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Monday, April 03, 2023

Oregon Department of Environmental Quality
Attn: Mr. Kevin Dana, Project Manager
Northwest Region Cleanup Section
700 NE Multnomah Street, Suite 600
Portland, Oregon 97232

Subject: March 6, 2023 Comments on Remedial Design/Remedial Action Implementation
Report for Elk Ridge Estates in St. Helens, Oregon (ECSI #4857)

Dear Mr. Dana:

On behalf of the Elk Ridge Estates (Elk Ridge), EVREN Northwest, Inc. (ENW) presents this response to comments the Oregon Department of Environmental Quality (ODEQ) provided in its letter dated March 6, 2023, as well as type written comments received from Heidi Nelson on March 30, 2023. Below are ODEQ's comments (shaded), with Elk Ridges' response below (unshaded).

ODEQ comments on RD/RA Implementation TM and Elk Ridge's Responses:

On the two title pages, the zip code for Elk Ridge Estates should be 97051, not 97015.

- ENW corrected the zip code for St. Helens on the cover and signature pages of the Remedial Design/Remedial Action Implementation Technical Memorandum (RD/RA Implementation TM).

Section 3.1. 4th bullet indicates a total of 8,400 CY of fill material was placed. Figure C165 shows a cap quantity of 9,400 CY. Please resolve the final quantity of fill imported for the FSWDA cap.

- The volume noted in sheet C165 is correct. ENW changed the volume to 9,400 cy in section 3.1 of the RD/RA Implementation TM consistent with the as-built plan set.

Section 3.5. The 2nd sentence states that construction activities began in August 2022. However, the weekly progress reports (and the 1st sentence of Section 3.5.1) suggest that construction activities began in September. Please confirm.

- Construction activities started in September. ENW revised the opening paragraph of section 3.5 to reflect this fact.

Section 3.5.2. Where was the vegetation from the FSWDA disposed of?

- Vegetation was recycled either at S&H Recycling in Tualatin, Oregon, or Allwood Recyclers Inc. in Troutdale, Oregon. ENW added this information to section 3.5.2.

Section 3.5.3. USWDC. Page 5. The text states, "Soil and solid waste were reconsolidated in 12-inch lifts and compacted using a Sheep's foot roller." Is not evident from this statement that there is not any solid waste included in the upper 3-feet of the USWDC. Please clarify this text to reflect

the current site conditions in the upper three feet of the USWDC and provide a reference to the as-built plans.

- Only clean cap soil was reconsolidated in 12-inch lifts and compacted. To reflect this fact in reference to the as-built plans, ENW modified the sentence in the USWDC subparagraph of section 3.5.3 as follows: "Clean cap soil was reconsolidated in three 12-inch-lifts and compacted using a Sheep's foot roller to achieve the final cap contours per the USWDC Cap Plan (Sheet C166 in Attachment B)."

The text states an estimated quantity of material that was reworked is 6,000CY of soil and waste; however, the quantity shown on Sheet C160 indicates about 4,500cy. Please resolve the discrepancy.

- 6,000 cy is the current estimated rework volume. The rework quantity in Sheet C160 was revised accordingly.

Section 3.5.7. USWDC. Page 7. Is there any concern with ongoing erosional issues in the area where the relative maximum density specified in the plans wasn't achieved?

- ENW's geotechnical engineer does not think the soil cover is more prone to erosion because the compacted rate was not met. Actually, erosion is mitigated more with good vegetation cover than with compaction. Less compaction allows the roots to become established because the underlying soils are not as dense. Grass is growing and the USWDC cap appears stable.

Section 3.5.8. Information in a small box gives the estimated volume of clean soils used for the FSWDA cap as 8,500 cubic yards. A previous bullet in Section 3.1 gave the total as 8,400 cubic yards. Please confirm the estimate.

- 9,400 cy is the current estimate of the amount of imported cap material placed on the FSWDA, which is referenced in the landfill cap quantities section of Sheet C165. ENW revised the volume in the fourth major bullet of section 3.1 and the second text box of section 3.5.8 consistent with the current 9,400 cy estimate.

Section 3.5.8. Information in a small box gives the estimated volume of clean soils used for the USWDC cap as 2,000 cubic yards. A previous bullet in Section 3.2 gave the total as 1,950 cubic yards. Please confirm the estimate.

- 2,000 cy is the current estimate of the amount of imported cap material placed on the USWDC. ENW revised the volume in the third bullet of section 3.1 and the Landfill Cap Quantities section of sheet C166 consistent with the third text box of section 3.5.8 consistent with the current 2,000 cy estimate referenced in the Landfill Cap Quantities section of Sheet C166.

Section 3.6.1. For consistency, please use the same term for the underdrain drain throughout the document. It isn't clear if underdrain drain is the same as the ravine drain (Figure 3) and trench drain (Attachment B). Has continued discharge been observed from the underdrain since it was installed? Are there any additional long-term maintenance requirements for the underdrain pipe?

- Underdrain, ravine drain, and trench drain are one and the same. ENW revised the RD/RA Implementation TM text, figures, and as-built drawings using the term "underdrain" for consistency per ODEQ's recommendation.
- Following the construction of the underdrain, stormwater channel and outfall, water discharging from the underdrain was observed as bed-flow through the rock dissipation pad, i.e., the underdrain pipe end is buried in drain rock wrapped in fabric some distance beneath the outfall. During the current wet season, there is no way to differentiate underdrain water flow from stormwater flow through the channel that also discharges at the outfall.
- The underdrain is designed to be maintenance free.

Section 3.8. Should reference Attachment C, versus Appendix.

- ENW made this correction as requested.

Report Figures

On Figure 2, the Former Solid Waste Disposal Area should be labeled "FSWDA" instead of "FSEDA".

- ENW made this correction as requested.

Figure 3. Please show the location of the underdrain (is this the same as "Ravine Trench Drain") that was added. Please add the pipe dimensions to the sheet (or include in note, and/or legend, etc.).

- ENW changed the name of ravine drain to underdrain and provided underdrain and pipe dimensions in the legend. The approximate position of the underdrain is shown in the figure.

Figure 4. Please add the total area of the USWDC to this figure.

- Figure 4 includes the total capped area of the USWDC, i.e., 0.40 acres.

Attachment B

F Figure C000. Please correct Sheet Title for Sheet 160. FSWDA should be added to the titles for Sheet 100 and 150.

- The title for Sheet 160 was corrected "Former Solid Waste Disposal Area (FSWDA) Subgrade Plan." "Former Solid Waste Disposal Area (FSWDA)" was added to the titles for Sheet 100 and Sheet 150 as requested.

Figure C100. Please label FSWDA. Please make the cross-section line (shown on C150) on the overview of area shown on C100 more evident. Also since this is an overview that is for FSWDA, please add that to the figure title.

- The title of Sheet C100 has been updated, as requested. The cross-section line on Sheet C150 has been emphasized (see below).

Figure C150. Please clearly show the station numbers on the plan view. If the storm drain modification plan is specific to FSWDA, then please update the title of the sheet and area so it is clear it is specific to this area.

- The title of Sheet C150 has been updated, as requested. The cross-section line has been modified to make it stand out more clearly, and station numbers have been added to the plan view.

Figure C160. The addition of the trench train pipe is not evident in the Trench Drain Section shown. Please note if the Section detail is drawn to scale. Please clearly show the location of the trench drain in the figures for the FSWDA.

- The pipe shown in the trench drain, aka underdrain section, has been modified so it can be seen more clearly. As mentioned earlier, all trench drain and ravine drain references have been changed to underdrain. As requested, the underdrain is clearly shown on applicable FSWDA figures and drawing sheets.

Figure C166. Please clearly show the cross-section line and stationing on the USWDC overview plan. Geotechnical Liner Edging Section and Full Depth Cap Section details reference grading and material details shown on C160, which appears to be specific to the FSWDA not USWDC. Please correct sheet C166.

- These revisions to Sheet C160 have been made, as requested.

Should you have any questions related to any of our responses, or generally about this facility, please phone me at 503-452-5561 or email me at LynnG@EVREN-NW.com.

Regards,

Lynn D. Green

Lynn D. Green, C.E.G.
Project Manager

CC: Mark Zoller, Elk Ridge Development
Brooks Foster, attorney