STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
*Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000*
*711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341*

April 11, 2014

Mr. David S. Schooler
Sterling Realty Organization Co.
600 106th Avenue NE, Suite 200
Bellevue, WA 98004

**Re: Opinion pursuant to WAC 173-340-515(5) on Proposed Remedial Action for the following Hazardous Waste Site:**

- **Name:** Bellevue Corner UNOCAL 4511
- **Address:** 10605 NE 8th Street, Bellevue, WA 98004
- **Facility/Site No.:** 5569973
- **VCP No.:** NW2817
- **Cleanup Site ID No.:** 7649

Dear Mr. Schooler:

Thank you for submitting documents regarding your proposed remedial action for the **Bellevue Corner UNOCAL 4511** facility (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site:

- Tetrachloroethylene (PCE) and related degradation products, methylene chloride, chloroform, chloromethane, gasoline-, diesel-, and oil-range petroleum hydrocarbons (TPHg, TPHd, TPHo), benzene, toluene, ethylbenzene, and xylenes (BTEX), and methyl tert-butyl ether (MTBE) into the Soil.

- PCE and related degradation products and naphthalene into the Groundwater.

Ecology is providing this advisory opinion under the specific authority of RCW

70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your proposed remedial action(s):

1. Sweet-Edwards/EMCON, Inc, *Preliminary Environmental Site Assessment (PESA), Unocal Service Station 4511, Bellevue, Washington,* September 5, 1990.

2. EMCON Northwest, Inc., *Underground Storage Tank Closure Assessment, UNOCAL Corporation Service Station 4511, 106th Avenue and NE 8th Street, Bellevue, Washington,* May 21, 1992.

3. Terra Associates, Inc., *Limited Phase II Environmental Site Assessment, SRO Site, SEC NE 8th Street and 106th Avenue NE, Bellevue, Washington, (missing laboratory data report attachment),* July 17, 2008.

4. URS, *Report, Limited Phase II Site Investigation, SRO Bellevue Corner Property, NE 8th and 106th Avenue, Bellevue (missing Appendices C and D) Washington,* October 10, 2008.

5. SoundEarth Strategies, Inc., *Remedial Investigation and Focused Feasibility Study Report, Former Thinker Toys Property, 10610 Northeast 8th Street, Bellevue, Washington (only portions of Appendix B and Appendix D reviewed),* April 8, 2011.

6. GeoEngineers, *Remedial Investigation and Feasibility Study (RI/FS), Sterling Realty Organization, Bellevue Corner Property, 10605 and 10619 NE 8th Street, Bellevue, Washington,* December 30, 2013.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at 425.649.7235 or sending an email to nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following releases:

- PCE and related degradation products, methylene chloride, chloroform, chloromethane, TPHg, TPHd, TPHo, BTEX, and MTBE into the Soil.

- PCE and related degradation products and naphthalene into the Groundwater.

The Site is more particularly described in Enclosure A to this letter, which includes a detailed Site diagram. The description of the Site is based solely on the information contained in the documents listed above.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Based on the detections of TPHo in near surface soils and TPHg in soils from 1.8 feet bgs to 9 feet bgs at concentrations greater than MTCA Method A cleanup levels, the previous No Further Action (NFA) determination for the Site dated July 2, 1992 is no longer valid. Therefore all data related to previous investigations and remediation conducted for former Unocal 4511 should be presented in RI/FS documents for the Property, including samples reported in the September 1990 PESA, and the May 1992 UST Closure Assessment.

- The RI/FS states that the PCE "is present at the Property solely as the result of passive migration in groundwater." Please provide more specific information regarding sampling locations with respect to the former waste oil tank and dry well at the Property that are considered the most likely sources of PCE releases at the Property. For example, the 1992 EMCON report indicates that limited sampling was conducted for VOCs near the dry well. Because of the common use of PCE as a parts washing agent at former service stations, it needs to be established that PCE sampling has been conducted in the appropriate locations and depths to make a determination regarding sources.

- At this time, it does not appear that sufficient sampling has been conducted for TPH to determine that the detections of TPH in soil are "isolated". Additional soil sampling would be necessary to confirm this statement.

- Ground water is described in Section 2.3.4 of the RI/FS text as occurring in uppermost water-bearing zone (perched zone), which generally occurs at a depth of 20 to 30 feet bgs in sandy lenses within Vashon till. An underlying aquifer (deep zone) is also described beneath the Property within Vashon advance outwash, and with static water levels ranging from approximately 70 feet bgs to 85 feet bgs. However, the cross-sections and many of the boring logs do not indicate the presence of till or the outwash unit. Further, on the cross-sections it appears that the aquitard is supposed to be the "silty sand" separating the water-bearing zones. Silty sand alone does not indicate the presence of an aquitard. The text in Sections 2.3.3 and 2.3.4, the boring logs, and the cross-sections should be in agreement with regard to interpretations of the stratigraphy at the Property.

Also the cross-section transect locations should be provided on a plan view map.

- The extent of groundwater impacts has not been characterized at the Site. Ground water investigations completed at the Property to date have focused on the perched zone. While water quality data is available from several monitoring wells completed in the perched zone, similar data is only available from two wells completed on the Property in the deep zone, and both wells are located outside the area impacted by PCE in the perched zone. It is therefore unclear if PCE contamination is present in the deep zone in the northwest portion of the Property. The low-level detections of PCE in down-gradient deep wells on the east side of the Property and southeast of the Property indicate that there may be PCE in the deep aquifer at concentrations greater than MTCA Method A closer to the PCE source at the Thinker Toys site. Monitoring wells should be installed in the deep zone in the northwest area of the Property to characterize the deep aquifer. During drilling of a deep boring, groundwater below the aquitard will need to be protected from potential cross contamination by using protective drilling methods.

  Groundwater has not been sampled immediately downgradient of the TPH detections in soil to determine if TPH impacts are present in groundwater. Until additional groundwater quality data is collected, these areas will be considered impacted. The nature and extent of impacts to groundwater at the Site should be characterized prior to evaluating and implementing a remedial alternative for the Site.

  To characterize groundwater conditions at the Property prior to remediation, existing and new perched and deep zone monitoring wells at the Property need to be sampled quarterly for one year. Water level elevation measurements should be made in all Site monitoring wells concurrent with the quarterly monitoring events to develop a comprehensive understanding of groundwater flow patterns in the perched and deep water bearing zones.

- BTEX has been detected at concentrations above laboratory reporting limits but below Method A cleanup levels in soil samples collected below the water table at SRO-8 (22 feet bgs), URS-SB-10 (70 and 75 feet bgs), and URS-SB-13 (60 feet bgs). Naphthalene was detected in a groundwater sample from URS-SB-15, a boring in which PCE was also detected in soil collected below the water table at 35 and 40 feet bgs. It is therefore probable that releases from the former Unocal 4511 are commingled in groundwater with the PCE contamination originating from the Thinker Toys Site. Ecology needs data that shows the petroleum groundwater contamination originating at the Property is not mixed with the PCE contamination originating from the Thinker Toys Site. Without such data, the commingled plume will have to be considered one Site for purposes of cleanup under MTCA.

- In Section 4.5.2, it is noted that the perched zone at the Property is not a potable resource. The highest beneficial use for ground water under MTCA is considered to be as a potable source, unless it can be demonstrated that the ground water is non

potable according to WAC-173-340-720(2). Such a demonstration has not been made for the Property.

- Several constituents have been detected at the Property including naphthalenes in groundwater and methylene chloride, chloroform, chloromethane, methyl tert-butyl ether (MTBE) in one or more soil samples. These detections should be presented on tables, discussed in the text and carried forward as COCs for the Property, unless a valid reason can be shown to eliminate them as COCs.

- Method A cleanup levels have been proposed where table values exist, and Method B for contaminants for which Method A table values are not available. This is acceptable, however, the soil and groundwater Method B values must be calculated to be protective of leaching to groundwater, not the standard values for protection of direct contact, as indicated on Table 4. In addition, cleanup levels must be developed for all compounds detected at the Site, not just those currently presented on the tables.

- Any future samples collected at the Property should be analyzed according to Table 830-1 of the MTCA regulation and Table 7.2, page 95, in the ***Guidance for the Remediation of Petroleum Contaminated Sites***, Ecology Publication No. 10-09-057, September 2011. The additional parameters listed on Table 830-1 of the MTCA regulation should be analyzed in the samples with the greatest TPH concentrations. This is particularly of concern in areas where TPHo has been detected, and where waste oil may have been generated, stored, or discharged to the ground including the former service station garage area, former waste oil tank area, and the former dry well area.

- Excavation is an appropriate remedial technology for soil at the Property. A sufficient number of final limit of excavation sidewall and base of excavation samples will need to be collected and analyzed for the appropriate parameters to demonstrate that all impacted soil is removed. The RI/FS indicates that there may be locations where soil samples containing concentrations of COCs greater than cleanup levels will remain below the proposed total depth of excavation. Impacted soils beneath the final limits of excavation will need to be treated or removed, or shown to no longer be present at concentrations greater than Site cleanup levels. Final limit of excavation soil samples will have to be analyzed for TPHg, TPHd, TPHo, VOCs. Removed soil will have to be disposed in accordance with local, state, and federal regulations.

  After the excavation is complete, residual contaminated soil vapor may exist within the Property boundaries, and will definitely be present outside the Property boundaries due to residual VOCs in soil and groundwater surrounding the Property. The new building floor and walls are to be designed to act as a barrier to vapor intrusion, but the specifications of this part of the construction have not been submitted to Ecology. Confirmation soil, ground water, soil vapor, and air sampling will be needed during and following the remediation in accordance with MTCA requirements for proving that cleanup levels have been met at the points of

compliance. The details for the sampling will be set forth in a Compliance Monitoring Plan to be submitted to Ecology for review and approval before the start of the remedial action.

- For perched groundwater, excavation may be considered a source removal action for the Property, and may result in lowered concentrations of COCs in groundwater. This assumes that the wall drains are constructed in such a way that they prevent movement of upgradient contaminated groundwater from entering the Property. Provisions will have to be made during Property re-development to ensure that groundwater monitoring of the plume at and adjacent to the Property can continue to be conducted after Property re-development, particularly in the deep zone and to characterize groundwater being collected upgradient of the wall drains. This should include installation of new monitoring wells beneath and adjacent to the new building, and a preparation of a confirmation ground water monitoring plan for Ecology review and approval. This will allow ongoing post-remediation groundwater data collection that can be used to determine if the soil removal action has a remedial effect on groundwater concentrations. Ongoing groundwater monitoring at the Property can be used to determine what, if any, additional remedial actions are necessary to bring groundwater concentrations into compliance with MTCA. This post-remediation monitoring would be required to support of an eventual NFA finding for the Property. The point of compliance for groundwater is throughout the Property.

- A revised Remedial Investigation (RI) report that summarizes all previous investigations and shows the nature and extent of contamination in all media must be provided. The RI must provide summaries of the former Site uses that could have resulted in releases, including a history of the use and locations of tanks and service areas. Plan-view graphics and multiple cross-sections need to show the relationship of the Site contamination to current and former Site features, parcel boundaries, Site geology, subsurface utilities, and points of compliance. A more complete description and interpretation of geologic and hydrogeologic conditions for and in the vicinity of the Site is needed. A rose diagram should be presented to show groundwater gradients over the history of the Site. All boring logs and analytical reports generated for the Property need to be included with the RI evaluation and appended to the RI.

  Summary tables should include all compounds that have been detected in each media throughout the history of the Site, and the proposed cleanup level for each compound. An annotated outline of an RI Report is presented in **Enclosure B** to provide an understanding of Ecology's expectations for conducting and documenting the RI.

  In general, the RI should provide more detail regarding nature and extent of contamination in each media, including an analysis of whether adequate sampling and analytical testing has been done at each location or area. This analysis should include separate figures to show lateral and vertical extent of TPH impacts. The presented plan-view graphics are difficult to interpret with regard to the vertical and lateral

extent of soil impacts at the Property. Ecology requests plan view graphics that show the extent of contamination at various depth intervals. At each interval, please provide sample results for each sample collected in the interval, and highlight the samples with concentrations greater than proposed cleanup levels.

The cross-sections and plan view figures should also be revised to show the former service station features (as constructed in 1958 and in 1969), including former tanks, service areas with hoists and sumps, dry well, pump islands, dispensers, and piping, as well as current site features. In addition, subsurface utilities at the Site that could provide a preferential pathway for contaminant movement should also be discussed and shown on figures. The proposed excavation area and likely depths should also be depicted on the figures.

- The soil tables show that several VOCs were not analyzed, but in many cases they were analyzed and not detected. In addition, Table 3 shows that MW-19 and MW-20 have not been analyzed for TPH and BTEX. However, data presented in the Thinker Toys RI/FS indicate that these wells were once analyzed for TPH and BTEX. Please correct the tables.

- Figures 8 and 10 have a pattern and differing color circles that need to be defined in the legend. It would also be helpful to super-impose contaminant concentrations onto the geologic cross-sections so that the relationship between Site geology and the extent of contamination is shown.

- Please clarify the last sentence of Section 2.1 with regard to potential residential exposures after Property re-development. Residential exposures can occur in areas other than on the ground floor of a building.

- Before further work is completed, Ecology encourages the development of a work plan to insure that sufficient data for the soil and ground water is collected to avoid unnecessary expenditure of time and money.

**This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action.** To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by

providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at 425.649.7257 or at masa461@ecy.wa.gov.

Sincerely,

Maureen Sanchez
Site Manager
NWRO Toxics Cleanup Program

ms/mc

Enclosures: A: Description and Diagrams of the Site
B: Remedial Investigation Outline

cc: James G. Roth, GeoEngineers
Sonia Fernandez, VCP Coordinator, Ecology

# Enclosure A

## Description and Diagrams of the Site

## Site Description

*This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.*

**Site:** The Site is defined as PCE and related degradation products, methylene chloride, chloroform, chloromethane, TPHg, TPHd, TPHo, BTEX, and MTBE in soil, and PCE and related degradation products and naphthalene to groundwater. The Site is located on King County tax parcels 1544100221 and 1544100216 at 10605 and 10619 NE 8th Street in Bellevue, Washington (Property).

**Area and Property Description:** The Property is located east of 106th Avenue East and south of NE 8th Street, see **Figure 1.** The Property is in the Bellevue central business district, surrounded by numerous commercial and multi-story condominium developments.

**Site History and Current Use:** Parcel 1544100221 (10605 NE 8th Street) was reportedly undeveloped until 1958 when a retail gasoline station was constructed on the Property by the Union Oil Company of California (Unocal). The gas station consisted of separate shop and station buildings, three gasoline underground storage tanks (USTs), a waste oil UST and an oil UST. In 1969, the gas station on parcel 1544100221 was re-developed or upgraded to a Union 76 station by Unocal. After re-development, the Union 76 station included two 10,000-gallon gasoline USTs, a heating oil UST, a waste oil UST, three hydraulic vehicle hoists, an oil water separator, and a dry well (**Figure 2**). Parcel 1544100221 continued to be used as a service station until 1991 when the station building was demolished and the facilities removed. Approximately 1,500 cubic yards of petroleum-impacted soil were removed from the Property during the closure of the service station and an NFA finding for the Site was issued by Ecology in July 1992. Parcel 1544100221 is vacant, paved and currently in use as a parking lot.

Parcel 1544100216 was used from approximately 1930 to 1958 as part of the Cheriton Fruit Gardens that had fruit trees, berry plants and fields in agricultural use. The commercial building on Parcel 1544100216 was constructed in 1963 for use as a office and retail space. The commercial building on Parcel 1544100216 is currently used for retail businesses.

**Sources of Contamination:** The sources of contamination at the Site are the USTs and associated product piping and dispensers, and potentially the former service garage waste oil UST and dry well. Based on data collected at the Property and the upgradient Thinker Toys Site, the probable source of PCE detected in soil and groundwater at the Property is the upgradient Thinker Toys Site located north of the Property across NE 8th Street. However, potential releases of PCE due to the former Unocal 4511 need to be fully investigated and documented.

**Physiographic Setting:** The Site is situated on top of and near the middle of the Interlake Drift Upland, a topographic highland bordered by Lake Washington on the west and the Lake Sammamish/Sammamish River valley to the east. The upland surface is molded into a series of north-south trending ridges and valleys, and near the Site slopes gently down to the southwest. Elevations at the Site range from about 150 to 160 feet above mean sea level.

**Surface/Storm Water System:** Surface water runoff from the Property and surrounding area is captured in the City of Bellevue's storm water drainage system. The runoff is likely directed to the southwest towards Meydenbauer Creek, the surface water body closest to the Site. This creek, and its tributaries, historically drained much of downtown Bellevue, but now that drainage is mostly underground in culverts. The creek daylights about ½-mile southwest of the Property, where it continues to the south and west before discharging into Lake Washington.

**Ecological Setting:** The downtown area near the Property has little ecological habitat, except for limited landscaping around commercial buildings. The land surface in the Site area is covered by paving and buildings.

**Geology:** The Property vicinity is mapped as being underlain by glacial till. The Property is generally underlain by approximately 5 to 15 feet of fill underlain by silt, sand, and gravel interpreted as glacial till to approximately 35 to 40 feet bgs. This unit contains some sandy zones, particularly at 20 to 30 feet bgs. Below this unit is a deposit consisting of silt, sand, and gravel that has been interpreted as glacial outwash that extends to maximum depths of approximately 88 feet bgs. A blue-gray dense, sandy silt layer was encountered beneath the advance outwash at depths ranging from 76 to 88 feet bgs in some borings.

**Groundwater:** The uppermost ground water at the Site reportedly occurs as a perched zone within sand lenses in the till. This water-bearing zone occurs between 20 and 35 feet bgs, whereas static water levels in the zone are generally 22 to 30 feet bgs. The boring logs and cross-sections are not clear as to how thick the sand lenses are or their location within the inferred till unit. Lateral flow in the perched zone is to the south or southwest **(Figure 3).**

A lower aquifer, the deep zone, has also been identified at a depth below 75 feet (static water levels range from 74 to 93 feet bgs). The boring logs and cross-sections are not clear as to how thick the deep zone aquifer is. Flow direction in the deep zone has not been inferred.

**Release and Extent of Contamination:** Soil samples indicate that soil containing petroleum hydrocarbon concentrations greater than MTCA Method A cleanup levels remains at several locations at the Property. TPHo was detected in near surface soils and TPHg was detected in soils from 1.8 feet bgs to 9 feet bgs (at SRO-7) at concentrations greater than Site cleanup levels. The confirmation sample collected below the soil sample collected at SRO-7 at 12.5 feet bgs, indicate that the TPHg extends to somewhere above the 12.5-foot sample. The nature and extent of the TPH releases have not been defined. PCE has been detected in soil samples collected at the Property at depths ranging from 12 feet bgs to 65 feet bgs.

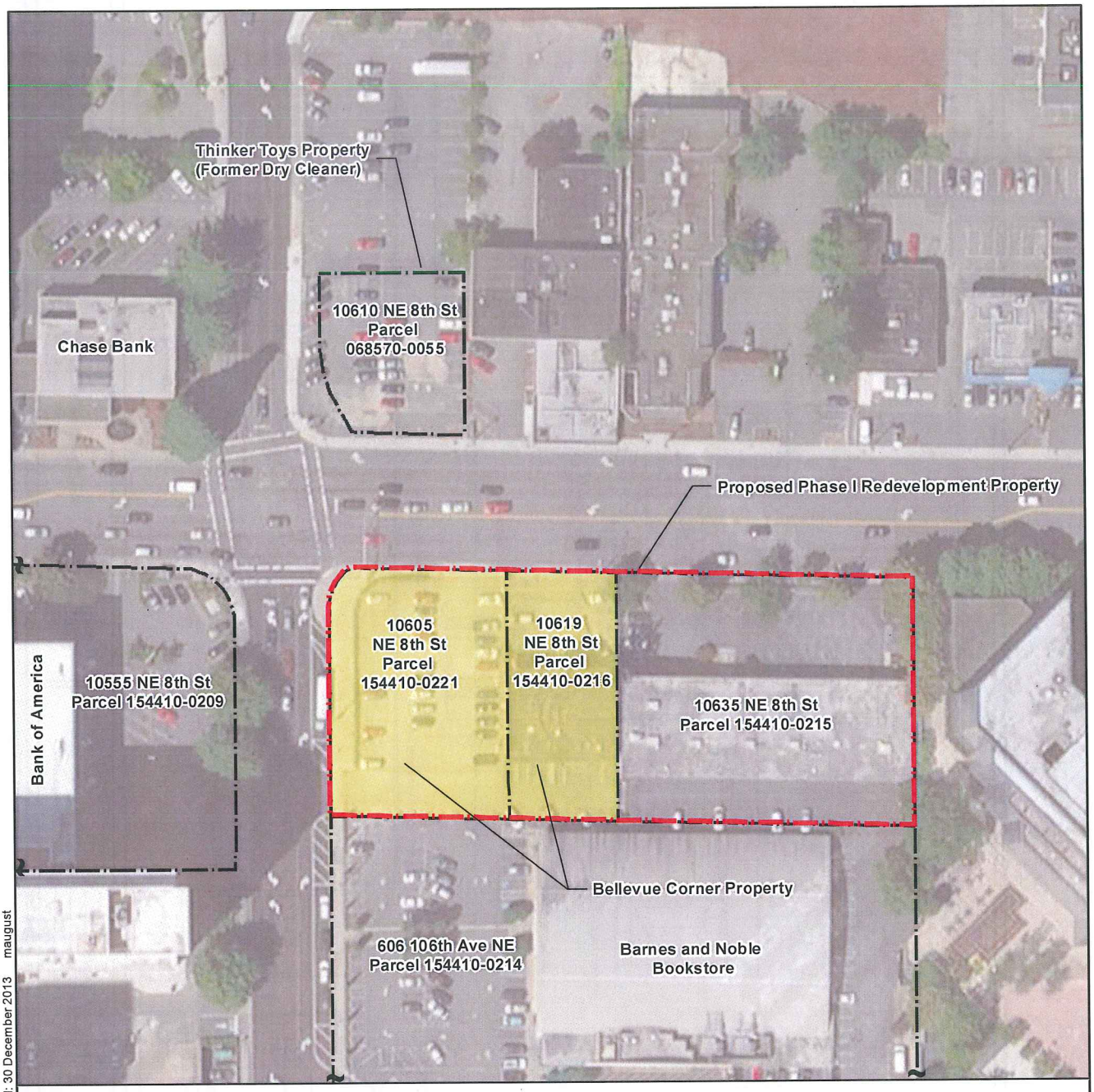
**Ground Water**: Ground water samples obtained from a number of monitoring wells on the Thinker Toys Site and on the Property show a broad PCE plume in the perched zone that extends onto, and likely beyond the Property. PCE concentrations close to 10,000 µg/L in two wells on the Thinker Toys property suggest the potential for product to be present and indicate the apparent upgradient source of PCE at the Property. Water quality data is only available from two wells completed on the Property in the deep zone, and both wells are located outside the area

potentially impacted by PCE. It is therefore unclear if PCE contamination is present in the deep zone at the northwest portion of the Property. The detections of PCE in down-gradient deep zone wells on the Property indicate that there may be PCE in the deep aquifer at concentrations greater than MTCA Method A closer to the PCE source at the Thinker Toys site.

Groundwater has not been sampled immediately downgradient of the TPH detections in soil to determine if TPH impacts are present in groundwater.

The sampling locations at the Site with select sample results are shown on **Figures 4 and 5,** which are included in the Site Diagrams.

# Site Diagrams




**Legend**

- Bellevue Corner Property at 10605 and 10619 NE 8th Street
- Proposed Phase I Redevelopment Property
- Parcel Boundary

N
W E
S

100 0 100

Feet

Data Source: Aerial image from Microsoft, 2011.
Parcel boundaries from King County, 2013.

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

**Bellevue Corner Property and Vicinity**

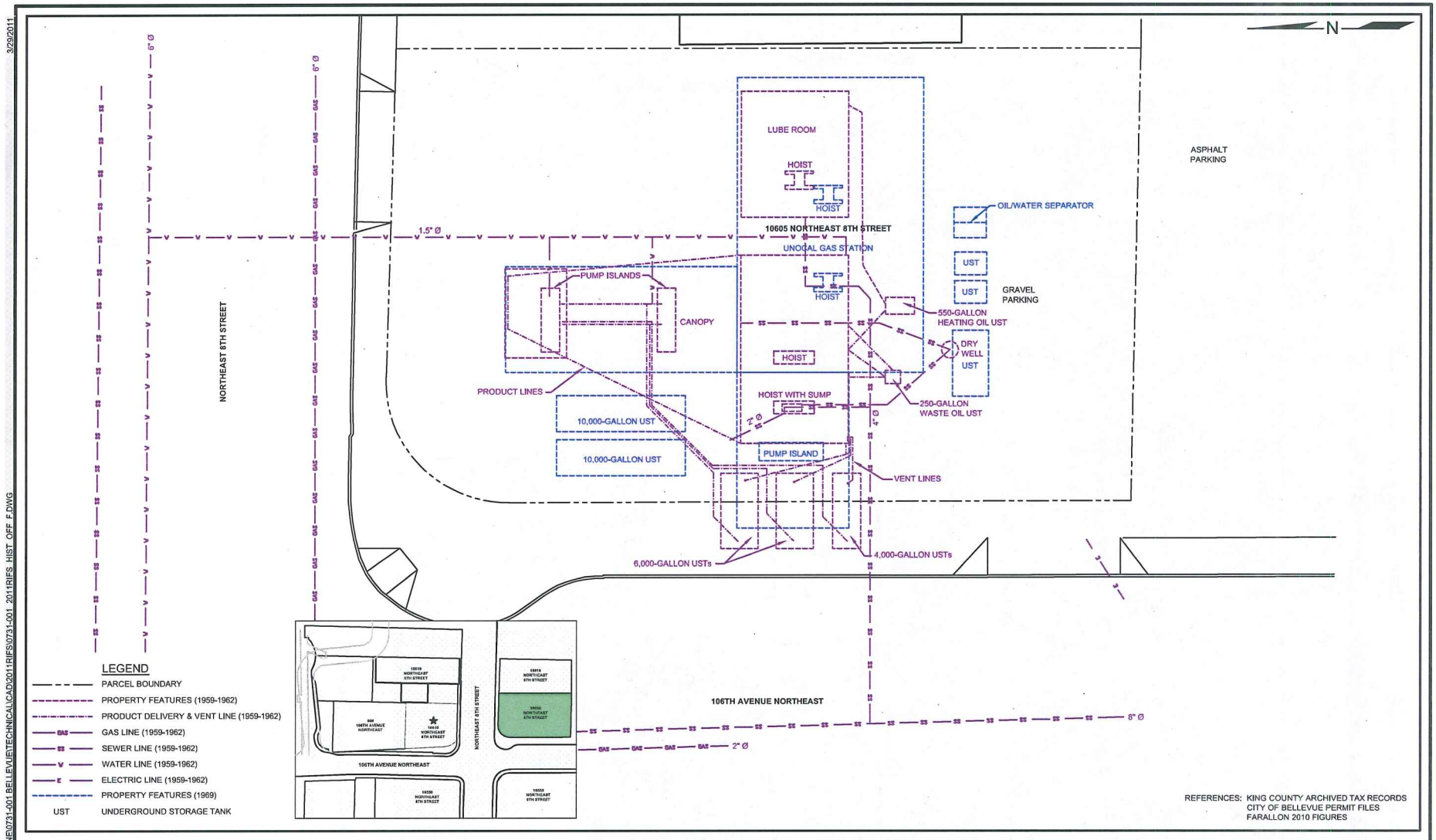
SRO, 10605 and 10619 NE 8th Street
Bellevue, Washington

GeoEngineers

**Figure 2**

Path: \\sea\projects\9\9227004\GIS\9227004 00_SitePlan.mxd Map Revised: 30 December 2013 maugust

**Exhibit A, Figure 1**




SoundEarth Strategies
WWW.SOUNDEARTHINC.COM

DATE: 03/29/11
DRAWN BY: NAC
CHECKED BY: EKR
CAD FILE: 0731-001_2011RIFS_HIST_OFF

PROJECT NAME: FORMER THINKER TOYS
PROJECT NUMBER: 0731-001-02
STREET ADDRESS: 10610 NORTHEAST 8TH STREET
CITY, STATE: BELLEVUE, WASHINGTON

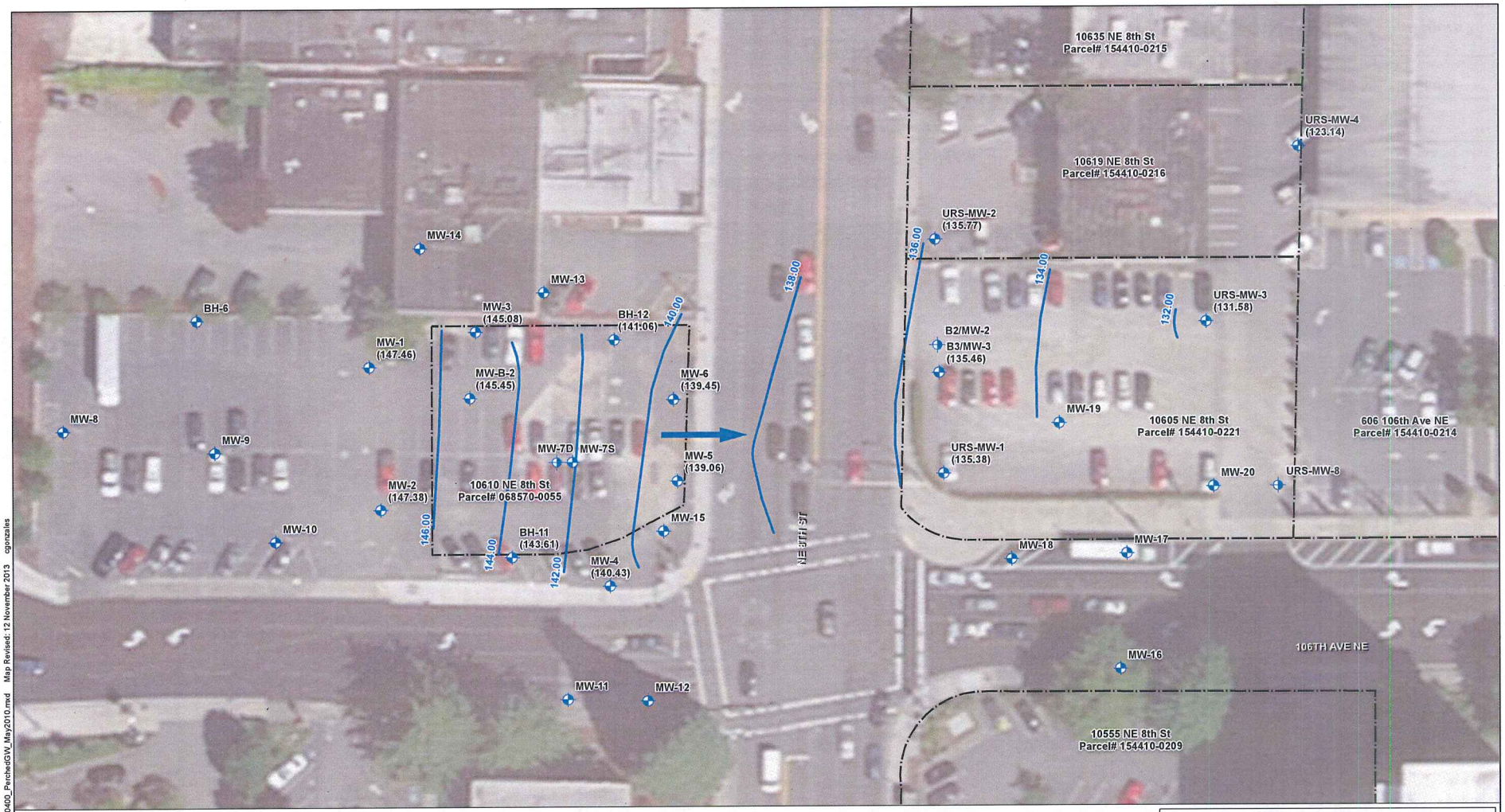
REGION:

0 10 20 40
APPROXIMATE SCALE IN FEET

**FIGURE 6**
HISTORICAL SOUTH-ADJOINING PROPERTY FEATURES

P:\0731 TOUCHSTONE\0731-001 BELLEVUE\TECHNICAL\CAD\2011RIFS\0731-001_2011RIFS_HIST_OFF_F.DWG 3/29/2011

**Exhibit A, Figure 2**




Data Source: Aerial image from Microsoft, 2011.
Wells and Groundwater contour digitized from Sound Earth Strategies, 2011.

Notes:
1. May 3, 2010 groundwater elevation data for shallow wells on the SRO Property are shown in Table 1. Groundwater elevation data for the Thinker Toys property wells is not tabulated.
2. The locations of all features shown are approximate.
3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

**Legend**

- Monitoring Well
- Deep Monitoring Well
- 2-Foot Interval Contour Line
- Estimated Perched Groundwater Flow Direction (May 3, 2010)
- Approximate Parcel Boundary

N W E S

40 0 40
Feet

**Perched Interval Groundwater Contour Map (May 3, 2010)**

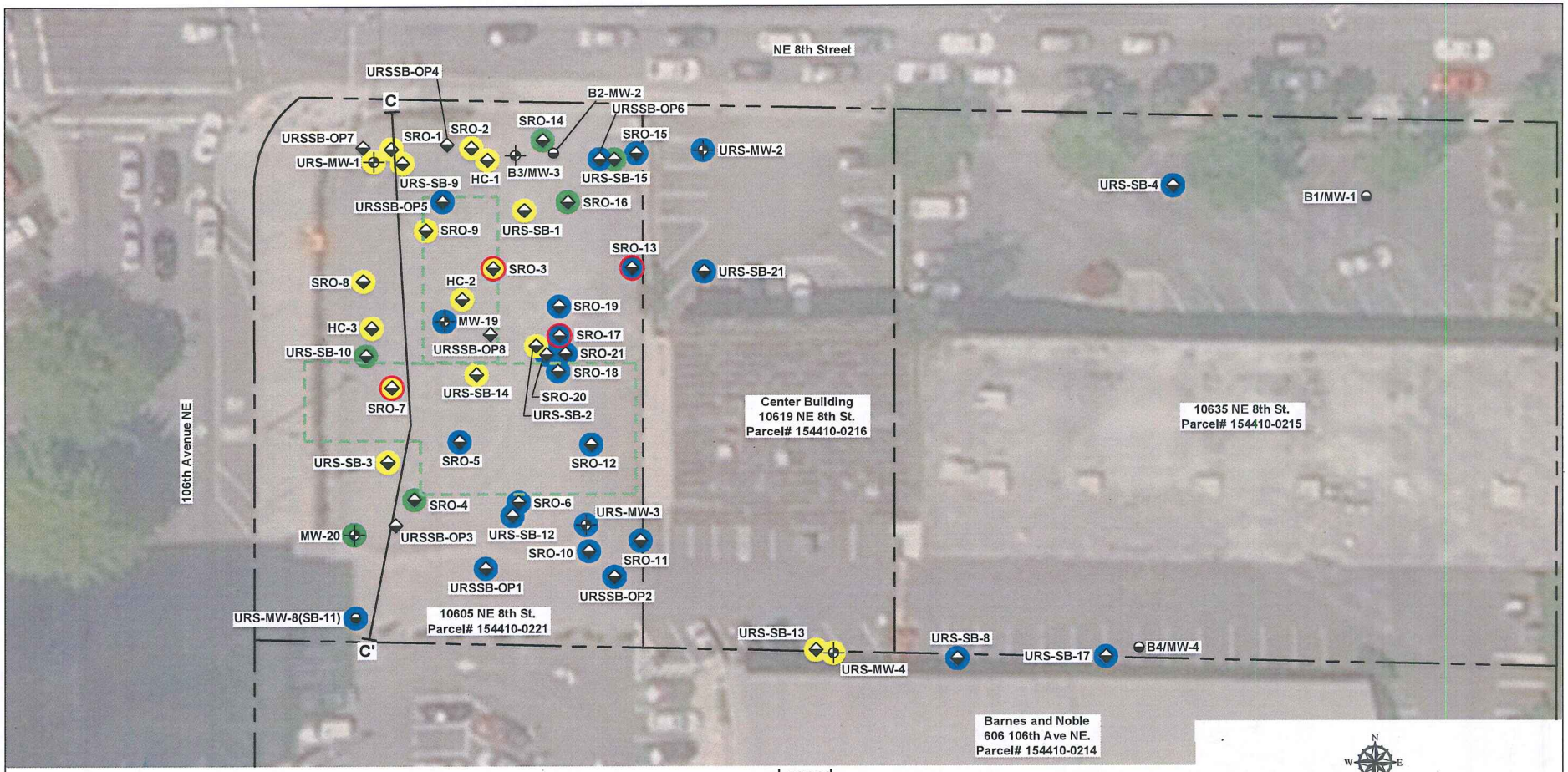
SRO, 10605 and 10619 NE 8th Street
Bellevue, Washington

GeoEngineers

Figure 5

Path: \\sea\projects\9\9227004\GIS\9227004GIS_PerchedGW_May2010.mxd Map Revised: 12 November 2013 cgonzales

**Exhibit A, Figure 3**




Legend

- Monitoring Well Location
- Deep Monitoring Well Location
- Soil Boring Location
- Approximate Parcel Boundaries
- HC Hart Crowser Soil Boring
- URS URS Soil Boring/Well
- SRO Farallon Soil Boring
- B1/MW-1 Terra Associates Boring/Well
- Former Gas Station
- C—C' Cross-Section

Highest PCE Concentration in Soil:

- Not detected above laboratory reporting limit
- Detected at or below MTCA Method A Cleanup Level (0.05 mg/kg)
- Detected above MTCA Method A Cleanup Level (0.05 mg/kg) and at or below 2.3 mg/kg
- Gasoline or diesel-/oil-range petroleum detected above MTCA Method A Cleanup level in shallow soil (≤ 9' bgs)
- No Color = Chemical analysis not performed

Notes

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Background image obtained from Bing Images, 2012.

N W E S

30 0 30
FEET

**PCE Detections in Soil**

SRO, 10605 and 10619 NE 8th Street
Bellevue, Washington

GeoEngineers | Figure 7

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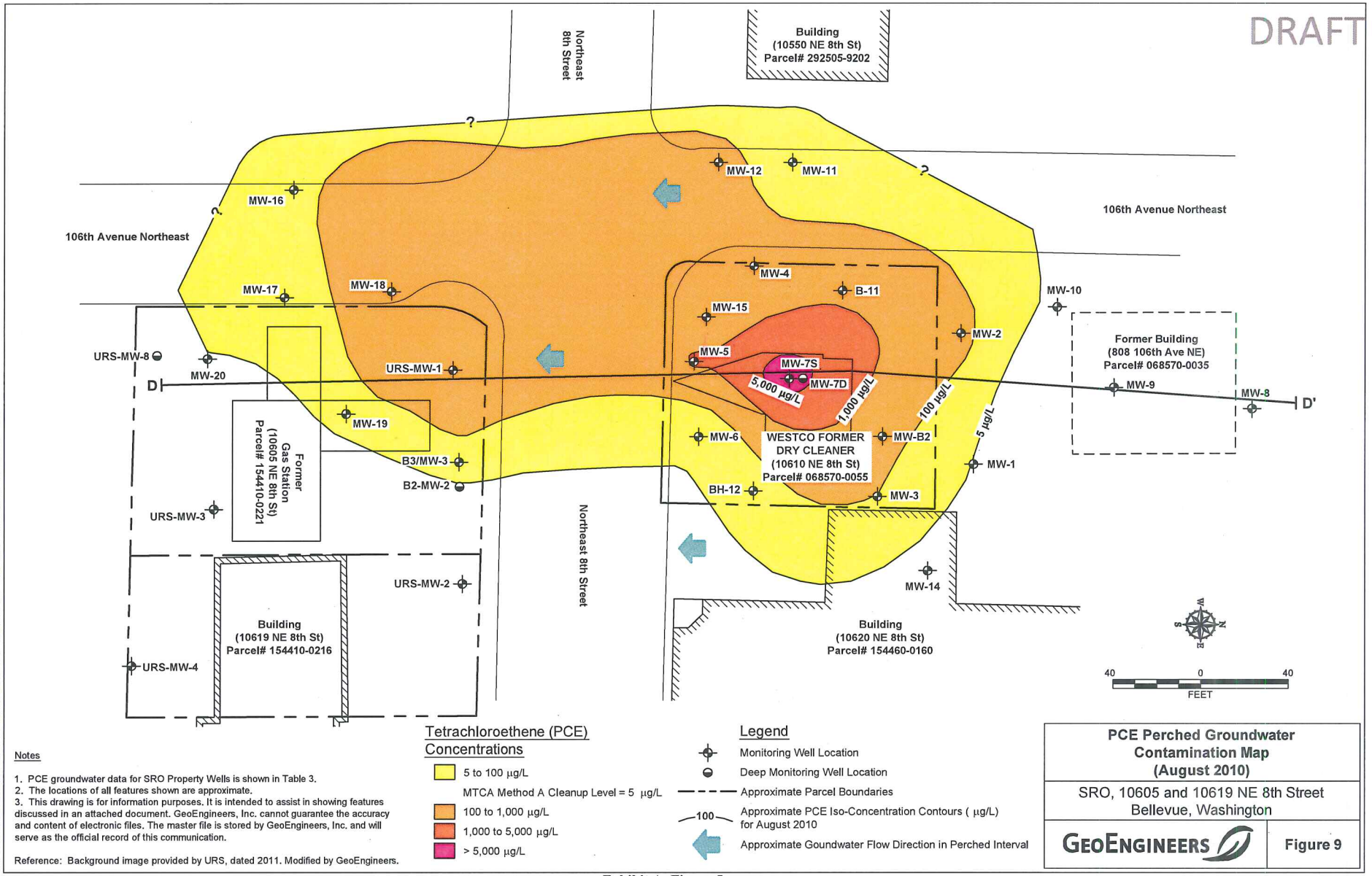
Exhibit A, Figure 4




Notes

1. PCE groundwater data for SRO Property Wells is shown in Table 3.
2. The locations of all features shown are approximate.
3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Reference: Background image provided by URS, dated 2011. Modified by GeoEngineers.

Tetrachloroethene (PCE) Concentrations

- 5 to 100 µg/L
- MTCA Method A Cleanup Level = 5 µg/L
- 100 to 1,000 µg/L
- 1,000 to 5,000 µg/L
- > 5,000 µg/L

Legend

- Monitoring Well Location
- Deep Monitoring Well Location
- Approximate Parcel Boundaries
- 100 — Approximate PCE Iso-Concentration Contours ( µg/L) for August 2010
- Approximate Goundwater Flow Direction in Perched Interval

**PCE Perched Groundwater Contamination Map (August 2010)**

SRO, 10605 and 10619 NE 8th Street
Bellevue, Washington

GeoEngineers | Figure 9

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Exhibit A, Figure 5

# Enclosure B

# Remedial Investigation Outline

**Outline for Remedial Investigation Report**
**For Discussion Purposes**

*The following annotated outline is a suggested schematic for elements to be included in a Remedial Investigation report. It is not intended to replace MTCA's specific requirements as presented in 173-340-350(7) WAC.*

*The main purpose of the outline is to facilitate the preparation of a document that is clear, comprehensive, and to the point. A secondary, but important, purpose for this project is to make document preparation and review more efficient.*

INTRODUCTION
(*concise, bulleted if possible*)

- Site name,VCP number, Name, address, and phone number of project consultant, Current owner/operator
- Purpose of document *(very brief restatement of what an RI is for, reference the WAC)*

SITE IDENTIFICATION AND DESCRIPTION
(*focus on defining the site in the context of its' location*)

- Site discovery and regulatory status (*describe how the site was identified and where it is in the MTCA process)*
- Site and property location/definition (*define actual MTCA site location relative to property or study area*)
- Neighborhood setting
- Physiographic setting/topography

Figure – Vicinity Map (*preferably with topography*)
Figure – Property/Site Map (*preferably with topography*)
Appendix – Legal description of property, present owner and operator, chronological listing of past owners and operators

PROPERTY DEVELOPMENT AND HISTORY
(*this section focuses on the built environment, both current and historical, and presents the sources of contamination and release mechanisms*)

- Past site uses and facilities
- Current site use and facilities
- Proposed or potential future site uses
- Zoning (*if appropriate)*
- Transportation/roads
- Utilities, water supply

- Potential sources of site contamination
- Potential sources of contamination from neighboring properties (*discuss nearby sources if known)*

Figure – Historical site features (*may be combined with Figure 2*)
Figure – Potential contaminant sources
Figure – Utilities (*may be combined with Figure 2*)
Table – Potential Contaminants

ENVIRONMENTAL INVESTIGATION/INTERIM ACTION SUMMARY

(*Concise summary presentation of the investigations that have been done at the site, along with prior remedial actions. Focused mostly on figures and tables. Details of and methods used in former investigations and remediation in appendices*)

- Constituents of Concern (*brief discussion about which specific compounds were chosen for analysis and why)*
- Soil
- Surface water
- Ground water
- Sediment
- Air/soil vapor
- Natural resources/wildlife
- Cultural history/archeology
- Interim actions (*brief intro to prior remediation activities*)

Figure – Soil investigation data points (*show potential source areas*)
Figure – Surface water/groundwater investigation data points (*show potential source areas*)
Figure – Air investigation data points (*show potential source areas*)
Figure – Prior remediation activities

Table – Exploration Summary
Table – Analytical Schedule per media (*include analytical methods and reporting limits, as possible)*

Appendix – Previous Investigations (*detailed discussion goes here)*
Appendix - Exploration and sampling methodology (*may combine with Previous Investigations)*
Appendix – Boring/ Well logs
Appendix - Prior Interim Actions

NATURAL CONDITIONS

- Geology
  (*focus on interpretation*)

  - Regional Setting (*brief*)
  - Property Geologic Conditions (*synthesis, not regurgitation of boring logs*)
  - Physical Properties (*unlikely to need this section, but in some cases may be useful to present data on soil adsorptive capacity, organic content, strength, etc.)*

  Figure – Plan view of geologic unit distribution (*if helpful*)
  Figure - Cross section A-A' (*show borings, wells, screened intervals, water levels*)
  Figure – Cross section B-B' (*if necessary*)

- Surface Water
  (*brief description of the surface water system*)

  - Property drainage
  - Area surface water/floodplain issues
  - Regulatory classifications, if any (*e.g surface water classification)*

  Figure – Surface water Conditions (*only if information not already in a prior figure*)

- Ground Water
  (*focus on interpretation, show on cross-sections*)

  - Occurrence (*aquifers, water levels, confinement, geometry, continuity, physical properties*)
  - Movement (*directions, gradient if important, seasonal fluctuations, tidal influence*)
  - Discharge
  - Recharge (*if significant for site*)
  - Regulatory classifications, if any (*e.g. sole source aquifer*)

  Figure – Cross section with ground water information (*if not already included above*)
  Figure – Water table/potentiometric surface maps (*for various seasons or tidal conditions, show surface water*)

  Appendix – Ground water elevation data (*a table)*

- Natural Resources and Ecological Receptors

(*preparatory to a TEE*)

- Greenbelts and other natural habitat
- Wildlife
- Other Information required to conduct evaluations under -7491, -7492, or if necessary -7493

Figure – showing natural areas, as appropriate

CONTAMINANT OCCURRENCE AND MOVEMENT

(*brief text, mostly figures and tables, main point is to provide easy-to-understand figures showing the depth and breadth of contamination*)

- Waste Material (*sludges, fluids, stockpiles)*
- Soil
- Surface Water
- Ground Water
- Sediment
- Air/Soil Vapor

Figures – Cross sections showing soil contamination with depth
Figures – Plan views showing soil contamination across site (*relative to releases if known*)
Figures – Cross section showing ground water contamination with depth (*if appropriate*)
Figures – Plan views showing ground water contamination in each aquifer (*relative to soil contamination and P-head map*)
Figures – XY plots of specific contaminants with time (*as appropriate*)
Figures – Others as appropriate to show the distribution of surface water, ground water, or air data

Tables – All of the analytical data against final cleanup levels (*exceedances highlighted, no need to develop screening levels*)
Tables – Summary of exceedances (*if helpful*)

Appendix – QA report
Appendix – Analytical lab reports

CONCEPTUAL MODEL

(*putting the whole story together, graphic illustrations are best*)

- Contaminant release/fate and transport/potential or actual receptors
- Data gaps (*is anything missing)*

CLEANUP STANDARDS

(*developing appropriate cleanup standards based on receptors and pathways*)

- Soil
  - Reasonable maximum exposure
  - Cleanup levels protective of contact, ground water, inhalation, terrestrial species, surface water, sediment
  - Points of compliance
  - Regulatory classifications (*classification of soil as dangerous or solid waste*)
- Ground Water
  - Highest beneficial use/reasonable maximum exposure
  - Cleanup levels protective of potable use, inhalation, surface water, sediment
  - Points of compliance
- Other Media as appropriate
  - Cleanup levels protective of ....
  - Points of compliance

Table – Cleanup Levels (*all potentially applicable values with final selected cleanup level noted*)

AREAS REQUIRING CLEANUP

(*the final story detailing where the contamination exceeds an applicable cleanup standard, brief text, mostly tables, figures*)

- Constituents of Concern (*a brief summary of compounds that exceed cleanup levels or "indicator hazardous substances" under MTCA. For most service station sites, the COCs should be the same)*
- Soil – vertical and lateral
- Ground water – vertical and later
- Sediment –
- Surface Water
- Soil Vapor/air

Figures – Plan view and vertical sections of areas requiring cleanup

REFERENCES