Response to DEQ Comments

DEQ Comments (provided in 4/30/21 email)	Response
Specific Comments:	
1. OAR 340-122-0235, requires removal of free product to the maximum extent as practicable. Considering blebs of free product are still present in MW-2 and -9, explain if and how removal has been achieved.	Removal of free product has been completed to the maximum extent practicable. The product consists of a mixture of Bunker C and diesel which is old, degraded, and viscous. The product is too viscous to bail by hand or remove with a peristaltic pump. The viscosity combined with the very low permeability of the soil results in very slow product transport in the subsurface, and as such the product infiltrates the monitoring wells extremely slowly. In 2013 and 2014 a vacuum truck was employed on a twice-yearly basis to extract accumulated product and "oily water" from three of the four monitoring wells displaying free product at that time (MW-1, MW-3, and MW-6 – all since decommissioned). The removal practice proved ineffective in that even after allowing product to accumulate in the wells for a period of six months, the combined fluids recovery from the three wells was only 50 to 100 gallons per event, of which only a gallon or two was product.
2. The Department concurs with your conceptual site model dated 12/2015 Figure 2-1.	Noted.
3. Please update the CMMP dated March 2, 2016.	The Contaminated Media Management Plan (CMMP) will be updated, and a copy provided to DEQ for review and approval.
4. Compliance monitoring wells include MW-4, -5, -7, -8, -9, -10 and BR-5. (MW-5 was included as an upgradient well.) a) Based on a year of compliance monitoring MW-4, -5, -8, -10 and BR-5 met the four quarters monitoring. MW-2, -7, -9 and sump exceeded either the RBCs and or the SLVs. Please note that DEQ's 2020 Ecological Risk Assessment Guidance should be consulted for the most recent screening level values. : https://www.oregon.gov/deq/Hazards-and-Cleanup/env-cleanup/Pages/ERA.aspx b) MW-4, -7 and -8 contained low levels of TPH. Oil was detected in MW-7. Low levels of PAHs were detected in MW-7, -8 and -9. No PAHs were detected in MW-4, -10 and BR-5. c) Pore water sample (PW-1) collected 4/9/2020 was non-detect for TPH and PAHs. The previous sample collected on 4/27/2015 exceeded SLV levels for Benzo(a)anthracene and Benzo(a)pyrene. To confirm there is no continual impact to Shelton Ditch the Department ask that another pore water sample be collected. d) NAPL was detected in MW-2 and -9.	a) Contaminant tables will be updated with DEQ's 2020 Ecological Screening Level Values (SLVs). Updated tables will be provided to DEQ in a forthcoming memo. b) Noted. c) Another pore water sample will be collected during the summer or early fall of 2021, prior to the creek level rising in response to the fall rains. The sample will be analyzed for Total Petroleum Hydrocarbons (TPH) in the diesel and heavy oil ranges and Polycyclic Aromatic Hydrocarbons (PAHs). Results will be provided to DEQ in an upcoming memo. d) Noted.
5. Moving SE from MW-2, there are two sanitary sewer lines that flow to the NE. Have both of the backfills along those sewer lines been evaluated as preferential pathways? Have samples been collected to delineate the contamination in that direction?	These two sanitary sewer lines and their associated backfill have been evaluated, and because both lines are located well above the seasonal high-water table neither are considered a potential preferential pathway. The depths of these two lines are 3 to 4 feet below ground surface (bgs) whereas the depth to first encountered groundwater along this stretch of Church Street (since Wood began measurements in October 2014) is much deeper (8.30 to 15.59 feet bgs as measured at wells MW-4, MW-7, and MW-8). As such no samples have been collected along these sewer lines and none are planned.

Response to DEQ Comments

DEQ Comments (provided in 4/30/21 email)	Response
6. Why was the analysis of the sub-slab summa canister (TO-15) limited to three constituents (sec-butylbenzene, Isopropylbenzene and n-propylbenzene) during the 12/27/12 sampling? If there is more analytical data, please present it. Again, in the 9/13/12 sampling it's the Department's understanding only the three referenced constituents were analyzed. Why didn't the analysis include TPH and the full list of PAHs? Please contact the lab and see if that information is still available.	The 9/13/12, 12/27/12, and 3/20/13 sampling events (by Wise Steps, Inc.) in the former cafeteria area were only for the three constituents referenced by DEQ. According to the respective reports, Wise Steps selected those three compounds based on prior detections of those compounds in Site groundwater samples. Wise Steps is apparently no longer in business and therefore further information is not available. On 10/20/14 Wood re-sampled the two sub-slab vapor pins which remained at the site (VP-1 and VP-3; [VP-2 had been decommissioned]) and analyzed the samples for the full suite of Volatile Organic Compounds (VOCs) [75 compounds including Naphthalene]. On 4/27/15 Wood again sampled locations VP-1 and VP-3, plus three additional locations (VP-4, VP-5 and VP-6 located between the building and center of Church Street) and analyzed the samples for VOCs and Methane. As stated in the Supplemental Site Characterization Report, dated 7/7/15: "*Soil gas samples were collected from vapor wells VP-1, VP-3, VP-4, VP-5, and VP-6 located within or nearby the Cafeteria Building. The samples from VP-1 and VP-3 were to provide "wet season" data to compare with the prior "dry season" data. Locations VP-4, VP-5, and VP-6 were selected to provide coverage of potential future indoor and outdoor areas, and a "worst case" location (above the free product plume).*" The results of Wood's 10/20/14 and 4/27/15 sampling indicated: • Most analytes (75 VOCs plus methane) were not detected (ND). • Trace amounts of several compounds were detected in some of the samples, possibly due in part to slight ambient air leakage during sampling. For detected constituents the maximum concentrations were: - Propene = 15 micrograms per cubic meter (ug/m^3) - Dichlorodifluoromethane = 6.8 ug/m^3 - Acetone = 31 ug/m^3 - Trichlorofluoromethane = 2.9 ug/m^3 - Ethyl Acetate = 38 ug/m^3 - N-Hexane = 34 ug/m^3 - Benzene = 7.5 ug/m^3 - 1,2,4 – Trimethylbenzene = 2.2 ug/m^3 - Ethanol = 25 ug/m^3 - N-Heptane = 2.3 ug/m^3 - 4-Methly-2-Pentanone = 3.1 ug/m^3 - D-Limonene = 3.4 ug/m^3 - Tetrachloroethene (PCE) = 9.4 ug/m^3 - Toluene = 6.3 ug/m^3 - N-Nonane = 3.4 ug/m^3 - Alpha-Pinene = 3.6 ug/m^3 - Methane = 1.8 parts per million volume (ppmV) Wood did not analyze for TPH or PAHs (except for Naphthalene as mentioned above) as these are not anticipated to pose a vapor issue at the Site.

Response to DEQ Comments

DEQ Comments (provided in 4/30/21 email)	Response
7. The sump in Church St has a discharge permit with the City of Salem WD 1237, which was extended to April 2025. a) Based on Table 2, there were 200 gallons discharged during 2/2020. Since the sump operated during the compliance monitoring period, the Department may consider the sump system/permit as part of an engineering control for long-term control to prevent bypass and discharges to Shelton Ditch.	Noted.
8. Looking at the area of contamination depicted on Figure 4, (dashed circle) discovered 8/20/2018, east of the 440 Church Street in soil/GW, has it been delineated and the source identified? Is it related to the contamination in Church Street?	The dashed circle area in Figure 4 has not yet been delineated and the source has not been identified. It is not known if the contamination is related to the contamination in Church Street, although it seems unlikely since the former Mill Race (current stormwater drain line) forms a drainage divide between the two areas. For the sake of efficiency SAIF wishes to complete the investigation of this area under the existing project rather than having DEQ open a separate project. An investigation workplan will be provided to DEQ for review and approval within the next couple of months.
9. Provide a figure/diagram indicating the location(s) where the 180 tons of contaminated soil was removed during the installation of the dams/sump and the other 180 tons from the site redevelopment portion. What were the concentrations of the soil and groundwater removed? How much mass was removed?	A figure will be provided to DEQ showing the locations of where contaminated soil was removed during the remediation and site redevelopment activities. Because soil samples were not collected and analyzed for TPH concentrations in most instances, it will not be possible to calculate the total petroleum hydrocarbon (TPH) mass removed. The figure will be included in the upcoming memo mentioned above.
10. Extensive construction/remodeling of the facility occurred. Were there any vapor barriers or engineering controls (e.g. sumps) installed to prevent groundwater/vapor intrusion? If so, where? How does it influence the subsurface? If dewatering sumps operate, where do the sumps discharge? (I.e. Shelton Ditch, Pringle Creek). If there has been a discharge, has the discharge been sampled?	A standard vapor barrier was installed per the attached construction plans (Below Grade/Edge of Slab Details, Ankrom Moisan, 2017). The dewatering system was removed during the campus renovation project and there are no dewatering sumps operating at the Site. [Note that use of the system had already been discontinued many years ago.] As mentioned above, based on prior sampling data, vapor intrusion is not considered to be an issue at the Site.
11. DEQ approached the City as a pre-public notice to determine if they have any concerns with the discharge permit and contamination remaining in the right-of-way. Upon completion of this review and the response, the Department will follow up with the City.	Noted.
General Comments:	
As the project moves towards closure, the Department is evaluating if a deed restriction is necessary and if so, what restriction(s) are necessary? Initial thoughts are: • No ground water use • CMMP & Health and Safety Plan • No Residential / Urban residential use of the property • Maintain bentonite dams, and sump • Annual sampling? • Vapor intrusion?	The first four bullet points should be easy to implement. For bullet #5 - Annual Sampling of selected locations during seasonal high water should be sufficient to monitor plume stability. Appropriate monitoring may consist of: • Visual inspection of the sump to confirm mounding of groundwater is not an issue. • Collecting groundwater samples from MW-7 and MW-10 to provide coverage of areas down gradient of the non-preferential and preferential pathways, respectively. For bullet #6 - As mentioned above, based on prior sampling data, vapor intrusion is not considered to be an issue at the Site.

Response to DEQ Comments

DEQ Comments (provided in 4/30/21 email)	Response
The Department is unable to approve the request for project closure at this time. As stated above, additional or clarifying information is necessary before a closure determination can be granted.	Noted.
If the Department has misstated or missed any information or you have additional information, please bring it to our attention and we will re-evaluate this information and reconsider our positions.	Noted.