MEMORANDUM

on the

VOLUME 1

WORK PLAN

FOR

FEASIBILITY STUDY

OF

PALMERTON OPERABLE UNIT (OU) 3

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for

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for:

The Palmerton Citizens For A Clean Environment

In Response to Task Schedule #20

OVERVIEW

The following memorandum has been prepared in response to PCCE Task Schedule #20, which requests a review and written comment in memorandum form of the document titled: "*Volume 1, Work Plan for Feasibility Study of Palmerton Operable Unit (OU) 3*", prepared by Black & Veatch Special Projects Corp., dated December 30, 1996. This memorandum will focus on the contents of the Feasibility Study Work Plan first, and will offer comments and a conclusion in later sections.

REVIEW

The Introduction section provides background information about the history of the site and the purpose of the Feasibility Study Work Plan. In the first paragraph of the Introduction Section, it is stated: "OU3 concerns residential exposure to contaminants in soil, air, water, and dusts resulting from air deposition that has caused extensive contamination in the residential district of the Borough of Palmerton. This Feasibility Study Work Plan (Work Plan) presents the procedure that will be followed for identifying, evaluating, and screening applicable remediation technologies."

The "Site Background" discussion recounts the history of zinc smelting activities since 1898, and includes a paragraph about the U.S. Atomic Energy Commission's storage of uranium ore at the East Plant from 1953 to 1973. The "Site Background" discussion also describes some of the environmental investigations conducted for OU3 to date, including the June 1994 National Enforcement Investigations Center (NEIC) study titled: "Hazardous Substances Source Identification Study". The NEIC study concluded that pre-1980 primary zinc smelting emissions are a major source of hazardous substances in the environment, but that the EAF dust recycling process also resulted in releases of hazardous substances to the environment. Airborne particulate matter linked to the EAF dust recycling process contains up to 100,000 ppm zinc, 1,640 ppm cadmium and 25,000 ppm lead. Soils in and around the Borough of Palmerton have been contaminated with this material.

The "Purpose" of the Feasibility Study for Palmerton OU3 is stated as follows: "...to identify remedial action alternatives (RAAs) that provide long term protection of human health and the environment." This is a two step process, with the first step involving the Development and Screening of RAAs's, and the second step involving a detailed analysis of RAAs. Section 121 (b)(1) of CERCLA requires that alternatives need to be developed which range from long-term permanent treatment or resource recovery technologies, to treatment technologies that will, in whole or in part, reduce toxicity, mobility, or volume as their principal element, to alternatives which involve little or no treatment.

The first major step, "Development and screening of the RAAs" involves 5 major activities including: (1) developing remedial action objectives and remediation levels, (2) developing general response actions, (3) identifying and screening applicable remedial technology options under each general response action, (4) development of RAAs, and (5) screening and evaluating RAAs.

The second major step involves (1) an evaluation of the potential RAAs in detail with respect to nine evaluation criteria, to address the statutory requirements and preferences of CERCLA; and (2) accomplishing a comparative analysis of the evaluated RAAs. The nine evaluation criteria are:

- Overall protection of human health and the environment
- Compliance with ARARs
- Short-term effectiveness
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume
- Implementability
- Cost
- State acceptance
- Community acceptance

A detailed description of all but the first criteria (Overall protection of human health and the environment), is provided in Appendix A of the Draft Feasibility Study Work Plan document. These descriptions provide more specific guidance on how each criteria is to be evaluated.

The potential for recontamination has been identified as a critical issue which will be addressed as part of the long-term effectiveness criteria. The potential for recontamination will be evaluated for each remedial alternative. Potential recontamination mechanisms identified include air deposition, cross contamination through vehicular traffic in and out of OU3, and from off-site sources such as the EAF process and other contaminated areas.

The main body of the OU3 Draft Feasibility Study Work Plan document is an outline of 16 tasks, followed by Appendix A (described previously), and Appendix B, which is the project schedule. The 16 tasks include:

Task 1.0	Project Planning and Support
Task 2.0	Community Relations
Task 3.0	Data Acquisition
Task 4.0	Sample Analysis
Task 5.0	Analytical Support and Data Validation
Task 6.0	Data Validation
Task 7.0	Risk Assessment
Task 8.0	Treatability Study
Task 9.0	Remedial Investigation Report
Task 10.0	Remedial Alternatives Screening
Task 11.0	Remedial Alternatives Evaluation
Task 12.0	Feasibility Study Report
Task 13.0	Post Feasibility Study Support
Task 14.0	Negotiation Support
Task 15.0	Administrative Record
Task 16.0	Work Assignment Closeout

Many tasks are further defined by second and third order sub-tasks (i.e. Task 1, 1.4, 1.4.1, 1.4.2, etc.) however not all tasks listed are applicable to the scope of work requested for this project. This suggests that a generic or standard outline was applied, and customized in accordance with the scope of work requested by EPA.

Task 1.0 is titled Project Planning and Support, which essentially outlines how the technical and price proposals for the feasibility study are to be developed. According to the project schedule (Appendix B), aspects of this task are already underway, and will continue through to project completion. Section 1.3 identifies the existing information which will be reviewed to write the Feasibility Study and to help establish risk-based action levels. These include:

1. "Palmerton Zinc Human Health Risk Assessment" by CDM Federal Programs. This report has not yet been completed or released for public review and comment.

2. "Final Technical Approach for Risk Assessment" by CDM Federal Programs, September 30, 1996.

3. "Palmerton Zinc Site Final Responsiveness Summary" by CDM Federal Programs, September 30, 1996.

4. "Hazardous Substance Source Identification Study" by National Enforcement Investigations Center (NEIC), of June 1994.

5. "Palmerton Zinc Site Field Trip Report" by CDM Federal Programs, 1991.

6. "Remedial Investigation/Risk Assessment" by R.E. Wright of 1992.

7. Health Study of Blood Lead Levels in Palmerton and Jim Thorpe, PA, by ATSDR, 1991.

8. Dataset from Interim Removal Action, 1994 through present.

9. Dataset from Neighbor Helping Neighbor Program, as available from PRP.

10. Dataset and summary report from Oak Ridge National Laboratory (ORNL) on residual radioactive material, 1988.

Task 1.0 also outlines the scope of work for development of the Work Plan (Draft Work Plan, the Draft Final Work Plan, and the Final Work Plan), as well as Project Management tasks (Periodic Status Reports, Meetings and Routine Communication, Cost and Schedule Control).

Task 2.0, titled Community Relations, is not applicable.

Task 3.0 is titled Data Acquisition, which is apparently related to concern about the potential for re-contamination after implementation of the selected remedial alternatives. This task involves the potential for additional investigations, which have not yet been defined.

Task 4.0, titled Sample Analysis, is not applicable.

Task 5.0, titled Analytical Support and Data Validation, is not applicable.

Task 6.0, titled Data Evaluation, is not applicable.

Task 7.0 is titled Risk Assessment, which is currently being performed by EPA. The outcome of the Risk Assessment will provide the basis for defining the scope of the Feasibility Study.

Task 8.0, titled Treatability Studies, describes a sort of cost/benefit comparison for each of the applicable remedial technologies. The potential for re-contamination will be one criteria examined to determine the long-term effectiveness of each alternative evaluated. This task will involve a Literature Search, which will determine if sufficient data is available to rate the remedial technology according to all nine evaluation criteria.

Task 9.0, titled Remedial Investigation Report, is not applicable.

Task 10.0, is titled Remedial Alternatives Screening, which is the method by which the range of potential remedial alternatives, "that are protective of human health and the environment", will be developed and evaluated. Remedial technologies or processes, which will be used to reduce the toxicity, mobility or volume of contaminants, will be evaluated and selected based on a combination of factors and evaluation criteria. The process begins by developing Remedial Action Objectives, which is accomplished by applying the results of the Risk Assessment to identify the contaminants and media of concern. The results of the Risk Assessment are also used to establish risk-based numerical remedial goals. The effectiveness of each proposed remedial alternative for accomplishing risk-based numerical goals and ARARs (applicable or relevant and appropriate remediation standards) will be evaluated. ARAR's may include other "to be considered" (TBC) criteria. Black and Veatch Special Projects Corporation (BVSPC) will develop chemical specific, location specific and action specific ARAR's/TBC's for OU3. To develop contaminant- and pathway-specific numerical remedial goals, BVSPC will establish the total permissible risk, such as a 10^{-6} carcinogenic risk factor or hazard quotient of one, for the entire area of concern. Because OU3 involves multiple contaminants and exposure pathways, permissible risk levels for each individual contaminant should be less than the total permissible risk. The authors (BVSPC) anticipate that contaminants of concern, exposure pathways, risk factors and types of contaminated media will be site specific, which will require the development of site specific remedial alternatives (i.e. Borough Park would require different remedial alternatives than a residence along Delaware Avenue).

In addition to site specific remedial alternatives, General Response Actions will also be developed (Task 10.2). General Response Actions are broad-based, medium specific categories of remedial activities that can be applied to meet the remedial action objectives. Examples of generic General Response Actions include no-action, institutional controls, containment, in-situ treatment, and removal/treatment/disposal. Refinement of the remedial action alternatives selection process will proceed from the list of general response actions by identifying and screening applicable remedial technologies (Task 10.3), developing a list of remedial action alternatives (Task 10.4), and screening the remedial action alternatives (Task 10.5). The purpose of screening is to reduce the number of RAAs prior to detailed evaluation. The results of these efforts will be documented in a Final Technical Memorandum (Task 10.6).

Task 11.0 describes the Remedial Alternatives Evaluation process. The nine evaluation criteria are categorized into three functional groups:

Threshold Criteria

- Overall protection of human health and the environment
- Compliance with ARAR's

Primary Balancing Criteria

- Short-term effectiveness
- Long-term effectiveness and permanence
- Reduction of toxicity, mobility, or volume
- Implementability
- Cost

Modifying Criteria

- State acceptance
- Community acceptance

A detailed description of each evaluation criteria is provided in Appendix A of the Draft Feasibility Study Work Plan document.

Task 12.0 describes the content of the Feasibility Study Report. Primary elements will include:

1. An introduction and executive summary.
2. Background information for Palmerton.
3. Development of remediation levels and remedial action objectives.
4. Development of general response actions.
5. Identification and screening of applicable remedial technology options.
6. Development and screening of RAAs.
7. Treatability study results, if performed, and
8. Detailed analysis of RAAs.

Task 13.0, titled Post FS Support, is not applicable at this time.

Task 14.0, titled Negotiation Support, is not applicable at this time.

Task 15.0, titled Administrative Record, is not applicable at this time.

Task 16.0 describes the Work Assignment Closeout. Work assignment closeout will involve preparation of a closeout report (Task 16.1), and transfer of project files from BVSPC to EPA (Task 16.2).

COMMENTS

1. Development of the Feasibility Study Work Plan is a very important aspect of the CERCLA process because it is the method by which the remedial activities are identified, evaluated and selected. The Draft Feasibility Study Work Plan, which is the subject of this report, is not sufficiently developed at this time to determine what remedial action alternatives will be selected and whether or not they will be effective. In fact, until the risk assessment is completed, EPA cannot establish scientifically sound remedial action objectives, which form the basis for selecting remedial action alternatives. Consequently, the information provided in the subject document is largely procedural, and contains little substantive information relative to establishing clean-up levels.

2. The organization of Tasks into 16 separate sub-tasks, 5 of which are not applicable, and an additional 3 of which are not applicable at this time, suggests that a standardized or generic format was used for development of the Feasibility Study Work plan. Given the information provided, the organizational structure for the 16 sub-tasks seems rational, and the level of effort or emphasis given to each sub-task seems reasonable at this time, but no references are given identifying the source of the organizational methodology. If the methodology is derived directly from established EPA guidance, as it appears to be, hasn't it already been subject to some level of peer review or public scrutiny? What is the function of public comment at this stage of Feasibility Study development?

3. The project schedule provided in Appendix B indicates that the remedial action objectives will be developed during March (1997 ?). If the process is on-schedule, development of the remedial action alternatives will not be completed until April. However, the transmittal correspondence from Mr. MacMillan to Ms. Ziegenfus dated January 14, 1997 states: "In order to expedite this public comment process leading to the final Feasibility Study work plan, EPA needs to receive all written comments in writing by no later than COB Friday, February 21, 1997." Although one of the Remedial Alternatives Evaluation Criteria is titled: "Community Acceptance", the schedule does not indicate that any additional opportunities for public comment will be provided. CERCLA Section 117 [42 USC 9617] Public Participation, added by Public Law 99-499, clearly identifies when public participation is necessary. While every sincere public participation opportunity provided by EPA should be appreciated and honored with an appropriate response, the public needs to be aware of when public participation is required so that the opportunity for comment is provided when substantive issues need to be addressed.

Sec. 117 [42 USC 9617] Public Participation reads as follows:

(a) Proposed Plan - Before adoption of any plan for remedial action to be undertaken by the President, by a State, or by any other person, under section 104, 106, 120, or 122, the President or State, as appropriate, shall take both the following actions:

> **(1) Publish a notice and brief analysis of the proposed plan and make such plan available to the public.**
> **(2) Provide a reasonable opportunity for submission of written and oral comment and an opportunity for a public meeting at or near the facility at issue regarding the proposed plan and regarding any proposed findings under section 121(d)(4) (relating to cleanup standards). The President or the State shall keep a transcript of the meeting and make such transcript available to the public.**
>
> **The notice and analysis published under paragraph (1) shall include sufficient information as may be necessary to provide a reasonable explanation of the proposed plan and alternative proposal considered.**

(b) Final Plan - Notice of the final remedial action plan adopted shall be published and the plan shall be made available to the public before commencement of any remedial action. Such final plan shall be accompanied by a discussion of any significant changes (and the reasons for such changes) in the proposed plan and a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations under subsection (a).

(c) Explanation of Differences - After adoption of a final remedial action plan -

> **(1) if any remedial action is taken,**
>
> **(2) if any enforcement action under section 106 is taken, or**
>
> **(3) if any settlement or consent decree under section 122 is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the President or the State shall publish an explanation of the significant differences and the reasons such changes were made.**

(d) Publication - For the purposes of this section, publication shall include, at a minimum, publication in a major local newspaper of general circulation. In addition, each item developed, received, published, or made available to the public under this section shall be available for public inspection and copying at or near the facility at issue.

Guidance related to public involvement under CERCLA is codified in 40 CFR 300.430 (f)(3 - 6). Essentially this guidance regards public involvement for selection of the remedy, and involves similar provisions as outlined above. I have not been able to identify any requirements for public involvement specific to preparation of the Feasibility Study.

4. In the first paragraph of the Introduction Section, it is stated: "OU3 concerns residential exposure to contaminants in soil, air, water, and dusts resulting from air deposition that has caused extensive contamination in the residential district of the Borough of Palmerton." This statement should be amended to reflect the fact that contamination of surface and ground water have not been investigated as part of OU3, but will be investigated instead under Operable Unit 4. Drinking water quality was investigated as part of some OU3 studies, but the difference in contamination levels and human health risks between individual and community drinking water sources has not been identified as a significant issue. In addition to general stormwater run-off, the U.S.G.S. Palmerton, PA 7.5 minute quadrangle identifies three blue line streams within or adjoining the residential sections of Palmerton Borough and the village of Aquashicola. These include, the Aquashicola Creek, Mill Creek, and an unnamed tributary to the Aquashicola Creek which flows through the Palmerton Borough Park. Also, it is likely that some of the contamination within the OU3 study area is due not only to air deposition, but has also resulted from direct placement of cinders and slag as structural fill, and the more recent use of IRM as anti-skid. Since the Feasibility Study Work Plan "... presents the procedure that will be followed for identifying, evaluating, and screening applicable remediation technologies", it is extremely important that information regarding the media investigated is as accurate as possible.

5. At several locations within the body of the document (in the description of Task 10.0, for example) the language "protective of human health and the environment" is used in the context of identifying and evaluating remedial alternatives. While selecting remedial alternatives which are "protective of human health and the environment" is EPA's mandate under CERCLA, insufficient information about ecological endpoints precludes accomplishment of this goal at this time. While the Neighbor Helping Neighbor program and some aspects of the Interim Remedial Action have involved re-establishment of vegetative cover (turf grasses), the impact of these activities on surface and groundwater quality, as well as the status of ecologically important soil inhabiting organisms has not been investigated. At this time, it appears that the OU3 cleanup will only address human health risks, and not environmental damage or ecological risks.

CONCLUSIONS

Overall, the Draft Feasibility Study Work Plan lacks sufficient detail to warrant a detailed review and formal comment. However, it is anticipated that the review performed during preparation of this memorandum will be useful during review and comment on selection of the remedy. To date, EPA's public participation program for the Palmerton Superfund site has provided many more opportunities for public comment than required by law. But the public needs to be ever vigilant that the regulated community is not confused with the public, during the public involvement process, and that EPA's response to public comment is sincere when critical decisions are being made.

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