ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
ER REGULATORY CONTACT RECORD

Date/Time: September 29, 2005 / 10:00 a.m.

Site Contact(s): K-H Karen Wiemelt, Susan Serreze

Phone: 303-692-2035 – CDPHE
303/312-6312 - EPA
303/966-4226 – DOE

Agency: CDPHE: Harlen Ainscough, Dave Kruchek
EPA: Sam Garcia, Larry Kimmel
DOE: Norma Castañeda

Purpose of Contact: A meeting was held on September 29, 2005 to discuss the Storm Drains Data Summary Report and the IHSS Group NE-1 Ponds Data Summary Report.

Discussion: See meeting minutes below.

Contact Record Prepared By: Susan Serreze

September 29, 2005 Comment Resolution Meetings
For
Storm Drains Data Summary Report
IHSS Group NE-1 Ponds Data Summary Report

A meeting was held on September 29, 2005 to discuss the Storm Drains Data Summary Report and the IHSS Group NE-1 Ponds Data Summary Report.

Attendees

CDPHE: Harlen Ainscough, Dave Kruchek
EPA: Robyn Blackburn, Sam Garcia, Larry Kimmel, Todd Bechtel (Greystone)
K-H Team: Karen Wiemelt, Gary Carnival, Annette Primrose, Greg Pudlik, Susan Serreze

II. Report Status

Issues

No Sitewide issues were discussed.

Specific Comments

Storm Drains Data Summary Report

The Storm Drains Data Summary Report was discussed and the following resolutions were agreed to:

- Previous storm drain sampling data will be briefly summarized
- A statement will be added indicating that ditches connecting culverts were removed, covered, or sampled.

IHSS Group NE-1 Ponds Data Summary Report

The attached written comments were received from EPA. The following resolutions were agreed to:

- Potential risks from surface water are addressed in the CRA on an AEU basis.
- Potential risks from subsurface sediment are addressed in the CRA on an AEU basis.
- Potential risks to wildlife receptors, especially, large home range animals are addressed in the CRA on an AEU basis.
- The toxicity tests and bulk sediment data will be reviewed.
- PCB nomenclature will be corrected.
- Analytes with DLs greater than the ESL are addressed in the CRA.
- References will be reviewed and corrected as necessary.
- An explanation of the AT will be added.
- A redline version of the NE-1 Pond Data Summary Report will be sent to the regulatory agencies on October 5, 2005.
- All other comments will be addressed.

Other Issues

There were no other issues for discussion.

V. Meetings

The next meeting will held on October 6, 2005 at 10:00 AM in the Breckenridge Room.

EPA Comments for Draft Data Summary Report for IHSS Group NE-1
September 2005

September 26, 2005

Overall the ecological screening sections are greatly improved over the previous NE-1 report. Sections tend to be well-written, organized clearly, and generally present a balanced interpretation of potential risks taking into account the multiple lines of evidence available for each pond. The general issues identified in EPA comments on a previous version of this document have been sufficiently addressed.

APPENDIX A - GENERAL COMMENTS

1. **Ecological Exposure Assessment.** The NE-1 report only provides an ecological evaluation of exposures based on direct contact of benthic invertebrates to bulk sediment. No ecological evaluation based on direct contact exposures of aquatic receptors (fish and benthic invertebrates) to surface water is provided. No conclusions can be drawn regarding potential risks to aquatic receptors from surface water in ponds. Therefore, conclusions regarding Accelerated Actions for the ponds are based solely on an evaluation of exposure to benthic invertebrates (no assessment of fish) from sediment only. In addition, potential risks to wildlife from ingestion of aquatic prey items are only addressed as a line of evidence based on each series of ponds. Thus, conclusions regarding the risk to wildlife receptors are currently inconclusive (see comments for Attachment 4). The report presents adequate information for accelerated action decision-making related to sediment dwelling receptors only. The complete evaluation of risk to be performed in the CRA for both surface water and sediment may result in a different conclusion.

2. **Risk to Aquatic Invertebrates, Conclusions.** In general, conclusions for potential risks to aquatic invertebrates from surficial sediment (i.e., likely to be minimal to low for all ponds), are agreed. However, it is noted that for Pond A-1 and B-1, while risks to aquatic invertebrates from surficial sediment is low, it appears that there may be a subsurface contamination issue for aroclor 1254 (MDC HQ based on the AT = 17 and 10, respectively). In addition, subsurface sediment contamination in Pond B-4 includes antimony, cadmium, mercury, selenium, and silver (MDC HQs based on the AT all > 1, especially silver MDC HQ = 1938, aroclor 1254 = 10, and total PCB=5). It is recommended that a summary of the potential risk related to subsurface contamination (i.e., all sediment) also be provided for use by risk managers.

3. **Wildlife Receptor, Ingestion of Prey Items, Conclusions.** Attachment 4 appropriately includes an evaluation of potential risks to wading birds and waterfowl. The conclusions state that risks are above a level of concern, but note that the exposure scenarios evaluated are not likely to be similar to what is actually expected on site. However, several key details used in the evaluation of

waterfowl and wading birds are not included in Attachment 4. Final conclusions on risk levels to these wildlife receptors cannot be made until the additional information is provided. See comments on Attachment 4.

4. **Other lines of Evidence**. As appropriate, toxicity testing information is used as a line of evidence to support the conclusion that risks are low. The line of evidence is particularly important for ponds that show multiple hazard quotient exceedances (i.e., several hazard quotients greater than 1 in one pond). However, the toxicity testing was conducted in 1992 and the bulk sediment chemistry data associated with the toxicity tests have not been presented (i.e., the concentrations in sediment that were found to not result in toxicity). Bulk sediment data associated with the 1992 toxicity testing should be presented and discussed with regard to how well these data represent the current sediment conditions in the ponds.

   In addition, sediment toxicity tests for Pond B-4 showed 91% survival for *Hyalella azteca* and 62% survival for *Chironomus tentans,* however this decrease was reported to be not statistically significant. For Pond B-4, there was a 20% decrease in *Chironomus tentans* survival compared to the control (control = 82%, site = 62%). For Pond B-5, there was a 29% decrease in *Hyalella azteca* survival compared to the control (control = 89%, site = 60%). The toxicity test results are presented in Table 4.6 (Attachment 4) identifies these decreases as not statistically significant. Statistical results indicated that the control sediment toxicity tests (Table 4.6) for Pond A-5 showed 89% survival for *Hyalella azteca*, but statistical significance could not be assessed because the control survival did not meet performance criteria. The NE-1 report does not provide sufficient detail to verify the reported statistical significance. Please provide the underlying data set from the toxicity testing, used in statistical calculations, for verification of the approach used.

5. **Total PCBs.** The nomenclature and presentation of results need to be clarified. Appendix A, Section 5 and Attachment 2 incorrectly refer to aroclors (e.g., 1254, 1260) as congeners. Total PCBs and aroclors (1016, 1254, etc.) are mixtures. Congeners are chemical specific (e.g., 2, 3-dichlorobiphenyl). A total PCB analysis measures a number of different aroclors and reports the results by aroclor mixture. If the typical EPA analysis method for PCBs was used, then seven aroclor mixtures would be reported. All of the reported aroclors should have been summed and termed total PCBs. Please verify whether there have been congener analyses at the site, and clarify/correct the terminology used in the report, and provide a description of the 'total PCB' analysis used at the site.

   The calculation of the total PCB exposure point concentration cannot be verified based on the information currently provided. It is recommended that a list of all aroclors that were analyzed with the associated detection limits be presented.

6. **Risk Characterization Methodology.** The risk characterization incorrectly assumes that non-detect is equivalent to below a level of concern. The detection limits (DLs) for infrequently detected ECOIs (and chemicals that were never detected) should be evaluated relative to the ESL to ensure that the DLs achieved were adequate to assess potential risks. If the DLs are greater than the ESL, it is not possible to conclude that risks are low or negligible.

7. **Other Lines of Evidence.** The conclusions for the Aquatic Population Studies (Section 3.1) state that pond populations were "comparable to reference conditions", but it is not clear which site was utilized as "reference". Please identify the reference area used for this assessment. The conclusions appear to appropriate, however, this study has not been reviewed. Please submit or provide the reference to the underlying population study data used to support this line of evidence. Minor: tissue concentrations presented in the text and tables do not indicate the weight basis (wet weight vs. dry weight).

8. **Use of Terminology.** The terminology for 'Alternate Toxicity' values may be misleading. For sediment, the default ESLs (as identified in the CRA Methodology) were selected to represent no effect levels or effects thresholds (e.g., NEC, TEC, ERL). As correctly stated in Attachment 4, the ATs are representative of an upper-bound concentration above which adverse effects are elevated (e.g., PEC, ERM) in order to bracket the estimated risks using an HQ approach. It is not appropriate to interpret effect-based ESLs as being "alternatives" for no effect or threshold-based ESLs. Therefore, to avoid potential confusion, it is recommended that the text and tables presented in the risk characterization be revised to present the "NOEC/Threshold ESL" and the "LOEC ESL" for sediment." Alternately, the use of "lower-bound ESL" and "upper-bound ESL" may be used since Attachment 4, Section 1.0 already introduces the concept of "lower-bound and upper-bound toxicity values".

   In addition, Attachment 1 refers to "site-specific" ESLs. This language is potentially confusing as it suggests that ESLs are derived from site-specific sediment toxicity tests. Equilibrium partitioning (EqP) values calculated based on fraction of organic carbon should not be referred to as "site-specific". Recommend removing references to "site-specific" ESLs.

   Appendix A, Section 5 includes subsections indicating that there are 'Weight of Evidence' conclusions being made. However, none of the lines of evidence have been assigned weight. Recommend changing subsection headings to "line-of-evidence' conclusions.

SPECIFIC COMMENTS

APPENDIX A

1. **Pages 13 and 14:** For aluminum, the text does not clearly describe which of the AT was used in the determination that risks are low. Please clarify that the comparison used for this estimate is based on the ERM (as presented in Table 2.1).

2. **Pond B-5:** The HQ screening results table for this pond does not include a summary of HQs for the organic compounds. Please summarize the results. Based on preliminary information that is presented, risks associated with surface sediment appear low for this pond.

3. **Pond C-1:** Based on the data presented, it may be that risks are in the low risk range for this pond. However, there are multiple exceedances of the upperbound effect levels reported for the pond. Please clarify that the sediment concentrations used in the toxicity testing is the same data that was used in the current HQ screening process. In addition, please present the underlying data set from the toxicity testing for review.

4. **Page 44, top of page:** The text incorrectly cites Pond C-2. Please revise.

5. **Page 49, Other Lines of Evidence**: The text references 'other biomonitoring results' for Pond C-1 as a line of evidence that the pond is thriving. The reference appears to be from upstream of the pond. Please provide specific reference and discussion to the 'other biomonitoring results' that is being used to support this statement.

Tables

6. **General:** There appears to be an inconsistency in reporting the HQ on several tables. For example, in Table A.33 the MDC All Sediment ESL-HQ = <1 for iron. But you can clearly see that the MDC (24,000 ppm) is greater than the ESL (20,000 ppm). The same is true for Table A-2 dioxin, B-5 iron, C-1 iron, C-2 iron. Please verify and revise as appropriate.

7. Table A-28, Pond A-1: The table presents several HQ = "0". Please provide the correct HQ.

8. Tables A-4 through A12: The results for several analytes (e.g., silver, selenium) are not consistently presented for all ponds. Please revise the tables to present all available results or indicate why results for these analytes were not available.

9. Table A.34 is missing the row for Total PAHs.

10. Minor comment: The tables for A-5 and C-2 are missing the grey header row for Organics.

Figures

11. Figure 7: The media type is incorrectly identified for several of the samples (i.e., indicates 'Sub Surf' for intervals of 0-0.5 feet. Please correct the figure and verify that the misidentification has not resulted in incorrect conclusions.

ATTACHMENT 2: ALTERNATE TOXICITY VALUES AND SITE SPECIFIC ESLs

12. Page 3, Ingersoll et al., 1996. The last sentence incorrectly indicates that the ERL was selected as the AT benchmark for aluminum, iron, manganese, benzo(g,h,i)perylene, and indeno(1,2,3-cd)pyrene. The AT presented in Table 2.1 and used for the evaluation is the ERM. Please revise the text and correct any associated statements presented in the pond-specific summaries in Appendix A, Section 5, related to these chemicals.

13. Table 2.1. Please verify the 'Type of Value' presented for antimony. Attachment 2, Page 5 indicates that it is the LEL; however the value type is designated as 'SLCA', which should be defined in the footnotes.

ATTACHMENT 4: LINES OF EVIDENCE IN SUPPORT OF RISK CHARACTERIZATION

14. Additional detail needs to be presented to support the interpretation for risks to waterfowl and wading birds. The resolution/response to the following 4 issues are requested in order to assess the final conclusions:

    - The underlying dose calculations are not presented, but it appears that the total intake is concentration-based rather than dose-based (intake = prey conc [mg/kg tissue] + sediment conc [mg/kg sediment]) (see Table 4.8). This completely neglects the ingestion rates of each. Please indicate whether this is an error in nomenclature and whether these are actually doses [mg/kg/d].

    - Risks were evaluated for 2 potential prey scenarios - 1) based on measured tissue data, 2) based on estimated tissue data using models that would tend to represent higher uptake scenarios. It is not clear which prey scenario is being shown in the tables.

    - In general, it is not clear what the basis of the EPCs were for each exposure area (i.e., the statistic used, the underlying dataset, evaluation of NDs). Please present additional detail on exposure point concentrations and area assumptions.

    - It is not clear what the basis of the TRVs were (i.e., NOAEL/LOAEL, endpoint type, source).

15. The following additional information should be added to clarify the presentation:

- Section 5.1 identifies 4 ECOPCs (di-n-butylphthalate, PCM, mercury, and antimony), but doesn't provide details on how these ECOPCs were selected. In addition, the tables present HQs for several other chemicals (which are called ECOCs). There appears to be an inconsistency between the text and the tables on the chemicals retained for risk evaluation. Please clarify.
- It appears that there were 3 quantitative exposure pathways identified (ingestion of sediment, water, and aquatic prey), but the tables only show sediment and prey HQs. Please provide the details on the exposure pathways used.

- Please clarify the exposure assumptions (i.e., dietary fractions, ingestion rates).

Required Distribution:

M. Aguilar, USEPA
S. Bell, DOE-RFFO
J. Berardini, K-H
B. Birk, DOE-RFFO
L. Brooks, K-H ESS
M. Broussard, K-H RISS
L. Butler, K-H RISS
G. Carnival, K-H RISS
N. Castaneda, DOE-RFFO
C. Deck, K-H Legal
S. Gunderson, CDPHE
M. Keating, K-H RISS
G. Kleeman, USEPA
D. Kruchek, CDPHE
D. Mayo, K-H RISS
R. McCallister, DOE-RFFO
J. Mead, K-H ESS
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