CONSTRUCTION CONTINGENCY/SOIL MANAGEMENT PLAN
1200 MADISON PROJECT
1200 MADISON STREET
SEATTLE, WASHINGTON

Prepared for:

1200 Madison Associates LP
URS Project No.: 33762858
April 13, 2011

URS

April 13, 2011

Mr. Steven Ness
1200 Madison Associates C/O Holland Construction, Inc.
2025 First Avenue, Suite 410
Seattle, WA 98121

Construction Contingency/Soil Management Plan
1200 Madison Project
1200 Madison Street
Seattle, Washington
URS Job No. 33762858

Dear Mr. Ness,

This construction contingency/soil management plan has been prepared on behalf of 1200 Madison Associates LP/Holland Construction, Inc. and presents the proposed monitoring activities for the 1200 Madison project located at 1200 Madison Street in Seattle, Washington. The plan has been prepared in conformance with our proposal dated January 13, 2011.

We trust this meets your current requirements. If you have any questions or require additional information please feel free to contact us.

Sincerely,

URS CORPORATION

David Raubvogel
Senior Geologist

Anthony Palmieri
Staff Geologist

Copy: Greg Thomas, Holland
Tom Zeman, Holland

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1.0 INTRODUCTION

URS Corporation (URS) has prepared this Construction Contingency/Soil Management Plan (CC/SMP) for 1200 Madison Associates LP/Holland Construction, Inc. (Holland) for the 1200 Madison Project located at 1200 Madison Street in Seattle, Washington (site or subject property). This CC/SMP has been prepared to aid the construction superintendent in managing environmental issues that may be encountered at the site during development activities. Activities that have the potential to expose environmental concerns at the site include hazardous materials abatement, demolition of the existing structure, removal of the existing underground storage tank (UST); installation of the shoring system (e.g., drilling of soldier piles); excavation, installation of utilities, and other activities that will cause a disturbance to soil at the site. Excavation and removal of petroleum-contaminated soils may be required during the property redevelopment at the site. This CC/SMP addresses the procedures to be employed during the soil excavation program and in the event contaminated soils are encountered during the building construction earthwork. The CC/SMP contains the following three separate sub-plans:

- Contaminated Soil Excavation and Loading Plan (Appendix A)
- Soil Sampling and Analysis Plan (Appendix B)
- Underground Storage Tank (UST) Removal Plan (Appendix C)

2.0 BACKGROUND

2.1 Site Description

The subject property is located at the north corner of the Madison Street and Minor Avenue intersection at 1200 Madison Street in Seattle, King County, Washington (Figure 1). The subject property is bound to the west by Minor Avenue, to the south by Madison Street, to the north by the San Marco Apartment building, and to the east by Key Bank. A multi-tenant commercial retail building and Swedish Cancer Institute are located across Madison Street. Land use in the site vicinity consists primarily of commercial retail businesses, single and multi-family residential properties, and hospital facilities.

The subject property consists of an approximately 0.5-acre parcel (Assessor Parcel Number 1978200720) and is comprised of a vacant, two-story former U.S. Bank building and adjacent asphalt-paved parking areas. Perimeter landscaping is present on the northwest, southwest and southeast parcel boundaries, and an alley abuts the eastern parcel boundary (Figure 2).

The elevation of the subject property ranges from approximately 335 feet above mean sea level (msl). The nearest surface water body is Elliott Bay, which is approximately 4,500 feet to the southwest. The site is relatively flat.

2.2 Subsurface Conditions

The subject property area is predominantly underlain by fill material and glacial outwash deposits. During prior subsurface investigations, soils encountered at the subject property consisted of silty and gravelly sand fill material ranging from approximately 7 to 14 feet below ground surface (bgs), which also contained miscellaneous debris (e.g., brick and concrete fragments, burnt wood, coal, etc.). The fill material is underlain by fine sands to approximately 16 feet bgs, and dense silt, sand and gravel to approximately 200 feet bgs (HartCrowser, 2005a). The depth to groundwater is reportedly greater than 100 feet bgs and the flow direction is inferred to be west-southwesterly towards Elliott Bay.

2.3 Previous Investigation Findings

HartCrowser's Phase I Environmental Site Assessment (ESA) indicated that historic development of the property included two single family residences and a hotel (Clark Hotel at 1014 Minor Avenue) in the early 1900s, a service station and restaurant operation (Tank and Tummy at 1208 Madison Street) from the late 1940s until the late 1960s, and demolition of the Clark Hotel and construction of the bank building in the early 1970s (HartCrowser, 2005a). USTs associated with the service station were reportedly removed during demolition of the service station, but no closure reports were available. The geotechnical investigation (Terra Associates, Inc., 2005) performed for the property in 2005 encountered a UST in the northeastern corner of the property adjacent to the San Marco apartment building (Figure 2). During the drilling of geotechnical boring B–3, the boring was terminated at 9 feet when the driller suspected a tank was encountered. The Phase I also reported one monitoring well (approximately 206 feet in depth) on the property and one along the sidewalk on the west side of the property that was installed in 1999 during the Sound Transit tunnel geotechnical investigation (HartCrowser, 2005b).

Subsequently, a Phase II investigation (HartCrowser, 2005b) was conducted which included a geophysical survey to assess possible UST locations and soil borings to evaluate the background soil quality. A ground penetrating radar (GPR) survey conducted at the location of the former service station did not identify evidence of existing USTs. The exact location of the UST identified in the north corner of the property adjacent to the San Marco apartment building could not be assessed because of vehicles parked in the area. Eleven hydraulic push probe borings (P–1 through P–11) were completed on the site to approximately 16 feet bgs. Groundwater was not encountered in the borings. Seven borings completed in the southern portion of the property did not detect field evidence of contamination nor did soil testing identify petroleum hydrocarbons and volatile organic compounds (VOCs). Metals detected in the soil were well below applicable Washington Model Toxics Control Act (MTCA) cleanup levels. Four borings completed in the northern half of the property also did not identify evidence of contamination (HartCrowser, 2005b).

Terra Associates, Inc. geotechnical investigation encountered a UST in the north corner of the property adjacent to the apartment building and alley way. The top of the tank was at approximately 9 feet bgs and the split spoon sampler "dropped through the augers" to a depth of 14 feet bgs. Approximately 10 inches of "black oil" was noted on the sampler. Based on this information it appears that the tank is approximately 5 feet in diameter. Tanks of this diameter may range in capacity from 2,000 to 4,000 gallons depending on the length of the tank. The orientation of the tank was not determined. Two of the Terra Associates, Inc. borings (B–1 and B–4) were completed as groundwater monitoring wells to depths of approximately 75 feet bgs (Terra Associates, Inc., 2005). Groundwater was not measured in either of these wells or in the other geotechnical borings.

In March 2011, Targus Associates (Targus) conducted a Phase I ESA on behalf of Invesco Advisers, Inc. Targus identified the prior service station and the existing UST located on the subject property as well as off-site historical dry cleaner/service stations located cross gradient to the property as recognized environmental conditions (RECs). A Phase II investigation was subsequently performed to further characterize soil and groundwater quality at the site. Four borings (SB-1 through SB-4) were advanced to depths ranging from 34 to 61 feet bgs (Figure 2). Soils observed during drilling operations consisted of dense to very dense silty sand with occasional gravel. Field screening did not identify evidence of contamination. Duplicate soil samples collected by URS did not detect VOCs and gasoline range (Gx) to diesel-range (Dx) petroleum hydrocarbons. Although groundwater was not encountered during drilling, monitoring wells were installed in borings SB-1, SB-2, and SB-3 and were screened from 50 to 60 feet bgs; 27.7feet to 37.7 feet bgs, and 27.5 feet to 37.5 feet bgs, respectively. Water level monitoring conducted on March 17, 23, and 29, 2011 did not detect groundwater in the wells. Some wet sediment,

primarily silt, was noted in the bottom of SB-1 and SB-2. Therefore, groundwater samples could not be obtained from any of the new site monitoring wells or from the existing site monitoring wells checked in March 2011.

3.0 SUMMARY OF CONTAMINANTS AND AREAS OF POTENTIAL CONCERN

This section describes common potential environmental conditions that can be encountered during site demolition and excavation activities. The contractor/inspector should use the indicators discussed below as the primary means of identifying potentially contaminated media prior to loading and off-site transport. If any of these indicators are present, both Holland and URS should be notified immediately.

3.1 Buried Debris/USTs

It is possible that areas of buried debris may be encountered during the shoring system installation and excavation activities. Buried debris will usually be identified by observation of the debris itself. An area of unusually loose or dark/stained soil or fill may also be an indication of a buried debris area. It is important to distinguish buried debris from trash or debris which has simply been discarded on the surface. Buried debris is an indication of on-site landfilling practices and could indicate disposal of potentially hazardous materials.

Materials that are dumped, used as fill, or otherwise placed in the environment may be contaminated (or could cause contamination), and could result in an unusual appearance or condition during excavation. Unusual appearance or conditions to be aware of include: layers or zones of non-soil material (e.g., ash, sludge, and/or slag of various colors); buried tanks or containers (which could contain chemicals or petroleum products); unanticipated utilities or conduits (which could be unidentified chemical lines, etc.); and/or moisture in the soil that appears to be something other than water.

Based upon the existing site information, a UST is suspected to be present in the northeastern corner of the subject property, which will require decommissioning in conformance with state and local requirements. URS will be on-site during the removal of the UST. No other USTs are suspected to be present at the project site. However, there is a potential that an unknown historic UST (e.g., hydraulic oil tank at former service station) could exist which would require decommissioning in conformance with State and local requirements. In the event that a tank, product lines or other components of a tank system (e.g., vent line, tank manway, etc.) are discovered, the contractor/inspector must stop work in the area and immediately contact 1200 Madison Associates/Holland and URS for further instruction.

3.2 Contaminated Soils

Based on the existing site data, soils impacted with petroleum, VOCs or metals have not been detected above respective MTCA cleanup levels. However, contaminated soils could be encountered at other unknown locations during site excavation at the project site (e.g., suspected UST in the north corner of the site, former service station area, etc.). Many forms of soil contamination are only detectable with the use of environmental testing equipment or analytical testing. In many cases, however, there may be observable indicators of potential contamination.

Common indicators of contamination in soil include staining, sheens, and odor. Stains and sheens are indicators that should be looked for in the soil on a routine basis as excavation proceeds. Odor, on the other hand, is only an inadvertent indicator; the contractor/inspector should not be routinely sniffing the soil for chemicals. However, observations of odor should be noted. Other indicators of potential soil

contamination include non-soil fill, tanks, containers, etc., which contain or could have contained chemicals or chemical residues.

Staining: Some types of contaminants will stain or discolor soil to a degree that it is visibly noticeable compared to typical soil colors. Staining in soil from contaminants usually results in a darkening of the soil color, often causing the soil to appear dark gray to black in color. In rare cases, other colorations may be present. Stains can range from being difficult to visibly detect to very obvious.

Odors: Some contaminants emit odors when exposed to the atmosphere. Odors can be very faint to strong, and range from sweet smelling to pungent. Odors are usually detected inadvertently during excavation or stockpiling of soil, and are usually noticeably different than typical odors in the ambient air. The most commonly encountered contaminants that cause odors in soil are solvents and petroleum hydrocarbons, although other contaminants may have noticeable odors.

Contaminated soil will be excavated and loaded according to the Contaminated Soil Excavation and Loading Plan provided in Appendix A. Field screening analyses will be conducted during excavation using a photoionization detector (PID). Once field screening results indicate that clean soil is encountered, confirmation samples will be collected from the excavation and analyzed for gasoline/diesel/oil range petroleum hydrocarbons and possibly other parameters, if warranted. Confirmation sampling results will be compared to applicable cleanup levels to verify attainment of cleanup levels and construction requirements. The details of the confirmation sampling and analysis procedures are presented in the Soil Sampling and Analysis Plan (SAP) provided in Appendix B.

3.3 Hazardous Building Materials and Hazardous Chemicals

Hazardous building materials (i.e., asbestos, lead-based paint, PCB-containing light ballasts, mercury switches, etc.) were identified in the subject property building during URS' recent hazardous building material survey (URS, 2008b). The asbestos containing building materials (ACM) identified on-site will be impacted by demolition of the subject property building. The ACM will be removed and disposed of prior to disturbance in accordance with WAC 296-62-077 and PSCAA Regulation III, Article 4. Abatement of ACM and PACM must be performed by a licensed asbestos abatement contractor.

Although our assessment to identify asbestos-containing materials has been completed, it is possible that materials not previously identified, or materials previously shown to be ACM may be encountered in unexpected areas of the building slated for demolition. In the event this happens, the contractor/inspector must stop work in the area and immediately contact Holland and URS for further instruction. At that time, either a sample of the material will be collected for analysis to determine the presence of asbestos fibers, or the material will be removed as ACM by a licensed contractor. During abatement, additional sampling of mastic is proposed to confirm that the material is <1% asbestos.

3.4 Groundwater Monitoring Wells

Six groundwater monitoring wells are located on-site and a seventh well is located in the sidewalk within the Minor Avenue right-of-way adjacent to the property (Figure 2). The six on-site monitoring wells will be decommissioned in accordance with Ecology guidance. After demolition of the existing site feature and removal of the pavement, a site reconnaissance will be performed to assess if any additional/ unknown monitoring wells are evident on the property. If a well is discovered, they will be decommissioned as stated above.

3.5 Groundwater

Although the presence of groundwater is not anticipated based on the prior geotechnical and recent environmental boring at the site, the following guidance should be followed in the event an area of perched groundwater is encountered during excavation. Common indicators of contamination in groundwater include free phase liquids, sheens, unnatural appearance, and odor. Liquids, sheens, and unnatural appearances are indicators that should be looked for in water on a routine basis as the excavation proceeds.

The presence of some contaminants in soil or water can create sheens on the surface of the water. A sheen is a chemical layer on the water with an immeasurable thickness, while a free phase liquid is thick enough to physically measure. Sheens can have variable appearances but are typically transparent or have a rainbow-like coloration under reflected light. Sheens can also have a crust-like appearance. Naturally occurring organic matter may cause sheens under some conditions. These natural sheens are difficult to distinguish from chemically caused sheens. Odors may or may not be associated with sheens on water.

4.0 APPLICABLE SOIL CLEANUP LEVELS & WASTE DESIGNATION

If required, the cleanup action to be implemented during the construction of the 1200 Madison Project will be performed in accordance with Ecology's Voluntary Cleanup Program (VCP). Based on known subsurface conditions and the site's current and anticipated future commercial land use, Washington Model Toxics Control Act (MTCA) Method A soil cleanup levels will be utilized at the site to reduce the concentrations of petroleum related compounds detected in soil at the site. MTCA Method A soil cleanup levels for petroleum hydrocarbons are based on protection of groundwater (either as a residential drinking water source or for prevention of the formation of free product on groundwater) and are the most stringent soil cleanup levels for petroleum hydrocarbons. The following summarizes the cleanup levels that will be used at this site:

COPC	**Cleanup Level (mg/kg)**	**Basis**
Benzene	0.03	MTCA Method A
TPH-Gx	30	MTCA Method A for gasoline with benzene present
TPH-Dx	2000	MTCA Method A
TPH-Dx_1	4000	MTCA Method A
cPAH	0.1	MTCA Method A

COPC = contaminant of potential concern
TPH = total petroleum hydrocarbons
Mg/kg = milligrams per kilogram
TPH-Gx = TPH gasoline range organics
TPH-Dx = TPH diesel to oil-range organics
TPH-Dx_1 = TPH mineral oil
cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons

Soil containing concentrations of contaminants of potential concern (COPC) significantly exceeding the cleanup levels listed above will be removed. In some cases, soil containing levels of petroleum hydrocarbons below applicable cleanup levels at the site may be removed during the building foundation earthwork and disposed at a permitted disposal facility. Based on the known site conditions, it presumed

that petroleum-impacted soils encountered at the site would be considered by Ecology to be category 2 through 4 as described in Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology, 2010).

5.0 CONTINGENCY WORK PLANS

The objective of the CC/SMP is to outline the procedures to be used during the site redevelopment and foundation excavation program when petroleum-contaminated soils are encountered during the construction project. The following sections present an overview of the components contained in this CCP.

5.1 Contaminated Soil Excavation and Loading Plan

The Contaminated Soil Excavation and Loading Plan (Appendix A) addresses the excavation and loading of the contaminated soil, and other related construction activities, as part of the removal of impacted soils. The purpose of the plan is to describe the excavation and loading tasks. The plan also addresses decontamination procedures and the management of residual materials. URS assumes that the excavation activities in potential petroleum contaminated materials will be performed by a qualified, 40-hour Occupational Safety and Health Administration (OSHA) health and safety trained and licensed contractor in conformance with a site-specific Health and Safety Plan to be developed by the contractor that meets the requirements of 29 CFR 1910.120.

Excavated soil will be loaded into dump trucks and transported to an appropriate licensed off-site disposal facility. The trucks will be cleaned and covered to ensure no loss of material during transport. Following the removal of the impacted soils, post-excavation soil sampling will be performed in conformance with the SAP described in Section 5.2.

5.2 Soil Sampling and Analysis Plan

The SAP (Appendix B) details the sampling and data gathering methods to be used during the confirmation and soil stockpile sampling activities performed following excavation and removal of impacted soils. The purpose of the confirmation sampling is to confirm that soils containing residual concentrations of petroleum hydrocarbons have been effectively managed. In addition to stockpile sampling of excavated soils, samples will also be collected and analyzed for waste designation purposes.

5.3 UST Removal Plan

A UST Removal Plan is provided in Appendix C which presents the procedures to be utilized when removing the UST located in the north corner of the site and in the event that other USTs are identified during site redevelopment (Appendix C). Tank abandonment requirements include (Ecology, 1996):

- Utilization of licensed or certified contractors for decommissioning and assessment;
- Notification and reporting to responsible agencies;
- Closure and assessment of UST and adjacent soils; and
- Associated permitting, and record keeping.

Contractors who perform tank decommissioning should have a certification from the International Fire Code Institute (IFCI). Contractors are required to carry proof of certification on-site. The UST Removal Plan outlines the general procedures to employ during the removal of any USTs uncovered during the site earthwork. The UST closures are to be performed in conformance with WAC 173-360-385 "Permanent Closure and Change-in-Service" and WAC 173-360-390 "Site Assessment at Closure or Change-in-Service".

5.4 Health and Safety Plan

A site-specific Health and Safety Plan for the field activities at the Site will be provided under separate cover.

5.5 Work Plan Contacts

The following is a list of contacts for Holland and URS, for timely notification of unknown contaminant conditions and for general implementation of this CCP.

URS:	**OFFICE NO.**	**CELL NO.**
David Raubvogel, URS PM Email: David_Raubvogel@URSCorp.com	(206) 438-2284	(206) 321-4111
Anthony Palmieri, URS Field Supervisor Email: Anthony_Palmieri@URSCorp.com	(206) 438-2417	(206) 245-7679
Holland:		
Steve Ness, Holland PM 2025 First Avenue, Suite 410 Seattle, WA 98121 Email: sness@hollandresidential.com		(206) 778-3596
Tom Zeman, Holland Site Superintendent:		(206) 491-0473
UST and Demolition Contractors:		
Nuprecon: Mark Lund		(206) 510-2604
EWR: Ryan Suplee		(206)799-7418
Clearcreek Contractors: Paul Curnett		(206) 423-9967

6.0 REFERENCES

HartCrowser, 2005a. *Preliminary Environmental Assessment (Phase I) and Limited ACM Survey, 1200 Madison Property, Seattle, Washington*. November 8.

HartCrowser, 2005b. *Limited Phase II Subsurface Assessment, 1200 Madison Property, Seattle, Washington*. December 5.

Terra Associates, Inc., 2005. *Geotechnical Report, Madison & Minor Site, 1200 Madison Street, Seattle, Washington, Project T–5803*. November 10 (revision November 15, 2007).

URS, 2008a. *Phase I Environmental Site Assessment; 1200 Madison Project, 1200 Madison Street, Seattle, Washington*. August 18.

URS, 2008b. *Hazardous Building Materials Survey Report, 1200 Madison Property Redevelopment Project, 1200 Madison Street, Seattle, Washington 98104*. July 9.

Washington State Department of Ecology, 2010. *Guidance for Remediation of Petroleum Contaminated Sites*. November.

Washington State Department of Ecology, 1996. http://www.ecy.wa.gov/programs/tcp/ust-lust/1closure.pdf

SOURCE: USGS 7.5-minute topographic quadrangle, Seattle South, Washington, 1983

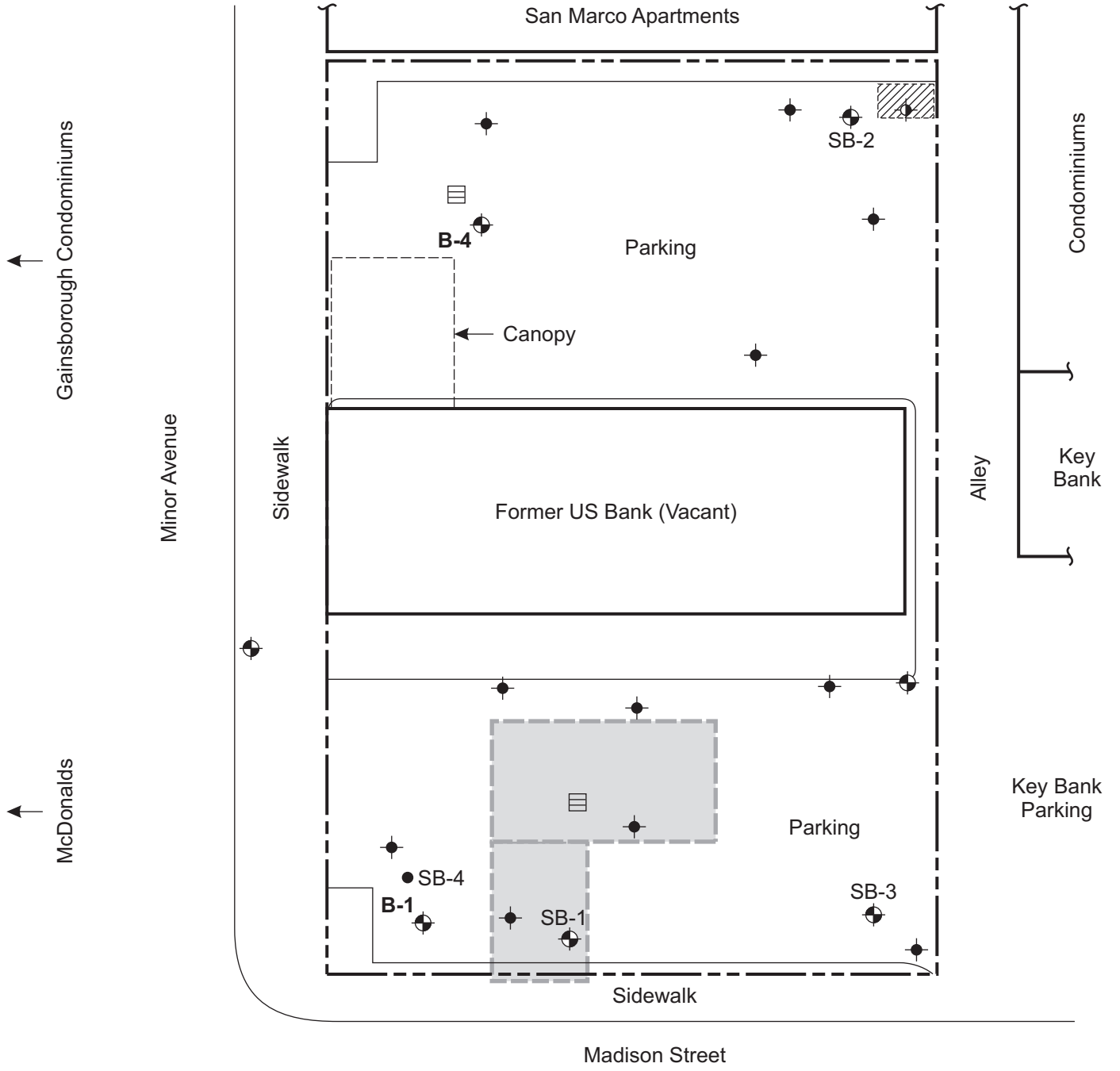
Job No. 33761127

Figure 1

Site Location Map

URS

Opus NW LLC
1200 Madison Street
Seattle, Washington



LEGEND

- Property boundary
- Monitoring well
- Storm drain
- Suspected heating oil UST
- Approximate location of former service station

B-1 Monitoring well installed by Terra Associates, Inc. (2005)

HartCrowser soil boring location (2005)

Terra Associates, Inc., soil boring (2005)

SB-1 Monitoring well/boring installed by Targus (2011)

0 30 60

Approximate Scale in Feet

Figure 2

Site Plan

Job No. 33762858

URS

1200 Madison Associates LP/Holland Construction, Inc.
1200 Madison Street
Seattle, Washington

APPENDIX A

CONTAMINATED SOIL EXCAVATION AND LOADING PLAN

A.1 INTRODUCTION

This Contaminated Soil Excavation and Loading Plan describes the general excavation/ construction tasks for remediation of site soils and handling of contaminated soils encountered during the shoring system installation. The information provided in this plan is intended to be of sufficient detail to enable the efficient and effective removal of impacted soils in compliance with applicable local, state, and federal regulations. This plan is to be used in conjunction with the SAP (Appendix B).

A.1.1 Permit Acquisition and Notifications

URS understands that the site permits will include earthwork (e.g., City of Seattle Department of Planning and Development (DPD) Grading Permit) and demolition-related permits from the City of Seattle and the Puget Sound Clean Air Agency (PSCAA). The General Contractor (GC) will be responsible for notification of appropriate agencies and utility providers. URS and the excavation contractor will be jointly responsible for completing the necessary waste profiling forms, as required by the disposal facility; however, the 1200 Madison Associates will be responsible for coordinating the selection of the disposal facility.

A.1.2 Utilities

The GC will be responsible for locating, capping, and/or abandoning underground utilities, as appropriate, within the project area.

A.1.3 Erosion and Sediment Control BMPs

The GC will coordinate the erosion and sediment control structures with the responsible contractor.

A.1.4 Demolition of Buildings and Other Surface Improvements

The demolition contractor (Nuprecon/EWR) will be responsible for the demolition of all existing structures and surface improvements as provided in the Demolition Plan.

A.1.5 Site Security

The GC will be responsible for installing the site security perimeter fencing for the project. The UST removal contactor and excavation contractor will be responsible for installing safety fencing (e.g., caution tape or cyclone fencing) around the active excavation areas to protect Site workers. The excavation contractor will also be responsible for the installation of an exclusion area for decontamination of equipment in accordance with their site-specific health and safety plan.

A.1.6 Shoring System Installation (Vertical Elements and Soil Nails)

A shoring system will be installed around the perimeter of the building foundation excavation. This will consist of vertical elements and soil nails as presented in the Temporary Shoring Wall Plans (Ground Support, 2008). Based on the present site information, impacted soils are not expected around the perimeter of the site. Therefore, soil cuttings removed from the drilling of the vertical elements and soil nails will not require special handling. If soil contamination is encountered, the shoring contractor will be responsible for handling of these soils in a safe manner. Contaminated soils should be segregated from clean soils for sampling and proper disposal. URS will conduct soil sampling and analysis as necessary to characterize any contaminated soils noted during the shoring system installation. URS will work closely

with the site geotechnical consultant to assure contaminated soils are properly handled as described below.

A.2 CONTAMINATED SOIL EXCAVATION

If encountered, the excavation contractor will excavate petroleum-contaminated soils from the site as directed by URS on behalf of 1200 Madison Associates. Contaminated soils encountered during the shoring system installation will be managed consistent with the procedures outlined in this section. Excavated soils will be stockpiled on-site as described in Section A3 or loaded directly into trucks as described in Section A.5. The excavation contractor will assist URS personnel in collecting periodic soil samples from the excavation base and sidewalls and from the soil stockpile. URS will periodically field-screen or analyze these soils to aid in directing soil excavation activities. Confirmation sampling will be performed as outlined in the SAP (Appendix B**).** Soil excavation will continue until field screening and soil confirmation sampling results indicate the impacted soils have been adequately removed or when 1200 Madison Associates determines that further excavation activities potentially below the bottom floor elevation for the proposed building are not practical.

A.2.1 Other Potential Areas of Concern & Petroleum Hydrocarbon Contamination

In URS' experience, other potential areas which may have petroleum impacted soils or sources of petroleum impacts would include:

- Beneath storm water catch basins and leakage along sewer lines
- Historic sumps, in ground hoists and oil/water separators associated with former service station operations; and
- Unknown site USTs or leaking USTs on adjacent properties.

A.3 STOCKPILING PROCEDURES

Soils will be stockpiled in accordance with the guidelines provided in Ecology's *Guidance for Remediation of Petroleum Contaminated Soils*, 2010. Excavated soils will be temporarily stockpiled on and covered with minimum 10 mil-thick plastic sheeting (Visqueen), or equivalent, and/or will be directly loaded into trucks for transportation to the disposal facility.

A.4 LOADING

The excavation contractor will be responsible for developing and providing a truck routing plan to be used during soil loading and transporting activities. The excavation contractor will be responsible for following the routing plan during all excavation and loading activities. The excavation contractor will be responsible for providing sealable dump trucks suitable for containing and transporting petroleum-impacted soils that may contain minor quantities of water. The excavation contractor will be responsible for loading the impacted soil into the trucks and transporting these soils to the selected disposal facility in accordance with all local, state, and federal regulations. Prior to the trucks exiting the site, the excavation contractor will inspect each truck to ensure that loading was conducted properly and that petroleum-contaminated soils are not adhering to the tires.

A.5 REGRADING

After closure sampling is completed, the area will be regraded in a manner that prevents accumulation of significant quantities of rainwater in the project area, as described by Holland.

A.6 DECONTAMINATION

After completion of the contaminated soil removal activities, equipment that has come in contact with the impacted soils should be washed and the wash water contained and pumped into 55-gallon drums or into an on-site storage tank and disposed of in accordance with applicable Metro discharge (sanitary sewer) guidelines and requirements.

URS will decontaminate all non-dedicated field sampling equipment prior to and after sampling at each sample location. The field sampling equipment decontamination procedures will be as follows:

- Rinse equipment thoroughly with potable water;
- Wash equipment with Alconox/water solution to remove any visible dirt;
- Rinse equipment with potable water;
- Rinse equipment with distilled water; and
- Allow equipment to air dry.

A.7 RESIDUAL MATERIALS MANAGEMENT

Residual materials generated during soil excavation and loading activities will likely include decontamination water, sediment that has accumulated in stormwater storage tanks, soiled PPE, and general municipal-type solid wastes. The procedures for handling decontamination water are described above. Following wastewater removal, accumulated sediments that remain in the on-site storage tank (if any) will be sampled and analyzed for waste designation purposes. Following designation, these sediments will be removed and disposed of accordingly.

The excavation contractor will be responsible for disposal of municipal-type solid wastes, such as paper and plastics, and PPE (e.g., Tyvek and latex gloves) generated during the field activities. The excavation contractor will also be responsible for proper disposal of construction demolition land clearing debris.

A.8 SOIL DISPOSAL

The excavation contractor will be responsible for disposing of the petroleum-contaminated soils in accordance with federal, state, and local regulations. Based on the current site environmental data, soil contamination has not been identified at the property. If identified, we anticipate that the levels of petroleum contamination will be consistent with Type 2 (diesel/oil range petroleum hydrocarbons from 60 to 200 mg/kg) or Type 3 (diesel/oil range petroleum hydrocarbons from 200 to 2000 mg/kg) based on Ecology's end use criteria for petroleum contaminated soils (Ecology, 2010). The excavation contractor will provide the name of the proposed disposal facility for approval by Holland. The excavation contractor will coordinate with the selected disposal facility for approval, delivery, and disposal of excavated soils, as necessary. URS will provide assistance to the excavation contractor for completing soil profiling activities prior to the start of the soil excavation program, as required by the disposal facility.

A.9 REFERENCES

Ground Support, 2008. Temporary Shoring Wall Plans; for Malcom Drilling Company 1200 Madison Street. June.

Washington State Department of Ecology, 2010. *Guidance for Remediation of Petroleum Contaminated Soils*. November.

APPENDIX B

SOIL SAMPLING AND ANALYSIS PLAN

B.1 INTRODUCTION

If required, soil sampling and analysis will be conducted periodically during shoring system installation and excavation activities to confirm the removal of petroleum and non-petroleum contaminants from the site and to aid in the characterization of soils necessary for disposal purposes. This section describes the general approach and specific tasks to be performed during field sampling. The field program includes confirmation (post-excavation) and stockpile sampling and analysis. The equipment decontamination procedures presented below apply to all non-dedicated sampling equipment employed during the field investigation. The details of the sampling and analysis procedures that will be implemented during remediation activities are presented in the following sections.

B.2 CONFIRMATION SOIL SAMPLING

B.2.1 APPROACH

The primary objective of the confirmation soil sampling program is to verify contaminant levels in the soils following soil excavation meet applicable cleanup requirements. To achieve these goals, soil samples will be collected periodically from the base of sidewalls of contaminated areas to assess the status of impacted soil removal. These soil samples will be field screened using a PID and visual inspection. Once field-screening results indicate that contaminated soils have been successfully removed from a particular area (i.e., no staining or significant PID readings are observed), confirmation samples will be collected and submitted to the laboratory for analysis of the contaminants of concern. If the analytical results indicate that impacted soils have been successfully removed, excavation will be discontinued in that area. Should the analytical results indicate that contaminated soils remain in a particular area above applicable cleanup levels and is accessible, additional excavation will be conducted and an additional round of confirmation sampling will be conducted in the same manner as the previous round.

B.2.2 PROCEDURES

Confirmation soil samples will be collected in areas of impacted soils according to the following schedule:

- Excavation Sidewalls: one from each sidewall, or every 20 to 30 lineal feet for excavation sidewalls greater than 50 feet in length.
- Excavation Base: sample every 20 to 30 lineal feet for excavations greater than 50 feet in length.

In all cases above, samples shall be collected where field screening indicates the highest level of contamination was noted. Generally, six soil samples will be collected per tank location. If the excavation is expanded to remove additional contamination, additional sidewall and base of excavation samples will be collected to assure adequate coverage of the resulting excavation.

Soil samples will be collected either directly from the excavation or from the excavator bucket using a stainless steel trowel or spoon. Care will be taken to collect material that is not in contact with the backhoe bucket surface or that was greatly disturbed. Samples will be transferred directly from the spoon or trowel into laboratory-provided glass jars. Each sample container will be filled completely so that no headspace is present. Upon filling, containers will be promptly capped. Following sample collection, each sample container will be labeled with a unique sample identifier, the confirmation sample location, sample depth, date, time of collection, sampler's initials, and analytical tests requested. Properly labeled sample containers will be placed into a cooler containing ice pending transfer to the laboratory.

Following placement of the sample into the container, the remaining portion of the sample will be used to describe the soil type using the Unified Soil Classification System (USCS) as described in the American Society for Testing and Materials (ASTM) D2487-69 (1975), including particle size and distribution, color, plasticity, moisture content, and unusual odors or staining. Sampling information will be recorded in the project field book and on the sampling log form. A portion of each sample will be placed in a plastic zipper-locking bag (or similar container) and allowed to set for several minutes. The concentration of organic vapors will be measured within the bag using a calibrated PID. These readings will be used to aid in the determination of the degree of contamination. PID readings will also be recorded in the field logs.

Sample collection information and the requested analysis will be recorded on the chain-of-custody (COC) form. Soil samples will be submitted to an Ecology-accredited laboratory for analysis. Samples will be analyzed for the following analytical methods:

Analyte(s)	Method
Diesel and Gasoline-range TPH	Ecology Method NWTPH-Dx & Gx and BTEX
cPAHs & Naphthalene*	EPA Method 8270
Other Parameters as Warranted	To be determined

*cPAHs &naphthalene will be analyzed in a select number of samples having the highest petroleum hydrocarbon detections.

B.2.3 SAMPLE DESIGNATION

The post excavation (PEX) soil sample designation will be as follows:

- Area - PEX No. - sample depth (in feet).

For example, the first confirmation/post-excavation sample collected from the UST area in the north corner of the site at a sample depth of ten feet will be designated as UST-PEX -1-10.

If contamination is noted in the vertical drilled elements while installing the shoring system, the samples will be designated by the vertical element number followed by the approximate depth as follow:

- Vertical Element No. - sample depth (in feet)

B.2.4 DECONTAMINATION OF EQUIPMENT

Non-dedicated field equipment used during soil sampling will be decontaminated prior to use and between the collection of each sample to reduce the potential for the introduction of contamination and cross-contamination. The decontamination procedures are as follows:

- Rinse thoroughly with potable water.
- Scrub with Alconox/water solution to remove any visible dirt.
- Rinse with potable water.
- Rinse with distilled water
- Allow to air dry.

B.3 SOIL STOCKPILE SAMPLING

B.3.1 APPROACH

Based on the existing site information, potentially impacted material will be acceptable for disposal in a solid waste landfill such as Roosevelt Regional Landfill and/or treatment/recycling facility such as Cemex in Everett, WA. Samples of stockpiled (or soils directly loaded into dump trucks) must be periodically sampled to confirm that contaminant levels are within those allowed by the disposal facility selected. Prior to disposal, a Waste Profile Sheet will have to be completed for acceptance of the material into the facility.

B.3.2 PROCEDURES

Samples of the stockpiled soil will be collected in general conformance with the frequency outlined on the table below per Ecology guidance (Ecology, 2010). Soil samples will be collected from the stockpiles using either a plastic scope or hand filled (dedicated latex glove to be used for each sample) directly into the laboratory supplied glassware. Composite soil samples will be collected from varying depth intervals within the soil piles to provide a representative characterization of the entire stockpile. The sampling equipment will be decontaminated between each sampling location in accordance with the procedures outlined above. Soil samples will be screened in the field for presence of organic compounds using a PID.

Recommended Number of Samples for Stockpiled Excavated Soil
1200 Madison Project

Cubic Yards of Soil	Minimum Number of Samples
0-100	3
101-500	5
501-1000	7
1001-2000	10
>2000	10 + 1 for each additional 500 cubic yards

B.3.3 SAMPLE DESIGNATION

The soil stockpile sample designation will be as follows:

- Area - Soil Stockpile (SP) Sample number and date

For example the second sample collected of the excavated soils from the UST area in the north corner of the site on April 15, 2011 will be designated as UST-SP-2-041511.

B.4 SAMPLE HANDLING AND QUALITY ASSURANCE

To ensure that the sampling and analysis program yields high quality and defensible data, appropriate sample handling (i.e. identification, tracking, documentation, and shipping) procedures will be followed. All samples will be preserved on ice in coolers for shipment to the laboratory under COC protocol. The QA/QC program will include the following:

- Equipment Decontamination: To ensure against cross-contamination between sampling locations, all of the sampling equipment will be decontaminated.
- Chemical data validation reviews of the summary data packages will be performed by URS chemists using the published analytical method criteria and EPA data validation guidelines. A brief data validation memorandum will be prepared for the analytical data packages.

B.5 REFERENCES

Washington State Department of Ecology, 2010. *Guidance for Remediation of Petroleum Contaminated Sites*. November.

APPENDIX C

UST REMOVAL PLAN

C.1 INTRODUCTION

The UST Removal Plan describes the general tasks for the removal and disposal of the exist UST and any USTs discovered during property redevelopment. The information provided in this plan is intended to be of sufficient detail to enable the efficient and cost-effective removal of USTs in accordance with all applicable local, state, and federal regulations. This plan is to be used in conjunction with the Contaminated Soil Excavation and Loading Plan (Appendix A) and the Sampling and Analysis Plan (Appendix B).

C.2 Contractor Scope

This section identifies activities to be performed by the UST decommissioning subcontractor.

C.2.1 Licensing

The contractor should be certified by the International Fire Code Institute (IFCI), or equivalent, as a UST decommissioner, and will carry proof of certification on-site.

C.2.2 Notification

The contractor will notify the City of Seattle and/or the Department of Ecology and provide any other applicable notifications prior to removal of the tank.

C.2.3 Decommissioning

The contractor's decommissioning scope will include the following:

- Obtain applicable permits and coordinate inspections.
- Remove and properly dispose of liquids and/or sludge within USTs
- Inert UST, certify inerting, and coordinate any required pre-removal inspections (e.g., contacting the marine chemist for inspection and certification of the tank).
- Clean UST, piping, and appurtenances and properly dispose of rinsate.
- Disconnect piping and conduit prior to UST removal.
- Excavate soils above and adjacent to UST as required to accommodate removal. Place excavated soils on plastic sheeting and cover until analytical test results are available. Segregate any soils with petroleum impacts, if encountered.
- Remove and lawfully dispose of UST and associated product and vent piping.
- Assist URS representative with collection of soil samples from UST excavation and stockpile.
- Provide temporary fencing, barriers, and/or other equipment at excavation and eliminate fall hazards while excavation is open.
- Remove accumulated surface water and/or ground water, if present, to accommodate excavation. Dispose of water in accordance with stormwater management plan, local and state disposal requirements per 1200 Madison Associates directive**.**

- Regrade, if necessary to minimize accumulation of storm water.

C.2.4 Closure Completion/Documentation

The contractor must certify that their services comply with the requirements for UST closures by submitting the Temporary/Permanent Closure and Site Assessment Notice form when applicable. The contractor must submit this form to Ecology within 30 days following the completion of the UST closure. The form must be signed by the owner/operator and by the contractor.

C.3 URS Scope

URS personnel will monitor the work performed by the decommissioning contractor and conduct UST site assessment and post-cleanup sampling and analysis services in general accordance with (1) Washington UST regulations (Chapter 173-360 WAC), (2) Ecology's 2003 *Guidance for Site Checks and Site Assessments for Underground Storage Tanks*, and (3) Ecology's 2010 Draft *Guidance for Remediation of Petroleum Contaminated Sites*. URS' services will include:

- Meeting with appropriate facility personnel to delineate the work area and coordinate the work.
- Monitoring the removal of and inspecting and documenting the physical condition of the UST and piping system.
- Visually assessing the soil conditions on the UST excavation floor and sidewalls, and field-screening of soils for the presence of petroleum hydrocarbon-related organic vapors using an organic vapor monitor equipped with a photo-ionization detector (PID).
- Assisting with segregation of petroleum-contaminated soils based on field screening.
- Collecting the appropriate post-UST removal soil samples from the excavations and stockpiles in accordance with the SAP (Appendix B).
- Subcontracting an Ecology-accredited laboratory to provide rapid analytical results that will allow timely decisions to be made and facilitate completion of the project in an expeditious manner.
- Submitting the soil samples for analysis by Ecology methods NWTPH-Dx and if necessary based on field screening, NWTPH-Gx.
- Submitting a Site Check/Site Assessment Checklist.
- Preparing a UST Site Assessment and Closure Report summarizing the field activities, tabulated analytical results, appropriate figures, and conclusions regarding the UST removals and Voluntary Cleanup.

C.4 REFERENCES

Washington Department of Ecology, 2003. *Guidance for Site Checks and Site Assessments for Underground Storage Tanks.* May.

Washington State Department of Ecology, 2010. Draft *Guidance for Remediation of Petroleum Contaminated Sites; Publication No. 10-09-057*. November.