From: Winslow, Frank (ECY)
To: John Funderburk
Cc: Roy Kuroiwa (rkkpe@comcast.net)
Subject: RE: Request for Change Order - Change Order Number 3
Date: Thursday, September 21, 2023 2:28:56 PM

Hi John,

Thank you for your email and data submittal. The scope adjustments discussed below that were made based on site conditions and findings appear to be within the reasonable bounds of field adjustments during remedial execution, and no concurrence from Ecology would appear to be warranted. Ultimately, Ecology's issue of a No Further Action (NFA) determination will be contingent on achieving cleanup levels at selected points of compliance. Data presentations within the Remedial Action Completion report will be an important aspect of Ecology's review and opinion letter preparation. I will plan on performing a deeper dive into these data in preparation for that activity, especially since this is a fairly complex site and demonstrating the success of ERH may also be complicated.

Please let me know if a more formal concurrence on the scope adjustments described below is needed from Ecology.

I will plan to do that deeper data dive within the next few days.

Thanks, Frank

Frank P. Winslow, LHG

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Frank.Winslow@ecy.wa.gov

From: John Funderburk <johnf@uepconsulting.com>
Sent: Thursday, September 21, 2023 9:34 AM
To: Winslow, Frank (ECY) <fwin461@ECY.WA.GOV>
Cc: Roy Kuroiwa (rkkpe@comcast.net) <rkkpe@comcast.net>
Subject: FW: Request for Change Order - Change Order Number 3

Frank: Hi! This email has a lot of attachments - sorry, and it is intended to provide new soil data collected in areas where the 3 new CMP borings (B113, B14, and B115) were completed in August. We did find some deeper contamination in the northwest area on the Property, so these CMP borings were very useful.

The Figures and data Table are somewhat self explanatory, but see my notes for emphasis below

We completed the 3 additional soil borings in the agreed CMP areas, as shown by B113, B114, and B115 on Figure 4 (blue ▲) below.
The new soil results are provided in Table 1 (attached) on PDF page 5.
The lab data show deeper soil contamination than was previously known in this area of PCE impact – see highlighted data on Table 1 below.
Lab results for the new CMP borings are attached below:
Please see the 2 cross-section figures (Figure 5 and 6) below, with new soil data highlighted.
The figures illustrate the PCE in the deeper soil impacts shown in Table 1 to depths of 12', 16', 17.5', 22', 24' and 28' BGS.
This Figure 7 below is the plan view with cumulative data showing the B113 - B115 data (highlighted) in context to cumulative site data. It is pretty busy, sorry.

As you would expect, the result of defining this additional impact area has ramifications on the ERH treatment plan- expanding it to go deeper, as illustrated below in TRS Figure Y-1, which shows now there are 5 treatment areas, with depths now of 10', 20', 25', and 30' as shown.
The consequence of the modified ERH plan has caused the additional remedial elements with additional costs as follows:

- Electrode lengths in 6 electrodes have been extended to require an additional 180 feet of total length.
- Based on the design energy capacity for the system, TRS expanded the electrodes from 10-inch diameter to 12-inch diameter.
- The larger treatment area/volume, over now 5 treatment areas will require additional treatment time, requiring longer TRP field operations to meet the design temperature (100 degrees C), and associated field support time.
- The initial design electrical energy required for a wider/deeper area has increased commensurately.

TRS expects these enhancements to the ERH plan will treat the expanded PCE impact area successfully.

An additional condition for a change in approach is shown below in the photo. Once the building was demolished and blackberries and shrubbery were removed, the driller decided that he cannot put the planned vertical borings in on the steep slope behind the white retaining wall, as shown on the Figure. Consequently, 4 of the ERH electrodes (E05, F04, G03, and H02) will require angle drilling and longer lengths to achieve the deeper depths along the NW side, in the 2 treatment areas, as shown on TRS Figure Y-1 above.

Steep Slope on North Side – Behind Retaining Wall
Drill Rig Cannot Get Access to drill Electrodes

Please let me and Roy know when you have had time to review this new data, and the TRS modifications to the ERH plan for the Property. Can we then arrange a quick call for discussion?

Thank you for your attention to this issue.

Regards - John Funderburk, MSPH

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