STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
1250 W Alder St • Union Gap, WA 98903-0009 • (509) 575-2490

January 12, 2018

Mr. Mathew Davis
GHD Services Inc.
732 Broadway, Suite 301
Tacoma, WA 98402

Re: Voluntary Cleanup Program – Work Plan Review Comments:

Site Name:	Unocal 76
Site Address:	920 N 6th Avenue, Yakima
Assessor's Parcel No.:	181313-31506
Facility/Site ID No.:	53365837
Cleanup Site ID No.:	2625
VCP Project No.:	CE0468

Dear Mr. Davis:

Thank you for submitting your proposed work plan titled "Site Assessment Work Plan, 76 Products Facility No. 351384" dated December 14, 2017, for review by the Washington State Department of Ecology (Ecology). Ecology appreciates your efforts in pursuing an independent remedial action under the Model Toxics Control Act (MTCA).

Based on Washington Administrative Code (WAC) 173-340-515, which outlines Independent Remedial Actions, I have reviewed the proposed work plan for the Unocal 76 site (Site) submitted by GHD Services Inc. (GHD) and have the following comments:

1. Please always included Ecology's official site name in emails, letters, and report titles in order to facilitate proper filing at Ecology. Ecology's official site name for this project is Unocal 76.

2. The overall approach presented in the work plan appears to be generally sound toward a goal of defining the current extent of soil and groundwater contamination. The most current groundwater monitoring data (October 2013-2014) suggests that, with the possible exception of wells MW-11 and MW-13, groundwater contaminant concentrations are now likely below MTCA Method A cleanup levels.

3. The exceedances of TPH-D of 1,300 µg/L (MW-11 in December 2013) and 1,400 µg/L (MW-11 in December 2013) over the cleanup level of 500 µg/L indicate that groundwater concentrations may be now or may soon be below cleanup levels. Ecology will require a minimum of four consecutive quarters with all results below Method A cleanup levels prior to issuing a No Further Action Determination for the site.

The following specific comments are offered with a goal of reaching site closure as expeditiously as possible.

4. As we discussed over the telephone, Ecology has not seen water level declines in other monitoring wells in the region as is evident from the Unocal 76 site data starting in 2013 to 2014. 2016 water levels, were at approximately 19 feet below ground surface (ft bgs) at another site located approximately 1,750 feet ENE of Unocal 76 and at a surface elevation approximately 7 feet lower than at Unocal 76. One possible hypothesis for the apparent water level drop is monitoring well screens clogging due to the operation of the air sparge system in the past.

   Ecology concurs with the proposed approach of first gauging the existing wells, then if all are still dry, installing one replacement monitoring well to confirm groundwater conditions. If the water levels in the existing monitoring wells can be concluded to be low due to clogging, perhaps well rehabilitation efforts could address the clogging. Gentle scrubbing and jetting of a well screen has potential to unblock screens if they are clogged with iron bacteria masses.

   Note that any well rehabilitation efforts include a risk of destroying the wells. However, if the wells are not usable due to clogging, the risk of well destruction becomes less of a concern.

5. Please provide a groundwater monitoring plan after the current status of monitoring wells has been verified. This monitoring plan could be provided in a brief letter. Monitoring wells which have had no historical detections of site constituents do not need to be sampled. Monitoring wells which have had no historical detections of parameters under a given analytical method can discontinue that analysis. Please provide a list of monitoring wells and proposed constituents for monitoring within your monitoring plan.

   Note that when NWTPH-Dx is analyzed, both TPH-D and TPH-O should always be reported, and silica gel cleanup should not be used on water samples.

   Note also that NWTPH-Gx and NWTPH-Dx detection limits should be lower than those reported during the October 2017 round (consistent with previous round detection limits).

6. Ecology considers wells MW-11 and MW-13 to be the most critical monitoring wells at this time, since they have had the most consistent exceedances of MTCA Method A cleanup levels in recent years. If monitoring wells MW-11 and MW-13 are not usable and cannot be effectively rehabilitated to be usable, then they should be replaced. For replacement monitoring wells, Ecology suggests that the bottom of the well screen be no more than 7 feet below the bottom of the current water level or historical water level, whichever is deeper and now more than 5 feet above the shallowest historical or current water level (the currently proposed 20 foot well screen may be longer than is needed). With respect to the remainder of the monitoring well network, if they are found to be unusable or cannot be effectively rehabilitated to be usable, then the following rules could be applied to determine whether or not replacement is needed:

   a. If a well had no historical MTCA Method A cleanup level exceedances, then no additional sampling should be required at that location.

   b. If a well had at least one historical MTCA Method A cleanup level exceedance, then at least one grab sample (i.e. direct push, temporary monitoring well, or monitoring well sample) should be collected. Ecology recommends measurement and reporting of turbidity in any direct push or temporary well groundwater sample since petroleum hydrocarbons have potential to be associated with turbidity.

      A monitoring well will likely be needed at a location if any site constituents are detected in groundwater above MTCA Method A cleanup levels.

   c. If a monitoring well is needed for potentiometric surface mapping (e.g. minimum of four points to defining the site perimeter) then a replacement monitoring well may be needed at that location.

7. Page 2 first complete bullet, Figure 2 to Figure 5. The author is correct that the Site is defined by the extent of contamination rather than property boundaries. However, because the extent of groundwater contamination can change over time, Ecology disagrees with the terminology "MTCA Site Boundary" and would prefer you refer to the designated area as the "approximate extent of groundwater contamination above MTCA Method A cleanup levels."

8. Section 3.2. In addition to visual observations and PID readings, any olfactory observations that are made should also be recorded. Ecology is not requesting that such observations be made, since such a request could be considered to have health and safety implications. However, if such observations are made, they can provide valuable information and should therefore be reported.

9. Table 3.1, Soil Boring Plan (total and sampling depths). Ecology concurs with the proposed soil sampling locations and depths.

10. Table 3.1, Soil Boring Plan (soil analysis). Please consider changing the analyses in this table to NWTP-Gx, NWTPH-Dx (including both TPH-D and TPH-O), and BTEX. If diesel range or heavy oil range petroleum hydrocarbons (TPH-D or TPH-O) analyzed by NWTPH-Dx are detected above Method A cleanup levels, please also analyze soil samples for carcinogenic polycyclic aromatic hydrocarbons (CPAHs) and naphthalenes. If gasoline range petroleum hydrocarbons are detected above Method A cleanup levels, please also analyze soil samples for naphthalenes, lead, and additives (MTBE, EDB, and EDC). Please include analysis of PCBs and Halogenated Volatile Organic Compounds (VOCs) only in areas with indications of storage or releases of waste oil.

11. Please include a schedule for implementation of the work plan.

Ecology suggests revising and resubmitting the work plan. Field work will ideally commence after Ecology has reviewed and approved the revised work plan.

The opinions presented by Ecology in this letter are made only with respect to this site, and based on the information provided and discussed above.

Please contact me at (509) 454-7835 or email me at frank.winslow@ecy.wa.gov if you have any questions or would like clarification of any portion of this letter.

Sincerely,

Frank P. Winslow
Site Manager
CRO Toxics Cleanup Program

cc: Ed Ralston, Phillips 66 Company