City of Arlington Right-of-Way TANK A (UST-1)
NCP: NW 2123 (NFA)
FS: 1602419
see also → (Arlington BP) UST: 8346, FS: 4886943

UNDERGROUND STORAGE TANK SITE ASSESSMENT AND SOIL EXCAVATION REPORT MAPLE STREET AT N. OLYMPIC AVENUE ARLINGTON, WASHINGTON

TANK A (UST-1)

Prepared for

City of Arlington
238 N. Olympic Avenue
Arlington, WA 98223

Tank Number UST-1

By

GeoConsulting, Inc.

October 12, 2006

James D. Coppernoll, LG, LHG
President

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1.0 SUMMARY

The following paragraphs summarize our findings and conclusions for this project. The project description, subject property conditions, and results are presented in the full text of this report.

- In August 2006, a single-wall steel UST measuring 3 feet in diameter by 9.75 feet in length was excavated and removed from the street just south of the curb. Another cylindrical tank measuring 2 feet by 2.5 feet was excavated from the same excavation. The two tanks were connected by steel piping.
- Approximately 7 tons of impacted soil was excavated and transported to Rinker Materials in Everett, Washington for disposal. Another 2 – 3 cubic yards of excavated soil was sampled and placed in the excavation as backfill.
- Five discrete soil samples were collected from the limits of the excavation and analyzed. Laboratory analysis did not indicate detectable concentrations of petroleum hydrocarbons in any of the samples.

Based on field observations and sample analytical results, no petroleum hydrocarbon compounds are present in the subsurface of the former UST location. All sample results were below method detection limits or below Ecology Method A Cleanup Levels.

No indication of ground water was observed in the excavation.

GeoConsulting, Inc. recommends no further action at this time.

2.0 INTRODUCTION

The City of Arlington, Washington contracted GeoConsulting, Inc., (GCI) to perform Underground Storage Tank (UST) assessments during removal and permanent closure of seven UST's along or near N. Olympic Avenue in Arlington, Washington. The UST removal and assessments were performed to prepare the area for the city's N. Olympic Avenue Improvement Project street reconstruction and resurfacing activities. Because of their separate and distinct locations, an individual assessment report was prepared for each UST street address. This report pertains to the first of the seven UST's removed and closed during this operation.

3.0 SCOPE OF SERVICES

To complete the UST Site Assessment and over-excavation assessment, GCI performed the following scope of work:

- Subject site and vicinity visual reconnaissance;
- Site and UST background review, as available;
- Sampling plan preparation;
- Site Health and Safety Plan Preparation;
- Field screening during UST removal and over-excavation;
- Soil sampling during UST removal and over-excavation;
- Soil sample laboratory analysis;
- Sample analytical results evaluation and recommendations;
- UST removal and over-excavation observation and documentation;
- Findings evaluation; and
- Preparation of this ***Underground Storage Tank Site Assessment and Soil Excavation Report*** documenting the findings of the study and our conclusions and recommendations.

4.0 SITE DESCRIPTION AND BACKGROUND

4.1 Site Description

The former UST site is located on the north side of Maple Street just west of N. Olympic Avenue in the City of Arlington, Snohomish County, Washington (Longitude -122°, 07′, 36′′; Latitude – 48°, 11′, 30′′) at an approximate elevation of 117 feet above mean sea level[1]. The site is in a commercial neighborhood within the City of Arlington N. Olympic Avenue Roadway Improvements Project. A gasoline station is located on the northwest corner of the intersection, immediately north of the former UST location. A used auto sales lot and a single-family residence adjoin Maple Street to the south. Appendix A - Figure 1, Site Location Map, shows the location of the subject site.

4.2 Site Background and Previous Investigation

The City of Arlington N. Olympic Avenue Roadway Improvements Project is a planned project

1 U.S.G.S National Map Viewer, http://nmviewogc.cr.usgs.gov/viewer.htm, viewed on August 14, 2006.

consisting of roadway reconstruction of N. Olympic Avenue from Maple Street to Division Street and some portions of the intersecting streets in between. In early 2006, City of Arlington personnel discovered information suggesting three or more underground storage tanks (UST's) were located along the roadway in the project area. City personnel gathered anecdotal evidence suggesting additional UST's may be located in the project area. Due to the potential for subsurface hazardous substance contamination commonly associated with UST's, and to avoid resulting project delays during road reconstruction activities, the following investigations were performed at the City's request:

- ***Environmental Background Investigation***, April 27, 2006 by GeoConsulting, Inc. This investigation involved site background research of the N. Olympic Avenue project area to discover indications of UST's in the project area. The research included review of historic Sanborn Fire Insurance Maps, historic City Directories, UST and LUST databases, geologic literature, and well logs. The subject site was identified as a historic UST location on Sanborn Fire Insurance Maps.
- ***Results of a Geophysical Survey to Investigate Underground Storage Tanks in the City of Arlington, Washington***, March 2006 by Williamson & Associates, Inc. This investigation involved the use of ground penetrating radar and magnetometer/gradiometer techniques to confirm the presence of UST location identified in the background investigation and discover potential additional locations in specified section of the project area.
- ***Phase II Geophysical Results Underground Storage Tank Investigation Olympic Avenue Arlington, Washington***, May 2006 by Williamson & Associates, Inc. This investigation employed the same geophysical techniques used in the previous geophysical survey and applied them to the remaining project area. Several additional potential UST sites were identified.

The above investigations identified a total of 21 locations in the N. Olympic Avenue project area where geophysical anomalies indicated a potential UST location. From July 17, 2006 through August 2, 2006, the City of Arlington conducted exploratory excavations at each of the 21 locations to confirm or deny the presence of an UST. The City contracted Rivers Edge Services Inc. (Rivers Edge) of Kent, Washington to utilize a vacuum truck to excavate an approximately 12-inch diameter hole to approximately 8 feet below ground surface (BGS) in each of the 21 locations. Exploratory excavations confirmed the presence of 7 UST's in the 21 potential locations.

4.3 Geology, Soils, and Groundwater

The site is situated near the western foothills of the Cascade Mountains and a few miles east of Puget Sound in the Puget Sound Lowlands of Western Washington. The Puget Sound Lowlands is a north-south trending trough between the Olympic Mountains to the west and the Cascade Mountains to the east. Elevation in the Lowlands ranges from sea level up to several hundred feet. The topography is dominated by north-south trending valleys and low, nearly flat-topped highlands cut by streams. The Puget Sound occupies a large part of the western portion of the basin and lakes and streams occur frequently throughout the area. Lowlands occupy the area east and west of Puget Sound between the adjacent mountains and the Puget Sound.

Surficial geology is dominated by Pleistocene glacial alluvium with Recent alluvium in river floodplains and mouths. Pleistocene sediments are typically well-compacted beds of very dense till interbedded with sands, silts and gravels with occasional lacustrine deposits. Beds of till are often several meters thick containing frequent discontinuous "lenses" of more permeable material. Perched

ground water frequently occurs in the lenses with larger aquifers occupying sandy strata overlying less permeable till or silt deposits. The first occurrence of ground water is typically within 50 feet of the surface.

The South Fork Stillaguamish River meets the North Fork approximately ½ mile north of the site as they flow generally westward to Puget Sound. The project area is underlain by Pleistocene age Vashon recessional outwash deposits consisting of moderately- to poorly-sorted gravel and sand[2].

5.0 FIELD ACTIVITIES

5.1 UST Removal

On August 3, 2006, a GCI hydrogeologist arrived on site to observe the UST removal. Rivers Edge had previously uncovered the UST and associated piping. The UST was located just over two feet south of the curb line along the north side of Maple Street and oriented with the long axis parallel to the street. The top of the UST was 3 feet BGS.

A marine chemist from Sound Testing, Inc. certified the UST safe for excavation, transport, and scrapping. According to the marine chemist, the tank was partially full of water. Rivers Edge then pumped the contents of the tank and transported them for proper disposal.

Following tank pumping, Rivers Edge excavated and removed the UST. The GCI hydrogeologist observed the excavation for signs of contamination and conducted field screening with a photo-ionization meter. Field screening results indicated no contaminated soil in the excavation. The single-wall steel UST measured 3 feet in diameter by 9.75 feet in length. Three steel pipes connected to the top of the UST and exited the excavation to the north.

The hydrogeologist noted extensive rust and pitting on the UST as well as several holes in the bottom.

A second steel tank was uncovered from just below and north of the larger UST. The small cylindrical tank measured 2 feet by 2.5 feet with a single small diameter steel pipe connected to the center top of the tank. Although the tank was mostly full of gasoline, no holes or leaks were observed. Appendix A – Figure 2, Site and Sample Location Map, depicts site and excavation details.

5.2 Soil Sampling and Over-excavation

After the larger UST was removed from the subsurface, the GCI hydrogeologist collected three discrete soil samples from the UST excavation. In each case, the geologist directed the backhoe operator to the sample location and collected the sample from the backhoe bucket, taking care to collect the sample from soil that had not contacted the bucket. The sample locations were chosen based on the UST location and orientation, soil conditions, and field indications of contaminants.

Upon discovery and excavation of the second smaller UST, approximately five cubic yards of

2 By Jones, M. A., 1998, Geologic Framework for the Puget Sound Aquifer System, Washington and British Columbia, USGS Professional Paper 1424-C.

soil was over-excavated from the bottom and north sidewall of the excavation and placed directly into a truck for transport to Rinker Materials in Everett, Washington for disposal. Two additional soil samples were then collected from the bottom and north sidewall of the excavation. Each sample was placed in a clean laboratory-prepared jar, sealed, labeled, and transported within minutes to the on-site mobile analytical laboratory. The sample numbers and locations are summarized as follows:

A-BOT-7.5	Collected from 7.5 feet BGS in the bottom of the excavation below the east end of the larger UST, before excavation of the second smaller UST;
A-ESW-5	Collected from 5 feet BGS in the central east wall of the excavation;
A-WSW-5	Collected from 5 feet BGS in the central west wall of the excavation;
A-BOT2-13	Collected from 13 feet BGS below the smaller UST and the east end of the larger UST; and
A-NSW-7	Collected from 7 feet BGS in the north side wall adjacent to the smaller UST location.

Following sample analysis, clean imported fill was placed in the excavation in approximately 1 foot lifts and compacted. The excavation was finished to the surface with new asphalt.

The GCI hydrogeologist collected soil samples A-STOCK-1, A-STOCK-2, and A-STOCK-3 from the approximately 3 – 5 cubic yards of excavated and stockpiled material.

Appendix D –Testing and Disposal Documentation contains permits and disposal documents.

5.3 Site Soil and Ground Water Conditions

Native soil encountered consisted of light brown, moist, silty sand under the asphalt to approximately 2.5 feet BGS underlain by variably colored, moist, sand and rounded gravel to 13 feet BGS. The soils encountered were consistent with recessional outwash deposits. Photo-ionization detector headspace measurements ranged from zero to 1.7 parts per million (ppm) in the excavated area. Ground water was not encountered in the excavation.

5.4 Laboratory Analysis

Libby Environmental, Inc., of Olympia, Washington, performed one or more of the following chemical analyses on the soil samples:

- Identification and semi-quantization of gasoline-, diesel-, mineral oil-, and heavy oil-range hydrocarbons by Washington State Department of Ecology (Ecology) Method NWTPH-HCID;
- Gasoline-range total petroleum hydrocarbons by Ecology method NWTPH-Gx;
- Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8021;
- Chromium, arsenic, selenium, silver, cadmium, barium, lead, and mercury by EPA Methods 200.8 and 1631E; and
- Total lead by EPA Method 7000 Series.

All analytical results were below Ecology Method A Cleanup Levels for Unrestricted Land Use. Appendix B - Table 1, Soil Analytical Data Summary, summarizes analytical results. Appendix D -

Certified Analytical Laboratory Report contains detailed analytical procedures and results.

6.0 CONCLUSION

Based on field observations and sample analytical results, no petroleum hydrocarbon compounds are present in the subsurface of the former UST location. A total of approximately 7 tons of impacted soil was over-excavated and transported for disposal at the Rinker Materials facility. All sample results were below method detection limits or below Ecology Method A Cleanup Levels.

No indication of ground water was observed in the excavation.

GeoConsulting, Inc. has no recommendations for further action at this time.

We appreciate this opportunity to be of service to you on this project. Should you have any questions regarding this report, or if you require additional assistance, please call Jim Coppernoll (425-350-7645) at your earliest convenience.