

Charlie Community

REVIEW COMMENT SET
REVIEW OF: FINAL DRAFT PHASE I RFI/RI WORK PLAN
WOMAN CREEK PRIORITY DRAINAGE (OPERABLE UNIT NO. 5)
CHAPTER 9.0, ENVIRONMENTAL EVALUATION

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[PRELIMINARY NOTE: All numbering of paragraphs in this review considers the first full paragraph on each page as "paragraph 1." Section headings have no bearing on paragraph numbering.]

MAJOR ISSUES/AGENDA ITEMS

ISSUE 1: CONSISTENCY OF EE APPROACH ACROSS OUs.

The EEWP described in this OU5 Work Plan is very different in scope and detail from the OU2 EEWP, to a degree that suggests that different contractors who were not interacting with each other produced the two EEWPs. The main thrust of the OU2 EE appears to be oriented towards ecosystem effects, while that for OU5 is very much oriented toward movement of contaminants through food chains and development of ecosystem criteria or benchmarks based on contaminant tissue burdens. In this regard, the OU5 assessment is closer to the classic "risk assessment" approach, while that of OU2 is more oriented toward "impact assessment." Mention is made in this OU5 EE to evaluation of population and ecosystem effects, but the information is so general and not focused that it was not possible to ascertain what was really being proposed beyond the tissue evaluations.

In general, compared to the OU2 EEWP, the OU5 EEWP includes a much more coherent assessment plan, and the document itself is much better written. Many of the stranger aspects of the OU2 plan (e.g., cancers in biota other than humans) are mercifully absent from this plan. However, this does not mean that there are not concerns with the approach embraced in the OU5 EEWP, particularly with relation to its feasibility, the endpoints being measured, and the general absence of any detailed risk characterization methodology. It is very much unclear what kinds of data are being collected and how they will be used for impact assessment.

The substantial differences in the OU2 and OU5 EEWPs is of concern because of the geographic proximity of these OUs (i.e., both in the same watershed). We strongly suggest that DOE ensure consistency in the EEs across RFP, but particularly among those within the same watersheds. We further suggest that DOE consider integrating some of the ecological inventory field efforts on a watershed basis (i.e., those for OUs 1, 2 and 5). It would appear very advantageous to integrate some of the field surveys associated with the Woman Creek drainage.

ISSUE 2: STRUCTURE OF THE EE (Reference Figure 9-1)

The EEWP for OU5 presents a coherent structure that was lacking in the OU2 EEWP. Tasks are laid out in a systematic manner that supports an iterative approach to ecological assessment. Our major concern, therefore, is not with the structure of the EE, per se, but rather the lack of specificity and detail about how the framework will be implemented.

However, we do have some concerns regarding the structure of the EE, particularly with reference to Tasks 100 & 200, and their relationship to Task 300 data collection efforts. In particular, we feel there is substantial justification for integrating these two tasks, or integrating at least parts of Task 200 with Task 100. For example, under Task 100, a subtask (Task 130) involves development of DQOs. We question whether DQOs can be developed until data gaps have been identified (presumably in Task 200). As mentioned elsewhere, the efforts described under Tasks 100 and 200 should have largely already been completed during the scoping and development of the work plan. The lack of specificity and detail is at least partly the result of the inadequate scoping of the work plan.

Task 200 is (or should) essentially involve the evaluation of historical data, development of the conceptual site model, and identification of data gaps. [Definition of the study area (Task 110) is also a conceptual modeling activity.] We are very concerned that rather than conceptual model development, the Task 200 effort is referred to as "Preliminary Risk Assessment." This "Preliminary Risk Assessment" appears nothing more than the initial development of a conceptual risk model, and we feel the use of the term is inappropriate and misleading. In any regard, the products of this "Preliminary Risk Assessment" need to be discussed in detail. How will this assessment be used to guide the development of subsequent field sampling efforts?

We recommend integrating some or all of the Task 200 efforts with those of Task 100, and changing the name from "Preliminary Risk Assessment" to "Conceptual Model Development." We recommend that this effort end in a detailed identification of data gaps to be filled in the Task 300 field efforts.

ISSUE 3: ADEQUACY OF WORK PLAN DEVELOPMENT

As was the case with the OU2 EEWP, the OU5 EEWP does not fulfill the scoping requirements defined in EPA's RI/FS guidance manuals. Section 2.4 of EPA's Environmental Evaluation Manual identifies the RI/FS scoping activities that culminate in the RI Work Plan. Among the considerations in a Work Plan are the following:

- a) The collection, organization, and synthesis of existing information on the Operable Unit;
- b) Development of a conceptual model, which both evolves from and provides the framework for (a) above;
- c) The systematic identification of data needs for the ecological assessment; and,

- d) Development of data quality objectives associated with these data gaps.

None of these essential elements of an RI Work Plan are included in the EEWP. This is usually considered to be unacceptable. All of these activities are presented as "will do" efforts.

Evaluation, analysis and synthesis of existing data and development of a conceptual model for the site must be part of the EE scoping and should be discussed in detail in the work plan. This inadequate scoping has resulted in a work plan that is much too generic. Our belief, after reviewing several RFP EEWPs, is that there is substantial historical information available upon which to base a site-specific assessment. We feel that many of the activities now incorporated into Tasks 100 and 200 should have already been accomplished.

This lack of adequate EEWP scoping and evaluation of historical data has profound scheduling (see Issue 7, below) and quality assurance implications. Since the details of the effort are not delineated in the work plan, we suggest that DOE require deliverables to be submitted following Task 1 and 2 efforts. These deliverables should be reviewed and approved prior to initiation of any field efforts. We do not believe that adequate detail has been presented to assure DOE that the study will be carried out effectively.

ISSUE 4: INTEGRATION OF EEWP WITH OTHER OU5 RI ACTIVITIES

Although the OU5 EEWP does a considerably better job (than the OU2 EEWP) at integrating EE activities with other OU5 RI activities, outstanding concerns remain to be resolved. We are particularly concerned about the location of Task 3 "ecological inventory" stations vis a vis the nature and extent of contamination. The EEWP indicates that the ecological inventory stations will be located at, or in the immediate vicinity of, stations at which abiotic media will be characterized for contaminant burdens. The concern is that data on the nature and extent of contamination will not be available to select the final locations for the ecological inventory sampling (scheduled for the May-June time period). If the ecological inventory stations are selected without knowledge of the nature and extent of contamination, what guarantee is there that the data will be relevant to the questions which must be addressed? This is particularly important to the toxicity testing activities to be conducted as part of Task 300, and the need to generate tissue data for later contaminant analyses during Task 9. Certainly, for the selection of stations from which media samples will be taken for toxicity tests and tissue analyses, substantial information concerning the nature and extent of contamination must be available.

Another critical consideration that is related to overall RI integration is the selection of **contaminants of concern**. The EEWP indicates that development of criteria for selection of contaminants of concern will occur during Task 100. However, it is not clear that these criteria will influence the selection of contaminants for Phase I sampling of abiotic media. Please discuss this relationship. Based on our cursory review of the rest of the Phase I Work Plan (i.e., sections other than Section 9), it appears that decisions have been made to exclude whole classes of contaminants have been excluded from some IHSSs because records do not indicate these contaminants were handled at these sites. We consider this a risky way to proceed, and suggest that DOE provide a complete Appendix VIII or Appendix IX sweep

for at least one (worst case) sample at each IHSS. This is the only sure way that contaminants can be removed from concern (i.e., showing they are not present).

ISSUE 5: APPROACH TOWARD USE OF REFERENCE OR BACKGROUND AREAS

The EEWP for OU5 indicates that reference areas will be selected, that the selection criteria will be developed as part of the Task 1 efforts, and that the selection of the reference areas will be based on the qualitative field survey of Task 300. We question whether or not reference areas can be identified based on such a qualitative survey.

We are also concerned that the precise use to which these reference areas will be put has not been fully elucidated. The EEWP should describe in detail the approach to impact or risk assessment to be employed using these background or reference areas. Use of reference areas implies that hypotheses will be tested and statistical tests will be conducted to determine if significant differences exist between impact and reference areas. This is not addressed in a straightforward manner in the EEWP for OU5.

If assessment methodologies employing reference areas are to be used, we suggest that DOE consider different approaches, such as comparing impacted areas in OU5 with a number of reference areas throughout the general Boulder-RFP region so a "range" of background or reference conditions can be established. It would then be possible to test whether or not OU5 impacted area(s) fall within the range of unimpacted conditions.

ISSUE 6: ADEQUACY OF THE OUS RISK OR IMPACT ASSESSMENT METHODOLOGY

The work plan lacks an adequate discussion of risk characterization. In general, DOE has failed to demonstrate how impacts will be assessed (based mainly on these tissue burdens), and particularly how exposure to suites of contaminants will be assessed. Discussion of site-specific risk characterization is hampered somewhat by the fact that project scoping has not yet been accomplished; however, it should still be possible to define (potential) generic risk and impact characterization methodologies which are being considered. If sampling stations can be identified, there must be some rationale for their selection. That rationale embodies the risk characterization approach. This should all be discussed so the reader clearly recognizes the methodologies to be employed and the data needed to implement these methodologies.

The OUS EEWP relies heavily on food web (pathway) analysis and evaluation of contaminant tissue burdens for the environmental effects evaluation. The major benefit from utilizing this approach is that it allows the formulation of ecological criteria that can be used to develop remediation objectives and conduct "what if" scenarios for evaluation of remedial alternatives. However, the methodology relies on the availability of toxicity data and data on maximum permissible concentrations of contaminants in the tissues of key or indicator species. We seriously question whether the existing database for these endpoints is adequate.

The methodology used to define ecological criteria (as shown in Figure 9-2) needs to be

explained in detail. The source reports for this approach are not available and without some explanation we cannot tell exactly what is being done to develop ecological criteria, and how these criteria can be used in impact assessment.

Section 9.2.7 (Task 6, Contamination Characterization) presents what appears to be the impact or risk assessment methodology, but the discussion is so general as to preclude determination of exactly what is being proposed. Endpoints mentioned in this section include death, diminished reproductive success, and reduced population levels. The source of these data is not clear, but implies that the Task 3 field inventories will be adequate to allow comparisons to be made. Mention is made of the fact that much of this assessment may be qualitative. This needs to be explained in much greater detail, and the implications need to also be addressed.

In Section 9.2.9 (page 9-33), under Task 8: Planning, there is mention of "analysis of population, habitat, or ecosystem changes." This is the only other reference to endpoints other than tissue burdens. We are able to identify virtually no development of this line of inquiry in the work plan. We are left with the impression that these and other ecological endpoints are not being seriously considered. This impression is reinforced by the apparent lack of data needed to determine the feasibility of utilizing such endpoints (from previous tasks).

Another key consideration is how the influence of multiple contaminants be assessed. Figure 9-2 and the text discussions involving development of ecological criteria are all oriented toward single contaminants, not the suites of contaminants expected in the abiotic media at RFP.

In Section 9.2.11 (Task 10: Environmental Evaluation Report), a number of bullet topics to be covered in the EE report are identified (see page 9-36). One of these is "Impact Characterization." However, nowhere in the EEWP is "impact characterization" discussed. As indicated by the bullet, "Impact Characterization" should be a separate section or subsection. It is critical to the overall effort.

We recommend that the EEWP include a detailed discussion of how biological endpoints will be used for impact or risk characterization. This discussion should include the way in which the impacts and risks from exposure to suites of contaminants will be assessed. This would most appropriately be located in the Tasks 900 and/or 1000 discussion.

ISSUE 7: SCHEDULING CONSIDERATIONS

The lack of adequate EEWP scoping and evaluation of historical data discussed under Issue 4, above, has profound scheduling implications. According to Figure 9-4, Task 100 scoping activities will take two months to complete, while Task 200 activities will require up to four months to complete. Ecological field surveys will not be initiated until Month 3. Given it is now mid April, it is unlikely that any field activities would begin before July 1st. The May-June period for ecological inventory sampling and toxicity testing does not seem realistic, given the need to complete the scoping activities before field sampling can be initiated.

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Given the fact that Task 1 and (to a large degree) Task 2 are efforts that must be completed before field work can be initiated, DOE would be prudent to approve implementation of these tasks as soon as possible. A revised work plan should be developed and thoroughly reviewed prior to implementation of Task 3 field efforts, at least the ecological inventory and toxicity testing portions of this Task 3 effort.

Another concern related to scheduling involves the assumption (shared by the rest of the RI effort) that the Phase I sampling efforts will provide all the data needed for an adequate characterization of the nature and extent of contamination and the related risk assessment. Our cursory review of the rest of this RI did not leave us with a comfortable feeling that this was necessarily going to be the case. The EE should discuss contingencies such as this. How dependent is the EE to a complete determination of the nature and extent of contamination? Under what circumstances would additional data be required? What are the scheduling implications of these potential situations.