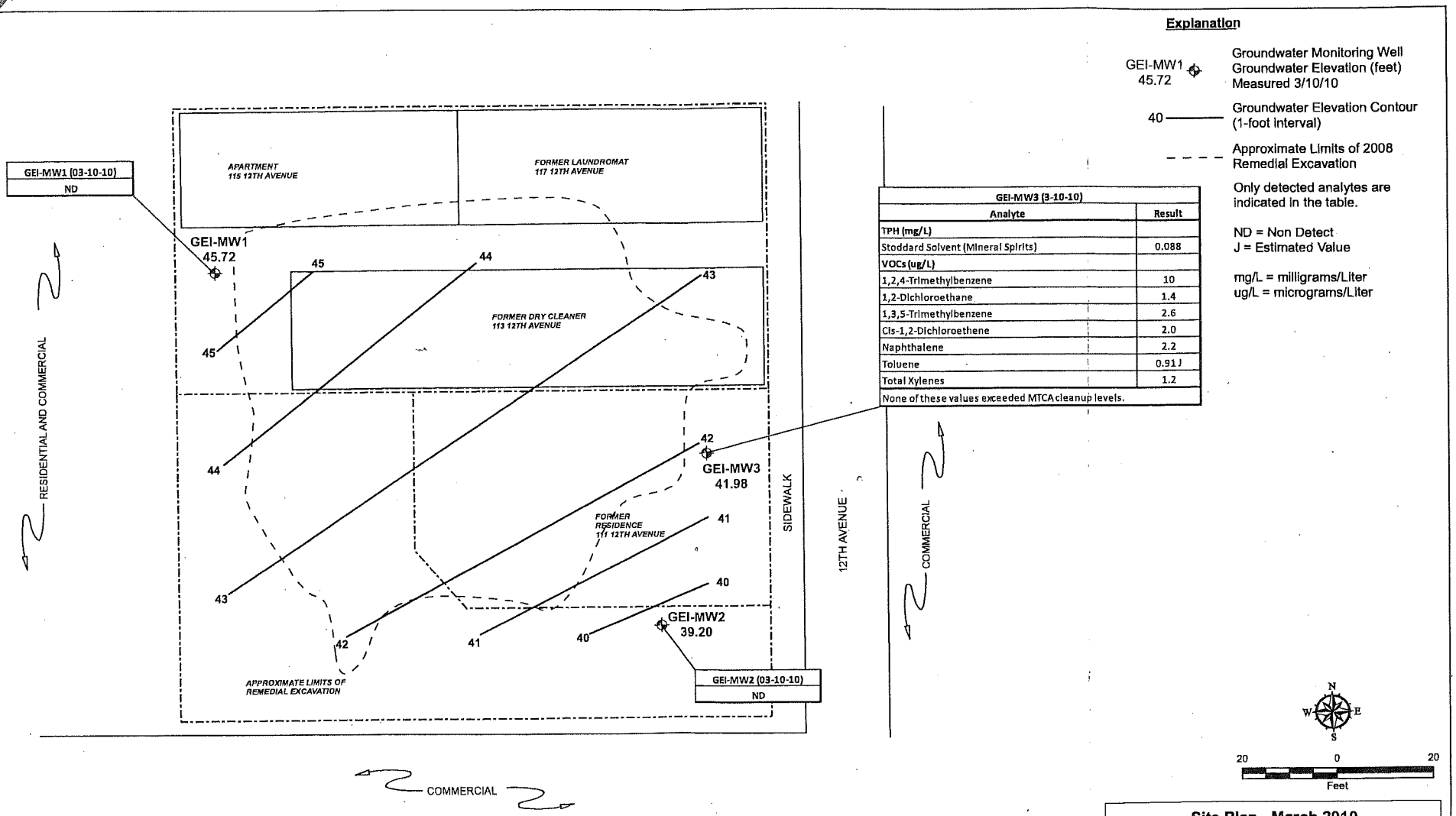
9826700270 -
Legal description - YESLERS H L 1ST ADD LESS BEG 14.63 FT N OF SE COR TH W 69.71 FT TH N 42 DEG 42 MIN W 15.76 FT TH N 34.85 FT TH E 81.33 FT TO NE COR TH S 45.49 FT TO BEG LESS ST OF 7 & N 10 FT OF 6

9826700305-
Legal description - YESLERS H L 1ST ADD POR N 1/2 8 & OF S 26 FT 9 S OF LN BEG ON W MARG 12TH AVE 4 FT S OF N LN LOT 8 TH N 89 DEG 59 MIN 38 SEC W 66 FT TH N 80 DEG 14 MIN 17 SEC W 32.46 FT TH N 89 DEG 59 MIN 38 SEC W 26 FT TO W LN LOT 9 LESS ST

The Site is situated on a gently rolling elevated plain (the Vashon Drift Plane) which was formed during the last period of continental glaciation, which ended approximately 13,500 years ago. Specifically soil underlying the Site is glacial till, a dense mixture of silt, sand, and gravel.

Discontinuous perched groundwater is found at the Site at depths ranging from 2-feet below ground surface (March, April, and December) to 11-feet below ground surface (September). The inferred direction of groundwater flow beneath the Site based on data derived during groundwater monitoring events is generally towards the southeast.

Contaminates present in soil and groundwater beneath the Site resulted from release(s) associated with historical dry cleaning operations conducted on Site, a heating oil underground storage tank (UST) east of the former dry cleaner building, and one or more other heating oil USTs found on Site during excavation activities.



Reference: Supplemental Subsurface Investigation, Two Residences, 109 & 111 Twelfth Avenue, Seattle, WA., by Environmental Associates, Inc. 10/09/04.

Notes:
1. The locations of all features shown are approximate.
2. Groundwater elevations were measured by GeoEngineers with reference to an arbitrary, temporary benchmark.
Elevation of this benchmark was assumed to be 50.00 feet.
3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Site Plan - March 2010
Groundwater Monitoring Event

109 Through 117 12th Avenue
Seattle, Washington

GeoEngineers | Figure 2

Map Revised: March 22, 2010 KKS;TCK
Path: P:\0102410211\GIS\02410210S_F2_GW_Mar_2010
Office: TAC

KING COUNTY

SITE ID:	**B & B Auto Repair Seattle**	Cleanup Site ID: 7826	FS ID: 8906920
	Alternate Name(s):	151 LOFTS, B & B AUTO REPAIR SEATTLE, B & B RADIATOR PROPERTY, FORMER GAS STATION, UPTOWN RADIATOR	

LOCATION:		WRIA: 8	Lat/Long:	47.603	-122.317	View Vicinity Map
Address:	151 12TH AVE		Township	Range	Section	Legislative District: 37
	SEATTLE 98122		24N	4E	5	Congressional District: 9

STATUS:	**No Further Action**	Rank:	View Site Web Page	View Site Documents
	Responsible Unit: Northwest	Site Manager: Bails, John	Statute: MTCA	
	Is Brownfield?	Has Environmental Covenant?	Is PSI Site?	
	NFA Received? Yes	NFA Date: 11/14/2012	NFA Reason: NFA-Voluntary Cleanup Program Review	

ASSOCIATED CLEANUP UNIT(s)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
7518	B & B Auto Repair	Upland	Voluntary Cleanup Program	No Further Action Required		605868

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Site Discovery/Release Report Received	Completed	5/20/2008	5/20/2008			Northwest Region
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	12/15/2008	12/15/2008		Ecology	Oakleaf, Bryn
CleanupSite		Early Notice Letter(s)	Completed	11/15/2011	11/15/2011			Musa, Donna
CleanupSite		Site Status Changed to NFA	Completed	11/14/2012	11/14/2012			Bails, John
LUST		LUST - Notification	Completed	5/20/2008	5/20/2008			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			
LUST		LUST - Report Received	Completed	10/15/2008	10/15/2008			
LUST		LUST - Report Received	Completed	8/14/2008	8/14/2008			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			
LUST		LUST - Report Received	Completed	3/19/2012	3/19/2012			

LUST		LUST - Report Received	Completed	9/8/2008	9/8/2008			
LUST		LUST - Report Received	Completed	9/8/2008	9/8/2008			
LUST		LUST - Report Received	Completed	9/8/2008	9/8/2008			
LUST		LUST - Report Received	Completed	9/8/2008	9/8/2008			
VcpProject	NW2586	VCP Opinion on Site Cleanup	Completed	10/25/2012	11/14/2012			Bails, John

AFFECTED MEDIA & CONTAMINANTS:

Media:

Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Benzene	C		C			
Non-Halogenated Solvents			C			
Other Halogenated Organics	B					
Other Non-Halogenated Organics	C		C			
Petroleum-Diesel	S		C			
Petroleum-Gasoline	C		C			
Petroleum-Other			C			

Key:
B - Below Cleanup Level
C - Confirmed Above Cleanup Level
S - Suspected
R - Remediated
RA - Remediated-Above
RB - Remediated-Below

CleanupSiteDetails2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

November 14, 2012

Ms. Laura Doyle Reifel
Umpqua Bank
19009 3rd Avenue West, Suite 260
Lynnwood, WA 98036

Re: No Further Action at the Following Site:

Site Name: B&B Auto Repair-Seattle
Site Address: 151 12th Avenue, Seattle, WA 98122
Facility/Site Number: 8906920
VCP Project Number: NW2586
ISIS Cleanup Number: 7826

Dear Ms. Reifel:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the former **B&B Auto Repair** facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is **Further Remedial Action** necessary to clean up contamination at the Site?

NO. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline as TPH-G into the soil and ground water
- Benzene and xylenes into the soil and ground water

Enclosure A includes a detailed description and diagram of the Site as currently known to Ecology.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel associated with this Site is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the documents listed below:

1. October 25, 2012. ***Additional Phase II Subsurface Investigation***, The Riley Group, Inc. (Riley Group)

2. January 27, 2012. ***Supplemental Phase II Subsurface Investigation***, Riley Group

3. October 25, 2010. ***Supplemental Phase II Subsurface Investigation***, Riley Group

4. November 25, 2009. ***Phase I Environmental Site Assessment***, Riley Group

5. May 5, 2008. ***Observation of Contaminated Soil Excavation and Sampling***, GEOTECH Consultants, Inc. (GEOTECH)

6. February 26, 2008. ***Geotechnical Engineering Report***, PanGEO Inc.

7. March 29, 2008. ***Woodhouse Project***, Tanks by Dallas

8. February 11, 2005. ***Limited Phase II Site Assessment***, GEOTECH

9. February 4, 2005. ***[Draft] Limited Phase II Site Assessment***, *GEOTECH*

These documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at (425) 649-7235 or emailing a request to nwro_public_request@ecy.wa.gov.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

Ecology has concluded that no further remedial action is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. **Characterization of the Site**

   Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A**.

2. **Establishment of Cleanup Standards**

   Ecology has determined the cleanup levels and the points of compliance established for the Site meet the substantive requirements of MTCA, as follows.

   Soil
   The Site is located in an area of mixed commercial businesses and residential housing. Soil cleanup levels suitable for unrestricted land uses are therefore applicable to this Site. Method A cleanup levels are protective of this use through direct contact and have been selected for this cleanup. The applicable point of compliance for soil under these conditions is throughout the Site and at least 15 feet below ground surface (bgs).

   Soil cleanup levels protective of ground water are also required and MTCA Method A cleanup levels are protective of ground water and therefore have been selected.

   Cleanup levels protective of other media (air, surface water, sediment) are not required based on the relatively low contaminant concentrations documented at the Site.

   Soil cleanup levels protective of terrestrial ecological receptors are also not required based on a simplified terrestrial evaluation (TEE). There are no parks or significant areas of undeveloped land with 500 feet of the Site. A simplified TEE exposure analysis using WAC 173-340-7492 (2)(a)(ii) and Table 749-1 indicates no further need for an ecological evaluation. Therefore, establishment of more stringent soil cleanup levels are not required because "land use at the Site and surrounding area makes substantial wildlife exposure unlikely".

   MTCA Method A cleanup levels for petroleum organics in soils are tabulated in Table 740-1. Selected values from that table are repeated here for reference. Gasoline as TPH-G: 100 mg/kg for gasoline mixtures without benzene and the total of ethylbenzene, toluene and xylenes are less than 1% of the gasoline mixture; or 30

mg/kg for all other GRPH mixtures. Diesel as TPH-D: 2000 mg/kg. Heavy Oil as TPH-O: 2000 mg/kg. For Volatile Organic Compounds (VOC's), the values are benzene: 30 µg/kg; toluene: 7000 µg/kg; ethylbenzene: 6000 µg/kg; xylenes: 9000 µg/kg. Lead in soil is 250mg/kg.

Ground Water

Shallow ground water at the Site is limited to isolated and discontinuous zones of perched ground water. There are two ground water monitoring wells, MW1 and MW2, at the Site. Monitoring well MW1 has never produced enough water for adequate purging and sampling. Samples collected from MW2 have been non-detect for TPH and BTEX components.

Ground water was not encountered during the September 18, 2012, sub- surface investigations when three borings using a hollow stem auger were advanced to a maximum depth of 14 feet.

MTCA Method A cleanup levels for ground water would be applicable for the Site. MTCA Method A cleanup level for petroleum organics in ground water are tabulated in Table 720-1. Selected values from that table are repeated here for reference and comparison. For gasoline with no detectable benzene in groundwater: 1000 µg/l; diesel: 500 µg/l; heavy oils: 500 µg/l; benzene: 5 µg/l; toluene: 1000 µg/l; ethyl-benzene: 700µg/l; total xylenes: 1000 µg/l. Lead in ground water 15 µg/l.

3 Selection of Cleanup Action

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA. The cleanup meets the minimum cleanup requirements and does not exacerbate conditions or preclude reasonable cleanup alternatives elsewhere at the Site.

The selected cleanup consisted of excavation of the contaminated soil and confirmational sampling.

4. Cleanup

Ecology has determined the cleanup you performed during March 2008 meets the cleanup standards established for the Site. Subsequent subsurface investigations have confirmed no additional remedial actions are necessary at the Site.

In March 2008, Tanks by Dallas removed one 500 gallon UST that had previously been closed in place in 2004.

Along with the removal of the tank, approximately 806 tons of contaminated soil was transported off-Site for proper disposal.

Additional sub-surface investigations conducted at the Site between January 2005 and September 2012, have provided confirmation that soil and ground water concentrations meet the cleanup requirements for the Site.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List (ISIS Cleanup #: 7826) and our Leaking Underground Storage Tank List (Release#: 592339).

Limitations of the Opinion

1. **Opinion does not settle liability with the state**

   Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion does not:

   - Resolve or alter a person's liability to the state.
   - Protect liable persons from contribution claims by third parties.

   To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. **Opinion does not constitute a determination of substantial equivalence**

   To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you performed is substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. **State is immune from liability**

   The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (NW2586).

For more information about the VCP and the cleanup process, please visit our website: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at (425) 649-7099 or e-mail at jbai461@ecy.wa.gov.

Sincerely,

John M. Bails
Toxics Cleanup Program

Enclosures (1): Enclosure A: Description and Diagrams of the Site

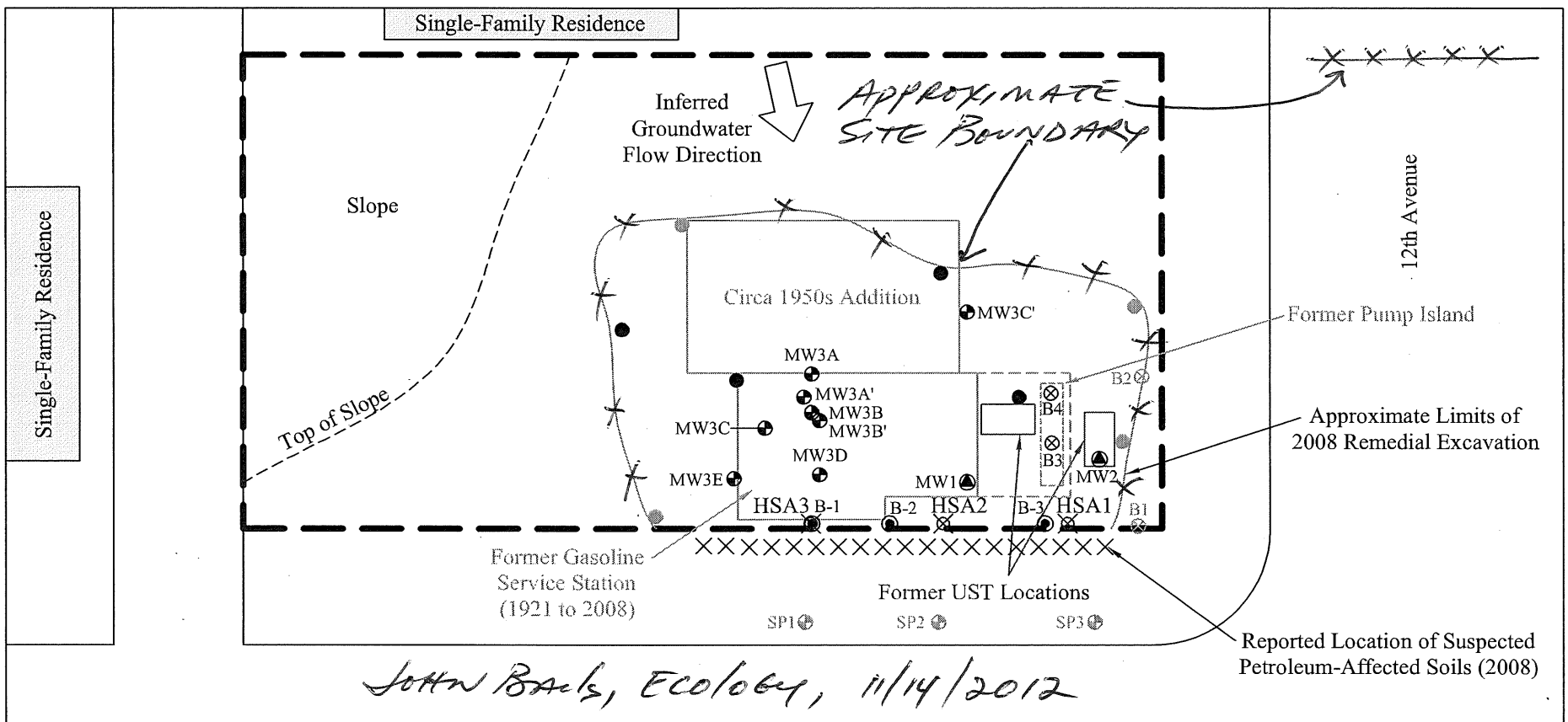
cc: Mr. Paul D. Riley, The Riley Group Inc.
Dolores Mitchell, VCP Financial Manager, Ecology

Enclosure A

Description and Diagrams of the Site

B&B AUTO SERVICE
FORMER B&B RADIATOR PROPERTY
NW2586

ENCLOSURE A



= (in blue) RGI Hollow Stem Auger Soil Boring Location (09/18/12)
= (in black) RGI Test Probe Location (08/15/12)
= (in black) RGI Soil Boring (Attempted Monitoring Well) Location (12/29/11 and 01/05/12)
= (in black) RGI Monitoring Well Location (12/29/11)
= (in gray) RGI Test Probe Location (Advanced September, 2010)
= (in gray) Approximate Confirmation Soil Sample Location (GCI, 2008)
= (in gray) Approximate Test Probe Location (GCI, 2005)

= Site Boundary

Approximate Scale: 1"=20'

0 10 20 40

N

The Riley Group, Inc.
17522 Bothell Way Northeast, Suite A
Bothell, Washington 98011
Phone: 425.415.0551 ♦ Fax: 425.415.0311

Former B&B Radiator		Figure 3
Project Number 2009-310C	Site Plan with Test Probe and Soil Boring Locations	Date Drawn: 10/2012
Address: 151 12th Avenue, Seattle, Washington		

Site Description

Site Name: B&B Auto Repair Seattle
Site Address: 151 12th Avenue, Seattle, WA 98122

Site Description

The Site is located within a property (the Property) listed by Ecology as the former B&B Auto Repair located at 151 12th Avenue, Seattle, WA 98122.

The Site was listed on Ecology's Confirmed and Suspected Contaminated Site list (CSCSL) for soil and ground water contamination first identified during of a limited Phase II Site assessment in February 2005. The purpose of the investigation was to evaluate possible environmental impacts in the vicinity of two out-of-service UST's. One tank, UST1, had previously been closed-in-place in 2004 by Tanks by Dallas. A second tank, UST2, had been removed at an unknown date but probably in July 2004, when UST1 was closed in-place. No documentation exists for the removal of UST2. The uses of the tanks and their contents are unknown.

The Site was listed because gasoline-range and diesel-range petroleum hydrocarbons as well as benzene and xylenes were present in the soil and ground water above Method A cleanup levels. Ecology was not notified of the contamination until 2008.

Area Description:
The Site is located in the city of Seattle, King County. The rectangular parcel comprises approximately 7013 square feet and is located at the northwest corner of the intersection of 12th Avenue and East Fir Street. The Site is bordered by 12th Avenue to the east, by East Fir Street to the south, by an alley to the west and by a residence to the north. The western portion of the Site is covered with trees and other low-growing vegetation. The Site has been vacant since 2008 and remains vacant. The neighborhood is known as the International District. Typical Site use in the neighborhood vicinity consists of a mix of commercial and residential properties. The location of the Site and the Property are illustrated in Enclosure A. King County identifies the Property as tax parcel 219760-0625.

Property History and Current Use:
Historically, the Site has been used for retail gasoline sales and automotive service. Use of the Site began in 1921 with the construction of a White-Rose branded gasoline service station. The exact date that the Site was no longer used for dispensing gasoline is not known precisely. By 1996 though, use of the facility had changed to a combination of auto parts supply and auto repair. Able Auto parts conducted business from the Site from 1966 until 1982. Uptown Radiator Service operated the Site from 1985 through 1994. Other tenants conducted similar business operations at the Property from 1999 until 2008. In March 2008, the building was torn down.

In 2008, one underground storage tank remained on the Site. This tank, UST1, had been closed-in-place in 2004 by filling it with a controlled density mix of concrete and sand. A second tank, UST2, had been removed from the Site in 2004. On January 24, 2005, GEOTEC Consultants conducted a site assessment that consisted of four boring to assess soil and ground water conditions. In GEOTEC's report of February 11, 2005, they noted that "a concrete patch covers the location of the previous removed UST" (UST2). The functions of these tanks are unknown but UST2 may have been used storing heating oil for use on-premises heating and not for re-sale.

Physiographic Setting:
The Site is situated on the south end of First Hill. The existing site grade slopes down from northwest toward the southeast with slope gradients ranging from about 25 to 60%. The majority of the east half of the Site is level. A concrete wall up to eight feet in height is located about five feet inside the north Site line for the eastern half of the Site for grade separation. The elevation difference between the highest point, near the northwest corner, and the lowest point, near the southeast corner, is approximately 28 feet.

Surface/Storm Water System:
The Site is vacant. Rainfall is absorbed and dispersed naturally. If the Site were to be re-developed, storm water would be handled with appropriate controls and dispersed to Seattle's storm water system.

Ecological Setting:
The area is developed having a mixture of residential and commercial/industrial areas. Along 12th Avenue, property uses are commercial/industrial. To the immediate south across, residential areas predominate. Residential areas also predominate to the west and north of the Site.

There are no parks or other areas of natural habitat in the immediate vicinity of the Site. However, the landscape vegetation and open areas comprising yards in the residential neighborhood would be considered terrestrial habitat for purpose of a terrestrial ecological evaluation.

Geology:
The Site is located in the Puget Sound Lowland geomorphic province, which consists mainly of glacially deposited sediments. The Puget Sound Lowland is a basin lying between the Cascade Mountains to the east and the Olympic Mountains to the west.

The Site is in an area mapped as "Qt", representing glacial till. Till is described as a dense, glacially compressed mixture of silt, sand, gravel and clay. Typically, till exhibits relatively low vertical hydraulic conductivity and this frequently results in the formation of trapped volumes of water referred to as "perched ground water". The "perched" water table (if present) is frequently seasonal and derives recharge primarily from the infiltration of precipitation through more permeable overlying soil.

Subsurface investigations have logged the conditions at the Site to consist of medium dense to dense fill or weather till over dense to very dense glacial till extending to a maximum explored depth of 20 feet bgs.

Ground Water:
Ground water is described as perched. It is seasonally present at depths of five to six feet. Perched ground water was noted at approximately nine to 10 bgs during the excavation of petroleum contaminated soils. Ground water levels are normally highest during the winter and early spring.

The direction of ground water has not been mapped as the planned installation of three monitoring wells by Riley in December 2011 resulted in only two being completed. Only one well (MW2) recharged. Based on regional topography, ground water is inferred to flow generally southeast.

Release and Extent of Contamination – Soil:
Initial Site Investigations (2005)
Four exploratory borings were completed to sample soil and ground water for analysis. None of the borings were completed as monitoring wells. The locations of these boring are identified in Enclosure A.

Concentrations of petroleum hydrocarbons characterized as gasoline, diesel, benzene and xylenes were present in the soil in the vicinity of UST-1. The highest concentrations of gasoline as TPH-G were reported as 2400 mg/kg. The highest concentration of diesel as TPH-D was reported as 4500 mg/kg. The highest reported concentration for benzene was 17 µg/kg; for xylenes the highest concentration was 30 mg/kg.

The areal extent of contamination remained undefined. GEOTECH consultants estimated the volume of impacted soil at 450 cubic yards covering an area of 500 square feet to a depth of ten feet bgs. Most of this volume was concentrated in the southeastern corner of the Site. The contamination began at approximately 2.5 feet bgs and extended to 10 feet bgs.

Concentrations of petroleum hydrocarbons were not identified in samples collected in the vicinity of UST-2

Interim Actions (2008)
In March 2008, one tank, UST-1, was removed. Elevated levels of diesel and heavy oil were present in the soil. Diesel results reported at TPH-D ranged from 5000 mg/kg to 20,000 mg/kg. Heavy Oil as TPH-O was present in the range of 6200 mg/kg to 11,000 mg/kg. These soil samples were taken near the walls of the tank excavation.

Approximately 806 tons were removed from the Site. The final excavation was approximately 41 feet measured east to west; 25 feet measured north to south and a uniform depth of 11 feet. Confirmation samples obtained from the bottom, and the north, east, and west wall of the excavation were all reported as non-detect.

No soil samples were obtained from the south wall as contamination was still visible as blue-gray staining.

Further excavation in the south wall was not recommended as shoring would have been necessary to prevent soil sloughing and collapse of the adjoining sidewalk and subsidence of East Fir Street. Potentially contaminated soil remains along the south wall in an area 40 feet long measured east to west. The wall height is eight feet. The penetration of soil into the bank is unknown.

Subsurface Investigation (2010)
In September 2010, three soil borings were drilled in the side walk right- of- way along the southern boundary of the Site and two borings in the sidewalk across East Fir Street. The maximum depth explored was 14 feet. Dense till was present beginning between 10 to 13 ft bgs. Concentrations of petroleum hydrocarbons in soil were below MTCA Method A cleanup levels for all samples submitted. **Enclosure A** presents the locations of these probes.

In October 2010, under order from the City of Seattle, the Site was re-graded to address slope stability issues associated with previous remedial excavations. Native soils from the western edge of the Site were repositioned along the northern half of the Site.

Additional Subsurface Investigation (2011-2012)
In December 2011 and January 2012, ten soil borings were advanced at the Site to convert to monitoring wells. Concentrations of TPH and BTEX in soil were not detected.

Subsurface Investigation (August-September 2012)
On September 18, 2012, three hollow stem auger soil borings were completed to a maximum depth of 14 feet bgs to investigate the soil and ground water concentrations along the southern boundary of the Site. These boring are referred to as HSA1 thru HSA3 in Riley Group's **Figure 3**. All of the soil samples collected for analysis were below MTCA Method A cleanup levels for soil.

Release Extent of Contamination – Ground Water:
Initial Site Investigation (2005)
On January 24, 2005 an exploratory subsurface investigation consisted of obtaining samples of soil and ground water using direct push probe drilling techniques. Four boring (B-1 through B-4) were advanced to a maximum depth of 12 ft. bgs. Only two ground water samples were submitted for analysis. Concentrations of gasoline, benzene and xylenes were present in one sample obtained from B-3. The reported value for TPH-G was: 40,000 µg/l; for benzene: 42 µg/l; for xylenes: 1700 µg/l.

Interim Actions (2008)
No monitoring wells were installed at the Site. The quality of the ground water remained undetermined.

Subsurface Investigation (2010)
Shallow ground water was present in all five test probes advanced in the south adjoining ROW at depths from six to 12 ft. bgs. Concentrations of petroleum hydrocarbons in water from these five sample points were below MTCA Method A cleanup levels for all samples submitted.

Additional Subsurface Investigation (2011-2012)
In December 2011, two monitoring wells were installed at the Site to characterize the ground water at the Site. Only one well, MW-2, recharged sufficiently to permit sampling. Another attempt to install additional monitoring wells was unsuccessful. Flow direction remains undefined. TPH and BTEX were not detected in the sample from MW-2. The depth to water at MW-2 is 7 ft bgs.

Subsurface Investigation (August 2012)
Ground water was not encountered during the drilling of HSA1 thru HSA3. The maximum depth explored was 13.5 feet bgs. Monitoring well MW1 has never produced enough water for adequate purging and sampling.

KING COUNTY

SITE ID:	**Lloyds Rocket & Heating Oil Co**	Cleanup Site ID: 5833	FS ID: 29398283
	Alternate Name(s): LLOYDS ROCKET & HEATING OIL CO		

LOCATION:		WRIA: 8	Lat/Long:	47.601	-122.317	View Vicinity Map
Address:	110 BOREN AVE S		Township	Range	Section	Legislative District: 37
	SEATTLE 98144		24N	4E	5	Congressional District: 9

STATUS:	**Cleanup Started**	Rank: 1	View Site Web Page	View Site Documents
	Responsible Unit: Northwest	Site Manager: Northwest Region	Statute: MTCA	
	Is Brownfield?	Has Environmental Covenant?	Is PSI Site?	
	NFA Received?	NFA Date:	NFA Reason:	

ASSOCIATED CLEANUP UNIT(s)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
6214	LLOYDS ROCKET & HEATING OIL CO	Upland	Independent Action	Cleanup Started		N42758

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed					Northwest Region
CleanupSite		Site Hazard Assessment/Federal Site Inspection	Completed	11/26/2014	6/3/2015		Ecology w/ Contractor	Musa, Donna
CleanupSite		Hazardous Sites Listing/NPL	Completed	6/9/2015	6/9/2015			Musa, Donna
Milestone		Cleanup Action Plan	Completed	4/27/2005	7/27/2005			Northwest Region
LUST		LUST - Notification	Completed	8/18/1997	8/18/1997			
LUST		LUST - Report Received	Completed	9/3/1997	9/3/1997			
LUST		LUST - Report Received	Completed	4/15/2005	4/15/2005			
LUST		LUST - Report Received	Completed	4/15/2005	4/15/2005			
VcpProject	NW1447	VCP Status Request	Completed	5/4/2009	6/1/2009			Olsen, Russ
VcpProject	NW1447	VCP Opinion on Cleanup Action Plan	Canceled	4/27/2005				Adams, Mark

AFFECTED MEDIA & CONTAMINANTS:

Media:

Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Benzene	C		C			

Non-Halogenated Solvents	C		C			
Petroleum-Gasoline	C		C			

Key:
B - Below Cleanup Level
C - Confirmed Above Cleanup Level
S - Suspected
R - Remediated
RA - Remediated-Above
RB - Remediated-Below

CleanupSiteDetails2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

July 1, 2015

Linwood Investment LLC
11532 15th Avenue NE, Suite 101
Seattle, WA 98125

Re: SITE HAZARD ASSESSMENT: Facility Site ID #29398283

Lloyds Rocket & Heating Oil Co
110 Boren Ave S
Seattle, WA 98144
Property Tax #9826700365
Cleanup Site ID 5833

Dear Sir or Madam:

The Washington State Department of Ecology (Ecology) is writing to inform you that the above referenced property was subject to a site hazard assessment (SHA) as required under the Model Toxics Control Act, on June 3, 2015. The site was determined to be contaminated with gasoline, diesel, benzene, toluene, ethylbenzene, and xylenes. The site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined by Ecology to be a 1, where a 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing ranking of this, and other recently assessed sites, in the August 2015 Special Issue of the Site Register. The hazard ranking will be used in conjunction with other considerations in determining Ecology's priority for future action at this site. This report is available here: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=5833. To view the documentation Ecology has available electronically; on the right-hand side of the web-page, click on View Electronic Documents.

For inquiries regarding what may occur with your site now that it is on Ecology's Hazardous Sites List, please contact me at (425) 649-7136 or by email at donna.musa@ecy.wa.gov.

Sincerely,

Donna Musa
Site Hazard Assessments
Toxics Cleanup Program

cc: Ted Benson, Ecology

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

SITE INFORMATION:

Cleanup Site ID: 5833

Lloyds Rocket & Heating Oil Co

Facility/Site ID: 29398283

110 Boren Ave S

Seattle, King County, WA 98144

Section:	5	Latitude:	47.60142
Township:	24N	Longitude:	-122.31716
Range:	4E	Tax/Parcel ID:	9826700365

Site Scored/ranked for the Hazardous Sites List Publication: August 2015

SITE DESCRIPTION:

The Lloyds Rocket & Heating Oil Co site (Site) is a former automotive service station and heating oil distribution facility located in Seattle, King County, Washington. The 0.33-acre property is located approximately 4,700 feet from Elliott Bay, and zoned for neighborhood commercial (NC3-65) use.

Residential properties are located to the west, northwest, and south of the Site. Adjacent properties to the north are under development as future mixed-use commercial/residential buildings. Bailey Gatzert Elementary School is located to the east, across 12th Avenue South, and various commertical properties are located northeast of the Site.

The Site is currently operated as a North Shore Hawaiian BBQ restaurant and Jucivana coffee and smoothies drive-through by Linwood Investment LLC.

The Site is currently operated as a restaurant with bar and a drive-up coffee shop.

The Site is located on a triangular parcel between East Yesler Way to the north, Boren Avenue South to the west-southwest, and 12th Avenue South to the east. The Site is located in the Yesler Terrace neighborhood of Seattle, located east of downtown Seattle.

SITE BACKGROUND:

A summary of prior operations/tenants at the subject property is presented below.

From	To	Operator/Tenant	Activity
1947	1970	Richfield Service Station (later Arco)	Automotive service and filling station
1970	1996	Lloyd's Rocket & Heating Oil Co	Automotive service station and fuel oil distribution
1996	2005	Erma L Lloyd	Unknown
2005	2007	Lakeside Properties LLC/James C Delong	Unknown (suspected restaurant)
2007	2015	Linwood Investment LLC	Restaurant and drive-through coffee stand

SITE CONTAMINATION:

In 1997 the Lloyds Rocket & Heating Oil Co site was reported to Washington State Department of Ecology (Ecology) and placed on the Leaking Underground Storage Tank (LUST) list.

The Site was historically operated as a gasoline service station and fuel oil distribution facility with two dispenser islands and six underground storage tanks (USTs). A service station with hydraulic lifts and a service bay was also present at the Site. In late 1991, the Site was identified by Ecology for enforcement based on noncompliance with UST regulations. The six USTs present at the Site had not been registered as required. Reportedly, the tanks were installed in the 1960s. Order DE 92TC-N284 was filed by Ecology in September 1992

regarding violations of UST compliance regulations.

In 1997, Galloway Environmental oversaw the removal of six USTs and conducted soil sampling to characterize Site conditions. Four 4,000-gallon gasoline USTs (USTs 1 through 4), one 6,000-gallon diesel UST (UST 5) and one 300-gallon used oil UST (UST 6) were decommissioned and removed. Approximately 80 cubic yards of soil were excavated from around the tanks. The depth of the UST excavations were not clearly specified, but groundwater was not encountered and the tank excavations were backfilled with imported fill materials. A hole was identified in the base of UST 1 during removal activities. It is unclear whether the former gasoline-containing USTs were previously used for storing leaded gasoline.

Soil samples were collected from the excavations, from the area of the fuel pump islands, and from stockpiled soils. Based on the collection location of the sample relative to the corresponding former tank contents, soil samples were analyzed for gasoline- and diesel-range hydrocarbons, benzene, toluene, ethylbenzene and xylenes (BTEX constituents), and/or undifferentiated total petroleum hydrocarbons (TPH). Analytical results identified concentrations of gasoline-range hydrocarbons in soil above Model Toxics Control Act (MTCA) Method A cleanup levels in samples collected below and/or adjacent to UST 1, UST 2, UST 3, and the western pump island. Reported concentrations of diesel-range hydrocarbons were below the current (2014) MTCA Method A cleanup levels for soil near UST 5, however concentrations of undifferentiated TPH near the former used oil UST were above current MTCA Method A cleanup levels for diesel- and oil-range petroleum hydrocarbons.

Galloway Environmental conducted additional site characterization activities in 1997 following the identification of petroleum-impacted soil near the former USTs. Other environmental liabilities noted at the Site included the potential for hydrocarbon leaks near the eastern fuel island, which was not investigated during UST decommissioning activities; a hydraulic lift in the service area; an oil/water separator in the service bay; possible leaks from 55-gallon drums stored at the property; and potential polychlorinated biphenyl (PCB)-containing light fixtures in the building. It is assumed that the fueling islands and associated piping have been removed, however characterization of soils associated with these features has not been reported. Samples of sheet tile in the office floor and roofing material did not contain asbestos above laboratory detection limits.

PAST REMEDIATION ACTIVITIES:

Additional characterization of soil and groundwater conditions was conducted by Farallon Consulting in 2004. Three groundwater monitoring wells (MW-1 through MW-3) were advanced and installed and soil samples were collected from the borings. Groundwater was encountered at depths of 10 to 12 feet below ground surface (bgs), and boreholes were advanced to depths of 24 feet bgs at MW-1, and 29 feet bgs at MW-2 and MW-3. Field indications of petroleum impacts were identified in soil samples from each boring location, at depths less than 15 feet bgs. Analytical soil results indicated concentrations of gasoline-, oil-, and diesel-range hydrocarbons, and/or BTEX constituents above MTCA Method A cleanup levels were present in soil samples collected from the three boring locations. A groundwater sample from well MW-1 contained concentrations of gasoline-range hydrocarbons, benzene and xylenes above MTCA Method A cleanup levels.

In 2005 the Site enrolled in the Voluntary Cleanup Program (VCP) with site ID NW1447. The property owners proposed implementing institutional controls (in particular treating paving at the Site as an engineered cap) to mitigate exposure to human and environmental receptors. Further characterization of Site conditions has not been reported to Ecology, nor have reports of remedial activities to address confirmed impacts to soil and groundwater at the Site. The Site's VCP agreement was terminated in 2009 due to inactivity.

CURRENT SITE CONDITIONS:

Gasoline, diesel, and BTEX impacts to soil and groundwater have been confirmed at the Site, however the lateral extent of impacts has not been fully characterized. The source of impacts appears to be former USTs, which were removed from the property in 1997, however other sources may still be present at the Site.

The approximate depth to groundwater is 10 to 12 feet below ground surface, with groundwater flowing to the southeast (as interpreted by Farallon Consulting in 2004). Subsurface soils are sand and silt with some gravel (as observed during monitoring well installation).

SPECIAL CONSIDERATIONS:

Checked boxes indicate routes applicable for Washington Ranking Method (WARM) scoring

SITE HAZARD ASSESSMENT
Worksheet 1
Summary Score Sheet

☐ **Surface Water**

Site contamination not expected to impact surface water.

☑ **Air**

Gasoline-range hydrocarbons and associated volatiles are present in soil and groundwater and available for vapor transport to air.

☑ **Groundwater**

Gasoline- and diesel-range hydrocarbons and associated substances are confirmed present in soil and groundwater at the Site.

The lateral extent of soil and groundwater impacted by hydrocarbons has not been fully characterized. It is unclear whether leaded gasoline was previously stored in the Site USTs.

ROUTE SCORES:

Surface Water/ Human Health:		Surface Water/ Environment:	
Air/ Human Health:	41.2	Air/ Environment:	1.6
Groundwater/ Human Health:	41.9		

Overall Rank: 1

REFERENCES:

1 Ecology Water Resources Explorer, accessed December 2014. https://fortress.wa.gov/ecy/waterresources/map/WaterResourcesExplorer.aspx

2 Farallon Consulting, 2004, Results of Limited Subsurface Investigation Lloyd's Rocket & Heating Oil Company Property 110 Boren Avenue South, Seattle, Washington. 18 October.

3 Galloway Environmental, Inc., 1997, Environmental Site Assessment and Limited Asbestos Survey at Lloyd's Rocket & Heating Oil Property 110 Boren Avenue South, Seattle, Washington. October.

4 Galloway Environmental, Inc., 1997, Report of Underground Storage Tank (UST) Removals and Site Assessment, 110 Boren Avenue South, Seattle, Washington. 3 September.

5 King County GIS Center iMAP application, Property Information, Groundwater Program, and Sensitive Areas mapsets. Accessed December 2014. http://www.kingcounty.gov/operations/GIS/Maps/iMAP.aspx

6 Missouri Census Data Center, Circular Area Profiles - 2010 census data around a point location. http://mcdc.missouri.edu/websas/caps10c.html. Accessed December 2014.

7 National Climatic Data Center 2011 Local Climatological Data for Seattle, Seattle Tacoma Airport. http://www1.ncdc.noaa.gov/pub/orders/IPS-90B1F39F-6CFA-4A6B-AA82-5ED1FF897CCC.pdf

8 Seattle Times (online edition), 1996, Joseph Lloyd, 80, 'Filling-Station Man' Who Loved His Job (obituary). Accessed 17 December 2014. http://community.seattletimes.nwsource.com/archive/?date=19961218&slug=2365556

9 WARM Scoring Manual

10 WARM Toxicological Database

11 Washington Department of Transportation 24-hour Isopluvial Maps, January 2006 update. http://www.wsdot.wa.gov/publications/fulltext/Hydraulics/Wa24hrIspoluvials.pdf

SITE HAZARD ASSESSMENT
Worksheet 2
Route Documentation

Cleanup Site ID: 5833 Lloyds Rocket & Heating Oil Co

Facility/Site ID: 29398283

1. SURFACE WATER ROUTE

List those substances to be considered for scoring:

Not applicable

Explain the basis for choice of substances to be used in scoring:

Not applicable

List those management units to be considered for scoring:

Not applicable

Explain basis for choice of unit to be used in scoring:

Not applicable

2. AIR ROUTE

List those substances to be considered for scoring:

Gasoline, benzene, toluene, ethylbenzene and xylenes

Explain the basis for choice of substances to be used in scoring:

Confirmed in soil and/or groundwater above MTCA Method A cleanup levels

List those management units to be considered for scoring:

Soil vapor pathway

Explain basis for choice of unit to be used in scoring:

Possible vapor intrusion pathway

3. GROUNDWATER ROUTE

List those substances to be considered for scoring:

Gasoline, diesel, benzene, toluene, ethylbenzene and xylenes

Explain the basis for choice of substances to be used in scoring:

Confirmed in soil and/or groundwater above MTCA Method A cleanup levels

List those management units to be considered for scoring:

Groundwater

Explain basis for choice of unit to be used in scoring:

Confirmed present in groundwater and shallow soil

Worksheet 5

Air Route

CSID: 5833 **Site Name:** Lloyd's Rocket & Heating Oil Co

1.0 Substance Characteristics

1.1 Introduction (WARM Scoring Manual) - Please Review before scoring

1.2 Human Toxicity

Substance	Ambient Air Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
Gasoline (benzene)	10	3	X	5
Ethylbenzene	1	X	X	X
Toluene	1	X	1	X
Xylenes	1	3	1	X

Highest Value 10

Bonus Points? 0

Toxicity Value 10

1.3 Mobility

Gaseous Mobility	Max Value:	4
Particulate Mobility	Soil Type:	
	Erodibility:	
	Climatic Factor:	

Mobility Value 4

1.4 Final Human Health Toxicity/Mobility Matrix Value **HH Final Matrix Value** 20

1.5 Environmental Toxicity/Mobility

Substance	Non-human Mammalian Inhalation Toxicity (mg/m3)	Acute Value	Mobility Value	Table A-7 Matrix Value
Gasoline (benzene)	31947	3	4	6
Ethylbenzene	X	X	3	X
Toluene	X	X	4	X
Xylenes	21714	3	3	5

Env. Final Matrix Value 6

1.6 Substance Quantity

Amount: up to 0.33 acres

Basis: Area of entire property

Substance Quantity Value 5

Worksheet 5

Air Route

CSID: 5833 **Site Name:** Lloyd's Rocket & Heating Oil Co

2.0 Migration Potential

2.1 Containment Containment Value: 5

Explain Basis: Cover assumed to be over 2 feet, with no vapor collection system

3.0 Targets

3.1 Nearest Population Population Distance Value: 10

<150 feet to Yesler Terrace Housing Project

3.2 Distance to and name of nearest sensitive environments Sensitive Environment Value: 7

750 feet to Yesler Terrace Playfield

3.3 Population within 0.5 miles Population Value: 75

13640 population

4.0 Release Release to Air Value: 0

Explain basis for scoring a release to air:

No confirmed release to air

Pathway Scoring - Air Route, Human Health Pathway

$AIR_H = (SUB_{AH}*60/329)*[REL_A+(TAR_{AH}*35/85)]/24$

Where:

SUB_{AH} =(Human toxicity + 5) * (Containment + 1) + Substance Qty	SUB_{AH}	155
REL_A = Release to Air	REL_A	0
TAR_{AH} = Nearest Population + Population within 1/2 mile	TAR_{AH}	85.0
	AIR_H	41.2

Pathway Scoring - Air Route, Environmental Pathway

$AIR_E = (SUB_{AE}*60/329)*[REL_A+(TAR_{AE}*35/85)]/24$

Where:

SUB_{AE} =(Environmental Toxicity Value +5)*(Containment +1) +Substance Qty	SUB_{AE}	71
REL_A = Release to Air	REL_A	0
TAR_{AE} = Nearest Sensitive Environment	TAR_{AE}	7.0
	AIR_E	1.6

Worksheet 6

Groundwater Route

CSID: 5833 **Site Name:** Lloyds Rocket & Heating Oil Co

1.0 Substance Characteristics

1.1 Human Toxicity

Substance	Drinking Water Standard Value	Acute Toxicity Value	Chronic Toxicity Value	Carcinogenicity Value
gasoline (benzene)	8	3	X	5
diesel	4	5	3	X
toluene	2	3	1	X
ethylbenzene	4	3	1	X
xylenes	2	10	1	X
lead (suspected)	6	X	10	X

Highest Value 10

Bonus Points? +2

Toxicity Value 12

1.2 Mobility

Cations/Anions Max Value:

Solubility Max Value: 3 Mobility Value 3

1.3 Substance Quantity

Amount: 15,000 cubic yards

Basis: Estimated volume based on confirmed and suspected extent of impacted soils

Substance Quantity Value 5

2.0 Migration Potential

2.1 Containment Containment Value 10

Explain Basis: Contaminated soil

2.2 Net Precipitation >10-20 inches Net Precipitation Value 2

2.3 Subsurface Hydraulic Conductivity Conductivity Value 3

Sand and silt with gravel

2.4 Vertical Depth to Groundwater 10 feet

Confirmed release: Yes Depth to Aquifer Value 8

3.0 Targets

3.1 Groundwater Usage Aquifer Use Value 4

Industrial, irrigation and domestic

3.2 Distance to Nearest Drinking Water Well 5280 feet

Well Distance Value 1

3.3 Population Served within 2 Miles Population Served Value 2

6 people

Worksheet 6

Groundwater Route

CSID: 5833 **Site Name:** Lloyds Rocket & Heating Oil Co

3.4 Area Irrigated by GW Wells within 2 miles Area Irrigated Value 1.7

5 acres

4.0 Release Release to Groundwater Value 5

Explain basis for scoring a release to groundwater:

Confirmed release

Pathway Scoring - Groundwater Route, Human Health Pathway

$GW_H = (SUB_{GH}*40/208)*[(MIG_G*25/17)+REL_G+(TAR_{GH}*30/165)]/24$

Where:

SUB_{GH} =(Human toxicity + mobility + 3) * (Containment + 1) + Substance Qty	SUB_{GH}	203
MIG_G=Depth to Aquifer+Net Precip + Hydraulic Conductivity	MIG_G	13
REL_G = Release to Groundwater	REL_G	5
TAR_{GH} = Aquifer Use + Well Distance + Population Served + Area Irrigated	TAR_{GH}	9.1
	GW_H	41.9

Washington Ranking Method

Route Scores Summary and Ranking Calculation Sheet

Site Name: Lloyds Rocket & Heating Oil Co **CSID:** 5833

Site Address: 110 Boren Ave S; Seattle, WA 98144 **FSID:** 29398283

HUMAN HEALTH ROUTE SCORES

Enter Human Health Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	41.2	5
Groundwater	41.9	4

H=	5
M=	4
L=	0

$$\frac{H^2 + 2M + L}{8} = \frac{25 + 8 + 0}{8}$$

Human Health Priority Bin Score: **5**

rounded up to next whole number

ENVIRONMENT ROUTE SCORES

Enter Environment Route Scores for all Applicable Routes:

Pathway	Route Score	Quintile Group
Surface Water	ns	0
Air	1.6	2

H=	2
L=	0

$$\frac{H^2 + 2L}{7} = \frac{4 + 0}{7}$$

Environment Priority Bin Score: **1**

rounded up to next whole number

Comments/Notes:

FINAL MATRIX RANKING **1**

FOR REFERENCE:

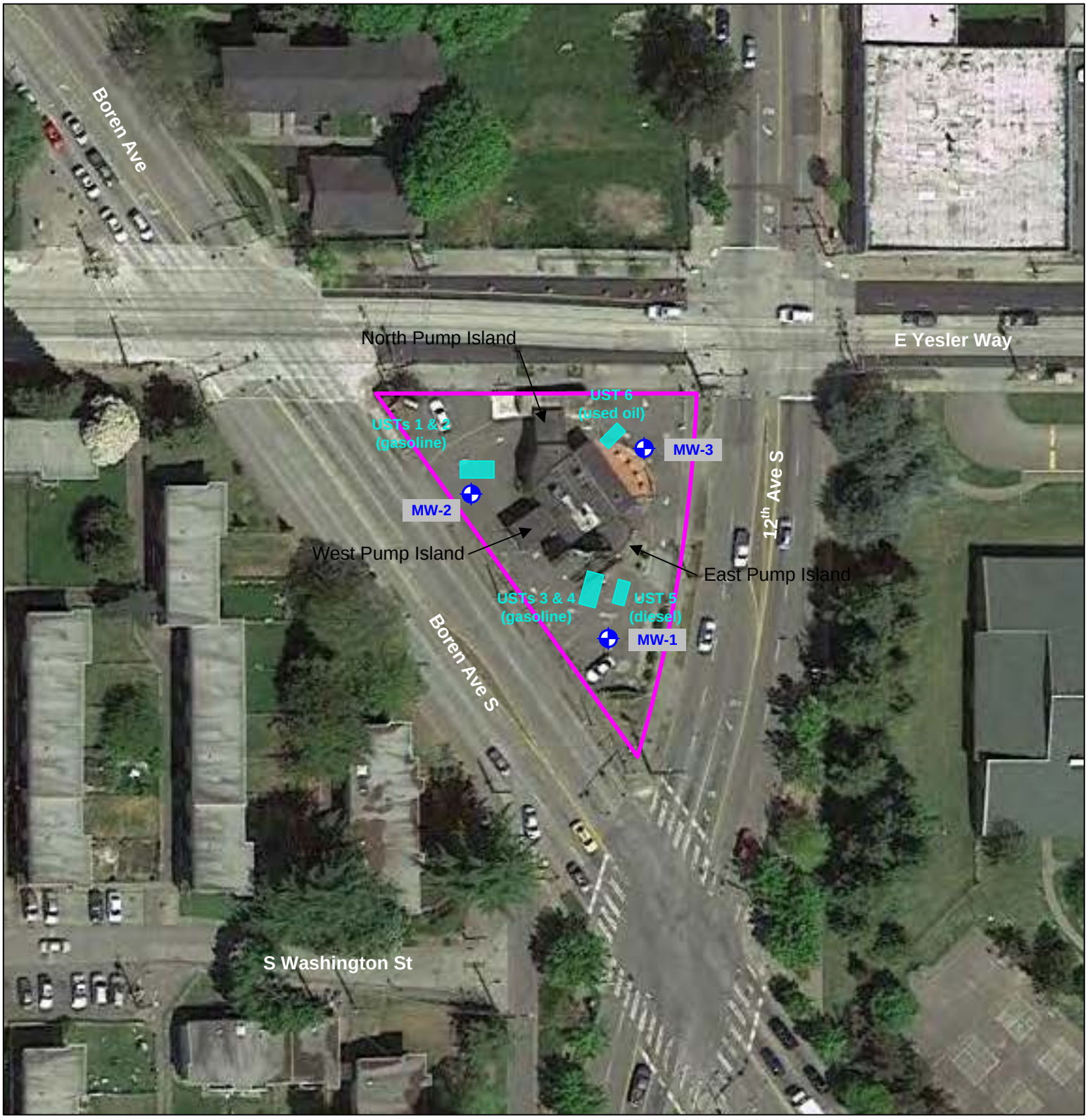
Final WARM Bin Ranking Matrix

Human Health Priority	Environment Priority 5	4	3	2	1	N/A
5	1	1	1	1	1	1
4	1	2	2	2	3	2
3	1	2	3	4	4	3
2	2	3	4	4	5	3
1	2	3	4	5	5	5
N/A	3	4	5	5	5	NFA

Quintile Values for Route Scores - February 2015 Values

Quintile	Human Health Surface Water	Air	Ground Water	Environment Surface Water	Air
5	>= 30.7	>= 37.6	>= 51.6	>= 50.9	>= 29.9
4	>= 23.1	>= 23.8	>= 40.9	>= 31.2	>= 22.5
3	>= 14.1	>= 15.5	>= 33.2	>= 23.6	>= 14.0
2	>= 7.0	>= 8.5	>= 23.5	>= 11.0	>= 1.6
1	<= 6.9	<= 8.4	<= 23.4	<= 10.9	<= 1.5

Quintile value associated with each route score entered above



Legend:

- Property location (approximate)
- Former UST location (approximate)
- Monitoring well (approximate)

Notes:

1. All locations are approximate, and not to scale.

N

Lloyds Rocket & Heating Oil Co
111 Boren Avenue South
Seattle, WA 98144

DEPARTMENT OF ECOLOGY
State of Washington

Site Overview Map

CSID 5833
CSID5833.vsd

KING COUNTY

SITE ID:	**Star Laundry**		Cleanup Site ID: 12676	FS ID: 979
	Alternate Name(s):	Star Laundry		

LOCATION:		WRIA: 8	Lat/Long:	47.603	-122.316	View Vicinity Map
Address:	160 12TH AVE		Township	Range	Section	Legislative District: 37
	SEATTLE 98122		24N	4E	5	Congressional District: 9

STATUS:	**Awaiting Cleanup**	Rank: 3	View Site Web Page	View Site Documents
	Responsible Unit: Northwest	Site Manager: Northwest Region	Statute: MTCA	
	Is Brownfield?	Has Environmental Covenant?	Is PSI Site?	
	NFA Received?	NFA Date:	NFA Reason:	

ASSOCIATED CLEANUP UNIT(s)

cuID	Cleanup Unit Name	Unit Type	Process Type	Unit Status	Size (Acres)	ERTS ID
13320	Star Laundry	Upland	No Process	Awaiting Cleanup		655254

SITE ACTIVITIES:

Applies to:	Related ID (Unit-LUST-VCP)	Activity Display Name	Status	Start Date	End Date	Legal Mechanism	Performed By	Project Manager
CleanupSite		Site Discovery/Release Report Received	Completed	2/6/2015	2/6/2015			Musa, Donna
CleanupSite		Initial Investigation / Federal Preliminary Assessment	Completed	5/4/2015	5/4/2015		Ecology	Cardona, Tamara
CleanupSite		Early Notice Letter(s)	Completed	6/11/2015	6/11/2015			Musa, Donna
CleanupSite		Site Hazard Assessment/Federal Site Inspection	Completed	7/29/2015	8/5/2015		Ecology	Cardona, Tamara
CleanupSite		Hazardous Sites Listing/NPL	Completed	8/7/2015	8/7/2015			Musa, Donna
Upland		Non-LUST Ind Report Received	Completed	2/6/2015	2/6/2015			

AFFECTED MEDIA & CONTAMINANTS:

Media:

Contaminant:	Ground Water	Surface Water	Soil	Sediment	Air	Bedrock
Halogenated Solvents	C					

Key:
B - Below Cleanup Level
C - Confirmed Above Cleanup Level
S - Suspected
R - Remediated
RA - Remediated-Above
RB - Remediated-Below

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

August 10, 2015

Mr. Hamed Saedi
1444 185th Ave NE
Bellevue, WA 98008

Re: SITE HAZARD ASSESSMENT: Facility Site ID #979

Star Laundry
160 12th Ave
Seattle, WA 98122
Property Tax # 3927400005
Cleanup Site ID 12676

Dear Mr. Saedi:

The Washington State Department of Ecology (Ecology) is writing to inform you that the above referenced property was subject to a site hazard assessment (SHA) as required under the Model Toxics Control Act, on August 5, 2015. The site was determined to be contaminated with tetrachloroethylene, trichloroethylene, vinyl chloride, cis-1,2 dichloroethylene, 1,1,2-trichloroethylene, and gasoline. The site's hazard ranking, an estimation of the potential threat to human health and/or the environment relative to all other Washington state sites assessed at this time, has been determined by Ecology to be a 3, where a 1 represents the highest relative risk and 5 the lowest.

For your information, Ecology will be publishing ranking of this and other recently assessed sites in the August 2015 Special Issue of the Site Register. The hazard ranking will be used in conjunction with other considerations in determining Ecology's priority for future action at this site. This report is available here: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=12676. To view the documentation Ecology has available electronically; on the right-hand side of the webpage, click on View Electronic Documents.

For inquiries regarding what may occur with your site now that it is on Ecology's Hazardous Sites List, please contact me at (425) 649-7136 or by email at donna.musa@ecy.wa.gov.

Sincerely,

Donna Musa
Site Hazard Assessments
Toxics Cleanup Program

cc: Ted Benson, Ecology HQ
Tamara Cardona, Ecology NWRO

CONESTOGA-ROVERS & ASSOCIATES

www.CRAworld.com

Groundwater Monitoring Report
Fourth Quarter 2014

Former Star Laundry
160 12th Avenue
Seattle, Washington

Conestoga-Rovers & Associates
20818 44th Ave. West, Suite 190
Lynnwood, Washington 98036

January 2015 • 062224 • Report No. 1

Partners in Sustainability

CONESTOGA-ROVERS & ASSOCIATES

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Groundwater Monitoring Report - Fourth Quarter 2014

Former Star Laundry
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Jing Song

Christina McClelland

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January 2015 • 062224 • Report No. 1

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List of Appendices

Section 1.0 Introduction

Conestoga-Rovers & Associates (CRA) prepared this report to document the fourth quarter 2014 groundwater monitoring activities performed at the former Star Laundry located at 160 12th Avenue, Seattle, Washington (Site, Figure 1).

Section 2.0 Findings

2.1 Monitoring Well Re-development

Blaine Tech Services, Inc. (Blaine) re-developed all Site monitoring wells MW-1A and MW-2 through MW-5 on October 16, 2014. Well re-development included surging and purging to remove sediment within the well casing and promote hydraulic conductivity. Blaine attempted to continue development until conditions (temperature, pH, conductivity, and turbidity) stabilized. However, turbidity did not drop below 1,000 Nephelometric Turbidity Units (NTUs) due to the insufficient groundwater in the wells. Blaine's field data sheets for well re-development are included in Appendix A.

2.2 Monitoring Well Gauging and Sampling

Blaine gauged and sampled Site monitoring wells MW-1A and MW-2 through MW-5 on October 21, 2014. The samples were collected without purging the wells due to the limited amount of groundwater present in the wells. The wells also dewatered during sample collection resulting in turbid groundwater samples. Field notes and observations from the sampling event are presented in Appendix B.

The groundwater samples were analyzed for the following.

- Total petroleum hydrocarbons (TPH) as gasoline (TPHg) by Method NWTPH-Gx
- TPH as diesel (TPHd) and TPH as heavy oil (TPHo) by Method NWTPH-Dx
- Volatile organic compounds (VOCs) by EPA Method 8260B
- Total and dissolved arsenic, cadmium, chromium, and lead by EPA Method 6020

Tabulated data are provided in Tables 1A and 1B, and the certified analytical reports are presented in Appendix C.

2.3 Groundwater Elevations and Flow Directions

The groundwater contour map for the fourth quarter of 2014 is presented as Figure 2. During the fourth quarter, groundwater elevations ranged from 36.63 feet relative to mean sea level (ft msl) measured in well MW-4 to 38.94 ft msl measured in well MW-1A. Current and prior sampling data are provided in Tables 1A and 1B. The groundwater flow direction beneath the Site was northeasterly at an estimated hydraulic gradient of 0.05.

2.3 Fourth Quarter 2014 Groundwater Concentrations

During the fourth quarter 2014, the following analyte concentrations exceeded the State of Washington Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Method A cleanup levels.

- TPHg in well MW-5
- Trichloroethene (TCE) in well MW-1A and MW-5
- Tetrachloroethene (PCE) in well MW-1A, MW-2, MW-3, MW-4, and MW-5
- Cis-1,2-dichloroethene (cis 1,2-DCE) in well MW-1A and MW-5
- Vinyl chloride in well MW-1A
- Arsenic in well MW-2
- Lead in well MW-4

The TCE, PCE, and cis 1,2-DCE concentrations in groundwater were contoured and are shown on Figures 3 through 5, respectively.

Section 3.0 Discussion

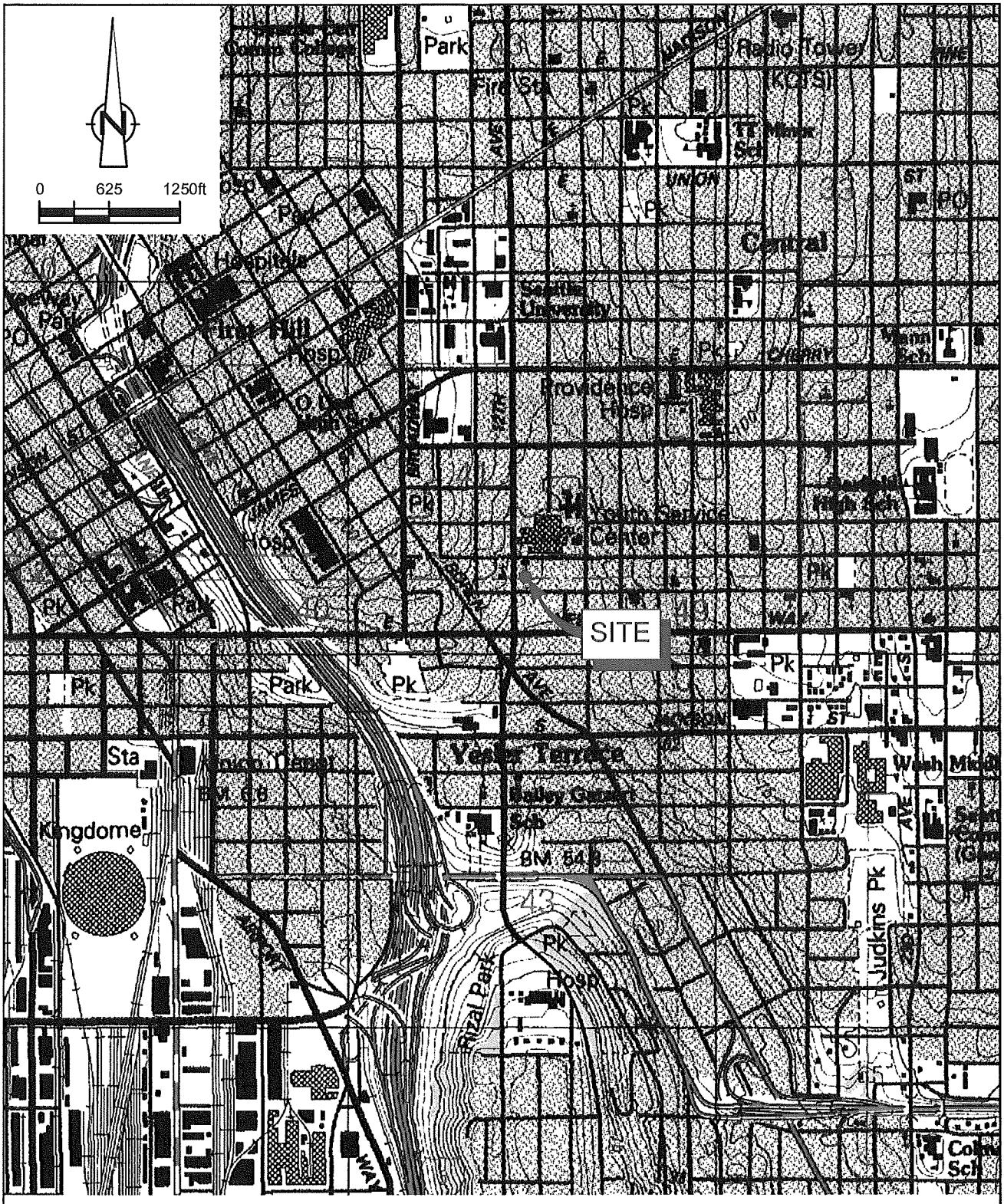
The groundwater analytical data indicate that one or more of the VOCs and metal concentrations remain above MTCA Method A cleanup levels in all Site monitoring wells MW-1A, and MW-2 through MW-5. Among these, PCE were detected at concentrations above MTCA Method A cleanup levels in all Site monitoring wells. Concentrations of TCE and cis 1,2-DCE were detected at concentrations above MTCA Method A cleanup levels in two monitoring wells (MW-1A and MW-5). Concentrations of vinyl chloride, arsenic, and lead were detected at concentrations above MTCA Method A cleanup levels in one monitoring well each; MW-1A (vinyl chloride), MW-2 (arsenic), and MW-4 (lead). In addition, TPHg was detected at a concentration above the MTCA Method A cleanup level in well MW-5, indicating that there may have been a petroleum release in the vicinity of the sump.

These results indicated that PCE, TCE, and cis 1,2-DCE are major constituents of concern (COC) in groundwater. Monitoring well MW-5 contained the highest concentrations of these COCs: 11,000 micrograms per liter (µg/L) of PCE, 1,380 µg/L of TCE, and 485 µg/L of cis 1,2-DCE. Monitoring well MW-5 is located adjacent to the former sump at the southeast corner of the Site, which may be the source of the VOC plume. Monitoring well MW-1A is located approximately 25 feet west of MW-5, which contained concentrations of PCE, TCE, and cis 1,2-DCE lower than MW-5, but still above MTCA Method A cleanup levels, indicating the VOC plume had migrated to the west.

PCE concentrations were detected above MTCA Method A cleanup levels in all Site monitoring wells indicating that the VOC groundwater plume is not fully delineated. Additional investigation is warranted to define the plume. In addition, the current monitoring well network consists entirely or 1" diameter pre-pack monitoring wells, which produce very little groundwater and may not be representative of in-situ groundwater conditions. Additional and/or replacement monitoring wells may be warranted in order to obtain more representative data.

Additional recommendations for evaluating data gaps will be proposed under separate cover.

Figures

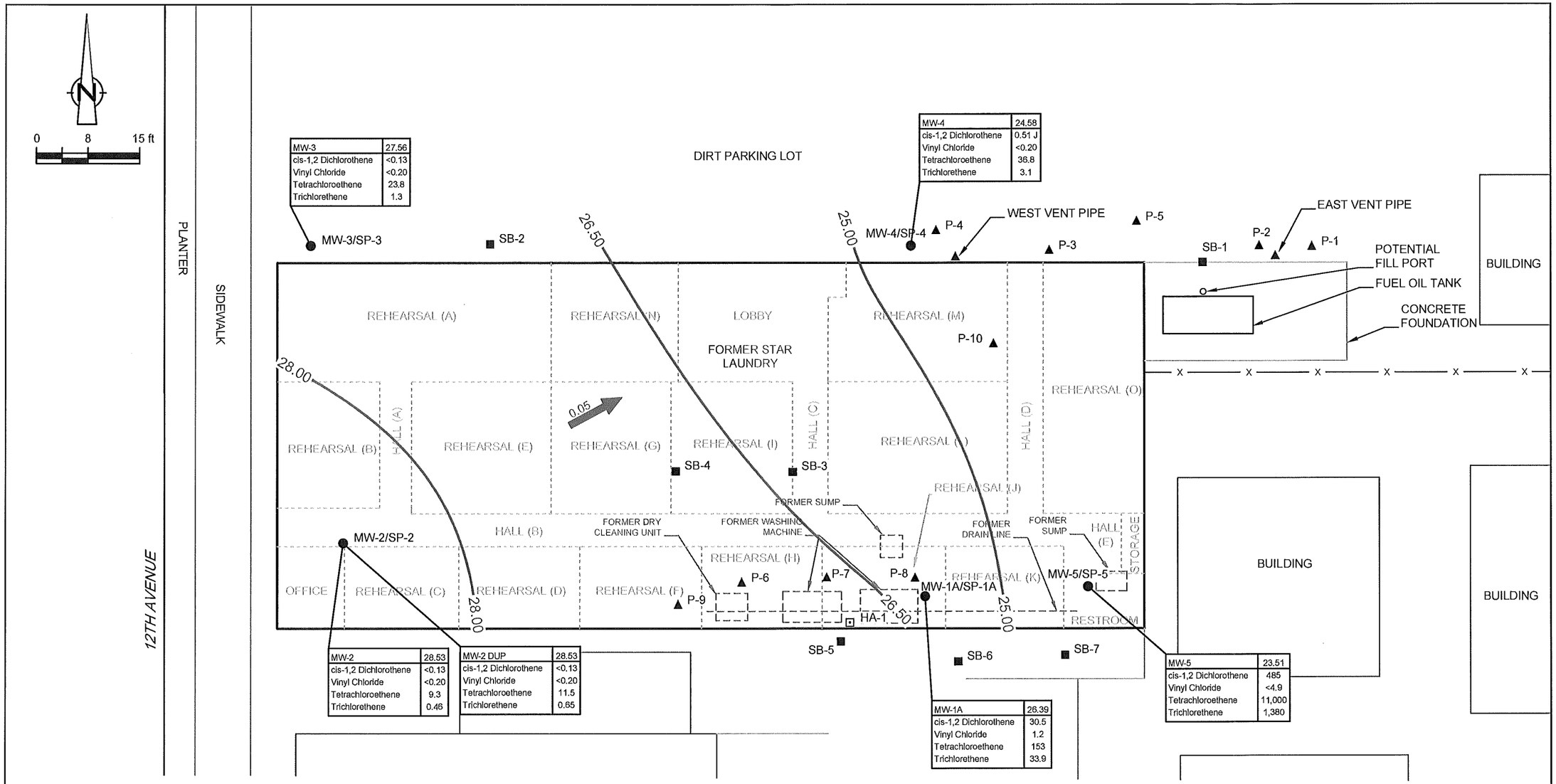


SOURCE: USGS QUADRANGLE MAP: SEATTLE SOUTH, WA.

figure 1

VICINITY MAP
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

62224-04(001)GN-WA002 JAN 12/2015



LEGEND

- MONITORING WELL LOCATION
- BORING LOCATION
- HAND AUGER BORING LOCATION
- GEOPROBE BORING LOCATION
- GROVEBOX FLOOR PLAN
- x FENCE LINE
- 28.00 GROUNDWATER ELEVATION CONTOUR, IN FEET, REFERENCED TO ARBITRARY DATUM
- 0.05 GROUNDWATER FLOW DIRECTION AND GRADIENT

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

MW-5	23.51
cis-1,2 Dichlorothene	485
Vinyl Chloride	<4.9
Tetrachloroethene	11,000
Trichlorethene	1,380

SAMPLE LOCATION — GROUNDWATER ELEVATION — RESULT — PARAMETER

NOTE:
ALL CONCENTRATIONS REPORTED IN MICROGRAMS PER LITER (µg/L).

MTCA METHOD A CLEANUP LEVELS (µg/L)

cis-1,2 Dichloroethene	16
Vinyl Chloride	0.2
Tetrachloroethene	5
Trichlorethene	5

figure 2

GROUNDWATER CONTOUR AND CHEMICAL CONCENTRATION MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

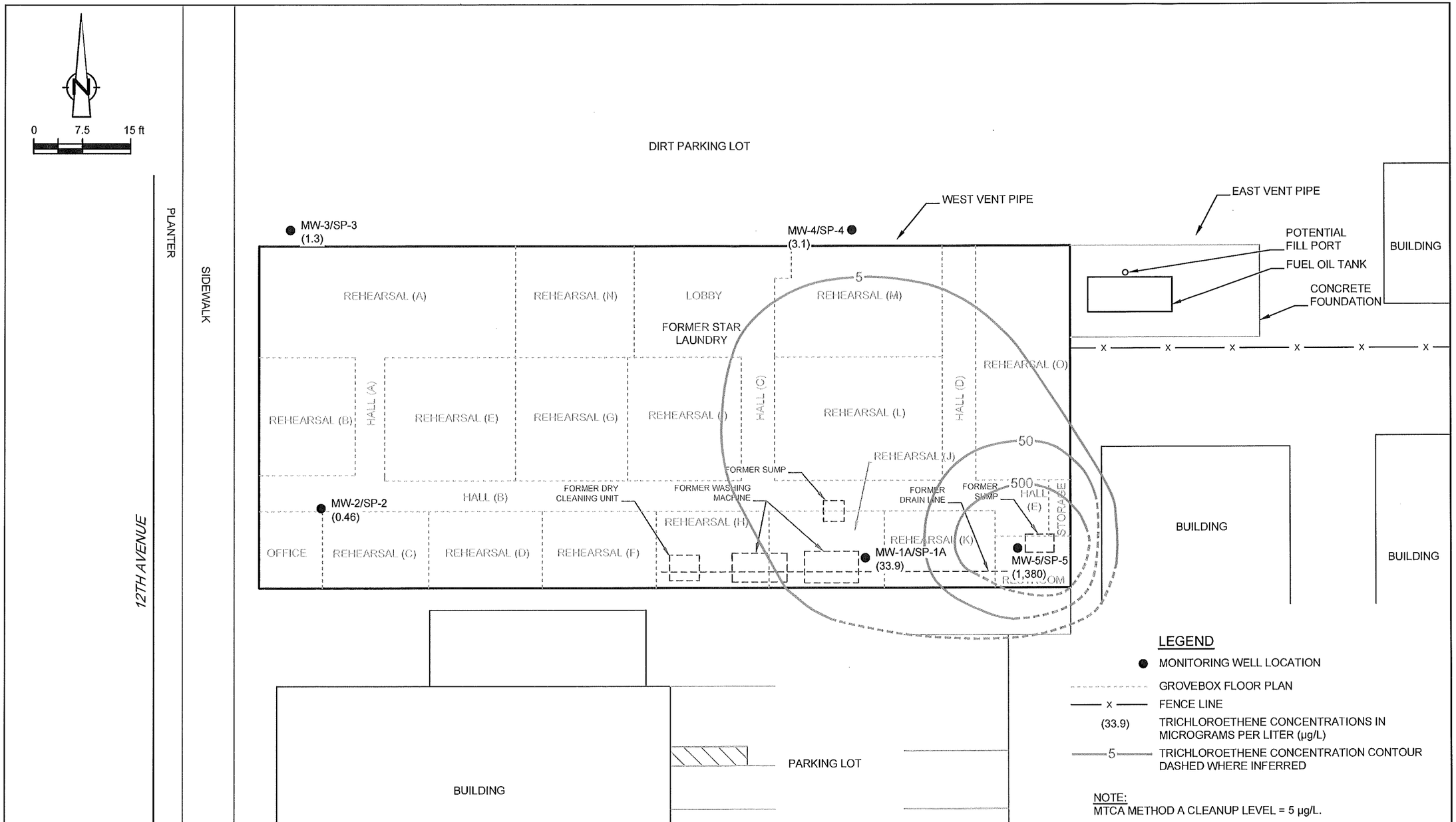
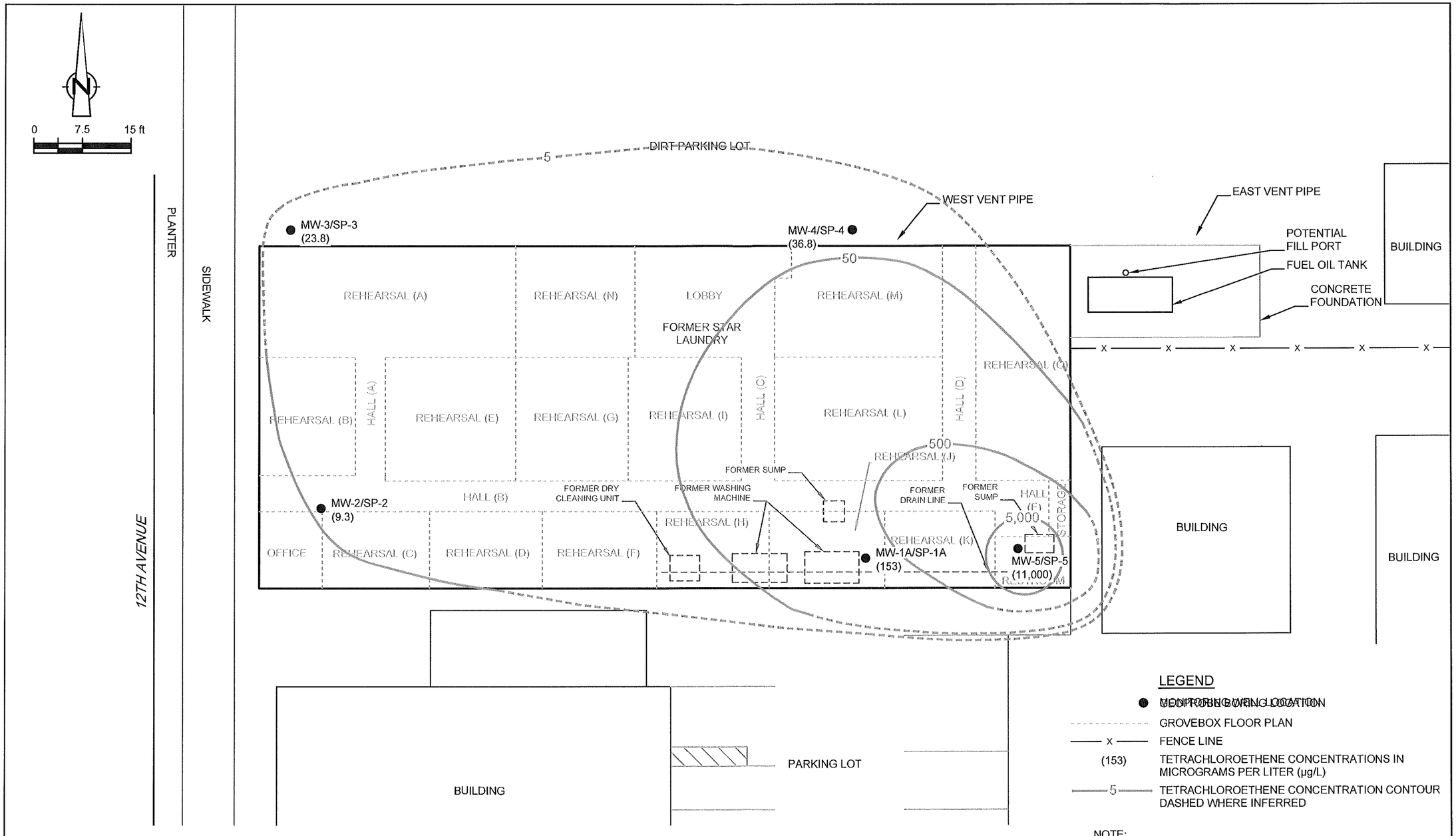


Figure 3

TRICHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

62224-04(001)GN-WA003 JAN 13/2015



LEGEND

- MONITORING WELL LOCATION
- GROVEBOX FLOOR PLAN
- FENCE LINE
- (153) TETRACHLOROETHENE CONCENTRATIONS IN MICROGRAMS PER LITER (µg/L)
- 5 TETRACHLOROETHENE CONCENTRATION CONTOUR DASHED WHERE INFERRED

NOTE:
MTCA METHOD A CLEANUP LEVEL = 5 µg/L.

Figure 4

TETRACHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

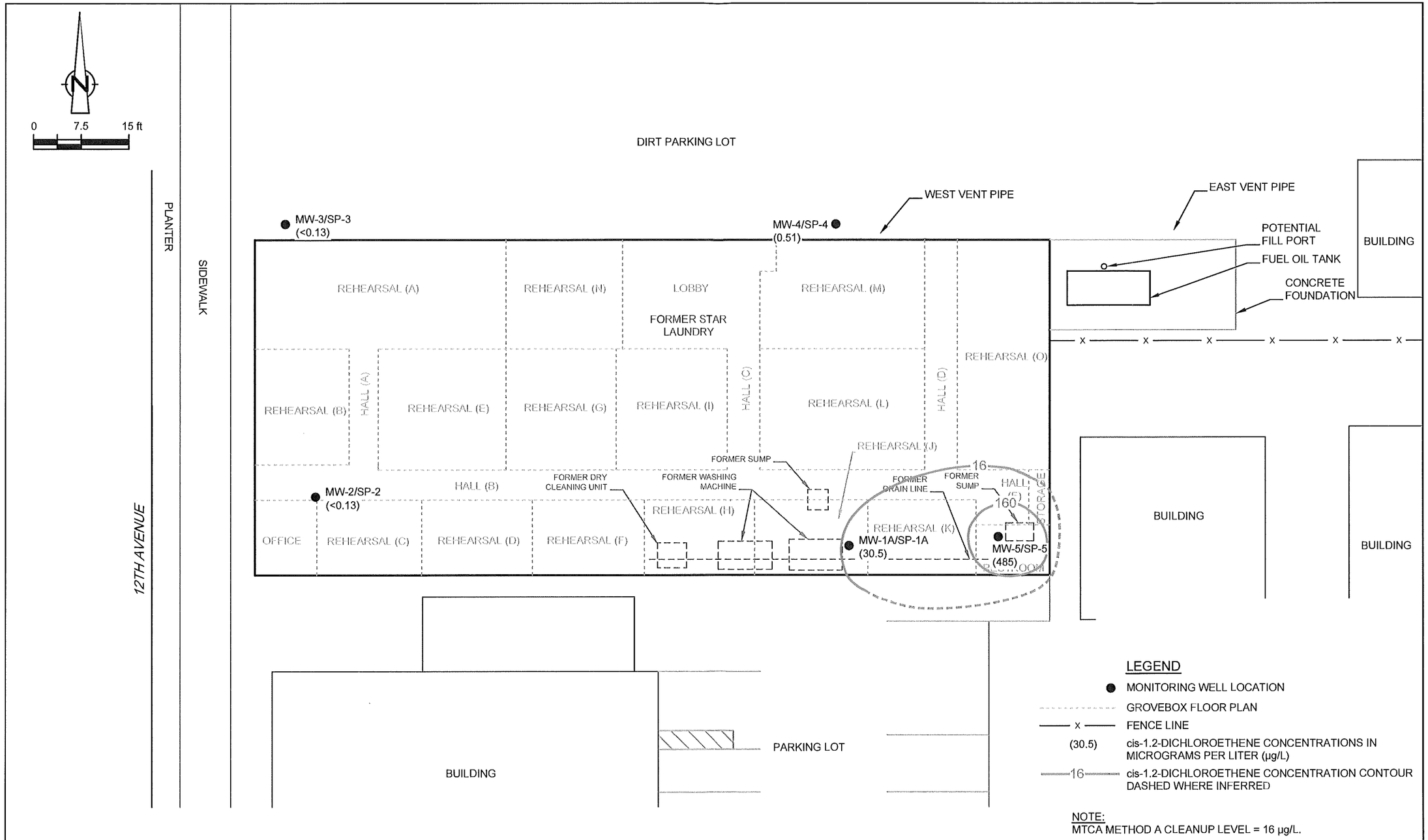


Figure 5

cis-1.2-DICHLOROETHENE ISOCONCENTRATION CONTOUR MAP - OCTOBER 21, 2014
FORMER STAR LAUNDRY
160 12th Avenue, Seattle, Washington

SOURCE: GROVEBOX FLOOR PLAN. KANE ENVIRONMENTAL , INC. SITE PLAN WITH BORING LOCATIONS NO DATE. USGS NATIONAL MAP AERIAL IMAGERY.

Tables

TABLE 1A

SUMMARY OF GROUNDWATER ANALYTICAL DATA
HYDROCARBONS AND VOLATILE ORGANIC COMPOUNDS
FORMER STAR LAUNDRY
160 12TH AVENUE
SEATTLE, WASHINGTON

					HYDROCARBONS									VOCs										
Sample ID	Date	TOC	DTW	GWE	TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total xylenes	Naphthalene	Chloroethane	1,1-Dichloroethene	1,1-Dichloroethane	(trans) 1,2-Dichloroethene	(cis) 1,2-Dichloroethene	1,2-Dibromoethane (EDB)	1,2-Dichloroethane (EDC)	1,1,1-Trichloroethane	Trichloroethene (TCE)	Tetrachloroethene (PCE)	Vinyl Chloride	1,1,2-Trichloroethane
MTCA Method A or B Cleanup Levels [1]					MTCA Method A			MTCA Method A					--					MTCA Method A						MTCA Method B
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
					800/1000	500	500	5	1000	700	1000	160	NE	400	1600	160	16	0.01	5	200	5	5	0.2	0.77
MW-1A	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.3	**120**	<0.01	<1.0	<1.0	**22**	**45**	<0.2	<1.0
MW-1A	10/16/2014	38.94	12.81	26.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-1A	10/21/2014	38.94	12.55	26.39	83.8 J	110 J	78 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	0.68 J	**30.5**	<0.15	<0.13	<0.26	**33.9**	**153**	**1.2**	**33.9**
MW-2 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-2	10/16/2014	38.71	10.99	27.72	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/21/2014	38.71	10.18	28.53	<50.0	<48	<28	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	0.46	**9.3**	<0.20	0.46
MW-2 DUP	10/21/2014	38.71	10.18	28.53	<50.0	---	---	<0.15	0.18 J	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	0.65	**11.5**	<0.20	0.65
MW-3 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-3	10/16/2014	38.68	11.35	27.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	10/21/2014	38.68	11.12	27.56	<50.0	<50	61 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	<0.13	<0.15	<0.13	<0.26	1.3	**23.8**	<0.20	**1.3**
MW-4 *	1/29/2004	NR	NR	NR	<100	<200	<500	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.01	<1.0	<1.0	<1.0	<1.0	<0.2	<1.0
MW-4	10/16/2014	36.63	12.30	24.33	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	10/21/2014	36.63	12.05	24.58	<50.0	<48	35 J	<0.15	<0.11	<0.16	<0.40	<2.0	<0.24	<0.20	<0.16	<0.23	0.51 J	<0.15	<0.13	<0.26	3.1	**36.8**	<0.20	**3.1**
MW-5 *	2/20/2004	NR	NR	NR	<200	<500	<500	<1.0	<1.0	<1.0	<1.0	--	--	7.8	--	35	**4700**	--	--	--	<1.0	**16,000**	**3.8**	--
MW-5	10/16/2014	37.07	13.48	23.59	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	10/21/2014	37.07	13.56	23.51	**6,430**	<48	29 J	<3.8	<2.8	<4.1	<10.1	<50.0	<6.0	<5.0	<4.0	14.4 J	**485**	<3.7	<3.3	<6.6	**1,380**	**11,000**	<4.9	**1,380**

Abbreviations and Notes:
DTW = Depth to Water in feet
GWE = Groundwater Elevation
TOC = Top of Casing
TPHg = Total petroleum hydrocarbons as gasoline range organics analyzed by method NWTPH-Gx
TPHd = Total petroleum hydrocarbons as diesel range organics analyzed by method NWTPH-Dx
TPHo = Total petroleum hydrocarbons as heavy oil range organics analyzed by method NWTPH-Dx
VOC = Volatile Organic Compounds analyzed by EPA Method 8260 (See analytical laboratory reports for a complete list of VOCs)
ug/L = Micrograms per liter
NE = Not established
NR = Not reported
---- = Not analyzed
<*n* = Below laboratory detection limit of *n* ug/L
MTCA = Model Toxics Control Act Cleanup Regulations [WAC 173-340-720(2)(a)(1), as amended February 2001]
[1] The cleanup levels in the table are from the following standards: Federal Maximum Contaminant Levels (MCLs) from US Environmental Protection Agency, MTCA Method A cleanup level, MTCA Method B cleanup level obtained from Cleanup Level Risk Calculations (CLARC) value for groundwater.
* = Grab groundwater sample
All data prior to 2014 collected by previous consultants
a = Constituent analyzed by method NWTPH-HCID

TABLE 1B

SUMMARY OF GROUNDWATER ANALYTICAL DATA
METALS
FORMER STAR LAUNDRY
160 12TH AVENUE
SEATTLE, WASHINGTON

					METALS								
Sample ID	*Date*	*TOC*	*DTW**	*GWE*	*Arsenic*	*Arsenic*	*Cadmium*	*Cadmium*	*Chromium*	*Chromium*	*Chromium IV*	*Copper*	*Lead*
	MTCA Method A or B Cleanup Levels [1]					*MTCA Method A*					*MTCA Method B*		*MTCA M*
					5	*5*	*5*	*5*	*50*	*50*	*48*	*320*	*15*
	Units	*ft*	*ft*	*ft*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*	*ug/L*
MW-1A	1/29/2004	NR	NR	NR	**26**	--	<5	--	<10	--	--	10	7
MW-1A	10/16/2014	38.94	12.81	26.13	---	---	---	---	---	---	---	---	---
MW-1A	10/21/2014	38.94	12.55	26.39	---	---	---	---	---	---	---	---	---
MW-2	1/29/2004	NR	NR	NR	**19**	--	<5	--	20	--	--	20	1
MW-2	10/16/2014	38.71	10.99	27.72	---	---	---	---	---	---	---	---	---
MW-2	10/21/2014	38.71	10.18	28.53	**5.8**	3.2	0.068 J	<0.033	9.4	<0.22	---	---	4.1
MW-2 DUP	10/21/2014	38.71	10.18	28.53	---	---	---	---	---	---	---	---	---
MW-3	1/29/2004	NR	NR	NR	**55**	--	<5	--	<10	--	--	<10	<2
MW-3	10/16/2014	38.68	11.35	27.33	---	---	---	---	---	---	---	---	---
MW-3	10/21/2014	38.68	11.12	27.56	2.7	1.6	0.050 J	0.033 J	11.7	2.0	---	---	2.1
MW-4	1/29/2004	NR	NR	NR	**28**	--	<5	--	9	--	--	10	7
MW-4	10/16/2014	36.63	12.30	24.33	---	---	---	---	---	---	---	---	---
MW-4	10/21/2014	36.63	12.05	24.58	4.1	0.36 J	0.25	0.035 J	15.9	0.33 J	---	---	**47.7**
MW-5	10/16/2014	37.07	13.48	23.59	---	---	---	---	---	---	---	---	---
MW-5	10/21/2014	37.07	13.56	23.51	---	---	---	---	---	---	---	---	---

Abbreviations and Notes:
DTW = Depth to Water in feet
GWE = Groundwater Elevation
TOC = Top of Casing
ug/L = Micrograms per liter
NE = Not established
---- = Not analyzed
<*n* = Below laboratory detection limit of *n* ug/L
All metals analyzed by method 7010, except mercury which was analyzed by method 7470A; see analytical laboratory reports for a complete list of compounds analyzed.
MTCA = Model Toxics Control Act Cleanup Regulations [WAC 173-340-720(2)(a)(1), as amended February 2001]
All data prior to 2014 collected by previous consultants

Appendix A

Blaine Tech Services, Inc. – Well Re-development Field Data Sheets

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What's In My Neighborhood

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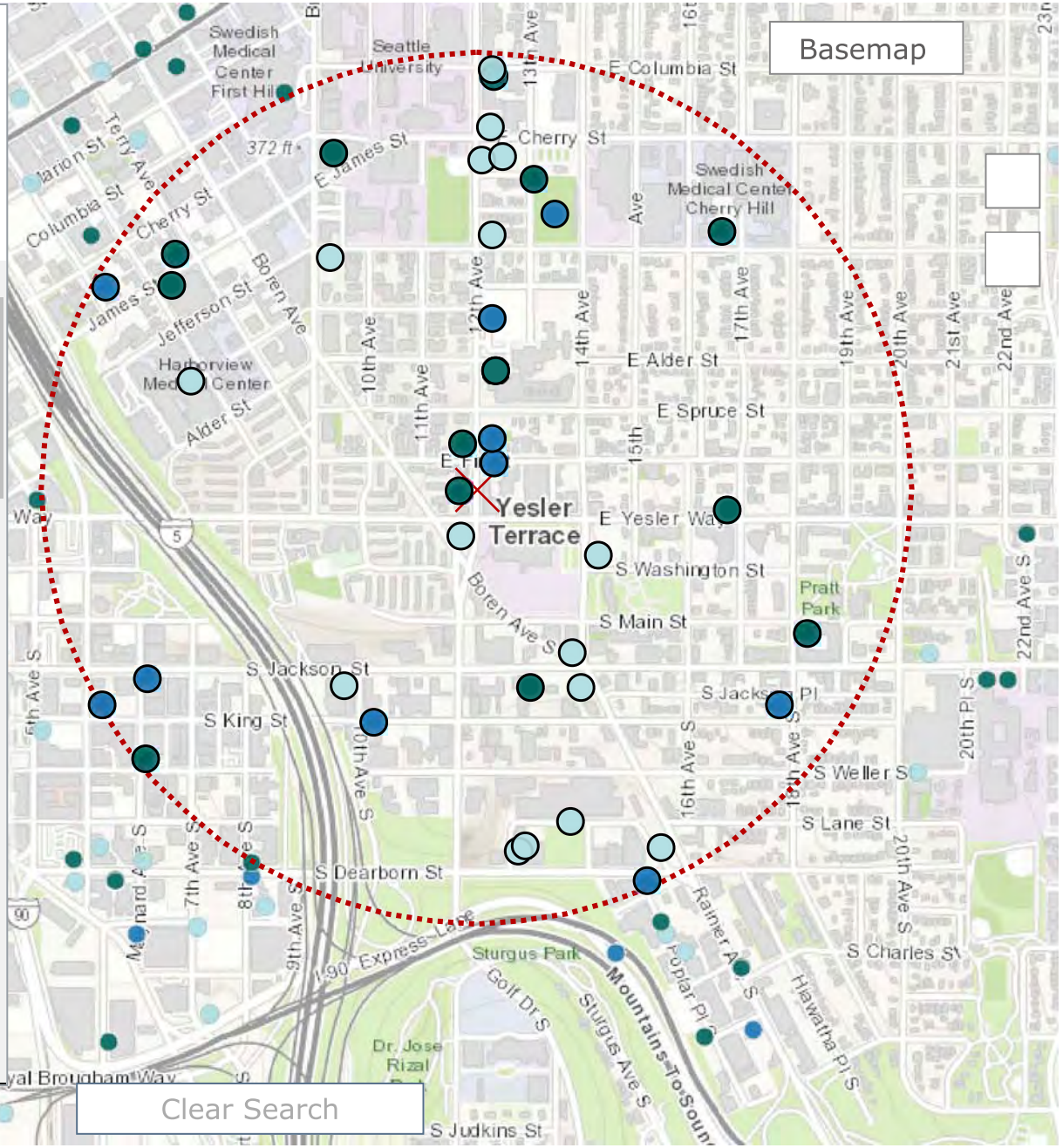
40 cleanup sites within 0.5 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
Chromium Inc	Awaiting Cleanup
12th & Columbia	No Further Action
Seattle Housing Authority 12th Ave Brownfield Cleanup	No Further Action
Metal Laundry Inc	Cleanup Started
Jefferson Street Bus Barn	Awaiting Cleanup
TD AUTO BODY & REPAIR	Awaiting Cleanup
Goodwill Corp Dearborn Campus	Cleanup Started
Barrett Property	No Further Action
King County Facilities Management	Awaiting Cleanup
Happy Gardens	No Further Action
EASTERN HOTEL	No Further Action



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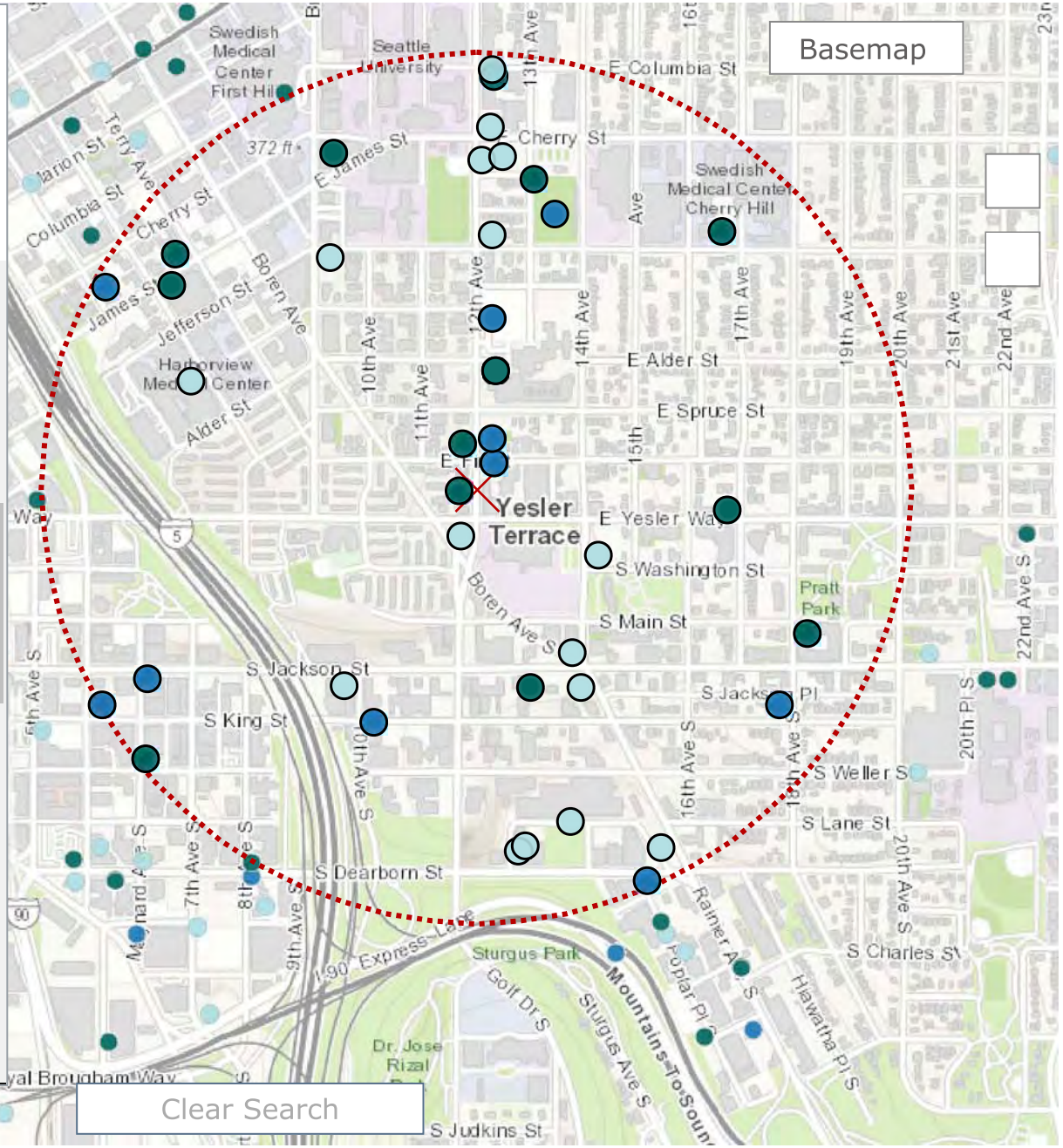
40 cleanup sites within 0.5 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
Ralphs Concrete	Awaiting Cleanup
Pearson Site 426 Broadway	Cleanup Started
Swedish Medical Center Providence Campus	No Further Action
Qwest Corporation W00291	Cleanup Started
Lloyds Rocket & Heating Oil Co	Cleanup Started
Interstate Brands Corp Wonder Bread	No Further Action
Dean Straleys 9th & James BP	No Further Action
Unocal 5473	Cleanup Started
Shell Station 121499	Cleanup Started
Herzog Glass	Cleanup Started
No Further	



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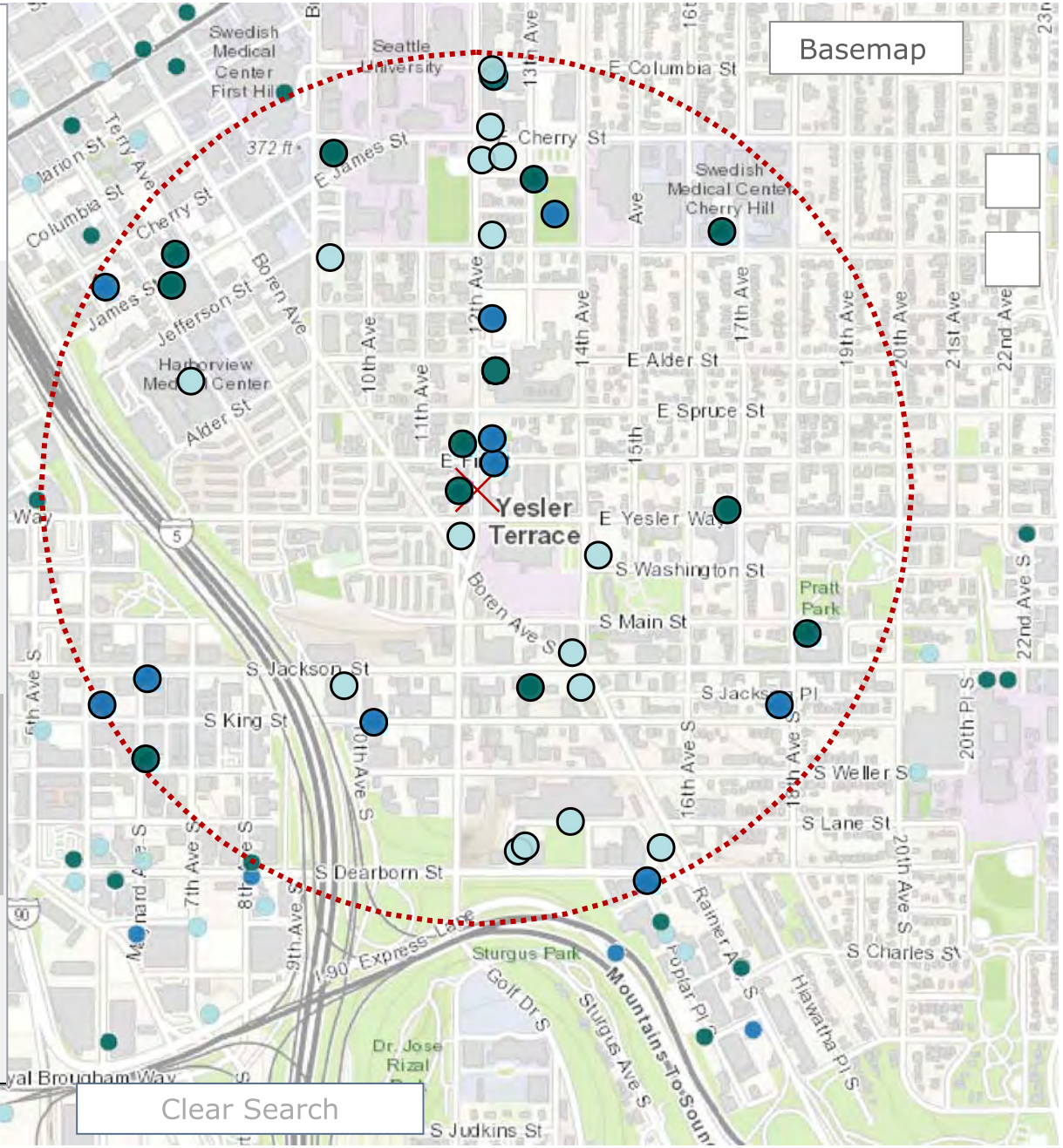
Help Legend Home

40 cleanup sites within 0.5 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
B & B Auto Repair Seattle	No Further Action
HARBORVIEW HOSPITAL	Cleanup Started
Polaris Apartments	Cleanup Started
WA DOT Herzog Glass Inc	Cleanup Started
Jergens Painting	Awaiting Cleanup
OLD REPAIR SHOP	No Further Action
PARKING GARAGE	No Further Action
Armored Transport NW	Cleanup Started
Unocal 0166	Cleanup Started
SEATTLE UNIVERSITY BLUE WHALE	No Further Action
Seventh Avenue Service	Awaiting Cleanup



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State of Washington

What's In My Neighborhood

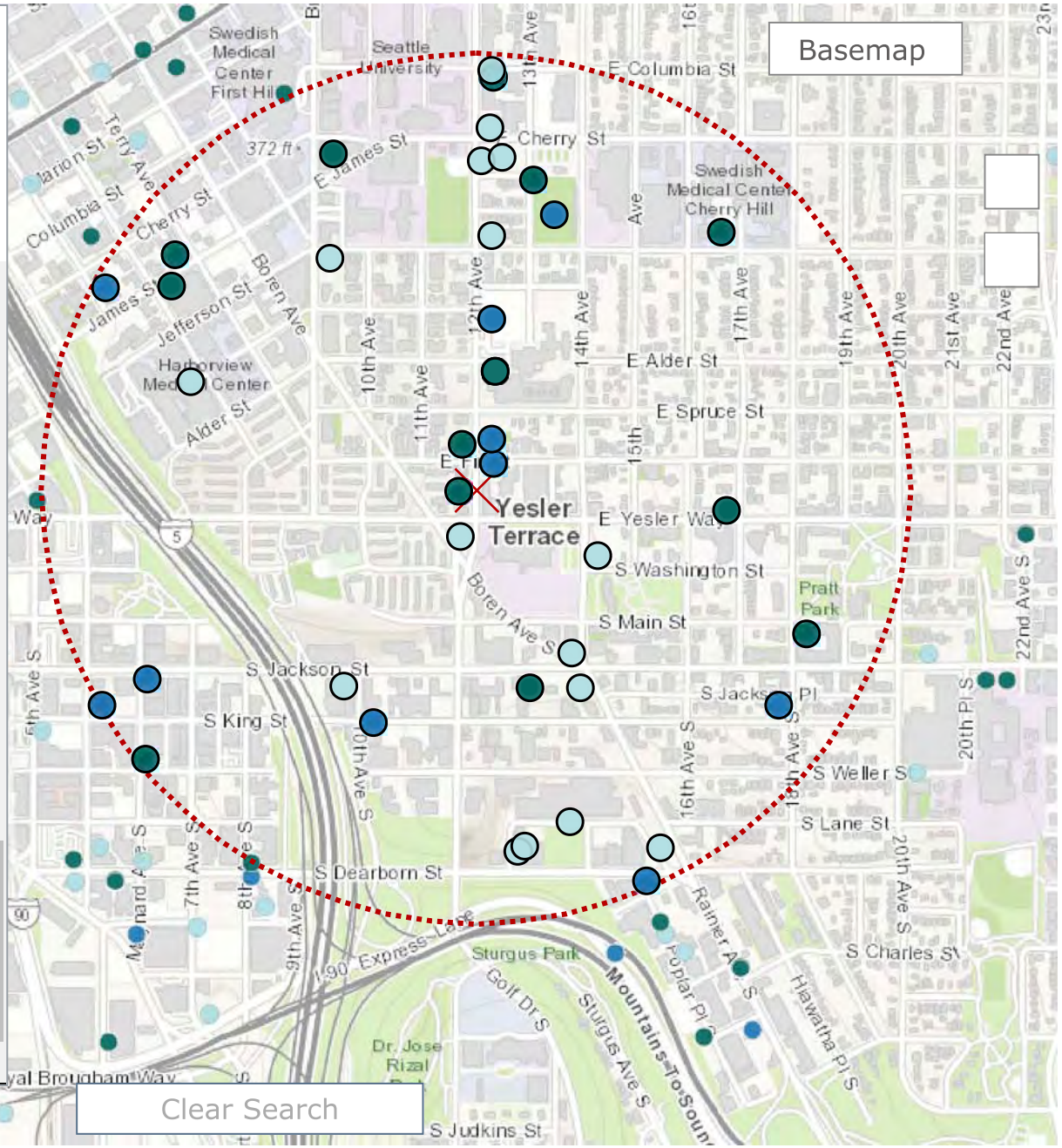
Help Legend Home

40 cleanup sites within 0.5 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
Unocal 0166	Cleanup Started
SEATTLE UNIVERSITY BLUE WHALE	No Further Action
Seventh Avenue Service	Awaiting Cleanup
1200 E Jefferson	Cleanup Started
Shell SAP 174361	Cleanup Started
King County Youth Services Alder Tower	No Further Action
The Douglas at Seattle University	Cleanup Started
USPS International District	Awaiting Cleanup
King County Youth Services Hydraulic Spill	Cleanup Started
PCE Plume 12th Ave & E Alder St	Awaiting Cleanup
Star Laundry	Awaiting Cleanup



DEPARTMENT OF ECOLOGY
State of Washington

What's In My Neighborhood

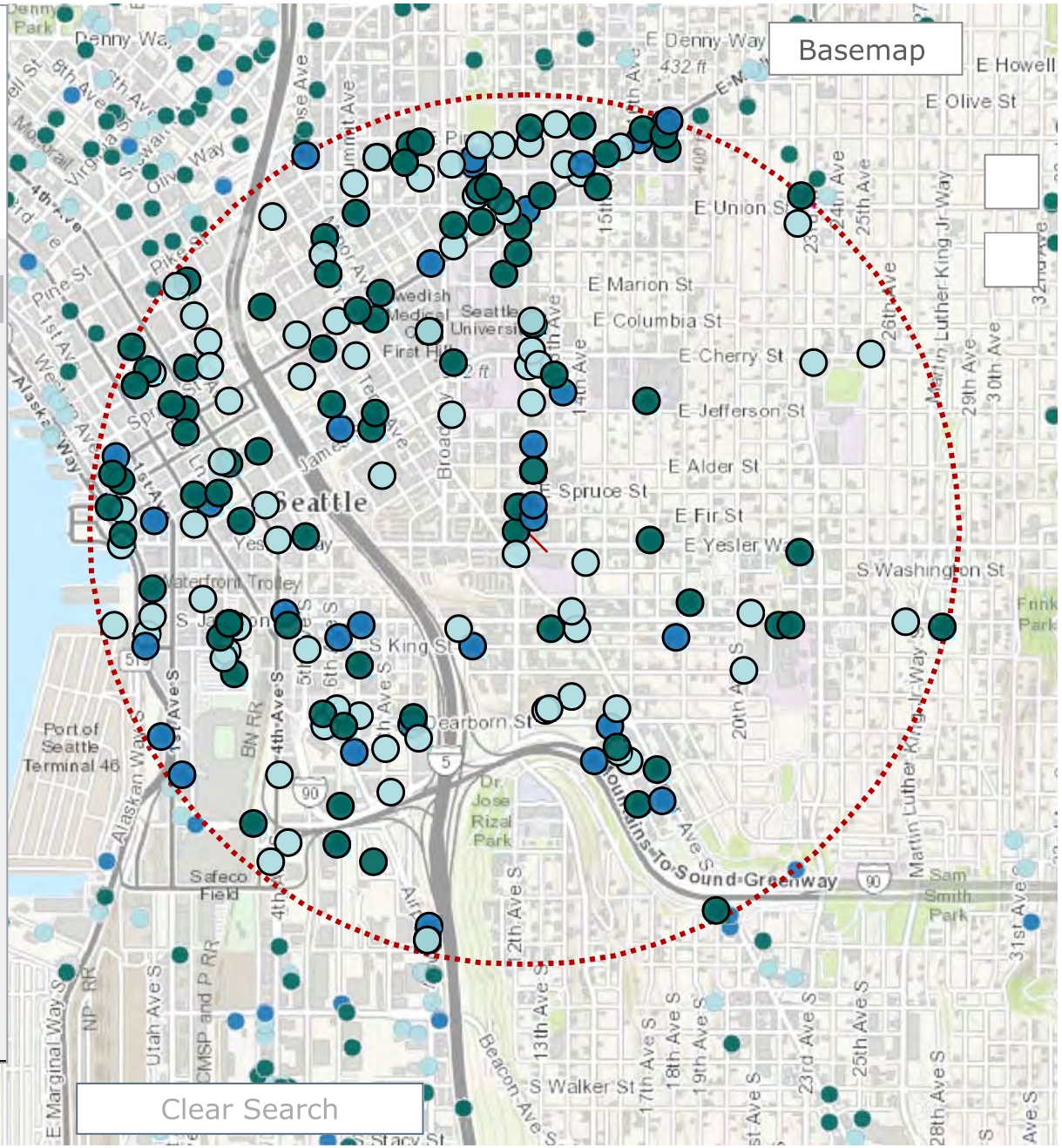
Help Legend Home

192 cleanup sites within 1 mile
- Hide Table -

Export Data

Filter Results

Site Name	Site Status
Emerald Recycling	Awaiting Cleanup
Chromium Inc	Awaiting Cleanup
Maritime Building	No Further Action
WA DOT King & Alaskan Way S	Awaiting Cleanup
Coleman Building	Cleanup Started
12th & Columbia	No Further Action
QUALMAN APARTMENTS	No Further Action
Boat Street Marina	Cleanup Started
Seattle Hilton Hotel Parking Garage	Cleanup Started
PARKER BLDG	No Further Action
Seattle Housing Authority 12th Ave Brownfield Cleanup	No Further Action
Joe Spates The Cleaner	Awaiting Cleanup



APPENDIX D

Soil Boring Logs
WES-1 to WES-13
BN-1 to BN-11

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor over gravel base.
1	2” Lined Spoon		3’	--		Dark brown gravelly silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0				Grades into black clayey SAND and SILT.
2	2” Lined Spoon		4’		TPH-G TPH-D VOCs	Dark gray silty and clayey SAND, trace gravel, soft, moist, slight petroleum odor.
		8.0				Gray silty fine to medium SAND, trace gravel soft, wet, strong petroleum odor.
3	2” Lined Spoon		4’		TPH-D	
		12.0				Dark gray clayey SAND, with gravel, little silt, dense, moist, no petroleum odor.
4	2” Lined Spoon		4’			
		16.0				End of Boring at 16.0 ft. Petroleum odor and discoloration encountered at noted depths. Water sample collected from temporary well screen installed in boring to a depth of 12’. After sampling, completed boring to 16’ depth. Backfilled with bentonite upon completion.

Date Drilled: 4-3-2017

Water Level Data	Depth	Date/Time
First Encountered:	7.5’	4-3-2017
Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor over gravel base.
1	2” Lined Spoon	4.0	2’	--		Rusty brown clayey and gravelly SAND (Fill).
2	2” Lined Spoon	8.0	4’		TPH-G VOCs TPH-D	Dark gray silty and clayey SAND, with gravel, soft, moist to wet, oily petroleum odor.
3	2” Lined Spoon	12.0	4’		TPH-G TPH-D	Dark gray fine to coarse SAND, with gravel, trace silt soft, wet, slight petroleum odor.
						Dark gray silty and clayey SAND, trace gravel, dense, moist, no petroleum odor.
						End of Boring at 12.0 ft.
						Petroleum odor and discoloration encountered at noted depths.
						Water sample collected from adjacent pre-existing monitoring well MW-3.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	8’	4-3-2017
	Stabilized:		

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Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon	2.0	2’	--		Dark brown to black silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0	2’			Rusty brown mottled clayey SAND, with darker zones, soft, moist.
2	2” Lined Spoon	6.0	2’		VOCs	Gray clayey fine to coarse SAND, with gravel, dense, moist to wet.
		8.0	2’			End of Boring at 8.0 ft. Two foot sample drives and slow progress due to low basement ceiling. No petroleum odor or discoloration encountered at any depth. Backfilled with bentonite upon completion.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	4’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor over gravel base.
1	2” Lined Spoon		2’	--		Dark brown silty and clayey SAND (Fill or old topsoil), soft, moist.
		4.0				
						Dark gray silty and clayey SAND, soft, moist to wet.
2	2” Lined Spoon		4’		VOCs	
		8.0				
						Dark gray fine to medium SAND, trace coarse sand and gravel, medium dense, moist to wet.
3	2” Lined Spoon		4’			
		12.0				Dark gray clayey SAND, with gravel, dense, wet.
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	4’	4-3-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-5
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
1	2” Lined Spoon		2’	--		Dark brown silty SAND with organics (Fill or old topsoil), soft, moist.
		4.0				
2	2” Lined Spoon		4’		VOCs	Dark brown mottled with gray clayey SAND, trace gravel, soft, moist.
						Dark gray silty fine to medium SAND, little clay, trace coarse sand and gravel, increasingly dense with depth, moist.
		8.0				
						Dark gray coarse SAND, trace silt, dense, wet.
3	2” Lined Spoon		4’			Dark gray silty and clayey fine SAND, moist.
		12.0				
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	6’	4-3-2017
	Stabilized:		

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Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-6
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
1	2” Lined Spoon		2’	--		Dark brown clayey SAND and GRAVEL (Fill), soft, moist.
		4.0				Dark brown to black SILT, former topsoil horizon, soft, moist.
2	2” Lined Spoon		4’			Greenish gray mottled sandy CLAY, trace gravel, increasingly dense with depth, moist.
						Dark gray fine to medium SAND, trace silt, wet.
						Dark gray silty and clayey SAND, little gravel, moist.
		8.0			VOCs	
3	2” Lined Spoon		4’			Dark greenish gray sandy CLAY, trace gravel, increasingly dense with depth, moist.
		12.0				End of Boring at 12.0 ft.
						No petroleum odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed to a depth of 12 feet.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-3-2017	First Encountered:	6’	4-3-2017
	Stabilized:		

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Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-7
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Concrete floor.
						Gray fine to medium SAND (Fill), soft, wet.
1	2” Lined Spoon		1.5’	--		Dark brown to black SILT, former topsoil horizon, soft, moist.
		4.0				
						Greenish gray sandy CLAY, increasingly dense with depth, moist.
2	2” Lined Spoon		3.5’			
		8.0				
3	2” Lined Spoon		4’		VOCs	Dark gray fine to medium SAND, trace silt, wet.
						Dark greenish gray sandy CLAY, trace gravel, increasingly dense with depth, moist.
		12.0				
						End of Boring at 12.0 ft.
						No petroleum odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed to a depth of 12 feet.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	6’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-8
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor.
1	2” Lined Spoon		4’	--		Dark brown to black SILT, former topsoil horizon, soft, moist.
						2’
						3’
		4.0				Greenish gray mottled sandy CLAY, dense, moist.
2	2” Lined Spoon		4’			
		8.0				
3	2” Lined Spoon		4’			
		12.0			VOCs	Dark gray fine SAND, interlayered with silt, wet.
						13’
						End of Boring at 13.0 ft. No petroleum odor or discoloration encountered at any depth.
						2” Sch. 40 PVC well screen installed from depth of 3 to 13 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	11’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-9
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Concrete floor over gravel base.
1	2” Lined Spoon	2.0	0.7’	--		Dark brown to black silty SAND, with organics (Fill or old topsoil), soft, moist.
		4.0	0.7’			
			2’			Gray mottled clayey SAND, with gravel, increasingly dense with depth, moist to wet.
2	2” Lined Spoon	6.0	2’		VOCs	Gray fine to medium SAND, trace silt wet.
		8.0				End of Boring at 8.0 ft. Two foot sample drives and slow progress due to low basement ceiling. No petroleum odor and discoloration encountered at any depth. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-4-2017	First Encountered:	6’	4-4-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-10
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
						Brown clayey SAND and GRAVEL (Fill), soft, moist.
1	2” Lined Spoon		2.5’	--		Dark brown organic SILT, former topsoil horizon, with roots and fibers, soft, moist.
		4.0				
2	2” Lined Spoon		3’		VOCs	Greenish gray clayey SILT, with fine to coarse sand, moist to wet.
		8.0				
3	2” Lined Spoon		4’			Grades to mottled brown silty and clayey SAND, trace coarse sand or fine gravel, increasingly dense with depth, moist.
		12.0				
						End of Boring at 12.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 12 feet. Backfilled with bentonite upon completion.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	6’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data No.	Type	Depth	Recovery	N	Lab Sample	Soil Description
						Asphalt over gravel base.
						1 Brown clayey SAND and GRAVEL with brick debris (Fill), soft, moist.
1	2” Lined Spoon		3’	--		2 Light brown fine to medium SAND, (Fill), soft, moist to wet. 3
		4.0				4 Dark brown organic SILT, former topsoil horizon, with roots and fibers, soft, moist. 5
2	2” Lined Spoon		4’			6
		8.0				7 Grades to mottled greenish gray and brown silty and clayey SAND, moist to wet. 8 9
3	2” Lined Spoon		4’			10 Greenish gray silty fine to coarse SAND with gravel, wet. 11
		12.0				12 Gray silty CLAY with fine to coarse sand, interlayered with zones of fine to medium sand, dense, moist to wet. 13
4	2” Lined Spoon		4’		VOCs	14 15
		16.0				16
						End of Boring at 16.0 ft. 17 No petroleum odor or discoloration encountered at any depth. 18 Water sample collected from temporary well screen installed to a depth of 16 feet. Water sample also taken from adjacent pre-existing monitoring well MW-6. 19 Backfilled with bentonite upon completion. 20

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	6’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-12
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
1	2” Lined Spoon	4.0	3’	--		Asphalt over gravel base. Brown silty GRAVEL (Fill), soft, moist. Brown fine to medium SAND, trace gravel (Fill), soft, moist to wet.
2	2” Lined Spoon	8.0	4’			Greenish gray mottled silty and clayey SAND, moist to wet. Greenish gray fine to medium SAND, trace gravel, wet.
3	2” Lined Spoon	12.0	4’			Gray mottled with rusty brown clayey SILT with fine to medium sand, moist to wet.
4	2” Lined Spoon	16.0	4’		VOCs	End of Boring at 16.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 16 feet. Water sample also taken from adjacent pre-existing monitoring well MW-2. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
4-5-2017	First Encountered:	2’	4-5-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Seattle Curtain Co. Property 104 12th Avenue Seattle, WA	Seattle Land Use Company	WES-13
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
1	2” Lined Spoon		2’	--		Dark brown clayey SAND and GRAVEL with brick debris, (Fill), soft, moist.
		4.0				Mottled brown silty CLAY with sand, trace gravel, moist to wet.
2	2” Lined Spoon		4’			
		8.0				
3	2” Lined Spoon		4’		VOCs	
		12.0				Brown silty fine to medium SAND, wet.
4	2” Lined Spoon		4’			
		16.0				End of Boring at 16.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed to a depth of 16 feet. Backfilled with bentonite upon completion.

Date Drilled: 4-5-2017

Water Level Data	Depth	Date/Time
First Encountered:	12’	4-5-2017
Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-1
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil containing brick & debris.
1	2” Lined Spoon		2.5’	--		Brown silty fine to coarse SAND, little gravel (Fill), loose, wet.
						Dark brown silty SAND buried topsoil with root fibers, moist to wet.
		5.0				Blueish gray clayey SAND, mottled with rusty brown, trace gravel, soft, moist.
2	2” Lined Spoon		4’		HCID VOCs	
		10.0				
3	2” Lined Spoon		5’			
						Gray fine to medium SAND, trace silt, wet.
						Blueish gray clayey SAND, little silt, firm, moist.
		15.0			VOCs	End of Boring at 15.0 ft.
						No petroleum odor or discoloration encountered at any depth.
						Water sample collected from temporary well screen installed in boring to a depth of 15’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-2
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		2.5’	--		Brown silty fine to medium SAND, trace clay (Fill), loose, wet.
					VOCs	Dark brown sandy SILT organic topsoil, moist to wet.
		5.0				
2	2” Lined Spoon		5’			Gradual transition to blueish gray, mottled clayey fine to medium SAND with thin lenses of clean sand, soft, moist.
		10.0				Gray SILT, mottled with rusty brown zones, firm, moist to wet.
3	2” Lined Spoon		5’		HCID VOCs	
		15.0				End of Boring at 15.0 ft. No petroleum odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-3
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-210’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		3’	--		Brown clayey GRAVEL and SAND (Fill), loose, wet.
						Dark brown clayey SAND organic topsoil, moist to wet.
		5.0				
2	2” Lined Spoon		5’		HCID VOCs	Gradual transition to blueish gray, mottled clayey fine to medium SAND with trace coarse sand and gravel, soft, moist.
		10.0				Gray SILT with fine sand, firm, moist to wet.
3	2” Lined Spoon		5’		VOCs	Gray fine to medium SAND, wet.
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	1’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-4
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-205’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Grass and topsoil.
1	2” Lined Spoon		3’	--		Dark brown SAND and GRAVEL with debris (Fill), loose, moist to wet.
		5.0				Mottled brown clayey SAND and GRAVEL, (likely Fill) moist to wet.
2	2” Lined Spoon		5’		HCID VOCs	Gray, mottled clayey and silty SAND with zones of fine to medium SAND, soft, moist.
		10.0				
3	2” Lined Spoon		5’			Gray fine to medium SAND, wet.
						Gray clayey and silty SAND, with zones of fine to medium SAND, soft, moist.
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	4’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-5
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Asphalt over gravel base.
1	2” Lined Spoon		2.5’	--		Dark brown silty SAND, little gravel, with organic material (Fill), loose, moist to wet.
		5.0			VOCs	Mottled brown silty SAND and GRAVEL, (likely Fill) moist to wet.
						Dark brown sandy organic SILT, soft, moist.
2	2” Lined Spoon		4’			Grayish brown, mottled clayey and silty SAND, firm, moist.
		10.0			HCID	
3	2” Lined Spoon		5’			Gray clayey and silty SAND, trace to little gravel, with zones of fine to medium SAND, harder with depth, moist.
		15.0				
4	2” Lined Spoon		5’		HCID	End of Boring at 20.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.
		20.0				

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	4’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-6
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Broken concrete surface over gravel base.
1	2” Lined Spoon		2’	--	TPH-G VOCs	Dark brown clayey SAND and GRAVEL (Fill), loose, moist to wet.
		5.0				Dark brown sandy organic SILT, soft, moist.
2	2” Lined Spoon		4’		HCID	
		10.0				Grayish brown clayey and silty SAND, soft, moist.
3	2” Lined Spoon		5’		TPH-G VOCs	
		15.0				End of Boring at 15.0 ft. No odor or discoloration encountered at any depth. Water sample collected from temporary well screen installed in boring to a depth of 15’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-12-2017	First Encountered:	6’	5-12-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-7
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

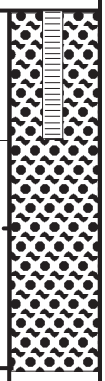
Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		2.5’	--		Brown silty SAND and GRAVEL (Fill),some black spots of organic or burned wood, loose, moist.
						3’
		5.0			VOCs	
2	2” Lined Spoon		4’			
						Distinct transition to gray SAND and GRAVEL (Fill), medium dense, moist, with distinct petroleum odor.
		10.0				
					HCID	Grayish green sandy CLAY, trace to little gravel, weathered glacial till or till derived fill, harder with depth, moist to wet, strong petroleum odor.
						12’
3	2” Lined Spoon		5’			
		15.0				Dark brown sandy organic SILT, soft, moist, no petroleum odor.
4	2” Lined Spoon		5’		HCID	Grayish green silty and sandy CLAY, harder with depth, moist to wet, moderate petroleum odor.
						Gray fine to medium SAND, trace coarse sand and gravel, wet, no petroleum odor.
		20.0				Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	8’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-7 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--		Gray fine to medium SAND, trace coarse sand and gravel, wet, no petroleum odor. 22’ Gray SILT with very fine sand, dilatant, wet, no petroleum odor. End of Boring at 25.0 ft. 2” Sch. 40 PVC well screen installed from depth of 12 to 22 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.



Dept. of Ecology Unique Well ID: **BJR-852**	Water Level Data	Depth	Date/Time
	First Encountered:	+/-8’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-8
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		2’	--		Brown SAND and GRAVEL (Fill), medium dense, moist.
		5.0				
2	2” Lined Spoon		4’		HCID	Brown silty and clayey SAND with brick and asphalt debris (Fill), soft, moist to wet, musty odor.
		10.0				Dark brown sandy organic SILT, soft, moist.
3	2” Lined Spoon		3’			Grayish brown clayey and silty SAND with gravel, medium dense, moist.
		15.0				
4	2” Lined Spoon		5’		TPH-G BTEX	Gray silty SAND, trace clay, trace gravel, medium dense, moist to wet.
		20.0				End of Boring at 20.0 ft Water sample collected from temporary well screen installed in boring to a depth of 20’. Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	6’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-9
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		4’	--		Brown SAND and GRAVEL (Fill), medium dense, moist.
		5.0				
2	2” Lined Spoon		3’			Brown silty and clayey SAND with brick and asphalt debris (Fill), soft, moist.
		10.0				
3	2” Lined Spoon		2.5’		TPH-G BTEX	Gray clayey SAND, trace gravel, medium dense, moist to wet, possible slight petroleum odor.
		15.0				
4	2” Lined Spoon		5’			Dark brown sandy organic SILT, with wood fragments, trace gravel, soft, moist, no petroleum odor.
		20.0				Greenish gray clayey SAND, trace gravel, moist to wet, no petroleum odor.

Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-9 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--		Greenish gray clayey SAND, trace coarse sand and gravel, with lenses of fine to medium SAND and laminar SILT, very moist to wet in sandy zones, no petroleum odor.
						End of Boring at 25.0 ft.
						Water sample collected from temporary well screen installed in boring to a depth of 20’.
						Backfilled with bentonite upon completion.

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

Date Drilled:

5-15-2017

Water Level Data	Depth	Date/Time
First Encountered:	+/-12’	5-15-17
Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-10
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

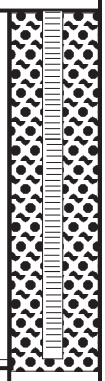
Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		0.5’	--		Brown silty SAND and GRAVEL with brick and debris (Fill), very soft, moist.
						3’ Poor sample recovery
		5.0				
2	2” Lined Spoon		0.3’			Poor sample recovery
		10.0				
						Dark brown sandy organic SILT, soft, moist, moderate petroleum odor. 12’
3	2” Lined Spoon		0.2’		VOCs TPH-G TPH-D	Poor sample recovery
		15.0				15’
4	2” Lined Spoon		0.7’		HCID	Poor sample recovery
		20.0				Gray fine to medium SAND, trace coarse sand and gravel, wet, slight petroleum odor. Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-10 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--		Gray fine to medium SAND, trace coarse sand and gravel, very moist, but no free water, no petroleum odor.
						25’
						End of Boring at 25.0 ft.
						Poor sample recovery throughout upper 20’. Moved 3’ west and redrilled using hollow stem auger for monitoring well installation. 2” Sch. 40 PVC well screen installed from depth of 15 to 25 feet below ground surface, surrounded with #10-20 silica sand filter pack. Bentonite seal and flush-mounted steel monument at surface.



Dept. of Ecology Unique Well ID: **BJR-853**	Water Level Data	Depth	Date/Time
	First Encountered:	+/-8’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-11
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
						Gravel surface.
1	2” Lined Spoon		1.5’	--		Yellowish brown to brown silty SAND and GRAVEL with brick and debris(Fill), very soft, moist.
		5.0				
2	2” Lined Spoon		1.3’			Piece of fire brick
		10.0				
3	2” Lined Spoon		1’		Metals	Broken glass fragments and brick
		15.0				
4	2” Lined Spoon		0.7’			
		20.0				Gray clayey SAND, trace gravel, wet, no petroleum odor.
						Continued

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	12’	5-15-2017
	Stabilized:		

WHITMAN
Environmental Sciences

Project:	Client:	Boring:
Redevelopment Property 104 - 124 12th Avenue Seattle, WA	Seattle Land Use Company	BN-11 Continued
	Driller: ESN Northwest / Method: Geoprobe	Project No. WES-1591
	Elevation: +/-215’ / Reference: –	

Sample Data						Soil Description
No.	Type	Depth	Recovery	N	Lab Sample	
5	2” Lined Spoon	20.0 – 25.0	5’	--	HCID	Gray clayey SAND, trace coarse sand and gravel, mottled with rusty brown coloration, moist, no petroleum odor.
						End of Boring at 25.0 ft.
						Water sample collected from temporary well screen installed in boring to a depth of 20’.
						Backfilled with bentonite upon completion.

Date Drilled:	Water Level Data	Depth	Date/Time
5-15-2017	First Encountered:	+/-12’	5-15-17
	Stabilized:		

WHITMAN
Environmental Sciences

APPENDIX E

Laboratory Analytical Reports
Friedman & Bruya, Inc.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
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www.friedmanandbruya.com

April 19, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on April 5, 2017 from the 104 12th PO WES 1591, F&BI 704063 project. There are 23 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0419R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 5, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 104 12th PO WES 1591, F&BI 704063 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
704063 -01	WES-1-7.5'
704063 -02	WES-2-6'
704063 -03	WES-3-7'
704063 -04	WES-4-6'
704063 -05	WES-5-6'
704063 -06	WES-6-8'
704063 -07	WES-7-10'
704063 -08	WES-8-11.5'
704063 -09	WES-9-8'
704063 -10	WES-10-7'
704063 -11	WES-11-15'
704063 -12	WES-12-16'
704063 -13	WES-13-12'
704063 -14	WES-2-7'
704063 -15	WES-2-9'
704063 -16	WES-1-10'

All quality control requirements were acceptable.

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063
Date Extracted: 04/06/17 and 04/13/17
Date Analyzed: 04/06/17 and 04/13/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
WES-1-7.5' 704063-01 1/10	710	100
WES-2-6' 704063-02 1/5	390	94
WES-2-9' 704063-15	230	ip
Method Blank 07-702 MB	<2	81
Method Blank 07-715 MB	<2	110

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063
Date Extracted: 04/06/17
Date Analyzed: 04/06/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
WES-1-7.5' 704063-01	160 x	<250	87
WES-2-7' 704063-14	340 x	<250	100
WES-2-9' 704063-15	440 x	<250	96
WES-1-10' 704063-16	<50	<250	88
Method Blank 07-725 MB	<50	<250	89

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-1-7.5'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-01
Date Analyzed:	04/06/17	Data File:	040619.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	0.35
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-2-6'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-02
Date Analyzed:	04/06/17	Data File:	040620.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	0.086
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-3-7'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-03
Date Analyzed:	04/06/17	Data File:	040638.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-4-6'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-04
Date Analyzed:	04/06/17	Data File:	040639.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	0.11
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-5-6'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-05
Date Analyzed:	04/06/17	Data File:	040640.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-6-8'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-06
Date Analyzed:	04/06/17	Data File:	040641.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-7-10'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-07
Date Analyzed:	04/06/17	Data File:	040642.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-8-11.5'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-08
Date Analyzed:	04/07/17	Data File:	040643.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-9-8'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-09
Date Analyzed:	04/07/17	Data File:	040644.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-10-7'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-10
Date Analyzed:	04/07/17	Data File:	040645.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-11-15'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-11
Date Analyzed:	04/07/17	Data File:	040646.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	103	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-12-16'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-12
Date Analyzed:	04/07/17	Data File:	040647.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-13-12'	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	704063-13
Date Analyzed:	04/07/17	Data File:	040648.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591
Date Extracted:	04/06/17	Lab ID:	07-677 mb
Date Analyzed:	04/06/17	Data File:	040606.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 704074-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	61-153

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 704063-15 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	230	370	47 hr

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	71-131

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 704070-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	170	101	102	63-146	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	89	79-144

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 704063-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	25	25	10-142	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	58	60	10-126	3
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	61	59	10-138	3
Bromomethane	mg/kg (ppm)	2.5	<0.5	73	76	10-163	4
Chloroethane	mg/kg (ppm)	2.5	<0.5	69	71	10-176	3
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	65	67	10-176	3
Acetone	mg/kg (ppm)	12.5	<0.5	108	95	10-163	13
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	88	87	10-160	1
Hexane	mg/kg (ppm)	2.5	<0.25	73	73	10-137	0
Methylene chloride	mg/kg (ppm)	2.5	<0.5	101	95	10-156	6
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	100	97	21-145	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	94	92	14-137	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	94	91	19-140	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	98	93	10-158	5
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	95	93	25-135	2
Chloroform	mg/kg (ppm)	2.5	<0.05	96	94	21-145	2
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	94	94	19-147	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	92	92	12-160	0
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	90	89	10-156	1
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	93	91	17-140	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	88	87	9-164	1
Benzene	mg/kg (ppm)	2.5	<0.03	93	93	29-129	0
Trichloroethene	mg/kg (ppm)	2.5	<0.02	91	90	21-139	1
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	94	94	30-135	0
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	89	87	23-155	2
Dibromomethane	mg/kg (ppm)	2.5	<0.05	93	92	23-145	1
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	93	93	24-155	0
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	94	94	28-144	0
Toluene	mg/kg (ppm)	2.5	<0.05	92	91	35-130	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	89	89	26-149	0
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	99	99	10-205	0
2-Hexanone	mg/kg (ppm)	12.5	<0.5	91	95	15-166	4
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	90	90	31-137	0
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	87	87	20-133	0
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	82	81	28-150	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	89	89	28-142	0
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	89	89	32-129	0
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	90	90	32-137	0
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	84	82	31-143	2
m,p-Xylene	mg/kg (ppm)	5	<0.1	89	89	34-136	0
o-Xylene	mg/kg (ppm)	2.5	<0.05	91	89	33-134	2
Styrene	mg/kg (ppm)	2.5	<0.05	90	90	35-137	0
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	90	88	31-142	2
Bromoform	mg/kg (ppm)	2.5	<0.05	71	70	21-156	1
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	91	91	23-146	0
Bromobenzene	mg/kg (ppm)	2.5	<0.05	89	90	34-130	1
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	91	91	18-149	0
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	115	121	28-140	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	87	89	25-144	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	92	91	31-134	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	90	90	31-136	0
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	90	89	30-137	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	89	89	10-182	0
sec-Butylbenzene	mg/kg (ppm)	2.5	0.30	86	86	23-145	0
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	92	92	21-149	0
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	91	90	30-131	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	89	29-129	1
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	88	88	31-132	0
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	73	75	11-161	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	92	91	22-142	1
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	100	98	10-142	2
Naphthalene	mg/kg (ppm)	2.5	<0.05	84	84	14-157	0
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	88	88	20-144	0

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704063

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	61	10-146
Chloromethane	mg/kg (ppm)	2.5	82	27-133
Vinyl chloride	mg/kg (ppm)	2.5	89	22-139
Bromomethane	mg/kg (ppm)	2.5	95	38-114
Chloroethane	mg/kg (ppm)	2.5	95	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	96	10-196
Acetone	mg/kg (ppm)	12.5	121	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	110	47-128
Hexane	mg/kg (ppm)	2.5	111	43-142
Methylene chloride	mg/kg (ppm)	2.5	116	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	114	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	111	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	109	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	113	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	109	72-113
Chloroform	mg/kg (ppm)	2.5	109	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	112	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	107	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	107	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	109	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	104	60-139
Benzene	mg/kg (ppm)	2.5	108	68-114
Trichloroethene	mg/kg (ppm)	2.5	107	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	110	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	101	72-130
Dibromomethane	mg/kg (ppm)	2.5	108	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	107	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	106	75-136
Toluene	mg/kg (ppm)	2.5	104	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	98	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	102	75-113
2-Hexanone	mg/kg (ppm)	12.5	105	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	103	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	101	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	91	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	74-132
Chlorobenzene	mg/kg (ppm)	2.5	102	76-111
Ethylbenzene	mg/kg (ppm)	2.5	102	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	94	69-135
m,p-Xylene	mg/kg (ppm)	5	102	78-122
o-Xylene	mg/kg (ppm)	2.5	102	77-124
Styrene	mg/kg (ppm)	2.5	103	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	101	76-127
Bromoform	mg/kg (ppm)	2.5	79	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	101	74-124
Bromobenzene	mg/kg (ppm)	2.5	101	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	102	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	103	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	99	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	103	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	101	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	100	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	99	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	101	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	101	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	100	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	100	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	99	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	81	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	101	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	101	50-153
Naphthalene	mg/kg (ppm)	2.5	92	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	99	63-138

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

704063

SAMPLE CHAIN OF CUSTODY

ME 04-05-17

Page # C11 of 301 / VW VS2

Report To Dan Whitman
Company Whitman Env. Sciences
Address 6812 16th Ave NE
City, State, ZIP Seattle, WA 98115
Phone 206-583-3308 Email

SAMPLERS (*signature*)	
PROJECT NAME 104 / 1294	PO # WES 1591
REMARKS	INVOICE TO

TURNAROUND TIME
☑ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
WES-1-7.5	01 A-E	4-3	AM	Soil	5		X	X		X							
WES-2-6'	02 A-D	4-3			4			X		X							
WES-3-7'	03	"								X							
WES-4-6'	04	"								X							
WES-5-6'	05	"								X							
WES-6-8'	06	"								X							
WES-7-10	07	4/4								X							
WES-8-11.5	08	"								X							
WES-9-8'	09	"								X							
WES-10-7'	10	4/5								X							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	[signature]	WES	4-5-17	12:45
Received by:	[signature]	Nhan Phan	FCBI	4/5/17	12:45
Relinquished by:					
Received by:					

Samples ...

704063

SAMPLE CHAIN OF CUSTODY

ME 04/05/17

B01 / VW2 VS2

Page # CI1 of ____

Report To Dan Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone 206-523-3505 Email ____

SAMPLERS (signature)	
PROJECT NAME: 104 / 12th	PO #: WES 1591
REMARKS	INVOICE TO

TURNAROUND TIME
- ☒ Standard Turnaround
- ☐ RUSH ____
- Rush charges authorized by: ____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other ____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
WES-11-15'	11 A-D	4-5-17	AM	Soil	4					X							
WES-12-16'	12	〃			4					X							
WES-13-12'	13	〃			4					X							ⓧ - per DW
WES-2-7'	14	4-3		Soil	1		X										4/13/17
WES-2-9'	15	4-3		〃	1		X	ⓧ									〃
WES-1-10'	16	4-3		〃	1		X										

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]		WES	4-5-17	12:45
Received by:	[signature]	Nhan Phan	FBI	4/5/17	1245
Relinquished by:					
Received by:			Samples received at 16 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 19, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on April 5, 2017 from the 104 12th PO WES 1591, F&BI 704061 project. There are 25 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0419R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 5, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 104 12th PO WES 1591, F&BI 704061 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
704061 -01	WES-1-GW
704061 -02	WES-4-GW
704061 -03	WES-5-GW
704061 -04	WES-6-GW
704061 -05	WES-7-GW
704061 -06	WES-9-GW
704061 -07	WES-10-GW
704061 -08	WES-11-GW
704061 -09	WES-12-GW
704061 -10	WES-13-GW
704061 -11	MW-2
704061 -12	MW-3
704061 -13	MW-4
704061 -14	MW-5
704061 -15	MW-6

Bromomethane in the 8260C laboratory control sample and laboratory control sample duplicate exceeded the acceptance criteria. The analyte was not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061
Date Extracted: 04/17/17
Date Analyzed: 04/17/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
WES-1-GW 704061-01	1,700	94
WES-4-GW 704061-02	560	82
WES-5-GW 704061-03	220	82
WES-10-GW 704061-07	<100	80
MW-3 704061-12	110	78
Method Blank 07-780 MB	<100	72

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061
Date Extracted: 04/06/17
Date Analyzed: 04/06/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
WES-1-GW 704061-01	690 x	<250	85
WES-4-GW 704061-02	1,000 x	680	91
WES-5-GW 704061-03 1/1.2	460 x	<300	100
WES-6-GW 704061-04	78 x	<250	83
WES-7-GW 704061-05	56 x	<250	92
WES-9-GW 704061-06	<50	<250	94
WES-10-GW 704061-07	180 x	530	77
WES-12-GW 704061-09	<50	<250	69
WES-13-GW 704061-10	120 x	<250	86
MW-2 704061-11	<50	<250	85
MW-3 704061-12	400 x	<250	92

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061
Date Extracted: 04/06/17
Date Analyzed: 04/06/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-4 704061-13	67 x	<250	84
MW-5 704061-14	<50	<250	94
MW-6 704061-15	<50	<250	89
Method Blank 07-722 MB	<50	<250	99

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-1-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-01
Date Analyzed:	04/06/17	Data File:	040624.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	2.2
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	13
Hexane	<1	o-Xylene	7.5
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.2
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	1.7
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	2.7
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	12
Benzene	0.42	sec-Butylbenzene	5.3
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	6.7	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	14
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-4-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-02
Date Analyzed:	04/06/17	Data File:	040625.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1.5
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	9.0
Hexane	<1	o-Xylene	4.7
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	1.9
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	9.0
Benzene	<0.35	sec-Butylbenzene	1.7
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	3.6	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	6.4
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-5-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-03
Date Analyzed:	04/06/17	Data File:	040626.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	2.3
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	14
Hexane	<1	o-Xylene	7.3
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	1.0
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	2.7
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	14
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	6.0	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	6.0
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-6-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-04
Date Analyzed:	04/06/17	Data File:	040627.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	3.9
Hexane	<1	o-Xylene	1.8
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	3.9	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	3.6
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	1.4	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	1.4
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-7-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-05
Date Analyzed:	04/06/17	Data File:	040628.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.7
Hexane	<1	o-Xylene	1.3
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	2.5
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	1.1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-9-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-06
Date Analyzed:	04/06/17	Data File:	040629.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	5.2
Hexane	<1	o-Xylene	2.4
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	4.6
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	1.6	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	1.5
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-10-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-07
Date Analyzed:	04/06/17	Data File:	040630.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.5
Hexane	<1	o-Xylene	1.2
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	2.2
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-11-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-08
Date Analyzed:	04/06/17	Data File:	040631.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	12
Vinyl chloride	0.39	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	27	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.7
Hexane	<1	o-Xylene	1.4
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	9.4	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	2.6
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	17	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-12-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-09
Date Analyzed:	04/05/17	Data File:	040532.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	29	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	WES-13-GW	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-10
Date Analyzed:	04/06/17	Data File:	040533.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	3.1
Vinyl chloride	0.23	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	12	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	10	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-2	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-11
Date Analyzed:	04/06/17	Data File:	040534.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-3	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-12
Date Analyzed:	04/06/17	Data File:	040535.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.34	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	11	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	5.3
Hexane	<1	o-Xylene	2.6
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	1.1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	4.9
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	2.5	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	4.7
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-4	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-13
Date Analyzed:	04/06/17	Data File:	040536.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-5	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-14
Date Analyzed:	04/06/17	Data File:	040537.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	12	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-6	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	704061-15
Date Analyzed:	04/06/17	Data File:	040538.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	3.8
Hexane	<1	o-Xylene	1.7
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	1.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	3.4
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	1.2	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591
Date Extracted:	04/05/17	Lab ID:	07-673 mb
Date Analyzed:	04/05/17	Data File:	040520.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 704244-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	87	69-134

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	97	107	61-133	10

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 704061-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	116	10-172
Chloromethane	ug/L (ppb)	50	<10	103	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	108	36-166
Bromomethane	ug/L (ppb)	50	<1	158	47-169
Chloroethane	ug/L (ppb)	50	<1	113	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	110	44-165
Acetone	ug/L (ppb)	250	<10	114	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	118	60-136
Hexane	ug/L (ppb)	50	<1	107	52-150
Methylene chloride	ug/L (ppb)	50	<5	107	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	109	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	110	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	106	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	85	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	1.3	109	71-127
Chloroform	ug/L (ppb)	50	<1	104	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	106	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	102	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	103	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	106	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	101	56-152
Benzene	ug/L (ppb)	50	<0.35	103	76-125
Trichloroethene	ug/L (ppb)	50	<1	100	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	105	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	96	61-150
Dibromomethane	ug/L (ppb)	50	<1	102	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	103	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	94	72-132
Toluene	ug/L (ppb)	50	1.2	98	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	87	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	97	68-131
2-Hexanone	ug/L (ppb)	250	<10	101	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	98	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	93	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	86	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	97	69-134
Chlorobenzene	ug/L (ppb)	50	<1	95	77-122
Ethylbenzene	ug/L (ppb)	50	<1	94	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	89	73-137
m,p-Xylene	ug/L (ppb)	100	3.8	94	69-135
o-Xylene	ug/L (ppb)	50	1.7	94	60-140
Styrene	ug/L (ppb)	50	<1	94	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	92	65-142
Bromoform	ug/L (ppb)	50	<1	75	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	94	58-144
Bromobenzene	ug/L (ppb)	50	<1	95	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	93	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	101	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	96	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	96	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	94	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	93	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	3.4	90	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	92	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	92	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	95	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	92	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	92	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	81	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	93	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	89	60-143
Naphthalene	ug/L (ppb)	50	<1	88	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	91	69-148

Date of Report: 04/19/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704061

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	121	119	25-158	2
Chloromethane	ug/L (ppb)	50	110	112	45-156	2
Vinyl chloride	ug/L (ppb)	50	113	114	50-154	1
Bromomethane	ug/L (ppb)	50	160 vo	163 vo	55-143	2
Chloroethane	ug/L (ppb)	50	114	117	58-146	3
Trichlorofluoromethane	ug/L (ppb)	250	117	117	50-150	0
Acetone	ug/L (ppb)	250	131	122	53-131	7
1,1-Dichloroethene	ug/L (ppb)	50	123	122	67-136	1
Hexane	ug/L (ppb)	50	124	121	57-137	2
Methylene chloride	ug/L (ppb)	50	111	110	39-148	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	116	116	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	116	115	68-128	1
1,1-Dichloroethane	ug/L (ppb)	50	111	110	79-121	1
2,2-Dichloropropane	ug/L (ppb)	50	118	118	55-143	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	110	108	80-123	2
Chloroform	ug/L (ppb)	50	109	108	80-121	1
2-Butanone (MEK)	ug/L (ppb)	250	115	113	57-149	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	108	107	73-132	1
1,1,1-Trichloroethane	ug/L (ppb)	50	108	108	83-130	0
1,1-Dichloropropene	ug/L (ppb)	50	112	110	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	109	108	75-158	1
Benzene	ug/L (ppb)	50	109	108	69-134	1
Trichloroethene	ug/L (ppb)	50	106	106	80-120	0
1,2-Dichloropropane	ug/L (ppb)	50	111	110	77-123	1
Bromodichloromethane	ug/L (ppb)	50	105	104	81-133	1
Dibromomethane	ug/L (ppb)	50	108	107	82-125	1
4-Methyl-2-pentanone	ug/L (ppb)	250	110	108	65-138	2
cis-1,3-Dichloropropene	ug/L (ppb)	50	111	110	82-132	1
Toluene	ug/L (ppb)	50	106	104	72-122	2
trans-1,3-Dichloropropene	ug/L (ppb)	50	107	104	80-136	3
1,1,2-Trichloroethane	ug/L (ppb)	50	104	102	75-124	2
2-Hexanone	ug/L (ppb)	250	107	104	60-136	3
1,3-Dichloropropane	ug/L (ppb)	50	103	101	76-126	2
Tetrachloroethene	ug/L (ppb)	50	102	100	76-121	2
Dibromochloromethane	ug/L (ppb)	50	102	100	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	103	102	82-125	1
Chlorobenzene	ug/L (ppb)	50	102	100	83-114	2
Ethylbenzene	ug/L (ppb)	50	102	100	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	98	97	84-127	1
m,p-Xylene	ug/L (ppb)	100	101	100	83-125	1
o-Xylene	ug/L (ppb)	50	101	101	81-121	0
Styrene	ug/L (ppb)	50	102	101	84-119	1
Isopropylbenzene	ug/L (ppb)	50	100	99	85-117	1
Bromoform	ug/L (ppb)	50	98	96	74-136	2
n-Propylbenzene	ug/L (ppb)	50	102	100	74-126	2
Bromobenzene	ug/L (ppb)	50	101	99	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	102	100	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	106	104	66-126	2
1,2,3-Trichloropropane	ug/L (ppb)	50	101	99	67-124	2
2-Chlorotoluene	ug/L (ppb)	50	102	101	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	101	99	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	100	99	80-123	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	99	97	79-122	2
sec-Butylbenzene	ug/L (ppb)	50	101	99	80-125	2
p-Isopropyltoluene	ug/L (ppb)	50	101	99	81-123	2
1,3-Dichlorobenzene	ug/L (ppb)	50	101	100	85-116	1
1,4-Dichlorobenzene	ug/L (ppb)	50	99	98	84-121	1
1,2-Dichlorobenzene	ug/L (ppb)	50	99	98	85-116	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	91	90	57-141	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	101	100	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	99	98	53-141	1
Naphthalene	ug/L (ppb)	50	90	90	64-133	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	95	96	65-136	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

784061

SAMPLE CHAIN OF CUSTODY ME 04-05-17 B04 / VW3

Page # ____ of ____

Report To Dan Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone 206-523-3505 Email ____

SAMPLERS (signature)

PROJECT NAME: 104 / 12th

PO #: WES 1591

REMARKS

INVOICE TO

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH ____
Rush charges authorized by: ____

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other ____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
WES-1-GW	01 A-D	4-3	AM	Water	4		X	(X)		X							(X) - per DW
WES-4-GW	02	↓		↓	↓		X	(X)		X							4/13/17
WES-5-GW	03						X	(X)		X							
WES-6-GW	04	↓					X			X							
WES-7-GW	05	4-4	AM				X			X							
WES-9-GW	06	↓					X			X							
WES-10-GW	07	4-5	AM				X	(X)		X							Samples received at 4
WES-11-GW	08 A-C				3		~~X~~			X							
WES-12-GW	09 A-D				4		X			X							
WES-13-GW	10	↓		↓	4		X			X							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	[signature]	WES	4-5-17	12:45
Received by: [signature]	Nhan Phan	FeBT	4/5/17	1205
Relinquished by:				
Received by:				

704061

SAMPLE CHAIN OF CUSTODY

ME 04-05-17

B04/VW3

Report To Dan Whitman

Company Whitman Env. Sciences

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone 206-523-3508 Email

SAMPLERS (*signature*)	
PROJECT NAME 104 / 12th	PO # WES 1591
REMARKS	INVOICE TO

Page # ____ of ____

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:
SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-2	11 A-D	4/4	AM	water	4		X			X							
MW-3	12 ↓	4/5	↓	↓	↓		X	⊗		X							
MW-4	13	4/5					X			X							
MW-5	14	4/5					X			X							
MW-6	15	4/4					X			X							
																	Samples received at 4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	[signature]	WES	4-5-17	12:45
Received by: [signature]	Nhan Phan	FeBI	4/5/17	1245
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 20, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on April 5, 2017 from the 104 12th PO WES 1591, F&BI 704062 project. There are 8 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0420R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 5, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 104 12th PO WES 1591, F&BI 704062 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
704062 -01	SSVP-2
704062 -02	SSVP-1
704062 -03	SSVP-3

Several compounds in the TO-15 laboratory control sample exceeded the acceptance criteria. The analytes were not detected in the sample, therefore the data were acceptable.

All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SSVP-2	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Collected:	04/04/17	Lab ID:	704062-01 1/2.5
Date Analyzed:	04/14/17	Data File:	041406.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration ug/m3	ppbv	Compounds:	Concentration ug/m3	ppbv
Chlorodifluoromethane	<0.88	<0.25	1-Butanol	<15	<5
Propene	3.8	2.2	Carbon tetrachloride	<1.6	<0.25
Dichlorodifluoromethane	<1.2	<0.25	Benzene	2.0	0.64
Chloromethane	<0.52	<0.25	Cyclohexane	<17	<5
F-114	<1.7	<0.25	2-Pentanone	<8.8	<2.5
Isobutene	<2.3	<1	3-Pentanone	<8.8	<2.5
Acetaldehyde	<23	<12	Pentanal	<8.8	<2.5
Vinyl chloride	<0.64	<0.25	1,2-Dichloropropane	<1.2	<0.25
1,3-Butadiene	<0.55	<0.25	1,4-Dioxane	<1.8	<0.5
Bromomethane	<0.97	<0.25	Bromodichloromethane	5.1	0.77
Chloroethane	<0.66	<0.25	Trichloroethene	<1.3	<0.25
Ethanol	<19	<10	cis-1,3-Dichloropropene	<1.1	<0.25
Acetonitrile	<4.2	<2.5	4-Methyl-2-pentanone	<10	<2.5
Acrolein	<2.3	<1	trans-1,3-Dichloropropene	<1.1	<0.25
Acrylonitrile	<0.54	<0.25	Toluene	24	6.4
Pentane	36	12	1,1,2-Trichloroethane	<1.4	<0.25
Trichlorofluoromethane	<1.4	<0.25	3-Hexanone	<10	<2.5
Acetone	<12	<5	2-Hexanone	<10	<2.5
2-Propanol	<22	<8.7	Hexanal	<10	<2.5
Isoprene	<0.7	<0.25	Tetrachloroethene	8.6	1.3
Iodomethane	<1.5	<0.25	Dibromochloromethane	<2.1	<0.25
1,1-Dichloroethene	<0.99	<0.25	1,2-Dibromoethane (EDB)	<1.9	<0.25
Methacrolein	<7.2	<2.5	Chlorobenzene	<1.2	<0.25
trans-1,2-Dichloroethene	<0.99	<0.25	Ethylbenzene	6.9	1.6
Cyclopentane	4.5	1.6	1,1,2,2-Tetrachloroethane	<1.7	<0.25
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	40	9.3
Butanal	<7.4	<2.5	o-Xylene	11	2.6
Methylene chloride	<700	<197	Styrene	<2.1	<0.5
CFC-113	<1.9	<0.25	Bromoform	<5.2	<0.5
Carbon disulfide	<16	<5	Benzyl chloride	<1.3	<0.25
Methyl t-butyl ether	<0.9	<0.25	1,3,5-Trimethylbenzene	<6.1	<1.2
Vinyl acetate	<18	<5	1,2,4-Trimethylbenzene	19	3.9
1,1-Dichloroethane	<1	<0.25	1,3-Dichlorobenzene	<3	<0.5
cis-1,2-Dichloroethene	<0.99	<0.25	1,4-Dichlorobenzene	<1.5	<0.25
Hexane	14	3.9	1,2,3-Trimethylbenzene	<6.1	<1.2
Chloroform	96	20	1,2-Dichlorobenzene	<3	<0.5
2-Butanone (MEK)	<7.4	<2.5	1,2,4-Trichlorobenzene	<1.9	<0.25
1,2-Dichloroethane (EDC)	<1	<0.25	Naphthalene	6.9	1.3
1,1,1-Trichloroethane	<1.4	<0.25	Hexachlorobutadiene	<2.7	<0.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SSVP-1	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Collected:	04/04/17	Lab ID:	704062-02 1/2.5
Date Analyzed:	04/14/17	Data File:	041407.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.88	<0.25	1-Butanol	<15	<5
Propene	56	33	Carbon tetrachloride	<1.6	<0.25
Dichlorodifluoromethane	<1.2	<0.25	Benzene	2.6	0.81
Chloromethane	<0.52	<0.25	Cyclohexane	<17	<5
F-114	<1.7	<0.25	2-Pentanone	<8.8	<2.5
Isobutene	14	6.1	3-Pentanone	<8.8	<2.5
Acetaldehyde	<23	<12	Pentanal	<8.8	<2.5
Vinyl chloride	<0.64	<0.25	1,2-Dichloropropane	<1.2	<0.25
1,3-Butadiene	<0.55	<0.25	1,4-Dioxane	<1.8	<0.5
Bromomethane	<0.97	<0.25	Bromodichloromethane	<1.7	<0.25
Chloroethane	<0.66	<0.25	Trichloroethene	<1.3	<0.25
Ethanol	27 ca	14 ca	cis-1,3-Dichloropropene	<1.1	<0.25
Acetonitrile	<4.2	<2.5	4-Methyl-2-pentanone	<10	<2.5
Acrolein	<2.3	<1	trans-1,3-Dichloropropene	<1.1	<0.25
Acrylonitrile	<0.54	<0.25	Toluene	24	6.4
Pentane	24	8.3	1,1,2-Trichloroethane	<1.4	<0.25
Trichlorofluoromethane	<1.4	<0.25	3-Hexanone	<10	<2.5
Acetone	210	87	2-Hexanone	<10	<2.5
2-Propanol	110	43	Hexanal	<10	<2.5
Isoprene	<0.7	<0.25	Tetrachloroethene	<1.7	<0.25
Iodomethane	<1.5	<0.25	Dibromochloromethane	<2.1	<0.25
1,1-Dichloroethene	<0.99	<0.25	1,2-Dibromoethane (EDB)	<1.9	<0.25
Methacrolein	<7.2	<2.5	Chlorobenzene	<1.2	<0.25
trans-1,2-Dichloroethene	<0.99	<0.25	Ethylbenzene	6.1	1.4
Cyclopentane	2.6	0.90	1,1,2,2-Tetrachloroethane	<1.7	<0.25
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	34	7.8
Butanal	<7.4	<2.5	o-Xylene	8.9	2.1
Methylene chloride	<700	<197	Styrene	<2.1	<0.5
CFC-113	<1.9	<0.25	Bromoform	<5.2	<0.5
Carbon disulfide	<16	<5	Benzyl chloride	<1.3	<0.25
Methyl t-butyl ether	<0.9	<0.25	1,3,5-Trimethylbenzene	<6.1	<1.2
Vinyl acetate	<18	<5	1,2,4-Trimethylbenzene	9.7	2.0
1,1-Dichloroethane	<1	<0.25	1,3-Dichlorobenzene	<3	<0.5
cis-1,2-Dichloroethene	<0.99	<0.25	1,4-Dichlorobenzene	<1.5	<0.25
Hexane	33	9.3	1,2,3-Trimethylbenzene	<6.1	<1.2
Chloroform	<1.2	<0.25	1,2-Dichlorobenzene	<3	<0.5
2-Butanone (MEK)	16	5.3	1,2,4-Trichlorobenzene	<1.9	<0.25
1,2-Dichloroethane (EDC)	<1	<0.25	Naphthalene	3.1	0.60
1,1,1-Trichloroethane	<1.4	<0.25	Hexachlorobutadiene	<2.7	<0.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SSVP-3	Client:	Whitman Environmental Sciences
Date Received:	04/05/17	Project:	104 12th PO WES 1591
Date Collected:	04/04/17	Lab ID:	704062-03 1/2.5
Date Analyzed:	04/14/17	Data File:	041408.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.88	<0.25	1-Butanol	<15	<5
Propene	3.4	2.0	Carbon tetrachloride	<1.6	<0.25
Dichlorodifluoromethane	1.3	0.25	Benzene	2.7	0.85
Chloromethane	<0.52	<0.25	Cyclohexane	<17	<5
F-114	<1.7	<0.25	2-Pentanone	<8.8	<2.5
Isobutene	<2.3	<1	3-Pentanone	<8.8	<2.5
Acetaldehyde	<23	<12	Pentanal	<8.8	<2.5
Vinyl chloride	<0.64	<0.25	1,2-Dichloropropane	<1.2	<0.25
1,3-Butadiene	<0.55	<0.25	1,4-Dioxane	<1.8	<0.5
Bromomethane	<0.97	<0.25	Bromodichloromethane	<1.7	<0.25
Chloroethane	<0.66	<0.25	Trichloroethene	<1.3	<0.25
Ethanol	50 ca	27 ca	cis-1,3-Dichloropropene	<1.1	<0.25
Acetonitrile	<4.2	<2.5	4-Methyl-2-pentanone	<10	<2.5
Acrolein	<2.3	<1	trans-1,3-Dichloropropene	<1.1	<0.25
Acrylonitrile	<0.54	<0.25	Toluene	39	10
Pentane	26	8.7	1,1,2-Trichloroethane	<1.4	<0.25
Trichlorofluoromethane	<1.4	<0.25	3-Hexanone	<10	<2.5
Acetone	73	31	2-Hexanone	<10	<2.5
2-Propanol	98	40	Hexanal	<10	<2.5
Isoprene	<0.7	<0.25	Tetrachloroethene	15	2.2
Iodomethane	<1.5	<0.25	Dibromochloromethane	<2.1	<0.25
1,1-Dichloroethene	<0.99	<0.25	1,2-Dibromoethane (EDB)	<1.9	<0.25
Methacrolein	<7.2	<2.5	Chlorobenzene	<1.2	<0.25
trans-1,2-Dichloroethene	<0.99	<0.25	Ethylbenzene	12	2.7
Cyclopentane	2.9	1.0	1,1,2,2-Tetrachloroethane	<1.7	<0.25
Methyl vinyl ketone	<2.9	<1	m,p-Xylene	68	16
Butanal	<7.4	<2.5	o-Xylene	18	4.2
Methylene chloride	<700	<197	Styrene	<2.1	<0.5
CFC-113	<1.9	<0.25	Bromoform	<5.2	<0.5
Carbon disulfide	<16	<5	Benzyl chloride	<1.3	<0.25
Methyl t-butyl ether	1.1	0.3	1,3,5-Trimethylbenzene	<6.1	<1.2
Vinyl acetate	<18	<5	1,2,4-Trimethylbenzene	25	5.2
1,1-Dichloroethane	<1	<0.25	1,3-Dichlorobenzene	<3	<0.5
cis-1,2-Dichloroethene	<0.99	<0.25	1,4-Dichlorobenzene	<1.5	<0.25
Hexane	23	6.5	1,2,3-Trimethylbenzene	<6.1	<1.2
Chloroform	5.8	1.2	1,2-Dichlorobenzene	<3	<0.5
2-Butanone (MEK)	<7.4	<2.5	1,2,4-Trichlorobenzene	<1.9	<0.25
1,2-Dichloroethane (EDC)	<1	<0.25	Naphthalene	5.8	1.1
1,1,1-Trichloroethane	<1.4	<0.25	Hexachlorobutadiene	<2.7	<0.25

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591
Date Collected:	Not Applicable	Lab ID:	07-676 mb
Date Analyzed:	04/06/17	Data File:	040606.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	MP

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	95	70	130

Compounds:	Concentration ug/m3	Concentration ppbv	Compounds:	Concentration ug/m3	Concentration ppbv
Chlorodifluoromethane	<0.35	<0.1	1-Butanol	<6.1	<2
Propene	<0.69	<0.4	Carbon tetrachloride	<0.63	<0.1
Dichlorodifluoromethane	<0.49	<0.1	Benzene	<0.32	<0.1
Chloromethane	<0.21	<0.1	Cyclohexane	<6.9	<2
F-114	<0.7	<0.1	2-Pentanone	<3.5	<1
Isobutene	<0.92	<0.4	3-Pentanone	<3.5	<1
Acetaldehyde	<9	<5	Pentanal	<3.5	<1
Vinyl chloride	<0.26	<0.1	1,2-Dichloropropane	<0.46	<0.1
1,3-Butadiene	<0.22	<0.1	1,4-Dioxane	<0.36	<0.1
Bromomethane	<0.39	<0.1	Bromodichloromethane	<0.67	<0.1
Chloroethane	<0.26	<0.1	Trichloroethene	<0.54	<0.1
Ethanol	<7.5	<4	cis-1,3-Dichloropropene	<0.45	<0.1
Acetonitrile	<1.7	<1	4-Methyl-2-pentanone	<4.1	<1
Acrolein	<0.92	<0.4	trans-1,3-Dichloropropene	<0.45	<0.1
Acrylonitrile	<0.22	<0.1	Toluene	<0.38	<0.1
Pentane	<3	<1	1,1,2-Trichloroethane	<0.55	<0.1
Trichlorofluoromethane	<0.56	<0.1	3-Hexanone	<4.1	<1
Acetone	<4.8	<2	2-Hexanone	<4.1	<1
2-Propanol	<8.6	<3.5	Hexanal	<4.1	<1
Isoprene	<0.28	<0.1	Tetrachloroethene	<0.68	<0.1
Iodomethane	<0.58	<0.1	Dibromochloromethane	<0.85	<0.1
1,1-Dichloroethene	<0.4	<0.1	1,2-Dibromoethane (EDB)	<0.77	<0.1
Methacrolein	<2.9	<1	Chlorobenzene	<0.46	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1	Ethylbenzene	<0.43	<0.1
Cyclopentane	<0.29	<0.1	1,1,2,2-Tetrachloroethane	<0.69	<0.1
Methyl vinyl ketone	<1.1	<0.4	m,p-Xylene	<0.87	<0.2
Butanal	<2.9	<1	o-Xylene	<0.43	<0.1
Methylene chloride	<87	<25	Styrene	<0.85	<0.2
CFC-113	<0.77	<0.1	Bromoform	<2.1	<0.2
Carbon disulfide	<6.2	<2	Benzyl chloride	<0.52	<0.1
Methyl t-butyl ether	<0.36	<0.1	1,3,5-Trimethylbenzene	<2.5	<0.5
Vinyl acetate	<7	<2	1,2,4-Trimethylbenzene	<2.5	<0.5
1,1-Dichloroethane	<0.4	<0.1	1,3-Dichlorobenzene	<1.2	<0.2
cis-1,2-Dichloroethene	<0.4	<0.1	1,4-Dichlorobenzene	<0.6	<0.1
Hexane	<3.5	<1	1,2,3-Trimethylbenzene	<2.5	<0.5
Chloroform	<0.49	<0.1	1,2-Dichlorobenzene	<1.2	<0.2
2-Butanone (MEK)	<2.9	<1	1,2,4-Trichlorobenzene	<0.74	<0.1
1,2-Dichloroethane (EDC)	<0.4	<0.1	Naphthalene	<0.52	<0.1
1,1,1-Trichloroethane	<0.55	<0.1	Hexachlorobutadiene	<1.1	<0.1

Date of Report: 04/20/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704062

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Chlorodifluoromethane	ppbv	10	109	70-130
Propene	ppbv	10	87	70-130
Dichlorodifluoromethane	ppbv	10	113	70-130
Chloromethane	ppbv	10	117	70-130
F-114	ppbv	10	130	70-130
Isobutene	ppbv	10	113	70-130
Acetaldehyde	ppbv	10	116	70-130
Vinyl chloride	ppbv	10	128	70-130
1,3-Butadiene	ppbv	10	125	70-130
Bromomethane	ppbv	10	146 vo	70-130
Chloroethane	ppbv	10	141 vo	70-130
Ethanol	ppbv	10	140 vo	70-130
Acetonitrile	ppbv	10	131 vo	70-130
Acrolein	ppbv	10	135 vo	70-130
Acrylonitrile	ppbv	10	96	70-130
Pentane	ppbv	10	93	70-130
Trichlorofluoromethane	ppbv	10	134 vo	70-130
Acetone	ppbv	10	120	70-130
2-Propanol	ppbv	10	127	70-130
Isoprene	ppbv	10	102	70-130
Iodomethane	ppbv	10	116	70-130
1,1-Dichloroethene	ppbv	10	107	70-130
Methacrolein	ppbv	10	96	70-130
trans-1,2-Dichloroethene	ppbv	10	111	70-130
Cyclopentane	ppbv	10	74	70-130
Methyl Vinyl Ketone	ppbv	10	106	70-130
Butanal	ppbv	10	107	70-130
Methylene chloride	ppbv	10	111	70-130
CFC-113	ppbv	10	116	70-130
Carbon disulfide	ppbv	10	119	70-130
Methyl t-butyl ether	ppbv	10	98	70-130
Vinyl acetate	ppbv	10	83	70-130
1,1-Dichloroethane	ppbv	10	107	70-130
cis-1,2-Dichloroethene	ppbv	10	108	70-130
Hexane	ppbv	10	99	70-130
Chloroform	ppbv	10	112	70-130
2-Butanone (MEK)	ppbv	10	107	70-130
1,2-Dichloroethane (EDC)	ppbv	10	107	70-130
1,1,1-Trichloroethane	ppbv	10	107	70-130
1-Butanol	ppbv	10	98	70-130
Carbon tetrachloride	ppbv	10	114	70-130

Date of Report: 04/20/17
Date Received: 04/05/17
Project: 104 12th PO WES 1591, F&BI 704062

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ppbv	10	107	70-130
Cyclohexane	ppbv	10	98	70-130
2-Pentanone	ppbv	10	109	70-130
3-Pentanone	ppbv	10	114	70-130
Pentanal	ppbv	10	101	70-130
1,2-Dichloropropane	ppbv	10	117	70-130
1,4-Dioxane	ppbv	10	125	70-130
Bromodichloromethane	ppbv	10	123	70-130
Trichloroethene	ppbv	10	121	70-130
cis-1,3-Dichloropropene	ppbv	10	111	70-130
4-Methyl-2-pentanone	ppbv	10	116	70-130
trans-1,3-Dichloropropene	ppbv	10	114	70-130
Toluene	ppbv	10	114	70-130
1,1,2-Trichloroethane	ppbv	10	124	70-130
3-Hexanone	ppbv	10	113	70-130
2-Hexanone	ppbv	10	112	70-130
Hexanal	ppbv	10	106	70-130
Tetrachloroethene	ppbv	10	123	70-130
Dibromochloromethane	ppbv	10	137 vo	70-130
1,2-Dibromoethane (EDB)	ppbv	10	127	70-130
Chlorobenzene	ppbv	10	125	70-130
Ethylbenzene	ppbv	10	121	70-130
1,1,2,2,-Tetrachloroethane	ppbv	10	131 vo	70-130
m,p-Xylene	ppbv	20	123	70-130
o-Xylene	ppbv	10	123	70-130
Styrene	ppbv	10	121	70-130
Bromoform	ppbv	10	143 vo	70-130
Benzyl chloride	ppbv	10	123	70-130
1,3,5-Trimethylbenzene	ppbv	10	122	70-130
1,2,4-Trimethylbenzene	ppbv	10	123	70-130
1,3-Dichlorobenzene	ppbv	10	130	70-130
1,4-Dichlorobenzene	ppbv	10	128	70-130
1,2,3-Trimethylbenzene	ppbv	10	122	70-130
1,2-Dichlorobenzene	ppbv	10	129	70-130
1,2,4-Trichlorobenzene	ppbv	10	101	70-130
Naphthalene	ppbv	10	100	70-130
Hexachlorobutadiene	ppbv	10	107	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

704062

SAMPLE CHAIN OF CUSTODY

ME 04/05/17

Report To [illegible]

Company [illegible]

Address 6812 16th Ave NE

City, State, ZIP Seattle, WA 98115

Phone 206 523-3808 Email

SAMPLERS (*signature*)	
PROJECT NAME: 104 12th	PO #: DES 1591
REMARKS	INVOICE TO

Page # ___ of ___

TURNAROUND TIME
☑ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Contr. ID	Date Sampled	Field Initial Press. (Hg)	Field Initial Time	Field Final Press. (Hg)	Field Final Time	TO-15 Full Scan	TO-15 BTEXN	TO-15 cVOCs		Notes
SSVP-2	01	FT102 3R55		4/4/17	28	1225	4.9	1231	X				
SSVP-1	02	FB110 3256		|	30	1258	6.5	1:07	X				Gauge seemed to stop at 6.5"
SSVP-3	03	FB198 2434		|	29.5	1:18	5.0	1:19	X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]		DES	4-5-17	12:36
Received by: [signature]	Nhan Phan	FBI	4/5/17	1236
Relinquished by:				
Received by:				

FORMS\COC\COCTO-15.DOC

Samples received at 20 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 31, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included is the amended report from the testing of material submitted on May 15, 2017 from the 110 12th PO WES 1591A, F&BI 705265 project. The HCID motor oil range concentrations have been estimated.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0524R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 24, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on May 15, 2017 from the 110 12th PO WES 1591A, F&BI 705265 project. There are 57 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0524R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 15, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 110 12th PO WES 1591A, F&BI 705265 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
705265 -01	BN-1-GW
705265 -02	BN-2-GW
705265 -03	BN-3-GW
705265 -04	BN-4-GW
705265 -05	BN-5-GW
705265 -06	BN-6-GW
705265 -07	BN-8-GW
705265 -08	BN-9-GW
705265 -09	BN-11-GW
705265 -10	HA-N-GW
705265 -11	HA-S-GW
705265 -12	BN-1-9'
705265 -13	BN-1-15'
705265 -14	BN-2-3'
705265 -15	BN-2-13'
705265 -16	BN-3-7'
705265 -17	BN-3-14.5'
705265 -18	BN-4-7'
705265 -19	BN-5-5'
705265 -20	BN-5-11'
705265 -21	BN-5-18'
705265 -22	BN-6-1'
705265 -23	BN-6-9'
705265 -24	BN-6-15'
705265 -25	SLOPE 1
705265 -26	SLOPE 2
705265 -27	HA-N-2.5'
705265 -28	HA-N-9'
705265 -29	HA-S-2.5'
705265 -30	HA-S-6'
705265 -31	BN-7-9'
705265 -32	BN-7-12'
705265 -33	BN-7-17'
705265 -34	BN-7-19'
705265 -35	BN-8-7'

CASE NARRATIVE (CONTINUED)

Laboratory ID	Whitman Environmental Sciences
705265 -36	BN-8-17'
705265 -37	BN-8-20'
705265 -38	BN-9-12'
705265 -39	BN-9-24'
705265 -40	BN-10-15-20'
705265 -41	BN-10-20'
705265 -42	BN-11-12'
705265 -43	BN-11-20'

All quality control requirements were acceptable.

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17 and 05/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
BN-1-9' 705265-12	ND	ND	ND	76
BN-2-13' 705265-15	ND	ND	ND	76
BN-3-7' 705265-16	ND	ND	ND	73
BN-4-7' 705265-18	ND	ND	ND	75
BN-5-11' 705265-20	ND	ND	ND	83
BN-5-18' 705265-21	ND	ND	ND	81
BN-6-9' 705265-23	ND	ND	ND	84
SLOPE 1 705265-25	ND	ND	ND	83
SLOPE 2 705265-26	ND	ND	660	84
BN-7-19' 705265-34	ND	ND	ND	81

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17 and 05/18/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 56-165)
BN-8-7' 705265-35	ND	ND	3,300	87
BN-11-20' 705265-43	ND	ND	ND	83
Method Blank 07-1076 MB	ND	ND	ND	84

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17 and 05/17/17
Date Analyzed: 05/16/17 and 05/17/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
BN-6-1' 705265-22	2.7	87
BN-6-15' 705265-24	<2	88
HA-N-2.5' 705265-27 1/10	730	93
HA-N-9' 705265-28	3.9	88
HA-S-2.5' 705265-29	7.0	90
HA-S-6' 705265-30	11	90
BN-7-12' 705265-32 1/20	780	107
BN-10-15-20' 705265-40 1/10	490	108
Method Blank 07-980 MB	<2	87
Method Blank 07-984 MB	<2	90

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
BN-1-GW 705265-01	<100	88
BN-2-GW 705265-02	<100	90
BN-3-GW 705265-03	<100	88
BN-4-GW 705265-04	<100	88
BN-5-GW 705265-05	<100	88
BN-6-GW 705265-06	<100	89
BN-8-GW 705265-07	1,300	82
BN-9-GW 705265-08	<100	90
BN-11-GW 705265-09	<100	90
HA-N-GW 705265-10	770	109

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
HA-S-GW 705265-11	600	86
Method Blank 07-982 MB	<100	87

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/17/17
Date Analyzed: 05/17/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 50-132)
BN-7-9' 705265-31	<0.02	<0.02	<0.02	0.082	14	81
BN-7-17' 705265-33	0.033	<0.02	0.26	2.0	24	82
BN-8-17' 705265-36	<0.02	<0.02	<0.02	<0.06	<2	79
BN-9-12' 705265-38	<0.02	<0.02	<0.02	<0.06	<2	80
Method Blank 07-984 MB	<0.02	<0.02	<0.02	<0.06	<2	80

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
HA-N-2.5' 705265-27	230 x	<250	89
BN-10-15-20' 705265-40	160 x	<250	88
Method Blank 07-1073 MB	<50	<250	85

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
BN-1-GW 705265-01	<50	<250	86
BN-2-GW 705265-02	<50	<250	83
BN-3-GW 705265-03	79 x	<250	93
BN-4-GW 705265-04	<50	<250	76
BN-5-GW 705265-05	64 x	<250	88
BN-6-GW 705265-06	100 x	<250	91
BN-8-GW 705265-07	830 x	<250	83
BN-9-GW 705265-08	120 x	<250	95
BN-11-GW 705265-09	460 x	<250	88
HA-N-GW 705265-10	410 x	<250	85

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265
Date Extracted: 05/16/17
Date Analyzed: 05/16/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
HA-S-GW 705265-11	730 x	<250	91
Method Blank 07-1064 MB2	<50	<250	88

Analysis For Total Metals By EPA Method 6020A

Client ID:	SLOPE 1	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/18/17	Lab ID:	705265-25
Date Analyzed:	05/19/17	Data File:	705265-25.070
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.13
Cadmium	<1
Chromium	12.9
Lead	2.20
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	SLOPE 2	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/18/17	Lab ID:	705265-26
Date Analyzed:	05/19/17	Data File:	705265-26.071
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	3.91
Cadmium	1.21
Chromium	16.5
Lead	243
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	BN-11-12'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/18/17	Lab ID:	705265-42
Date Analyzed:	05/19/17	Data File:	705265-42.072
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.03
Cadmium	<1
Chromium	16.8
Lead	305 ve
Mercury	<1

Analysis For Total Metals By EPA Method 6020A

Client ID:	BN-11-12'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/18/17	Lab ID:	705265-42 x2
Date Analyzed:	05/19/17	Data File:	705265-42 x2.095
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.30
Cadmium	<2
Chromium	17.5
Lead	330
Mercury	<2

Analysis For Total Metals By EPA Method 6020A

Client ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	NA	Project:	110 12th PO WES 1591A
Date Extracted:	05/18/17	Lab ID:	I7-273 mb
Date Analyzed:	05/18/17	Data File:	I7-273 mb.059
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-1-9'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-12
Date Analyzed:	05/17/17	Data File:	051644.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-1-15'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-13
Date Analyzed:	05/17/17	Data File:	051645.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-2-3'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-14
Date Analyzed:	05/17/17	Data File:	051646.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-2-13'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-15
Date Analyzed:	05/17/17	Data File:	051647.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-3-7'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-16
Date Analyzed:	05/17/17	Data File:	051648.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-3-14.5'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-17
Date Analyzed:	05/17/17	Data File:	051649.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-4-7'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-18
Date Analyzed:	05/17/17	Data File:	051650.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-5-5'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-19
Date Analyzed:	05/17/17	Data File:	051651.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-6-1'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-22
Date Analyzed:	05/17/17	Data File:	051652.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-6-15'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-24
Date Analyzed:	05/17/17	Data File:	051653.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-N-2.5'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-27
Date Analyzed:	05/17/17	Data File:	051654.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.24
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	0.60
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-N-9'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-28
Date Analyzed:	05/17/17	Data File:	051655.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-S-2.5'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-29
Date Analyzed:	05/17/17	Data File:	051656.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-S-6'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-30
Date Analyzed:	05/17/17	Data File:	051710.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.12
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-7-12'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-32
Date Analyzed:	05/18/17	Data File:	051819.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	6.8
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	42 ve
Hexane	<0.25	o-Xylene	15 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	2.6
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	10
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	19 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	52 ve
Benzene	<0.03	sec-Butylbenzene	1.2
Trichloroethene	<0.02	p-Isopropyltoluene	0.55
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	4.9
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-7-12'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-32 1/10
Date Analyzed:	05/18/17	Data File:	051813.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	6.9
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	44
Hexane	<2.5	o-Xylene	15
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	2.6
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	10
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	20
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	63
Benzene	<0.3	sec-Butylbenzene	1.2
Trichloroethene	<0.2	p-Isopropyltoluene	0.56
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	<0.5	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	4.6
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-10-15-20'	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-40
Date Analyzed:	05/17/17	Data File:	051712.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	2.6
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.44
Hexane	5.1	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	2.0
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	8.5
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	1.7
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	3.5
Benzene	<0.03	sec-Butylbenzene	0.94
Trichloroethene	<0.02	p-Isopropyltoluene	0.36
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.86
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	07-1020 mb
Date Analyzed:	05/17/17	Data File:	051643.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-1-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-01
Date Analyzed:	05/16/17	Data File:	051610.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-2-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-02
Date Analyzed:	05/16/17	Data File:	051611.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-3-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-03
Date Analyzed:	05/16/17	Data File:	051612.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	0.65	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-4-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-04
Date Analyzed:	05/16/17	Data File:	051613.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-5-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-05
Date Analyzed:	05/16/17	Data File:	051614.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-6-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-06
Date Analyzed:	05/16/17	Data File:	051615.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	11	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-8-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-07
Date Analyzed:	05/16/17	Data File:	051616.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	12
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	6.9
Hexane	1.1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	28
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	39
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	3.9
Benzene	1.6	sec-Butylbenzene	1.5
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	1.3	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	2.1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-9-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-08
Date Analyzed:	05/16/17	Data File:	051617.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-11-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-09
Date Analyzed:	05/16/17	Data File:	051618.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	95	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-N-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-10
Date Analyzed:	05/16/17	Data File:	051620.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	98	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	1.9	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	3.5
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	12
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	5.3	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	1.9	sec-Butylbenzene	9.9
Trichloroethene	1.6	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-S-GW	Client:	Whitman Environmental Sciences
Date Received:	05/15/17	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	705265-11
Date Analyzed:	05/16/17	Data File:	051619.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	97	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	9.3
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	45
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	7.5
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	110 12th PO WES 1591A
Date Extracted:	05/16/17	Lab ID:	07-1019 mb
Date Analyzed:	05/16/17	Data File:	051609.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	99	63	127
4-Bromofluorobenzene	94	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 05/24/17
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Project: 110 12th PO WES 1591A, F&BI 705265

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 705266-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	61-153

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 705284-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	90	69-134

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 705308-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	<0.02	<0.02	nm
Toluene	mg/kg (ppm)	<0.02	<0.02	nm
Ethylbenzene	mg/kg (ppm)	<0.02	<0.02	nm
Xylenes	mg/kg (ppm)	<0.06	<0.06	nm
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	mg/kg (ppm)	0.5	93	66-121
Toluene	mg/kg (ppm)	0.5	94	72-128
Ethylbenzene	mg/kg (ppm)	0.5	101	69-132
Xylenes	mg/kg (ppm)	1.5	98	69-131
Gasoline	mg/kg (ppm)	20	100	61-153

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 705272-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	82	95	98	73-135	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	74-139

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	80	80	63-142	0

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020A

Laboratory Code: 705285-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	1.01	102	96	75-125	6
Cadmium	mg/kg (ppm)	10	<1	98	95	75-125	3
Chromium	mg/kg (ppm)	50	12.1	92	86	75-125	7
Lead	mg/kg (ppm)	50	1.08	96	93	75-125	3
Mercury	mg/kg (ppm	5	<1	95	97	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	92	80-120
Cadmium	mg/kg (ppm)	10	93	80-120
Chromium	mg/kg (ppm)	50	90	80-120
Lead	mg/kg (ppm)	50	93	80-120
Mercury	mg/kg (ppm)	5	96	80-120

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 705265-13 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	32	10-142
Chloromethane	mg/kg (ppm)	2.5	<0.5	62	10-126
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	63	10-138
Bromomethane	mg/kg (ppm)	2.5	<0.5	70	10-163
Chloroethane	mg/kg (ppm)	2.5	<0.5	76	10-176
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	70	10-176
Acetone	mg/kg (ppm)	12.5	<0.5	86	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	77	10-160
Hexane	mg/kg (ppm)	2.5	<0.25	63	10-137
Methylene chloride	mg/kg (ppm)	2.5	<0.5	93	10-156
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	84	21-145
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	14-137
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	83	19-140
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	79	10-158
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	82	25-135
Chloroform	mg/kg (ppm)	2.5	<0.05	84	21-145
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	87	19-147
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	81	12-160
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	82	10-156
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	81	17-140
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	84	9-164
Benzene	mg/kg (ppm)	2.5	<0.03	80	29-129
Trichloroethene	mg/kg (ppm)	2.5	<0.02	81	21-139
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	82	30-135
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	85	23-155
Dibromomethane	mg/kg (ppm)	2.5	<0.05	83	23-145
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	87	24-155
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	87	28-144
Toluene	mg/kg (ppm)	2.5	<0.05	81	35-130
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	89	26-149
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	85	10-205
2-Hexanone	mg/kg (ppm)	12.5	<0.5	83	15-166
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	82	31-137
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	80	20-133
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	89	28-150
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	84	28-142
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	82	32-129
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	83	32-137
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	89	31-143
m,p-Xylene	mg/kg (ppm)	5	<0.1	82	34-136
o-Xylene	mg/kg (ppm)	2.5	<0.05	83	33-134
Styrene	mg/kg (ppm)	2.5	<0.05	84	35-137
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	83	31-142
Bromoform	mg/kg (ppm)	2.5	<0.05	91	21-156
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	81	23-146
Bromobenzene	mg/kg (ppm)	2.5	<0.05	83	34-130
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	81	18-149
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	84	28-140
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	82	25-144
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	81	31-134
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	82	31-136
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	82	30-137
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	82	10-182
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	81	23-145
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	81	21-149
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	82	30-131
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	81	29-129
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	82	31-132
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	84	11-161
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	81	22-142
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	86	10-142
Naphthalene	mg/kg (ppm)	2.5	<0.05	84	14-157
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	82	20-144

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	46	43	10-146	7
Chloromethane	mg/kg (ppm)	2.5	65	65	27-133	0
Vinyl chloride	mg/kg (ppm)	2.5	75	76	22-139	1
Bromomethane	mg/kg (ppm)	2.5	84	82	38-114	2
Chloroethane	mg/kg (ppm)	2.5	87	87	10-163	0
Trichlorofluoromethane	mg/kg (ppm)	2.5	84	86	10-196	2
Acetone	mg/kg (ppm)	12.5	95	103	52-141	8
1,1-Dichloroethene	mg/kg (ppm)	2.5	86	89	47-128	3
Hexane	mg/kg (ppm)	2.5	84	85	43-142	1
Methylene chloride	mg/kg (ppm)	2.5	97	101	42-132	4
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	93	97	60-123	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	92	97	67-127	5
1,1-Dichloroethane	mg/kg (ppm)	2.5	92	97	68-115	5
2,2-Dichloropropane	mg/kg (ppm)	2.5	93	93	52-170	0
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	93	98	72-113	5
Chloroform	mg/kg (ppm)	2.5	93	98	66-120	5
2-Butanone (MEK)	mg/kg (ppm)	12.5	99	104	57-123	5
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	93	98	56-135	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	93	96	62-131	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	92	96	69-128	4
Carbon tetrachloride	mg/kg (ppm)	2.5	96	100	60-139	4
Benzene	mg/kg (ppm)	2.5	90	95	68-114	5
Trichloroethene	mg/kg (ppm)	2.5	94	98	64-117	4
1,2-Dichloropropane	mg/kg (ppm)	2.5	94	97	72-127	3
Bromodichloromethane	mg/kg (ppm)	2.5	96	101	72-130	5
Dibromomethane	mg/kg (ppm)	2.5	93	99	70-120	6
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	97	102	45-145	5
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	99	104	75-136	5
Toluene	mg/kg (ppm)	2.5	91	96	66-126	5
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	100	106	72-132	6
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	96	102	75-113	6
2-Hexanone	mg/kg (ppm)	12.5	93	99	33-152	6
1,3-Dichloropropane	mg/kg (ppm)	2.5	93	99	72-130	6
Tetrachloroethene	mg/kg (ppm)	2.5	90	96	72-114	6
Dibromochloromethane	mg/kg (ppm)	2.5	101	106	74-125	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	95	101	74-132	6
Chlorobenzene	mg/kg (ppm)	2.5	92	97	76-111	5
Ethylbenzene	mg/kg (ppm)	2.5	93	98	64-123	5
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	101	104	69-135	3
m,p-Xylene	mg/kg (ppm)	5	93	98	78-122	5
o-Xylene	mg/kg (ppm)	2.5	94	99	77-124	5
Styrene	mg/kg (ppm)	2.5	96	100	74-126	4
Isopropylbenzene	mg/kg (ppm)	2.5	95	99	76-127	4
Bromoform	mg/kg (ppm)	2.5	103	109	56-132	6
n-Propylbenzene	mg/kg (ppm)	2.5	91	96	74-124	5
Bromobenzene	mg/kg (ppm)	2.5	92	99	72-122	7
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	92	96	76-126	4
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	92	97	56-143	5
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	90	97	61-137	7
2-Chlorotoluene	mg/kg (ppm)	2.5	90	96	74-121	6
4-Chlorotoluene	mg/kg (ppm)	2.5	90	96	75-122	6
tert-Butylbenzene	mg/kg (ppm)	2.5	92	97	73-130	5
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	92	96	76-125	4
sec-Butylbenzene	mg/kg (ppm)	2.5	92	96	71-130	4
p-Isopropyltoluene	mg/kg (ppm)	2.5	92	96	70-132	4
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	93	98	75-121	5
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	92	97	74-117	5
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	93	98	76-121	5
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	96	100	58-138	4
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	92	96	64-135	4
Hexachlorobutadiene	mg/kg (ppm)	2.5	101	102	50-153	1
Naphthalene	mg/kg (ppm)	2.5	96	100	63-140	4
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	95	98	63-138	3

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 705265-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	<1	87	87	10-172	0
Chloromethane	ug/L (ppb)	50	<10	86	86	25-166	0
Vinyl chloride	ug/L (ppb)	50	<0.2	93	93	36-166	0
Bromomethane	ug/L (ppb)	50	<1	117	117	47-169	0
Chloroethane	ug/L (ppb)	50	<1	107	107	46-160	0
Trichlorofluoromethane	ug/L (ppb)	50	<1	95	95	44-165	0
Acetone	ug/L (ppb)	250	<10	86	86	10-182	0
1,1-Dichloroethene	ug/L (ppb)	50	<1	90	90	60-136	0
Hexane	ug/L (ppb)	50	<1	85	85	52-150	0
Methylene chloride	ug/L (ppb)	50	<5	96	96	67-132	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	91	91	74-127	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	91	91	72-129	0
1,1-Dichloroethane	ug/L (ppb)	50	<1	91	91	70-128	0
2,2-Dichloropropane	ug/L (ppb)	50	<1	85	85	36-154	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	89	89	71-127	0
Chloroform	ug/L (ppb)	50	<1	90	90	65-132	0
2-Butanone (MEK)	ug/L (ppb)	250	<10	97	97	10-129	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	89	89	69-133	0
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	90	90	60-146	0
1,1-Dichloropropene	ug/L (ppb)	50	<1	88	88	69-133	0
Carbon tetrachloride	ug/L (ppb)	50	<1	93	93	56-152	0
Benzene	ug/L (ppb)	50	0.65	87	87	76-125	0
Trichloroethene	ug/L (ppb)	50	<1	88	88	66-135	0
1,2-Dichloropropane	ug/L (ppb)	50	<1	89	89	78-125	0
Bromodichloromethane	ug/L (ppb)	50	<1	95	95	61-150	0
Dibromomethane	ug/L (ppb)	50	<1	91	91	66-141	0
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	97	97	10-185	0
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	95	95	72-132	0
Toluene	ug/L (ppb)	50	<1	87	87	76-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	98	98	76-130	0
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	94	94	68-131	0
2-Hexanone	ug/L (ppb)	250	<10	92	92	10-185	0
1,3-Dichloropropane	ug/L (ppb)	50	<1	90	90	71-128	0
Tetrachloroethene	ug/L (ppb)	50	<1	86	86	10-226	0
Dibromochloromethane	ug/L (ppb)	50	<1	103	103	70-139	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	93	93	69-134	0
Chlorobenzene	ug/L (ppb)	50	<1	88	88	77-122	0
Ethylbenzene	ug/L (ppb)	50	<1	88	88	69-135	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	98	98	73-137	0
m,p-Xylene	ug/L (ppb)	100	<2	87	87	69-135	0
o-Xylene	ug/L (ppb)	50	<1	89	89	60-140	0
Styrene	ug/L (ppb)	50	<1	90	90	71-133	0
Isopropylbenzene	ug/L (ppb)	50	<1	88	88	65-142	0
Bromoform	ug/L (ppb)	50	<1	108	108	65-142	0
n-Propylbenzene	ug/L (ppb)	50	<1	84	84	58-144	0
Bromobenzene	ug/L (ppb)	50	<1	88	88	75-124	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	86	86	66-137	0
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	92	92	51-154	0
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	89	89	53-150	0
2-Chlorotoluene	ug/L (ppb)	50	<1	85	85	66-127	0
4-Chlorotoluene	ug/L (ppb)	50	<1	85	85	65-130	0
tert-Butylbenzene	ug/L (ppb)	50	<1	86	86	65-137	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	86	86	59-146	0
sec-Butylbenzene	ug/L (ppb)	50	<1	85	85	64-140	0
p-Isopropyltoluene	ug/L (ppb)	50	<1	85	85	65-141	0
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	88	88	72-123	0
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	86	86	69-126	0
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	88	88	69-128	0
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	98	98	32-164	0
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	86	86	66-136	0
Hexachlorobutadiene	ug/L (ppb)	50	<1	89	89	60-143	0
Naphthalene	ug/L (ppb)	50	<1	91	91	44-164	0
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	88	88	69-148	0

Date of Report: 05/24/17
Date Received: 05/15/17
Project: 110 12th PO WES 1591A, F&BI 705265

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	86	25-158
Chloromethane	ug/L (ppb)	50	86	45-156
Vinyl chloride	ug/L (ppb)	50	87	50-154
Bromomethane	ug/L (ppb)	50	123	55-143
Chloroethane	ug/L (ppb)	50	99	58-146
Trichlorofluoromethane	ug/L (ppb)	250	105	50-150
Acetone	ug/L (ppb)	250	98	53-131
1,1-Dichloroethene	ug/L (ppb)	50	100	67-136
Hexane	ug/L (ppb)	50	101	57-137
Methylene chloride	ug/L (ppb)	50	85	39-148
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	99	64-147
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	68-128
1,1-Dichloroethane	ug/L (ppb)	50	94	79-121
2,2-Dichloropropane	ug/L (ppb)	50	108	55-143
cis-1,2-Dichloroethene	ug/L (ppb)	50	97	80-123
Chloroform	ug/L (ppb)	50	94	80-121
2-Butanone (MEK)	ug/L (ppb)	250	103	57-149
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	91	73-132
1,1,1-Trichloroethane	ug/L (ppb)	50	101	83-130
1,1-Dichloropropene	ug/L (ppb)	50	97	77-129
Carbon tetrachloride	ug/L (ppb)	50	107	75-158
Benzene	ug/L (ppb)	50	95	69-134
Trichloroethene	ug/L (ppb)	50	92	80-120
1,2-Dichloropropane	ug/L (ppb)	50	97	77-123
Bromodichloromethane	ug/L (ppb)	50	103	81-133
Dibromomethane	ug/L (ppb)	50	101	82-125
4-Methyl-2-pentanone	ug/L (ppb)	250	108	65-138
cis-1,3-Dichloropropene	ug/L (ppb)	50	105	82-132
Toluene	ug/L (ppb)	50	102	72-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	113	80-136
1,1,2-Trichloroethane	ug/L (ppb)	50	104	75-124
2-Hexanone	ug/L (ppb)	250	102	60-136
1,3-Dichloropropane	ug/L (ppb)	50	106	76-126
Tetrachloroethene	ug/L (ppb)	50	110	76-121
Dibromochloromethane	ug/L (ppb)	50	119	84-133
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	113	82-125
Chlorobenzene	ug/L (ppb)	50	106	83-114
Ethylbenzene	ug/L (ppb)	50	103	77-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	114	84-127
m,p-Xylene	ug/L (ppb)	100	102	83-125
o-Xylene	ug/L (ppb)	50	103	81-121
Styrene	ug/L (ppb)	50	106	84-119
Isopropylbenzene	ug/L (ppb)	50	105	85-117
Bromoform	ug/L (ppb)	50	116	74-136
n-Propylbenzene	ug/L (ppb)	50	101	74-126
Bromobenzene	ug/L (ppb)	50	109	80-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	103	78-123
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	105	66-126
1,2,3-Trichloropropane	ug/L (ppb)	50	101	67-124
2-Chlorotoluene	ug/L (ppb)	50	101	77-127
4-Chlorotoluene	ug/L (ppb)	50	100	78-128
tert-Butylbenzene	ug/L (ppb)	50	106	80-123
1,2,4-Trimethylbenzene	ug/L (ppb)	50	104	79-122
sec-Butylbenzene	ug/L (ppb)	50	102	80-125
p-Isopropyltoluene	ug/L (ppb)	50	106	81-123
1,3-Dichlorobenzene	ug/L (ppb)	50	108	85-116
1,4-Dichlorobenzene	ug/L (ppb)	50	106	84-121
1,2-Dichlorobenzene	ug/L (ppb)	50	108	85-116
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	108	57-141
1,2,4-Trichlorobenzene	ug/L (ppb)	50	107	72-130
Hexachlorobutadiene	ug/L (ppb)	50	108	53-141
Naphthalene	ug/L (ppb)	50	101	64-133
1,2,3-Trichlorobenzene	ug/L (ppb)	50	107	65-136

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

705265

SAMPLE CHAIN OF CUSTODY ME 05/15/17 DO4/VS3/VW3

Page # 1 of 5

Report To [illegible]

Company [illegible]

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]

SAMPLERS (*signature*)

PROJECT NAME: 110 12TH

PO #: 6065 / 1591A

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH WATER SAMPLES
- Rush charges authorized by: BY THURSDAY PM

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
BW-1-6D	01 A-D	5-12		WATER	4		X	X		X							3 DAY
BW-2-6D	02																ON WATER
BW-3-6D	03																SAMPLES
BW-4-6D	04 A-C				X3												PLEASE.
BW-5-6D	05 A-D				4												
BW-6-6D	06																
BW-8-6D	07	5-15															
BW-9-6D	08																
~~BW-10-6D~~																	DO NOT (NP) received
BW-11-6D	09 A-D																

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:			5/15/17	1525
Received by:	Khan Phan	FCBI	5/15/17	1525
Relinquished by:				
Received by:		Samples received at 6 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

705265

SAMPLE CHAIN OF CUSTODY ME 5/15/17

DO4/VS3/VW3

Page # 2 of 5

Report To [illegible]

Company [illegible]

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]

SAMPLERS (*signature*)

PROJECT NAME: 110 12TH

PO # 6065 1591A

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH SEE NOTES

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
HA-N-GW	10 A-D	5-15		WATER	4		X	X		X							3 DAY
HA-S-GW	11	11		11	11		X	X		X							↓
BW-1-9'	12	5-12		SOIL	4	X				X							3 DAY
BW-1-15'	13	↓		↓	↓					X							
BW-2-3'	14									↓							
BW-2-13'	15					X											3 DAY
BW-3-7'	16					X											
BW-3-14.5'	17																
BW-4-7'	18					X											
BW-5-5'	19	↓		↓	↓					↓							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	[signature]	GES	5/15/17	1525
Received by: [signature]	Nhan Phan	FEBI	5/18/17	1525
Relinquished by:				
Received by:		Samples received at 6 °C		

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SAMPLE CHAIN OF CUSTODY

ME 05/15/17 DO4/US3/VW3

Page # 3 of 5

Report To [illegible]

Company [illegible] ENV. SERVICES

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]@YAHOO.COM

SAMPLERS (*signature*)

PROJECT NAME: 110 12TH

PO #: 1591A

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH SEE NOTES
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	Metals				Notes
BW-5-11'	20	5-12		SOIL	1	X											FAILED UP ON
BW-5-18'	21	"		"	1	X											ANY HIGH DETECTIONS
BW-6-1'	22 A-D	"		"	4			X		X							PLEASE
BW-6-9'	23	"		"	1	X											IF TPH-G
BW-6-15'	24 A-D	"		"	4			X		X							TO G-BTEX
SLOPE 1	25	5 11		"	1	X							X				
SLOPE 2	26	"		"	1	X							X				
HA-N-2.5'	27 A-E	"		"	5		X	X		X							3 DAY
HA-N-9'	28 A-D	"		"	4			X		X							
HA-S-2.5'	29 V	"		"	4			X		X							3 DAY

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		[illegible]	5/15/17	1525
Received by:	Nhan Phan	FE BT	5/15/17	V
Relinquished by:				
Received by:		Samples received at 6 °C		

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SAMPLE CHAIN OF CUSTODY ME 05/15/17 D04/V53

Page # 4 of 5

Report To [illegible]

Company [illegible]

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]

SAMPLERS (*signature*)

PROJECT NAME: 110 12TH

PO #: 1591A

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH [illegible]
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
[illegible] HA-S-6'	30 A-D	5-12		SOIL	4			X		X							
BO-7-9'	31	5-15			4			X	X								
BO-7-12'	32				4			X		X							3 DAY
BO-7-17'	33				4			X	X								
BO-7-19'	34				1	X											
BO-8-9'	35				1	X											
BO-8-17'	36 A-D				4			X	X								
BO-8-20'	37				1												HOLD
BO-9-12'	38 A-D				4			X	X								
BO-9-24'	39				1												HOLD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [illegible]	[illegible]	[illegible]	5/15/17	
Received by: [illegible]	Khan Pham	FCBI	5/15/17	1525
Relinquished by:				
Received by:		Samples received at [illegible] °C		

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Seattle, WA 98119-2029
Ph. (206) 285-8282

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SAMPLE CHAIN OF CUSTODY ME 05/15/17 D04/VS3/VW3

Page # 5 of 5

Report To [illegible]

Company [illegible]

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]

SAMPLERS (*signature*)

PROJECT NAME: 110 12TH

PO # 1591A

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH [illegible]

Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	MTCA 5 Metals				Notes
BD-10-15-20'	40AE	5-15		Soil	5		X	X		X							3 DAY
BD-10-20'	41	"		"	1												HOLD
BD-11-12'	42	"		"	1								X				
BD-11-20'	43	"		"	1	X											

ANALYSES REQUESTED

Samples received at 6 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		[illegible]	5/15/17	
Received by:	Nhan Phan	FEBI	5/15/17	1524
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

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(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 7, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on June 30, 2017 from the 104 12th PO WES 1591, F&BI 706523 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0707R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 30, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 104 12th PO WES 1591, F&BI 706523 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
706523 -01	MW-1-GW
706523 -02	MW-7-GW

All quality control requirements were acceptable.

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523
Date Extracted: 07/05/17
Date Analyzed: 07/05/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-1-GW 706523-01	<100	95
MW-7-GW 706523-02	<100	92
Method Blank 07-1423 MB	<100	73

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523
Date Extracted: 07/05/17
Date Analyzed: 07/05/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-1-GW 706523-01	<50	<250	90
MW-7-GW 706523-02	<50	<250	97
Method Blank 07-1424 MB	<50	<250	94

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-1-GW	Client:	Whitman Environmental Sciences
Date Received:	06/30/17	Project:	104 12th PO WES 1591, F&BI 706523
Date Extracted:	07/03/17	Lab ID:	706523-01
Date Analyzed:	07/03/17	Data File:	070315.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	109	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	0.20	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-7-GW	Client:	Whitman Environmental Sciences
Date Received:	06/30/17	Project:	104 12th PO WES 1591, F&BI 706523
Date Extracted:	07/03/17	Lab ID:	706523-02
Date Analyzed:	07/03/17	Data File:	070316.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	109	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591, F&BI 706523
Date Extracted:	07/03/17	Lab ID:	07-1399 mb
Date Analyzed:	07/03/17	Data File:	070314.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	109	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 707006-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	102	69-134

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	104	104	61-133	0

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 707015-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	97	10-172
Chloromethane	ug/L (ppb)	50	<10	101	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	105	36-166
Bromomethane	ug/L (ppb)	50	<1	110	47-169
Chloroethane	ug/L (ppb)	50	<1	109	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	117	44-165
Acetone	ug/L (ppb)	250	<10	111	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	110	60-136
Hexane	ug/L (ppb)	50	<1	97	52-150
Methylene chloride	ug/L (ppb)	50	<5	112	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	107	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	111	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	108	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	113	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	111	71-127
Chloroform	ug/L (ppb)	50	<1	113	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	121	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	113	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	113	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	111	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	115	56-152
Benzene	ug/L (ppb)	50	<0.35	108	76-125
Trichloroethene	ug/L (ppb)	50	<1	110	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	110	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	119	61-150
Dibromomethane	ug/L (ppb)	50	<1	115	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	112	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	118	72-132
Toluene	ug/L (ppb)	50	<1	94	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	110	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	100	68-131
2-Hexanone	ug/L (ppb)	250	<10	103	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	101	71-128
Tetrachloroethene	ug/L (ppb)	50	9.4	98	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	113	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	104	69-134
Chlorobenzene	ug/L (ppb)	50	<1	99	77-122
Ethylbenzene	ug/L (ppb)	50	<1	98	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	73-137
m,p-Xylene	ug/L (ppb)	100	<2	99	69-135
o-Xylene	ug/L (ppb)	50	<1	96	60-140
Styrene	ug/L (ppb)	50	<1	99	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	95	65-142
Bromoform	ug/L (ppb)	50	<1	118	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	91	58-144
Bromobenzene	ug/L (ppb)	50	<1	97	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	91	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	96	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	94	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	93	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	93	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	91	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	93	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	90	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	92	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	93	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	96	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	105	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	96	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	88	60-143
Naphthalene	ug/L (ppb)	50	<1	97	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	97	69-148

Date of Report: 07/07/17
Date Received: 06/30/17
Project: 104 12th PO WES 1591, F&BI 706523

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	87	96	25-158	10
Chloromethane	ug/L (ppb)	50	95	113	45-156	17
Vinyl chloride	ug/L (ppb)	50	99	113	50-154	13
Bromomethane	ug/L (ppb)	50	101	122	55-143	19
Chloroethane	ug/L (ppb)	50	102	119	58-146	15
Trichlorofluoromethane	ug/L (ppb)	250	111	120	50-150	8
Acetone	ug/L (ppb)	250	113	114	53-131	1
1,1-Dichloroethene	ug/L (ppb)	50	110	112	67-136	2
Hexane	ug/L (ppb)	50	93	93	57-137	0
Methylene chloride	ug/L (ppb)	50	110	113	39-148	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	107	113	64-147	5
trans-1,2-Dichloroethene	ug/L (ppb)	50	113	115	68-128	2
1,1-Dichloroethane	ug/L (ppb)	50	107	109	79-121	2
2,2-Dichloropropane	ug/L (ppb)	50	110	119	55-143	8
cis-1,2-Dichloroethene	ug/L (ppb)	50	112	115	80-123	3
Chloroform	ug/L (ppb)	50	114	116	80-121	2
2-Butanone (MEK)	ug/L (ppb)	250	125	126	57-149	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	114	117	73-132	3
1,1,1-Trichloroethane	ug/L (ppb)	50	112	119	83-130	6
1,1-Dichloropropene	ug/L (ppb)	50	109	113	77-129	4
Carbon tetrachloride	ug/L (ppb)	50	115	121	75-158	5
Benzene	ug/L (ppb)	50	110	112	69-134	2
Trichloroethene	ug/L (ppb)	50	111	115	80-120	4
1,2-Dichloropropane	ug/L (ppb)	50	113	116	77-123	3
Bromodichloromethane	ug/L (ppb)	50	119	123	81-133	3
Dibromomethane	ug/L (ppb)	50	117	119	82-125	2
4-Methyl-2-pentanone	ug/L (ppb)	250	115	119	65-138	3
cis-1,3-Dichloropropene	ug/L (ppb)	50	119	124	82-132	4
Toluene	ug/L (ppb)	50	97	98	72-122	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	111	114	80-136	3
1,1,2-Trichloroethane	ug/L (ppb)	50	103	104	75-124	1
2-Hexanone	ug/L (ppb)	250	105	107	60-136	2
1,3-Dichloropropane	ug/L (ppb)	50	103	105	76-126	2
Tetrachloroethene	ug/L (ppb)	50	100	102	76-121	2
Dibromochloromethane	ug/L (ppb)	50	115	117	84-133	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	105	108	82-125	3
Chlorobenzene	ug/L (ppb)	50	100	103	83-114	3
Ethylbenzene	ug/L (ppb)	50	99	103	77-124	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	105	111	84-127	6
m,p-Xylene	ug/L (ppb)	100	99	104	83-125	5
o-Xylene	ug/L (ppb)	50	97	102	81-121	5
Styrene	ug/L (ppb)	50	99	106	84-119	7
Isopropylbenzene	ug/L (ppb)	50	95	101	85-117	6
Bromoform	ug/L (ppb)	50	118	125	74-136	6
n-Propylbenzene	ug/L (ppb)	50	92	94	74-126	2
Bromobenzene	ug/L (ppb)	50	97	99	80-121	2
1,3,5-Trimethylbenzene	ug/L (ppb)	50	91	96	78-123	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	98	98	66-126	0
1,2,3-Trichloropropane	ug/L (ppb)	50	95	96	67-124	1
2-Chlorotoluene	ug/L (ppb)	50	93	96	77-127	3
4-Chlorotoluene	ug/L (ppb)	50	93	95	78-128	2
tert-Butylbenzene	ug/L (ppb)	50	91	96	80-123	5
1,2,4-Trimethylbenzene	ug/L (ppb)	50	94	97	79-122	3
sec-Butylbenzene	ug/L (ppb)	50	89	94	80-125	5
p-Isopropyltoluene	ug/L (ppb)	50	92	97	81-123	5
1,3-Dichlorobenzene	ug/L (ppb)	50	96	100	85-116	4
1,4-Dichlorobenzene	ug/L (ppb)	50	92	97	84-121	5
1,2-Dichlorobenzene	ug/L (ppb)	50	96	100	85-116	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	107	110	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	96	100	72-130	4
Hexachlorobutadiene	ug/L (ppb)	50	85	89	53-141	5
Naphthalene	ug/L (ppb)	50	98	101	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	101	65-136	4

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

706523

SAMPLE CHAIN OF CUSTODY

ME 06-30-17 VS2/B05

Report To [illegible]

Company [illegible] ENV. SCIENCES

Address [illegible]

City, State, ZIP [illegible]

Phone [illegible] Email [illegible]

SAMPLERS (*signature*)

PROJECT NAME: 104/12TH

PO #: [illegible] / 1591

REMARKS

INVOICE TO

Page # [illegible] of [illegible]

TURNAROUND TIME
- ☒ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
MW-1-GW	01 A-D	6-30	11:00	WATER	4		X	X		X							
MW-7-GW	02	"	11:15	"	"		X	X		X							

ANALYSES REQUESTED

Samples received at 6 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		[illegible]	6/30/17	6:05
Received by:	Jen Simms	FBI	"	"
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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August 11, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on August 3, 2017 from the 124 12th PO WES 1591A, F&BI 708087 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0811R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 3, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 124 12th PO WES 1591A, F&BI 708087 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
708087 -01	BN-7-GW
708087 -02	BN-10-GW

2,2-Dichloropropane in the 8260C water laboratory control sample and laboratory control sample duplicate failed the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087
Date Extracted: 08/08/17
Date Analyzed: 08/08/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
BN-7-GW 708087-01	3,200	100
BN-10-GW 708087-02	500	95
Method Blank 07-1624 MB	<100	92

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087
Date Extracted: 08/07/17
Date Analyzed: 08/07/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
BN-7-GW 708087-01	790 x	<250	96
BN-10-GW 708087-02	270 x	<250	101
Method Blank 07-1673 MB	<50	<250	101

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-7-GW	Client:	Whitman Environmental Sciences
Date Received:	08/03/17	Project:	124 12th PO WES 1591A
Date Extracted:	08/07/16	Lab ID:	708087-01
Date Analyzed:	08/08/17	Data File:	080805.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	71
Acetone	<20	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	360 ve
Hexane	<1	o-Xylene	62
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	12
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	23
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	55
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	170 ve
Benzene	11	sec-Butylbenzene	1.8
Trichloroethene	<1	p-Isopropyltoluene	1.1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	8.9
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-7-GW	Client:	Whitman Environmental Sciences
Date Received:	08/03/17	Project:	124 12th PO WES 1591A
Date Extracted:	08/07/17	Lab ID:	708087-01 1/10
Date Analyzed:	08/09/17	Data File:	080929.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	101	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<10	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	72
Acetone	<200	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	360
Hexane	<10	o-Xylene	59
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	12
trans-1,2-Dichloroethene	<10	Bromoform	<10
1,1-Dichloroethane	<10	n-Propylbenzene	24
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	59
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<100	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	180
Benzene	11	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	BN-10-GW	Client:	Whitman Environmental Sciences
Date Received:	08/03/17	Project:	124 12th PO WES 1591A
Date Extracted:	08/07/17	Lab ID:	708087-02
Date Analyzed:	08/09/17	Data File:	080927.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	100	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	6.3
Acetone	<20	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	4.3
Hexane	4.3	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	7.2
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	17
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	1.4
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	1.3
Benzene	6.8	sec-Butylbenzene	1.5
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	124 12th PO WES 1591A
Date Extracted:	08/07/17	Lab ID:	07-1659 mb
Date Analyzed:	08/07/17	Data File:	080712.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<20	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 708099-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	540	540	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	89	69-134

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	92	63-142	4

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708082-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	139	10-172
Chloromethane	ug/L (ppb)	50	<10	116	25-166
Vinyl chloride	ug/L (ppb)	50	<0.2	119	36-166
Bromomethane	ug/L (ppb)	50	<1	125	47-169
Chloroethane	ug/L (ppb)	50	<1	120	46-160
Trichlorofluoromethane	ug/L (ppb)	50	<1	111	44-165
Acetone	ug/L (ppb)	250	77	118 b	10-182
1,1-Dichloroethene	ug/L (ppb)	50	<1	106	60-136
Hexane	ug/L (ppb)	50	<1	86	52-150
Methylene chloride	ug/L (ppb)	50	<5	112	67-132
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	6.1	107	74-127
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	108	72-129
1,1-Dichloroethane	ug/L (ppb)	50	<1	108	70-128
2,2-Dichloropropane	ug/L (ppb)	50	<1	49	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	109	71-127
Chloroform	ug/L (ppb)	50	<1	105	65-132
2-Butanone (MEK)	ug/L (ppb)	250	<10	123	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	108	69-133
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	110	60-146
1,1-Dichloropropene	ug/L (ppb)	50	<1	106	69-133
Carbon tetrachloride	ug/L (ppb)	50	<1	111	56-152
Benzene	ug/L (ppb)	50	<0.35	108	76-125
Trichloroethene	ug/L (ppb)	50	<1	104	66-135
1,2-Dichloropropane	ug/L (ppb)	50	<1	109	78-125
Bromodichloromethane	ug/L (ppb)	50	<1	113	61-150
Dibromomethane	ug/L (ppb)	50	<1	108	66-141
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	117	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	100	72-132
Toluene	ug/L (ppb)	50	<1	99	76-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	96	76-130
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	104	68-131
2-Hexanone	ug/L (ppb)	250	<10	109	10-185
1,3-Dichloropropane	ug/L (ppb)	50	<1	105	71-128
Tetrachloroethene	ug/L (ppb)	50	<1	100	10-226
Dibromochloromethane	ug/L (ppb)	50	<1	111	70-139
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	107	69-134
Chlorobenzene	ug/L (ppb)	50	<1	99	77-122
Ethylbenzene	ug/L (ppb)	50	<1	100	69-135
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	106	73-137
m,p-Xylene	ug/L (ppb)	100	<2	99	69-135
o-Xylene	ug/L (ppb)	50	<1	102	60-140
Styrene	ug/L (ppb)	50	<1	104	71-133
Isopropylbenzene	ug/L (ppb)	50	<1	99	65-142
Bromoform	ug/L (ppb)	50	<1	118	65-142
n-Propylbenzene	ug/L (ppb)	50	<1	95	58-144
Bromobenzene	ug/L (ppb)	50	<1	100	75-124
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	95	66-137
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	51-154
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	98	53-150
2-Chlorotoluene	ug/L (ppb)	50	<1	96	66-127
4-Chlorotoluene	ug/L (ppb)	50	<1	96	65-130
tert-Butylbenzene	ug/L (ppb)	50	<1	95	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	96	59-146
sec-Butylbenzene	ug/L (ppb)	50	<1	95	64-140
p-Isopropyltoluene	ug/L (ppb)	50	<1	92	65-141
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	98	72-123
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	69-126
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	96	69-128
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	103	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	92	66-136
Hexachlorobutadiene	ug/L (ppb)	50	<1	83	60-143
Naphthalene	ug/L (ppb)	50	<1	96	44-164
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	95	69-148

Date of Report: 08/11/17
Date Received: 08/03/17
Project: 124 12th PO WES 1591A, F&BI 708087

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	125	116	25-158	7
Chloromethane	ug/L (ppb)	50	110	105	45-156	5
Vinyl chloride	ug/L (ppb)	50	114	106	50-154	7
Bromomethane	ug/L (ppb)	50	127	115	55-143	10
Chloroethane	ug/L (ppb)	50	117	110	58-146	6
Trichlorofluoromethane	ug/L (ppb)	250	112	104	50-150	7
Acetone	ug/L (ppb)	250	124	118	53-131	5
1,1-Dichloroethene	ug/L (ppb)	50	104	100	67-136	4
Hexane	ug/L (ppb)	50	85	80	57-137	6
Methylene chloride	ug/L (ppb)	50	112	105	39-148	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	108	100	64-147	8
trans-1,2-Dichloroethene	ug/L (ppb)	50	108	102	68-128	6
1,1-Dichloroethane	ug/L (ppb)	50	109	101	79-121	8
2,2-Dichloropropane	ug/L (ppb)	50	45 vo	38 vo	55-143	17
cis-1,2-Dichloroethene	ug/L (ppb)	50	107	101	80-123	6
Chloroform	ug/L (ppb)	50	105	99	80-121	6
2-Butanone (MEK)	ug/L (ppb)	250	120	114	57-149	5
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	107	101	73-132	6
1,1,1-Trichloroethane	ug/L (ppb)	50	111	102	83-130	8
1,1-Dichloropropene	ug/L (ppb)	50	106	99	77-129	7
Carbon tetrachloride	ug/L (ppb)	50	111	104	75-158	7
Benzene	ug/L (ppb)	50	108	102	69-134	6
Trichloroethene	ug/L (ppb)	50	120	112	80-120	7
1,2-Dichloropropane	ug/L (ppb)	50	110	103	77-123	7
Bromodichloromethane	ug/L (ppb)	50	113	106	81-133	6
Dibromomethane	ug/L (ppb)	50	109	100	82-125	9
4-Methyl-2-pentanone	ug/L (ppb)	250	115	107	65-138	7
cis-1,3-Dichloropropene	ug/L (ppb)	50	100	94	82-132	6
Toluene	ug/L (ppb)	50	98	93	72-122	5
trans-1,3-Dichloropropene	ug/L (ppb)	50	92	88	80-136	4
1,1,2-Trichloroethane	ug/L (ppb)	50	101	95	75-124	6
2-Hexanone	ug/L (ppb)	250	104	99	60-136	5
1,3-Dichloropropane	ug/L (ppb)	50	104	98	76-126	6
Tetrachloroethene	ug/L (ppb)	50	99	94	76-121	5
Dibromochloromethane	ug/L (ppb)	50	108	104	84-133	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	104	99	82-125	5
Chlorobenzene	ug/L (ppb)	50	98	93	83-114	5
Ethylbenzene	ug/L (ppb)	50	99	94	77-124	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	106	100	84-127	6
m,p-Xylene	ug/L (ppb)	100	98	93	83-125	5
o-Xylene	ug/L (ppb)	50	100	96	81-121	4
Styrene	ug/L (ppb)	50	102	97	84-119	5
Isopropylbenzene	ug/L (ppb)	50	98	94	85-117	4
Bromoform	ug/L (ppb)	50	114	110	74-136	4
n-Propylbenzene	ug/L (ppb)	50	95	89	74-126	7
Bromobenzene	ug/L (ppb)	50	99	95	80-121	4
1,3,5-Trimethylbenzene	ug/L (ppb)	50	96	90	78-123	6
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	84	80	66-126	5
1,2,3-Trichloropropane	ug/L (ppb)	50	99	92	67-124	7
2-Chlorotoluene	ug/L (ppb)	50	96	90	77-127	6
4-Chlorotoluene	ug/L (ppb)	50	97	91	78-128	6
tert-Butylbenzene	ug/L (ppb)	50	97	90	80-123	7
1,2,4-Trimethylbenzene	ug/L (ppb)	50	96	91	79-122	5
sec-Butylbenzene	ug/L (ppb)	50	95	89	80-125	7
p-Isopropyltoluene	ug/L (ppb)	50	93	88	81-123	6
1,3-Dichlorobenzene	ug/L (ppb)	50	98	92	85-116	6
1,4-Dichlorobenzene	ug/L (ppb)	50	95	89	84-121	7
1,2-Dichlorobenzene	ug/L (ppb)	50	98	90	85-116	9
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	100	94	57-141	6
1,2,4-Trichlorobenzene	ug/L (ppb)	50	92	87	72-130	6
Hexachlorobutadiene	ug/L (ppb)	50	83	79	53-141	5
Naphthalene	ug/L (ppb)	50	96	89	64-133	8
1,2,3-Trichlorobenzene	ug/L (ppb)	50	95	89	65-136	7

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708087.
[redacted]

SAMPLE CHAIN OF CUSTODY

ME [redacted] 8/3/17 E04/VW2

Report To Dan Whitman
Company Whitman Env. Sciences
Address 6812 16th Ave NE
City, State, ZIP Seattle, WA 98115
Phone 206 523 3?? Email

SAMPLERS (*signature*)	
PROJECT NAME: 124 12TH	PO #: WES 1591A
REMARKS	INVOICE TO

Page # 1 of 1

TURNAROUND TIME
☑ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Archive Samples
☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
BW-7-6W	01 A-D	8-3	AM	Water	4		X	X		X							
BW-10-6W	02 A-D	"	"	"	4		X	X		X							

ANALYSES REQUESTED

Samples received at 2 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	[signature]	WES	8-3-17	5:16
Received by: [signature]	TOM LADD	FBI	08-03-17	5:16
Relinquished by:				
Received by:				

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 14, 2017

Dan Whitman, Project Manager
Whitman Environmental Sciences
6812 16th Ave NE
Seattle, WA 98115

Dear Mr Whitman:

Included are the results from the testing of material submitted on August 7, 2017 from the 104 12th PO WES 1591, F&BI 708125 project. There are 17 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
WES0814R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 7, 2017 by Friedman & Bruya, Inc. from the Whitman Environmental Sciences 104 12th PO WES 1591, F&BI 708125 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Whitman Environmental Sciences
708125 -01	HA-3-GW
708125 -02	HA-3-4'

The 8260C calibration standard failed the acceptance criteria for trichlorofluoromethane. The data were flagged accordingly.

All other quality control requirements were acceptable.

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125
Date Extracted: 08/09/17
Date Analyzed: 08/09/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
HA-3-4' 708125-02	<2	94
Method Blank 07-1687 MB	<2	98

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125
Date Extracted: 08/09/17
Date Analyzed: 08/09/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
HA-3-GW 708125-01	<100	96
Method Blank 07-1685 MB	<100	102

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125
Date Extracted: 08/08/17
Date Analyzed: 08/08/17

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
HA-3-4' 708125-02	<50	<250	94
Method Blank 07-1681 MB	<50	<250	100

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125
Date Extracted: 08/08/17
Date Analyzed: 08/08/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
HA-3-GW 708125-01	100 x	<250	102
Method Blank 07-1697 MB	<50	<250	90

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-3-4'	Client:	Whitman Environmental Sciences
Date Received:	08/07/17	Project:	104 12th PO WES 1591, F&BI 708125
Date Extracted:	08/08/17	Lab ID:	708125-02
Date Analyzed:	08/08/17	Data File:	080832.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	89	113
Toluene-d8	103	64	137
4-Bromofluorobenzene	99	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591, F&BI 708125
Date Extracted:	08/08/17	Lab ID:	07-1679 mb2
Date Analyzed:	08/08/17	Data File:	080805.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	89	113
Toluene-d8	102	64	137
4-Bromofluorobenzene	100	81	119

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	<0.05
Chloroethane	<0.5
1,1-Dichloroethene	<0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	<0.05
1,1-Dichloroethane	<0.05
cis-1,2-Dichloroethene	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,1,1-Trichloroethane	<0.05
Trichloroethene	<0.02
Tetrachloroethene	<0.025

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	HA-3-GW	Client:	Whitman Environmental Sciences
Date Received:	08/07/17	Project:	104 12th PO WES 1591, F&BI 708125
Date Extracted:	08/09/17	Lab ID:	708125-01
Date Analyzed:	08/09/17	Data File:	080937.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	101	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1 ca	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Whitman Environmental Sciences
Date Received:	Not Applicable	Project:	104 12th PO WES 1591, F&BI 708125
Date Extracted:	08/09/17	Lab ID:	07-1665 mb
Date Analyzed:	08/09/17	Data File:	080908.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	100	91	108
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<10	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 708065-06 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	85	61-153

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 708126-16 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	94	69-134

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 708119-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	102	96	63-146	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	96	79-144

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	91	96	61-133	5

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708124-13 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	39	41	10-91	5
Chloroethane	mg/kg (ppm)	2.5	<0.5	48	50	10-101	4
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	48	51	22-107	6
Methylene chloride	mg/kg (ppm)	2.5	<0.5	77	78	14-128	1
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	62	64	13-112	3
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	65	67	23-115	3
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	71	72	25-120	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	70	73	22-124	4
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	60	61	27-112	2
Trichloroethene	mg/kg (ppm)	2.5	<0.02	71	73	30-112	3
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	75	75	25-114	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	mg/kg (ppm)	2.5	75	42-107
Chloroethane	mg/kg (ppm)	2.5	78	47-115
1,1-Dichloroethene	mg/kg (ppm)	2.5	81	65-110
Methylene chloride	mg/kg (ppm)	2.5	103	50-127
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	91	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	92	74-109
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	96	73-110
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	93	73-111
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	85	72-116
Trichloroethene	mg/kg (ppm)	2.5	98	72-107
Tetrachloroethene	mg/kg (ppm)	2.5	103	73-111

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 708139-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<1	118	55-137
Chloromethane	ug/L (ppb)	50	<10	102	61-120
Vinyl chloride	ug/L (ppb)	50	<0.2	98	61-139
Bromomethane	ug/L (ppb)	50	<1	109	20-265
Chloroethane	ug/L (ppb)	50	<1	94	55-149
Trichlorofluoromethane	ug/L (ppb)	50	<1	84	71-128
Acetone	ug/L (ppb)	250	<10	88	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<1	85	71-123
Hexane	ug/L (ppb)	50	<1	92	44-139
Methylene chloride	ug/L (ppb)	50	<5	104	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	91	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	94	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<1	93	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<1	86	48-157
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	97	63-126
Chloroform	ug/L (ppb)	50	<1	97	77-117
2-Butanone (MEK)	ug/L (ppb)	250	<10	95	70-135
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	90	70-119
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	83	75-121
1,1-Dichloropropene	ug/L (ppb)	50	<1	96	67-121
Carbon tetrachloride	ug/L (ppb)	50	<1	87	70-132
Benzene	ug/L (ppb)	50	<0.35	98	75-114
Trichloroethene	ug/L (ppb)	50	<1	96	73-122
1,2-Dichloropropane	ug/L (ppb)	50	<1	98	80-111
Bromodichloromethane	ug/L (ppb)	50	<1	95	78-117
Dibromomethane	ug/L (ppb)	50	<1	96	73-125
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	100	79-140
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	100	76-120
Toluene	ug/L (ppb)	50	<1	94	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	97	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	95	81-116
2-Hexanone	ug/L (ppb)	250	<10	90	74-127
1,3-Dichloropropane	ug/L (ppb)	50	<1	98	80-113
Tetrachloroethene	ug/L (ppb)	50	2.9	102	72-113
Dibromochloromethane	ug/L (ppb)	50	<1	94	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	96	79-120
Chlorobenzene	ug/L (ppb)	50	<1	100	75-115
Ethylbenzene	ug/L (ppb)	50	<1	96	66-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	94	76-130
m,p-Xylene	ug/L (ppb)	100	<2	98	63-128
o-Xylene	ug/L (ppb)	50	<1	96	64-129
Styrene	ug/L (ppb)	50	<1	98	56-142
Isopropylbenzene	ug/L (ppb)	50	<1	96	74-122
Bromoform	ug/L (ppb)	50	<1	93	49-138
n-Propylbenzene	ug/L (ppb)	50	<1	97	65-129
Bromobenzene	ug/L (ppb)	50	<1	102	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	99	60-138
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	96	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	95	62-125
2-Chlorotoluene	ug/L (ppb)	50	<1	96	40-159
4-Chlorotoluene	ug/L (ppb)	50	<1	97	76-122
tert-Butylbenzene	ug/L (ppb)	50	<1	102	74-125
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	96	59-136
sec-Butylbenzene	ug/L (ppb)	50	<1	98	69-127
p-Isopropyltoluene	ug/L (ppb)	50	<1	99	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	100	77-113
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	98	75-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	97	70-120
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	83	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	96	66-123
Hexachlorobutadiene	ug/L (ppb)	50	<1	96	53-136
Naphthalene	ug/L (ppb)	50	<1	95	60-145
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	96	59-130

Date of Report: 08/14/17
Date Received: 08/07/17
Project: 104 12th PO WES 1591, F&BI 708125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	124	124	50-157	0
Chloromethane	ug/L (ppb)	50	105	106	62-130	1
Vinyl chloride	ug/L (ppb)	50	101	102	70-128	1
Bromomethane	ug/L (ppb)	50	109	111	62-188	2
Chloroethane	ug/L (ppb)	50	96	98	66-149	2
Trichlorofluoromethane	ug/L (ppb)	50	79	87	70-132	10
Acetone	ug/L (ppb)	250	90	93	44-145	3
1,1-Dichloroethene	ug/L (ppb)	50	82	81	75-119	1
Hexane	ug/L (ppb)	50	88	90	51-153	2
Methylene chloride	ug/L (ppb)	50	101	104	63-132	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	91	93	70-122	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	95	96	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	93	94	77-119	1
2,2-Dichloropropane	ug/L (ppb)	50	74	74	62-141	0
cis-1,2-Dichloroethene	ug/L (ppb)	50	95	97	76-119	2
Chloroform	ug/L (ppb)	50	96	98	78-117	2
2-Butanone (MEK)	ug/L (ppb)	250	98	101	49-147	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	90	92	78-114	2
1,1,1-Trichloroethane	ug/L (ppb)	50	84	85	80-116	1
1,1-Dichloropropene	ug/L (ppb)	50	96	98	78-119	2
Carbon tetrachloride	ug/L (ppb)	50	87	88	72-128	1
Benzene	ug/L (ppb)	50	96	98	75-116	2
Trichloroethene	ug/L (ppb)	50	99	101	72-119	2
1,2-Dichloropropane	ug/L (ppb)	50	97	98	79-121	1
Bromodichloromethane	ug/L (ppb)	50	95	97	76-120	2
Dibromomethane	ug/L (ppb)	50	97	98	79-121	1
4-Methyl-2-pentanone	ug/L (ppb)	250	102	105	54-153	3
cis-1,3-Dichloropropene	ug/L (ppb)	50	97	100	76-128	3
Toluene	ug/L (ppb)	50	94	95	79-115	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	94	96	76-128	2
1,1,2-Trichloroethane	ug/L (ppb)	50	96	96	78-120	0
2-Hexanone	ug/L (ppb)	250	94	94	49-147	0
1,3-Dichloropropane	ug/L (ppb)	50	99	100	81-115	1
Tetrachloroethene	ug/L (ppb)	50	103	102	78-109	1
Dibromochloromethane	ug/L (ppb)	50	95	95	63-140	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	98	98	82-118	0
Chlorobenzene	ug/L (ppb)	50	99	101	80-113	2
Ethylbenzene	ug/L (ppb)	50	96	96	83-111	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	93	94	76-125	1
m,p-Xylene	ug/L (ppb)	100	98	99	84-112	1
o-Xylene	ug/L (ppb)	50	96	96	81-117	0
Styrene	ug/L (ppb)	50	98	99	83-121	1
Isopropylbenzene	ug/L (ppb)	50	96	96	81-122	0
Bromoform	ug/L (ppb)	50	93	94	40-161	1
n-Propylbenzene	ug/L (ppb)	50	97	98	81-115	1
Bromobenzene	ug/L (ppb)	50	102	102	80-113	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	98	99	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	93	98	79-118	5
1,2,3-Trichloropropane	ug/L (ppb)	50	96	94	74-116	2
2-Chlorotoluene	ug/L (ppb)	50	95	97	79-112	2
4-Chlorotoluene	ug/L (ppb)	50	97	98	80-116	1
tert-Butylbenzene	ug/L (ppb)	50	101	102	81-119	1
1,2,4-Trimethylbenzene	ug/L (ppb)	50	96	96	81-121	0
sec-Butylbenzene	ug/L (ppb)	50	98	99	83-123	1
p-Isopropyltoluene	ug/L (ppb)	50	98	98	81-122	0
1,3-Dichlorobenzene	ug/L (ppb)	50	100	100	80-115	0
1,4-Dichlorobenzene	ug/L (ppb)	50	98	99	77-112	1
1,2-Dichlorobenzene	ug/L (ppb)	50	96	97	79-115	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	82	83	62-133	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	95	94	75-119	1
Hexachlorobutadiene	ug/L (ppb)	50	96	95	70-116	1
Naphthalene	ug/L (ppb)	50	94	95	72-131	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	95	95	74-122	0

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708125

SAMPLE CHAIN OF CUSTODY

ME 08-07-17 VS1/VW2/E04

Report To: Tom Cammarata
Company: Cammarata Env. Sciences
Address: 2812 16th Ave NE
City, State, ZIP: Seattle, WA 98115
Phone: 206-523-3505 Email:

SAMPLERS (signature)

PROJECT NAME	PO #
104 12th	CES 1591
REMARKS	INVOICE TO

Page # ___ of ___

TURNAROUND TIME
- ☒ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
HR-3-GW	01A-D	8-7		Water	4		X	X		X							
HR-3-4'	02	8-7		Soil	4		X	X		X							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		CES	8-7-17	4:54
Received by:	Matt Langston	FBI	8/7/17	1654
Relinquished by:				
Received by:		Samples received at 2 °C		

APPENDIX F

Data from Prior Site Investigations
2014 AEG Phase II of 124 12th Avenue Parcel
2016 Farallon Phase II of 104 12th Avenue Parcel


E FIRST STREET
E YESLER WAY
12TH AVENUE
BOREN AVENUE S
PROJECT SITE– SHADED AREA DENOTES PROPERTY LIMITS
BUILDING

PROJECT NUMBER 14-142

APPROVED BY LC 11/04/2014

CHECKED BY LC 11/04/2014

DRAWN BY ICD 11/04/2014

FILENAME 14-142_1404_1.DWG

N

W E

S

SIDEWALK

BUILDING

SIDEWALK

PLANTER

PLANTER

E FIRST STREET

SIDEWALK

PLANTER

PLANTER

SIDEWALK

SIDEWALK

BUILDING

B-6

PLANTER

SIDEWALK

PLANTER

B-1

PARKING LOT

BUILDING

B-2

B-5

B-3

B-4

BUILDING

BUILDING

BUILDING

BUILDING

BUILDING

12TH AVENUE

PLANTER

BUILDING

BUILDING

BUILDING

BUILDING

LEGEND

PROPERTY LINE

TENTATIVE BORING LOCATION

NOTES

1. THE LOCATIONS OF ALL FEATURES SHOWN ARE APPROXIMATE
2. THIS DRAWING IS FOR INFORMATION PURPOSES. IT IS INTENDED TO ASSIST IN SHOWING FEATURES DISCUSSED IN AN ATTACHED DOCUMENT.

REFERENCE

DRAWING CREATED FROM AERIAL PHOTOGRAPH AND NOTES PROVIDED BY AEG, LLC.

0 10 20

SCALE IN FEET

ASSOCIATED ENVIRONMENTAL GROUP, LLC

FIGURE 2

SITE MAP

110 12TH AVENUE
SEATTLE, WASHINGTON

Table 1 - Summary of Soil Analytical Results

Orion 12th Ave Seattle
Seattle, Washington

Boring	Sample Number	Depth Collected (feet)	Date Collected	Total Petroleum Hydrocarbons (TPH) (mg/kg)			Volatile Organic Compounds (mg/kg)			
				Gasoline	Diesel	Lube Oil	Benzene	Toluene	Ethylbenzene	Xylenes
B-1	B1-S1-15	15.0	10/21/2014	<10	<50	<100	<0.02	<0.05	<0.05	<0.15
B-2	B2-S1-10	10.0	10/21/2014	<10	<50	**160**	<0.02	<0.05	<0.05	<0.15
	B2-S2-13.5	13.5	10/21/2014	<10	<50	<100	<0.02	<0.05	<0.05	<0.15
	B2-S3-20	20.0	10/21/2014	**11**	**150**	<100	<0.02	<0.05	<0.05	<0.15
B-3	B3-S1-15	15.0	10/21/2014	**2500**	<50	<100	<0.02	<0.05	**0.34**	**0.20**
B-4	B4-S1-14	14.0	10/21/2014	<10	<50	<100	<0.02	<0.05	<0.05	<0.15
B-5	B5-S1-11.5	11.5	10/21/2014	<10	<50	<100	<0.02	<0.05	<0.05	<0.15
	B5-S2-18.5	18.5	10/21/2014	<10	<50	<100	<0.02	<0.05	<0.05	<0.15
B-6	B6-S1-13.5	13.5	10/21/2014	**480**	<50	<100	<0.02	<0.05	**0.56**	**2.80**
	B6-S2-18	18.0	10/21/2014	**50**	<50	<100	<0.02	<0.05	**0.23**	**0.66**
PQL (mg/kg)				10	50	50	0.02	0.05	0.05	0.15
MTCA Method A Cleanup Levels (mg/kg)				100	2000	2000	0.03	7	6	9

Notes:
mg/kg = milligrams per kilogram
-- Not analyzed for constituent
< Not detected at the listed laboratory detection limits
PQL = Practical Quantification Limit (laboratory detection limit)
Red Bold indicates the detected concentration exceeds Ecology MTCA Method A cleanup level
Bold indicates the detected concentration is below Ecology MTCA Method A cleanup levels

Table 2 - Summary of Groundwater Analytical Results

Orion 12th Ave Seattle
Seattle, Washington

Sample Number	Date Collected	Total Petroleum Hydrocarbons (TPH) (ug/l)			Volatile Organic Compounds (µg/l)			
		Gasoline (µg/l)	Diesel	Lube Oil	Benzene	Toluene	Ethylbenzene	Xylenes
B1-W	10/21/2014	<100	<250	<500	<1.0	<1.0	<1.0	<3.0
B2-W	10/21/2014	<100	<250	<500	<1.0	<1.0	<1.0	<3.0
B3-W	10/21/2014	**14,000**	<250	<500	**7.6**	**4.2**	**26.0**	**12.0**
B4-W	10/21/2014	**740**	<250	<500	**15**	<1.0	<1.0	**14.0**
B5-W	10/21/2014	<100	<250	<500	<1.0	<1.0	<1.0	<3.0
PQL (µg/l)		100	250	500	1.0	1.0	1.0	3.0
MTCA Method A Cleanup Levels (µg/l)		800	500	500	5.0	1,000	700	1,000

Notes:
ug/L= micrograms per liter
-- Not analyzed for constituent
< Not detected at the listed laboratory detection limits
PQL = Practical Quantification Limit (laboratory detection limit)
Red Bold indicates the detected concentration exceeds Ecology MTCA Method A cleanup level
Bold indicates the detected concentration is below Ecology MTCA Method A cleanup levels

APPENDIX B

Supporting Documents
Boring Logs
Laboratory Datasheets

605 11th Ave. SE, Suite 201 • Olympia, WA • 98501
Phone: 360-352-9835 • Fax: 360-352-8164 • Email: admin@aegwa.com

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seattle***	**JOB #** ***14-142***	**BORING #** ***B-1*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller:	*ESN / Casey*	**Equipment / Drilling Method:**	*Geoprobe / Direct Push*
Date:	*October 21, 2014*	**Logged By:**	*B. Dilba*

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, medium dense GRAVELLY SAND; fine grained sand, fine to medium gravel	SP				9:00	N/A			
5	at 4.5 feet; broken brick material									
10										
15	Dark brown, moist, medium dense SILTY SAND; fine grained	SM			B1-S1-15	9:15		0.0		
20	at 19 feet; saturated, with medium gravel, some silt	▽							Not observed	
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue c- Seattle***	**JOB #** ***14-142***	**BORING #** ***B-2*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller:	*ESN / Casey*	**Equipment / Drilling Method:**	*Geoprobe / Direct Push*
Date:	*October 21, 2014*	**Logged By:**	*B. Dilba*

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, dense GRAVELLY SAND; medium grained sand, fine to medium gravel, trace of organic material	SP				9:55	N/A			
10					B2-S1-10	10:10		0.1		Odor
	at 10 feet; discolored soil									
					B2-S2-13.5	10:15		0.3		Strong Odor
		▽							Not observed	
15	at 14 feet; dark gray, saturated, dense									
	Dark gray, moist, stiff GRAVELLY SILT; trace of clay	ML								
20					B2-S3-20	11:00				Odor
	Dark gray, saturated, loose SANDY GRAVEL; fine grained grael, fine sand	GP								
	Dark gray, moist, stiff GRAVELLY SILT; fine gravel, trace of clay, trace organics	ML								
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT: *Orion 12th Avenue - Seattle*	**JOB #** *14-142*	**BORING #** *B-3*	**PAGE 1 OF 1**
Location: *110 12th Ave, Seattle, Washington*	**Approximate Elevation:**		
Subcontractor / Driller: *ESN / Casey*	**Equipment / Drilling Method:** *Geoprobe / Direct Push*		
Date: *October 21, 2014*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Brown, dry, medium dense GRAVELLY SAND; fine grained sand, fine gravel, organic content	SP				11:30	N/A			
	at 7 feet; Yellowish brown									
5										
	at 9 feet; brick residue									
10										
15	Black, moist, medium dense SILTY SAND; fine grained, trace organics	SM			B3-S1-15	11:00		0.3	Not observed	Odor
	at 17 feet; gray, saturated, dense									
20										
	Dark gray, moist, stiff GRAVELLY SILT; fine gravel, trace organics	ML								
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seatlle***	**JOB #** ***14-142***	**BORING #** ***B-4*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller: *ESN / Casey*		**Equipment / Drilling Method:** *Geoprobe / Direct Push*	
Date:	*October 21, 2014*	**Logged By:** *B. Dilba*	

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light brown, moist, medium, dense GRAVELLY SAND; fine to medium grained sand, fine gravel, trace organics	SP	1–5				N/A			
5	at 9.5 feet; brick material		6–10							
10			11–15		B4-S1-14	13:00		0.1	Not observed	Slight odor
15	Greenish gray, saturated, dense SILTY SAND; fine grained	SM	16–20							
20	at 16.5 feet; moist		21–25							
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT: *12th Ave Parking Lot*	**JOB #** *14-142*	**BORING #** *B-5*	**PAGE 1 OF 1**
Location: *110 12th Ave, Seattle, Washington*	**Approximate Elevation:**		
Subcontractor / Driller: *ESN/Casey*	**Equipment / Drilling Method:**		*Geoprobe*
Date: *October 21, 2014*	**Logged By:** *B. Dilba*		

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Light gray, moist, medium dense GRAVELLY SAND; fine grained sand, fine gravel	SP				13:55	N/A			
5										
	Brown,moist, medium dense SILTY SAND; fine grained sand, with fine to medium gravel	SM								
10					B5-S1-11.5	1415		0.1		faint odor
	at 11.5 feet; greenish gray									
15										
	at 16 feet; a 0.5 foot layer of light gray GRAVELLY SAND, underlain by: Black moist, dense SILTY SAND, fine grained	SP SM								
			▽		B5-S2-18.5	14:25		0.0	Not observed	
20	at 19 feet; greenish gray, saturated									
25										

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ASSOCIATED ENVIRONMENTAL GROUP, LLC **LOG OF BOREHOLE**

PROJECT:	***Orion 12th Avenue - Seattle***	**JOB #** ***14-142***	**BORING #** ***B-6*** **PAGE 1 OF 1**
Location:	*110 12th Ave, Seattle, Washington*	**Approximate Elevation:**	
Subcontractor / Driller: *ESN / Casey*		**Equipment / Drilling Method:** *Geoprobe / Direct Push*	
Date:	*October 21, 2014*	**Logged By:** *B. Dilba*	

Boring Depth (feet)	Soil Description	Unified Soil Symbol	Sample Depth	Sample Recovery	Sample Number	Time	Blows/Foot	PID Reading	Sheen	Observations
	Gravel surface underlain by; Brown, moist, medium dense GRAVELLY SAND; fine grained sand, fine gravel	SP	1–5				N/A			
5			5							
10			10							
			13		B6-S1-13.5	15:15		10		odor from 13.5 to 15.0
	Dark green, moist, dense SILTY SAND with GRAVEL; fine sand, fine gravel	SM	14							
15	at 14 feet; GREENISH GRAY, trace of fine gravel, trace of clay		15							
			18		B6-S2-18	15:25		2.8		Odor from 16.5 to 18.5
20	at 19.5 feet; wet, with fine gravel	▽	20						Not observed	
25			25							

Explanation

- Sample Advance / Recovery
- No Recovery
- Contact located approximately
- ATD — Groundwater level at time of drilling or date of measurement

ESN NORTHWEST CHEMISTRY LABORATORY

Associated Environmental Group
PROJECT 12th AVE PARKING LOT
PROJECT #14-142
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	10/24/2014	10/24/2014	118	nd	nd
LCS	10/24/2014	10/24/2014	119	62%	---
B1-S1-15	10/24/2014	10/24/2014	115	nd	nd
B2-S1-10	10/24/2014	10/24/2014	124	nd	**160**
B2-S2-13.5	10/24/2014	10/24/2014	102	nd	nd
B2-S3-20	10/24/2014	10/24/2014	126	**150**	nd
B3-S1-15	10/24/2014	10/24/2014	126	nd	nd
B4-S1-14	10/24/2014	10/24/2014	131	nd	nd
B4-S1-14 Duplicate	10/24/2014	10/24/2014	119	nd	nd
B5-S1-11.5	10/24/2014	10/24/2014	118	nd	nd
B5-S2-18.5	10/24/2014	10/24/2014	107	nd	nd
B6-S1-13.5	10/24/2014	10/27/2014	115	nd	nd
B6-S2-18	10/24/2014	10/27/2014	128	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Associated Environmental Group
PROJECT 12th AVE PARKING LOT
PROJECT #14-142
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
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(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	10/23/2014	10/23/2014	132	nd	nd
LCS	10/23/2014	10/23/2014	138	89%	---
B1-W	10/23/2014	10/23/2014	129	nd	nd
B2-W	10/23/2014	10/23/2014	147	nd	nd
B3-W	10/23/2014	10/23/2014	134	nd	nd
B4-W	10/23/2014	10/23/2014	117	nd	nd
B5-W	10/23/2014	10/23/2014	109	nd	nd
Reporting Limits				250	500

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

ESN NORTHWEST CHEMISTRY LABORATORY

Associated Environmental Group
PROJECT 12th AVE PARKING LOT
PROJECT #14-142
Seattle, Washington

ESN Northwest
1210 Eastside Street SE Suite 200
Olympia, WA 98501
(360) 459-4670 (360) 459-3432 Fax
lab@esnnw.com

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	10/22/2014	10/22/2014	nd	nd	nd	nd	nd	118
LCS	10/22/2014	10/22/2014	76%	85%	87%	91%	92%	104
LCSD	10/22/2014	10/22/2014	90%	98%	102%	103%	---	102
B1-S1-15	10/21/2014	10/1/2314	nd	nd	nd	nd	nd	116
B2-S1-10	10/21/2014	10/22/2014	nd	nd	nd	nd	nd	116
B2-S2-13.5	10/21/2014	10/22/2014	nd	nd	nd	nd	nd	116
B2-S3-20	10/21/2014	10/22/2014	nd	nd	nd	nd	**11**	117
B3-S1-15	10/21/2014	10/22/2014	nd	nd	**0.34**	**0.20**	**2500**	113
B4-S1-14	10/21/2014	10/23/2014	nd	nd	nd	nd	nd	115
B5-S1-11.5	10/21/2014	10/23/2014	nd	nd	nd	nd	nd	108
B5-S2-18.5	10/21/2014	10/22/2014	nd	nd	nd	nd	nd	111
B6-S1-13.5	10/21/2014	10/23/2014	nd	nd	**0.56**	**2.8**	**480**	113
B6-S2-18	10/21/2014	10/23/2014	nd	nd	**0.23**	**0.66**	**50**	116
B6-S2-18 Duplicate	10/21/2014	10/23/2014	nd	nd	**0.08**	**0.24**	**23**	115
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS : 65% TO 135%

ESN NORTHWEST CHEMISTRY LABORATORY

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Seattle, Washington

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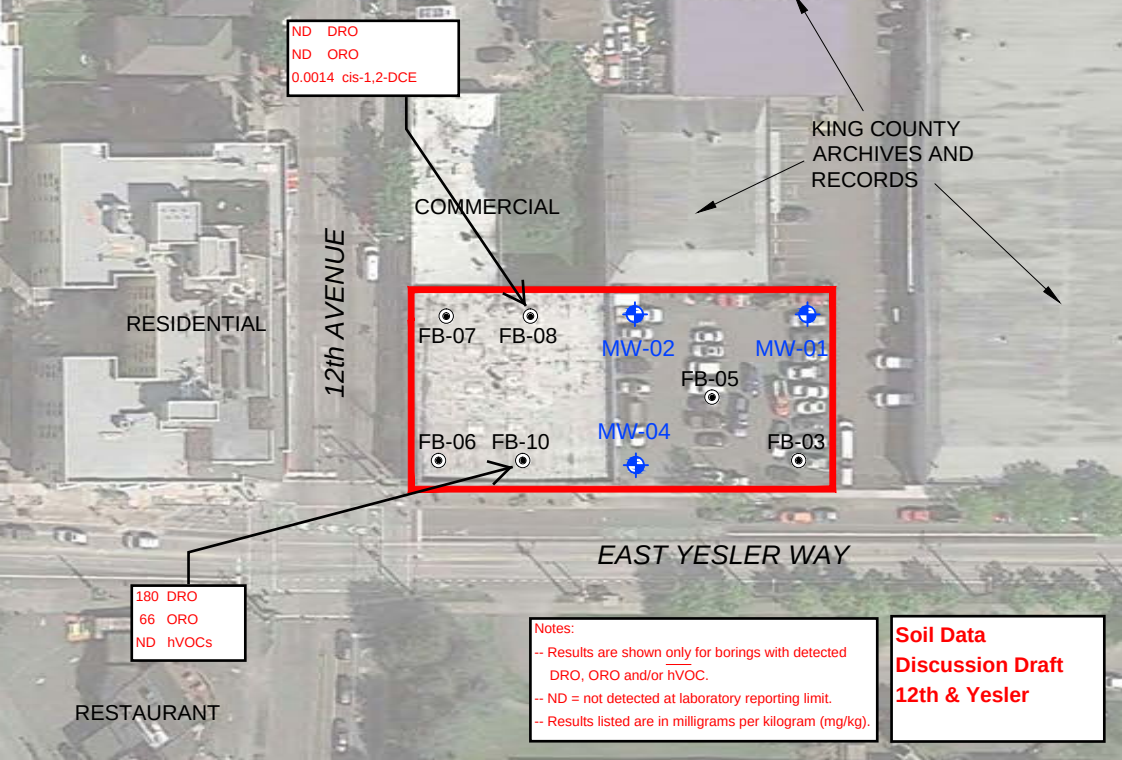
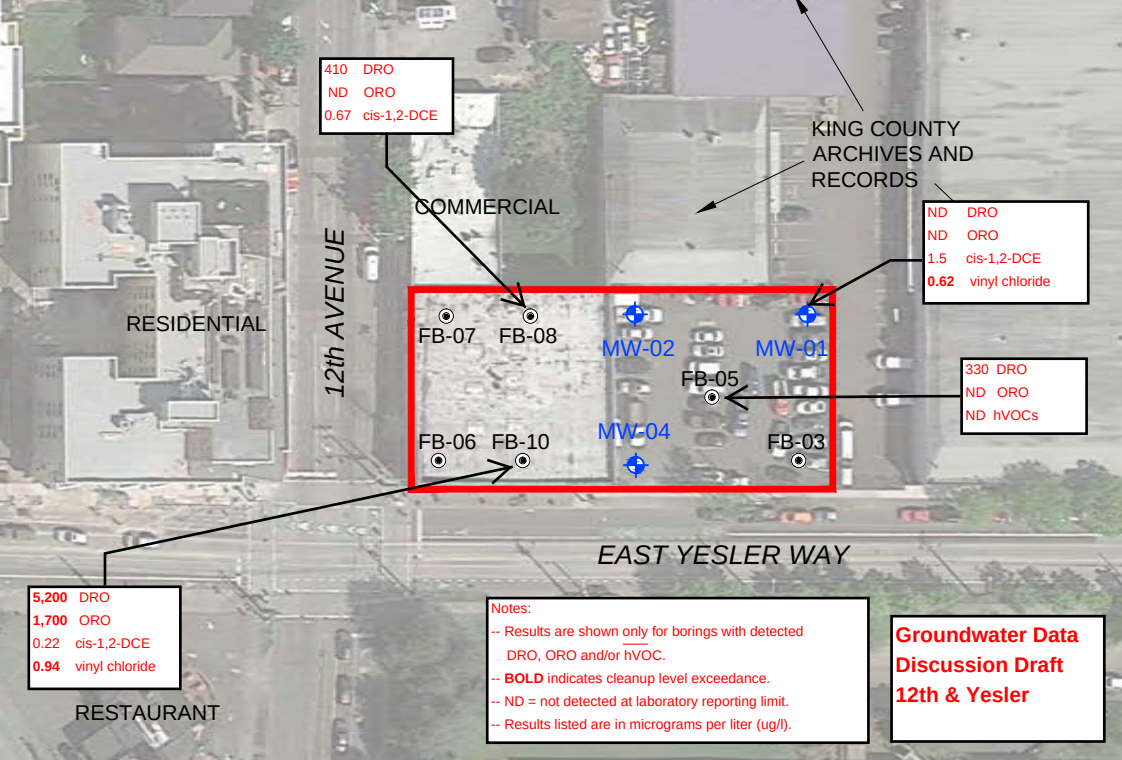
Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

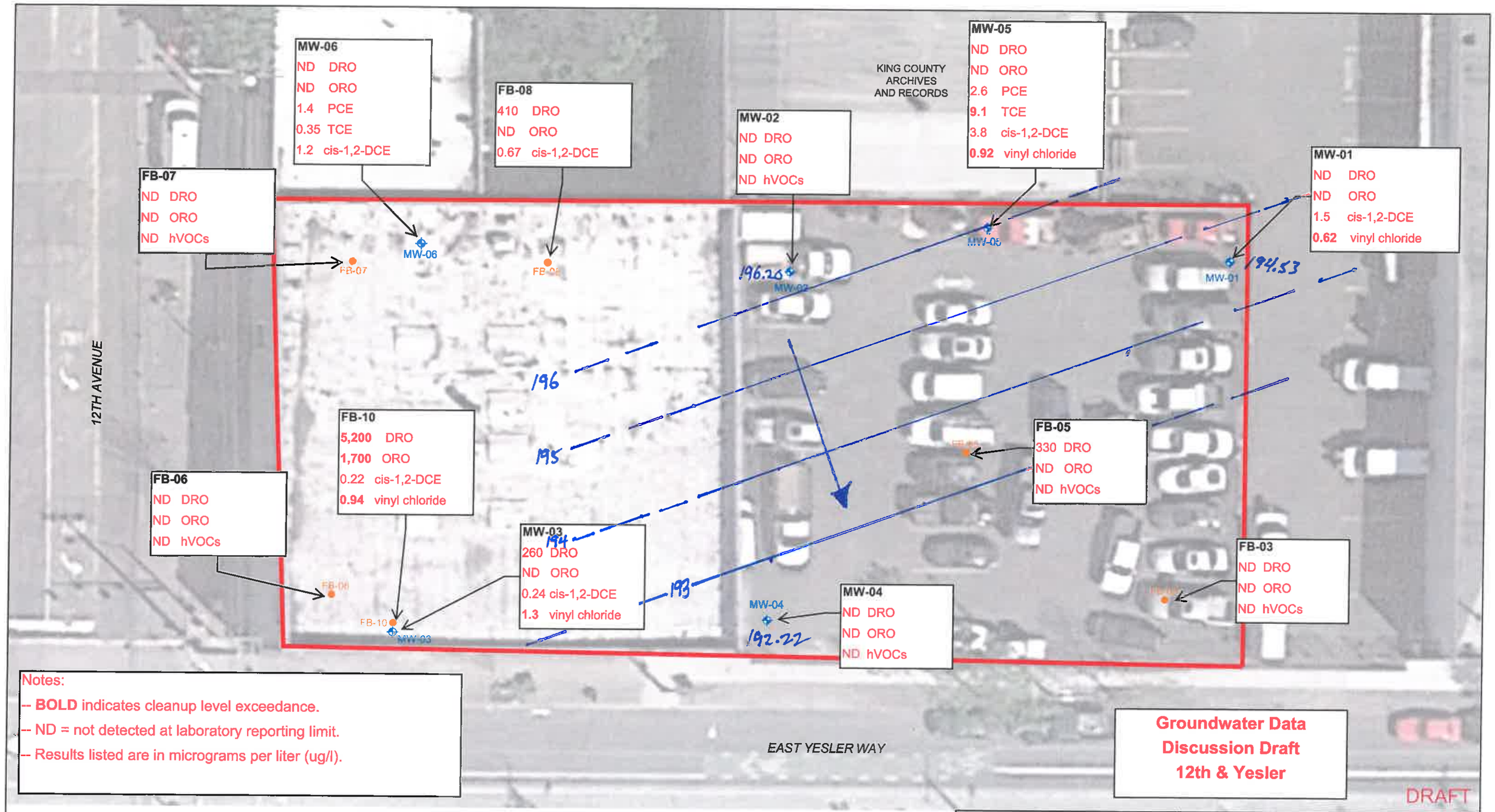
Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	10/24/2014	nd	nd	nd	nd	nd	114
LCS	10/24/2014	85%	85%	87%	86%	98%	102
LCSD	10/24/2014	91%	83%	94%	116%	---	132
B1-W	10/24/2014	nd	nd	nd	nd	nd	115
B2-W	10/24/2014	nd	nd	nd	nd	nd	117
B3-W	10/24/2014	**7.6**	**4.2**	**26**	**12**	**14,000**	119
B4-W	10/24/2014	**15**	nd	nd	**14**	**740**	115
B5-W	10/24/2014	nd	nd	nd	nd	nd	122
B5-W Duplicate	10/24/2014	nd	nd	nd	nd	nd	121
Trip Blank	10/24/2014	nd	nd	nd	nd	nd	119
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%


ND DRO
ND ORO
0.0014 cis-1,2-DCE
KING COUNTY
ARCHIVES AND
RECORDS
COMMERCIAL
RESIDENTIAL
12th AVENUE
FB-07
FB-08
MW-02
MW-01
FB-05
FB-06
FB-10
MW-04
FB-03
EAST YESLER WAY
180 DRO
66 ORO
ND hVOCs
RESTAURANT
Notes:
-- Results are shown only for borings with detected DRO, ORO and/or hVOC.
-- ND = not detected at laboratory reporting limit.
-- Results listed are in milligrams per kilogram (mg/kg).
Soil Data
Discussion Draft
12th & Yesler


410 DRO
ND ORO
0.67 cis-1,2-DCE
COMMERCIAL
KING COUNTY
ARCHIVES AND
RECORDS
ND DRO
ND ORO
1.5 cis-1,2-DCE
0.62 vinyl chloride
RESIDENTIAL
12th AVENUE
FB-07
FB-08
MW-02
MW-01
FB-05
330 DRO
ND ORO
ND hVOCs
FB-06
FB-10
MW-04
FB-03
EAST YESLER WAY
5,200 DRO
1,700 ORO
0.22 cis-1,2-DCE
0.94 vinyl chloride
RESTAURANT
Notes:
-- Results are shown only for borings with detected DRO, ORO and/or hVOC.
-- BOLD indicates cleanup level exceedance.
-- ND = not detected at laboratory reporting limit.
-- Results listed are in micrograms per liter (ug/l).
Groundwater Data
Discussion Draft
12th & Yesler



FARALLON CONSULTING
Quality Service for Environmental Solutions | farallonconsulting.com

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Bend | Baker City

California
Oakland | Sacramento | Irvine

FIGURE 2

SITE PLAN
12TH AND YESLER PROPERTY
104 THROUGH 108 12th AVENUE AND
1206 EAST YESLER WAY
SEATTLE, WASHINGTON

FARALLON PN: 1200-003

Drawn By: DJR Checked By: RC Date: 2/18/2016 Disk Reference: 1200-003.dwg

Table 1
Groundwater Elevations
Seattle Curtain
Seattle, Washington
Farallon PN: 1200-003

Location	Date Measured	Well Head Elevation (feet)[1]	Depth to Water (feet)[2]	Total Well Depth (feet)[2]	Groundwater Elevation (feet)[1]
MW-01	1/5/2016	200.24	5.67	29.36	194.57
	2/17/2016	200.24	5.71	29.36	194.53
MW-02	1/5/2016	201.10	4.89	29.38	196.21
	2/17/2016	201.10	4.90	29.38	196.20
MW-04	1/5/2016	199.34	7.11	24.78	192.23
	2/17/2016	199.34	7.12	24.78	192.22

NOTES:

[1] North Rim Elevation of well casing based off of Spectrum Development survey conducted on 2/05/16.

[2] In feet below top of well casing.

Farallon = Farallon Consulting, L.L.C.

APPENDIX G

Resume of Environmental Professional
Daniel S. Whitman, LG

Whitman
Environmental Sciences

Daniel S. Whitman, L.G.

Daniel Whitman is a Senior Environmental Geologist with over 28 years of experience in management of contaminated site investigations, ranging from small scale property assessments to CERCLA and SARA RI/FS studies throughout the northern United States. Mr. Whitman has specialized in environmental site assessments, subsurface exploration, remediation, regulatory compliance and waste management issues. He has extensive experience in environmental investigations and monitoring on landfills, industrial facilities, petroleum facilities, Department of Defense properties and development sites. His background includes regulatory negotiations; preparation, technical review and implementation of sampling plans, quality assurance plans and work plans; as well as remedial action alternatives analysis and implementation.

Education
Michigan Technological University, B.S. Geology, 1980

Professional Affiliations and Registrations
Licensed Professional Geologist, Washington, No. 889
Professional Geologist, Wyoming, PG No. 411
Registered Environmental Assessor, California, REA No. 01985
Registered Washington UST Assessor
AHERA Certified Building Inspector
HAZWOPER 40-hour Health and Safety Training, with
over 80 hours of supervisor training and updates

Examples of Project Experience

Project Manager for the on-going assessment and remediation of contaminated soil and groundwater at a wood-treatment plant in Tacoma, Washington. Conducted mass excavations of pentachlorophenol, arsenic and petroleum contaminated soil from areas adjacent to tidally influenced waterways and directed hazardous waste disposal at out-of-state facilities. Developed site cleanup criteria under MTCA and conducted regulatory negotiations with Department of Ecology and the Port of Tacoma.

Manager of drilling and monitoring well installation on CERCLA NPL-designated sites in Minnesota, including Oak Grove Sanitary Landfill, WDE landfill, FMC - Fridley site, Reilly Tar & Chemical site, Koppers Coke Plant, Arrowhead Refinery, and Pine Bend Landfill.

Oversight of all aspects of environmental compliance during construction of an Automated Materials Handling Facility at the Naval Undersea Warfare Engineering Station, Keyport, Washington. Project Manager performing third party oversight for prime contractor on a multi-party construction project involving excavation and piling installation within a contaminated area. Audited contractor and subcontractor compliance with regulations and contract requirements for excavation, Health & Safety, sampling, waste management, erosion and wastewater control and documentation.

On-going soil and groundwater remediation of petroleum hydrocarbons on a former service station in Mercer Island, Washington. Operation and maintenance of vapor extraction equipment and nutrient injection to enhance bioremediation.

Whitman Environmental Sciences

Daniel S. Whitman, L.G.

Technical consultant for the Edmonds Citizens Awareness Committee (ECAC). ECAC was a community group coordinating public participation in a State of Washington mandated cleanup at a major bulk oil terminal on the Edmonds waterfront. The community group was funded through Department of Ecology grants to conduct technical review of the remedial investigation/feasibility study of the terminal and disseminate the information to the public in a readily understandable way. The goal was to allow public involvement in cleanup decisions that affect the community surrounding the site.

Assessment and remediation for solvent contamination of soil and groundwater from a dry cleaning facility in Lynnwood, Washington. Successful closure of the site and no further action letter under Ecology's Voluntary Cleanup Program.

Contaminated soil assessment and cleanup oversight at a former Nike missile launch site in Redmond, Washington.

Program and Project Manager for assessment and remediation of retail and bulk fuel facilities for six major oil company clients in Washington, Alaska and Oregon. Activities included tank removal and retrofitting, excavation and disposal of contaminated soil; free product recovery; groundwater pump and treat; installation of hydrologic barriers and collection sumps; vapor extraction; risk assessment and long-term monitoring.

Project Manager for contamination investigation of the fuel hydrant system around the "B" Concourse of the Anchorage, Alaska International Airport. Developed work plan, QA/QC plan, site security plan and Health & Safety plan; performed an impact analysis on the surrounding community, including limited groundwater modeling, catalogue of water wells in the area and exposure assessment for community and airport personnel.

National service coordinator of environmental assessments conducted for a major real estate investment trust. Coordinated and conducted over 80 assessments of multi-family investment properties, including Phase I Environmental Assessments, asbestos surveys, lead paint surveys, electromagnetic field measurement studies, radon surveys, and Phase II site investigations.

Conducted a Phase I Environmental Assessment of an analytical laboratory that manages samples of hazardous waste, high level radioactive wastes and mixed waste materials.

Project Manager for the assessment and remediation audit of a former lumber mill and furniture plant in Pendleton, Oregon. The site investigation focused on a portion of the site planned for future development and included extensive soil and groundwater sampling and analysis. Mr. Whitman audited the progress of a remediation system and the potential for migration of contaminants to the portion of the property under investigation.

Project Manager for assessment of the extent of petroleum, PCB and heavy metal waste contamination in a storage and operations area of an active shipyard in Seattle, WA.

Site assessment in the area of a jet fuel pipeline suspected as the source of contamination encountered during road reconstruction by the Alaska Department of Transportation and Public Facilities.

Whitman
Environmental Sciences

Daniel S. Whitman, L.G.

Emergency response assessment of a high-pressure jet fuel pipeline leak at Sea-Tac International Airport, including drilling, excavation sampling, monitoring well installation and regulatory interaction.

Environmental consulting for a meat byproducts plant in Tacoma, Washington. Projects have included a soil and groundwater contamination investigation, environmental compliance auditing, a statistical evaluation of long-term groundwater monitoring data, and regulatory permit compliance services.

Hydrogeological study and petroleum recovery operations at a fishery plant in western Alaska. Performed and documented site assessment to determine distribution of fugitive petroleum and tidal influences on groundwater. Selected petroleum recovery locations for emergency remedial actions, then developed and implemented a comprehensive site restoration plan.

Site investigation planning for a major RI/FS of groundwater contamination at an active ammonia/urea plant in Kenai, Alaska. Responsible for sampling plan, QA/QC plan and overall project coordination. Site studies included groundwater contaminant fate and transport analysis, marine sediment environmental risk assessment, development of a long-term groundwater monitoring plan.

Developed sampling QA/QC plans and directed subsurface exploration of the boiler residuals area of a former plywood mill, designated a State-level Superfund site in Seattle, Washington. Evaluated dredge spoils for disposal characterization. Parameter of concern included PNA's solvents and heavy metals.

Groundwater quality investigation surrounding a computer manufacturing facility in Rochester, Minnesota. Established monitoring points, modeled groundwater conditions and developed long-term quarterly monitoring plan.

Design and installation of a soil and groundwater remediation system to address impacts from a solvent spill at the Swanson River Pipe and Supply Yard, Soldotna, Alaska. Remediation systems include a groundwater collection gallery and winterized pump and treat system, vapor extraction system, reinfiltration galleries and an irrigation system for treated groundwater.

Project manager for landfill siting studies performed for six counties in southeastern Minnesota. Performed preliminary site screening for geologic hazards and zoning restrictions; performed second phase site investigations of candidate sites and detailed hydrogeologic characterization of finalist sites. Presented findings at several stages of the evaluation program at public hearings before the County Boards and Joint Powers Board.

Site characterization at the Twin Cities Army Ammunition Plant performed under the Department of Defense Installation Restoration Program. Studies included extensive Remedial Investigation activities over a period of five years through four separate phases of work at eight different areas within the plant, including: drilling and sampling; installation of over 200 monitoring wells; geophysical surveys of waste disposal areas; soil gas surveys; quarterly groundwater sampling and data management; preparation of a four volume, 1000 page report.