



DEPARTMENT OF THE ARMY
ST. LOUIS DISTRICT, CORPS OF ENGINEERS
9170 LATTY AVENUE
BERKELEY, MISSOURI 63134

REPLY TO
ATTENTION OF:

September 28, 1999

Formerly Utilized Sites Remedial Action Program Project Office

Mr. Robert Geller
Missouri Dept. of Natural Resources
P.O. Box 176
Jefferson City, Missouri 65102

SUBJECT: Draft Final Ecological Risk Assessment for the North County Site, July,
1999 -- Response to Comments

Dear Mr. Geller:

Please find enclosed the response to your comments on the subject survey plan
attached at Enclosure 1. If you have any questions with regard to this plan, contact Mr.
Dennis Chambers at (314) 524-3329.

Sincerely,

A handwritten signature in cursive script, reading "Sharon R. Cotner".

Sharon R. Cotner
FUSRAP Program Manager

Enclosure
CC: Mr. Dan Wall, EPA

**COMMENTS AND RESPONSES FOR THE
ECOLOGICAL RISK ASSESSMENT FOR THE ST. LOUIS NORTH COUNTY SITE
ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§¶	Summarized Comment	Response
1	Section 1.1, p. 1-3	Why are SLAPS soils not being evaluated in the SERA?	Clarification. The SLAPS soils are not being evaluated in the SERA because SLAPS is currently being remediated. Furthermore, the highly disturbed nature of the soils, limited vegetation, and industrial surroundings reduce the likelihood that receptors will use these grounds.
2	Section 1.1, p. 1-3	Is the current soil sampling data post-remediation sampling data? Why is historical sampling data not being used in lieu of more recent sampling?	Clarification. The current soil sampling data is not post-remediation sampling data. The most recent data characterize current site conditions.
3	Section 2.3.3, p. 2-5	Why is historical sampling data from Coldwater Creek not being used?	Clarification. Historical sampling data is not being used because the recent data better represent the site.
4	Section 3.3.1, 3.3.2, and 3.3.3	The locations and information regarding "North County sediment background" values should be provided.	Clarification. The locations and information regarding the background data will be added to the report. The "background" values were those available from previous investigations of the North County Site.
5	Section 3.3.1, 3.3.2, and 3.3.3	The locations and information regarding "North County surface water background" values should be provided.	Clarification. The locations and information regarding the background data will be added to the report. The "background" values were those available from previous investigations of the North County Site.

**COMMENTS AND RESPONSES FOR THE
ECOLOGICAL RISK ASSESSMENT FOR THE ST. LOUIS NORTH COUNTY SITE
ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft) (continued)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§/¶	Summarized Comment	Response
6	Section 1.2, p. 1-9, para. 2, line 3	On what basis is this made? Isn't the purpose of this process to assess and mitigate impacts to 'any' organisms in the impacted areas?	Clarification. The purpose of the ecorisk process (and especially the screening process) is not to assess and mitigate impacts. Rather, the purpose of the process is to identify whether site-related contaminants in a given medium are posing an unacceptable risk to ecological resources. The results of the assessment are used by the risk manager to make a decision as to whether remediation is warranted. If so, an appropriate remedy is selected through another process as part of the FS. This does not occur in the BRA. The present report represents a screening level assessment, which is much more limited in its purpose: to determine whether site-related contaminants pose a potentially unacceptable risk, and if so, is an interim action or a baseline risk assessment necessary. The original BRA report (DOE 1993) includes an "environmental assessment for biota" for the St. Louis Site. The observations in that report were primarily based on the results of the habitat characterization conducted by Argonne National Laboratory and reported in DOE (1993). We cannot comment on those methods or the basis for interpretations or recommendations in that report.
7	None	Why was a fish not evaluated as a receptor, specifically the fathead minnow?	Clarification. Aquatic biota were used to represent all aquatic species exposed to potential risks, including fish. The AWQC and other surface water benchmarks are designed to be protective of a diversity of aquatic biota. Many of these benchmarks are based in part on the fathead minnow data that are available in the literature. Evaluating the risk to fathead minnows alone neglects other biota in Coldwater Creek. Evaluating the risk to aquatic biota is more inclusive.

**COMMENTS AND RESPONSES FOR THE
ECOLOGICAL RISK ASSESSMENT FOR THE ST. LOUIS NORTH COUNTY SITE
ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft) (continued)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§/¶	Summarized Comment	Response
8	None	How and where are the receptors chosen? Did the U.S. Army Corps of Engineers carry out a new biological inventory before deciding on receptors?	Clarification. Receptors were chosen following the development of a preliminary conceptual model, which identified expected fate and transport mechanisms and exposure routes, identified general assessment endpoints and ecological receptors. We then used the USFWS report, together with our observations from our site visit, to select the receptors to be evaluated in the assessment. Based on the this preliminary conceptual model, the results of a site reconnaissance, and existing reports, particularly the USFWS report (Parker and Szlemp 1987), ecological receptors were chosen in accordance with EPA guidance. Without sampling fish in the creek, there is no way to know if new species have been introduced during recent floods.
9	Section 3, p. 3-1, para. 3.	The assessment should provide justification of why non-lethal community and population impacts were not included in the assessment.	Clarification. There are few data and much uncertainty about non-lethal community and population effects. There are insufficient data to predict population and community-level effects from impacts on individuals. Chemicals impact individuals; if enough individuals are impacted, then the populations may be impacted. If the impact is mortality or reduced reproduction, population-level effects are more likely, than if the impacts are non-lethal individual impacts. Nevertheless, community effects were considered through the use of certain screening values. For example, the AWQC represent values considered protective of 95% of the aquatic community. Also some of the NOAA sediment values are based on non-lethal effects, and many of the ORNL screening values are based on sublethal effects on individuals, such as growth. The text will be revised to indicate that for an effect to be significant with a high degree of certainty it should be one that results in death or reproductive failure.
10	Sect. 3.1-3.3, table 26	Are North County background concentration "natural" or do those means include "impacted" sites? Are concentrations higher than the GSM?	Clarification. The background concentrations are not "natural." The median concentrations are in general lower than the Geochemical Survey of Missouri data

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ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft) (continued)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§/¶	Summarized Comment	Response
11	Sect. 3.1-3.3	The author(s) use inadequate justification in discounting the potential of risk posed by metals present at levels well above a hazard quotient of 1.0.	Disagree. The adequacy of the proffered justification is a matter for the risk manager to decide.
12	Section 3.3.2, p. 3-6, para. 5	Statement that the Middle Reach of Coldwater Creek is not designated for any beneficial use by the State of Missouri is not relevant, since this stream reach empties into lower Coldwater Creek which is protected for livestock and wildlife watering and aquatic life.	Disagree. The lack of designation is indicative of the quality of the ecological habitat represented by the Middle Reach of Coldwater Creek and any risk management decision about that reach of the creek should consider habitat quality.
13	Tables 3, 18, and 19	Explain how authors arrived at HQs in tables 18 and 19 because they are drastically different than HQs in Table 3. What assumptions were made which resulted in the additional lowering of the HQ?	Clarification. The differences in the HQs in the tables are due to using a variety of different input values in the derivation of the Step 3 hazard quotients table compared to the screening table, e.g., realistic diets versus exclusive worst case diets. These differences are described on p. 3-1.
14	Sect. 4, p. 4-1	How did the authors arrive at the conclusion that HQs several times the "level of concern" HQ of 1 did not represent significant ecological risk?	Clarification. This conclusion is based on three considerations: 1) magnitude of risk relative to uncertainty in risk estimates; 2) likelihood of significant ecological effect on local populations; and 3) the presence or absence of unique, rare and critical habitat. These are defined on p. 3-1 and discussed for each area in Sects. 3.1 – 3.3. The consideration of these things is consistent with EPA (1998) guidance recommending the application of professional judgement in the interpretation of the risk assessment. A HQ > 1.0 does not identify an actual, realized effect. Rather, it only suggests that there is a potential for adverse effects under the exposure scenarios employed. HQs utilize no site-specific data except for media concentrations and infer risk potentials using non-site-specific screening values derived elsewhere and typically under laboratory conditions.

**COMMENTS AND RESPONSES FOR THE
ECOLOGICAL RISK ASSESSMENT FOR THE ST. LOUIS NORTH COUNTY SITE
ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft) (continued)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§¶	Summarized Comment	Response
15	Section 1.2, p. 1-9	The statement of "not unique or unusual; not necessary for continued propagation of key species etc.... is incorrect based on the fact that Coldwater Creek runs through numerous city parks and residential areas.	Clarification. The referenced statement is a quote from a historical document. From an ecological perspective and on the basis of observations made during the site visit, the historical comment is accurate. The presence of a city park does not automatically imply the presence of ecologically important or valuable resources (consider baseball diamonds, basketball courts, tennis courts, and parking lots in city parks). The comment does not relate the creek to ecological use but rather to human use.
16	Section 1.3, p. 1-9	Please clarify why the RME was selected over going strictly with maximum concentration from the sampling.	Clarification. RME is the concentration used in Step 3. Maximum values were used in the Screening Ecological Risk Assessment (Step 1 and 2). The RME is used in re-evaluation of COPCs to help the risk manager decide whether ecological risk requires further evaluation.
17	Section 1.3, p. 1-9	What was the date for the most recently collected chemical data for surface soils at IA-9 and IA-10? Justification for leaving out data for the evaluation needs to be included in the document.	Clarification. We used the data collected between June and November 1998. All samples were collected prior to remediation.
18	Section 4.0, p. 4-1	Does this mean that RGOs should be based on ecological risk if human health risk exists but is not solely ecological risk?	Agree. Statement regarding Ecological RGOs will be removed.
19	Section 2.2, p. 2-4	The effect of using a body-weight scaling exponent of zero for birds is discussed in the re-evaluation of ecological COPCs. Please clarify this statement. We could not find justification for a zero scaling factor within section 3.	Clarification. A body-weight ratio scaling exponent of 0.25 was used for both birds and mammals as given in Sect. 2.2. Although, Sample et al. (1996) use an exponent of 0, this issue is not resolved in the scientific community. The effect on the results of using an exponent of 0 rather than 0.25 is described in Sect. 3 pg. 3-2 para. 2, p. 3-4 para.4, p.3-5, para 4, p. 3-6 para 4, p 3-7, para 3. No justification is provided because it is not the approach recommended in the ERA.
20	Appendix E, p. E-3	Did any of the locations that were sampled during the most recent sampling event correspond to the locations sampled during the remedial investigation?	Clarification. Yes, nearby locations were sampled in Coldwater Creek (compare Figures 1-2 and 1-4).

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ST. LOUIS, MISSOURI (July 1999 St. Louis District Review Draft) (continued)**

Comments received from MO Dept. of Natural Resources			
Comment No.	pp/§¶	Summarized Comment	Response
21	Section 3.3.1, 3.3.2, 3.3.3, 3.4, 4.0	How does the fact that Coldwater Creek is not a unique, rare, or critical habitat for ecological receptors effect the fact a HQ is greater than one for a contaminant?	Clarification. Screening HQs are not sufficient to establish risk, but are used to determine whether additional assessment or characterization may be required. A HQ > 1 does not document that an actual impact has or is occurring, nor does it mean further investigation is required before a risk management decision can be made. Rather, it merely indicates that there is a potential for unacceptable risks under the exposure scenarios evaluated and the assumptions. Risk acceptability and the need for further investigation is determined by risk managers through the consideration of ecological setting, resources potentially at risk, ecological significance, and the uncertainties associated with the data, the exposure scenarios, and the screening values.

Cataloging Form

{Technical/Project Managers fill in C through G, K through Q. RM completes other fields}

A. Document ID Number: Assigned by database 622

B. Further Information Required?: ☐

C. Operable Unit (Choose One):

USACE ☐
St. Louis Sites ☐
Downtown ☐
North County ☒
Madison Sites ☐
Inaccessible Areas ☐
PRP ☐
Oversight Committee ☐

D. Site (Optional):

SLDS VPs ☐
Mallinckrodt ☐
SLAPS ☐
SLAPS VPs ☐
CWC ☐
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H. Bechtel Number: _____

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J. MARKS Number (Choose One): FN: 1110-1-8100e ☐ FN: 1110-1-8100f ☐ FN: 1110-1-8100g ☐

K. Subject/Title: Responses to MDR Comments on the Ecological Risk Assessment for the North County Sites

L. Author: Sharon Cotner

M. Author's Company: ~~SAIC~~ ~~SAIC~~

N. Recipient(s): Robert Heller

O. Recipient(s) Company: MDNR

P. Version (Choose One): ~~Draft~~ ☒ Final ☒

Q. Date: 9/28/99

R. Include in the ARF? ☐

S. Include in the AR? ☐

T. Filed as Confidential/Privileged? ☐

U. Document Format (Choose one):

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W. Physical Location (Choose One):

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X. Associated with Document(s): _____

Secondary Document Types

- ☐ Amendments to Record of Decision (ROD)
- ☐ Anomaly Review Board Documents (Management Plan, Correspondence, Standard Operating Procedures, Findings)
- ☐ Applicable or Relevant and Appropriate Requirements (ARAR) Determinations
- ☐ Archives Search Reports (ASR)
- ☐ Briefing Papers
- ☐ Chain of Custody Forms
- ☐ Community Relations Plan
- ☐ Correspondence
- ☐ Daily Operations Summary/Situation Reports
- ☐ Engineering Evaluation and Cost Analysis (EE/CA) Action Memo
- ☐ Engineering Evaluation and Cost Analysis (EE/CA) Approval Memorandum
- ☐ Engineering Evaluation and Cost Analysis (EE/CA)
- ☐ Explanation of Significant Differences
- ☐ Fact Sheets/Newsletters
- ☐ Feasibility Study (FS) Reports
- ☐ Federal, State, Local Tech. Records
- ☐ Final Approved Findings and Determinations
- ☐ Final Remedial Design Documents
- ☐ Freedom of Information (FOIA) Requests
- ☐ Freedom of Information (FOIA Responses)
- ☐ Health and Endangerment Assessments
- ☐ Interagency Agreements/Memoranda
- ☐ Interim Deliverables
- ☐ Inventory Project Report (INPR) Risk Assessment Code (RAC)
- ☐ Invoices/Contractor Payments/Cost Reports
- ☐ Land Grants/Deeds
- ☐ Mailing Lists
- ☐ News Clippings and Press Releases
- ☐ No Further Action Docs (NOFA)
- ☐ On-Scene Coordinator Reports
- ☐ Proposed Plans for Remedial Action
- ☐ Public Meeting Minutes/Transcripts
- ☐ Public Notices
- ☐ Public notices, Comments Received, Responses to the Comments
- ☐ Published Hearings
- ☐ Record of Decision (ROD)
- ☐ Reference Documents
- ☐ Remedial Action Documents
- ☐ Remedial Investigation (RI) Reports
- ☐ Removal Response Reports (Emergency Evacuation Orders)
- ☐ Rights of Entry Documents
- ☐ Sampling/Analysis Data and Plans
- ☐ Scopes of Work/Contractual Documents
- ☐ Site Descriptions and Chronologies
- ☐ Site Inspection Documents
- ☐ Site Photographs and Maps
- ☐ Testimonies
- ☐ Title Search Documents
- ☐ Work Logs
- ☐ Work Plans and Progress Reports
- ☐ Work Plans/Site Safety and Health Plans and Progress Reports
- ☐ Work Register and Logs