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May 28, 2019

COPY

Laura Skow
Montrose Environmental
1 Park Plaza, Suite # 1000
Irvine, CA 92614

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

- **Name:** Time Oil 01-284
- **Address:** 12807 Des Moines Memorial Drive S, Seattle, WA
- **Facility/Site No.:** 45191292
- **VCP No.:** NW3173
- **Cleanup Site ID No.:** 9267

Dear Laura Skow:

Thank you for submitting documents regarding your remedial actions for the Time Oil 01-284 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:

- Gasoline-range petroleum hydrocarbons (TPHg), diesel-range petroleum hydrocarbons (TPHd), oil-range petroleum hydrocarbons (TPHo), benzene, toluene, ethylbenzene, and xylenes (BTEX) into the Soil.

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 and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your remedial actions:

1. ES Engineering Services, LLC, *Site Boring Logs*, April 18, 2018.
2. ES Engineering Services, LLC, *Site Cleanup Action Report*, October 3, 2017.
3. Property Solutions Inc., *Phase I Environmental Site Assessment*, Sept. 23, 2014
4. Time Oil Co., *Status of Cleanup Activities at Jackpot Food Mart*, November 21, 2002.
5. Time Oil Co., *Submittal of "Remedial Investigation Report" for Jackpot Food Mart*, December 4, 1997.
6. Alisto Engineering Group, *Remedial Investigation Report Time Oil Facility No. 01-284*, November 12, 1997.
7. Time Oil Co., *Remediation of Former Used Motor Oil Tank Bed and Site Assessment Jackpot Food Mart*, October 25, 1993.
8. GeoEngineers, Inc., *Report of Geoenvironmental Services Subsurface Soil Explorations and Remediation Jackpot Food Mart Property No. 01-284*, April 28, 1993.
9. Time Oil Co., *Underground Storage Tank Removal Jackpot Food Mart*, May 20, 1991.

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 completing a Request for Public Records form (https://www.ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests) and emailing it to PublicRecordsOfficer@ecy.wa.gov, or by calling the Public Records Officer at 360-407-6040. Some documents are accessible electronically at the Site web page (https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=9267).

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

- TPHg, TPHd, TPHo, and BTEX into the Soil.

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 release(s) at the Site, Ecology has determined:**

You requested a written opinion "for regulatory Site closure and no further action status" based on the investigations and remedial actions accomplished at the Site. The following comments comprise Ecology's assessment of those actions, and opinions.

During December 1990, two 8,000 gallon gasoline underground storage tanks (USTs) and one 10,000 gallon gasoline UST, were removed from a single excavation at the southern portion of the Property. Seven soil samples were acquired within the excavation, and analyzed for TPHg and BTEX. Low concentrations were found except in two samples, where the current Method A soil cleanup level for benzene (0.03 mg/kg) was exceeded. A 100-foot length of perforated pipe was laid in the excavation, and the excavated soil was returned without testing.

During January 1991, a 550 gallon heating-oil UST and a 350 gallon waste-oil UST were removed from a single excavation at the western edge of the Property. Five soil samples were acquired within the excavation, and analyzed for total petroleum hydrocarbons (TPH), eight metals (RCRA 8), polychlorinated biphenyls (PCBs), and volatile organic compounds (VOCs). Low concentrations of all compounds were found in the samples except three, where the current Method A soil cleanup level (2,000 mg/kg) for TPHd +TPHo was exceeded.

During December 1992, a remedial excavation was undertaken to clean up contaminated soil in the area of the heating-oil and waste-oil USTs to Method A cleanup levels. Excavation proceeded based on field screening methods: visual observation, sheen screening, and/or headspace vapor screening. At its completion, the excavation covered an area of approximately 1,050 square feet (2/3 of which extended off-property to the west), and ranged in depth from 19 to 23 feet below ground surface (bgs). The extent of the excavation was limited to the east by the building on the Property.

Fourteen confirmation soil samples (HW-1 through HW-14) were acquired at the bottom and sides of the excavation and analyzed for TPHg, TPHd, TPHo, and BTEX. There were elevated concentrations of TPH in three samples adjacent to the building, and in one sample at the southern end of the excavation. Approximately 920 cubic yards of contaminated soil were transferred from the Property to the Woodworth facility in Tacoma.

During December 1992, a soil-vapor extraction (SVE) system was connected to the perforated piping previously installed within the excavation of the three gasoline USTs. The system operated through mid-January 1993, at which time vapor recovery levels had attenuated.

During February 1993, nine borings (B-1 through B-9) were drilled to test for remaining soil contamination in the area of the former gasoline USTs, and also in other areas of the Property (see **Enclosure A, Figure 3**). The borings extended to depths ranging from 14.0 to 56.5 feet bgs. Eighty-seven soil samples (total) were acquired, and based on field screening as described above, seventeen samples were analyzed for TPHg, TPHd, TPHo, BTEX, and total lead. The data showed high levels of TPHg (maximum 13,000 mg/kg) and also elevated levels of benzene, xylenes, TPHd and TPHo in B-1 within a contaminated zone between 26 feet and 46 feet bgs south of the building.

The TPHg in this location appeared to be Stoddard solvent/mineral spirits. There was a detection of TPHg (120 mg/kg) above the Method A cleanup level for soil in one other boring (B-7) at a depth of 34.5 feet. Vapor-extraction wells were installed in two borings (VP-1 and VP-7). Ground water was not encountered in any of the borings.

During February 1997, three borings (B-10, VP-101, and VP-102) were drilled to test for remaining soil contamination and to be part of a SVE system. Boring B-10 was placed to augment information in the area of the gasoline USTs, and two vapor extraction wells were installed in the area of contaminated soil left in place west of the building. The borings extended to depths ranging from 38 to 58 feet bgs.

Twenty-eight soil samples (total) were acquired, and eleven samples were selected for analyses. One sample from VP-101 was analyzed for TPHg, TPHd, TPHo, BTEX, and lead with no results above Method A soil cleanup levels. All other samples were analyzed using method WTPH-HCID with no detections of hydrocarbons. Ground water was not encountered in any of the borings.

During March 1997, a pilot test was performed using the four vapor extraction wells to determine if SVE was feasible to complete remediation of the Site. Based on the pilot test, an SVE system utilizing three wells (VP-1, VP-7, and VP-101) was designed and proposed for implementation. The system was not implemented however, and there were no further remedial actions at the Site for the next 20 years.

During August 2017, five borings (B-11 through B-15) were drilled to test for any remaining soil contamination in areas where contaminated soil was suspected or known to remain in 1997 (see **Enclosure A, Figure 4**). The areas explored included the former gasoline USTs, the south end of the building, and west side of the building. The borings extended to depths ranging from 35 to 55 feet bgs. Forty-three soil samples (total) were acquired and, based on location and field screening, 19 samples were analyzed.

The August 2017 samples were mostly analyzed for TPHg, TPHd, TPHo, and BTEX. Approximately one-third of the samples included analyses for the gasoline additives ethylene dibromide (EDB) and ethylene dichloride (EDC), VOCs, and total lead.

Two samples included analyses for semi-volatile organic compounds (SVOCs) and a suit of eight additional metals. It was stated in each boring log that ground water was not encountered.

With the exception of three samples, the analytical results for the August 2017 samples were non-detectable for all compounds. The exceptions were: (1) a sample from B-11 at a depth of 10 feet bgs slightly exceeded the Method A cleanup level for TPHd+TPHo, (2) TPHd was detected at 1,200 mg/kg (below the Method A soil cleanup level) in a sample from B-14 at a depth of 30 feet bgs (where high levels of TPHg were detected in 1973), and (3) cadmium was detected in a sample from B-15 below its Method A cleanup level.

Given the assessment related above, Ecology offers the following opinions:

1. The contaminants of concern (TPHs and BTEX) and the cleanup standards established for the Site are acceptable. MTCA Method A soil cleanup levels were used to evaluate contamination in the soil, both to characterize the Site, and to perform a remedial excavation cleanup action. A terrestrial ecological evaluation (TEE) performed for the Site demonstrated that the Method A soil cleanup levels did not need to be adjusted for wildlife exposure considerations. The point of compliance for soil is all soil contained within the Site (standard point of compliance).

2. The cleanup actions at the Site included a remedial excavation of contaminated soil in the area of the heating-oil and waste-oil USTs and the operation of an SVE system for approximately 1 year in the immediate area of the former gasoline USTs. There was also apparent natural attenuation of petroleum hydrocarbons in soil over a period of approximately 25 years. With the exception of one sample from boring B-11 with a concentration of 2,180 mg/kg for TPHd+TPHo (exceeding the Method A cleanup level for of 2,000 mg/kg), cleanup levels in soil in the southern portion of the Property (the area of the former gasoline USTs), and the areas south and west of the building appear to have been attained.

Note: Ecology Implementation Memoranda #4 "Determining Compliance with Method A Cleanup level for Diesel and Heavy Oil" (publication 04-09-86 dated June 17, 2004), requires the summation of the diesel and oil components. See: https://fortress.wa.gov/ecy/publications/SummaryPages/0409086.html

3. The characterization of soil at the Site is not complete. **Figure 4** of **Enclosure A** depicts the areas of the Site where characterization is complete via borings and a remedial investigation. Given the long history of the Property as an automobile fueling and services facility, however, additional characterization is needed in northern, central, and eastern portions of the Property. The dispenser islands have been in the same location since the 1960s, and are typical sources of release from older UST systems. There are no data near, or in any direction from, the dispenser islands.

An auto service bay was likely located in the building, and additional data is needed north and east of the building. If significant contamination is detected, sampling would be needed near the current USTs installed in 1991. Furthermore, if elevated levels of TPHo indicative of waste oil are detected in any additional soil samples collected, those samples should include analyses for the chemical parameters listed in Table 830-1 of WAC 173-340, the MTCA cleanup regulation.

4. Additional assessment and sampling of ground water is necessary at this Site to determine if ground water is a medium of concern and if so, to establish appropriate cleanup standards for the ground water. High levels of Stoddard solvent (detected as TPHg) were found in 1993 at a depth of approximately 50 feet bgs in boring B-1 (those levels did attenuate as indicated by soil samples from boring B-14 in 2017). However, data from another site (Shell 129596) located 300 feet to the northeast indicates depth to the regional aquifer is approximately 76 feet.

Given the long history of the Property as an automobile fueling and services facility, and also the maximum depth reached historically by known contamination, the regional aquifer should be sampled to assess potential impacts. Additionally, the presence of, and potential contaminant impacts to any perched ground water should be evaluated during any future sampling.

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 by phone at (425) 649-7251 or by email at roger.nye@ecy.wa.gov

Sincerely,

Roger K. Nye

Roger K. Nye
NWRO Toxics Cleanup Program

Enclosures: (1) A-Site Description and Diagrams of the Site

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 by the extent of TPHg, TPHd, TPHo, and BTEX released into the soil. The Site is contained within Property located at 12807 Des Moines Memorial Drive South, Burien, King County, WA. The Property is 0.30 acres in size and consists of King County Tax Parcel # 1623049066.

Property and Area Description: The Property is situated on the southwest corner of the intersection between South 128th Street and Des Moines Memorial Drive South. A single story - 1,512 square foot building constructed in 1966 occupies the western portion of the Property. The Property is paved and utilized as a service station facility with three 10,000 gallon USTs, associated product and ventilation pipelines, and two dispenser islands.

The area adjacent to the Property is mixed commercial and residential development. Single-family residential areas (and a fire station) are located north of the Property and residences also to the west. Commercial businesses are located to the south and southwest of the Property. A large city park (North SeaTac Park and Ball Fields) is located east of the Property (see Figure 2).

Site History and Current Use: The Property has been utilized as an auto service station facility since the 1950s. Before then the use of the Property was residential. During its earlier history, the facility included a possible service bay with auto-repair activity (a waste-oil UST was found on the Property). Currently the Property is used as 76-brand fueling station (Ecology UST Site ID 4050, Foodmart #2840) only, with a Food Mart and no auto repair services.

Sources of Contamination: The sources of contamination at the Site were: (1) the historical operations of UST systems, which included tanks, fuel lines, and dispensing equipment, and (2) historical auto service and repair activities.

Physiographic Setting: The Site is situated on a relatively level plateau that lies between the Duwamish River to the east and Puget Sound to the west, at an elevation of approximately 375 feet above mean sea level. The land at the Property slopes gently downward to the south.

Surface/Storm Water System: The surface water body nearest the Site is a tributary of Miller Creek, located approximately 1,900 feet southwest of the Site. Miller Creek flows south and joins Walker Creek, which discharges to Puget Sound. As shown in Figure 4, storm water enters drains along the west and south edges of the Property, and then flows to the municipal storm water system.

Ecological Setting: The large North SeaTac Park located to the east consists of athletic fields near the Site. The land in all other directions is covered with streets, parking lots, and buildings, with small residential yards at more distal locations. The environment near the Site offers little habitat attractive to wildlife.

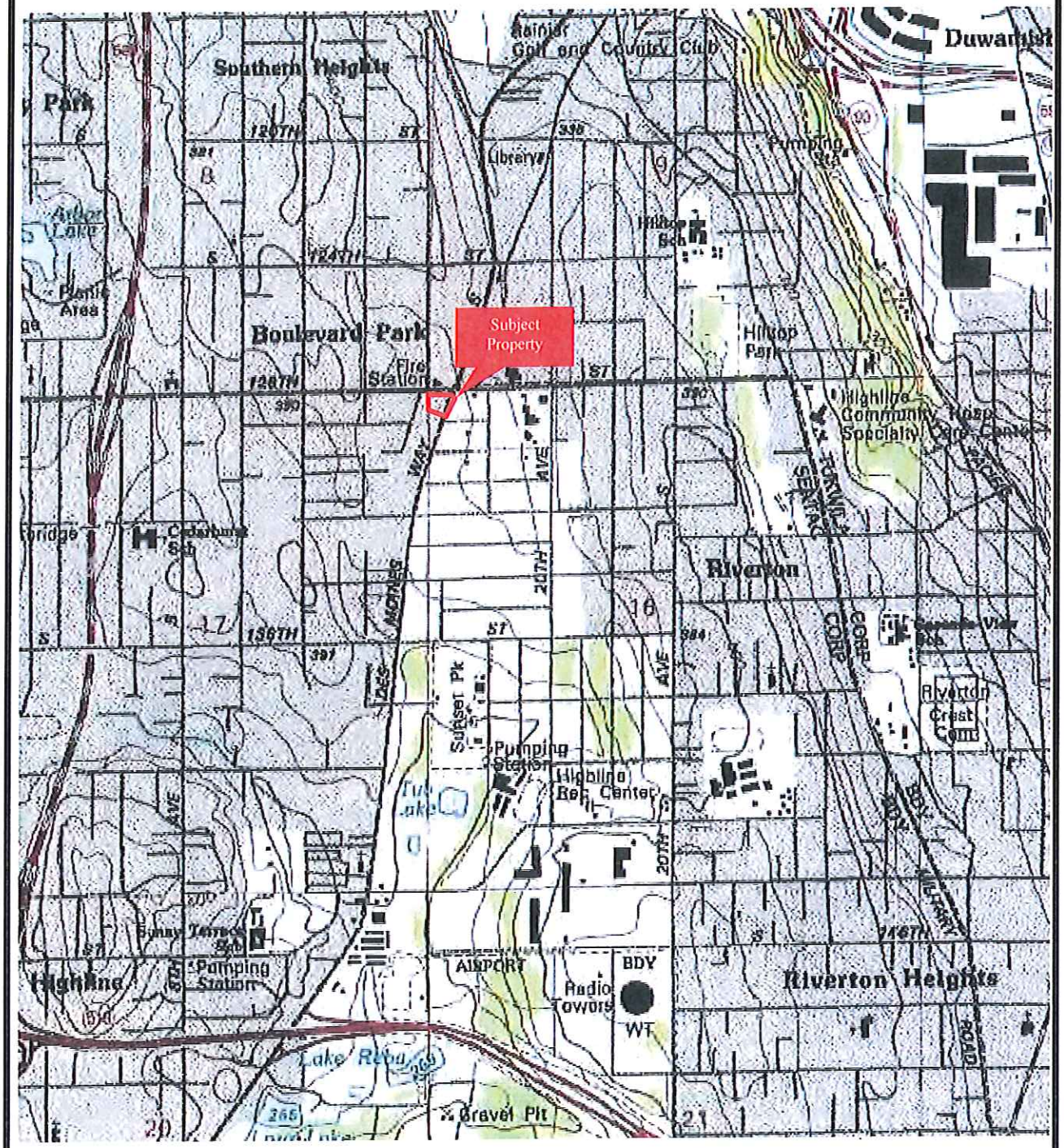
Geology: Fill material consisting of coarse sands and gravel with brick, concrete, and asphalt fragments extends across the Property at depths ranging from 2 to 10 feet bgs. The underlying native material consists of dense sands with varying compositions of silt and gravel (Vashon till) to the maximum depth of exploration (58.0 feet bgs).

Ground water: There was no significant zone of perched ground water encountered to the maximum depth of exploration (58.0 feet bgs), that extended throughout the known Site. There is potential for perched ground water at the Site however, which should be evaluated through any further sampling. Based on well logs and surface water elevations, the regional unconfined ground water was estimated to be 80 to 100 feet bgs beneath the Site. Data from another Site 300 feet to the northeast indicated regional ground water to be approximately 76 feet bgs.

The Site is located immediately adjacent to the well-head protection area for a City of Seattle municipal drinking water well (Boulevard Park Well), located 900 feet to the east (see Figure 2). The well draws water from the "intermediate aquifer" at a depth of approximately 210 to 300 feet bgs, and the Site is located just outside the 10-year capture zone.

Release and Extent of Contamination: The original extent of contamination associated with the gasoline USTs was not defined prior to the operation of the SVE system in that area, and is unknown. TPHg as Stoddard solvent at high levels was found at approximately 50 feet bgs south of the building. The remedial excavation in the area of the heating oil and waste oil USTs extended laterally 30 by 35 feet, and ranged in depths north to south from 9 feet bgs (north) to 23 feet bgs (south). Approximately 920 cubic yards, of contaminated soil from the excavation was removed from the Property. Method A cleanup levels for petroleum hydrocarbons were achieved during 1992 except laterally on the south and east sides of the excavation.

Site Diagrams



US DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY 7.5' TOPOGRAPHIC QUADRANGLE

Property Solutions Inc.	PC&F Station 1-284 12807 Des Moines Way SW Seattle, Washington	Property Location Figure 1	N
Topo Quad Name:		Property Boundaries are Approximate	

Google Maps 12807 Des Moines Memorial Dr

Land Use Near the Property

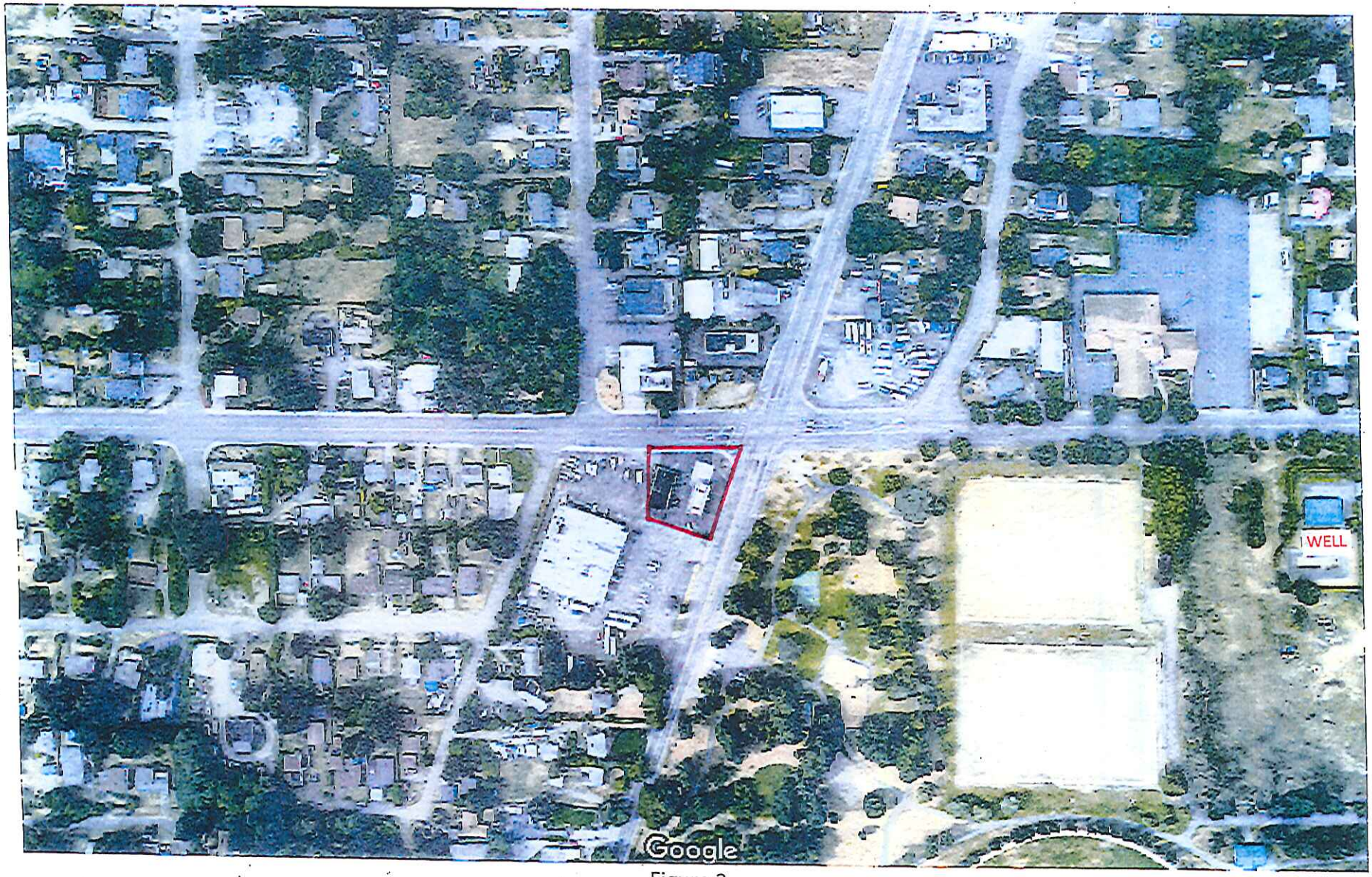
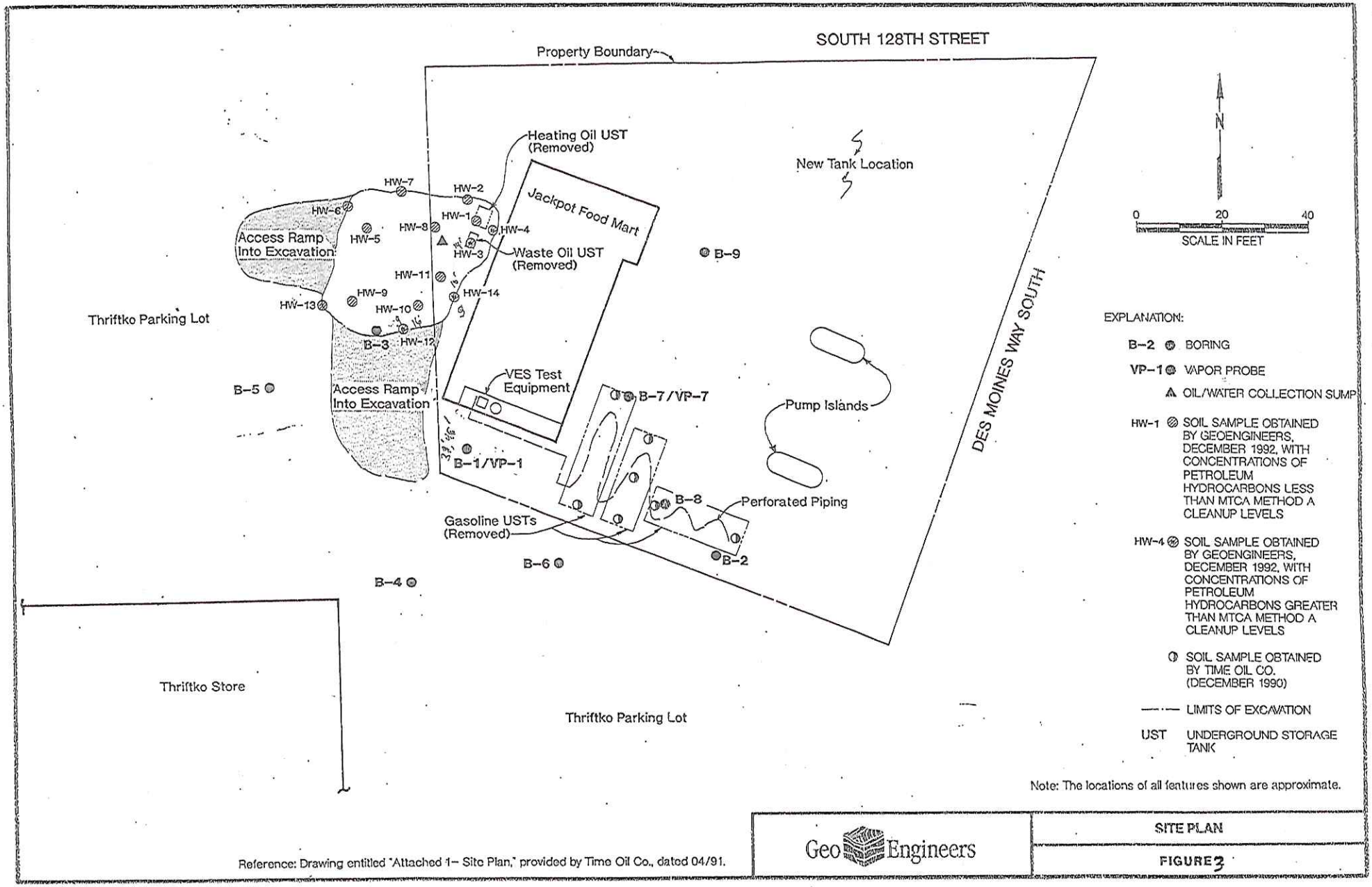


Figure 2

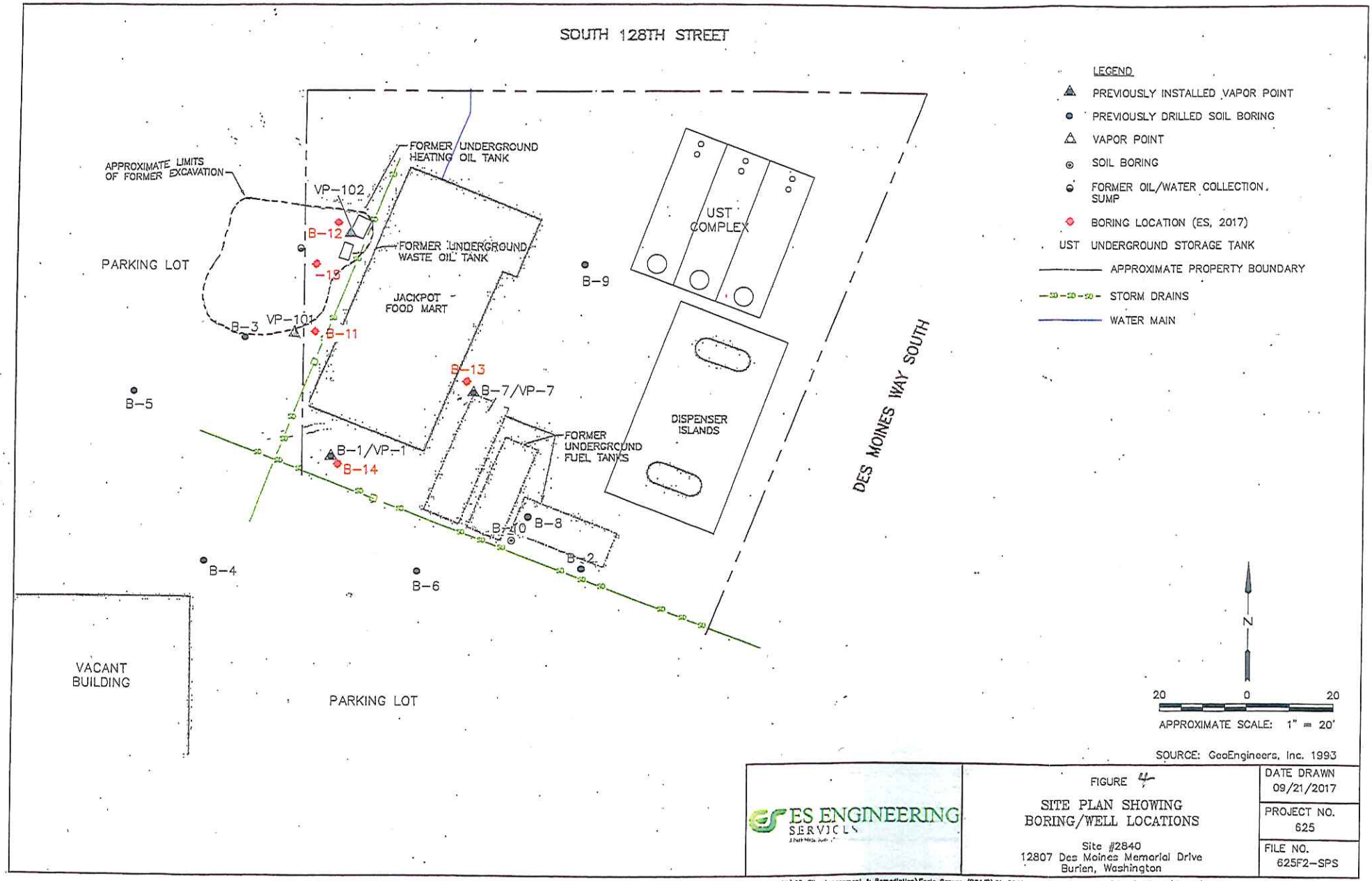


Reference: Drawing entitled "Attached 1– Site Plan," provided by Time Oil Co., dated 04/91.

Geo Engineers

SITE PLAN

FIGURE 3



SOURCE: GeoEngineers, Inc. 1993

ES ENGINEERING SERVICES

FIGURE 4

SITE PLAN SHOWING BORING/WELL LOCATIONS

Site #2840
12807 Des Moines Memorial Drive
Burien, Washington

DATE DRAWN	09/21/2017
PROJECT NO.	625
FILE NO.	625F2-SPS

W:\03_Site Assessment & Remediation\Eagle Canyon (PC&F)\01-2840 - Des Moines Memorial Drive, Seattle, WA\Reports\2017 Cleanup Action Report\Figures\625.dwg