



Anchor Environmental, L.L.C.
1423 3rd Avenue, Suite 300
Seattle, Washington 98101
Phone 206.287.9130
Fax 206.287.9131

Memorandum

To: Matt McClincy, Oregon Department of Environmental Quality

From: Carl Stivers

CC: Jennifer Peterson, Mike Poulsen

Date: November 19, 2004

Re: Comments: Baseline Level III Ecological and Human Risk Assessment NW Natural – Gasco Facility

Below are itemized responses to ODEQ comments on the above project. As discussed in our meeting of June 11, 2004, NW Natural has decided to withdraw the Level III Ecological Risk Assessment in favor of presenting a Level II Ecological Risk Assessment. As a result, the majority of the comments on the Ecological Risk Assessment need not be addressed. Exceptions are noted below. The Level III human health risk assessment will be carried forward. Our proposed revisions in response to each comment are described below.

Baseline Level III ERA Comments

A level II approach is now being taken, and these comments are no longer applicable. Specific comments that are still applicable and that will be incorporated into the Level II ecological risk assessment are noted below.

General Comments

1. Supporting information is included in the revised ERA, including tables with unlocked worksheets
2. Comment not applicable to Level II ERA format
3. Comment not applicable to Level II ERA format
4. Comment not applicable to Level II ERA format
5. Comment not applicable to Level II ERA format
6. Comment not applicable to Level II ERA format
7. The riverbank samples (with pre-fix SS) are now included in the Level II Ecological Risk Assessment.

8. Comment not applicable to Level II ERA format
9. Comment not applicable to Level II ERA format
10. Comment not applicable to Level II ERA format
11. Comment not applicable to Level II ERA format
12. Comment not applicable to Level II ERA format

Specific Comments

1. The Site Map (Figure 1-2) will be updated and the SE corner boundary clarified (See figure 1-2)
2. Comment not applicable to Level II ERA format, although dermal exposure to site soil will be taken into account in screening process
3. Comment not applicable to Level II ERA format, although conceptual model (Figure 2-2) has been revised and is included in report
4. Comment not applicable to Level II ERA format
5. Section 1.2.3 is amended to read:
“Contamination in nearby North Doane Lake and at the Stormwater outfall to the Willamette may potentially be associated with the Site. Off-Site surface water risks will be evaluated after completing the Willamette River source control investigations which are currently being completed under the direction of DEQ.”
6. to 17. Comments not applicable to Level II ERA format

Receptor Specific Comments

All - Comments not applicable to Level II ERA format

Baseline Human Health Risk Assessment Comments

General and specific comments are noted below.

General Comments

Information from the Level II report has been incorporated into this document to provide for a comprehensive Level II report to support decision making.

Specific Comments

1. MW-10 labeling is corrected and the SE corner boundary clarified (see Figure 1-2)
2. The toxicological distinction between Chromium III and VI has been clarified, only Chromium VI is applicable to this RA.
3. Residential exposure has been omitted from the exposure scenarios
4. The term “ecologically important” will be removed from the Figure 3-1 Receptor title. Exposure to indoor as well as outdoor non-volatiles is distinguished throughout the risk assessment (see Figure 3-1)
5. Incidental ingestion of groundwater by workers has been omitted from the exposure scenarios (see Figure 3-1).
6. The 0-3 ft soil horizon is used in the industrial worker scenario for developed areas of the site and the 0-12 ft soil horizon is used in areas where re-development is likely. Figure 3-2 has been added to show which areas are designated for potential re-development. Surface samples SS-1 to SS-8 are included in the calculation of exposure point calculations.
7. Ingestion of groundwater by workers has been omitted from the exposure scenarios and a reference to the 2000 ODEQ HHRA guidance has been added.
8. The GI adsorption factor for dermal toxicity has been updated to EPA Supplemental Guidance for Dermal Risk Assessment (EPA/540/R/99/005).
9. Risk estimate values throughout the document have been updated to one significant digit.
10. Tables 3-6 and 3-7 have been included, which summarize risks by pathway and include HQ's, cancer risks, and inhalation pathways (separately).
11. Variances of exposure factors (see Table 3-8) are compared to the RME in the uncertainty section. This is clarified in Section 3.5.4:
12. “These parameters were varied, and the differences in the RME and the uncertainty cumulative risk estimate results are shown in Figures 3-3 and 3-4.”
13. A row has been added to the Appendix A tables to identify detected from non-detected values. These tables have been re-formatted to provide easier readability.
14. DEQ default exposure values were used in Table B-1 to B-6. DEQ's Risk Based Decision Making for the Remediation of Petroleum-Contaminated sites (DEQ 2003) was used as reference for the N_{air} and F_{crack} values.

15. DEQ's Risk Based Decision Making for the Remediation of Petroleum-Contaminated sites (DEQ 2003) exposure values for skin surface area and soil adherence factors were used in Table B-1 and B-3.
16. EPA 's default inhalation rate of 20 m³/day was used in Table B-4.
17. Values in Table B-4 have been updated to be current with EPA Supplemental Guidance for Dermal Risk Assessment guidance (EPA/540/R/99/005).
18. Henry's Law constant units were corrected in Table B-5 and B-6.
19. The oral slope factor in Table C-1 for benzo[k]fluoranthene has been updated.
20. The inhalation slope factors in Table C-2 has been updated.
21. Exposure point concentrations were done using MS Access queries. These calculations can not be presented, although Appendix A tables have been updated to allow for separate calculation/verification of the EPCs.