STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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April 10, 2014

MR. CHARLES R. LIE
TERRA ASSOCIATES, INC.
12525 WILLOWS ROAD, SUITE 101
KIRKLAND, WA 98034

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

- **Site Name:** Cowman Campbell Paints
- **Site Address:** 5221 Ballard Avenue NW, Seattle, WA
- **Facility/Site No.:** 30774595
- **VCP Project No.:** NW2496
- **Cleanup Site ID No.:** 8651

Dear Mr. Lie:

Thank you for submitting documents regarding your proposed remedial action for the **Cowman Campbell Paints** 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 releases at the Site:

- Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) into the Soil

- Total Petroleum Hydrocarbons in the Gasoline Range (TPH-G) and Benzene into the Soil and Ground Water

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 actions:

1. Terra Associates, Inc., 2013. *Environmental Services Remedial Investigation/Feasibility Study/Remedial Action Summary, 5221 Ballard Avenue NW, Seattle, Washington.* July 24.

2. Terra Associates, Inc., 2012. *Current Groundwater Assessment, Shilshole Avenue NW Parcels, Seattle, Washington.* October 24.

3. Terra Associates, Inc., 2012. *Technical Memo – Interim Action Project Progress, 5221 Ballard Avenue NW, Seattle, Washington.* September 6.

4. Terra Associates, Inc., 2011. *Technical Memo - November Groundwater Sampling, 5221 Ballard Avenue NW, Seattle, Washington.* December 1.

5. Terra Associates, Inc., 2011. *Technical Memo-Fall 2011 Quarterly Sampling, 5221 Ballard Avenue NW, Seattle, Washington.* October 12.

6. Terra Associates, Inc., 2011. *Underground Injection Control Well Registration Form for Voluntary Cleanup Sites and Groundwater Technical Memo - 5221 Ballard Avenue NW, Seattle, Washington.* September 2.

7. Terra Associates, Inc., 2011. *Phase II Environmental Site Assessment, 5221 Ballard Avenue NW, Seattle, Washington, Project No. T-6552.* July 29.

8. Nowicki & Associates, 1998. *UST Closure In Place - Site Assessment Report, C&C Paints - Ecology Site ID 004806, 5121 (5221) Ballard Avenue NW, Seattle, Washington.* February 10.

9. Bison Environmental Northwest, Inc. 1992. *Underground Storage Tank Closure In Place Site Assessment Report Cowman - Campbell Paint Company, 5221 Ballard Avenue NW, Seattle, Washington, 98107.* November.

10. November 19, 1992. Notice of Confirmed Release at 5221 Ballard Avenue NW from Mr. Ken Beaulaurier with Bison Environmental to Department of Ecology - NWRO.

11. April 19, 1991. Letter from Mr. Charles E. Kitchin, P.E. of Pacific Testing Laboratory to Mr. E. Arthur Cowman, Cowman Campbell Paints.

12. April 17, 1991. Letter from Ms. Susan Kunimatsu of Ballard Avenue Landmark District Board to Mr. Robert Campbell, Cowman Campbell Paints.

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:

- Carcinogenic Polycyclic Aromatic Hydrocarbons (cPAHs) into the Soil
- Total Petroleum Hydrocarbons in the Gasoline Range (TPH-G) and Benzene into the Soil and Ground Water

The Site is located at 5221 Ballard Avenue NW in Seattle, Washington on King County tax parcel number 2767702565 (Property) which is one of four parcels containing Cowman Campbell Paints. On one of the three additional parcels, 2767702620, a separate release occurred that is associated with six former USTs that contained solvents. This opinion letter does not pertain to that separate release on parcel number 2767702620.

The Site is more particularly described in Enclosure A to this letter, which includes detailed Site diagrams. 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:**

- The Environmental Services Remedial Investigation/Feasibility Study/Remedial Action Summary (report) states that a permanent dewatering sump was put into operation for recent construction of a new building, Hotel Ballard, located northeast of the Site at 5216 Ballard Avenue NW (King County parcel number 2767702970). Hotel Ballard is a 4-story, mixed-use structure with a fitness center and retail area on the first floor and a hotel on the upper 3 floors. The building also has 3 floors of underground parking. The permanent dewatering system discharges to the municipal storm water drainage system and then to Salmon Bay.

- The report also states that due to operation of the dewatering system, the horizontal hydraulic gradient has been reversed at the Site. Prior to operation of the dewatering system, the static water level at the Site was approximately 10 feet below the ground surface (bgs) and the ground water flow direction was to the west-southwest. Table 1 provides ground water elevation data collected in November 2011 that indicated an east-northeast hydraulic gradient. Water levels collected in May 2012 in six wells indicated that ground water was not within the screened intervals at that time. A round of water levels collected in August 2012 that included three wells indicated ground water was again below the screened intervals. No attempted ground water elevation measurements were reported for 2013. Ecology requires verification that the dewatering system is still lowering the water levels and reversing the gradient beneath the Site by multiple rounds of attempted water level data collection. Ecology also requests that Rose diagrams be plotted using all available groundwater elevation data.

- Ground water is now estimated to occur at approximately 20 to 25 feet bgs at the Site. A previous opinion letter dated February 12, 2012 stated that further ground water characterization was needed south and southeast of the tank nest and along any UST piping corridors since piping has not been previously characterized. Due to the gradient reversal and the potential for different upgradient off-Site sources, ground water beneath the Site still needs to be characterized.

- Method B surface water cleanup levels for ground water at the Site are not appropriate. There is insufficient data to demonstrate that Site ground water is being captured by the dewatering system to the northeast. Even if this data were available, the Lake Washington ship canal is designated for use as a domestic water supply (WAC 173-201A-602) and ground water under the Site is classified as potable so ground water cleanup levels protective of drinking water uses apply. For potable ground water, either MTCA Method A or Method B ground water cleanup levels could be used. The point of compliance for ground water is throughout the Site.

- Soil samples collected on the Site have contained cPAHs at concentrations below MTCA Method A cleanup levels. Analysis for cPAHs in ground water has not been conducted.

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) 649-7064 or hvic461@ecy.wa.gov.

Sincerely,

Heather Vick, LHg
NWRO Toxics Cleanup Program

Enclosures: (1) A – Site Description and Diagrams

cc: 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 contamination associated with constituents of paint solvents released to soil and groundwater from three underground storage tanks (UST) at 5221 Ballard Avenue Northwest in Seattle, Washington (Property). The Property, which corresponds to King County tax parcel number 2767702565, is 0.17 acre in size. The Property is the location of Cowman Campbell Paints which is also located on three adjacent parcels of land located west and southwest of the Property including parcel numbers 2767702620, 2767702630 and 2767702640.

There is a separate release associated with one of the additional parcels (2767702620) involving six former USTs that contained solvents. The USTs on parcel number 2767702620 consisted of three 1,000-gallon USTs and three 2,000-gallon USTs that were removed in 1992. This opinion letter does not pertain to that separate release.

Area Description: The Property is situated in the Ballard neighborhood in north Seattle. The Property is bordered by Ballard Avenue Northwest on the northeast, commercial properties to the northwest and southeast, and warehouse and light industrial properties to the south and southwest.

Property History and Current Use: The Property was part of a paint manufacturing facility from about 1947 to approximately 2000. The Property is the location of three underground storage tanks (UST) which were installed in the early 1960s and closed in place in 1992 and 1998. The USTs contained different types of paint thinners which are detailed in the table below:

UST Volume	Substance Stored	Date Installed	Date Closed
6,000 gallons	Petroleum solvent (Chevron 350B)	1962	1992
8,000 gallons	Petroleum solvent (Chevron 410B(140))	1962	1992
7,000 gallons	Alkyd resin	1964	1998

The paint mixing occurred in an off-Property building that fronts on Shilshole Avenue; no paint mixing was conducted on the Property. The USTs are located in a small parking lot between two registered historical buildings and were closed in place because removing them would potentially undermine the foundations of the historical buildings. The Property is currently vacant.

Sources of Contamination: Sources of contamination relate to spills and leaks associated with the Property's former UST systems described above. In 1992, analytical results from a soil sample collected during closure of the two USTs containing petroleum solvents indicated TPH concentrations above the MTCA Method A cleanup level.

Physiographic Setting: The Site and surrounding area are situated on lowlands on the north side of the dredged Lake Washington ship canal. The ship canal extends west from the Site for about 1.5 miles before entering Puget Sound. Water levels are maintained in the Lake Washington ship canal by the Chittenden Locks, an engineered system that regulates surface water flow between Lake Washington and Puget Sound. Ground surface elevations are about 30 to 50 feet above mean sea level (msl) in the vicinity of the Property. Surface water elevations on Salmon Bay directly south of the Property are about 20 feet above msl.

The Property is situated at an elevation of about 36 feet above msl with a concrete retaining wall bordering the west side. On the west side of the retaining wall, the ground surface elevation drops to an elevation of about 28 feet. The Property building includes a basement with the same floor elevation observed on the west side of the retaining wall, about 28 feet. The Property slopes south-southwest toward Salmon Bay.

Surface/Storm Water System: The closest surface water body, Salmon Bay in the Lake Washington Ship Canal, is located approximately 900 feet southwest of the Site. Surface water runoff in the area is collected in municipal storm drains and eventually reaches Puget Sound. At the Property, surface water runoff moves via sheet flow south toward Shilshole Avenue Northwest and Salmon Bay.

Ecological Setting: The Site and the surrounding area provide limited terrestrial ecological habitat because it is has been mostly developed with buildings and areas paved with concrete and asphalt.

Geology: Conditions at the Site have been explored to a maximum depth of about 21.5 feet below ground surface (bgs). The geology consists of fill materials from approximately 0 to 2 feet below the ground surface (bgs) and from approximately 0 to10 feet bgs in the areas near the USTs. Weathered glacial till occurs from about 10 to 14 feet bgs with increasing density with depth. Unweathered glacial till occurs below depths of approximately 14 feet bgs. Based on geotechnical borings drilled across Ballard Avenue, the till underlying the Property is approximately 10 to 15 feet thick, below which are Advance outwash deposits.

Ground Water: The uppermost ground water beneath the Site occurs as a perched, water-bearing zone within the lower part of the fill and the weathered till. The water table varies from depths of 3 to 10 feet bgs, and is shallowest on the west side of the concrete retaining wall at a depth of about and deepest in the vicinity of the UST system. Static water level data from the Site monitoring wells in June 2011 indicated that the ground water flow in the perched zone at the Property is to the west southwest.

Construction dewatering at a property across Ballard Avenue and northeast of the Site has reportedly lowered the ground water level 20 to 25 feet bgs at the Property. This lowering has

resulted in a gradient reversal such that now ground water moves across the Site to the northeast.

Release and Extent of Contamination - Soil: The Site is defined by the extent of gasoline (TPH-G), benzene, and carcinogenic polynuclear aromatic hydrocarbon (cPAH) contamination in soil. The maximum TPH-G concentration detected in soil was 7,300 mg/kg. A note in the laboratory reports indicated that the chromatograms for TPH-G detections were similar to mineral spirits. Benzene was not detected above laboratory detection limits. However, the laboratory detection limit was above the MTCA Method A cleanup level in the sample that detected TPH-G at 3,900 mg/kg.

Detected cPAH concentrations were adjusted using toxicity equivalency factors. The maximum total cPAH concentration detected in soil was 0.261 mg/kg which was corrected to 0.082 which is below the Method A cleanup level of 0.1 mg/kg.

The known soil contamination extends from a depth of 10 to 14 feet bgs in the vicinity of the USTs. Contamination characteristics from the ground surface to a depth of 10 feet bgs are undefined. One soil sample has been analyzed near the surface (B-104 at 2.5 feet bgs) and was collected approximately 15 feet to the northwest on the opposite side of the concrete retaining wall, instead of near the UST fill ports and along UST piping where a shallow release, if present, would likely be detected. Further characterization of soil to the north of the center UST, and to the east, south, southeast, and west of the UST cluster, including characterization of soil near any UST associated piping, is necessary to determine the lateral and vertical extent of contamination.

Extent of Contamination – Ground Water: Four monitoring wells have been installed at the Site in locations near and down to crossgradient of potentially impacted soil. Analytical results from collected groundwater samples indicated TPH-G at concentrations above the MTCA Method A cleanup level. Benzene, toluene, ethylbenzene, and xylenes (BTEX) were not detected above Method A cleanup levels in ground water. Analysis for cPAHs in groundwater has not been conducted. The extent of the contaminant plume has not been defined.

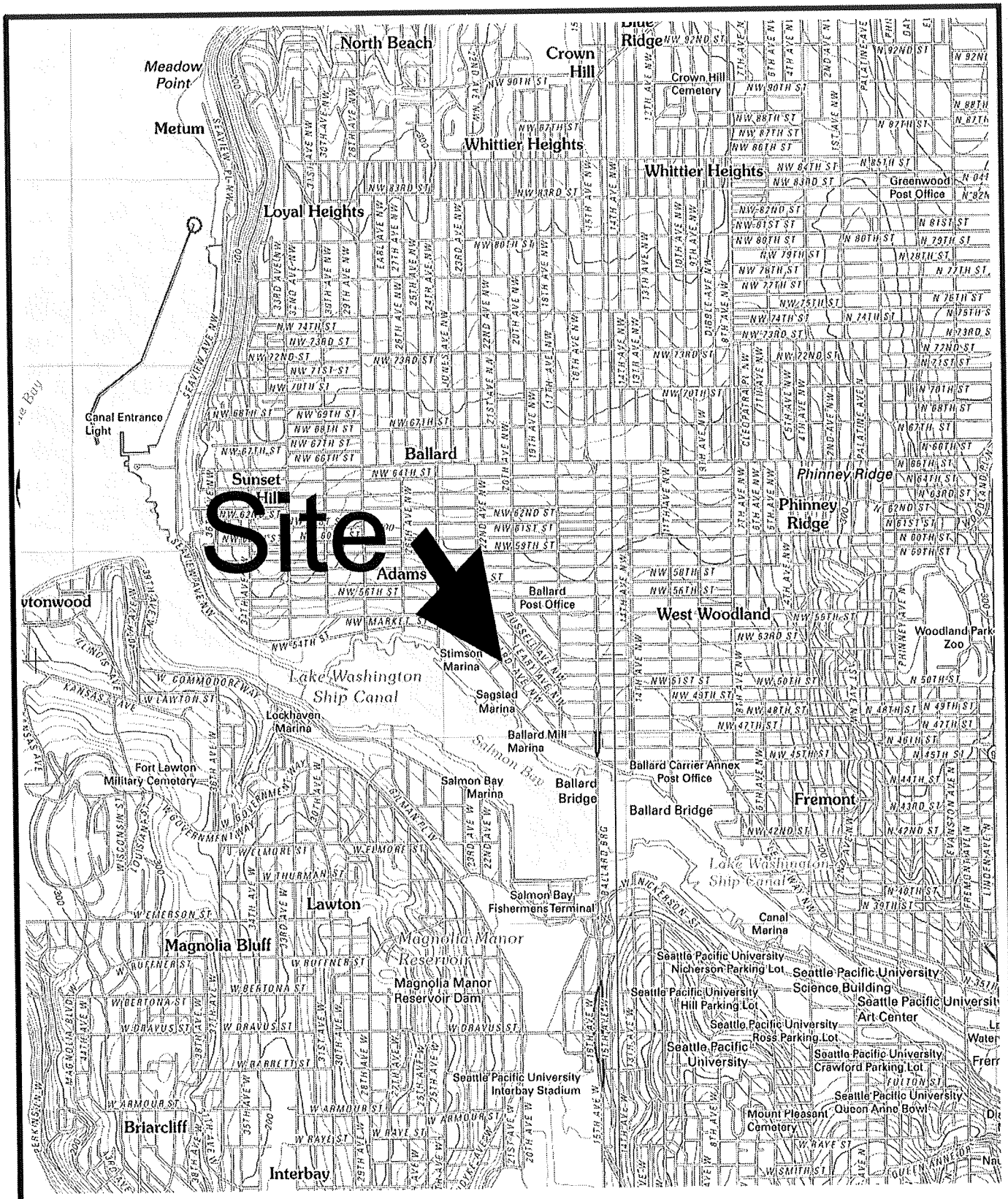
In 2012, a permanent dewatering sump was put into operation beneath Hotel Ballard, constructed northeast of the Site at 5216 Ballard Avenue NW (King County parcel number 2767702970). The dewatering system discharges to the municipal stormwater drainage system and then to Salmon Bay. Ground water levels on the Site have been lowered from approximately 10 feet bgs to an estimated 25 feet bgs, below the screened intervals of Site monitoring wells. In addition, the direction of the ground water flow at the Site has most likely been reversed to flow approximately east-northeast toward the dewatering system.

Site Remediation: In October 2011, approximately 880 pounds of TersOx^{TM}, a calcium hydroxide, was injected using six injection points, two in each UST cavity, with a GeoProbe drill

rig. The four Site monitoring wells (MW-101 through MW-104) were sampled in May and September 2011.

To address the vapor pathway, an interim remedial action consisting of a vacuum extraction system (VES) was put into operation on the Site in May 2012. The VES system consists of a trench that provides an individual pipe to each of the three monitoring wells on the Site. The initial operation of the VES focused on the area near monitoring well MW-101 but in June 2012, the system drew from two additional monitoring wells, MW-102 and MW-103. Two new VES wells (MW-105 and MW-106) were put into operation in February 2013. The system currently operates 12 hours per day (due to noise ordinance requirements) and the exhaust is sampled on a monthly basis. As of July 2013, approximately 180 gallons of paint thinner had been removed from the subsurface by the VES.

Site Diagrams



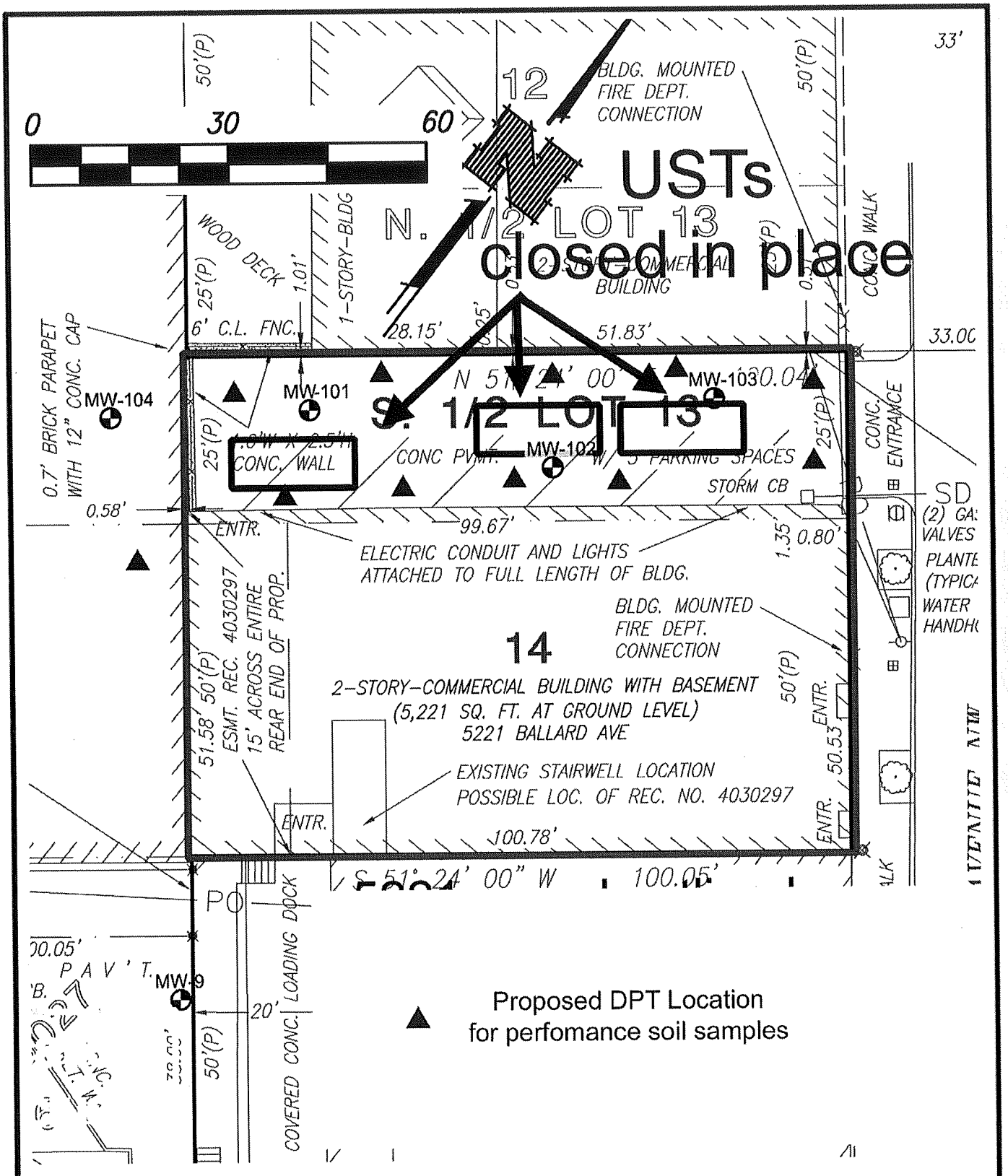
Reference: Bellevue Seattle North and Shilshole Bay USGS Quadrangles

TERRA ASSOCIATES

Geotechnical Consultants

Topographic Vicinity Map
5221 Ballard Ave NW
Seattle, Washington

Proj. No T-6552	Date Sept 2012	Figure 2



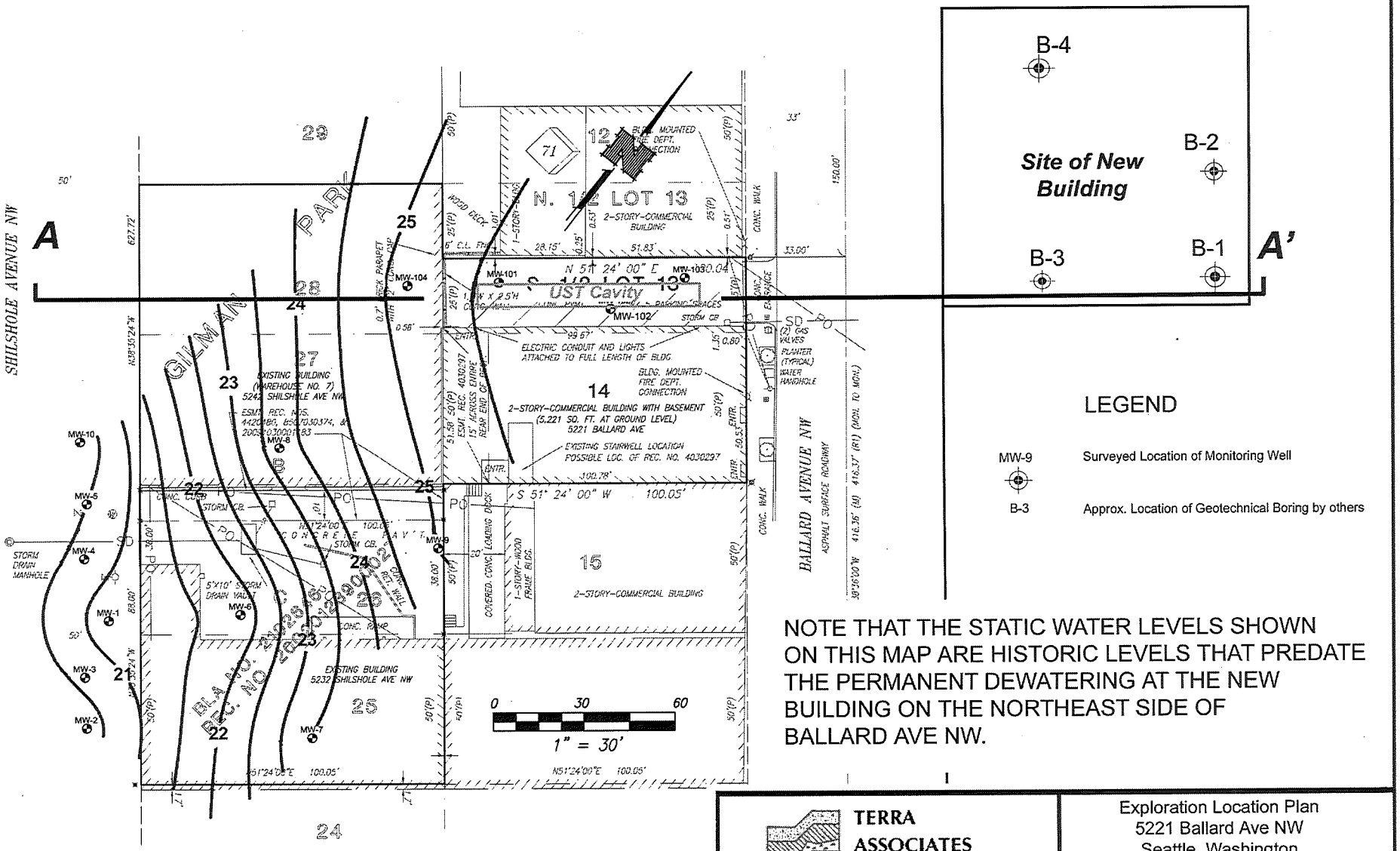
Reference: Site Survey by Hart Associates and Terra Associates field notes

TERRA ASSOCIATES

Geotechnical Consultants

Proposed Performance DPT Locations
5221 Ballard Ave NW
Seattle, Washington

Proj. No T-6552	Date Sept 2012	Figure 6



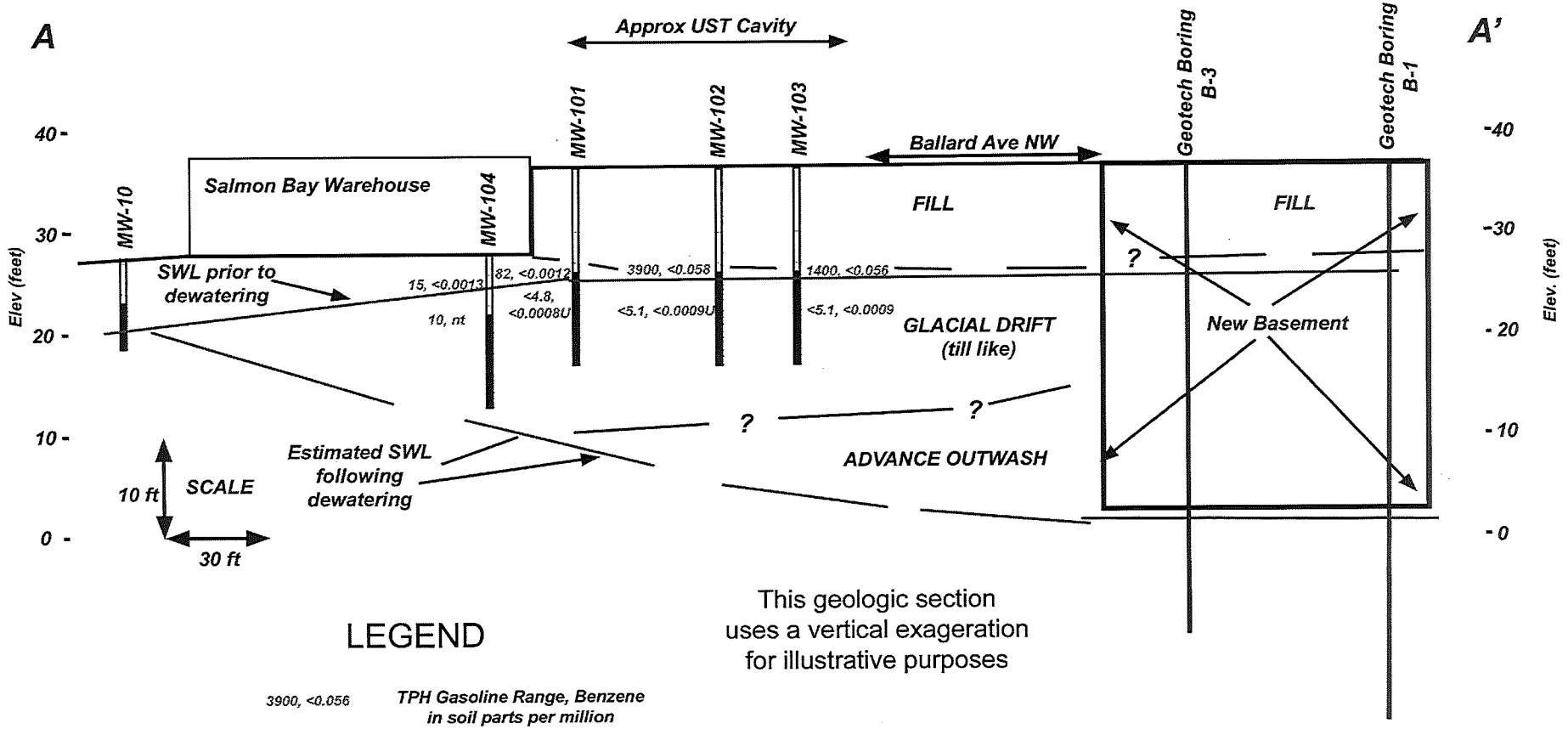
NOTE THAT THE STATIC WATER LEVELS SHOWN ON THIS MAP ARE HISTORIC LEVELS THAT PREDATE THE PERMANENT DEWATERING AT THE NEW BUILDING ON THE NORTHEAST SIDE OF BALLARD AVE NW.

Reference: Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

Exploration Location Plan
5221 Ballard Ave NW
Seattle, Washington

Proj. No. T-6552	Date Sept 2012	Figure 3



LEGEND

3900, <0.056 — TPH Gasoline Range, Benzene in soil parts per million

This geologic section uses a vertical exageration for illustrative purposes

Reference: Locations from Survey by Jim Hart and Associates

TERRA ASSOCIATES
Geotechnical Consultants

Schematic Geologic Section
5221 Ballard Ave NW
Seattle, Washington

Proj. No. T-6552	Date Sept 2012	Figure 4