



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

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November 6, 2013

Brian Dixon  
SoundEarth Strategies Inc.  
2811 Fairview Avenue E, Suite 2000  
Seattle, WA 98102

**Re: Opinion on Proposed Cleanup of a Property associated with a Site:**

- Name: American Linen Supply Co Dexter Avenue
- Property Address: 700 Dexter Avenue North, Seattle, Washington
- Facility/Site No.: 3573
- CSID: 12004
- VCP Project No.: NW2652

Dear Mr. Dixon:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of a Property associated with the American Linen Co. Dexter Avenue facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

**Issues Presented and Opinion**

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1. Upon completion of the proposed cleanup, will further remedial action likely be necessary at the Property to clean up contamination associated with the Site?

**NO. Ecology has determined that no further remedial action will likely be necessary at the Property to clean up contamination associated with the Site.**

2. Upon completion of the proposed cleanup, will further remedial action likely still be necessary elsewhere at the Site?

**YES. Ecology has determined that further remedial action will likely still be necessary elsewhere at the Site.**



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

## **Description of the Property and the Site**

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This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

### **1. Description of the Property.**

The Property includes the following tax parcel in King County, which was affected by the Site and will be addressed by your cleanup:

- 224900-0285.

**Enclosure A** includes a legal description of the Property. **Enclosure B** includes a diagram of the Site that illustrates the location of the Property within the Site.

### **2. Description of the Site.**

The Site is defined by the nature and extent of contamination associated with the following releases:

- Tetrachloroethene (PCE), Trichloroethene (TCE), Dichloroethene (DCE), vinyl chloride, gasoline, diesel, and oil range petroleum hydrocarbons (GRPH, DRPH, ORPH), and benzene into soil and groundwater.

Those releases have affected more than one parcel of real property, including the parcel identified above.

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

### **3. Identification of Other Sites that may affect the Property.**

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the Property is affected by other sites.

## **Basis for the Opinion**

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

1. Feasibility Study Report, 700 Dexter Property, prepared by SoundEarth Strategies Inc, publication date August 16, 2013.
2. Interim Cleanup Action Plan, 700 Dexter Property, prepared by SoundEarth Strategies Inc, publication date September 13, 2013

Those documents are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can make an appointment by calling the NWRO resource contact at 425-649-7235 or send email request to [nwro\\_public\\_request@ecy.wa.gov](mailto:nwro_public_request@ecy.wa.gov).

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

## **Analysis of the Cleanup**

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### **1. Cleanup of the Property located within the Site.**

Ecology has concluded that, upon completion of your proposed cleanup, **no further remedial action (NFA)** will likely be necessary at the Property to clean up contamination associated with the Site. That conclusion is based on the following analysis:

#### **a. Characterization of the Site.**

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

The previous tenants at this Property have included a gasoline station, auto repair shop, and a dry cleaning business. Contamination is above the MTCA Method A cleanup levels in soil and groundwater from these operations and include chlorinated solvents (tetrachloroethene [PCE], trichloroethene [TCE], dichloroethene [DCE] and vinyl chloride), gasoline, diesel, and oil range hydrocarbons, and benzene. A majority of the releases are from leaking underground storage tanks, leaking pipes and drains.

Characterization of soil and groundwater was performed through sampling of soil and groundwater at soil boring and groundwater monitoring well locations throughout the Property and the adjoining area. The vertical and lateral extent of characterization for each media is adequate to characterize the soil and groundwater contamination over most of the Site. Additional characterization of groundwater upgradient of the Property is necessary to confirm that contamination is not entering the Property from an off Property source. If there is an off Property source, then the Property cannot get an NFA.

The chlorinated solvents comprise the majority of the contamination in soil and groundwater at this Site. Soil contamination is onsite in close proximity to former USTs, drains, and piping, extending to groundwater level. The unsaturated soils consist of fill material.

Gasoline, diesel, and oil range petroleum hydrocarbons have been identified as contaminants in soil and groundwater in previous site investigation reports. The extent of petroleum contamination and possible remedy has not been addressed in the documents submitted for the site at 700 Dexter. Further clarification of the petroleum hydrocarbons is necessary.

four distinct hydrogeologic units were identified during characterization and are (1) the shallow water bearing zone comprised of fill and weathered till that grade to the east into fill and lacustrine deposits off property, (2) the intermediate water bearing zone in dense glacial deposits, (3) a deeper aquifer in glacial outwash, and (4) a dense fine grained cemented glacial till. The chlorinated solvent plume resides in the upper water bearing zone beneath the property and extends from the property to the east, in the direction of groundwater flow. The contamination is also found at deeper locations throughout the saturated zone, extending to the deeper aquifer at the farthest extent of characterization. Chlorinated products show a progression from PCE to vinyl chloride that reflects chlorinated decay with increased distance from the source.

The groundwater flow direction in each aquifer is from west to east. South Lake Union is located approximately 600 feet down gradient from the property. Depth to groundwater beneath the property is approximately 10 to 20 feet below ground surface.

Soil vapor measurements were collected in soils at three sampling points aligned perpendicular to flow and 300 feet down gradient from the property. Results indicate that vapor concentrations may be above MTCA Method B indoor air

quality screening levels.

**b. Establishment of cleanup standards for the Site.**

The future use of this property is as office and commercial space. The adjacent properties are also predominantly office and commercial businesses. The MTCA Method A cleanup levels are selected to be protective of human health and the environment at this site.

A Terrestrial Ecological Evaluation (TEE) is required as per WAC 173-340-7490 for each contaminated site to determine whether more restrictive cleanup levels are necessary to protect sensitive ecological habitat. An exclusion from consideration can be attained if the site meets one of the criteria identified in WAC 173-340-7491. The American linen Co. Dexter Avenue site qualifies for the exclusion because any soil contamination is covered by pavement or buildings.

**c. Selection of cleanup for the Property.**

Ecology has determined the cleanup you proposed for the Property meets the substantive requirements of MTCA. Your proposed cleanup meets minimum cleanup requirements and will not exacerbate conditions or preclude reasonable cleanup alternatives elsewhere at the Site.

The cleanup selected for the Property includes excavation of contaminated soil, thermal resistivity heating and soil vapor extraction of the soil column to a depth of 40 feet below ground surface, and injection of an edible oil substrate to enhance reactive dechlorination in groundwater. Much of the contaminant mass beneath the Property is within the range where thermal resistivity heating is to be applied. Consequently, it is believed that most of the contaminant mass will be removed through heating and vapor extraction. If properly managed, reductive dechlorination can effectively degrade chlorinated solvents in groundwater.

Base on the presented technologies and the expected results, the selected remedy will likely result in clean up of the soil and groundwater to concentrations below the MTCA Method A cleanup levels.

**2. Cleanup of the Site as a whole.**

Ecology has concluded that **further remedial action** will still be necessary elsewhere at the Site upon completion of your proposed cleanup. In other words, while your proposed

cleanup may constitute the final action for the Property, it will constitute only an “interim action” for the Site as a whole.

## **Limitations of the Opinion**

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

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

- Change the boundaries of the Site.
- Resolve or alter a person’s liability to the state.
- Protect liable persons from contribution claims by third parties.

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

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

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

### **3. Opinion is limited to proposed cleanup.**

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Property upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the VCP.

### **4. State is immune from liability.**

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

## **Contact Information**

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Mr. Brian Dixon  
November 6, 2013  
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Thank you for choosing to clean up your Property under the Voluntary Cleanup Program (VCP). As you conduct your cleanup, please do not hesitate to request additional services. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: [www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm](http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm). If you have any questions about this opinion, please contact me by phone at 425-649-7191 or by e-mail at [eufri461@ecy.wa.gov](mailto:eufri461@ecy.wa.gov).

Sincerely,



Eugene Freeman  
NWRO Toxics Cleanup Program

Enclosures (2): A – Legal Description of the Property  
B – Description and Diagrams of the Site (including the Property)

cc: Sonia Fernandez, NWRO VCP Coordinator





## **Enclosure A**

### **Legal Description of the Property**

EDEN ADD LESS PORTION LOTS 5 THRU 8 FOR DEXTER AVE



## **Enclosure B**

### **Description and Diagrams of the Site**

#### **Site Definition**

The site is located at 700 Dexter Avenue, Seattle, Washington near the south end of Lake Union. The Property is identified in King county records as parcel number 224900-0285. Contamination from this Site includes chlorinated solvents, gasoline, diesel, and oil range petroleum hydrocarbons and benzene.

#### **Property History and Current Use**

Historical records indicate that a residence was on the Property from 1893 through 1925. In 1930 the northwest quadrant of the Property was occupied by a gasoline service station additional buildings were added to the lot through 1966. In 1966 a dry cleaner started operations at the site and operated through the mid-1990. After the mid-1990s the buildings were leased to various business including auto repair shop, bakery, and rental car office. Pre-development of the Site is ongoing in preparation for construction of an office building.

The south adjoining property is currently utilized as a parking and storage lot for the Mercer Corridor project. The south adjoining property is owned by the Seattle Department of Transportation. The east adjoining properties are occupied by commercial businesses that include vehicle maintenance facility, restaurants, a motorcycle dealership, and an auto body shop. The north adjoining property is a warehouse and parking lot. The west adjoining property consists of an office building and a lot under development.

## Contaminant Source and History

Contaminant release at the Site is from activities that included gasoline service stations and dry cleaners. A gasoline station occupied the northwest quadrant of the Property from 1930 to about 1947. The station was equipped with several underground storage tanks. Up to three underground storage tanks and pump islands were installed on the northeast quadrant of the Property between 1947 and 1960. Four 6,000 gallon heating oil underground storage tanks were installed in the southwest quadrant of the lot in 1947. Dry cleaning operations started on the site about 1966 and ran until the mid-1990s. Releases to soil and groundwater are the result of petroleum hydrocarbons and chlorinated solvent releases from underground storage tanks, drains and piping.

## Physiographic Setting

The Site lies within the Puget Sound Trough or Lowland portion of the Pacific Border Physiographic Province. Elevation ranges from 50 to 60 feet above mean sea level and slopes east-northeast toward Lake Union, which is about 0.1 miles to the east of the Property and Elliot Bay is located approximately 1 mile to the southwest of the Property.

## Ecological Setting

The Property is located in the metropolitan area of Seattle, near the south end of Lake Union. There are no significant undeveloped areas within 500 feet of the Property.

## Geology

The local geology in the area consists of fill material at the surface to a depth of as much as 30 feet. Near surface deposits that consist of anthropogenic fill includes reworked native near-surface soil, organic material, and debris. Beneath the fill is weathered glacial till composed of dense fine to medium clean to silty sand with intermittent gravel lenses that grades into lacustrine deposits toward the east. The weathered till can be 10 to 20 feet thick. Beneath the weathered till is a more dense glacial till deposit composed of fine to medium clean to silty sand, gravel lenses and inclusions of fine grained deposits that is approximately 80 feet thick beneath the Property. Beneath that is a glacial outwash deposit that is about 30 feet thick and beneath the glacial outwash is fine grained, cemented glacial till.

## Groundwater

The groundwater conceptual model for the Site consists of four units (1) a shallow water bearing zone comprised of till, lacustrine deposits, and weathered glacial till, (2) an

intermediate water bearing zone comprised of dense to very dense heterogeneous glacial deposits, (3) a deep outwash aquifer comprised of glacial outwash deposits, and (4) a lower aquitard of very fine grained glacial drift deposits. Water flow direction in the upper three units is from west to east with a vertical, downward gradient. Depth to shallow groundwater is about 10 to 20 feet beneath the Property.

## Surface Water

The nearest surface water is Lake Union, which is about 600 feet to the east. Runoff at the Site flows toward the east, but is captured by storm drains before it reaches the lake.

## Release and Extent of Contamination – Soil

Chlorinated solvent and petroleum contamination exists throughout the Property but is concentrated near areas that housed tanks, drains, and pipes. Contamination in the soil extends from the ground surface through the entire unsaturated zone and into groundwater. Soil contamination also extends beyond the boundaries of the Property. The full extent of contamination in the soil beyond the Property boundary is not fully characterized. The full extent of the petroleum hydrocarbons throughout the site has not been characterized.

## Release and Extent of Contamination – Groundwater

Contamination in groundwater at the Property and over the Site appears to originate from sources at the Property. There may be an upgradient contaminant component that has not been adequately described. The main body of the down gradient plume extends from the property to near Lake Union. The main plume consists of chlorinated solvents and exhibit progressive decay products starting with PCE at the source area through vinyl chloride at the end of the plume. Contamination also appears to migrate vertically through the groundwater system as it moves down gradient. PCE is primarily located at and near the Property in the upper to intermediate aquifers, while vinyl chloride is predominantly farthest from the source area and is in the intermediate to deeper aquifers. Chlorinated solvents identified that are above MTCA Method A levels include PCE, TCE, Cis-1,2-Dichloroethene, and vinyl chloride. The extent of petroleum hydrocarbons through the site has not been characterized.

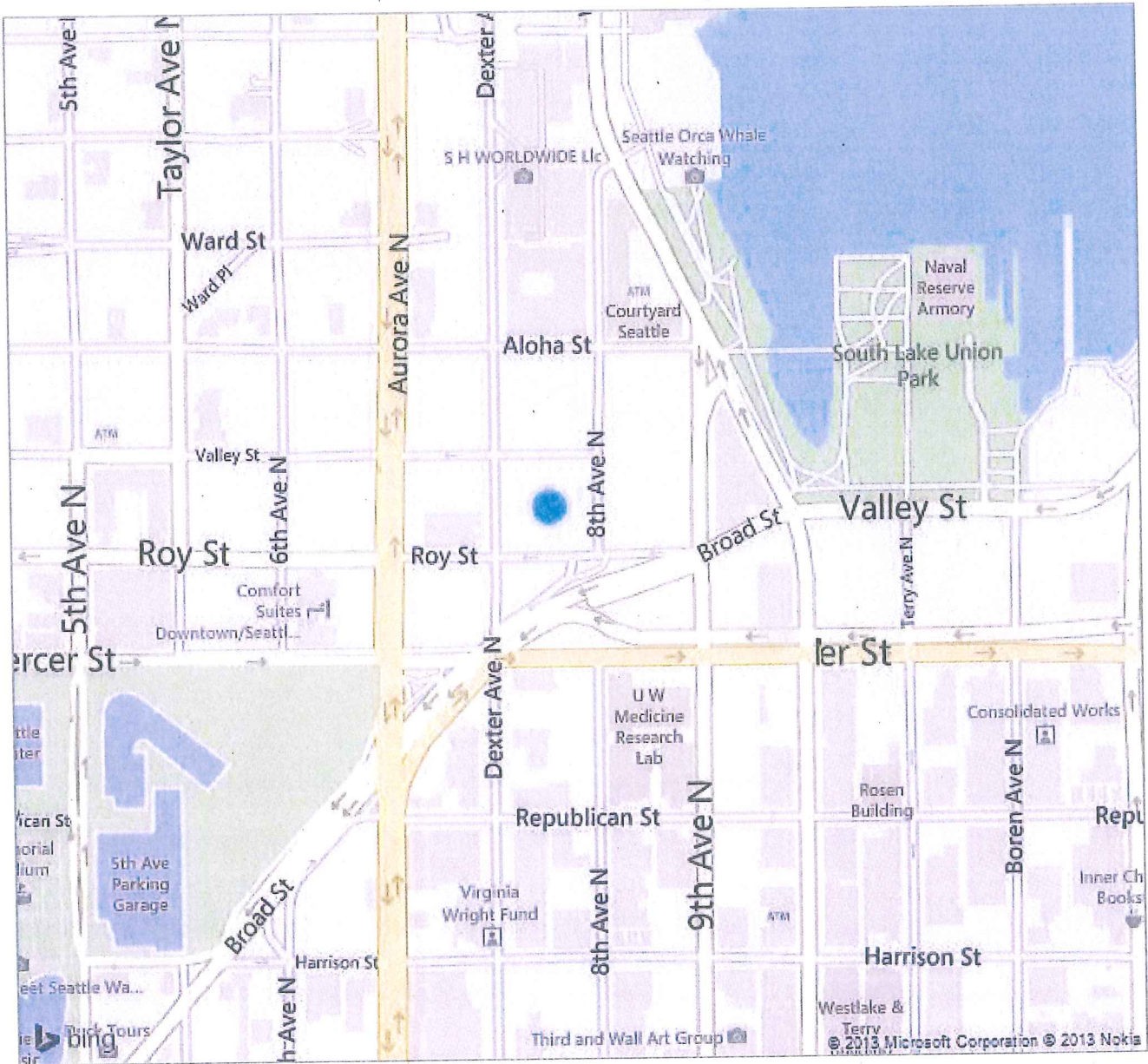
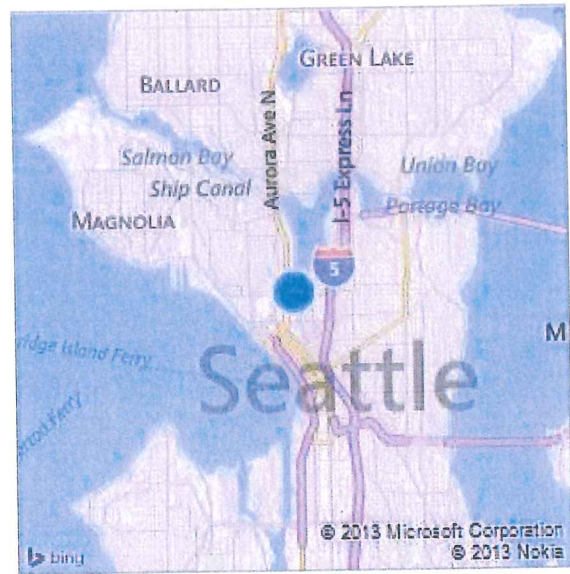




700 Dexter Ave N, Seattle, WA 98109

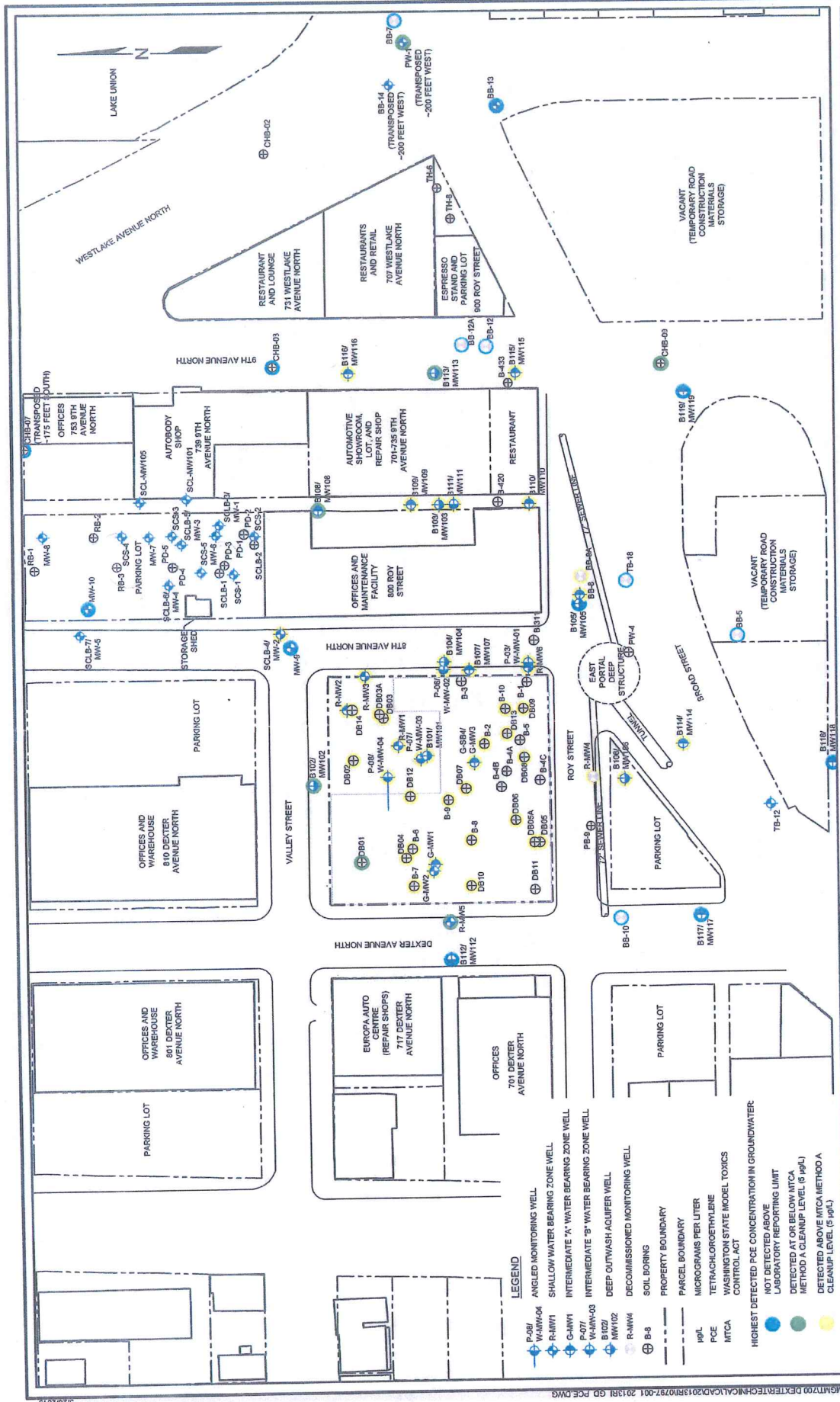
American Linen Supply Co.

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**FIGURE 18**  
PCE CONCENTRATIONS IN  
GROUNDWATER

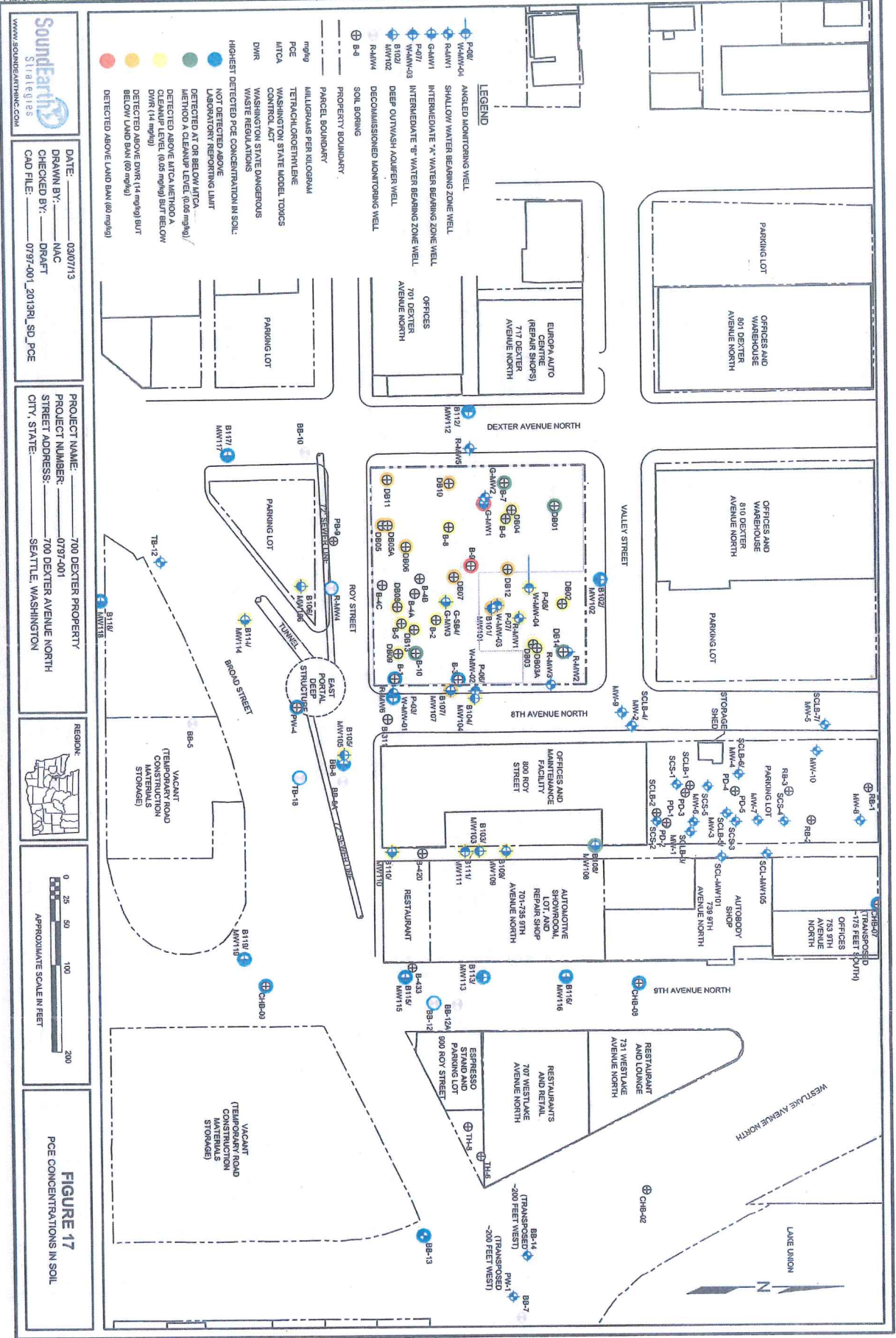


REGION: \_\_\_\_\_  
PROJECT NAME: 700 DEXTER PROPERTY  
PROJECT NUMBER: 0797-001  
STREET ADDRESS: 700 DEXTER AVENUE NORTH  
CITY, STATE: SEATTLE, WASHINGTON

DATE: 09/07/13  
DRAWN BY: NAC  
CHECKED BY: DRAFT  
CAD FILE: 0797-001\_2013R1\_GD\_PCE



- LEGEND**
- P-061 ANGLED MONITORING WELL
  - W-404 SHALLOW WATER BEARING ZONE WELL
  - G-MW1 INTERMEDIATE "A" WATER BEARING ZONE WELL
  - P-077 INTERMEDIATE "B" WATER BEARING ZONE WELL
  - W-MW-03 DEEP OUTWASH AQUIFER WELL
  - B-102/ R-MW4 SOIL BORING
  - B-8 DECOMMISSIONED MONITORING WELL
  - PROPERTY BOUNDARY
  - PARCEL BOUNDARY
  - MICROGRAMS PER LITER
  - PCE TETRACHLOROETHYLENE
  - MTCA WASHINGTON STATE MODEL TOXICS CONTROL ACT
  - HIGHEST DETECTED PCE CONCENTRATION IN GROUNDWATER
  - NOT DETECTED ABOVE LABORATORY REPORTING LIMIT
  - DETECTED AT OR BELOW MTCA METHOD A CLEANUP LEVEL (6 µg/L)
  - DETECTED ABOVE MTCA METHOD A CLEANUP LEVEL (5 µg/L)

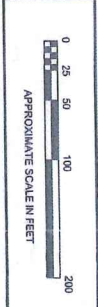
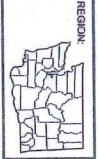


- LEGEND**
- PCE/ W-W-M-04 ANGLED MONITORING WELL
  - P-W-M-01 SHALLOW WATER BEARING ZONE WELL
  - P-W-M-02 INTERMEDIATE "X" WATER BEARING ZONE WELL
  - P-W-M-03 DEEP OUTWASH AQUIFER WELL
  - P-W-M-04 DECOMMISSIONED MONITORING WELL
  - P-W-M-05
  - P-W-M-06
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  - P-W-M-99
  - P-W-M-100

**SoundEarth Strategies**  
www.soundearthinc.com

DATE: 03/07/13  
DRAWN BY: NMC  
CHECKED BY: DPAFT  
CAD FILE: 0797-001\_2013R1\_SD\_PCE

PROJECT NAME: 700 DEXTER PROPERTY  
PROJECT NUMBER: 0797-001  
STREET ADDRESS: 700 DEXTER AVENUE NORTH  
CITY, STATE: SEATTLE, WASHINGTON



**FIGURE 17**  
PCE CONCENTRATIONS IN SOIL