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DEPARTMENT OF ECOLOGY

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July 27, 2011

Mr. Mike Nielson
BV Holdings, LLC.
10672 NE 9th Place
Bellevue, WA 98004

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

- Property Address: 10610 NE 8th Street, Bellevue, WA 98004
- Facility/Site No.: 2462690
- VCP Project No.: NW2338

Dear Mr. Nielson:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of a Property associated with the "Thinker Toy Former" 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

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, upon completion of your proposed cleanup, 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

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 Site is associated with contaminant releases from two former service stations and a dry cleaning facility located at 10610 Northeast 8th Street in Bellevue, Washington (the 10610 property or Thinker Toy property). The 10610 property was recently combined with a number of other properties to form one larger property known as the Washington Square Phase 1 property (the Washington Square property). Within this larger property are three parcels that were affected by the Site and which will be subject to the proposed cleanup action. These parcels are individually called the 01610 property, the east-adjoining property and the north-adjoining property, and together are collectively termed the Property for purposes of this letter.

The Property includes the following tax parcels, which were affected by the Site and will be addressed by your cleanup:

- 068570-0055 (Thinker Toys)
- 068570-0035 (north-adjoining to Thinker Toys)
- 154460-0160 (east-adjoining to Thinker Toys)

The location of the Property within the Site is illustrated in **Enclosure A.**

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), cis1,2-dichloroethene (cis DCE), gasoline-, diesel-, and oil-range petroleum hydrocarbons (TPHg, TPHd, TPHo), ethylbenzene, and xylenes into the Soil.
- PCE, TCE, cis DCE, trans 1,2-DCE (trans DCE), TPHg, and TPHd into the Ground Water.
- PCE, TCE, various dichloroethenes, trichloroethanes and tetrachloroethanes, naphthalene & methyl naphthalenes, benzene, ethylbenzene, toluene, xylenes, various methylbenzenes, and other petroleum-related compounds into the Air

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

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

Note that petroleum hydrocarbon releases occurred at the property across NE 8th Street to the south ("south-adjoining property") separately from those at the Thinker Toy property. Contaminants from the two releases have become commingled and are considered one site for purposes of cleanup under MTCA.

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

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

Basis for the Opinion

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

1. July 21, 2011, *Interim Cleanup Action Plan, Former Thinker Toys Property, 10610 Northeast 8th Street, Bellevue, Washington,* SoundEarth Strategies ("July 21 IAP")

2. April 8, 2011, *Remedial Investigation and Focused Feasibility Study Report, Former Thinker Toys Property, 10610 Northeast 8th Street, Bellevue, Washington,* SoundEarth Strategies ("April 8 RI/FSS")

These documents incorporate the findings of a number of earlier investigation reports. We did not review the earlier documents.

The two documents listed above, and the earlier investigation reports, 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, Sally Perkins, at 425 649-7107.

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

Analysis of the Cleanup

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

Ecology has concluded that, upon completion of your proposed cleanup, **no further**

remedial action 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.**

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

Ecology has determined the cleanup levels and points of compliance you established for the Site **meet** the substantive requirements of MTCA, **as modified below**.

Soil

Cleanup Levels: Cleanup levels and a point of compliance are needed for contaminants present in soil at the Site. The final cleanup levels selected need to be protective of all potential exposure pathways, and be the most stringent of the cleanup levels identified as being applicable.

The Site is located in the Bellevue central business district, with an established residential neighborhood about 1,500 feet to the north. A soil cleanup level for unrestricted use is therefore appropriate, specifically protection of human health from direct contact (ingestion). Either MTCA Methods A or B cleanup levels could be used for this purpose.

Ground water is present beneath the Property, and soil cleanup levels protective of leaching to ground water are needed. Method A cleanup levels are also appropriate for this purpose, or Method B cleanup levels could be calculated for individual constituents.

The Site is located in an area with almost no terrestrial habitat – limited landscaping around commercial buildings. The Site qualifies for an exclusion from further terrestrial ecological evaluation (exclusion criterion - less than 1.5 acres of undeveloped land within 500 feet of the Site), and soil cleanup levels protective of terrestrial species are unnecessary.

A vapor intrusion threat exists at the Site, as indicated by relatively high residual concentrations of PCE and TCE in soil, and the actual detections of these compounds in soil vapor probes. Ecology's current guidance on soil vapor intrusion does not provide an explicit method for establishing soil cleanup levels protective of indoor air, and instead relies on empirical demonstrations of air

quality or on modeling. Proof that soil cleanup levels protective of air have been met will therefore be based on one of these methods.

No other exposure pathways appear to exist at this Site or require pathway-specific soil cleanup levels. Method A cleanup levels have proposed as protective of all exposure pathways. **Ecology agrees with the proposed cleanup levels, except to note that Method A soil cleanup levels may not be fully protective of air.**

Point of Compliance: The point of compliance for soil at this Site will be throughout the Site. However, a conditional point of compliance will be set as soils throughout the Property for determining Property cleanup.

Ground Water

Cleanup Levels: 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. Cleanup levels protective of potable use are therefore the default. Either Method A or B cleanup levels can be used for this purpose. Method A has been proposed where table values exist, and Method B where Method A values are lacking. **Ecology concurs** with the selection.

Point of Compliance: The point of compliance for ground water is throughout the Site from the uppermost point of saturation to the lowest depth potentially impacted. A conditional point of compliance will be set for the Property cleanup comprising ground water throughout the Property from the uppermost point of saturation to the lowest depth potentially impacted.

Air

Cleanup Levels: Air cleanup levels are necessary to protect against soil vapor intrusion into buildings ultimately constructed at the Property or into existing buildings on adjacent properties. **The cleanup levels proposed in the April 8 RI/FFS for air are accepted.**

Cleanup levels are also proposed for soil gas in the April 8 RI/FSS. MTCA does not consider soil gas as a separate medium, and therefore does not recognize soil gas cleanup levels. However, MTCA does allow for setting air (soil gas) remediation levels that are protective of ambient air. **Ecology accepts the values** listed in the April 8 RI/FSS under "Proposed Cleanup Levels for Soil Gas" **(P. 45) as remediation levels** (WAC 173-340-750(3)(d), -708(3)(d), -355).

Point of Compliance: The point of compliance for air is ambient air throughout the Site. A conditional point of compliance will be set for the Property cleanup as ambient air throughout the Property.

c. Selection of cleanup for the Property.

Ecology has determined the cleanup you proposed for the Property **meets** the substantive requirements of MTCA.

The bulk of the proposed interim action is planned to occur in conjunction with construction of the new "Washington Square Phase 1" development. The Phase 1 development encompasses a larger area than the Property (as defined in this letter), and subsurface excavations for the new development will extend beyond Site boundaries to the north and east. (see Figure 3 in the April 8 RI/FSS).

The proposed interim action includes an initial step of pre-treating PCE-contaminated soil with a soil vapor injection/extraction system (SVS). The primary purpose of the SVS system is to reduce PCE soil concentrations requiring disposal as a hazardous waste, and it would include multiple wells completed within the area of maximum PCE concentrations in soil. Heated air would be pumped into the subsurface via the injection wells to enhance PCE volatilization, and pumped out via the extraction wells. Recovered soil vapor would be discharged to the atmosphere. The April 8 RI/FSS states that discharging to the atmosphere would not exceed the PSCAA emission limit of 500 pounds of PCE annually would not be exceeded. However, because PCE concentrations in the discharge would likely exceed the MTCA Method B air cleanup level without treatment, the extracted soil vapor will pass through a catalytic oxidizer prior to discharge to the atmosphere. Ecology **concurs** with this approach.

The SVS pre-treatment would be followed by excavating contaminated soil exceeding cleanup levels within the Property boundaries. The excavation necessary to remove the contaminated soil will be an estimated 10 to 40 feet deep, over an area measuring approximately 110 by 150 feet in plan dimension. The remedial excavation will be done in conjunction with the construction of a new parking garage that is planned to extend to a depth of about 50 feet below ground surface (bgs) and over a considerably larger area. Ecology **concurs** with this approach, given that its' intent is to remove all contaminated soils within the Property.

After the excavation is complete, residual contaminated soil vapor will be present outside the Property boundaries. The new building floor and walls are to be designed to act as a barrier to vapor intrusion. Ecology **concurs** with this approach, although the details have yet to be provided.

All of the contaminated ground water contained within the Property in the Perched Interval will be removed during the remedial excavation and the larger building excavation. In fact, the entire water-bearing zone will be gone within the limits of the building excavation. Shallow ground water in the Perched Interval upgradient of the Property would normally re-establish flow around the subsurface part of the building, and continue to the southwest in accordance with the current flow pattern. However, a foundation and sub-slab drain system will be installed below the parking garage, and water collected in the sub-drain system will be pumped to a City of Bellevue sanitary sewer. The sub-drain system will act as a hydraulic sink, and likely capture some of the contaminated ground water down gradient of the Property. Ecology **concurs** with this plan as it will provide for additional ground water cleanup.

Confirmation soil, ground water, soil vapor, and air sampling is planned during and following the remediation in accordance with MTCA requirements for proving that cleanup levels have been met at the point 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 interim action.

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

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

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. If you have any questions about this opinion, please contact me at 425.649.7107.

Sincerely,

Mark Adams
NWRO Toxics Cleanup Program

ma/kh

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

cc: Erin Rothman, SoundEarth Strategies

Enclosure A

Description and Diagram of the Site

Site Description

Site and Property Definition: The Site is associated with contaminant releases from two former service stations and a dry cleaning facility located at 10610 Northeast 8th Street in Bellevue, Washington (the 10610 property). The Site is known as the Thinker Toys Former, after a toy store that occupied the 10610 property during the 1990s.

The Site is defined primarily by PCE contamination in soil, ground water, and air. Other PCE-breakdown products and petroleum hydrocarbons are also present, but in greatly subordinate distributions and concentrations. The Site extends off the 10610 property to the north, south, east, and west, as shown on the enclosed Site and Property Map.

The 10610 property was recently combined with a number of other properties to form one larger property known as the Washington Square Phase 1 property (the Washington Square property). Within this larger property are three parcels that include part of the Site and which will be subject to the proposed cleanup action. These parcels are termed the 01610 property, the east-adjoining property and the north-adjoining property. The three parcels are termed "the Property" for purposes of this opinion letter. All are shown on the Site and Property Map.

Area and Property Description: The Property is in the Bellevue central business district, surrounded by numerous commercial and multi-story condominium developments. Residential housing begins about 1,500 feet to the north.

Property History and Current Use: The 20610 property supported a retail gasoline station and auto repair facility between 1955 and 1968. The gas station was demolished in 1968 and replaced with a second gasoline station, which operated until 1976. One-Hour Martinizing, a dry cleaning business, then operated at the 20610 property until 1986, after which there were a succession of small retail businesses, including Thinker Toys. The 20610 property is currently paved over, and used for parking. Adjoining properties have also been used for commercial purposes since the area was developed in the mid-to-late 1950s.

Contaminant Sources and History of Releases: Potential contaminant sources for this Site include petroleum hydrocarbon releases from service station operations and dry cleaning fluid releases at the cleaners. The dry cleaning fluid consisted principally of PCE. There is no record of specific spills or leaks at the 20610 property.

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 on 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 drainage system. The runoff is likely directed to the southwest towards Meydenbauer Creek. This creek, and its' tributaries, historically drained much of downtown Bellevue, but now that drainage is mostly underground in culverts. The creek daylights about 2,000 feet to the southwest, 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 closest area of significant habitat is the strip park that rings downtown Bellevue and the landscaped yards beyond. This area is about 1,500 feet north of the Property.

Geology: The Property is underlain by 40 to 60 feet of glacial till, a dense unsorted mixture of silt, sand, and gravel. The till contains some sandy zones, particularly at 20 to 35 feet below land surface. Below the till is a similar deposit of silt, sand, and gravel that has been interpreted as a glacial outwash deposit. This deposit extends to at least 101 feet, the deepest exploration at the Site.

Ground Water: The uppermost ground water at the Site occurs within sand lenses in the till under slightly confined conditions (the Perched Interval). This water-bearing zone occurs between 20 and 35 feet below ground surface (bgs), whereas static water levels in the zone are generally 10 to 25 feet bgs. Lateral flow in the Perched Interval is down to the south or southwest.

till outwash aquifer.

A lower aquifer, the Shallow Aquifer, has also been identified within the glacial outwash at a depth below 75 feet (static water levels are at about 75 feet). The boring logs are not clear as to how thick the aquifer is, or whether it is confined. The lack of clarity suggests it may be slightly confined within more permeable zones, much like the Perched Interval within the till. It has been stated, however, that this aquifer appears to have a greater saturated thickness and would be more productive than the overlying Perched Interval. Flow directions with the Shallow Aquifer are not known.

Water Use: Water is provided to the area by the City of Bellevue, but Ecology's well database shows two deep wells completed within the same township, range, and section as the Property. The wells were drilled in the mid-1940s by King County Water District #68 to depths of over 1,000 feet, and screened at some depth below 250 feet. It is not known where these wells are exactly, or whether they are still in use.

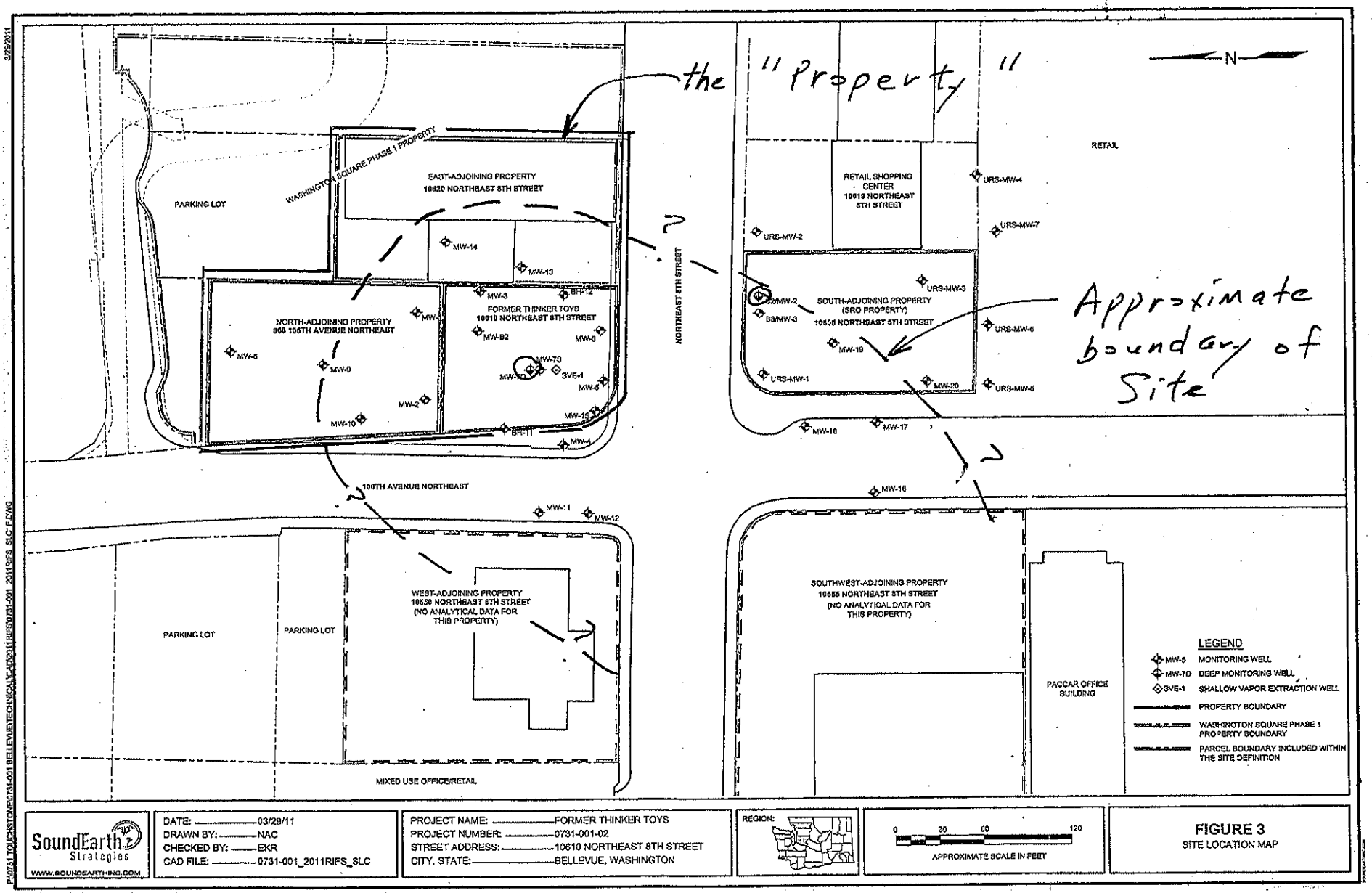
Release and Extent of Contamination - Soil: PCE contamination in soil extends to depths of about 45 feet below land surface over an area about 150 feet wide and a length in excess of 300 feet. The full lateral extent of contamination has not been determined. The most contaminated area noted to date occurs at the 20610 property below the location of a former sump. The current

interpretation of subsurface conditions (Figures 13 and 14 from the RI/FSS) shows the soil contamination on either side of NE 8th Street, but not in between. Ecology believes it is more likely the contamination is continuous across the right-of-way, and does not terminate at the 10610 property line.

Extent of Contamination – Ground Water: Ground water samples obtained from a number of monitoring wells show a broad PCE plume in the Perched Interval extending off-Property to the south and southwest. Exceptionally high PCE concentrations, close to 10,000 ug/L in two wells on the Property, suggest the potential for product to be present. The full extent of the plume has not been determined, but it does not appear to be preferentially following subsurface utilities as these are generally above the ground water.

Ground water investigations completed to date have focused on the uppermost water-bearing zone (Perched Interval), which generally occurs at a depth of 20 to 30 feet below ground surface. An underlying aquifer (Shallow Aquifer) is also present beneath the Property, with static water levels at a depth of about 75 feet. While water quality data is available from 24 monitoring wells completed in the Perched Interval, similar data is only available from 3 wells completed in the Shallow Aquifer. Of these three, only one appears to be located in an area potentially impacted by PCE (MW-7D).

Fortunately, MW-7D is located directly in the most contaminated area of the Property, and showed no PCE in two sampling rounds in 2010. This data suggest the till and outwash sediments between the Perched Interval and the Shallow Aquifer are an effective aquitard and barrier to PCE migration at the Property. However, one appropriately situated well in the Shallow Aquifer is not an adequate number given the high concentrations of PCE in the overlying Perched Interval, and the presence of a strong vertical gradient between the two water-bearing zones. Additional monitoring wells will need to be installed in the Shallow Aquifer down gradient to the south, southwest, and west to characterize conditions in this deeper water-bearing zone.



MARK ADAMS
ECOLOGY
7-14-11

SITE & PROPERTY MAP