Appendix C-3

Confirmed or Suspected Contaminated Sites and Leaking Underground Storage Tank Properties within the S Brandon Street CSO Basin

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Appendix C-3

Confirmed or Suspected Contaminated Sites and Leaking Underground Storage Tank Properties within the S Brandon Street CSO Basin

Industrial and commercial facilities within the S Brandon Street CSO basin have been identified as follows:

- 128 facilities within the Michigan Street CSO basin have been assigned Ecology Facility/Site ID numbers (Table C-1).
- 11 of these facilities are listed on Ecology's CSCSL.
- 52 of these facilities have active EPA ID numbers.
- 8 of the facilities hold NPDES permits.
- 5 of these facilities have KCIW discharge authorizations or permits[1], allowing them to discharge industrial wastes to the sanitary sewer.
- 18 of these facilities are listed on Ecology's LUST list.
- 43 of these facilities are listed on Ecology's UST list.

These facilities are listed by category in Appendix C-1 and their locations are shown on Figure C-1. Three of the facilities with KCIW discharge authorizations or permits are also listed on the CSCSL. As discussed in Section 3.0 of the *Data Gaps Report*, facilities listed on the CSCSL, LUST facilities, and facilities discharging industrial wastes to the sanitary/combined sewer may represent potential sources which may recontaminate sediment associated with the KC Lease Parcels source control area from the S Brandon Street CSO.

The S Brandon Street CSO serves an area of approximately 380 acres. During periods of heavy rainfall, when the combined wastewater and stormwater flow exceeds system capacity, the excess flow is discharged to the S Brandon Street CSO structure. CSO discharges contain a mixture of wastewater and stormwater, with stormwater generally comprising the majority of the flow. Wastewater may carry concentrations of sediment COCs, particularly from those facilities that are permitted to discharge industrial wastes to the sanitary sewer (Art Brass Plating, Cadman, Longview Fibre Paper & Packaging, and St. Gobain). Chemical residues present in catch basins on these properties or on adjacent roadways may become dissolved and suspended in stormwater. Contaminants suspended in the combined sewer discharge (if any) may be conveyed to the KC Lease Parcels source control area during a CSO event.

Due to the distance between these facilities and the LDW (Figure C-2), the potential for sediment recontamination via soil and groundwater is very low. Soil and/or groundwater contamination has been confirmed at Air Tec Co., Parcel C, General Electric Aviation Division, Sahlberg Equipment, and Shell 121430. Contaminated groundwater may infiltrate to the combined sewer system, contributing to potential contaminant loads in the combined sewer discharge. Additional

[1] Note two additional facilities with KCIW discharge authorizations that have not been assigned Ecology Facility/Site ID numbers have been identified, see Table C-5.

information regarding contamination at these facilities is included in the facility-specific sections below.

Soil and groundwater at LUST facilities may be contaminated with VOCs or petroleum hydrocarbons. While these contaminants are not sediment COCs, at sites where VOCs and petroleum products are present in the subsurface, naturally occurring arsenic in soil can be mobilized and migrate into groundwater (Harter and Rollins 2008). Arsenic is a COC for LDW sediments. Due to the distance between the LUST facilities within the S Brandon Street CSO basin and the LDW (Figure C-5), the potential for sediment recontamination via soil and groundwater is very low.

Chemical concentrations in the combined sewer discharge are likely to be heavily diluted prior to discharge to the LDW. Therefore, the potential for sediment recontamination via this pathway is likely to be lower than for direct discharges from adjacent facilities and the stormwater drainage basin. However, given the frequency of discharge from the S Brandon Street CSO (approximately 23 times per year with an average discharge of 31.6 mgy), the cumulative effects of CSO discharges could contribute to recontamination of sediments associated with the KC Lease Parcels source control area.

C-3.1 Data Gaps Common to All S Brandon Street CSO Basin Properties

Information needed to assess the potential for ongoing releases and sediment recontamination associated with current operations at each of the facilities in the S Brandon Street CSO Basin is listed below. This information can be obtained during the facility inspections currently performed by SPU, KCIW, and Ecology.

- Information regarding any ongoing industrial activities is needed to verify that these facilities are in compliance with all applicable regulations and BMPs.
- Information on how and where any hazardous materials, chemicals, or hazardous wastes are stored or used at these facilities is needed to evaluate the potential for spills to commingle with wastewater and stormwater.
- Facility plans showing the locations of floor drains, catch basins, sewer connections, and storm drains (if any) are needed to evaluate the potential for contaminants suspended in wastewater and stormwater (if any) to be transported to the LDW via combined sewer discharges.
- Information regarding any containment systems at these properties is needed to evaluate the adequacy of the systems and determine the potential for spills to commingle with wastewater and stormwater.

C-3.2 CSCSL Facilities

Data gaps and source control actions have been identified previously for all but four CSCSL facilities (see Table C-3). These four facilities are:

- Air Tec Co., Parcel C,
- General Electric Aviation Division,
- Sahlberg Equipment, and
- Shell 121430.

Information regarding current and historical operations, regulatory history, and environmental investigations at these facilities is included in this section of the Data Gaps Report. Because these facilities are not adjacent to the LDW, surface runoff directly to the waterway, bank erosion, and spills directly to the waterway are not potential sediment recontamination pathways and therefore are not discussed further in this section. The locations of these facilities are shown on Figure C-2.

C-3.2.1 Air Tec Co. Parcel C

Facility Summary: Air Tec Co. Parcel C	
Tax Parcel No.	1722802460, 1722802465, 1722802470
Address	2460: 5701 1st Avenue S 2465: 85 S Orcas Street 2470: 71 S Orcas Street
Property Owner	2460: Viking Community Bank 2465 & 2470: Willie Shoe LLC
Parcel Size	2460: 0.37 acre (16,165 sq ft) 2465: 0.49 acre (21,526 sq ft) 2470: 0.53 acre (23,163 sq ft)
Facility/Site ID	57633623
SIC Code(s)	None
EPA ID No.	None
NPDES Permit No.	None
UST/LUST ID No.	97435 (UST) 532723 (LUST release)

Air Tec Co., shown on Figure C-2 as Facility 4, historically operated on three parcels near the LDW. The parcels are bound on the north by S Orcas Street, on the west by East Marginal Way S, to the south by S Mead Street, and to the east by 1st Avenue S. The former Air Tec Co., Parcel C (Parcel 2470) is located on East Marginal Way S between S Orcas Street and S Mead Street. King County Tax Assessor records describe parcel 2470 as a "vacant, contaminated storage lot." The current property owner is Willie Shoe LLC.

Willie Shoe LLC currently also owns parcel 2465 (aka Parcel B). A 25,716 sq ft warehouse, constructed in 1962, is present on parcel 2465. Parcel 2460 (aka Parcel A) is owned by Viking Community Bank; a 10,170 sq ft bank is present on the property. The bank was constructed in 2004. Environmental investigations performed on Parcels A and B have shown that soil and groundwater contamination are not present on these parcels (URS 2002b). Parcels A and B are not included on the CSCSL.

The property is underlain by 5 to 12.5 feet of silty sand. The silty sand layer is underlain by a unit of sand that is approximately 8 feet in thickness. Organic silty clay is present beneath the sand unit. Groundwater is encountered at approximately 10 feet bgs (Dames & Moore 1994). Groundwater flow direction is west-northwest towards the LDW and is tidally influenced (URS 2002a).

Historical Operations

The property has been used for commercial and light industrial purposes since approximately 1914. A warehouse was built on the property in 1922. The address of the warehouse was 203 West Orcas Street. In 1927, a Texaco service station opened on the property using 5701 1st Avenue S as its operating address. Two USTs were present on the property. By the late 1940s, Truck Equipment, an auto wrecking facility, occupied the property. Four buildings and two additional USTs (up to 4,999-gallon capacity) were present on the property by 1970. Tool Crib Company occupied the buildings at this time. In 1974, the building at 5701 1st Avenue S was remodeled to accommodate rental equipment and a repair garage and two 1,500-gallon lube oil USTs were installed on the property. Tool Crib Company obtained permits from the Seattle Fire Department to store flammable liquids and petroleum products at the property in 1975. By 1977, Alaska Western Industries, a construction equipment and tool rental business, became a tenant at the property. Case Power and Equipment Supplies occupied the property in 1985 (Dames & Moore 1989).

In 1988, five USTs were removed from the property and a concrete lined truck service pit on the west side of the property was cleaned, backfilled, and paved over (Dames & Moor 1989).

By 1989, six businesses operated at the property, all using 5701 1st Avenue S as their operating address. Buildings were present on parcels 2460 and 2470, and parcel 2465 was used as a storage area. The six businesses were Air Tec Company, Tenino Wood Preservatives, Earl's Restaurant Supply, Kawanan Imports, MacDonald Miller Service Company, and a small woodworking shop (Dames & Moore 1989).

Air Tec (1987 to approximately 2002) was a wholesale distributor of heating, ventilating, and air-conditioning (HVAC) equipment. Air Tec handled lubricating oils and small quantities of paint used for building maintenance on the property. Air Tec did not perform maintenance on the HVAC equipment or sell lubricants or refrigerants at the property (Dames & Moore 1989, URS 2002a).

Tenino Wood Preservatives manufactured three products at the property. Copper naphthenate and zinc naphthenate were individually mixed with fuel oil and packaged into polypropylene pads and plastic bottles. These products were mixed in an AST, which was located in a partially enclosed area adjacent to the office building. The mixtures were piped into the office building and dispensed into the pads or bottles. Lithium-based grease was mixed with copper naphthenate and packaged in 5-gallon buckets. The grease was mixed in the warehouse area (Dames & Moore 1989).

MacDonald Miller Service maintained HVAC equipment at customer locations. The company stored stock tools and parts for its service trucks at the property. **Earl's Restaurant Supply** sold

dishes, cookware, large and small appliances, and small packages of cleaning agents. **Kawanan Imports** stored wicker and rattan furniture at the warehouse. The small woodworking shop manufactured window blinds (Dames & Moore 1989).

Historical owners of parcel 2460 included Willie Shoe LLC, PB Investments LP, and Leavitt Shay Real Estate Company (Leavitt Shay). Leavitt Shay is an alternative name for this property.

Hazardous Materials Used In Operations

Small quantities of routine maintenance products, such as bathroom cleaners and paint, were used at Air Tec and Earl's Restaurant Supply. Methyl ethyl ketone (MEK), shell turbo grease, and other compounds were used at the small woodworking shop. Oil was used in a processing machine inside the woodworking shop. No hazardous materials appeared to have been used at Kawanan Imports (Dames & Moore 1989).

Tenino Wood Preservatives used copper naphthenate, zinc napththenate, lithium grease, and mineral spirits in its operations. The bulk products were stored in 55-gallon drums in the warehouse (Dames & Moore 1989).

Waste Streams

Waste oil and discarded compressor motors were generated by MacDonald Miller Service (Dames & Moore 1989).

Regulatory History

In October 2002, Ecology required Leavitt Shay to file a Restrictive Covenant for the property (Parcels A, B, C) with the King County Assessor's or Recorder's office prior to issuing a No Further Action (NFA) determination. Ecology also required Leavitt Shay to conduct groundwater monitoring and submit a Groundwater Quality Compliance Monitoring Plan for Ecology's review and approval (Ecology 2002b). In January 2003, Ecology determined that groundwater monitoring was required for Parcel C only (Ecology 2003a).

In March 2007, Ecology determined that further actions were necessary at Parcel C because diesel- and gasoline-range hydrocarbons and benzene were present in soil above Model Toxics Control Act (MTCA) Method A cleanup levels, gasoline-range hydrocarbons and benzene were present in groundwater above MTCA Method A cleanup levels, and there was a lack of cleanup activities within the previous 12 months. Additionally Ecology indicated that a Restrictive Covenant may be required at the property (Ecology 2007a).

Environmental Investigations and Cleanups

Several environmental investigations have been conducted at the former Air Tec property. Sampling locations are shown on Figures C-8 and C-9. Chemical data are presented in Tables C-13 and C-14.

Phase I Property Transfer Assessment and Update (1989 and 1994)

A Phase I Property Transfer Assessment was performed in 1989 prior to the sale of the property. In the Phase I Report, the property refers to parcels 2460, 2465, and 2470. At least seven historical USTs were identified on the property. Five USTs were removed from the property in May 1988 including two 1,000-gallon lube oil tanks, two 1,500-gallon fuel tanks (one diesel and one gasoline), and one 3,000-gallon waste oil UST. No evidence of leaks from the USTs was observed and no soil samples were collected from the UST excavations. No records were found to determine the disposition of two USTs that were installed on the property in 1927 (Dames & Moore 1989, 1994).

The concrete-lined truck service pit was also decommissioned in May 1988. Approximately 30 cubic yards of petroleum-contaminated sludge were removed from the pit and disposed of at Cedar Hills Landfill (Dames & Moore 1994).

In the Tenino Wood Preservatives warehouse, grease spatters were noted on walls, drums, and storage racks near the area where the lithium-based grease product was mixed. Cardboard was used in the drum storage area to absorb spills; extensive spills were noted during the Phase I assessment (Dames & Moore 1989).

Inside the woodworking shop, oil was observed leaking from the processing machine onto the shop floor. Sawdust was used to absorb the oil. The concrete floor appeared to be free of cracks (Dames & Moore 1989).

Phase II Soil and Groundwater Investigation (1994)

Ten soil borings and four groundwater monitoring wells were installed on the property in 1994. The soil borings were located around the former USTs, truck service pit, the former service station area at the northeast corner of the property, and the western property line. A concrete surface was encountered in borings B-5 and B-6 at 8.5 feet bgs. Nineteen soil samples were collected for laboratory analysis of petroleum hydrocarbons and one sample was also analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX). Concentrations of gasoline-, diesel-, and heavy oil-range hydrocarbons, ethylbenzene, toluene, and/or xylenes exceeding the MTCA Method A cleanup levels were detected in soil near the former waste oil USTs, former lube oil USTs, and former service pit (Dames & Moore 1994).

Four groundwater samples were collected for laboratory analysis of petroleum hydrocarbons and BTEX. Gasoline-, diesel-, and heavy oil-range hydrocarbons, benzene, ethylbenzene and xylenes were detected in well MW-1 and benzene was detected in well MW-2. All concentrations exceeded the MTCA Method A cleanup levels. Groundwater contamination appeared to be limited to the vicinity of the former waste oil UST. Petroleum hydrocarbons and BTEX were not detected in wells MW-3 and MW-4 (Dames & Moore 1994).

A geophysical survey was performed to identify subsurface features that may have been associated with the former service station. The survey did not detect the presence of USTs or other anomalies indicative of buried metal objects (Dames & Moore 1994).

Voluntary Cleanup Action (2000 to 2001)

Groundwater samples were collected from the onsite monitoring wells and analyzed for total petroleum hydrocarbons (TPH) and BTEX. Gasoline- and diesel-range hydrocarbons and BTEX concentrations exceeded MTCA Method A cleanup levels in well MW-1. TPH was detected below cleanup levels and BTEX was not detected in the remaining wells (Dames & Moore 2000).

In April 2000, approximately 50 to 60 cubic yards of petroleum-contaminated soil were excavated from the former 3,000-gallon waste oil UST area and removed from the property. Groundwater was encountered at 10 feet bgs in the excavation and a sheen was observed on the north and west sides. The excavation extended to approximately 12 feet bgs. Three sidewall samples and one bottom sample were collected from the excavation for laboratory analysis of TPH and BTEX. TPH and BTEX were present at the southern side and northwest corner of the excavation (Dames & Moore 2000).

Ecology determined that there was potential for the residual contaminated soil to come in contact with seasonal fluctuations in groundwater. An additional 50 to 60 cubic yards of petroleum-contaminated soil was removed from the northwest corner of the 2000 excavation in April 2001. Three additional soil samples were collected for laboratory analysis. Diesel-range hydrocarbons were present up to 29,000 milligrams per kilogram (mg/kg) (URS 2002a).

Groundwater monitoring well MW-1 was removed during the 2000 excavation (Dames & Moore 2000). A replacement well was installed in September 2000 (Eco Compliance Corporation 2000).

Groundwater Monitoring (2000 to 2002)

Seven groundwater monitoring events were performed on a quarterly basis from October 2000 to August 2002. Groundwater samples were analyzed for TPH and BTEX. TPH and BTEX were not detected in wells MW-2 through MW-4 during the last five monitoring events. In well MW-1, benzene concentrations exceeded the MTCA Method A cleanup level. TPH, ethylbenzene, toluene, and total xylenes were present in the well below the MTCA Method A cleanup level (URS 2002a).

Potential for Sediment Recontamination

Air Tec is included in this Data Gaps Report because contaminated groundwater associated with the facility may become part of combined sewer discharge to the S Brandon Street CSO by infiltrating the combined sewer system.

Sediment COCs have not been detected at this facility, with the exception of a single detection of lead in soil. No exceedances of soil-to-sediment or groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps were identified for this property.

C-3.2.2 General Electric Aviation Division

Facility Summary: General Electric Aviation Division	
Tax Parcel No.	3573700330
Address	220 S Dawson Street
Property Owner	Key Mac LLC
Parcel Size	1.74 acres (75,609 sq ft)
Facility/Site ID	2522
SIC Code(s)	3724 Aircraft Engines & Engine Parts 3812 Search & Navigation Equipment
EPA ID No.	WAD009278706
NPDES Permit No.	None
UST/LUST ID No.	None

The General Electric (GE) Aviation Division Property, identified on Figure C-2 as Facility 64, is located on the north side of S Dawson Street between 2nd Avenue S and 3rd Avenue S. A 53,620 sq ft office and warehouse building, constructed in 1948, is present on the property. Permits to remodel the building were issued in November 2008 and April 2009.

McKinstry Company currently occupies the building (AECOM 2009). General Electric Co. Dawson Street is an alternative name for this facility.

The property is underlain by interbedded silt and silty sand to a depth of 65 feet bgs (the maximum depth explored). Groundwater is encountered between 7 and 11 feet bgs. Groundwater generally flows to the west (ENSR 2008).

Historical Operations

GE operated at this facility from 1949 to 1996. From 1959 to 1994, GE manufactured and repaired aircraft equipment at the property. After 1994, GE used the building for office and warehouse space until the property was sold in 1996. Since the property sale, various owners and tenants have used the property for warehousing operations (ENSR 2008).

GE used petroleum products and chlorinated solvents during the manufacture and repair operations from 1959 to 1994. Trichloroethylene (TCE), 1,1,1-trichloroethane (TCA), and tetrachloroethene (PCE) were used for parts cleaning (ENSR 2008).

Regulatory History

Initial investigations and cleanups at the property were performed as a Resource Conservation and Recovery Act (RCRA) closure of the Dangerous Waste Management Unit. In April 1995,

Ecology accepted clean closure of the former GE storage unit and GE agreed to conduct additional corrective actions for the former dangerous waste storage facilities (ENSR 2008).

In 1997, GE performed an independent investigation and interim cleanup at the property in cooperation with Ecology to support Consent Decree negotiations. Ecology required additional work prior to continuing with the Consent Decree. Agreed Order DE02HWTRNR-4686 between Ecology and GE was executed on November 13, 2002, implementing an Interim Action which included groundwater extraction and continued quarterly groundwater monitoring at the property (RETEC 2008).

In 2007, Agreed Order DE 4258 was executed to address issues related to subslab vapor and indoor air pathways. In May 2008, Agreed Order DE 5477 was executed between Ecology and GE. The 2008 Agreed Order required GE to complete a Focused Feasibility Study (ENSR 2008). The final Focused Feasibility Study was finalized in December 2009. The remedial technology for the property and the groundwater plume will be in situ chemical oxidation with optimized hydraulic controls (Ecology 2009i). The remedial objectives are to achieve compliance with soil and groundwater cleanup levels that are protective of MTCA Method B cleanups levels for indoor air and surface water (Yasuda 2010).

Environmental Investigations and Cleanups

Environmental investigations and cleanups have been ongoing at the GE Aviation property since 1987. TCE is the primary COC at this property (ENSR 2008).

In 1995 and 1996, over 3,000 tons of petroleum hydrocarbon and chlorinated VOC-contaminated soil (concentrations exceeding MTCA Method B) were excavated and removed from 12 areas on the property. GE estimated that approximately 100 cubic yards of contaminated soil remained in areas beneath the building, a transformer, and electrical poles (Figure C-10) (ENSR 2008).

Groundwater monitoring wells have been installed on the former GE property, on the Liberty Ridge Building (former Western Cartage) property, and downgradient of 1st Avenue S (Figure C-11). Groundwater monitoring has been performed on a monthly to quarterly basis since 1996. Groundwater samples are analyzed for PCE, TCE, cis-1,2-dichloroethene (DCE), 1,1-DCE, 1,1-dichloroethane (DCA), 1,1,1-TCA, and vinyl chloride. Samples were analyzed for total and dissolved metals in 2003, 2004, and 2008; dissolved arsenic is the only metal that has been detected at concentrations exceeding the MTCA Method A cleanup level. In 2004 and 2008, the wells were sampled for 1,4-dioxane. Over 850 groundwater samples have been collected (ENSR 2008).

A groundwater recovery system was installed in August 1996 and has operated on a nearly continuous basis for the past 13 years. Chlorinated VOC concentrations have remained stable or decreased since system startup. Groundwater is extracted from two recovery wells. Approximately 113,900,000 gallons of water were extracted during the first 12 years[2] of operation (ENSR 2008). Extracted groundwater is discharged to the sanitary sewer under KCIW Discharge Authorization 543 (RETEC 2008).

[2] Groundwater extraction data from 2009 were not yet available for review.

The most recent groundwater monitoring results available for review are from February 2009. TCE exceeded the MTCA Method B cleanup level in nine wells and PCE exceeded the MTCA Method B cleanup level in two wells. GE planned to sample groundwater again in May 2009 (General Electric 2009). Groundwater monitoring data from February 2007 to February 2009 are presented on Table C-15.

Subslab vapor sampling was performed in December 2005 and indoor air samples were collected from 2000 to 2007 at the former GE facility, the Liberty Ridge Building, and the building at the northwest corner of 1st Avenue S and S Dawson Street. A subslab depressurization system was installed beneath the former GE building in June 2007 (ENSR 2008).

Potential for Sediment Recontamination

GE Aviation is included in this Data Gaps Report because contaminated groundwater associated with the former GE facility may become part of combined sewer discharge to the S Brandon Street CSO in two ways:

- GE extracts contaminated groundwater from the subsurface, which is treated and then discharged to the sanitary sewer under KCIW discharge authorization 543. A treatment system failure may result in the release of contaminated groundwater to the combined sewer system.
- Contaminated groundwater may infiltrate the combined sewer system.

Sediment COCs have not been detected at this facility, with the exception of arsenic in groundwater. No exceedances of groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

According to the 2008 Focused Feasibility Study, chemical concentrations in the groundwater plume decrease to below detection levels approximately 690 feet east of the LDW; thus, the groundwater-to-sediment pathway is likely to be incomplete (ENSR 2008).

Data Gaps

Additional environmental investigation and cleanup activities are currently being performed at GE under the direction of Ecology. For this reason, no facility-specific data gaps regarding soil and groundwater contamination and the potential for contaminated groundwater to infiltrate the combined sewer system have been identified.

C-3.2.3 Former Sahlberg Equipment

Facility Summary: Former Sahlberg Equipment	
Tax Parcel No.	5367204735
Address	5950 4th Avenue S
Property Owner	Society of Saint Vincent de Paul
Parcel Size	1.02 acres (44,388 sq ft)
Facility/Site ID	2450
SIC Code(s)	3531 Construction Machinery 7538 General Automotive Repair Shops 7699 Repair Services, Not Elsewhere Classified
EPA ID No.	WAD988490496
NPDES Permit No.	None
UST/LUST ID No.	None

The former Sahlberg Equipment property, shown on Figure C-2 as Facility 102, is located at the northeast corner of the intersection between 4th Avenue S and S Front Street. There are three buildings on the property: a 5,532 sq ft office constructed in 1954, a 15,904 sq ft retail store with basement constructed in 1941, and a 2,080 sq ft garage and storage building constructed in 1956. The buildings are currently vacant.

Soil beneath the property consists of silty fine- to medium-coarse sand. Groundwater is approximately 5 feet bgs and flows to the southwest (RZA AGRA 1992; Ecology 1993c). The area of the property between the office building and the warehouse is approximately 5 feet lower than the surrounding street elevation (Pacific Testing 1993a).

Society of Saint Vincent de Paul and U.S. Bank AJ Sahlberg Trust are alternative names for this facility.

Current Operations

Information regarding current operations at the former Sahlberg Equipment was not available in the files reviewed by SAIC.

Historical Operations

A sheet metal works and welding facility and a small machine shop were present on the property in 1929 (Ecology 1993c).

Anderson Blowpipe and Manufacturing Company, a sheet metal manufacturer, operated at the property in Building 2 from the early 1940s to the early- to mid-1960s. Joseph Conradi & Company, a machine shop, operated at the property from the early 1940s to the mid-1950s. By the mid-1950s, the Jack Sahlberg Equipment Company began operating north of Anderson Blowpipe. United Textile Company began operating on the site formerly occupied by Joseph Conradi & Company, followed shortly thereafter by Aero Electric Company at the same location (RZA 1991).

In 1951, Seattle Pacific Engineering and United Cleaners began operating on the property. United Cleaners reverted back to a residence the following year (RZA 1991).

In 1957, Western Processing Company was established south of Sahlberg Equipment and Anderson Blowpipe and operated until 1960 or 1961 before moving to its present site in Kent. Western Processing reprocessed animal byproducts and brewer's yeast (RZA 1991).

By the 1960s, Sahlberg Equipment was the sole operator on the property. Sahlberg Equipment was a wholesaler/retailer of new construction heavy equipment and safety supply equipment. The company prepared new heavy equipment and machinery for sale and delivery but did not conduct significant maintenance or repair activities at the property, aside from adding motor oil or hydraulic fluid to new machinery (RZA 1991). Sahlberg Equipment left the property in approximately 1992 (RZA AGRA 1992; Ecology 1992c).

An equipment wash area was present at the southeast corner of the property. The wash area contained a sump and a pump. An unpaved drum storage area was also present at the southeast corner. A waste oil AST was present at the southwest corner of the service department and shop building (Building 3). An open shed (Building 4) was used for storing drums and for equipment maintenance activities (Ecology 1993c). A heating oil UST was present at the northwest corner of the property (RZA 1991).

Two single-family homes were present at the southern end of the property from the 1940s to the 1960s (RZA 1991). No other information on historical operations at this location was identified.

Regulatory History

In 1991, a report was made to Ecology concerning Sahlberg Equipment pouring liquids down the storm drain at the southeast corner of the property (Ecology 1991).

Ecology performed a property inspection in November 1992. Sahlberg Equipment had already moved to Kent, Washington, at the time of the inspection. The Ecology inspector observed five drums at the southeast corner of the property and a polyvinyl chloride (PVC) pipe running along the eastern property line, between the back of one building to a catch basin in the right-of-way (Ecology 1992c). A property representative reported that sumps were present in the building and discharged to the sanitary sewer through the PVC pipe; however, METRO reported that a representative of Sahlberg Equipment had previously reported that the pipe drained runoff from a low point in the yard (O'Herron 1993a, 1993b). The drums were determined to contain soil cutting and purge water from an environmental assessment performed at the property (O'Herron 1993a).

Environmental Investigations and Cleanups

Several environmental investigations have been performed at the former Sahlberg Equipment property. Soil and groundwater analytical results are presented on Tables C-16 and C-17, respectively.

Level I Environmental Site Assessment (1991)

A Level I Environmental Site Assessment (ESA) was conducted in March 1991 by Rittenhouse-Zeman & Associates, Inc. (RZA). A 300-gallon heating oil UST was present at the northwest corner of the property (Figure C-12). The UST was taken out of service around 1970 when the building it served (Building 1) was renovated and the heating system was converted to natural gas. Heating oil was still present in the UST at the time of the ESA. RZA recommended that the UST be properly decommissioned (RZA 1991).

Several 55-gallon drums containing motor oil and hydraulic fluid were stored in the storage shed (Building 4); some minor staining was observed, but there was no evidence of severe product leakage or spillage. Open drums containing used antifreeze, solvents, and hydraulic fluid were stored on wooden pallets in an unpaved area at the southeast corner of the property. Stained soil was observed in the vicinity of these drums. RZA recommended that Sahlberg discontinue storing drums in the unpaved area. Additionally, RZA recommended sampling the soil for chemical analysis (RZA 1991).

Environmental Site Assessment (1992)

Two groundwater monitoring wells, MW-1 and MW-2, were installed on the property in April 1992 to evaluate soil and groundwater conditions at the southern end of the property (Figure C-13), where the soil had been exposed to potential contamination from antifreeze and solvents. Soil and groundwater samples were analyzed for diesel-range hydrocarbons and total recoverable petroleum hydrocarbons (TRPH), VOCs, and ethylene glycol. In soil, diesel-range hydrocarbons, TRPH, and VOCs were detected at concentrations up to 187 parts per million (ppm), 5,100 ppm, and 190 parts per billion (ppb), respectively. In groundwater, diesel-range hydrocarbons, TRPH, and VOCs were detected at concentrations up to 6,300 ppb, 42,000 ppb, and 1,200 ppb, respectively. TPH concentrations in soil exceeded the MTCA Method A cleanup levels. TPH, acetone, chlorobenzene, ethylbenzene, toluene, and total xylene concentrations in groundwater exceeded the MTCA Method A cleanup levels (RZA AGRA 1992).

Soil Remediation (1993)

Three soil borings (A, B, and C) were advanced in the property yard between the office building and the warehouse (Figure C-12). One soil sample from each boring was collected for laboratory analysis. Two groundwater monitoring wells (MW-A and MW-B) were installed. Six soil samples were collected from each well boring. Diesel-range hydrocarbons concentrations exceeded the MTCA Method A cleanup level only at well MW-A. Groundwater samples were collected from wells MW-1, MW-2, MW-A, and MW-B. TRPH and diesel-range hydrocarbon concentrations exceeded the MTCA Method A cleanup levels in wells MW-1 and MW-2. No analytes were detected in the groundwater samples collected from wells MW-A and MW-B (Pacific Testing 1993a).

Approximately 40 cubic yards of soil were excavated from the property. Twenty soil samples were collected from the excavated soil and excavation sidewalls. The final post-excavation samples did not contain concentrations of petroleum hydrocarbons above MTCA Method A

cleanup levels (Pacific Testing 1993a). Wells MW-1 and MW-2 were destroyed during the excavation (Pacific Testing 1993b).

Monitoring Well Installation and Monitoring (1993)

Groundwater monitoring wells SW and NE (replacements for wells MW-1 and MW-2, respectively) were installed and well MW-B was decommissioned in May 1993. Soil samples were not collected from the new well borings. Groundwater samples were collected from wells MW-1 and MW-2 and analyzed for diesel-range hydrocarbons and VOCs. Diesel-range hydrocarbon concentrations in both wells were equal to the MTCA Method A cleanup level of 1,000 ppb. Chlorobenzene exceeded the MTCA Method A cleanup level in wells MW-1 and MW-2. Xylenes exceeded the MTCA Method A cleanup level in well MW-2 (Pacific Testing 1993b).

A groundwater sample was collected from well MW-2/NE in July 1993 and analyzed for VOCs. Chlorobenzene and 1,4-dichlorobenzene exceeded MTCA Method B cleanup levels. Ethylbenzene and xylenes exceeded MTCA Method A cleanup levels (Pacific Testing 1993c).

Environmental Assessment (1993)

An environmental assessment was performed at the property by Applied Geotechnology, Inc. (AGI) in 1993 as part of a pre-purchase due diligence review. AGI reviewed historical property records and determined that the heating oil UST, identified during the Level I Environmental Site Assessment, had been removed in April 1992. Soil samples collected from the UST excavation indicated that no contamination was present. AGI indicated that the previous environmental studies did not fully define the source and extent of contamination at the Sahlberg property. AGI concluded that the most obvious sources of contamination would be spills and leakage from the drums stored in the unpaved area at the southeast corner of the site and indicated the equipment wash area was another possible source, due to the use of solvents in wash activities and the poor condition of the pavement. Solvents may have infiltrated the subsurface through cracks in the pavement. Additionally, AGI concluded that petroleum-contaminated soils below 1 foot bgs had not been removed during the 1993 remedial excavation (AGI 1993).

AGI installed two additional groundwater monitoring wells (AGI1 and AGI2) on the property (Figure C-13) and collected groundwater samples from wells MW-A, SW, and NE in May 1993. Soil and groundwater samples were collected and analyzed for diesel- and heavy oil-range hydrocarbons. The groundwater samples were also analyzed for aromatic and halogenated VOCs. In soil, heavy oil-range hydrocarbons exceeded the MTCA Method A cleanup level in the boring for well AGI1. In groundwater, diesel- and heavy oil-range hydrocarbons, chlorobenzene, 1,4-dichlorobenzene, 1,1-DCA, ethylbenzene, and xylenes exceeded the MTCA Method A cleanup levels. Diesel- and heavy oil-range hydrocarbons were detected below cleanup levels and VOCs were not detected in wells AGI1 and MW-A. AGI concluded that soil contamination may be coming from historical use of oil as dust control, asphalt tack coat application, or storage/maintenance of heavy equipment. Groundwater contamination may have come from the wash area and improper storage of drums on exposed soil (AGI 1993).

Potential for Sediment Recontamination

The former Sahlberg Equipment property is included in this Data Gaps Report because contaminated groundwater associated with the facility may become part of combined sewer discharge to the S Brandon Street CSO.

Sediment COCs have not been detected at this facility. No exceedances of soil-to-sediment or groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps have been identified for this property.

C-3.2.4 Shell 121430

Facility Summary: Shell 121430	
Tax Parcel No.	5367201160
Address	Operating: 600 S Michigan Street Parcel: 650 S Michigan Street
Property Owner	B&G Chandler LLC
Parcel Size	0.47 acre (20,563 sq ft)
Facility/Site ID	19688471
SIC Code(s)	5541 Gasoline Service Stations
EPA ID No.	WAD988504056
NPDES Permit No.	None
UST/LUST ID No.	4487 (UST) 309690 (LUST release)

The Shell 121430 property, shown as Facility 109 in Figure C-2, is located at the northeast corner of the intersection between 6th Avenue S and S Michigan Street. One building, a 1,914 sq ft convenience store constructed in 1968, is present on the triangular-shaped parcel.

Shell 600 Michigan, Texaco 121430, Texaco Station 632320400 UST 4487, and Texaco Station Michigan are alternative names for this facility.

The property is underlain by brown sandy fill to approximately 4 feet bgs and interbedded sandy clay and silty sand beneath the fill. Groundwater is encountered at approximately 8.5 feet bgs (ESE 1995).

Current Operations

A Shell service station currently operates at the property. Additional information on current operations at the facility was not available for review.

Historical Operations

In 1986, six USTs were installed on the property, including four 10,000-gallon USTs, one 1,000-gallon heating oil UST, and one 550-gallon waste oil UST (Tanknology 1991; NDE Environmental 1993). The 10,000-gallon USTs stored gasoline and diesel. The tanks were installed in 1986. All five tanks passed tightness testing performed in November 1991 (Tanknology 1991). The 10,000-gallon USTs passed tightness testing performed in November 1992 (Tanknology 1992), November 1993 (NDE Environmental 1993), September 2007, and August 2008 (Northwest Tank 2007, 2008). The 1,000-gallon heating oil UST also passed tightness testing in November 1993 (NDE Environmental 1993).

The 550-gallon waste oil UST was removed in March 1994 during station upgrade activities (ESE 1995).

Regulatory History

Ecology performed a UST inspection at the facility in June 2003. Only one item of non-compliance was noted: the overfill alarm was not set at 90% or audible to the delivery driver. Station employees arranged for the alarm to be repaired while the Ecology inspectors were at the facility (Ecology 2003b).

Ecology performed a UST inspection at the facility in October 2008. The USTs at the facility were determined to be in compliance (Ecology 2008c).

Environmental Investigations and Cleanups

One environmental investigation has been conducted at the Shell 121340 property. Soil sampling locations are presented on Figure C-14. Soil analytical results are presented in Table C-18.

UST Removal and Compliance Soil Sampling (1994)

Soil samples were collected during service station upgrades, including the removal of the 550-gallon waste oil UST, and installation of Stage II vapor recovery lines to the UST complex. The dispenser islands were removed prior to installing the vapor recovery lines. Seven soil samples were collected below the dispenser islands and in the new piping trenches between 2 and 4 feet bgs. The soil samples were analyzed for TPH and BTEX. Diesel- and gasoline-range hydrocarbons and BTEX concentrations exceeded the MTCA Method A cleanup level (ESE 1995).

The UST excavation extended to 7 feet bgs. Two sidewall samples and a bottom sample were collected from the excavation and analyzed for heavy oil-range hydrocarbons. Heavy oil-range hydrocarbons were not detected in the soil samples (ESE 1995).

Potential for Sediment Recontamination

Historical activities at the facility have resulted in soil contamination beneath the property. Soil and possibly groundwater have been contaminated by petroleum hydrocarbon constituents; these

contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have not been detected at this facility. No exceedances of soil-to-sediment levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps have been identified for this property.

C-3.3 LUST Facilities

Information regarding current and historical operations, regulatory history, and environmental investigations at the LUST facilities is included in this section of the Data Gaps Report. Because these facilities are not adjacent to the LDW, surface runoff directly to the waterway, bank erosion, and spills directly to the waterway are not potential sediment recontamination pathways and therefore are not discussed further in this section. The locations of these facilities are shown on Figure C-5.

C-3.3.1 Draper Machine Works, Inc.

Facility Summary: Draper Machine Works, Inc.	
Tax Parcel No.	3573700255
Address	5055 4th Avenue S
Property Owner	Draper Associates
Parcel Size	2.21 acres (96,165 sq ft)
Facility/Site ID	75459442
SIC Code(s)	6726 Investment Offices, Not Elsewhere Classified
EPA ID No.	WAD982657959 (Inactive)
NPDES Permit No.	None
UST/LUST ID No.	3876 (UST) 1630 (LUST Release ID)

The Draper Machine Works parcel, shown on Figure C-5 as Facility 47, is located on the north side of S Dawson Street between 3rd and 4th Avenues S. The GE Aviation property (Section C-3.2.2) is west of the property and the UPRR Dawson Street property is east of Draper Machine. There is one building on the property, a 28,500 sq ft warehouse, constructed in 1949.

The property is underlain by approximately 4 feet of gravelly sand followed by fine- to medium-grain sand to 10.5 feet bgs. Groundwater is encountered at approximately 10.5 feet bgs (Hart Crowser 1991).

Current Operations

Information on current operations at this property was not available for review.

Historical Operations

Between 1950 and 1979, Howard Cooper operated a construction equipment maintenance, parking, and storage facility. A 1,000-gallon waste oil UST was installed on the property in 1960 and a 1,500-gallon diesel UST was installed on the property in 1965 (Hart Crowser 1991).

Regulatory History

In November 1991, Hart Crowser, on behalf of the property owner, notified Ecology that a petroleum hydrocarbon release had occurred on the property (Hart Crowser 1991).

Environmental Investigations and Cleanups

Two environmental investigations and cleanups have been performed at the former Draper Machine property. Soil sample locations are shown on Figure C-15. Soil analytical data are presented in Table C-19.

Underground Storage Tank Removal and Assessment (1989)

A waste oil UST and a diesel UST were removed from the property in March 1989 (Draper Machine 1990). Soil samples were collected from the UST excavations and analyzed for TPH and BTEX. TPH concentrations exceeded the MTCA Method A cleanup levels in both excavations (Hart Crowser 1991).

Underground Storage Tank Soil Assessments (1989 and 1991)

In April 1989 one test pit and four hand auger borings were advanced around the former diesel UST excavation and five test pits were excavated around the former waste oil UST excavation. Nine soil samples (18 samples total) were collected from each area, nine soil samples were analyzed for TPH, and one soil sample was analyzed for chlorinated solvents. Hydrocarbon contamination above the MTCA Method A cleanup levels was present approximately 0.5 to 6 feet around the former diesel UST excavation and approximately 1 to 15 feet around the former waste oil UST at a depth of 10.5 feet bgs (Hart Crowser 1991).

In July 1989, petroleum-contaminated soils were removed from the former UST excavations. Following these excavations, TPH concentrations exceeding the MTCA Method A cleanup levels remained on the north and west sidewalls of the former waste oil UST excavation and on the south and east sidewalls of the former diesel UST excavation. In August, an additional excavation was performed to remove the petroleum-contaminated soil from the south and east sidewalls of the former diesel UST excavation (Hart Crowser 1991).

In February 1991, an additional excavation was performed to remove petroleum-contaminated soil from the north, east, and west sidewalls and the bottom of the former waste oil UST excavation. Soil removal from the eastern sidewall extended 25 feet east of the initial investigation. TPH concentrations remaining in soil following the excavation were below the MTCA Method A cleanup levels (Hart Crowser 1991).

Approximately 300 tons of petroleum-contaminated soil were removed from the UST excavations. The soil was treated on the property.

Potential for Sediment Recontamination

Historical activities at the facility have resulted in soil contamination beneath the property. Soil and possibly groundwater have been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have been detected in soil at this facility; however, no exceedances of soil-to-sediment levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps were identified for the former Draper Machine.

C-3.3.2 Environmental Transport Inc.

Facility Summary: Environmental Transport Inc.	
Tax Parcel No.	5263301179, 3573200845
Address	54 and 55 S Dawson Street
Property Owner	Dawson Street Land Company
Parcel Size	0845: 3.37 acres (146,773 sq ft) 1179: 0.94 acre (40,880 sq ft)
Facility/Site ID	22245293 (Emerald City Disposal Dawson St) 28825715 (West Pac Environmental Inc) 36716241 (Environmental Transport Inc.) 4961762 (West Pac Environmental)
SIC Code(s)	4212 Local Trucking, without Storage 4953 Refuse Systems 7699 Repair Services, Not Elsewhere Classified 8744 Facility Support Services
EPA ID No.	WAD007943194 (Emerald City Disposal Dawson St) WAD980982532 (Environmental Transport Inc.) (Inactive) WAD988518031 (West Pac Environmental) (Inactive) WAH000001271 (West Pac Environmental Inc.) (Inactive)
NPDES Permit No.	None
UST/LUST ID No.	Emerald City Disposal Dawson Street 101485 (UST) Environmental Transport Inc. 7423 (UST) 3568 (LUST Release ID)

Environmental Transport Inc. is located on two parcels located near the intersection of Utah Avenue S and S Dawson Street. It is shown as Facility 55 on Figure C-5. Parcel 0845 is located at the northwest corner of the intersection and is bordered by Colorado Avenue S to the west, S Hudson Street to the north, Utah Avenue S to the east, and S Dawson Street to the south. Three buildings are present on parcel 0845: a 9,229 sq ft warehouse and office; a 42,984 sq ft warehouse with loading docks; and a 6,234 sq ft service garage. All three buildings were constructed in 1950.

Parcel 1179 is located at the southwest corner of the intersection. Eagle Systems Inc. (Facility/Site ID 87626746) is immediately west of the parcel, S Dawson Street borders the parcel to the north, Utah Avenue S borders the parcel to the east, and the SEA-DRU-NAR Recycling property (Section C-3.3.4) is immediately south of the parcel. Parcel 1179 is vacant.

Alternate names for the property include: Allied Waste Services, Emerald City Disposal Dawson St, NW Waste Emerald City Disposal, Seattle Disposal, and West Pac Environmental.

Current and Historical Operations

No information regarding current or historical operations at the Environmental Transport Inc. property was available for review.

Regulatory History

According to the ISIS database, eight USTs have been removed from the property and three USTs have been closed-in-place on the property.

Environmental Investigations and Cleanups

Two environmental investigations have been performed at the Environmental Transport Inc. property. Environmental sampling locations are shown on Figure C-16.

<u>UST Removal (1991)</u>

In November 1991, a 5,000-gallon diesel UST was removed from the property at 55 S Dawson Street (parcel 1179). Three soil samples and one groundwater sample were collected from the UST excavation. Groundwater was encountered at 10.5 feet bgs. The samples were analyzed for diesel-range hydrocarbons. Diesel-range hydrocarbons were detected in one soil sample at a concentration of 56 ppm; diesel-range hydrocarbons were not detected in the groundwater sample (Benz 1991).

<u>UST Removal (1992)</u>

In July 1992, nine USTs were removed from the property, including two 8,000-gallon and one 20,000-gallon waste oil USTs, four 10,000-gallon diesel USTs, one 500-gallon heating oil UST, and one 3,500-gallon heating oil UST (Benz 1992). The tank removal checklist indicates that no releases from the USTs were confirmed; however, handwritten notes indicate that a UST closure

report was prepared and the results of the site check/site assessment were to be forwarded to Ecology. The report and results indicated on the checklist were not available for review.

Potential for Sediment Recontamination

Historical activities at the facility may have resulted in soil and groundwater contamination beneath the property. Soil and groundwater may have been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have not been detected at this facility. No exceedances of soil-to-sediment or groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps were identified for the Environmental Transport Inc. property.

C-3.3.3 Loomis Fargo & Company

Facility Summary: Loomis Fargo & Company	
Tax Parcel No.	1924049001
Address	5200 East Marginal Way S
Property Owner	Loomis Fargo & Co.
Parcel Size	0.91 acres (39,578 sq ft)
Facility/Site ID	67737549
SIC Code(s)	9999 Nonclassifiable Establishments 56163 Armored Car Services (NAICS Code)
EPA ID No.	WAR000004580 (Inactive)
NPDES Permit No.	None
UST/LUST ID No.	12101 (UST) 1979 (LUST Release ID)

The Loomis & Fargo Company (Loomis) property, shown on Figure C-5 as Facility 74, is located at the southeast corner of the intersection between East Marginal Way S and S Dawson Street. The property is bordered by East Marginal Way S to the west and S Dawson Street to the north. Eagle Systems, Inc. (Facility/Site ID 87626746) is immediately to the east and SEA-DRU-NAR Recycling (Section C-3.3.4) is immediately south of the property.

According to King County Tax Assessor records, one building is present on the property, an 11,839 sq ft industrial light manufacturing building, constructed in 1953. The property name is listed as Loomis Armored Car Service.

Groundwater is encountered at 12 feet bgs (EMCON 1991).

Current Operations

Loomis provides armored transport services for the cash handling services industry from its location at 5200 East Marginal Way S (Loomis 2009). An administrative and dispatch building is located at the northwest corner of the property. A maintenance shop is attached to the south side of the building (EMCON 1991). No additional information regarding current operations at the facility was available for review.

Historical Operations

No information regarding historical operations at the Loomis property was available for review.

Regulatory History

In January 1990 Ecology received a complaint regarding UST removal operations at Loomis. Apparently, Loomis planned to use contaminated soil as backfill in the UST excavation (Ecology 1990a).

Environmental Investigations and Cleanups

One environmental investigation and one cleanup have been performed at the Loomis property. Soil sample locations are shown on Figure C-17. Soil sample analytical data are presented on Table C-20.

UST Removal (1990)

In January 1990, three USTs and a dispenser island were removed from the property. Product lines were drained and abandoned in place. The three USTs included one 550-gallon waste oil UST, one 6,000-gallon gasoline UST, and one 7,500-gallon diesel UST. The gasoline and diesel USTs were removed in a single excavation. Neither tank showed evidence of leakage. Petroleum odors and staining were observed in soil on the northern side of the gasoline and diesel UST excavation area. Approximately 165 cubic yards of petroleum-contaminated soil was removed from the property. Four soil samples were collected from the excavation sidewalls and analyzed for TRPH, gasoline-range hydrocarbons, and BTEX. Gasoline-range hydrocarbons were detected in one sample at a concentration of 2,070 ppm. Benzene concentrations ranged from 0.12 ppm to 36 ppm, toluene concentrations ranged from 0.056 ppm to 250 ppm, ethylbenzene concentrations ranged from 0.14 ppm to 80 ppm, and xylenes concentrations ranged from 0.84 ppm to 540 ppm. Excavated soil that was designated as “clean” using field-screening methods was used as backfill in the excavation (EMCON 1991).

The 550-gallon waste oil UST was removed in a separate excavation. The UST did not show any signs of leakage when removed. The bottom of the UST had been supported by a concrete cradle. Excavated soils did not show any signs of petroleum contamination. The excavation was lined with plastic and backfilled with the excavated soil. One composite soil sample was collected from the north and south sidewalls of the excavation. The sample was analyzed for TRPH, VOCs, and heavy metals. Arsenic, chromium, copper, lead, magnesium, zinc, and VOCs were detected in the sample (EMCON 1991).

The dispenser island area was excavated until field screening indicated the absence of petroleum hydrocarbons. Approximately 2 cubic yards of soil were impacted by petroleum hydrocarbons in this area (EMCON 1991).

Soil Vapor Extraction (1990)

A soil venting system was installed in the gasoline and diesel UST excavation in January 1990, prior to backfilling the excavation. The system consisted of five vertical vapor extraction wells; three wells were placed in the petroleum-contaminated soil and two wells were placed in the "clean" soil. At system startup, BTEX concentrations were 506 ppb and declined to nondetectable after four months of continuous operation (EMCON 1991).

Verification soil samples were collected in the northern half of the former UST complex. The four soil samples were analyzed for BTEX and TRPH. BTEX was not detected in any of the soil samples. TRPH was detected below MTCA Method A cleanup levels in all four samples (EMCON 1991).

Potential for Sediment Recontamination

Historical activities at the facility have resulted in soil contamination beneath the property. Soil and possibly groundwater have been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have not been detected at this facility, with the exception of single detections of arsenic, chromium, copper, and lead in soil. The arsenic concentration exceeded the MTCA Method B cleanup level. No exceedances of soil-to-sediment have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps were identified for the Loomis property.

C-3.3.4 Former National Transfer Inc. Seattle

Facility Summary: Former National Transfer Inc. Seattle	
Tax Parcel No.	0005000001, 1924049119, 5263301245, 5263301280
Address	Operating: 5265 Utah Avenue S 0001: 28 S Brandon Street 1245 & 1280: None 9119: 5810 East Marginal Way S
Property Owner	SEA-DRU-NAR Recycling
Parcel Size	0001: 1.23 acres (53,600 sq ft) 1245: 0.74 acre (32,333 sq ft) 1280: 0.44 acre (19,005 sq ft) 9119: 0.31 acre (13,606 sq ft)
Facility/Site ID	49423263 (SEA-DRU-NAR Recycling) 73845797 (National Transfer Inc.)
SIC Code(s)	4212 Local Trucking without Storage 4214 Local Trucking with Storage
EPA ID No.	WAD988523205 (SEA-DRU-NAR Recycling)
NPDES Permit No.	None
UST/LUST ID No.Text	10267 (UST) 1844 (LUST Release ID)

The former National Transfer Inc. (National Transfer) property, shown on Figure C-5 as Facility 87, is located at the northwest corner of the intersection between East Marginal Way S and S Brandon Street. The property is bordered by East Marginal Way S to the west, S Brandon Street to the south, and Utah Avenue to east. Loomis (Section C-3.3.3) and Eagle Systems, Inc. (Facility/Site ID 87626746) are immediately to the north of the property.

According to King County Tax Assessor records, parcels 1245, 1280, and 9119 are vacant. The present use of parcel 1280 is listed as Terminal (Auto/Bus/Other). The SEA-DRU-NAR Training building is on parcel 0001. The Training building consists of a 7,460 sq ft industrial light manufacturing building constructed in 1961, and a 46,340 sq ft warehouse constructed in 2001.

Current Operations

SEA-DRU-NAR Recycling is the current operator at the property, using 28 S Hudson Street as its operating address. SEA-DRU-NAR Recycling specializes in recycling office paper and also accepts cardboard, newspapers, magazines, and aluminum cans. The company sorts, bales, and ships recyclable materials nationally and internationally for repulping. SEA-DRU-NAR Recycling provides recycling containers, pick-up services, and document destruction services to businesses throughout the Puget Sound region. SEA-DRU-NAR also buys clean paper, aluminum cans, and PET bottles from the public and sells baled products. Proceeds are used to support the Seattle Drug and Narcotics Center (SEA-DRU-NAR), a long-term drug and alcohol treatment center (SEA-DRU-NAR Recycling 2009).

Historical Operations

National Transfer Inc. historically operated at the property, using 5265 Utah Avenue S as its operating address. National Transfer was a trucking company. National Transfer performed truck maintenance and washing activities on the property. A 6-foot-deep by 12-foot-long steam pit was used in these activities (Ecology 1993a). A 500-gallon diesel UST was present at the northwest corner of the property and a 1,000-gallon diesel UST was present at the southeast corner of the property (Eco-Tec 1995).

Regulatory History

National Transfer notified Ecology that contaminated soil was found on the property during UST removal activities performed in May 1990 (National Transfer 1990). In October 1990, Ecology determined that remediation performed to address the petroleum-contaminated soil met Ecology's cleanup standards (Ecology 1990b).

In August 1993, Ecology received a complaint that during truck maintenance activities, National Transfer drained all fluids to a steam pit and then cleaned the trucks over the steam pit. Fluids and wash water were allowed to accumulate in the steam pit for approximately 15 years. When the steam pit was drained, the fluids and wash water were allegedly pumped to a sump in the right-of-way. A representative of National Transfer reported that wastes from the steam pit are drained to an OWS prior to discharge to the sanitary sewer. Ecology referred the complaint to METRO (Ecology 1993a).

Ecology inspected the National Transfer facility in October 1992. Drums and containers of new oil and waste oil were stored in an uncontrolled outdoor area (Ecology 1992b). The inspector noted the need for better BMPs for container storage and indicated that runoff from the facility drains to an OWS which discharged to the sanitary sewer (Ecology 1992a).

Environmental Investigations and Cleanups

Two environmental investigations and cleanups have been performed at the former National Transfer property.

<u>UST Removal and Remedial Action (1990)</u>

The 500-gallon diesel UST and 1,000-gallon diesel UST were removed in May 1990. Contaminated soil was observed in the UST excavation, apparently resulting from a leak in the diesel UST. Four soil samples were collected and analyzed for TRPH and BTEX. All samples contained concentrations of TRPH (maximum 40,000 ppm) exceeding the MTCA Method A cleanup levels for petroleum hydrocarbons. Toluene, ethylbenzene, and xylenes concentrations in soil were below the MTCA Method A cleanup levels (Eco-Tec 1995). Soil sample locations and names were not available for review.

In-situ treatment was performed to remediate petroleum-contaminated soil (Eco-Tec 1990). Post-treatment soil samples indicated concentrations of TPH below cleanup levels (Eco-Tec 1995).

Subsurface Sediment and Groundwater Assessment (1995)

In September 1995, three monitoring wells were installed on the property (Figure C-18). Soil and groundwater samples were analyzed for hydrocarbon identification (soil only), gasoline- and diesel-range hydrocarbons (groundwater only), BTEX, eight RCRA metals, and halogenated VOCs. Hydrocarbons were not identified in soil. Gasoline-range hydrocarbons were the only analyte detected in groundwater; the concentration was 470 ppb (Eco-Tec 1995). This concentration exceeded the MTCA Method A cleanup level by an exceedance factor of 5.

Potential for Sediment Recontamination

Historical activities at the facility have resulted in groundwater contamination beneath the property. Groundwater has been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have not been detected at this facility. No exceedances of soil-to-sediment or groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps have been identified for the former National Transfer property.

C-3.3.5 PNB Building

Facility Summary: PNB Building	
Tax Parcel No.	1722800985
Address	Operating: 707 S Orcas Street Parcel: 5815 Padilla Place S
Property Owner	King County
Parcel Size	1.80 acres (78,357 sq ft)
Facility/Site ID	27585467
SIC Code(s)	None
EPA ID No.	None
NPDES Permit No.	None
UST/LUST ID No.	200597 (UST) 3034 (LUST Release ID)

The PNB building property is located in the Georgetown area of Seattle. It is shown on Figure C-5 as Facility 97. The property is bordered by 7th Avenue S to the northwest, S Orcas Street to the northeast and residential properties, Padilla Place S to the southeast, and S Fidalgo Street to the southwest. King County purchased the property from Broadacres LLC in January 2006. A 27,680 sq ft office building and warehouse, constructed in 1968, is present on the property.

The property is underlain by 4 feet of interbedded silty sand and clayey sand, followed by dark grey to black sand to 13 feet bgs (maximum depth explored). Groundwater is encountered between 12 and 13 feet bgs (SEACOR 1990). Groundwater flows to the west (ENSR 1991b).

Current Operations

King County Fleet Administration appears to be the current operator at the property. Information on the current operations at the property was not available for review.

Historical Operations

Boeing Computer Services occupied the building and U.S. West used the secured parking area for its telephone repair vehicles in 1991 and 1992 (ENSR 1991b; Diagnostic Engineering 1992). Additional information regarding historical operations at the property was not available for review.

Regulatory History

In January 1992, Diagnostic Engineering notified Ecology that petroleum hydrocarbons had been released to the subsurface from the former dispenser island and product lines. In March 1992, Ecology indicated that proper procedures had been followed to fulfill the requirements for tank closure and remediation of potential releases of petroleum (Diagnostic Engineering 1992).

Environmental Investigations and Cleanups

Three environmental investigations have been performed at the property. Soil and groundwater sample locations are shown on Figures C-19 and C-20, respectively. Chemical data for soil and groundwater samples are presented on Tables C-21 and C-22, respectively.

Underground Storage Tank Removal (1990)

Three USTs and the associated pipelines and dispenser island were removed from the property in 1990. The USTs consisted of a 5,000-gallon and an 8,000-gallon UST, both used to store gasoline, and a 300-gallon UST used to store heating oil. Two stub outs for dispensers were present in the island, but dispensers were not present. No evidence of leakage was observed when the USTs were removed from the subsurface. The USTs and dispenser islands were removed in four separate excavations. Moderate to strong hydrocarbon odors were observed at 12 feet bgs in the 8,000-gallon UST excavation and in the dispenser island excavation. Five soil samples were collected from each of the excavations; 18 samples were submitted for laboratory analysis for TPH and BTEX. Gasoline-range hydrocarbons and BTEX concentrations exceeded the MTCA Method A cleanup levels in one sample, PI-1, collected from the dispenser island excavation (SEACOR 1990). Approximately 175 to 200 cubic yards of contaminated soil were removed from the property (Diagnostic Engineering 1992).

Remedial Excavation and Confirmation Sampling (1991)

In March 1991, 25 cubic yards of soil were removed from the base of the pump island excavation. Four soil samples were collected from the sidewalls of the excavation. Two grab groundwater samples were collected after groundwater had infiltrated the excavation. Soil and groundwater samples were analyzed for gasoline-range hydrocarbons, BTEX, and lead. Gasoline-range hydrocarbons and xylenes were detected in soil at concentrations below the MTCA Method A cleanup levels. In groundwater, gasoline-range hydrocarbons, xylenes, and total lead were present above MTCA Method A cleanup levels (ENSR 1991a).

Groundwater Investigation (1991)

In April 1991, three groundwater monitoring wells, MW-1 through MW-3, were installed on the property. Soil samples were not collected from the well borings. Groundwater samples were collected from the wells in May 1991 and analyzed for BTEX and total lead. BTEX was not detected in the groundwater samples. Total lead was detected in only one well, at a concentration of 31.8 micrograms per liter (µg/L), which exceeded the MTCA Method A cleanup level (ENSR 1991b).

In October 1991, all three groundwater monitoring wells were sampled. The groundwater samples were analyzed for organic and total lead. Neither organic nor total lead were detected in the groundwater samples (Diagnostic Engineering 1992).

Potential for Sediment Recontamination

Historical activities at the facility have resulted in soil and groundwater contamination beneath the property. Groundwater has been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs, with the exception of lead, have not been detected at this facility. No exceedances of soil-to-sediment have been observed. Lead concentrations in groundwater have exceeded the groundwater-to-sediment screening levels; however, these data are 19 years old. Additionally, this facility is over 3,000 feet east of the LDW. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps have been identified for the former PNB Building property.

C-3.3.6 Former Western Parcel Express Seattle

Facility Summary: Western Parcel Express Seattle	
Tax Parcel No.	5367200820
Address	525 S Front Street
Property Owner	Hirao Otani Enterprises LLC
Parcel Size	2.20 acres (95,880 sq ft)
Facility/Site ID	39473625
SIC Code(s)	4215 Courier Services, except by air
EPA ID No.	WAD988468518 (Inactive)
NPDES Permit No.	None
UST/LUST ID No.	97775 (UST) 491225 (LUST Release ID)

The property, shown on Figure C-5 as Facility 124, is located at the southeast corner of the intersection between 5th Avenue S and S Front Street. A 44,476 sq ft warehouse, constructed in 1960, is the only building on the property. Air Data Express, Inc. is an alternate name for the facility.

The property is underlain by approximately 11 feet of medium sand. Clay is present at 12 feet bgs. Groundwater is encountered at approximately 10 feet bgs (NW Construction 1999). Groundwater flow direction is to the north northeast (Treadwell & Rollo 2000).

Current Operations

Current operations at the property are unknown.

Historical Operations

Western Parcel operated at the property until 1999 or 2000 (NW Construction 1999; Treadwell & Rollo 2000). No additional information regarding historical operations at the property was available for review.

Regulatory History

No records of regulatory actions regarding the property were available for review.

Environmental Investigations and Cleanups

Several environmental investigations have occurred at the former Western Parcel property. Soil and groundwater sample locations are shown on Figures C-21 and C-22, respectively. Analytical results for soil and groundwater samples are presented in Tables C-23 and C-24, respectively.

Underground Storage Tank Removal and Remedial Excavation (1999)

A 6,000-gallon diesel UST and a 10,000-gallon gasoline UST were removed from the property in March 1999. Soil contaminated with gasoline was discovered at the western end of the gasoline UST excavation and beneath the UST. Groundwater within the excavation was contaminated with petroleum. Approximately 326 tons of petroleum-contaminated soil was removed from the property and sent to the LaFarge Corporation for recycling and 1,500 gallons of petroleum-contaminated groundwater was removed from the property. Ten soil samples were collected from the sidewalls and bottom of the excavation. Contaminated soil remained at the southern side of the excavation, adjacent to the building. Additional soil could not be removed without damaging the building (NW Construction 1999; Treadwell & Rollo 2000). Fuel pumps and associated piping and an OWS was also removed (Treadwell & Rollo 2000).

Groundwater Monitoring Well Installation (2000)

Three groundwater monitoring wells, MW-1 through MW-3, were installed on the property in February 2000. Low concentrations of gasoline-range hydrocarbons and BTEX were present in well MW-1. Diesel- and heavy oil-range hydrocarbons were detected in the well at concentrations exceeding the MTCA Method A cleanup level. Well MW-1 was installed in the UST excavation backfill. In groundwater, gasoline and diesel-range hydrocarbons and BTEX concentrations exceeded the MTCA Method A cleanup levels (ATC 2000).

Soil and Groundwater Investigation (2000)

In May 2000, eleven soil borings (TR-1 through TR-11) were advanced on the property to define the extent of residual petroleum hydrocarbons in soil and petroleum hydrocarbons in groundwater. Soil samples and a grab groundwater sample were collected from each boring. Groundwater samples were also collected from wells MW-1 through MW-3. Two soil samples and 14 groundwater samples were analyzed for TPH and BTEX. No analytes were detected in soil. Gasoline-range hydrocarbons and BTEX were detected in groundwater. Benzene and xylenes concentrations in one groundwater sample exceeded the MTCA Method A cleanup levels (Treadwell & Rollo 2000).

Monitoring Well Installation (2000)

One groundwater monitoring well, MW-4, was installed on the property, and groundwater monitoring wells MW-1 through MW-4 were sampled in November 2000. Soil samples were not collected for laboratory analysis during the installation of well MW-4. Groundwater samples were analyzed for TPH and BTEX. TPH-g and BTEX concentrations exceeded the MTCA Method A cleanup levels. No analytes were detected in well MW-4 (Treadwell & Rollo 2001a).

Groundwater Monitoring (2001)

Two groundwater monitoring events were performed in February and June 2001. Wells MW-1 through MW-4 were sampled during each event. Groundwater samples were analyzed for TPH and BTEX. Analytical results were consistent with historical groundwater data: TPH-g and

BTEX concentrations exceeded the MTCA Method A cleanup levels in wells MW-1 and MW-3 (note that toluene was not detected in well MW-3, which was consistent with previous results). No analytes were detected in wells MW-2 and MW-4 (Treadwell & Rollo 2001b, 2001c).

Potential for Sediment Recontamination

Historical activities at the facility have resulted in soil and groundwater contamination beneath the property. Groundwater has been contaminated by petroleum hydrocarbon constituents; these contaminated media may infiltrate the combined sewer system and be discharged to the LDW via the combined sewer discharge pathway.

Sediment COCs have not been detected at this facility. No exceedances of soil-to-sediment or groundwater-to-sediment screening levels have been observed. Therefore, the potential that contaminants from this property will impact sediments associated with the KC Lease Parcels source control area is very low.

Data Gaps

No facility-specific data gaps have been identified for the former Western Parcel property.

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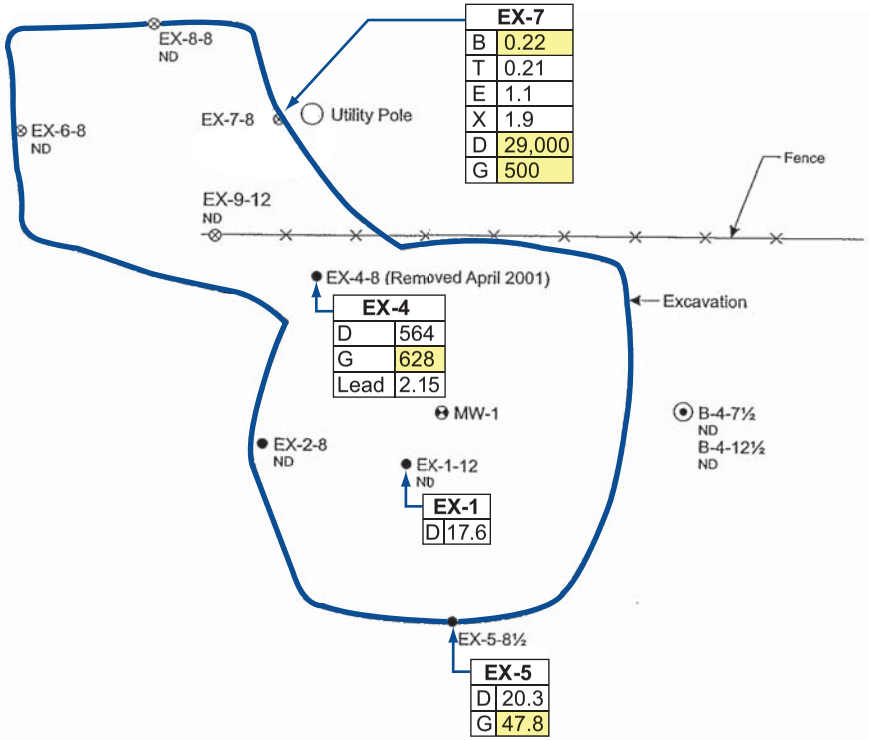
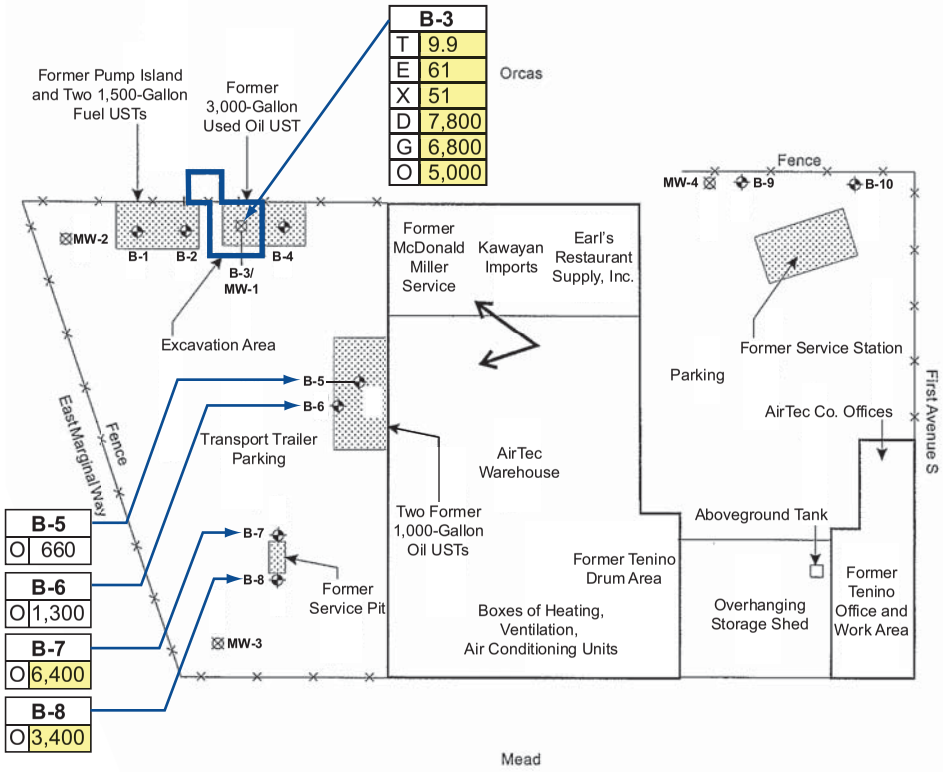
Detail of Excavation Area





LEGEND

EX-4-8 ●	April 2000 soil sample location ID and depth below grade in feet
EX-6-8 ⊗	April 2001 soil sample location ID and depth below grade in feet
B-4-7½ ⊙	June 1994 phase II boring and sample depth below grade in feet
MW-1 ⊖	Groundwater monitoring well
ND	TPH not detected

0 6 12
Scale in Feet

0 50 100
Approximate Scale in Feet

Notes:

B: Benzene
T: Toluene
E: Ethylbenzene
X: Xylenes, total
D: Diesel-Range Hydrocarbons
G: Gasoline-Range Hydrocarbons
O: Heavy-Oil-Range Hydrocarbons

All results in milligrams per kilogram.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-13 for cleanup levels and exceedance factors.

LEGEND

B-1 ⊕	Soil boring
MW-1 ⊠	Monitoring well
⇗⇖	Typical range of groundwater flow

Source: URS 2002

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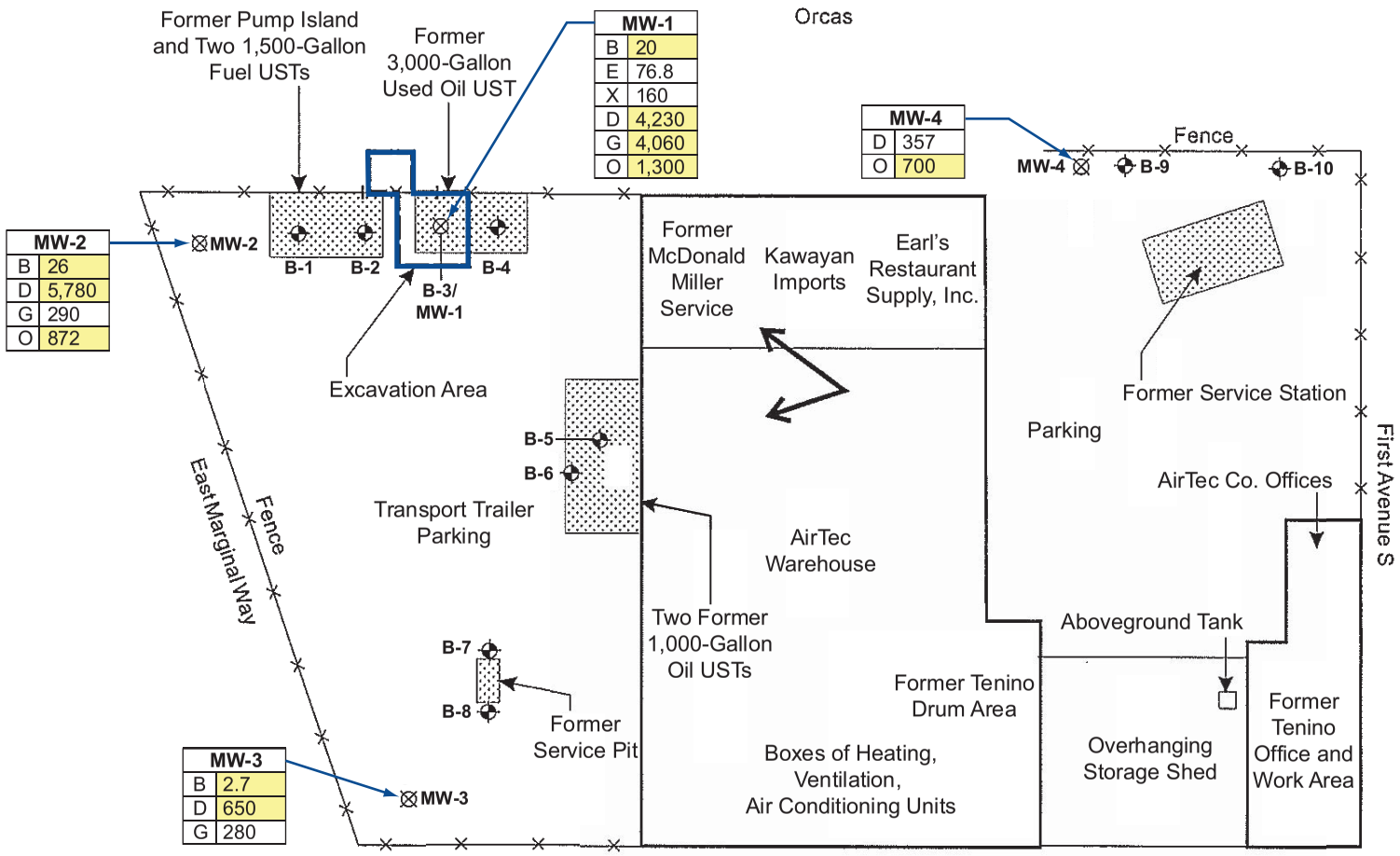
Figure C–8. Former Air Tec Property
Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington



Notes:

B: Benzene
E: Ethylbenzene
X: Xylenes, total
D: Diesel-Range Hydrocarbons
G: Gasoline-Range Hydrocarbons
O: Heavy-Oil-Range Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-14 for cleanup levels and exceedance factors.

Mead

LEGEND

B-1 Soil boring

MW-1 Monitoring well

Typical range of groundwater flow

0 50 100

Approximate Scale in Feet

Source: URS 2002

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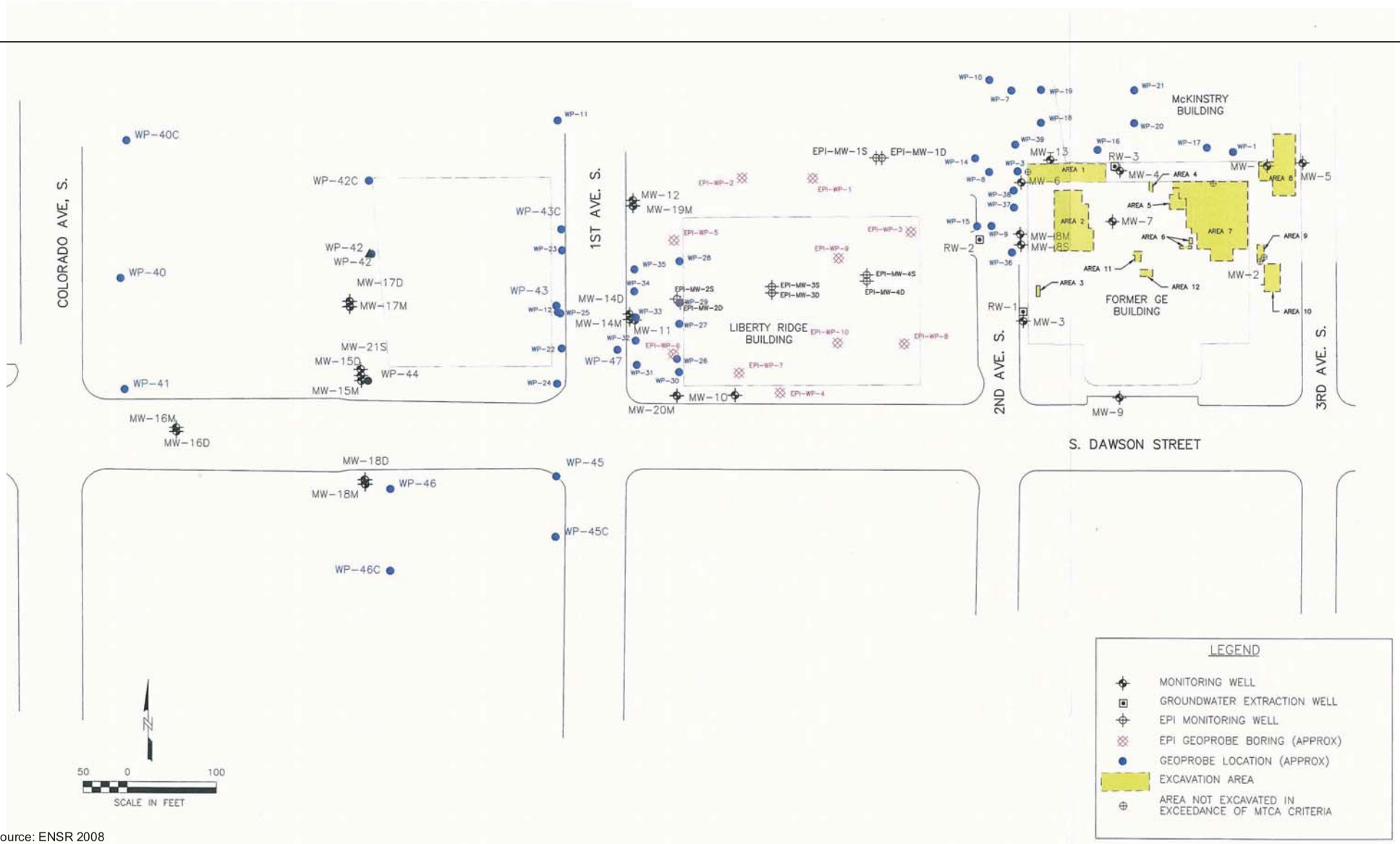
Figure C–9. Former Air Tec Property
Historical Maximum Chemical Concentrations in Groundwater

DEPARTMENT OF ECOLOGY State of Washington



Source: ENSR 2008

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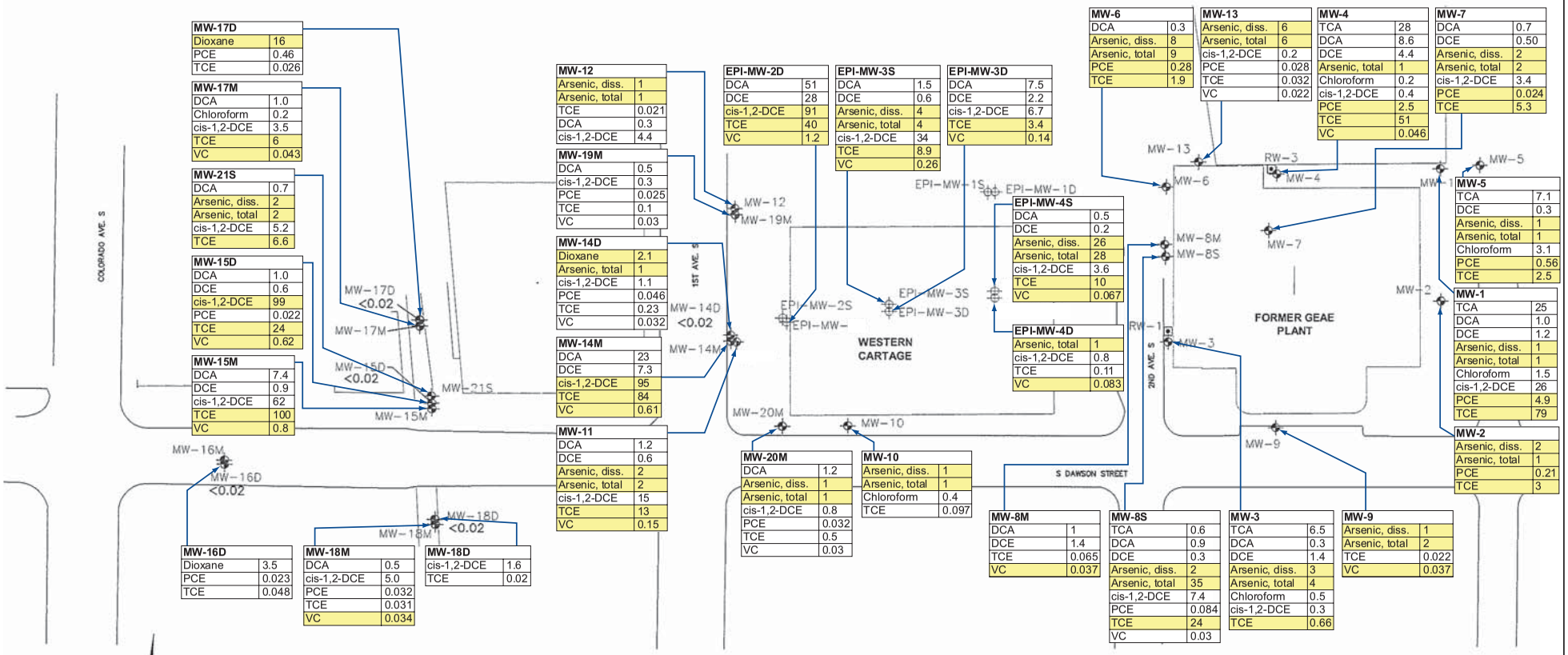
Figure C-10. Former General Electric Aviation Division Property Historical Soil Sampling Locations

DEPARTMENT OF ECOLOGY State of Washington



Notes:

PCE: Tetrachloroethene	All results in milligrams per kilogram.
TCE: Trichloroethene	
DCE: Dichloroethene	Shading indicates concentrations
TCA: Trichloroethane	exceeding the MTCA Method A or B
DCA: Dichloroethane	cleanup levels. See Table C-15 for cleanup
VC: Vinyl Chloride	levels and exceedance factors.

NOTES:

1. MONITORING WELLS MW-8, MW-14S, MW-15S, AND MW-16S HAVE BEEN RENAMED MW-8S, MW-14M, MW-15M, AND MW-16M.
2. LOCATIONS ARE APPROXIMATE.

Source: AECOM 2009

AECOM

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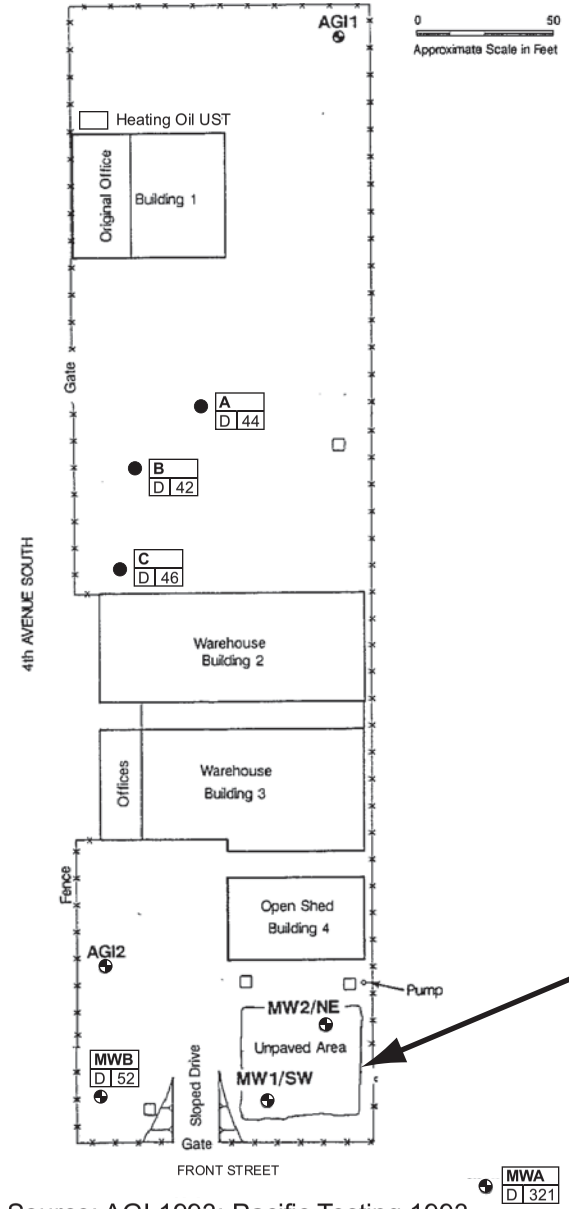
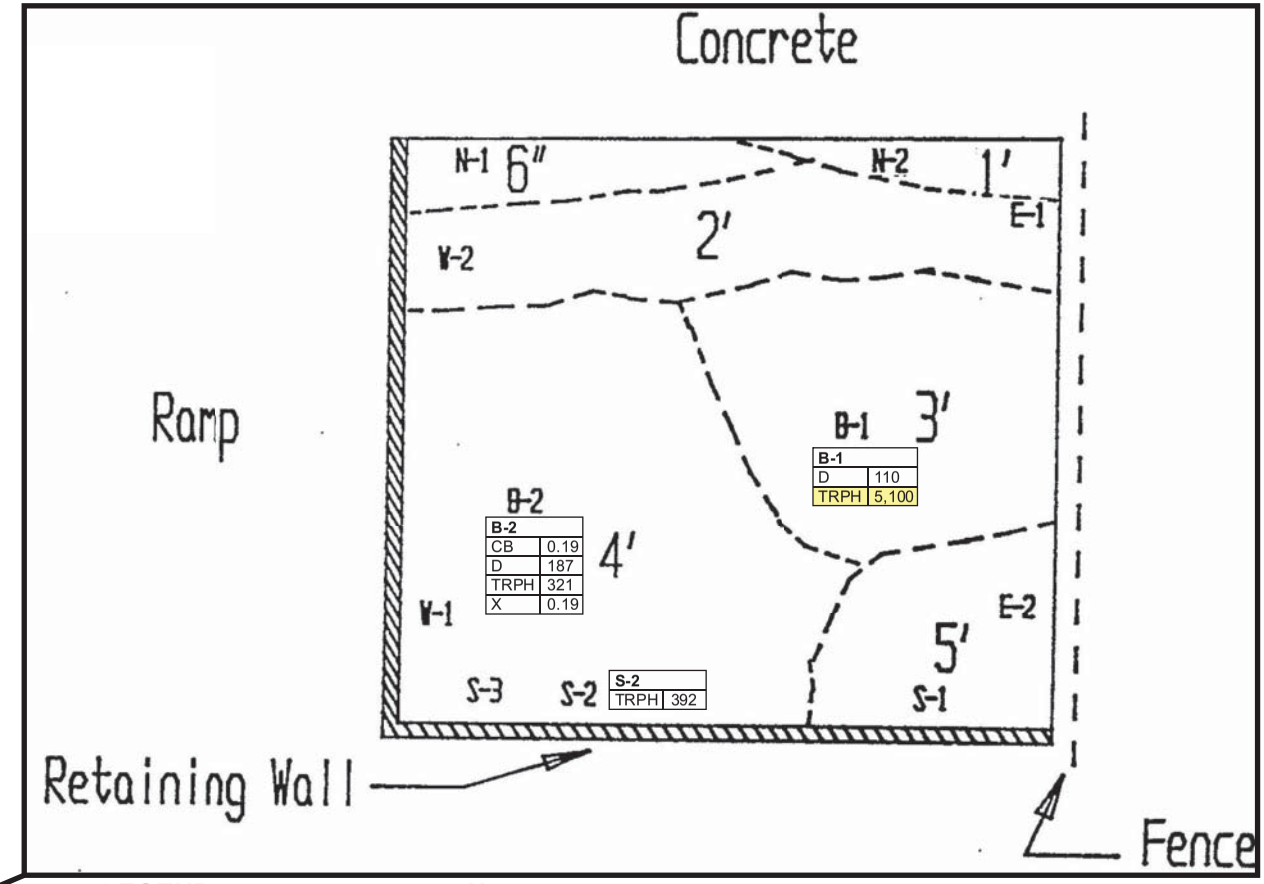
Figure C–11. General Electric Aviation Division Property Maximum Chemical Concentrations in Groundwater February 2007 to February 2009

DEPARTMENT OF ECOLOGY State of Washington



Source: AGI 1993; Pacific Testing 1993

Approximate Limits of 1993 Excavation



LEGEND

AG12 Monitoring Well number and approximate location

Soil Boring

Sump

Notes:

All results in milligrams per kilogram.
CB: Chlorobenzene
D: Diesel-range hydrocarbons
TRPH: Total recoverable petroleum hydrocarbons
X: Xylenes, total
Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-16 for cleanup levels and exceedance factors.

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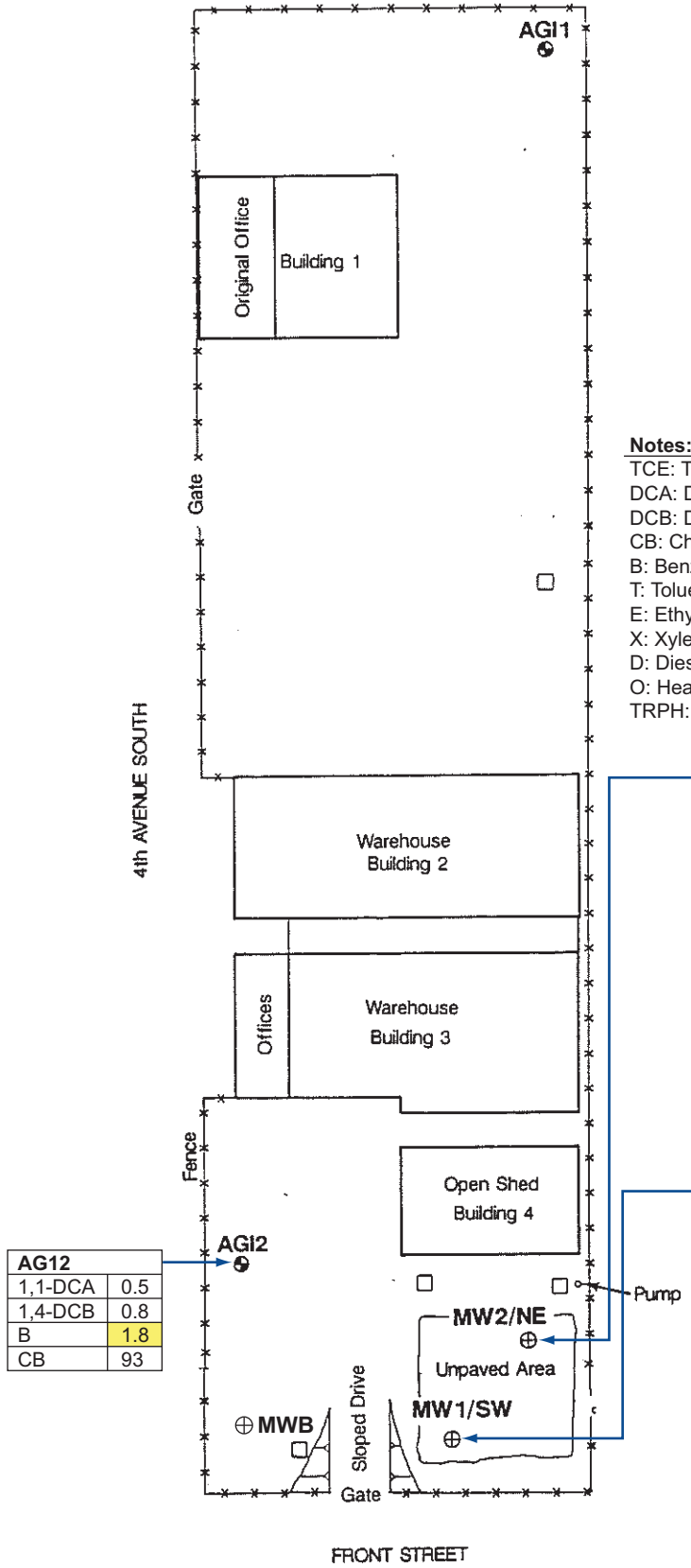
Figure C–12. Former Sahlberg Equipment Property Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington



LEGEND

AGI2	Monitoring Well number and approximate location installed by AGI
MW2/NE	Monitoring Well number and approximate location installed by others
□	Sump

Notes:

TCE: Trichloroethene
DCA: Dichloroethane
DCB: Dichlorobenzene
CB: Chlorobenzene
B: Benzene
T: Toluene
E: Ethylbenzene
X: Xylenes, total
D: Diesel-Range Hydrocarbons
O: Heavy-Oil-Range Hydrocarbons
TRPH: Total Recoverable Petroleum Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-13 for cleanup levels and exceedance factors.

MW-2	
1,1-DCA	1.4
1,2-DCB	130
1,3-DCB	10
1,4-DCB	74
Acetone	61
B	3.7
CB	1,200
cis-1,2-DCE	0.7
D	8,300
E	200
O	1,100
T	380
TRPH	24,900
TCE	0.5
X	1,000

MW-1	
1,2-DCB	1.8
Acetone	42
B	4
CB	830
cis-1,2-DCE	1.3
D	3,000
E	26
O	910
T	23
TRPH	41,000
TCE	0.5
X	110

AG12	
1,1-DCA	0.5
1,4-DCB	0.8
B	1.8
CB	93

MWA	
D	550
O	890

Reference: Bruce C. Allen & Assoc., Inc.

N

0 50
Approximate Scale in Feet

Source: AGI 1993

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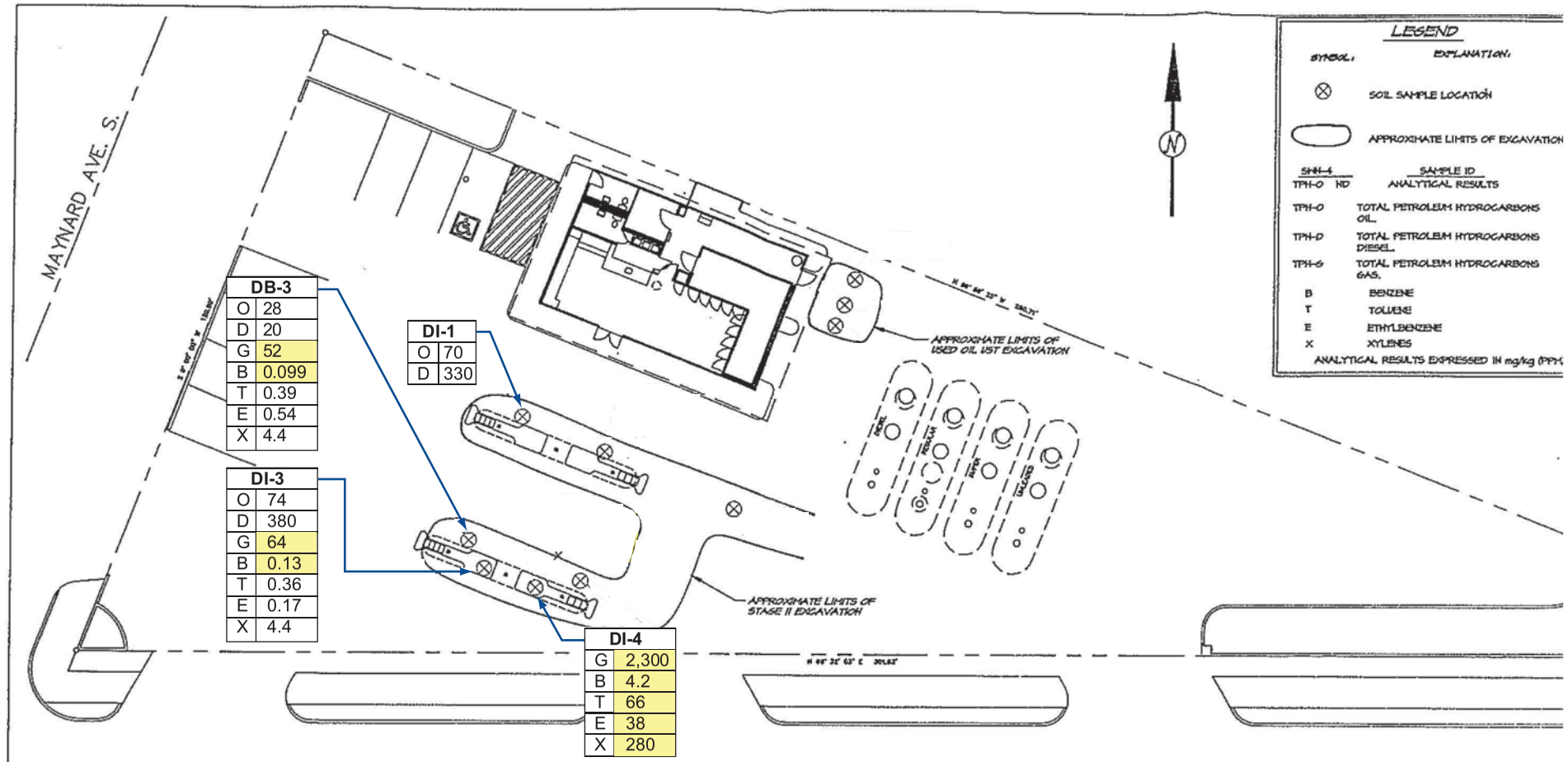
Figure C–13. Former Sahlberg Equipment Property Historical Maximum Chemical Concentrations in Groundwater

DEPARTMENT OF ECOLOGY State of Washington



Notes:

B: Benzene
T: Toluene
E: Ethylbenzene
X: Xylenes, total
D: Diesel-Range Hydrocarbons
G: Gasoline-Range Hydrocarbons
O: Heavy-Oil-Range Hydrocarbons

All results in milligrams per kilogram.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-18 for cleanup levels and exceedance factors.

Source: ESE 1995

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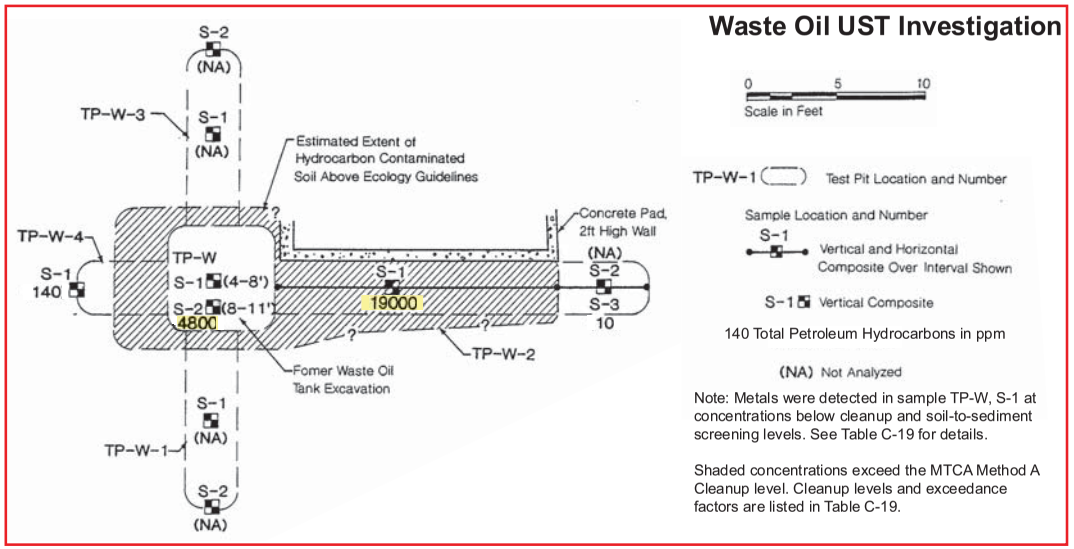
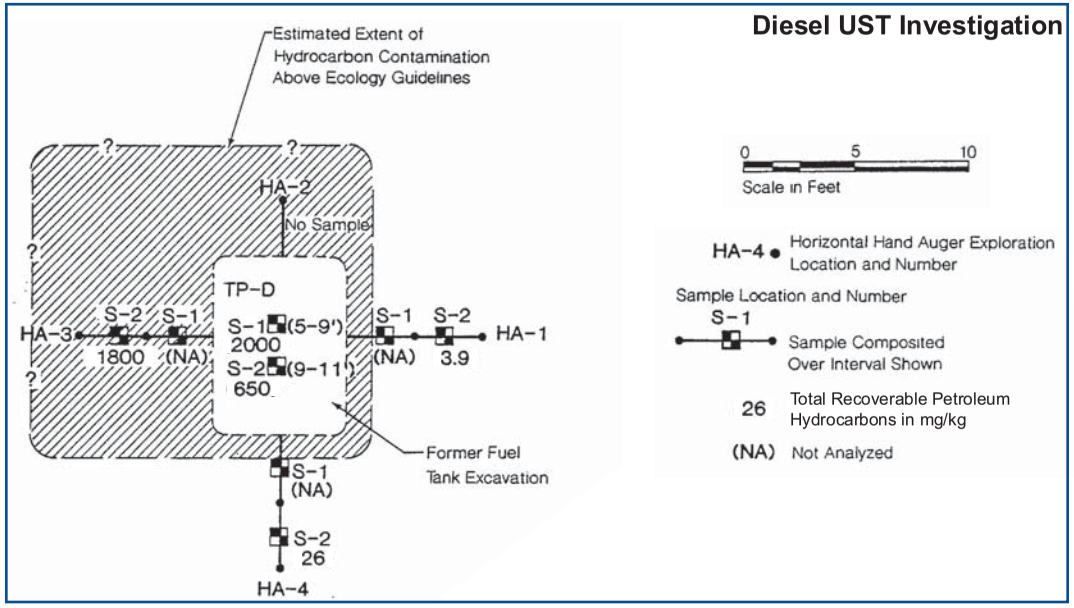
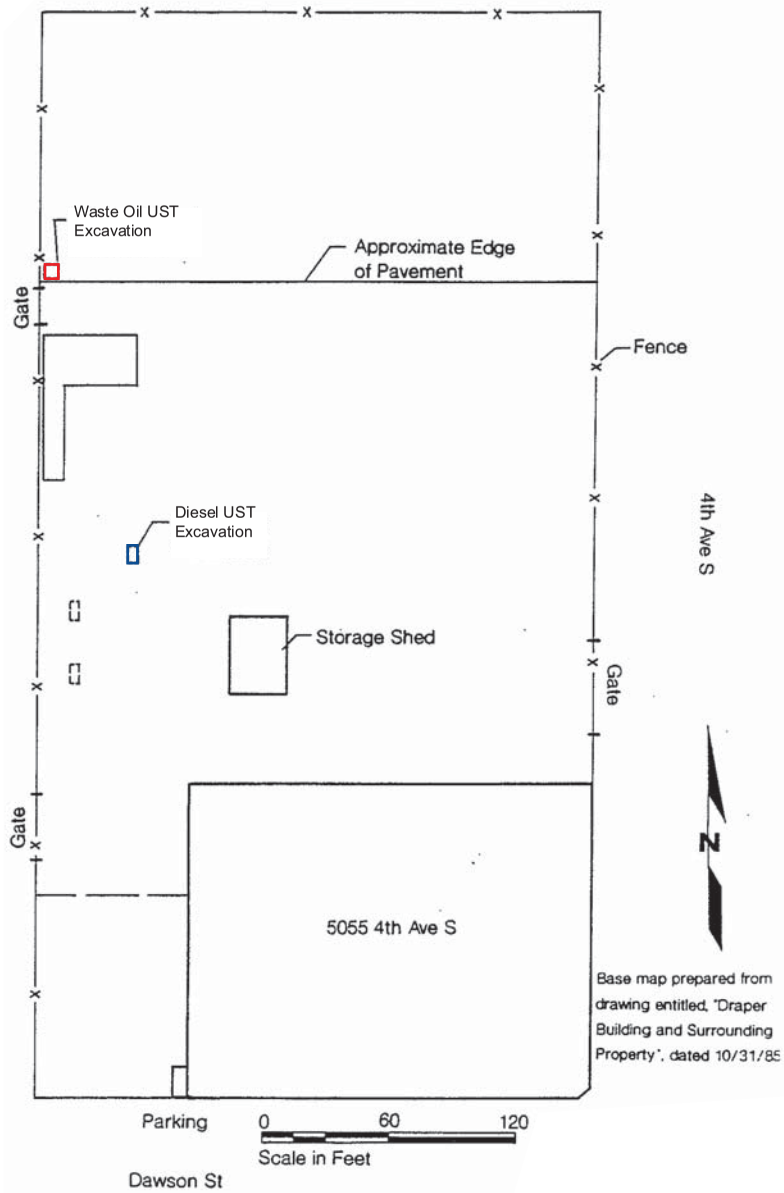
Figure C–14. Shell 121430
Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington







Source: Hart Crowser 1991

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Figure C–15. Draper Machine, Inc.
Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington

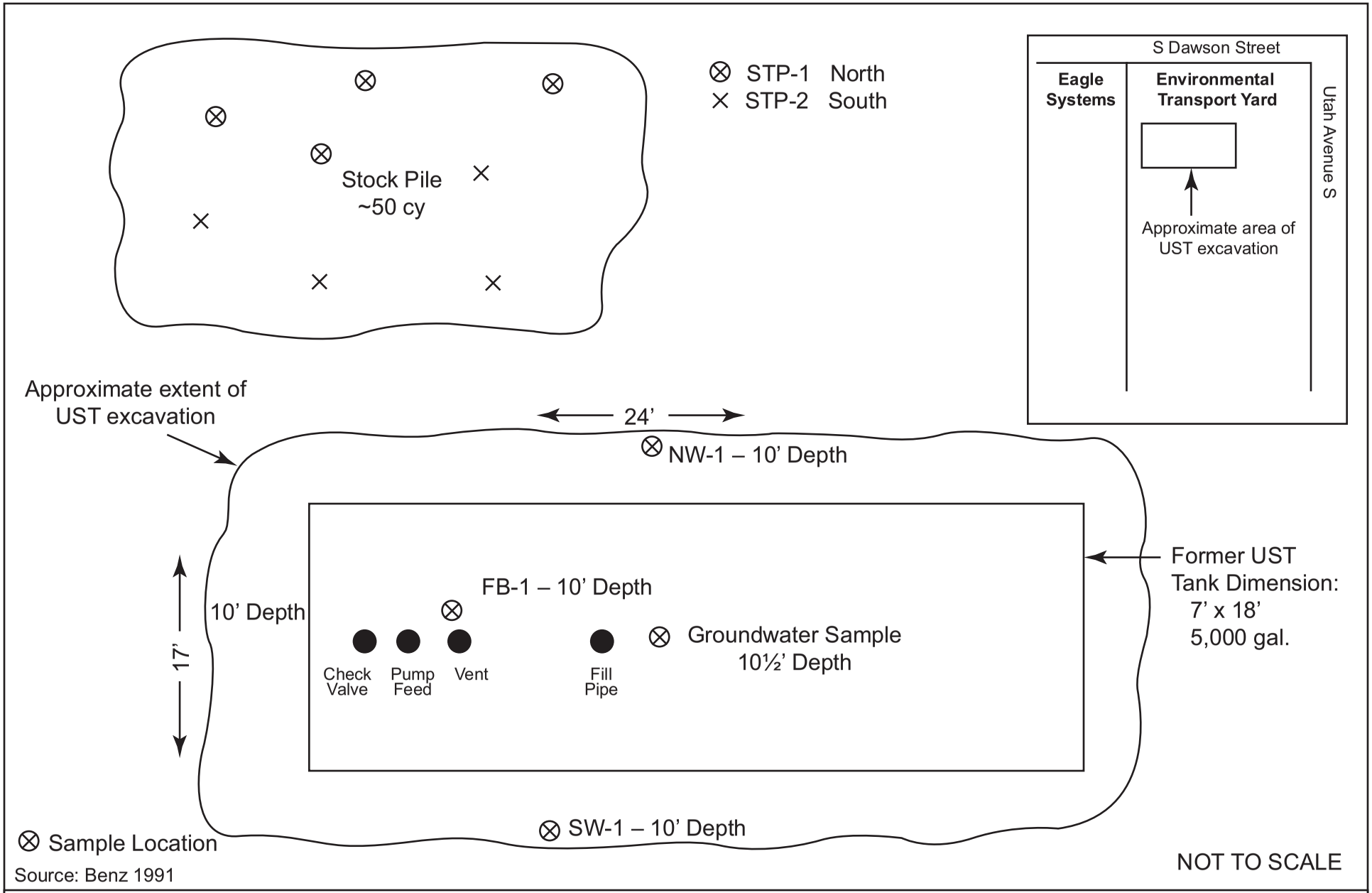

Figure C–16. Environmental Transport, Inc.
Historical Sampling Locations

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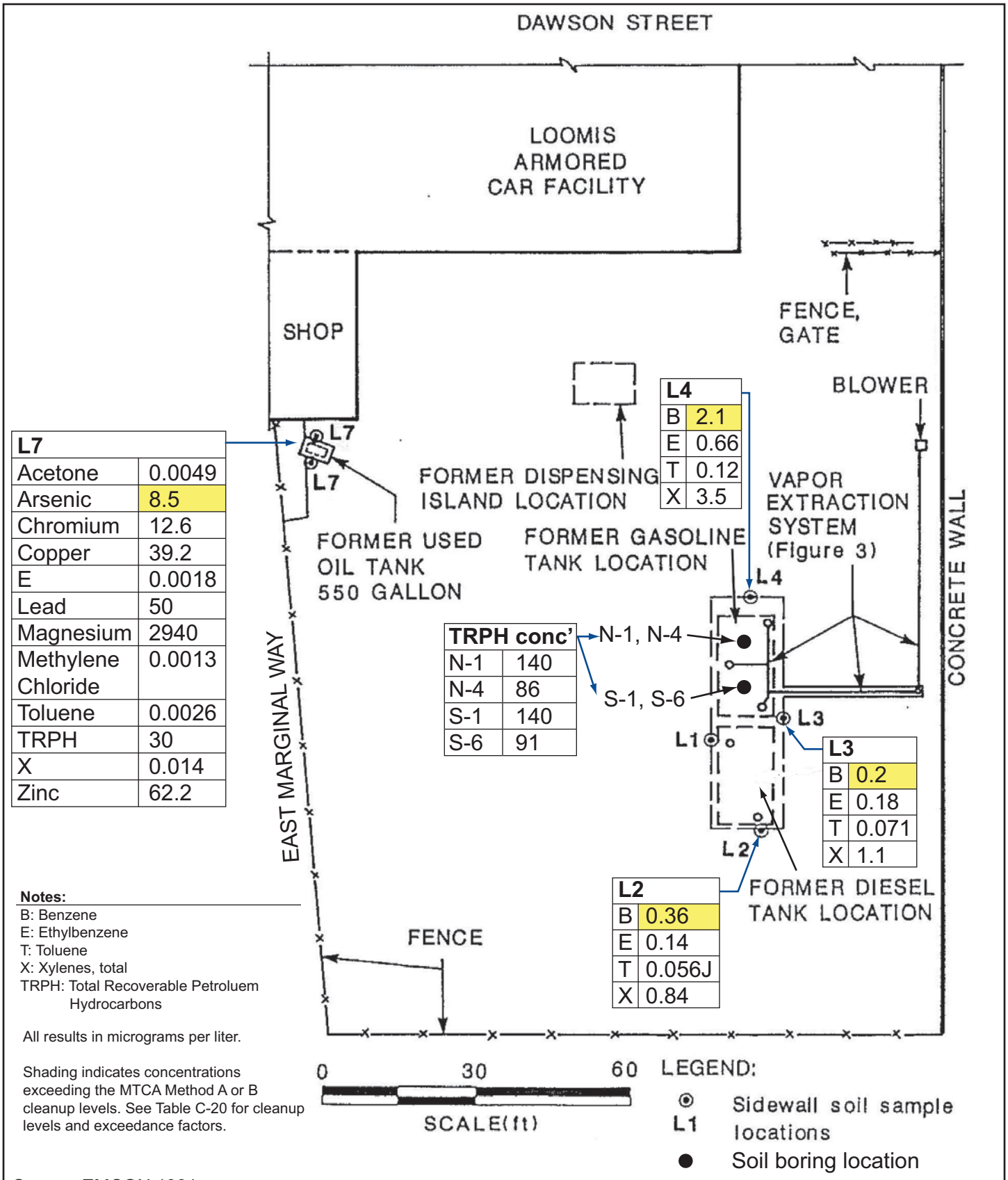
DEPARTMENT OF ECOLOGY State of Washington



L7	
Acetone	0.0049
Arsenic	8.5
Chromium	12.6
Copper	39.2
E	0.0018
Lead	50
Magnesium	2940
Methylene Chloride	0.0013
Toluene	0.0026
TRPH	30
X	0.014
Zinc	62.2

L4	
B	2.1
E	0.66
T	0.12
X	3.5

TRPH conc'	
N-1	140
N-4	86
S-1	140
S-6	91

L3	
B	0.2
E	0.18
T	0.071
X	1.1

L2	
B	0.36
E	0.14
T	0.056J
X	0.84

Notes:
B: Benzene
E: Ethylbenzene
T: Toluene
X: Xylenes, total
TRPH: Total Recoverable Petroluem Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-20 for cleanup levels and exceedance factors.

Source: EMCON 1991

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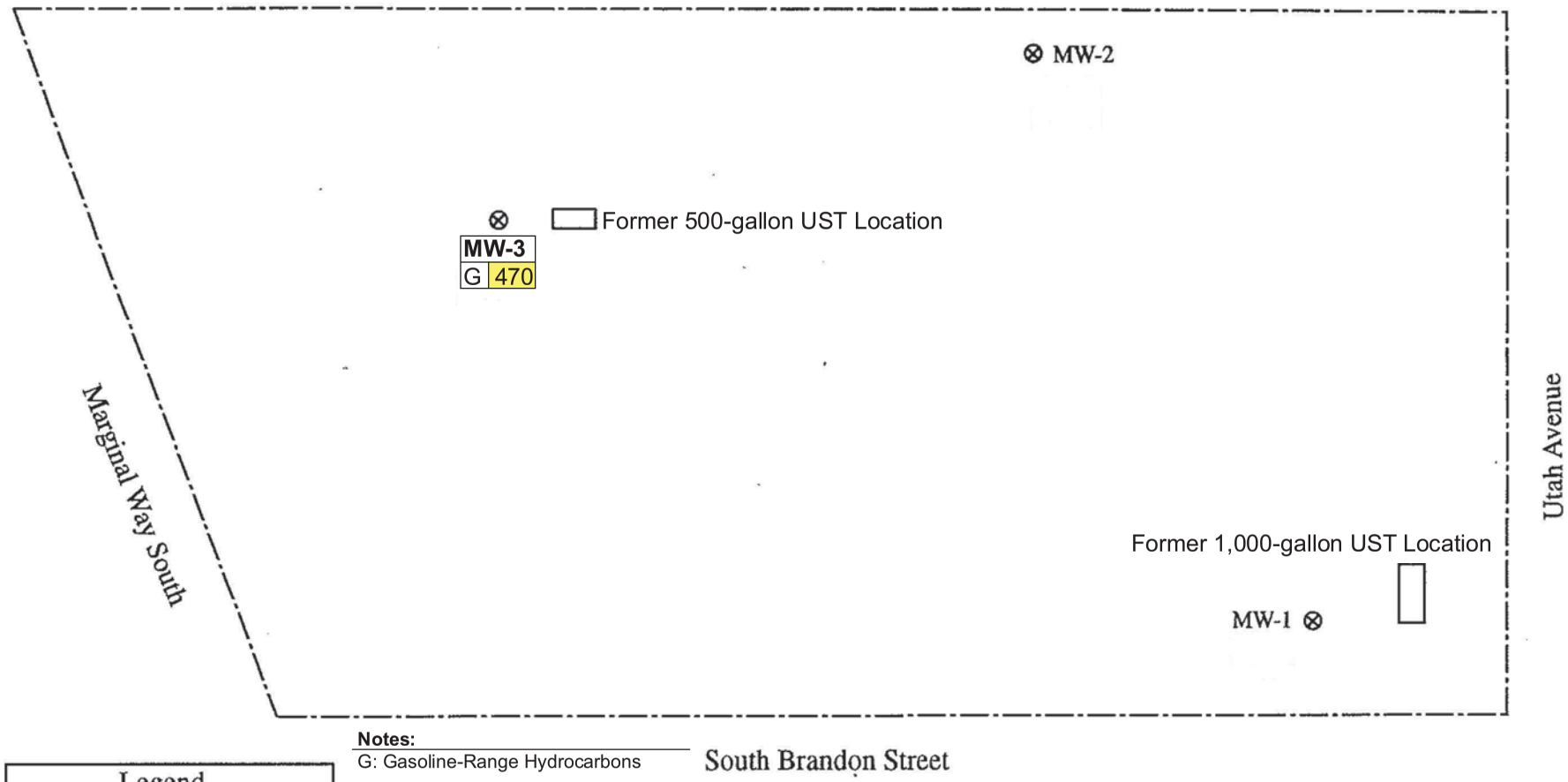
Figure C–17. Loomis & Fargo Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington



Notes:

G: Gasoline-Range Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels.

Legend	
⊗	Monitoring Well
—·—	Property Line

Source: Eco-Tec 1995

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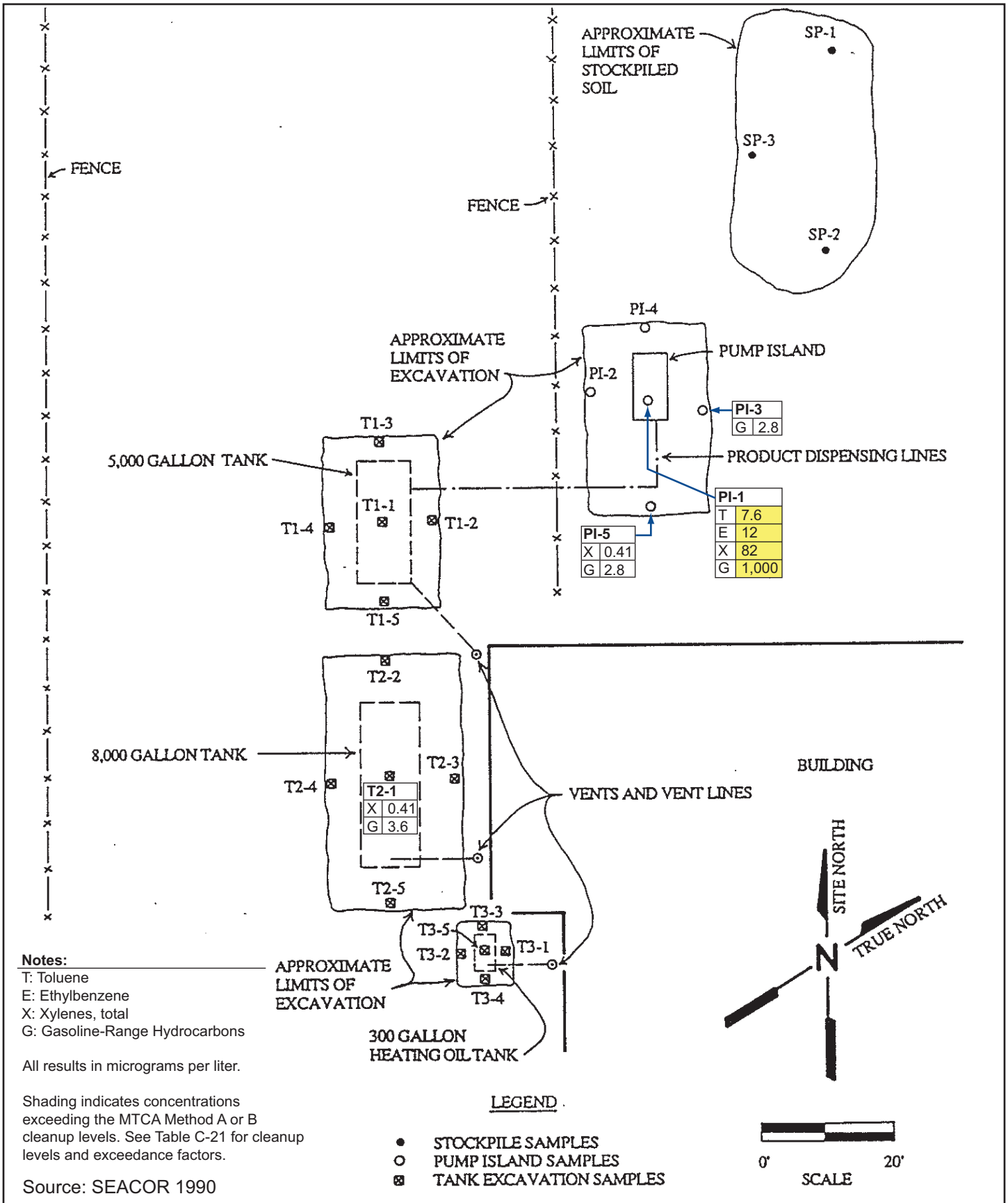
Figure C–18. Former National Transfer Property Historical Maximum Chemical Concentrations in Groundwater

DEPARTMENT OF ECOLOGY State of Washington



Notes:
T: Toluene
E: Ethylbenzene
X: Xylenes, total
G: Gasoline-Range Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-21 for cleanup levels and exceedance factors.

Source: SEACOR 1990

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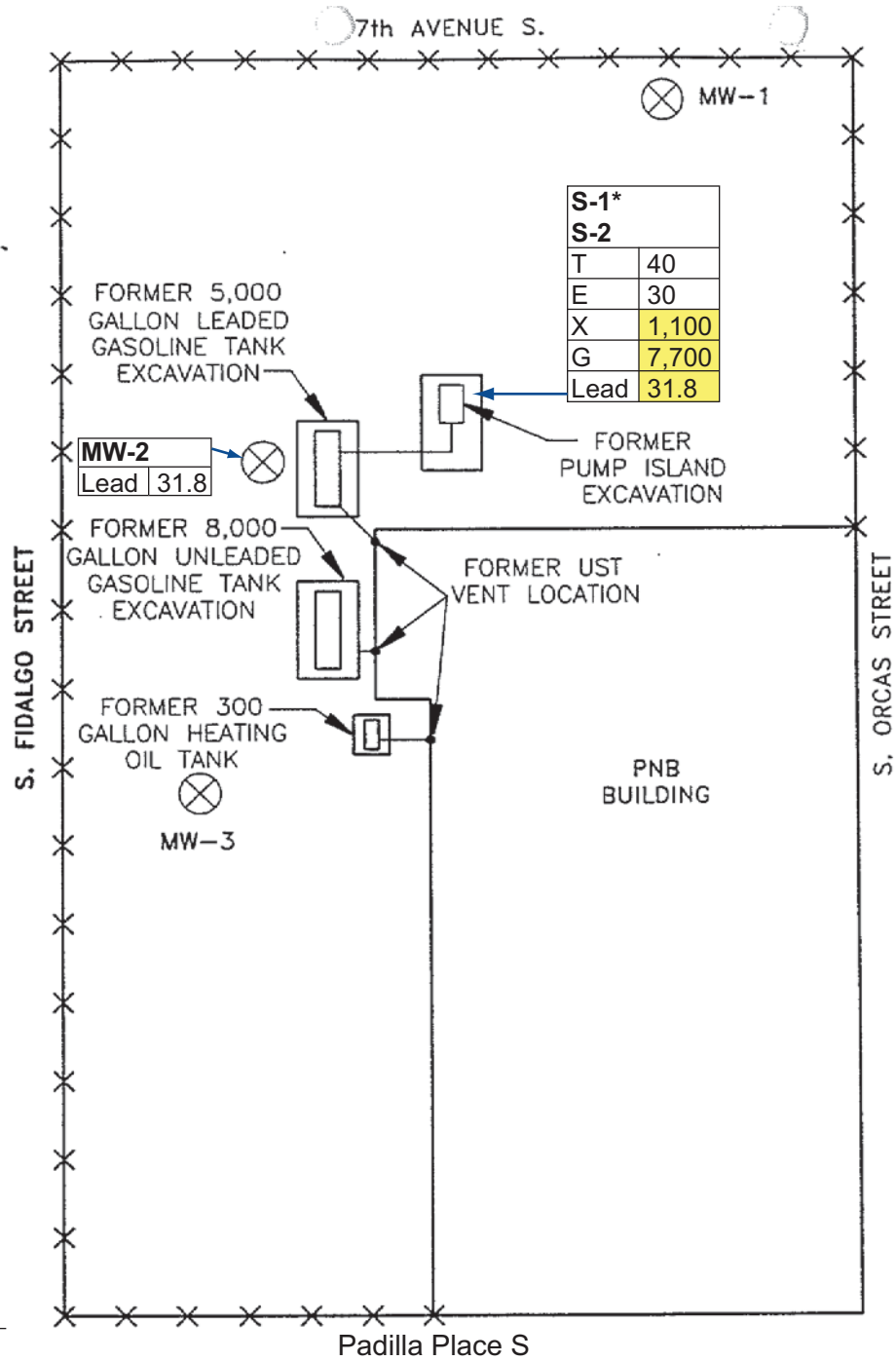
Figure C–19. Former PNB Building
Historical Maximum Chemical Concentrations in Soil

DEPARTMENT OF ECOLOGY State of Washington



Notes:

T: Toluene
E: Ethylbenzene
X: Xylenes, total
G: Gasoline-Range Hydrocarbons

All results in micrograms per liter.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-22 for cleanup levels and exceedance factors.

EXPLANATION

FORMER FUEL & UST VENT LINES

GROUNDWATER MONITORING WELL LOCATION

APPROXIMATE SCALE: 1"=40'

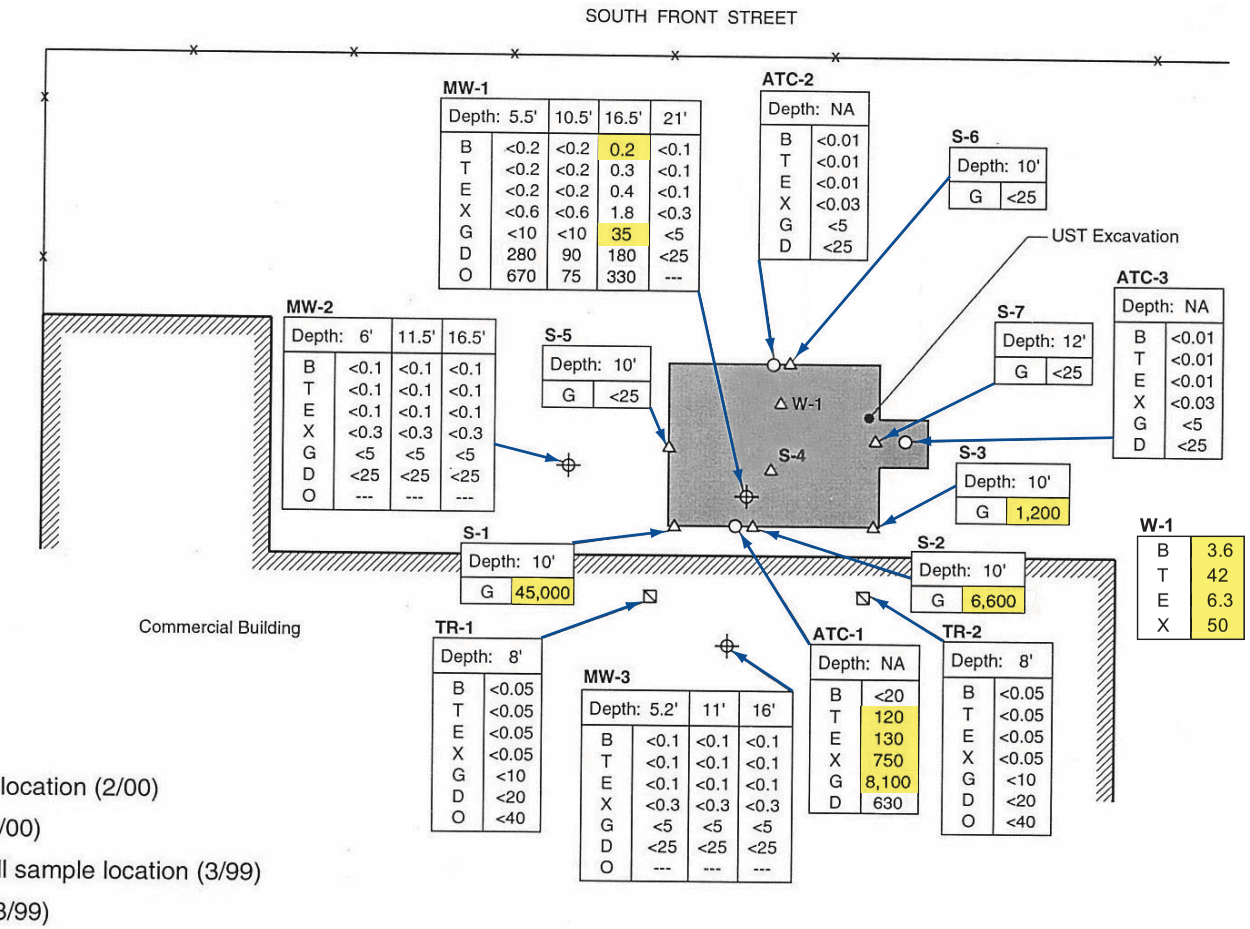
* S-1 and S-2 were grab groundwater samples collected from the dispenser island excavation. Sample locations were not depicted on the facility maps available for review.

Source: ENSR 1991

SAIC From Science to Solutions

Figure C–20. Former PNB Building Historical Maximum Chemical Concentrations in Groundwater

DEPARTMENT OF ECOLOGY State of Washington



Depth: NA	
B	<0.2
T	<0.2
E	<0.2
X	<0.6
G	<5
D	280
O	670

Notes:

B: Benzene
T: Toluene
E: Ethylbenzene
X: Xylenes, total
D: Diesel-Range Hydrocarbons
G: Gasoline-Range Hydrocarbons
O: Heavy-Oil-Range Hydrocarbons

All results in milligrams per kilogram.

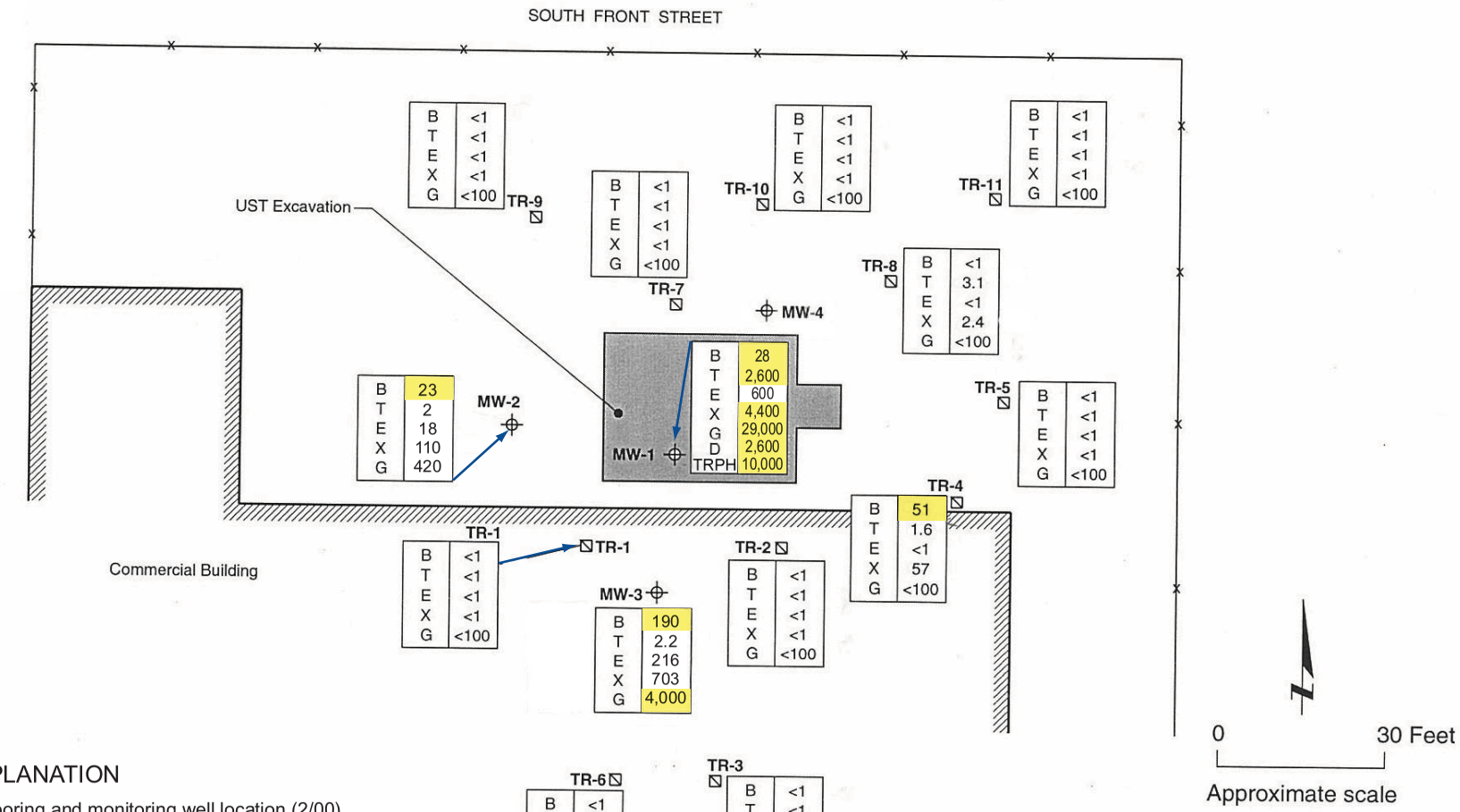
Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C–23 for cleanup levels and exceedance factors.

Source: Treadwell & Rollo 2000

SAIC From Science to Solutions

Figure C–21. Former Western Parcel Express Historical Maximum Chemical Concentrations in Soil

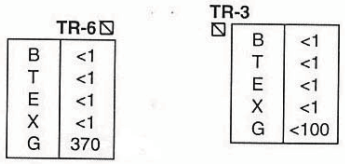
DEPARTMENT OF ECOLOGY State of Washington



EXPLANATION

MW-1 ⌖ Soil boring and monitoring well location (2/00)

TR-1 ▧ Stratprobe sampling location (5/00)



B	<1
T	<1
E	<1
X	<1
G	370

Notes:

B: Benzene
T: Toluene
E: Ethylbenzene
X: Xylenes, total
G: Gasoline-Range Hydrocarbons

All results in milligrams per kilogram.

Shading indicates concentrations exceeding the MTCA Method A or B cleanup levels. See Table C-24 for cleanup levels and exceedance factors.

Source: Treadwell & Rollo 2000

SAIC® From Science to Solutions

Figure C–22. Former Western Parcel Express Historical Maximum Chemical Concentrations in Groundwater

DEPARTMENT OF ECOLOGY State of Washington