STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

August 6, 2013

Mr. John Kelly Sr.
Harold LeMay Properties II LLC
PO Box 44459
Tacoma, WA 98448

Re: No Further Action at the following Site:

- **Site Name:** Northwest Pipeline GP Tacoma
- **Site Address:** 19111 38th Avenue East, Tacoma Washington
- **Facility/Site No.:** 14928284
- **Cleanup Site ID No.:** 1741
- **VCP Project No.:** SW1198

Dear Mr. Kelly:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of the Northwest Pipeline GP Tacoma facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issue Presented and Opinion

Is further remedial action necessary to clean up contamination at the Site?

No. Ecology has determined that no further remedial action is necessary to clean up contamination at the Site.

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

Description of the Site

This opinion applies only to the Site described below. The Site is defined by the nature and extent of contamination associated with the following release:

- Petroleum hydrocarbons, and arsenic in the Soil and the Groundwater.

Please note that a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

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

1. Work Plan for Confirmation Soil Sampling and Supplemental Site Assessment, Former Spanaway Lumber Site, Tacoma, WA, dated September 15, 2011 by SCS Engineers (SCS).

2. Supplemental Remedial Investigation, Former Spanaway Lumber Site, Tacoma, WA, dated December 31, 2012 by SCS.

3. Additional Arsenic Sampling Report, Former Spanaway Lumber Site, Tacoma, WA, dated May 5, 2013 by SCS.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

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

Analysis of the Cleanup

Ecology has concluded that no **further remedial action** is necessary to clean up contamination at the Site. That conclusion is based on the following analysis:

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described below.

The former Spanaway Lumber site is located at 19111 38th Avenue East in Tacoma, Pierce County, Washington. The subject Site consists of two irregularly shaped parcels comprising a total of 17.5 acres. Improvements to the Site consist of an office building, one warehouse/manufacturing building, a shop/maintenance building, a guard shack, three support/storage buildings, and two covered work areas. One small roofed building had a concrete containment area that was reportedly used for storage of bulk oil and diesel fuel drums. This area was heavily stained. One above ground storage tank for water and an existing groundwater well are also present on the property. The western half of the Site is paved with a mix of asphalt and concrete. The eastern half is unpaved and consists of rocks,

tree bark, and wood chips. Two drainage ditches were observed running north/south. A drainage pipe was observed running east/west in the southern section of the site. Additionally, two ponds were observed on the Site, one along the north property boundary and one in the southeast corner. The Site was used as a wood and lumber manufacturing facility and mill from the late 1970's through 2003. A Site location map is included as Figure 1 in the Enclosures.

A Phase 1 Environmental Site Assessment (ESA) was conducted on the site in August 2004 by Kleinfelder Inc. (Kleinfelder) and identified several concerns on the property including minor staining on asphalt and gravel surfaces, anonymous reports of improperly buried waste on the site, dumping of paint waste and hydraulic oil in a ditch near the bander station, and areas of illegal household refuse dumping due to ease of access by the public. The Phase 1 ESA also recommended a limited Phase 2 Site Assessment be performed to investigate the areas of concern noted in the Phase 1 ESA.

A Phase 2 Site Assessment was conducted by Kleinfelder at the Site in September 2004. A total of 14 borings were advanced to approximately 12 to 16 feet below ground surface (bgs) in the areas of concern noted in the Phase 1 report. Soil samples were collected at 4 foot intervals in each boring and groundwater samples were collected from temporary well points in 12 of the 14 borings. Two locations encountered refusal before reaching the water table. Four shallow soil samples from a drainage ditch and surface water pond bottom were also collected.

Results of the soil sampling identified high concentrations of oil-range total petroleum hydrocarbons (TPH-O) above the MTCA Method A cleanup levels of 2,000 milligrams per kilogram (mg/kg) at GP-3 and GP-6 near the central ditch and old building. Gasoline-range TPH (TPH-Gx) was found at one location (GP-6) at concentrations greater than the MTCA Method A cleanup level of 100 mg/kg. No exceedances were noted in these same locations at 8 feet bgs. Arsenic greater than MTCA Method A cleanup level of 20 mg/kg was found in one sample (GP-2) west of the ditch and south of the pond. TPH-O was also found at concentrations greater than the MTCA Method A cleanup levels in one shallow soil sample collected from the base of a storm water pond (pond was dry at the time of sampling). Shallow groundwater samples were collected from 12 of the 14 boring locations. One sample collected near the Warehouse/Manufacturing building (GP-10) had concentrations of diesel-range TPH (TPH-Dx) and TPH-O slightly greater than their MTCA Method A cleanup levels of 500 µg/L. Klienfelder estimated that the area of impacted soils was approximately 500 cubic yards. They also recommend these soils be excavated from the Site and properly disposed of.

Marsh Industrial Research (MIR) began a cleanup of the Site in March 2007. Following some of the recommendations noted in the Kleinfelder Phase 2 report, MIR began excavation of the identified heavy oil impacted areas on the Site. The impacted soils were excavated and stored on an adjacent paved area for future treatment. According to the cleanup memo and field notes provided by MIR, a total of 4 cubic yards (this is assumed to

be a typo and should likely read 4000 cubic yards) of material were excavated and temporarily stored on Site. The site was also monitored with a metal detector/locator to identify below surface structures. According to the memo, only rebar and pipes were found, and no underground tanks were identified. MIR was in the process of conducting bioremediation of the stockpiled soils including the addition of urea and wood chips to the soil piles, covering with plastic sheeting, and turning the soil piles. Confirmation soil samples from the excavated areas indicated that all impacted soils had been removed; however, the data presented was not able to easily be correlated with actual sample locations on the provided figures.

Ecology prepared a further action opinion letter in March 2008 outlining the need for additional arsenic investigation surrounding the arsenic in soil exceedance in boring GP-2. It also recommended a survey of the existing groundwater wells on the Site to allow for proper determinations of groundwater flow direction. Further details on the bio-remediation being conducted and a concise summary of all samples collected with a proper Site plan was also requested to properly document Site activities.

In December 2011, SCS Engineers (SCS) conducted a supplemental remedial investigation to address the concerns outlined in Ecology's further action letter and address areas identified by Kleinfelder. Confirmational test pits and soil sampling was conducted within the previous remedial excavations advanced by MIR. Confirmational soil samples were collected surrounding GP-2 (location of the elevated arsenic in soil concentrations), and all soil stockpiles near the former maintenance shop were re-sampled and tested for TPH-Dx, TPH-O, and select samples for polycyclic aromatic hydrocarbons (PAHs). In addition, four groundwater monitoring wells were installed (MW-5 through MW-8), and all groundwater monitoring wells (including previously installed wells (MW-2 through MW-4) were sampled. Groundwater samples were submitted for testing of TPH-Dx, TPH-O, volatile organic compounds (VOCs), and total metals.

The results of the supplemental remedial investigation identified the presence of petroleum impacted soils at seven locations within the former MIR excavation areas. TPH-O exceeded the MTCA Method A Cleanup Levels at STP-3 (2,400 mg/kg), STP-5 (2,900 mg/kg), MBTP-1 (3,500 mg/kg), MBTP-2 (3,000 mg/kg), MBTP-8 (4,600 mg/kg), NTP-7 (17,000 mg/kg), and NTP-8 (8,400 mg/kg). TPH-Dx was also found to exceed the MTCA Method A Cleanup Levels at STP-5 (2,500 mg/kg), and NTP-7 (2,400 mg/kg). No metals or PAHS were detected in any sample, greater than their respective MTCA Method A Cleanup Levels. These locations are shown in Figure 4 and analytical results are presented in Tables 2, 3, 4, and 5 all of which are included in the Enclosures. Groundwater samples collected did not have any exceedances of the applicable MTCA Method A Cleanup Levels with the exception of arsenic in MW-4 at 5.6 µg/L greater than the MTCA Method A Cleanup Level of 5 µg/L.

Based on the results of the supplemental investigations, in June 2012, SCS undertook a soil excavation and confirmation sampling program to address the impacted soils remaining on

the Site. All previously impacted areas were excavated and removed from the Site. Confirmational soil samples were collected and analyzed on Site using a mobile laboratory for quick turnaround. Where confirmational soil samples exceeded the applicable MTCA Method A Cleanup Levels, additional soil was removed and another samples was collected for testing. These areas are shown on Figure 6 included in the Enclosures. All confirmational soil sample results are summarized in Table 11 included in the Enclosures.

SCS contacted Ecology regarding the one arsenic exceedance found in MW-4 during the previous investigation. Ecology recommended that three wells (MW-4, MW-3, and MW-8) be sampled again using low-flow sampling techniques. This was to ensure that suspended sediment within the water sample was not biasing the metals results. The sampling of these wells for both total and dissolved arsenic was completed in April 2013. The results from the samples indicates that neither total nor dissolve arsenic was detected above method detection limits in any of the groundwater samples. Turbidity measurements were much lower during this sampling round (compared to the previous round). A summary table (Table 3) of the arsenic in groundwater results is included in the Enclosures.

Subsurface soils on the Site consist of dense to very dense silty gravel with some sand and cobbles and interbedded lenses of medium sand. Shallow groundwater is noted at approximately 11 to 14 feet bgs and flows in a west to northwesterly direction.

2. Establishment of cleanup standards.

Ecology has determined the cleanup levels and points of compliance you established for the Site meet the substantive requirements of MTCA.

a. Cleanup levels.

MTCA Method A Cleanup Levels for unrestricted land use for soil and groundwater were used to characterize the Site.

b. Points of compliance.

Standard points of compliance were used for the Site. The point of compliance for protection of groundwater was established in the soils throughout the Site. For soil cleanup levels based on human exposure via direct contact or other exposure pathways where contact with the soil is required to complete the pathway, the point of compliance was established in the soils throughout the Site from the ground surface to 15 feet bgs. In addition, the point of compliance for the groundwater was established throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest most depth that could potentially be affected by the Site.

3. Selection of cleanup action.

Ecology has determined the cleanup action you selected for the Site meets the substantive requirements of MTCA.

Cleanup actions conducted at the Site to date have included bioremediation and soil excavation.

4. Cleanup.

Ecology has determined the cleanup you performed meets the cleanup standards established for the Site.

Bioremediation was conducted on the Site soils and was effective in reducing some TPH concentrations. Remaining soils greater than MTCA Method A Cleanup Levels were excavated (approximately 450 tons) and transported to the LRI Landfill in Tacoma, Washington.

Listing of the Site

Based on this opinion, Ecology will remove the Site from our Confirmed and Suspected Contaminated Sites List.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

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

- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

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

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

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

3. State is immune from liability.

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

Termination of Agreement

Thank you for cleaning up the Site under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1198)

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 360-407-7263 or e-mail at tmid461@ecy.wa.gov.

Sincerely,

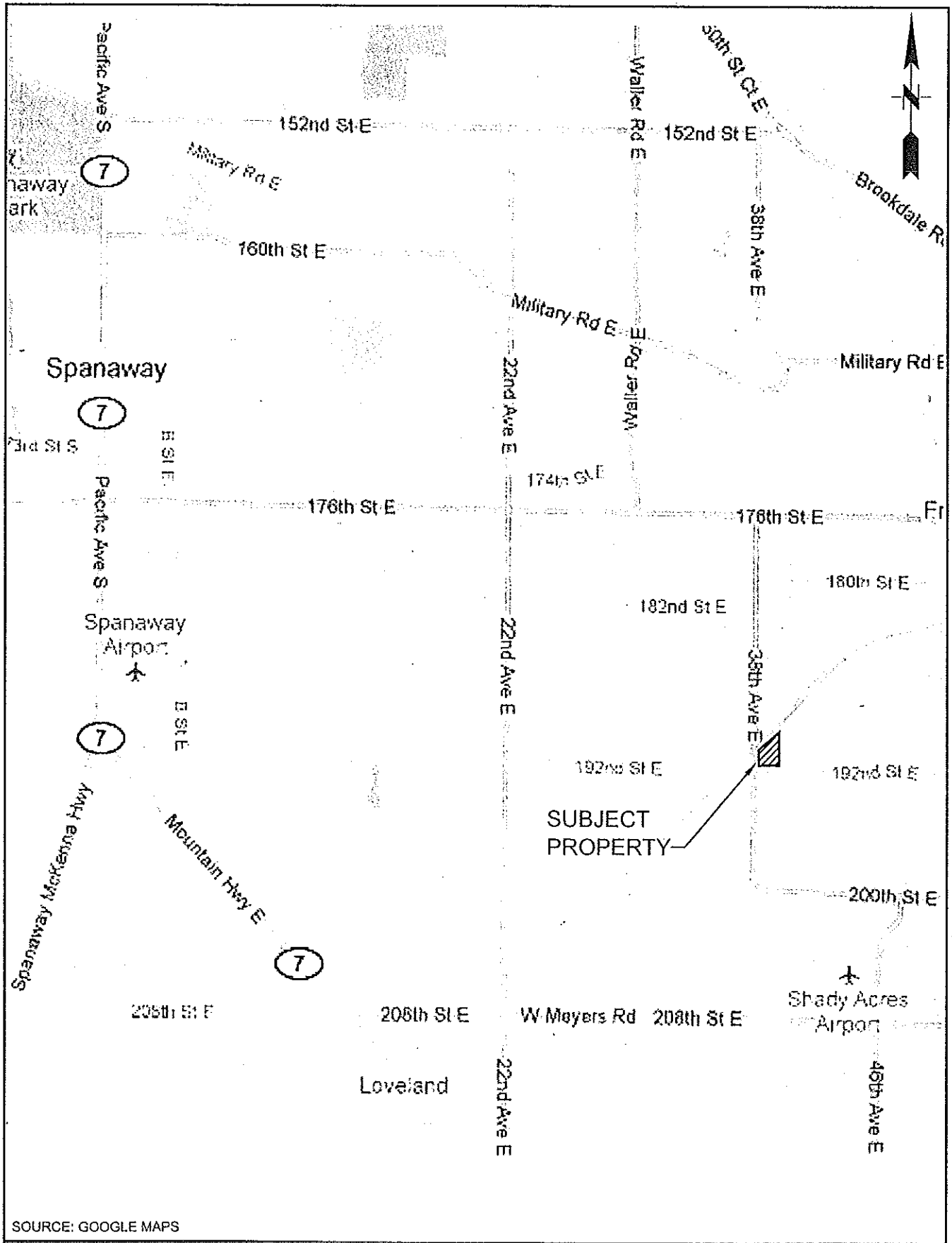
Thomas Middleton L.HG.
SWRO Toxics Cleanup Program

TMM/ksc:SW1198 NFA NW Pipeline GP Tacoma

Enclosures:
Figure 1 – Site Vicinity Map
Figure 4 – SCS Monitoring Well and Test Pit Locations Map
Figure 6 – SCS Follow-up Remedial Excavations (2012)
Table 2 through 5 – Summary of Analytical Results in Soils
Tables 8 through 10 – Summary of Analytical Results in Groundwater
Table 11 – Summary of Soil Test Pit Confirmation Results
Table 3 – SCS Supplemental Arsenic in Groundwater Results (April 2013)

By certified mail: (7012 1010 0003 0195 4840)

cc: Mr. Dan Venchiarutti – SCS Engineers
Rob Olsen Pierce Co Health Dept
Scott Rose – Ecology
Dolores Mitchell – Ecology (w/o enclosures)



SOURCE: GOOGLE MAPS

SCS ENGINEERS
Environmental Consultants and Contractors
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(425) 746-4600 FAX: (425) 746-6747

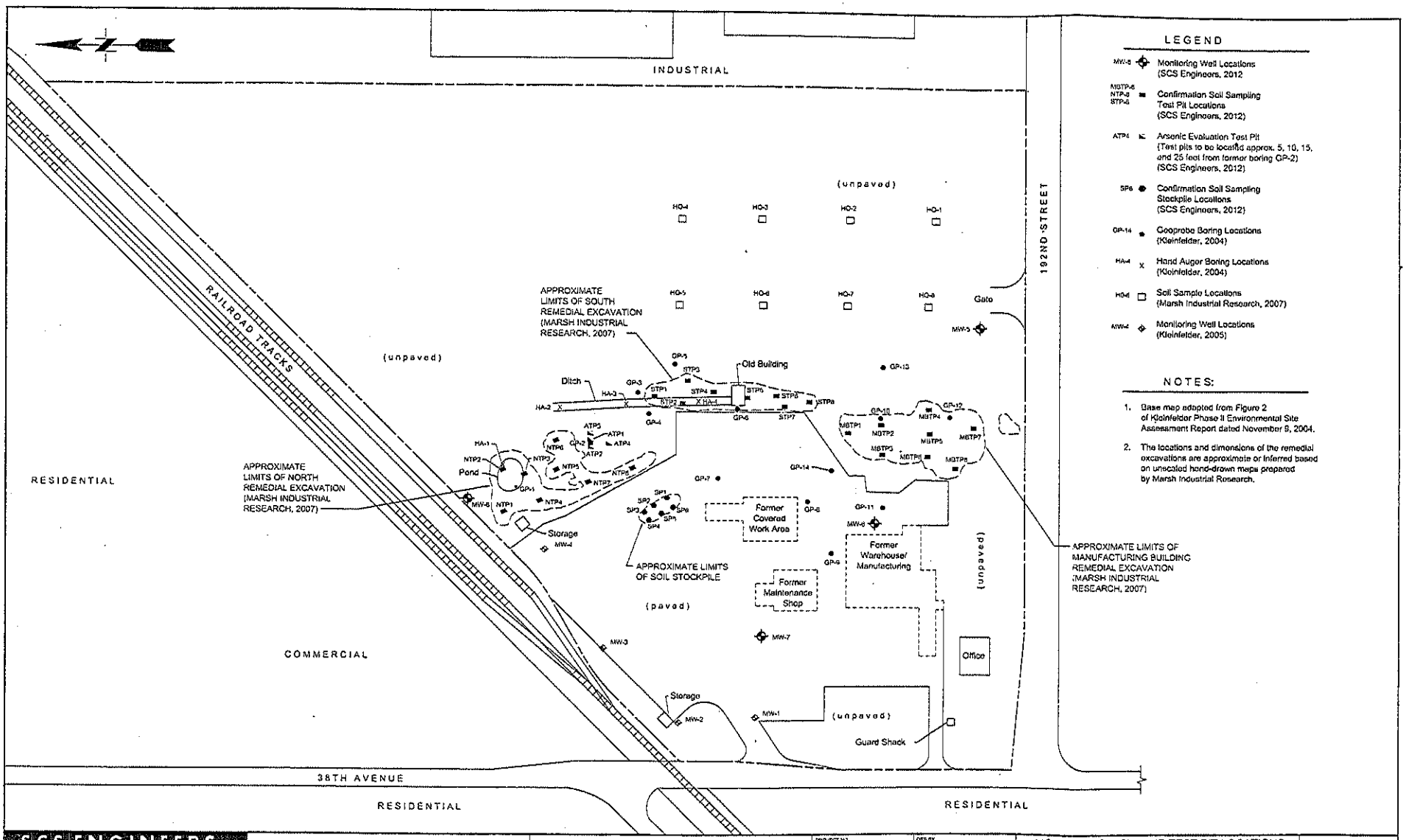
PROJECT NO.	DES BY
04211021.00	L.L.
SCALE	CHK BY
-	E.S.
CAD FILE	APP BY
FIGURE 1	D.V.

SITE VICINITY MAP

FORMER SPANAWAY LUMBER FACILITY
19111 38TH AVENUE EAST
TACOMA, WASHINGTON

DATE: OCTOBER 2012

FIGURE: 1



LEGEND

- MW-6 — Monitoring Well Locations (SCS Engineers, 2012)
- MBTP-6, NTP-8, STP-5 — Confirmation Soil Sampling Test Pit Locations (SCS Engineers, 2012)
- ATP-1 — Arsenic Evaluation Test Pit (Test pits to be located approx. 5, 10, 15, and 25 feet from former boring GP-2) (SCS Engineers, 2012)
- SP-6 — Confirmation Soil Sampling Stockpile Locations (SCS Engineers, 2012)
- GP-14 — Geoprobe Boring Locations (Kleinfelder, 2004)
- HA-4 — Hand Auger Boring Locations (Kleinfelder, 2004)
- HO-6 — Soil Sample Locations (Marsh Industrial Research, 2007)
- MW-2 — Monitoring Well Locations (Kleinfelder, 2005)

NOTES:

1. Base map adopted from Figure 2 of Kleinfelder Phase II Environmental Site Assessment Report dated November 9, 2004.
2. The locations and dimensions of the remedial excavations are approximate or inferred based on unscaled hand-drawn maps prepared by Marsh Industrial Research.

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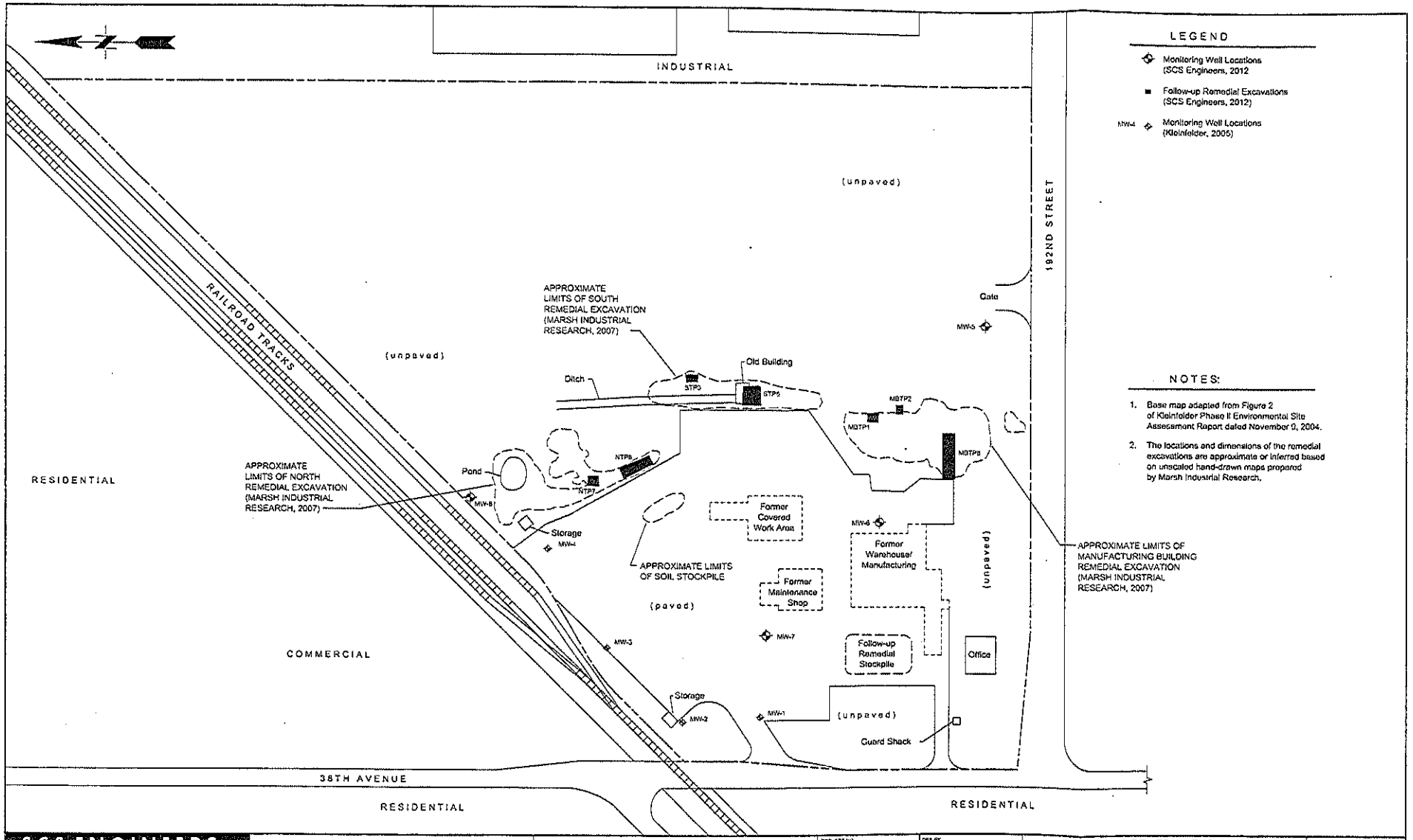
0 40 80 120
SCALE IN FEET

PROJECT NO	04211021.00
DES BY	D.L.
SCALE	1" = 120'-0"
CHK BY	E.S.
CAD FILE	FIGURE 4
APP BY	D.V.

MONITORING WELL AND TEST PIT LOCATIONS
SCS ENGINEERS, 2012
FORMER SPANAWAY LUMBER FACILITY
19111 38TH AVENUE EAST
TACOMA, WASHINGTON

DATE: OCTOBER 2012
FIGURE: 4



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0 40 80 120
SCALE IN FEET

PROJECT NO	04211021.00
SCALE	1" = 120'-0"
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FOLLOW-UP REMEDIAL EXCAVATIONS
SCS ENGINEERS, 2012
FORMER SPANAWAY LUMBER FACILITY
19111 38TH AVENUE EAST
TACOMA, WASHINGTON

DATE: OCTOBER 2012
FIGURE: 6

Table 2. Summary of NWTPH-Dx Results in Soil from Test Pits and Well Borings

Location	Sample Date	Sample Depth (ft)	NWTPH-Dx (mg/kg)	
			#2 Diesel (C10-C24)	Motor Oil (>C24-C36)
NTP1	12/5/2011	3.0	<	<
NTP2	12/5/2011	2.0	<	<
NTP3	12/5/2011	1.0	36	360
NTP4	12/5/2011	1.0	56	570
NTP5	12/5/2011	1.0	120	1200
NTP6	12/5/2011	3.0	150	1000
NTP7	12/5/2011	1.0	**2400**	**17000**
NTP8	12/5/2011	2.0	1200	**8400**
MBTP1	12/5/2011	1.0	310	**3500**
MBTP2	12/5/2011	1.0	280	**3000**
MBTP3	12/5/2011	2.5	<	90
MBTP4	12/5/2011	3.0	<	<
MBTP5	12/5/2011	1.0	180	1900
MBTP6	12/5/2011	3.0	<	<
MBTP7	12/5/2011	2.0	52	500
MBTP8	12/5/2011	3.0	420	**4600**
STP1	12/5/2011	3.0	97	930
STP2	12/5/2011	2.0	250	1400
STP3	12/5/2011	3.0	440	**2400**
STP4	12/5/2011	4.0	720	1900
STP5	12/5/2011	2.0	**2500**	**2900**
STP6	12/5/2011	2.0	300	1100
STP7	12/5/2011	1.0	49	400
STP8	12/5/2011	2.0	100	750
SP1	12/5/2011	stockpile	61	540
SP2	12/5/2011	stockpile	70	720
SP3	12/5/2011	stockpile	80	810
SP4	12/5/2011	stockpile	84	780
SP5	12/5/2011	stockpile	85	880
SP6	12/5/2011	stockpile	92	990
MW5	2/13/2012	10'	<25	<51
MW6	2/13/2012	10'	<28	<56
MW7	2/13/2012	10'	<28	<56
MW8	2/13/2012	10'	<28	92
MTCA Cleanup Levels			2000 (A)	2000 (A)

Bold	Analyte concentration exceeds MTCA cleanup levels.
<	Analyte not detected above method reporting limit.
(A)	MTCA Method A cleanup level
MBTP	Manufacturing Building Test Pit
NTP	North Remedial Excavation Test Pit
STP	South Remedial Excavation Test Pit
SP	Soil Stockpile

Table 3. Summary of Arsenic Results in Soil

Location	Sample Date	Sample Depth (ft)	Method 6010B (mg/kg)							
			Arsenic (As)	Lead (Pb)	Chromium (Cr)	Cadmium (Cr)	Barium (Ba)	Silver (Ag)	Selenium (Se)	Mercury (Hg)
ATP1	12/5/2011	4.0	<3.3	NA	NA	NA	NA	NA	NA	NA
ATP2	12/5/2011	4.0	3.8	NA	NA	NA	NA	NA	NA	NA
ATP3	12/5/2011	4.0	<3.4	NA	NA	NA	NA	NA	NA	NA
ATP4	12/5/2011	4.0	<3.6	NA	NA	NA	NA	NA	NA	NA
MW-5	2/13/2012	10.0	<2.9	<1.4	5.4	<0.48	20	<0.95	<4.8	<0.015
MW-6	2/13/2012	10.0	3	2.1	15	0.45	33	<0.83	4.2	<0.019
MW-7	2/13/2012	10.0	3.8	2.5	19	0.72	54	<1.1	5.4	<0.014
MW-8	2/13/2012	10.0	4	2.4	19	0.6	44	<1.1	<5.4	0.166
	MTCA Cleanup Levels:		20 (A)	250	2,000	2	5,600 (B)	400 (B)	400 (B)	2

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

NA Not Analyzed

(A) MTCA Method A cleanup level

(B) MTCA Method B cleanup level

ATP Arsenic Test Pit

MW Monitoring Well

Table 4. Summary of Polynuclear Aromatic Hydrocarbons (µg/L) in Soil

Sample Date	Sample Identification	NAPH	NWTPH-Dx (mg/kg)	1-MN	ACEN	ACE	TPd	FLUORENE	PHEN	ANTH	FLUORA	PYRENE	B(a)A	CHRYSENE	B(b)F	B(k)F	B(a)P	I(1,2,3-cd)P	DB(ah)A	B(ghi)P	Total PAH	Total cPAH	TEF-Corrected Total cPAH
12/05/11	MBTP1-1'	2.4 L	2.4 L	1.8 L	1.8 L	1.8 L	700	1.8 L	13	1.8 L	6.3	9.8	6.2	24	27	1.8 L	16	13	1.8 L	20	844.3	86.2	20.9
12/05/11	MBTP8-2'	2.1 L	2.1 L	1.6 L	1.6 L	1.6 L	740	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	1.6 L	762.4	0.0	0.0
12/05/11	NTP7-1'	2.4 L	12	7	1.8 L	1.8 L	780	1.8 L	110	1.8 L	31	180	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1120.8	0.0	0.0
12/05/11	NTP8-2'	23	66	22	1.8 L	1.8 L	1000	1.8 L	60	1.8 L	1.8 L	69	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1150.6	0.0	0.0
12/05/11	SP6	2.1 L	2.1 L	1.6 L	1.6 L	1.6 L	780	1.6 L	6.5	1.6 L	13	18	11	16	17	1.6 L	10	1.6 L	1.6 L	9.6	890.7	54.0	13.0
12/05/11	STP3-3'	23	90	100	2.3 L	14	1200	49	170	2.3 L	15	26	2.3 L	19	14	2.3 L	2.3 L	2.3 L	2.3 L	12	1532.8	33.0	1.6
12/05/11	STP5-2'	12	54	85	24	1.8 L	1200	1.8 L	250	1.8 L	52	160	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1.8 L	1681.8	0.0	0.0
MTCA Method A Cleanup Level		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	100	--	--	--	--	--	100

Notes: All concentration are presented in micrograms per liter (µg/Kg)
Analyses performed by Test America Seattle, Washington
(1) Results exclude L-qualified detections (i.e. "non-detects")
(MRL) Indicates Method Reporting Limit
(L) Indicates results are less than the MRL ("Non Detect")
(—) Indicates not applicable or not performed
(NA) Indicates not analyzed
(TEF) Indicates toxicity equivalency factor for Benzo(a)Pyrene
Parameter abbreviations are as follows:

NAPH = Naphthalene
2-MN = 2-Methylnaphthylene
1-MN = 1-Methylnaphthylene
ACEN = Acenaphthylene
ACE = Acenaphthene
TPd = Terphenyl-d14
PHEN = Phenanthrene
ANTH = Anthracene
FLUORA = Fluoranthene
B(a)A = Benzo(a)Anthracene
B(b)F = Benzo(b)Fluoranthene
B(k)F = Benzo(k)Fluoranthene
B(a)P = Benzo(a)Pyrene
I(1,2,3-cd)P = Indeno(1,2,3-cd)Pyrene
DB(a,h)A = Dibenz(a,h)Anthracene
B(g,h,i)P = Benzo(g,h,i)Perylene

Table 5. Summary of VOC Results in Soil, Well Installation

Sample ID	Sample Date	Selected Volatile Organic Compounds (µg/kg) (Compounds listed were selected based on groundwater results; See Table 8.)		
		Chloroform	Vinyl Chloride	Remaining VOCs
MW5-10'	2/13/2012	<33	<6.5	<
MW6-10'	2/13/2012	<40	<8.1	<
MW7-10'	2/13/2012	<35	<6.9	<
MW8-10'	2/13/2012	<38	<7.6	<
MTCA Cleanup Levels		164,000 (B)	667 (B)	

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

(B) MTCA Method B cleanup level

Table 3. Summary of Arsenic Results in Soil

Location	Sample Date	Sample Depth (ft)	Method 6010B (mg/kg)							
			Arsenic (As)	Lead (Pb)	Chromium (Cr)	Cadmium (Cr)	Barium (Ba)	Silver (Ag)	Selenium (Se)	Mercury (Hg)
ATP1	12/5/2011	4.0	<3.3	NA	NA	NA	NA	NA	NA	NA
ATP2	12/5/2011	4.0	3.8	NA	NA	NA	NA	NA	NA	NA
ATP3	12/5/2011	4.0	<3.4	NA	NA	NA	NA	NA	NA	NA
ATP4	12/5/2011	4.0	<3.6	NA	NA	NA	NA	NA	NA	NA
MW-5	2/13/2012	10.0	<2.9	<1.4	5.4	<0.48	20	<0.95	<4.8	<0.015
MW-6	2/13/2012	10.0	3	2.1	15	0.45	33	<0.83	4.2	<0.019
MW-7	2/13/2012	10.0	3.8	2.5	19	0.72	54	<1.1	5.4	<0.014
MW-8	2/13/2012	10.0	4	2.4	19	0.6	44	<1.1	<5.4	0.166
	MTCA Cleanup Levels:		20 (A)	250	2,000	2	5,600 (B)	400 (B)	400 (B)	2

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

NA Not Analyzed

(A) MTCA Method A cleanup level

(B) MTCA Method B cleanup level

ATP Arsenic Test Pit

MW Monitoring Well

Table 8. Summary of VOC Detections in Groundwater

Sample ID	Sample Date	Detected Volatile Organic Compounds (µg/L)		
		Chloroform	Vinyl Chloride	Remaining VOCs
MW-2	2/23/2012	<0.1	0.1	<
MW-3		<0.1	<0.02	<
MW-4		<0.1	<0.02	<
MW-5		0.14	<0.02	<
MW-6		<0.1	<0.02	<
MW-7		0.16	<0.02	<
MW-7 duplicate		0.14	<0.02	<
MW-8		<0.1	<0.02	<
MTCA Cleanup Levels		7.17*	0.2	

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

* MTCA Method B cleanup level

Table 9. Summary of Petroleum Hydrocarbon Results in Groundwater

Sample ID	Sample Date	Diesel-Range TPH (ug/L)	
		Diesel	Heavy Oil
MW-2	2/23/2012	<120	<240
MW-3		<120	<240
MW-4		<120	<240
MW-5		<120	<240
MW-6		130 (Y)	260 (Y)
MW-7		<120	<240
MW-7 duplicate		<120	<240
MW-8		<120	<240
MTCA Clean Up Levels		500	500

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

Y The chromatographic response resembles a typical fuel pattern.

Table 10. Summary of Metal Results in Groundwater

Sample ID	Sample Date	Detected Metals (ug/L)							
		Lead (Pb)	Chromium (Cr)	Cadmium (Cr)	Barium (Ba)	Silver (Ag)	Arsenic (As)	Selenium (Se)	Mercury (Hg)
MW-2	2/23/2012	<2	<2	<2	<6	<2	<5	<5	<0.2
MW-3		<2	<2	<2	7.8	<2	<5	<5	<0.2
MW-4		<2	<2	<2	8.3	<2	**5.6**	<5	<0.2
MW-5		<2	2.1	<2	14	<2	<5	<5	<0.2
MW-6		<2	<2	<2	8.6	<2	<5	<5	<0.2
MW-7		<2	<2	<2	6.7	<2	<5	<5	<0.2
MW-7 dup.		<2	<2	<2	7	<2	<5	<5	<0.2
MW-8		<2	<2	<2	6.8	<2	<5	<5	<0.2
MTCA Cleanup Levels		15 (A)	50 (A)	5 (A)	3200 (B)	80 (B)	5 (A)	80 (B)	2 (A)

Bold Analyte concentration exceeds MTCA cleanup levels.

< Analyte not detected above method reporting limit.

(A) MTCA Method B cleanup level

(B) MTCA Method B cleanup level

Table 11. Summary of NWTPH-Dx Results in Soil from Follow-up Remedial Excavations

Remedial Area	Sample Location	Sample Date	Sample Depth (ft)	NWTPH-Dx (mg/kg)		Notes
				#2 Diesel (C10-C24)	Motor Oil (>C24-C36)	
STP5	STP5-S1-2'	6/4/2012	2'	**3,100**	<100	Initial sample, S sidewall
	STP5-W1-2'	6/4/2012	2'	<50	210	Initial sample, W sidewall
	STP5-W1-2' dup	6/4/2012	2'	<50	180	Initial sample, W sidewall, duplicate
	STP5-E1-2'	6/4/2012	2'	<50	<100	Initial sample, E sidewall
	STP5-N1-2'	6/4/2012	2'	1,070	130	Initial sample, N sidewall
	STP5-S2-2'	6/5/2012	2'	420	170	Second sample, S sidewall
	STP5-B1-E-5'	6/5/2012	5'	<50	130	Initial sample, bottom, E portion
	STP5-B1-W-5'	6/5/2012	5'	<50	420	Initial sample, bottom, W portion
STP3	STP3-N1-3'	6/4/2012	3'	60	<100	Initial sample, N sidewall
	STP3-E1-3'	6/4/2012	3'	<50	<100	Initial sample, E sidewall
	STP3-W1-3'	6/4/2012	3'	230	800	Initial sample, W sidewall
	STP3-B-6'	6/4/2012	6'	<50	240	Initial sample, bottom
	STP3-S1-3'	6/4/2012	3'	<50	<100	Initial sample, S sidewall
MBTP1	MBTP1-N1-1'	6/4/2012	1'	<50	1,300	Initial sample, N sidewall
	MBTP1-E1-1'	6/4/2012	1'	<50	<100	Initial sample, E sidewall
	MBTP1-S1-1'	6/4/2012	1'	<50	480	Initial sample, S sidewall
	MBTP1-W1-1'	6/4/2012	1'	<50	770	Initial sample, W sidewall
	MBTP1-B1-4'	6/4/2012	4'	<50	<100	Initial sample, bottom
	MBTP1-B1-4' dup	6/4/2012	4'	<50	150	Initial sample, bottom, duplicate
MBTP2	MBTP2-E1-1'	6/4/2012	1'	<50	1,125	Initial sample, E sidewall
	MBTP2-S1-1'	6/4/2012	1'	<50	320	Initial sample, S sidewall
	MBTP2-W1-1'	6/4/2012	1'	<50	760	Initial sample, W sidewall
	MBTP2-N1-1'	6/4/2012	1'	<50	310	Initial sample, N sidewall
	MBTP2-B-4'	6/4/2012	4'	<50	1,400	Initial sample, bottom
NTP8	NTP8-S1-2'	6/4/2012	2'	<50	**7,900**	Initial sample, S sidewall
	NTP8-N1-2'	6/4/2012	2'	<50	**29,000**	Initial sample, N sidewall
	NTP8-E1-2'	6/4/2012	2'	<50	**7,200**	Initial sample, E sidewall
	NTP8-W1-2'	6/4/2012	2'	<50	610	Initial sample, W sidewall
	NTP8-B-5'	6/4/2012	5'	<50	1,100	Initial sample, bottom
	NTP8-S2-2'	6/5/2012	2'	<50	390	Second sample, S sidewall
	NTP8-N2-2'	6/5/2012	2'	<50	950	Second sample, N sidewall
	NTP8-E2-2'	6/5/2012	2'	<50	**3,400**	Second sample, E sidewall
	NTP8-E3-2'	6/6/2012	2'	<50	**2,300**	Third sample, E sidewall
	NTP8-E3-2' dup	6/6/2012	2'	<50	1,600	Third sample, E sidewall, duplicate
	NTP8-E4-2'	6/6/2012	2'	<50	690	Fourth sample, E sidewall
MTCA Cleanup Levels				2000 (B)	2000 (B)	

Bold	Analyte concentration exceeds MTCA cleanup levels.
<	Analyte not detected above method reporting limit.
(B)	MTCA Method B cleanup level
MBTP	Manufacturing Building Test Pit
NTP	North Remedial Excavation Test Pit
STP	South Remedial Excavation Test Pit

Table 11 (continued). Summary of NWTPH-Dx Results in Soil from Follow-up Remedial Excavations

Remedial Area	Sample Location	Sample Date	Sample Depth (ft)	NWTPH-Dx (mg/kg)		Notes
				#2 Diesel (C10-C24)	Motor Oil (>C24-C36)	
NTP7	NTP7-E1-1'	6/5/2012	1'	<50	1,510	Initial sample, E sidewall
	NTP7-S1-1'	6/5/2012	1'	<50	**2,700**	Initial sample, S sidewall
	NTP7-W1-1'	6/5/2012	1'	<50	**3,800**	Initial sample, W sidewall
	NTP7-N1-1'	6/5/2012	1'	<50	<100	Initial sample, N sidewall
	NTP7-B1-4'	6/5/2012	1'	<50	240	Initial sample, bottom
	NTP7-B1-4' dup	6/5/2012	1'	<50	580	Initial sample, bottom, duplicate
	NTP7-S2-1'	6/5/2012	1'	<50	880	Second sample, S sidewall
	NTP7-W2-1'	6/5/2012	1'	<50	710	Second sample, W sidewall
MBTP8	MBTP8-W1-3'	6/5/2012	3'	<50	**19,000**	Initial sample, W sidewall
	MBTP8-S1-3'	6/5/2012	3'	<50	<100	Initial sample, S sidewall
	MBTP8-E1-3'	6/5/2012	3'	<50	**11,000**	Initial sample, E sidewall
	MBTP8-N1-3'	6/5/2012	3'	<50	**7,000**	Initial sample, N sidewall
	MBTP8-B1-6'	6/5/2012	3'	<50	1,300	Initial sample, bottom
	MBTP8-B1-6' dup	6/5/2012	6'	<50	1,400	Initial sample, bottom, duplicate
	MBTP8-B2-6'	7/19/2012	6'	120	1,100	Second sample, bottom
	MBTP8-W2-3'	6/6/2012	3'	<50	**5,500**	Second sample, W sidewall
	MBTP8-E2-3'	6/6/2012	3'	<50	**4,100**	Second sample, E sidewall
	MBTP8-N2-3'	6/6/2012	3'	<50	**2,800**	Second sample, N sidewall
	MBTP8-E3-3'	6/6/2012	3'	<50	360	Third sample, E sidewall
	MBTP8-N3-3'	6/6/2012	3'	<50	660	Third sample, N sidewall
	MBTP8-W3-3'	6/6/2012	3'	<50	**3,600**	Third sample, W sidewall
	MBTP8-W3-3' dup	6/6/2012	3'	<50	**3,300**	Third sample, W sidewall, duplicate
	MBTP8-W4-3'	6/6/2012	3'	<50	**4,700**	Fourth sample, W sidewall
	MBTP8-W5-3'	6/7/2012	3'	<50	**12,000**	Fifth sample, W sidewall
	MBTP8-W5-3' dup	6/7/2012	3'	<50	**8,500**	Fifth sample, W sidewall, duplicate
	MBTP8-W6-3'	7/19/2012	3'	370	**3,900**	Sixth sample, W sidewall,
	MBTP8-W7-3'	7/19/2012	3'	<25	<49	Seventh sample, W sidewall,
MTCA Cleanup Levels				2000 (B)	2000 (B)	

Bold	Analyte concentration exceeds MTCA cleanup levels.
<	Analyte not detected above method reporting limit.
(B)	MTCA Method B cleanup level
MBTP	Manufacturing Building Test Pit
NTP	North Remedial Excavation Test Pit
STP	South Remedial Excavation Test Pit

TABLE 3: SUMMARY OF TOTAL AND DISSOLVED ARSENIC IN GROUNDWATER

Sample ID	Sample Date	Arsenic (µg/L)	
		Total	Dissolved
MW-3	April 16, 2013	<5	<5
MW-4		<5	<5
MW-8		<5	<5
MTCA Method A Cleanup Level		5 (total)	

< Analyte not detected above method reporting limit.