

Memo



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To: Brandon Smith (West Bay Development Group, LLC)
From: Troy Bussey, P.E., L.G. L.H.G. and Joel Hecker, L.G. (PIONEER Technologies Corporation [PIONEER])
Date: October 13, 2020
Subject: Due Diligence Investigation Status Update
Hardel Mutual Plywood Corporation Site
1210 West Bay Drive NW, Olympia, Washington

Executive Summary

The purpose of this memo is to summarize the results and recommended path forward for due diligence investigation activities conducted between June and August 2020 at the Hardel Mutual Plywood Corporation (Hardel) site (Site) located in Olympia, Washington. A conservative screening of the June and August 2020 investigation results indicated that the Site is generally unimpacted (as expected based on the previous completion of remediation to the Washington State Department of Ecology's [Ecology's] satisfaction), with the exception of a few minor Model Toxics Control Act (MTCA) soil and groundwater screening level (SL) exceedances. The few minor soil SL exceedances are petroleum-related, do not pose a significant concern, and can be remedied relatively easily. The few minor groundwater SL do not appear to pose a significant concern, and may not even be attributable to a Site release. However, additional investigation and evaluation activities are warranted to determine the path forward for addressing these groundwater SL exceedances. There were no MTCA SL exceedances for dioxins/furans and polychlorinated biphenyls (PCBs) in the 2020 soil and groundwater samples, which confirms the previous Ecology conclusion (in response to public comments) that dioxins/furans and PCBs are not a concern at this Site. The June and August 2020 investigation activities and results will be fully documented in future reports.

Background Information

Investigation and remediation activities were previously completed at the Site to assess and address releases from historical operations, including the former plywood manufacturing facility operated by Hardel from 1951 through 1996. These previous MTCA investigation and remediation activities were completed pursuant to the 2007 Agreed Order #DE 4108 (AO) between Hardel and Ecology. Pursuant to the AO, a Remedial Investigation, a Feasibility Study, and an Interim Action (IA) were conducted, and a Cleanup Action Plan (CAP) was prepared. Based on the nature of historical operations and sampling and analyses activities conducted between 2004 and 2007, diesel, heavy oil, and the associated polycyclic aromatic hydrocarbons (PAHs) were identified as the constituents of concern (COCs) for the Site (Greylock Consulting LLC [Greylock] 2009a). In addition, in response to questions about dioxins/furans from concerned citizens during multiple AO-related public notice periods, Ecology explicitly concluded that "dioxins/furans were determined to not be COCs at this Site" (Ecology 2012a). Remediation activities during the 2010 IA included the excavation of approximately 23,331 tons of petroleum-impacted soil and debris that was disposed of at the Weyerhaeuser landfill in Cowlitz County, Washington (Greylock 2010). Since "all soil contaminated with petroleum hydrocarbons and polyaromatic hydrocarbons (PAHs) above MTCA cleanup levels were removed from the Site as part of the interim action" and "confirmation groundwater monitoring results were below the MTCA cleanup levels for petroleum hydrocarbons and PAHs", Ecology determined in the CAP that "Hardel completed all required cleanup of soil, groundwater and sediment at the Hardel



Mutual Plywood Site” (Ecology 2012a). In addition, Ecology stated in a 2012 letter (see Attachment 1) that Hardel had satisfied all AO requirements and “no additional remedial action is necessary at this site unless new or different information becomes known” (Ecology 2012b).

As you know, PIONEER conducted a Phase I Environmental Site Assessment (ESA), a Phase II ESA, and additional investigation activities in 2020 for due diligence purposes. Recognized Environmental Concerns identified in the Phase I ESA included historical fill material throughout the Site and the south-adjointing Reliable Steel site (PIONEER 2020a). Phase II ESA sampling was conducted in June 2020 as part of the City of Olympia’s United States Environmental Protection Agency brownfield assessment grant. PIONEER conducted additional sampling in August 2020 based on several MTCA SL exceedances in the June 2020 samples. As part of the August 2020 sampling, soil and groundwater samples were analyzed for dioxins/furans and PCBs even though Ecology had previously concluded that dioxins/furans and PCBs were not COCs for the Site. A summary of the sampling locations and laboratory analyses for the 2020 investigation activities (and for previous investigation activities) is presented in Table 1. The 2020 sampling and analyses activities were conducted in general accordance with the Sampling and Analysis Plan and Quality Assurance Project Plan (PIONEER 2020b, 2020c).

Screening of 2020 Investigation Results

A conservative screening of the investigation results from the June and August 2020 samples was performed. Constituent concentrations in soil samples were compared to default MTCA direct contact SLs for an unrestricted land use (e.g., residential) scenario and a commercial/industrial land use scenario.¹ A summary of the soil SL exceedances is presented in Figure 1. Constituent concentrations in groundwater samples were compared to default MTCA groundwater SLs that are protective of drinking water use and potential surface water receptors. A summary of the groundwater SL exceedances is presented in Figure 2.

Please note that the presence of SL exceedances does not mean that the Site poses an unacceptable risk to human health or the environment. Some of the default SLs are based on potentially complete exposure pathways that may not be relevant. For instance, the default groundwater SLs assume that future residents are using Site groundwater for drinking water purposes even though that is highly unlikely. Likewise, the default groundwater SLs are being applied at upland groundwater locations even though the actual exposure points for potential surface water receptors are surface water and sediment at the Budd Inlet shoreline.

Discussion

Soil SL Exceedances

The few minor soil SL exceedances in the 2020 samples do not pose a significant concern and can be remedied relatively easily. The only exceedances of default MTCA direct contact SLs for an unrestricted land use scenario soil were diesel, heavy oil, and/or total carcinogenic PAHs (cPAHs) concentrations in five soil samples, and the only exceedance of default

¹ Soil constituent concentrations were also compared to default MTCA soil-to-groundwater SLs, which will be discussed in future reports.



MTCA direct contact SLs for a commercial/industrial land use scenario was a diesel concentration in a B2 soil sample. The spatial distribution of the diesel, heavy oil, and total cPAHs exceedances suggests that there could be other minor diesel, heavy oil, and/or total cPAHs soil SL exceedances at other Site locations. In addition, concentrations of total cPAHs may be present at various Site locations at concentrations that exceed its soil SL due to urban background (PIONEER 2010). Regardless of the source(s), these minor SL exceedances could be remediated relatively easily. One potential solution that could satisfy MTCA regulations and expectations would be to (1) remove the B2 diesel exceedance, (2) install, monitor, and maintain a cap/cover across the upland portion of the Site, and (3) record a land use covenant to monitor and maintain the cap/cover.

Groundwater SL Exceedances

The few minor groundwater SL exceedances in the 2020 samples do not appear to pose a significant concern, and may not even be attributable to a Site release. The only exceedances of default MTCA groundwater SLs were slightly elevated concentrations of (1) tetrachloroethylene (PCE), ethylene dibromide (EDB), and arsenic in B5 or B6, (2) EDB in B3, (3) arsenic in MW101 and MW104, and (4) diesel, heavy oil, total naphthalenes, and total cPAHs in MW104. However, existing data suggest that most, if not all, of these GW exceedances are not attributable to a Site release. For instance, the B5 and B6 exceedances are attributable to the Reliable Steel site based on the groundwater flow direction near these samples (Greylock 2011a, 2011b). The EDB concentration in B3 may be an unrepresentative artifact from direct-push groundwater sampling since EDB was not detected in the August 2020 groundwater sample collected from adjacent MW103. Based on the nature of historical Site operations and experience at other Puget Sound shoreline sites, the arsenic SL exceedances in MW101 and MW104 are likely due to natural background and localized geochemical conditions. Localized treated wood debris may be responsible for the diesel, heavy oil, total naphthalenes, and total cPAHs SL exceedances in MW104 given the prevalence of wood debris in the subsurface (including within the MW104 boring) and the lack of groundwater SL exceedances in adjacent B4. Nonetheless, further investigation and evaluation activities (e.g., conducting additional groundwater sampling events) are necessary in order to further assess the existing groundwater SL exceedances.

Dioxins/Furans and PCBs

There were no dioxins/furans or PCBs exceedances of default MTCA soil or groundwater SLs in the seven soil samples and four groundwater samples collected in 2020 to further assess the potential for dioxins/furans and PCBs in historical fill material. Thus, the 2020 results confirm the previous Ecology conclusion that dioxins/furans and PCBs are not a concern at this Site.

Future Reporting

The investigation activities and results from the June 2020 Phase II ESA will be documented in a forthcoming Phase II ESA Report. The investigation activities and results from the August 2020 sampling and follow-up groundwater sampling will be documented in one or more future reports on a to-be-determined schedule.



References

- Ecology. 2012a. Final Cleanup Action Plan. Hardel Mutual Plywood. April.
- Ecology. 2012b. Satisfaction of Agreed Order No. DE4108: Hardel Mutual Plywood. August.
- Greylock. 2007. Remedial Investigation Report. Former Hardel Plywood Site. December.
- Greylock. 2009a. Feasibility Study. Former Hardel Plywood Site. May.
- Greylock. 2009b. Supplemental Subsurface Investigation. Former Hardel Plywood Site. November.
- Greylock. 2010. Interim Action Closure Report. Former Hardel Plywood Site. December.
- Greylock. 2011a. Post-Construction Groundwater Monitoring Summary of Four Quarters. Former Hardel Plywood Site. November.
- Greylock. 2011b. Draft RI/FS Report, Former Reliable Steel Site. 1218 West Bay Drive NW, Olympia, Washington. February.
- Stemen Environmental, Inc. 2004. Phase II ESA Report, Former Hardel Mutual Plywood Waterfront Property. July.
- PIONEER. 2010. Site Boundary Technical Memorandum for the East Bay Redevelopment Site. November.
- PIONEER. 2020a. Phase I ESA. Hardel Mutual Plywood Corporation. 1210 West Bay Drive NW. Olympia, Washington. February.
- PIONEER. 2020b. Quality Assurance Project Plan for the City of Olympia's Brownfield Assessment Grant. March.
- PIONEER. 2020c. Sampling and Analysis Plan. Hardel Mutual Plywood Corporation. 1210 West Bay Drive NW. Olympia, Washington. May.

Enclosures

Table 1	Summary of All Sampling Locations with Laboratory Analyses to Date
Figure 1	Summary of 2020 Soil Sampling Results
Figure 2	Summary of Groundwater Sampling Results
Attachment 1	Ecology August 22, 2012 Letter Titled "Satisfaction of Agreed Order No. DE 4108: Hardel Mutual Plywood, FS #75128579"



Professional Certification

This document was prepared under my direction. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I hereby certify that I was in responsible charge of the work performed for this document.



EXPIRES 12/06/20



TROY D. BUSSEY, JR.

October 13, 2020

Troy D. Bussey Jr.
Principal Engineer
PIONEER Technologies Corporation
Washington P.E. Registration No. 38877
Washington L.G. and L.HG. Registration No. 1568

Date



Table 1: Summary of All Sampling Locations with Laboratory Analyses to Date

Document / Phase	Media	Total # of Sampling Locations	Sampling Location IDs	Laboratory Analyses	Total # of Sampling Locations Analyzed for Dioxins/Furans	Total # of Sampling Locations Analyzed for PCBs
2004 Phase II ESA (Stemen Environmental, Inc. 2004)	Soil ⁽¹⁾	25	S-1 through S-16, S-18, S-19, S-20, S-22, S-24, TP-2 through TP-5	NWTPH-Dx (e.g., Diesel, Heavy Oil), SVOCs*, VOCs*, PCBs*, Metals*	0	2
	Groundwater	12	S-1, S-3, S-6, S-8, S-10, S-12, S-15, S-24, S-26, TP-3, TP-4, DV-1	NWTPH-Dx (e.g., Diesel, Heavy Oil), SVOCs*, VOCs*, PCBs*	0	4
	Sediment	1	SED-1	VOCs, Metals	0	0
2007 Remedial Investigation Report (Greylock 2007)	Soil ⁽¹⁾	26	GB-1 through GB-19, MW-1 through MW-7	NWTPH-Dx (e.g., Diesel, Heavy Oil), PAHs*, Phenols*	0	0
	Groundwater	7	MW-1 through MW-7	NWTPH-Dx (e.g., Diesel, Heavy Oil), SVOCs, pH, Salinity	0	0
	Sediment	3	GS-1, GS-2, and GS-4	SVOCs, Dioxins/Furans, PCBs, Pesticides, Metals, Sulfide, TOC, and Total Solids	3	3
2009 Supplemental Subsurface Investigation (Greylock 2009b)	Soil ⁽¹⁾	6	GB-103 through GB-107, MW-8	NWTPH-Dx (e.g., Diesel, Heavy Oil)	0	0
2010 Interim Action Closure Report (Greylock 2010)	Soil	83	See Footnote 2 for sampling location IDs ⁽²⁾	NWTPH-Dx (e.g., Diesel, Heavy Oil)	0	0
Post-Construction Groundwater Monitoring Summary of Four Quarters (Greylock 2011)	Groundwater ⁽³⁾	9	MW-2, MW-3, MW-6, MW-10 through MW-15	NWTPH-Dx (e.g., Diesel, Heavy Oil), PAHs	0	0
June 2020 Phase II ESA Sampling (future PIONEER report)	Soil	9	B1 through B9	NWTPH-Dx (e.g., Diesel, Heavy Oil), SVOCs*/PAHs, NWTPH-Gx (e.g., Gasoline), VOCs, Metals*, EPH*, TOC*	0	0
	Groundwater	6	B1 through B6	NWTPH-Dx (e.g., Diesel, Heavy Oil), SVOCs, NWTPH-Gx (e.g., Gasoline), VOCs, Metals	0	0
August 2020 Additional Sampling (future PIONEER report)	Soil	5	B2-C, B2-N, B2-E, B2-S, B2-W	NWTPH-Dx (e.g., Diesel, Heavy Oil) PAHs, NWTPH-Gx (e.g., Gasoline), VOCs	0	0
	Soil	7	B101 through B107	Dioxins/Furans, PCBs, NWTPH-Dx (e.g., Diesel, Heavy Oil)*, NWTPH-Gx (e.g., Gasoline)*	7	7
	Groundwater	4	MW101 through MW104	NWTPH-Dx (e.g., Diesel, Heavy Oil), PAHs, NWTPH-Gx (e.g., Gasoline), VOCs, Dioxins/Furans, PCBs, Arsenic, Chloride, EPH*	4	4
Totals		203			14	20

Notes:

EPH: extractable petroleum hydrocarbons; NWTPH-Dx: Northwest Total Petroleum Hydrocarbons - Diesel Extended; NWTPH-Gx: Northwest Total Petroleum Hydrocarbons - Gasoline Extended; PAHs: polycyclic aromatic hydrocarbons; PCBs: polychlorinated biphenyls; SVOCs: semi-volatile organic compounds; TOC: total organic carbon; VOCs: volatile organic compounds

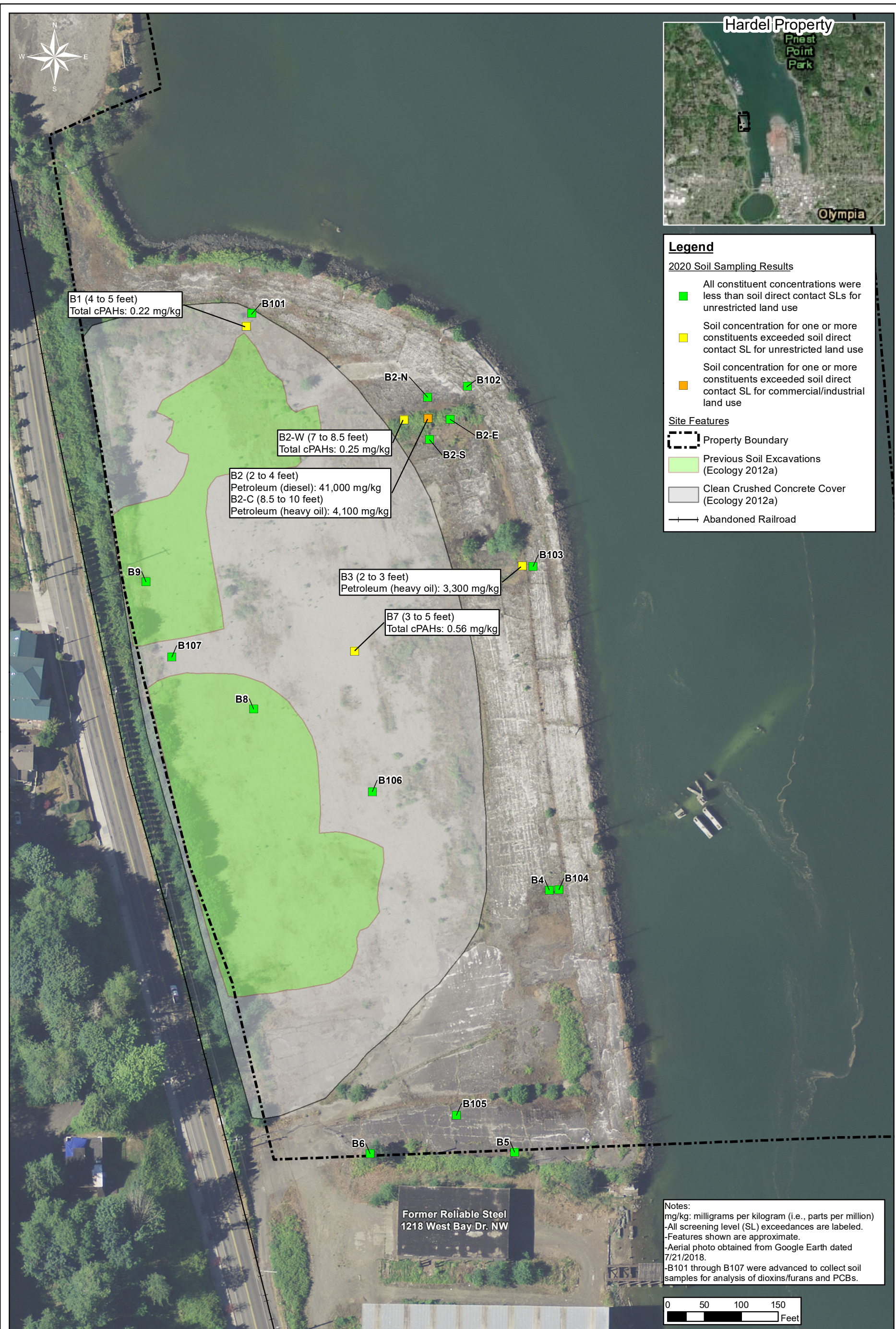
* This analysis was performed on a subset of the samples.

⁽¹⁾ Multiple soil samples were often collected from different depths at a given location. This table counts unique sample locations (not the total number of samples).

⁽²⁾ Sample Location IDs were EX-1-S1 through EX-1-S14, EX-1-B1 through EX-1-B4, EX-1-B5-OEX, EX-1-B6 through EX-1-B9, EX-2-S1, EX-2-S2, OEX-2-S3A, OEX-2-S4, OEX-2-S5A, EX-2-S6, EX-2-S7, EX-2-S8, OEX-2-S9, EX-2-S10, OEX-2-S11, EX-2-S12, EX-2-S13, OEX-2-B1, EX-2-B2 through EX-2-B9, EX-3-S1 through EX-3-S11, EX-3-S12A, EX-3-S12B, EX-3-S13, OEX-3-S14, EX-3-S17, EX-3-S18, EX-3-S20, OEX-3-S21, EX-3-S-22 through EX-3-S27, and EX-3-B1 through EX-3-B13.

⁽³⁾ Four quarters of samples were collected from each of the nine sampled monitoring wells.

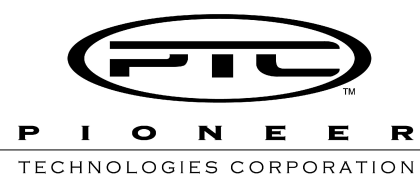
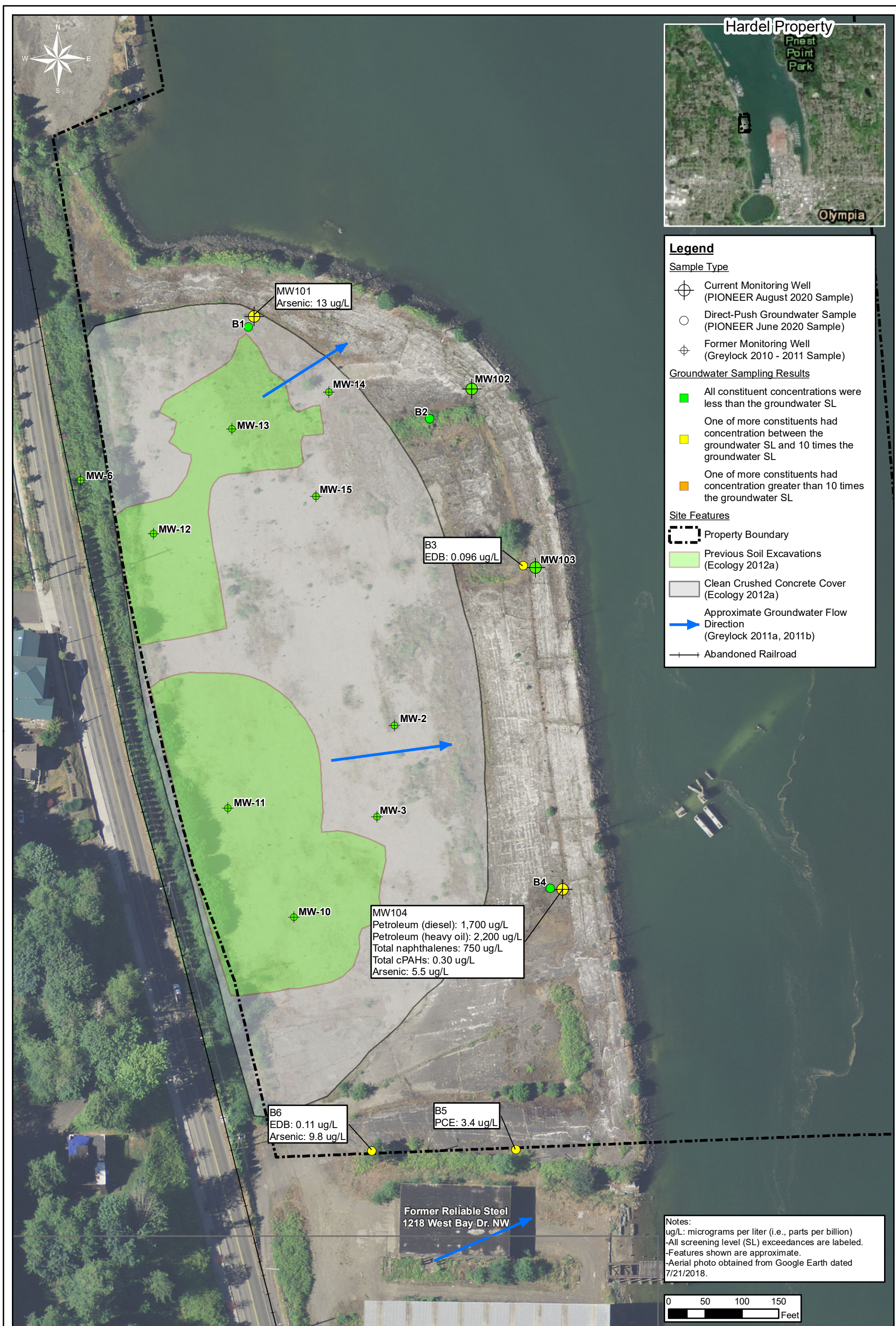
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Summary of 2020 Soil Sampling Results
 Hardel Mutual Plywood Corporation
 1210 West Bay Drive NW
 Olympia, WA

Figure 1

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Summary of Groundwater Sampling Results
 Hardel Mutual Plywood Corporation
 1210 West Bay Drive NW
 Olympia, WA

Figure 2

Attachment 1



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

August 22, 2012

Mr. EJ Piliaris, General Manager
Hardel Mutual Plywood, Inc.
PO Box 540
Chehalis, WA 98532

RE: Satisfaction of Agreed Order No. DE 4108: Hardel Mutual Plywood, FS #75128579

This letter is to notify Hardel Mutual Plywood, Inc. that the above referenced Order has been satisfied under Chapter 173-340 WAC, the Model Toxics Control Act (MTCA), for the above site located at 1210 West Bay Drive NW, Olympia, WA.

As you are aware, the Washington State Department of Ecology (Ecology) has overseen the investigation, remedial activities, and groundwater monitoring that has taken place at the Hardel Mutual Plywood Site located at 1210 West Bay Drive in Olympia, WA. The remedial activities have taken place under an Agreed Order with Ecology (No. DE 4108), and in accordance with the tasks specified in the Cleanup Action Plan of 2012.

Under the Agreed Order, soil cleanup activities included:

- Removing and crushing concrete building foundations.
- Removing contaminated soil and filling the areas with clean soil and then one foot of clean recycled crushed concrete.
- Pumping and treating groundwater from areas where soil was removed.
- Removing free-floating contaminants.
- Sampling soil to make sure all contaminated soil was removed.

In addition, post-cleanup groundwater monitoring was performed for one year to confirm MTCA cleanup levels had been achieved.

Ecology issued a Fact Sheet dated March, 2012, stating preliminary approval of the remedial action for the site, subject to a 30-day public comment period regarding the completion of the site cleanup and removal from the Hazardous Sites List. Only one comment was received by Ecology during the comment period, which ended April 20, 2012.



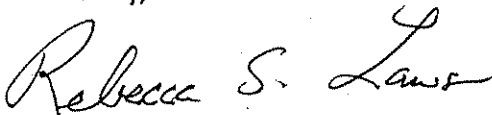
Mr. EJ Piliaris
August 22, 2012
Page 2

This completes the remedial action requirements of Agreed Order #DE 4108, and therefore no additional remedial action is necessary at this site unless new or different information becomes known.

Ecology will update its database to reflect this determination. This site will not appear in future publications of the Hazardous Sites List. However, please note that because your actions were not conducted under a consent decree with Ecology, this letter is written pursuant to RCW 70.105D.030(1)(j) and does not constitute a settlement by the state under RCW 70.105D.040(4) and is not binding on Ecology.

Please call me at (360) 407-7115, or email Guy Barrett at Gbar461@ecy.wa.gov, if you have any questions.

Sincerely,



Rebecca S. Lawson, P.E., LHG
Regional Section Manager
Southwest Regional Office
Toxics Cleanup Program

RSL/GB/ksc:Hardel AO Satisfaction

By certified mail: (7009 3410 0000 1273 0104)

cc: Suzanne Dudziak, Greylock Consulting, LLC
David J. Wild, Hardel Mutual Plywood, Inc.
Katherine Scott, Ecology