Potential Sources Soil Investigation and Focused Groundwater Investigation Work Plan
Noland DeCoto Flying Services
Yakima, Washington

Prepared for

Yakima Airport Land Company
2810 West Washington Avenue
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1.0 INTRODUCTION

This work plan presents the rationale and planned sampling activities for the investigation of soil conditions on the Noland DeCoto properties (Site). A Phase I Environmental Site Assessment (ESA; Fulcrum, 2009) of the properties identified several recognized environmental conditions that were potential sources of soil contamination, including underground storage tanks (USTs) and above ground storage tanks (ASTs). There is a confirmed release from a heating oil UST that was removed in 2000. In addition, there are three dry wells on the Site that are potential sources of contamination. TPH-Gasoline was in a groundwater sample collected in 2006 near the Oil Storage Shed (OSS). Investigation of these locations is planned.

The Site property addresses are 2804, 2806, 2806, and 2810 West Washington Avenue in Yakima, Washington. The Site is adjacent to the Yakima Air Terminal-McAllister Field. The Site is being enrolled in the Washington Department of Ecology's (Ecology) Voluntary Cleanup Program (VCP).

This document was prepared consistent with MTCA Sampling and Analysis Plan Rule Requirements under WAC 173-340-820 and Guidance for Remediation of Contaminated Sites (Ecology, 2011). The planned locations of soil borings, number of soil and groundwater samples; and chemical analyses to be conducted are summarized in this document.

2.0 BACKGROUND

This section describes the Site, including its known history, past and current uses; existing property features; and summarizes previous environmental investigations completed at the Site.

2.1 SITE DESCRIPTION AND HISTORY

The subject Site is located within current City of Yakima boundaries and southwest of the historic downtown area. The subject site is located immediately north and adjacent to the Yakima Airport Terminal (YAT), which was established in 1932 with the construction of a 2,600-foot gravel landing strip and associated drainage system. Shortly after, the area was graded and surfaced for an improved runway system. In 1940, the original runways were converted into taxiways and a new 5,000-foot and 4,000-foot paved runways were constructed. In 1949, the passenger terminal was constructed and in 1953 the airport installed its first Instrument Landing System. Finally, in 1974, the Air Traffic Control tower was constructed.

As part of the Phase I ESA (Fulcrum 2009) the historic occupants of the Site were identified using Yakima Polk Directories. Their findings are summarized immediately below.

> DeCoto Brothers Air Craft Division was first identified in the Yakima Polk Directories in 1953 at the listed address of 2801 West Washington Avenue. A change in address was noted in 1987 from odd numbered addresses to even number addresses in conjunction with relocation of West Washington Avenue from south of the subject site to north of the subject site. Beginning in 1963, multiple listings are identified for the site and are consistent with current issued addresses. The multiple listings suggest leasing of the current 2804-2808 Building by third party businesses. Identified businesses identified during the review as having operated at the subject site include the following:
>
> DeCoto Brothers Aircraft Division, Inc.
> Dowty Aerospace
> Noland DeCoto Flight Service
> Cascade Helicopters Crop Dusting
> Northwest Challenger Boats

Horizon Concepts
Morales, Charles
Scuba Mule Sporting Goods
Specialty Detail
Burkhart Dental Supply Company
Intermountain Cleaning Service
Solar Graphics
Spanton Business Forms
Yakima Industrial Electric
Accurate Metallurgist, Inc.
Motor head Auto Detailing
Ayala, Robert
Open Door Pre Finish
Maximum Fix Labs, Inc.
Yakima Plastics
Computer Professional, Inc.
Noland, James
Roemmich, Jacob
Simonson, Albert
White, Robert
GE Aviation

2.2 CURRENT SITE CONDITIONS

The general layout of the Site features and boundaries are presented in Figure 2. The site is currently comprised of two separate and adjacent Yakima County Assessor tax parcels recognized as 181335-23001 (23001) and 181335-23007 (23007). The parcels are located immediately south of West Washington Avenue and borders the YAT.

Parcel 23001 is approximately 2.72-acres, and is located immediately south of West Washington Avenue. The parcel contains six aircraft hangar buildings and a fuel storage area containing three aboveground storage tanks (ASTs). Approximately 95-percent of the parcel is covered with asphalt, concrete, or building footprint.

Parcel 23007 is approximately 5.25-acres and located immediately south of parcel 23001 and is bordered by YAT to the south. The parcel contains four aircraft hangar buildings; and three additional facility buildings. The first additional facility building is represented by the 2804, 2806, 2808 West Washington Avenue addresses. The second building is located in the center portion of the parcel and represents the Noland DeCoto operations building, identified as 2810 West Washington Avenue. One additional facility building is currently unoccupied, is under renovation, and does not have an issued physical address.

2804, 2806, and 2808 West Washington Avenue Building

The building identified as 2804, 2806, and 2808 West Washington Avenue is located on the eastern portion of parcel 23007. The two-story building was constructed in approximately the 1950s and is composed of concrete exterior walls on a concrete foundation, totaling approximately 26,000-square feet. The building is currently occupied by three business tenants including Solar Graphics, Inc. (2804), Accurate Metallurgy, Inc. (2806), and General Electric Aviation, Inc. (2808). The building was originally constructed as the DeCoto Brothers Aircraft Division facility.

2810 West Washington Avenue

The building identified as 2810 West Washington Avenue is located in the center portion of parcel 23007. The building is currently occupied by Noland DeCoto Flying Services, Inc. and is used for facility operations including administration. The single story building was constructed in approximately the 1950s

and is composed of concrete exterior walls on a concrete foundation, totaling approximately 5,500-square feet. The building contains a customer service, lounge, and office areas on the southern portion; a shop on the northeastern portion; and additional office space on the northwestern portions of the building.

Additional Facility Building

One additional facility building is located on the eastern portion of the parcel immediately east of the 2810 building. The single story building appeared to be of 1970s construction and composed of wood framing on a concrete slab foundation, totaling approximately 1,000-square feet. The building is currently undergoing both interior and exterior renovation activities.

Aircraft Hangar Buildings

Ten aircraft hangar buildings are currently located throughout the Site. The buildings are constructed of either wood framing with metal exterior siding, or metal framing with metal exterior siding, dependent of age of construction. Two types of hangars are present at the site and include long, multitenant buildings, and square shaped corporate aircraft hangars. The buildings are constructed on concrete slab foundations and are not heated.

2.3 ADJOINING PROPERTY

Property in the vicinity of the site is predominately commercially operated real estate. Immediately adjacent property includes the following:

North: Beyond West Washington Avenue, parcels include the Flightline Convenience Center and an automobile retail fueling station.

East: Beyond South 28th Avenue, the parcel to the east of the site is owned and operated by General Electric Aviation Systems, a manufacturer of actuation and landing gear components for aircraft.

South: The site is bound of the south by YAT operated taxiways and runways.

West: The parcel to the west of the site is owned and operated by YAT. A segregated portion of the western adjacent parcel is leased to CAS Properties, LLC, and operated as a FEDEX facility.

2.4 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

This section summarizes previous environmental investigations of the Site and is divided into four subsections. The first subsection summarizes the reports found in Ecology's records. The second subsection summarizes the applicable findings of a Phase I ESA completed in 2009. The third subsection summarizes groundwater contamination found near the Oil Storage Shed (OSS) located on the west side of the Noland DeCoto building. The fourth subsection summarizes potential sources identified by Hayman Environmental during a December 2012 site visit.

2.4.1 ECOLOGY RECORDS

For development of this Work Plan, a review of information on file for previous environmental work at the Site was conducted at Ecology's Central Regional Office, and a Site visit was conducted by Hayman Environmental on December 21, 2012. An electronic copy of Ecology's records was received at that time.

Previous environmental investigations of the Noland DeCoto Site focused on individual areas or potential contaminant sources and did not consider the Site as a single entity. The investigations are summarized below. The summary is organized by potential contaminant source. The reports relevant to each area are listed at the beginning of each discussion.

Ecology records included reports on the GE Aviation Site located southeast of the Noland DeCoto property. Groundwater flows from the Noland DeCoto property to the GE Aviation property. The result of the GE Aviation investigation and groundwater monitoring are summarized in this section.

NOLAND DECOTO PROPERTY

Northeastern Former AST Fuel Storage Area

Ecology record:

> Noland DeCoto Flying Services Limited Soil Investigation Report, Fulcrum Environmental Consulting, July 2008

The northeastern former aboveground storage tank (AST) fuel storage area consists of the following empty ASTs:

- Approximate 15,000-gallon 100LL Gasoline AST
- Approximate 15,000-gallon JET A AST
- Approximate 500-gallon JET A AST

In 2005 visual evidence of a release of petroleum product to the site soils was reported. The affected area was limited to the southeast corner of the AST fuel storage area. Soils were stained directly below a release valve piping component. In October 2005 the soil beneath the leaking piping on the southeastern corner of the tank have was sampled and the presence of diesel range hydrocarbons above MTCA cleanup standards was confirmed (Fulcrum 2008). At an unidentified date, the affected soil was excavated and stockpiled on 6 mil visqueen sheeting. In 2008 five soil samples were collected from the excavation and one soil sample was collected from the stockpiled soil. The samples were analyzed by NWTPH-Dx. Diesel, heavy oil and mineral oil were not detected in any of the samples (Fulcrum 2008).

The ASTs were emptied in the Fall of 2010 when a fence was constructed cutting off access to the airport runways.

In May 2008 Ecology recommended a No Further Action (NFA) for this location. No additional investigation is planned for this area.

Former Heating Oil UST

Ecology Records:

> Letter report from PLSA Engineering and Surveying to Tom Mackey (Ecology), Re: Leaking Underground Storage Tank Remedial action Proposal, December 1999.
>
> Site Assessment Engineering Report, Underground Storage Tank Removal; PLSA Engineering and Surveying, March 2000.
>
> Letter report from PLSA Engineering and Surveying to Jim DeCoto, Re: Groundwater Sampling and Testing, July 2000.
>
> Letter report from PLSA Engineering and Surveying to Jim DeCoto, Re: Groundwater Sampling and Testing, November 2000.
>
> Letter report from PLSA Engineering and Surveying to Jim DeCoto, Re: Noland DeCoto Flying Services, January 2001.

In November 1999, PLSA Engineering and Surveying (PLSA) completed site assessment services associate with decommissioning (removal) of one 500-gallon heating oil UST on the north side of 2810 Building. The UST was found to be corroded and leaking. A single soil sample was collected from the bottom of the tank excavation and submitted for analysis by method NWTPH-Dx. The analytical results are presented in the table below.

Soil Sample Analytical Results (mg/kg), Analytical Method NWTPH-Dx modified

Sample Name	#2 Diesel	Motor Oil
1	3,800	250
MTCA Cleanup Level	500	500

Following the discovery of impacted soil during the UST removal, three groundwater monitoring wells were installed by PLSA. Well locations are shown on Figure 2. Four quarters of groundwater monitoring were conducted. Groundwater samples were analyzed by method NWTHP-Dx. All analytical results were below the laboratory method detection limit (MDL). Three analytical results were above the laboratory practical quantitation limit (PQL). These three results were reported as estimated concentrations and "J" flagged. The MTCA groundwater cleanup levels were not exceeded by any of the analytes in any of the samples analyzed. The results of the groundwater sample analyses are summarized in the following table.

Groundwater Monitoring Analytical Results (ug/L), Analytical Method NWTPH-Dx modified

Well Name	March 2, 2000		June 30, 2000		October 16, 2000		January 17, 2001	
	#2 Diesel	Motor Oil	#2 Diesel	Motor Oil	#2 Diesel	Motor Oil	#2 Diesel	Motor Oil
MW-1	130J	<480	<240	<480	<240	NA	<240	<480
MW-2	<240	<480	<240	<480	150J	NA	<240	<480
MW-3	120J	<480	<240	<480	<240	NA	<240	<480
MTCA Cleanup Level[1]	500	500	500	500	500	500	500	500

NA- Not Analyzed
J- Estimated value
[1]MTCA Method A groundwater cleanup level

In a certified letter to Jim DeCoto dated May 11, 2000 Ecology stated the soil sampling was insufficient and added the Noland DeCoto property to their known and suspected contaminated sites list. The soil around the former UST location will be investigated to evaluate the extent of soil contamination. This affected soil is currently covered by the 2810 building and a concrete patio with limited access.

GE AVIATION SITE

The electronic records received from Ecology in December 2012 included a *Figure 6 Detected Groundwater Results* which summarized the groundwater monitoring results for March, June and August 2011. The results on this figure relevant to the Noland DeCoto Site were Benzene, Toluene, Ethylbenzene, Xylene (BTEX). None of the reported results exceeded MTCA Method B cleanup levels for groundwater, suggesting that releases, if any, on the Noland DeCoto property have not migrated down gradient.

2.4.2 PHASE I ENVIRONMENTAL SITE ASSESSMENT

A Phase I ESA (Fulcrum 2009) of the Site was conducted in 2009. A review of the ESA identified two additional areas for investigation as potential contaminant sources. These potential sources are discussed below.

Former UST Fueling Island and Suspected USTs

The Phase I ESA identified two vent pipes adjacent to the former concrete fueling dispenser pad northwest of the Hangar C building (Figure 2). Associated fill ports were not identified in the vicinity of the fueling dispenser island. No information or UST decommissioning documentation was identified by Fulcrum during the Phase I ESA.

The fueling Island was removed prior to the December 2012 site visit. This area will be investigated for the presence of USTs, aviation gasoline and jet fuel.

Hanger A Former Low Lead Aviation Gasoline AST

The Phase I ESA identified a former AST used to store low lead aviation gasoline at the east end of Hanger A (Figure 2). Soil staining and stressed vegetation have not been observed or identified at this location; however, to ensure that aviation gasoline was not released in this area soil samples will be collected and analyzed.

2.4.3 GE COMMERCIAL FINANCE GROUNDWATER INVESTIGATION

A limited groundwater investigation was conducted in 2006 (JMK, 2006) to evaluate groundwater conditions at the site. Groundwater samples were collected using direct push methods at four locations on the Site and from two existing monitoring wells (Figure 2). Samples were analyzed by EPA Method 8260B for volatile organic compounds (VOCs) and EPA Method 8015B for diesel and oil range organic compounds. VOCs, and diesel and oil range organics were detected in the sample from location B1 located south of the Oil Storage Shed (OSS). Analytes were not detected in samples from any of the other locations. The table below summarizes the groundwater sample analytical results. Sampling and analysis of the soil and groundwater is planned for this area.

Groundwater Sample Analytical Results (ug/L)

Sample Location	Analyte					
	TPH Gasoline	Acetone	Ethylbenzene	Other VOCs	Diesel	Oil
B1	3,110	6.2	1.2	ND	1,300	8,000
B2	ND	ND	ND	ND	ND	ND
B3	ND	ND	ND	ND	ND	ND
B4	ND	ND	ND	ND	ND	ND
MW-2[1]	ND	ND	ND	ND	ND	ND
MW-3[2]	ND	ND	ND	ND	ND	ND
MTCA Cleanup Level[3]	1,000[4]	7,200[4]	700	N/A	500	500

[1]Referred to as MW1 in JMK 2006
[2]Referred to as MW2 in JMK 2006
[3]MTCA Method A Cleanup Level
[4]No detectable benzene
[5]MTCA Method B Cleanup Level
N/A – Not applicable

2.4.4 SITE VISIT

During the December 2012 site visit Hayman Environmental identified two dry wells on the Site that could act as sources of contamination. A third dry well was identified by the site operator in February 2013.

Dry Wells

Three dry wells are in the southeast portion of the Site (Figure 2). Dry wells can be readily contaminated by surface releases that drain or are transported by storm water runoff into the dry well. The three Site dry wells are not known to have been previously sampled or investigated. Subsurface soil samples will be collected from a soil boring adjacent to each dry well.

3.0 ENVIRONMENTAL SETTING

The Site is located in the Yakima River Basin of Yakima County, Washington and is generally flat, with a ground surface elevation of approximately 1,080 ft above mean sea level (MSL). A perennial stream called Wide Hollow Creek is located within 1,000 ft to the north and curves around the east end of YAT. Spring Creek and Bachelor Creek flow across the central and south portions of the airport, respectively. The streams all flow east and eventually converge with the Yakima River which is located approximately 4 miles to the east.

3.1 REGIONAL GEOLOGY

The Yakima Basin is located on the western margin of the Columbia Plateau physiographic province. Available literature indicates that area surface geology consists of unconsolidated silt, sand, and gravel deposited as alluvial flood plain sediments, which are underlain by thick sequences of alluvial fan, loess, continental, and Ellensburg formation deposits that range in thickness from 0 ft to a maximum of approximately 1,800 ft in the northwest portion of the basin (USGS 2006). These sediments were deposited in an east-west trending structural basin of the Yakima fold belt called the Ahtanum-Moxee syncline. The basin is bounded by the Yakima Ridge to the north and the Ahtanum Ridge to the south. The underlying bedrock consists of siltstone, mudstone, and Miocene-age volcanics of the Columbia River basalt group. Basalt bedrock is found at approximately 1,000 ft beneath the Airport.

The Natural Resources Conservation Service, Soil Survey of Yakima County further describes near surface sediments as Umapine silt loam, 0 to 5 percent slopes. This soil is somewhat poorly drained and has moderate permeability. The stream channel containing Spring Creek is mapped as Toppenish silt loam, 0 to 2 percent slopes, which has moderately slow permeability (NRCS 1985).

3.2 REGIONAL HYDROGEOLOGY

Groundwater in the Yakima Basin is contained within three hydrogeological units (USGS 2006). The primary water bearing units include alluvial, unconsolidated, and consolidated basin fill deposits. Unit 1, the shallowest unit, consists of alluvial flood plain deposits and averages approximately 20 ft in thickness across the basin. Unit 2 typically underlies Unit 1 and consists of alluvial fan, loess, terrace, and Thorp gravels which average approximately 90 ft in thickness. Unit 3 underlies Unit 2 and consists primarily of consolidated Miocene volcanic and non-volcanic sedimentary deposits of the Ellensburg formation which average approximately 510 ft thick across the basin (USGS 2006). The direction of regional groundwater flow within these units is reportedly to the south and east.

4.0 POTENTIAL CONTAMINANT SOURCES

The potential contaminant sources at the Site are:

- the former heating oil UST,
- the former fueling island and suspected USTs,
- the former low lead AST that was located at the east end of hanger A,
- the three dry wells in the southeast portion of the Site, and
- the Oil Storage Shed (OSS) located on the west side of the Noland DeCoto Building.

4.1 PRELIMINARY CONCEPTUAL SITE MODEL

This section presents a preliminary conceptual site model (CSM). The potential contaminants for the Noland DeCoto Site are aviation gasoline, jet fuel and the additive associated with these fuels. The planned investigation is in-part designed to determine if the soil in these areas contains elevated concentrations of these potential contaminants. Groundwater near the OSS will be sampled to evaluate the extent of petroleum compounds found in 2006.

4.2 CURRENT AND FUTURE LAND USE

The Site is located in the City of Yakima. The Site is currently zoned as Light Industrial (M-1), according to the official Yakima County GIS website (February 13, 2013). Surrounding properties are zoned as airport Safety (AS), General Commercial (GC), and Multi-Family Residential (R-3, and Light Industrial (M-1). It is expected that the current operations at the Site will generally continue. The eastern half of the Site will continue to be operated as light industrial and storage for the foreseeable future. The western half of the Site is planned for acquisition by YAT for airplane storage.

4.3 CURRENT AND FUTURE WATER USE

Drinking water for the Site and surrounding properties is supplied by the City.

Shallow groundwater at the Site is not currently used for drinking water and is not a reasonable future source of drinking water. A single groundwater sample collected south of the OSS contained concentrations of TPH Gasoline (3,110 ug/L), Diesel (1,300 ug/L) and Oil (8,000 ug/L) above the MTCA Method A cleanup levels (see Section 2.4.3). No other compounds were detected above this cleanup level. Ethylbenzene was detected at 1.2 ug/L. No other BTEX compounds or VOCs were detected. There are no known releases or former storage tanks on the Noland DeCoto property that could be the sources of these compounds in the groundwater sample. Historically, refueling tanker trucks were parked about 150 ft west of the Noland DeCoto Building and immediately south of the Noland DeCoto property. Reportedly, plane refueling also took place between in this area too. Releases from the trucks or during refueling activities could be the source for the contamination found in the groundwater sample.

The groundwater monitoring conducted on the Noland DeCoto property and on the downgradient GE Aviation site have not detected significant threats to groundwater quality at the downgradient boundaries. Should the results of the planned investigation demonstrate a substantial risk to groundwater from releases on the Noland DeCoto property; a groundwater investigation will be conducted.

4.4 POTENTIAL RECEPTORS AND EXPOSURE PATHWAYS

There is limited contamination known to be present on the Noland DeCoto property. No complete exposure pathways have been identified. Therefore, it is premature to conduct a complete evaluation of receptors and exposure pathways. Should additional contamination be discovered by the planned investigation, potential receptors and exposure pathways to evaluated would be determined as part of a future phase of work. The receptors that would likely need to be evaluated include humans and terrestrial ecological receptors. Aquatic organisms would not be evaluated because there are no known groundwater discharges to surface water near the Site. Exposure pathways to be evaluated will be determined at the time if the evaluation.

5.0 SOIL AND GROUNDWATER INVESTIGATION

The scope of this investigation will be conducted at each of the following potential release points. Proposed boring locations are shown on Figure 2. Actual boring locations will be determined based on field conditions.

Prior to initiation of drilling or any other invasive subsurface activity, the locations of each proposed boring will be checked in the field to locate aboveground utilities or physical limitations that would prevent drilling at the proposed location. In addition, a public utility locate service will be contacted to locate underground utilities at the perimeter of the Site and a private utility locate service will be retained to clear explorations for underground utilities. The final location for each borehole will be based on the findings of the utility location and field conditions.

Boreholes for collecting soil and groundwater samples will be drilled using a truck-mounted Geoprobe® or equivalent direct-push drilling rig. Borings will be completed by a driller licensed in the State of

Washington and will be monitored by a Hayman Environmental field representative. Soil will be described and classified in accordance with the Unified Soil Classification System (USCS).

Former Heating Oil UST

The location of the former heating oil UST is covered by a concrete patio. Four soil borings are planned to be drilled to characterize the extent of soil contamination from the heating oil UST. One proposed boring will be drilled through the patio at the reported location of the former UST location. The remaining borings will be drilled approximately 15 ft north, northeast and west of the former UST location. These three planned locations are outside the patio. The proposed boring locations are shown on Figure 2.

Former UST Fueling Island and Suspected USTs

Three soil borings will be drilled to characterize the soil in this area. The planned boring locations are through the former pump island and former UST location. The proposed locations are shown on Figure 2.

Hanger A Former Low Lead Aviation Gasoline AST

Two soil borings will be drilled to characterize the soil in this area. The planned boring locations are centered on the eastern end of Hanger A and offset from the hanger approximately 10 ft. The proposed locations are shown on Figure 2.

Dry Wells

One soil boring is proposed to be installed within 8 ft of each dry well. The exact location of each boring will be determined in the field. The proposed locations are shown on Figure 2.

Oil Storage Shed

Five borings are planned to evaluate the Noland DeCoto property for evidence of the source of the petroleum compounds detected in a groundwater sample collected in 2006 (JMK, 2006). The proposed locations are shown on Figure 2.

5.1 BORINGS

5.1.1 SAMPLE COLLECTION METHODS

Soil Samples

Continuous soil samples will be recovered from each boring using a closed-piston sampling device with a 48-inch long, 1.5-inch inside-diameter (ID) core sampler. The sampler will be advanced to the top of the sample interval with the piston in a locked position. The piston tip will then be loosened and the sampler will be advanced over the desired depth interval, thereby coring the soil inside the sampler's disposable, single-use liner. The sampler will then be withdrawn to retrieve the liner and soil sample. After the liner is cut to remove the soil sample, a new liner will be placed in the core sampler and this process will be repeated until the total depth has been reached. Between locations, the core sampler, including the piston tip and rods, will be decontaminated as described in Section 7.0.

After the liner is cut, the soil type will be evaluated by Hayman Environmental's field representative and recorded on a soil boring log. The soil column retained in the sample liner will be field-screened for evidence of environmental impact. Field-screening will be conducted by visually inspecting the soil for staining and other evidence of environmental impact, and monitoring soil vapors for volatile organic compounds (VOCs) using a portable photoionization detector (PID). Soil samples collected for analysis of gasoline-range petroleum hydrocarbons by Method NWTPH-Gx and for analysis of VOCs will be collected in accordance with U.S. Environmental Protection Agency (EPA) Method 5035A.

Groundwater Samples

Representative groundwater samples will be collected using a tool that has a protective sheath covering the screen as the tool is driven to a nominal depth 12 ft BGS. When the tool reaches the sample depth, the protective sleeve is unlocked and retracted, exposing the screen. Groundwater samples will be collected into laboratory supplied bottles using a peristaltic pump, a mini bailer or tubing check valve.

5.1.2 SAMPLE DEPTH INTERVALS

This section summarizes the planned boring locations and soil samples and groundwater samples to evaluate the Site. Boring locations are presented on Figure 2. Table 1 summarizes the planned soil and groundwater sampling and analysis.

Former Heating Oil UST

Four borings are planned to be drilled to evaluate the Former Heating Oil UST area (Figure 2). Three soil samples will be collected from each soil boring. Two soil samples will be collected from contaminated intervals based on visual, PID field screening and sheen testing. The third soil sample will be collected from slightly above the capillary fringe of the water table.

Former UST Fueling Island and Suspected USTs

Three borings are planned to be drilled and sampled to evaluate this former potential petroleum source (Figure 2). Two soil samples will be collected from each soil boring. One soil sample will be collected from the depth of the greatest apparent contamination based on visual and PID field screening and sheen testing. A second soil sample will be collected from slightly above the capillary fringe of the water table. A total of six soil samples are planned

Hanger A Former Low Lead Aviation Gasoline AST

Two borings are planned to be drilled and sampled to evaluate this potential source of petroleum (Figure 2). Two soil samples will be collected from each soil boring. One soil sample will be collected from the depth of the greatest apparent contamination based on visual and PID field screening and sheen testing. A second soil sample will be collected from slightly above the capillary fringe of the water table. A total of 4 soil samples are planned for this area.

Dry Wells

Three borings are planned to be drilled and sampled to evaluate the three dry wells, one boring adjacent to each dry well (Figure 2). Two soil samples will be collected from each soil boring. One soil sample will be collected from the depth of the greatest apparent contamination based on visual inspection, PID field screening and sheen testing. A second soil sample will be collected from slightly above the capillary fringe of the water table.

Oil Storage Shed

Five borings are planned to be drilled and sampled to evaluate the soil and groundwater adjacent to and up gradient (northwest) of the OSS (Figure 2).

One soil boring will be drilled boring adjacent to the shed. Two soil samples will be collected from this boring. One soil sample will be collected from the depth of the greatest apparent contamination based on visual inspection, PID field screening and sheen testing. A second soil sample will be collected from slightly above the capillary fringe of the water table. A groundwater sample will be collected from approximately 12 ft BGS.

The four remaining borings will be drilled northwest of the OSS. One soil sample will be collected from the capillary fringe. A groundwater sample will be collected each of these borings from approximately 12 ft BGS.

A total of six soil samples and five groundwater samples will be collected and analyzed to evaluate this area.

5.1.3 SAMPLE LABORATORY ANALYSES

Soil and groundwater samples will be analyzed by a Washington accredited environmental laboratory for petroleum hydrocarbons and related additives in accordance with Model Toxics Control Act (MTCA) requirements summarized in MTCA Table 830-1. The planned chemical analyses for each investigation area are summarized below and in Table 1.

Former Heating Oil UST

- NWTPH-Dx with an acid/silica gel cleanup

Former UST Fueling Island and Suspected USTs

- NWTPH-GX
- EPA Method 8260, BTEX; 1,2-dibromomethane (EDB); 1,2-dichloroethane (EDC); and methyl tertiary- butyl ether (MTBE)
- EPA 6000 or 7000, Lead
- NWTPH-Dx with an acid/silica gel cleanup
- EPA Method 8270, Naphthalene
- Volatile Petroleum Hydrocarbons (VPH, archive)
- Extractable Petroleum Hydrocarbons (EPH archive)

Hanger A Former Low Lead Aviation Gasoline AST

- NWTPH-GX
- EPA Method 8260, BTEX; EDB; EDC; and MTBE
- EPA 6000 or 7000, Lead
- EPA Method 8270 Naphthalene
- Volatile Petroleum Hydrocarbon (VPH, archive)

Dry Wells

- NWTPH-GX
- EPA Method 8260, BTEX; 1,2-dibromomethane (EDB); 1,2-dichloroethane (EDC); and methyl tertiary- butyl ether (MTBE)
- EPA 6000 or 7000, Lead
- NWTPH-Dx with an acid/silica gel cleanup
- EPA Method 8270, Naphthalene
- VPH (archive)
- EPH (archive)

Oil Storage Shed

- NWTPH-GX
- EPA Method 8260, BTEX; EDB; EDC; and MTBE
- EPA 6000 or 7000, Lead
- NWTPH-Dx with an acid/silica gel cleanup
- EPA Method 8270, Naphthalene
- Volatile Petroleum Hydrocarbons (VPH, archive)
- Extractable Petroleum Hydrocarbons (EPH archive)

VPH analysis will be analyzed should the NWTPH-Gx results for the sample exceed MTCA soil cleanup levels. EPH analysis will be analyzed should the NWTPH-Dx results for the sample exceed MTCA soil cleanup levels.

5.2 SAMPLE CONTAINERS, PRESERVATION, AND STORAGE

Soil samples submitted to the analytical laboratory for analysis will be collected in the appropriate sample container provided by the analytical laboratory. The samples will be preserved by cooling to a temperature of 4^{o}C and as required by the analytical method. Maximum holding and extraction times until analysis is performed will be strictly adhered to by field personnel and the analytical laboratory. Sample containers, preservatives, and holding times for each chemical analysis are presented in the following table.

Soil Sample Containers, Preservation and Holding Time

Analysis	Bottle Type	Quantity	Holding Time
NWTPH-Dx	8 oz. jar	1*	14 days
NWTPH-Gx	40mL VOA vial (pre-weighted) 8 oz. jar	1** 1*	14 days
Volatiles EPA 8260C	40mL VOA vials with stir bar (pre-weighted) 40mL VOA vial (pre-weighted) 8 oz. jar	2 1 1*	14 days
Total Lead EPA 6010C	8 oz. jar	1*	6 months
Naphthlenes EPA 8270D/SIM	8 oz. jar	1*	14 days
Volatile Petroleum Hydrocarbons (VPH)	40mL VOA vial (pre-weighted) 8 oz. jar	1** 1*	14 days
Extractable Petroleum Hydrocarbons (EPH)	4 oz. jar	1	14 days

* - all of these analyses can be performed from one 8 oz jar.
** - these two analyses can be performed from one 40ml VOA vial.

Groundwater Sample Containers, Preservation and Holding Time

Analysis	Bottle Type	Quantity	Holding Time
NWTPH-Dx	500ml amber (HCL preserved)	2	14 days for extraction, then 40 days for analysis
NWTPH-Gx and Volatile Petroleum Hydrocarbons (VPH)	40mL VOA (HCL preserved)	3	14 days
Volatiles EPA 8260C	40mL VOA (HCL preserved)	3	14 days
Total Lead EPA 200.7/200.8	500mL HDPE (Nitric preserved)	1	6 months
Naphthalene EPA 8270D/SIM	1 Liter amber (unpreserved)	2	7 days for extraction, then 40 days for analysis
Extractable Petroleum Hydrocarbons (EPH)	1 Liter amber (HCL preserved)	2	14 days for extraction, then 40 days for analysis

5.3 LABORATORY DATA QUALITY OBJECTIVES

The laboratory target Method Detection Limits (MDLs) and Practical Quantitation Limits (PQLs) are summarized in the table below.

Analytical Methods and Target Reporting Limits (ppm and ppb)

METHOD/ANALYTE	SOIL			GROUNDWATER		
	MDL	PQL	Units	MDL	PQL	Units
NWTPH-Gx						
Gasoline	0.565	5.0	ppm	9.14	100	ppb
Volatiles by Method 8260C						
Methyl t-Butyl Ether (MTBE)	0.135	1.0	ppb	0.0452	0.20	ppb
Benzene	0.174	1.0	ppb	0.0241	0.20	ppb
1,2-Dichloroethane (EDC)	0.189	1.0	ppb	0.0526	0.20	ppb
Toluene	0.103	5.0	ppb	0.0218	1.0	ppb
1,2-Dibromoethane (EDB)	0.134	1.0	ppb	0.0698	0.20	ppb
Ethylbenzene	0.136	1.0	ppb	0.0296	0.20	ppb
m,p-Xylene	0.253	2.0	ppb	0.0495	0.40	ppb
o-Xylene	0.122	1.0	ppb	0.0339	0.20	ppb
ICP Metals by Method 6010C						
Lead	0.992	5.0	ppm	0.101	1.1	ppb
NWTPH-Dx						
Diesel Fuel #2	8.36	25	ppm	51.4	250	ppb
Oil	12.6	50	ppm	149	0400	ppb
Naphthalenes by Method 8270D/SIM						
Naphthalene	0.000345	0.0067	ppm	0.00761	0.10	ppb
2-Methylnaphthalene	0.000141	0.0067	ppm	0.00635	0.10	ppb
1-Methylnaphthalene	0.0000917	0.0067	ppm	0.00388	0.10	ppb
Volatile Petroleum Hydrocarbons						
Aliphatic C5-C6	--	5.0	ppm	--	50	ppb
Aliphatic C6-C8	--	5.0	ppm	--	50	ppb
Aliphatic C8-C10	--	5.0	ppm	--	50	ppb
Aliphatic C10-C12	--	5.0	ppm	--	50	ppb
Aromatic C8-C10	--	5.0	ppm	--	50	ppb
Aromatic C10-C12	--	5.0	ppm	--	50	ppb
Aromatic C12-C13	--	5.0	ppm	--	50	ppb
Extractable Petroleum Hydrocarbons						
Aliphatic C8-C10	1.00	5.0	ppm	20	50	ppb
Aliphatic C10-C12	0.491	5.0	ppm	20	50	ppb
Aliphatic C12-C16	0.353	5.0	ppm	20	50	ppb
Aliphatic C16-C21	0.358	5.0	ppm	20	50	ppb
Aliphatic C21-C34	0.361	5.0	ppm	20	50	ppb
Aromatic C8-C10	1.00	5.0	ppm	20	50	ppb
Aromatic C10-C12	0.626	5.0	ppm	20	50	ppb
Aromatic C12-C16	0.628	5.0	ppm	20	50	ppb
Aromatic C16-C21	0.512	5.0	ppm	20	50	ppb
Aromatic C21-C34	0.430	5.0	ppm	20	50	ppb

MDL- Method Detection Limit
PQL- Practical Quanitation Limit
ppm- parts per million
ppb- parts per billion

5.4 SAMPLE TRANSPORTATION AND HANDLING

The transportation and handling of soil samples will be accomplished in a manner that not only protects the integrity of the sample, but also prevents any detrimental effects due to release of samples. Samples will be logged on a Chain of Custody (COC) form and will be kept on ice in secured coolers under the custody of field personnel or an authorized courier until delivery to the analytical laboratory. The COC will accompany each shipment of samples to the laboratory.

5.5 SAMPLE CUSTODY

The primary objective of sample custody is to create an accurate, written record that can be used to trace the possession and handling of samples so that their quality and integrity can be maintained from collection until completion of all required analyses. Adequate sample custody will be achieved by means of approved field and analytical documentation. Such documentation includes the COC record that is initially completed by the sampler and is, thereafter, signed by those individuals who accept custody of the sample. A sample is in custody if at least one of the following is true:

- It is in someone's physical possession.
- It is in someone's view.
- It is secured in a locked container or otherwise sealed so that tampering will be evident.
- It is kept in a secured area, restricted to authorized personnel only.

Sample control and COC in the field and during transportation to the laboratory will be conducted in general conformance with the procedures described below:

- As few people as possible will handle samples.
- Sample containers will be obtained new or pre-cleaned from the laboratory performing the analyses.
- The sample collector will be personally responsible for the completion of the COC record, and the care and custody of samples collected until they are transferred to another person or dispatched properly under COC rules.
- The cooler in which the samples are shipped will be accompanied by the COC record identifying its contents. The original record and laboratory copy will accompany the shipment (sealed inside the shipping container). The other copy will be retained by Hayman Environmental.
- Coolers will be sealed with strapping tape and custody seals for shipment to the laboratory.
- The method of shipment, name of courier and other pertinent information will be entered in the "remarks" section of the COC record and traffic report.

When samples are transferred, the individuals relinquishing and receiving the samples will sign the COC form and record the date and time of transfer. The sample collector will sign the form in the first signature space. Each person taking custody will observe whether the shipping container is correctly sealed and in the same condition as noted by the previous custodian (if applicable); deviations will be noted on the appropriate section of the COC record.

A designated sample custodian at the laboratory will accept custody of the shipped samples, verify the integrity of the custody seals, and certify that the sample identification numbers match those on the COC record. The custodian will then enter sample identification number data into a bound logbook, which is arranged by a project code and station number. If containers arrive with broken custody seals, the laboratory will note this on the COC record and will immediately notify Hayman Environmental.

6.0 INVESTIGATION DERIVED WASTE

Soil cuttings and groundwater generated during the field investigation will be temporarily stored on site in 55-gallon drums. Disposal methods for this soil will be determined based on the analytical results for the soil samples.

7.0 EQUIPMENT DECONTAMINATION

The decontamination procedures described below are to be used by field personnel to clean drilling, sampling, and related field equipment. Deviation from these procedures must be documented in field records.

7.1 SAMPLING EQUIPMENT

All sampling equipment used (e.g., stainless-steel bowls, stainless-steel spoons, soil split-spoon samplers, etc.) will be cleaned using a three-step process, as follows:

1. Scrub surfaces of equipment that would be in contact with the sample with brushes using an Alconox solution
2. Rinse and scrub equipment with clean tap water.
3. Rinse equipment a final time with deionized water to remove tap water impurities. Decontamination of the reusable sampling devices will occur between the collection of each sample.

7.2 HEAVY EQUIPMENT

Heavy equipment (e.g., the drilling rig and drilling equipment that is used downhole, or that contacts material and equipment going downhole) will be cleansed by a hot water, high pressure wash before each use and at completion of the project. Potable tap water will be used as the cleansing agent.

8.0 SCREENING LEVELS

Soil and groundwater screening levels have been developed to screen the analytical results for the purpose of determining the nature of contamination that may pose a threat to human health and the environment. The screening levels were developed in accordance with WAC 173-340-900 requirements and, therefore, are considered to be adequately protective of human health and the environment. Following completion of the investigation, cleanup standards for constituents that are detected during the investigations will be developed. Cleanup standards consist of: 1) cleanup levels that are adequately protective of human health and the environment, and 2) the point of compliance at which the cleanup levels must be met. For the Noland DeCoto Site industrial cleanup levels will be applied because the property is zoned light industrial (see Section 4.2).

Soil Screening Levels (1)

Analyte	MTCA Method A Cleanup Level (mg/kg)	
	Unrestricted Land Use	Industrial Land Use
TPH, Gasoline Range Organics	30 (no benzene)	30 (no benzene)
	100 (benzene present)	100 (benzene present)
Benzene	0.03	0.03
Toluene	7.00	7.00
Ethylbenzene	6.00	6.00
Xylenes, Total	9.00	9.00
1,2-Dichlorethane (EDC)	--	--
1,2-Dibromomethane (EDB)	0.005	0.005
Methyl tertiary-butyl ether (MTBE)	0.1	0.1
TPH, Diesel Range Organics	2,000	2,000
THP, Heavy Oil	2,000	2,000
Naphthalene	5	5
Lead, Total	250	1,000

(1) Source: Tables 740-1 and 745-1 in WAC 173-340-900.
-- No cleanup level listed

Groundwater Screening Levels

Analyte	MTCA Method A Cleanup Levels (ug/L)
TPH, Gasoline Range Organics	800 (benzene not present)
	1,000 (benzene present)
Benzene	5
Toluene	1000
Ethylbenzene	700
Total Xylenes	1000
1,2-Dichloroethane (EDC)	5
1,2- Dibromomethane (EDB)	0.01
Methyl tertiary-butyl ether (MTBE)	20
TPH, Diesel Range Organics	500
THP, Heavy Oil	500
Naphthalene	160
Total lead	15

9.0 REPORTING

A report summarizing the investigation results will be prepared and submitted to Ecology following receipt of the analytical results. The report will summarize the field activities, including significant deviations from the work plan. Analytical results will be presented in tables. Soil boring locations will be presented on figures. Complete analytical reports and documentation of the disposal of investigation derived waste will be included in appendices. Analytical data will be entered into Ecology's EIM database.

10.0 LIMITATIONS

This work plan has been prepared for the exclusive use of the Yakima Airport Land Company, LLC for specific application to the Noland DeCoto Site. Reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by Hayman Environmental, shall be at the user's sole risk. Hayman Environmental warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

REFERENCES

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PLSA Engineering and Surveying, 1999; Letter report to Tom Mackey (Ecology), Re: Leaking Underground Storage Tank Remedial Action Proposal; December 1999.

PLSA Engineering and Surveying, 2000a; Site Assessment Engineering Report, Underground Storage Tank Removal; March 2000.

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USGS, 2006; *Hydrogeologic Framework of Sedimentary Deposits in Six Structural Basins, Yakima River Basin, Washington*, Scientific Investigations Report 2006-5116; United States Geologic Survey; 2006.

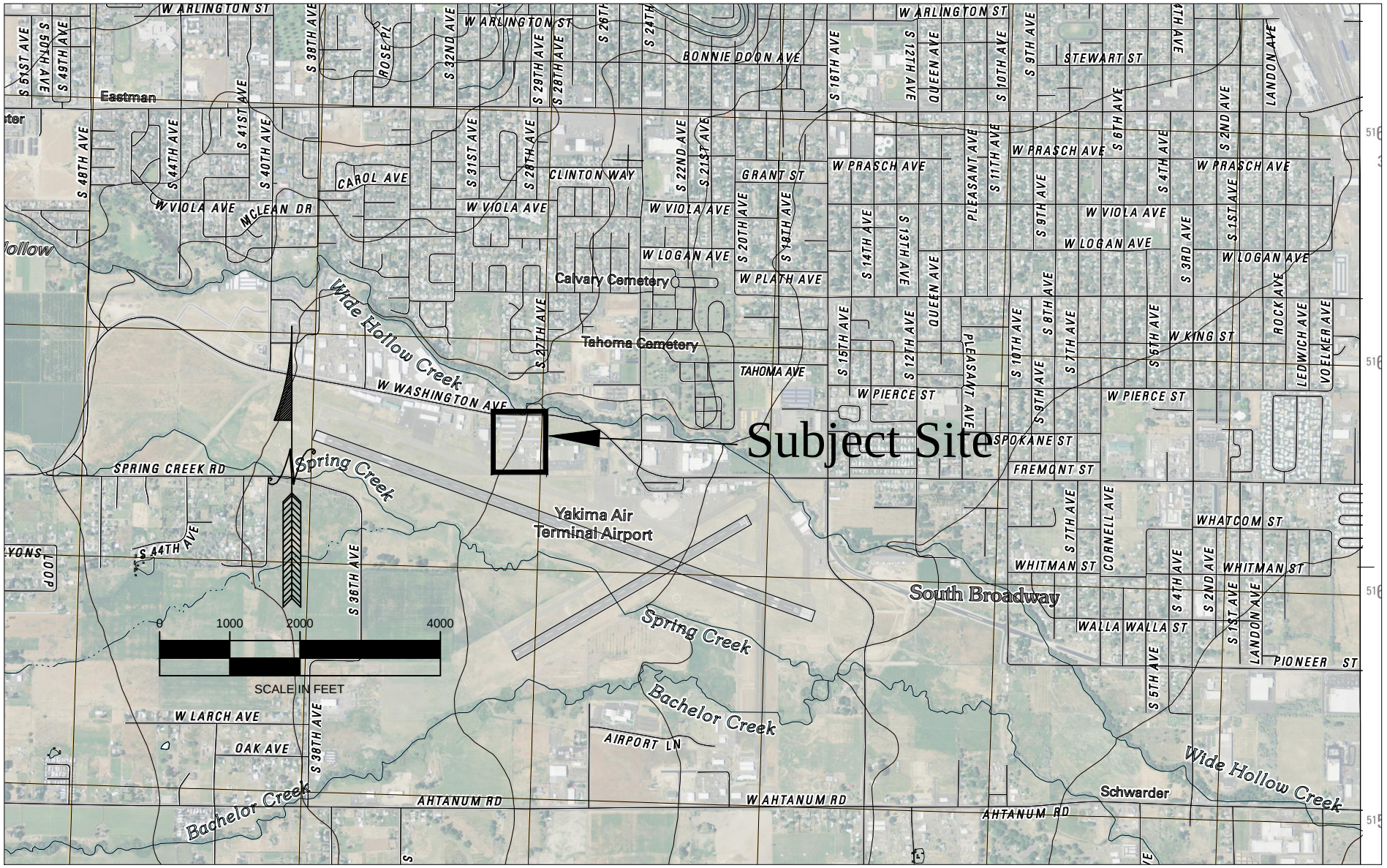
Table 1. Soil and Groundwater Sample and Analysis Summary
Noland DeCoto Site
Yakima, Washington

Location	Suspected Contaminants	Sample Matrix	Chemical Analysis and Number of Samples						
			NWTPH-Gx	EPA Method 8260 (VOCs)	EPA Method 6000, 7000 or 200 (Lead)	NWTPH-Dx	EPA Method 8270 (Naphthalenes)	VPH[1] (Archive)	EPH[2] (Archive)
Former Heating Oil UST	Heating Oil	Soil	--	--	--	**12**[3]	--	--	--
Former UST Fueling Island	Aviation Gasoline, Jet Fuel	Soil	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Hanger A Former Low Lead Aviation Gasoline AST	Aviation Gasoilne	Soil	**4**	**4**	**4**	--	**4**	**4**	--
Dry Wells (3)	Surface run off of Aviation Gasoline, Jet Fuel, Oil	Soil	**6**	**6**	**6**	**6**	**6**	**6**	**6**
Oil Storage Shed	Aviation Gasoline, Jet Fuel, Oil	Soil	**1**	**1**	**1**	**1**	**1**	**1**	**1**
		Soil @ Capillary Fringe	**5**	**5**	**5**	**5**	**5**	**5**	**5**
		Water	**5**	**5**	**5**	**5**	**5**	**5**	**5**

[1]Samples will be analyzed for if TPH-Gx exceeds Screening Level (MTCA Method A Cleanup Level)

[2]Samples will be analyzed for if TPH-Dx exceeds Screening Level (MTCA Method A Cleanup Level)

[3]Number of samples



SMD: 02/11/2013

Source: USGS 7.5' Quadrangle, Yakima West (2011)

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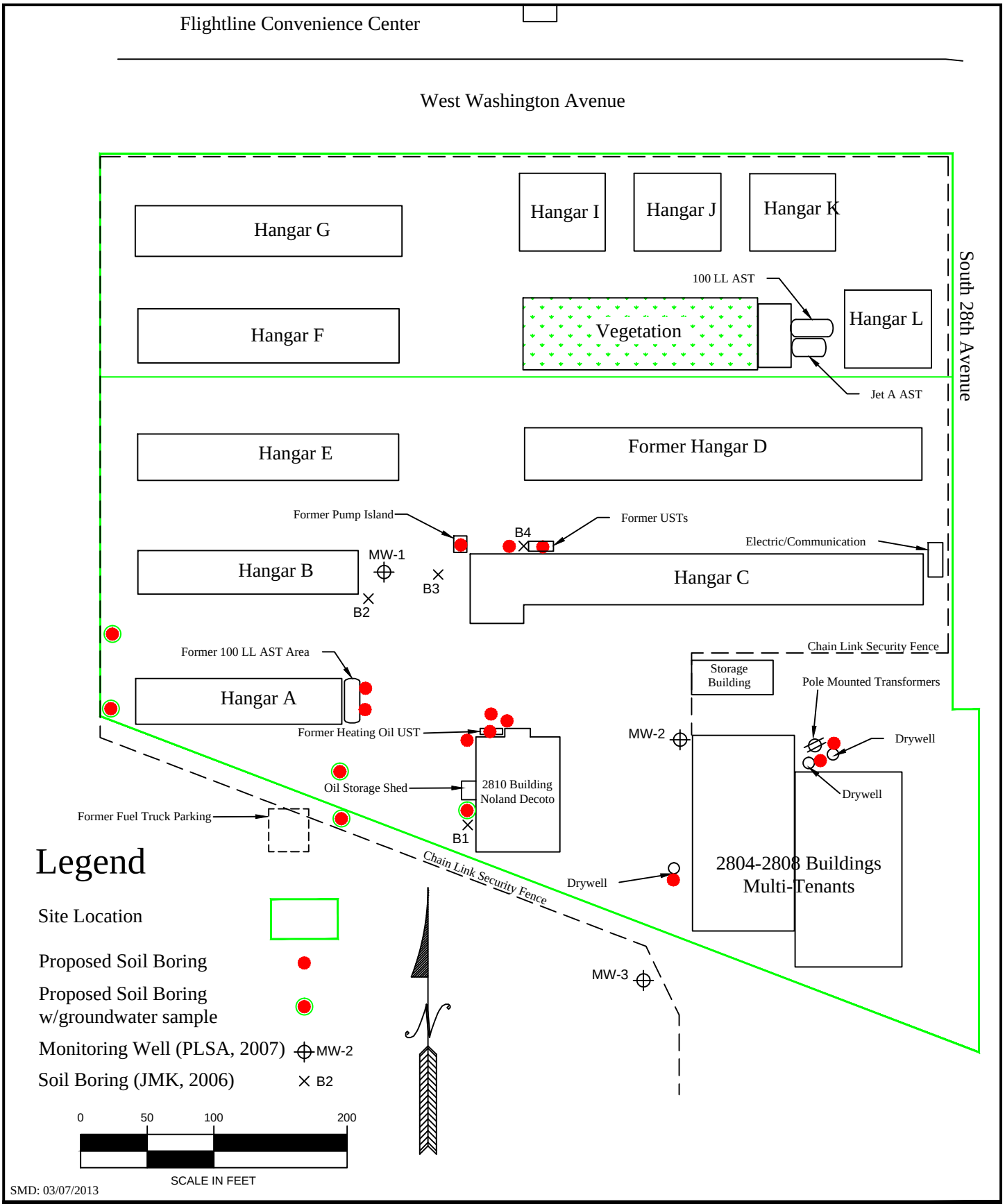
Noland DeCoto Site
2804 & 2810 West Washington Avenue
Yakima, Washington

Figure 1

Site Location Map



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Noland DeCoto Site

2804 - 2810 West Washington Avenue
Yakima, Washington

Figure 2

Subject Site Map