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**RESPONSES TO ADDITIONAL OHIO EPA
COMMENTS ON THE OPERALBE UNTIT (OU) 2
INITIAL SCREENING OF ALTERNATIVES (ISA)
REPORT**

03-11-92

DOE-1129-92

DOE-FN/EPA

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LETTER



Department of Energy
Fernald Environmental Management Project
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MAR 11 1992

DOE-1129-92

Mr. James A. Saric, Remedial Project Director
U. S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604

Mr. Graham E. Mitchell, Project Manager
Ohio Environmental Protection Agency
40 South Main Street
Dayton, Ohio 45402-2086

Dear Mr. Saric and Mr. Mitchell:

RESPONSES TO ADDITIONAL OHIO EPA COMMENTS ON THE OPERABLE UNIT (OU) 2 INITIAL SCREENING OF ALTERNATIVES (ISA) REPORT

Enclosed are the responses to comments by Ohio EPA on the OU 2 ISA report. A significant number of the comments deal with sitewide Risk Assessment issues and are also being addressed in the Risk Assessment Work Plan. As indicated in the responses to specific comments, the action to be taken will involve modifications and changes that will be incorporated into the OU 2 Feasibility Study (FS) Report.

If you or your staff have any questions, please contact Johnny Reising at FTS 774-9083 or (513) 738-9083.

Sincerely,

Jack R. Craig
Fernald Remedial Action
Project Manager

FN:Reising

Enclosure: As Stated

cc w/enc.:

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**OPERABLE UNIT 2 (OU 2)
INITIAL SCREENING OF ALTERNATIVES (ISA) REPORT**

The following three Ohio EPA comments on the Final ISA Report refer to previous comments and DOE responses:

- 1 ► **BACKGROUND:** This item was originally Ohio EPA comment number 15. The DOE response to this comment was the same as the response to U. S. EPA comment number 1, which was similar. The Ohio EPA had further comment on this response, and also had further comment on this item in the final ISA Report.
- COMMENT:** Ohio EPA Comment #15: DOE's response to this comment referred to U. S. EPA Comment #1. Ohio EPA maintains that preliminary remediation goals (PRGs) must be developed as stated in Comment #15. DOE must incorporate the NCP requirements for developing PRGs, as stated in Ohio EPA Comment #15, into the proposed addenda to the RI and FS work objectives (RAOs) being proposed in the addenda to the RI and FS work plans. The addendum must include the development of a table as outlined in U. S. EPA Comment #1(c).
- RESPONSE:** PRGs relative to carcinogens will be based on the CERCLA goal of meeting the 10^{-4} to 10^{-6} risk range [40 CFR 300.430, paragraphs (e)(2)(i)(A) and (3)(2)(i)(D)]. A risk level of 10^{-6} will be used as a point of departure when determining PRGs for individual contaminants in each pathway, assuming the cumulative risk from all pathways and contaminants will not exceed 10^{-4} . This approach is consistent with the approach presented in the RI Work Plan Addendum. However, since exposures are expected to be Operable Unit specific, the addendum can only present the methodology to be used when determining PRGs, not the actual values. These must be determined later in the RI/FS process.
- ACTION:** Risk-based PRGs will be presented in the OU 2 FS Report, along with any identified ARARs, background levels and required detection limits.

- 2 ► **BACKGROUND:** This item was originally Ohio EPA comment number 16.
- COMMENT:** Ohio EPA Comment #16: Non-zero MCLGs must be considered as RAOs as suggested in Ohio EPA Comment #16. The use of non-zero MCLGs as RAOs should be incorporated into the text of Section 2.2.3, second paragraph of the ISA Report.
- RESPONSE:** Non-zero MCLGs have been included in the tables and will be included in the OU 2 FS Report.
- ACTION:** See response.
- 3 ► **BACKGROUND:** This item was originally OEPA comment number 55.
- COMMENT:** Ohio EPA Comment #55: Figures 3-16 and 3-17 were not revised to be consistent with each other as was noted in the DOE response. These figures should be revised per Ohio EPA Comment #55.
- RESPONSE:** DOE agrees, and this response will be included in the OU 2 FS Report.
- ACTION:** See response.

GENERAL COMMENTS -- *The following two comments are general Ohio EPA comments on the Final ISA Report.*

- 1 ► **COMMENT:** Ohio EPA maintains that PRGs must be developed as outlined in the NCP. DOE must consider the methodology presented in the NCP in the development of addenda to the RI and FS work plans. Ohio EPA looks forward to the expedient development and delivery of the addenda as well as the DOE position papers for our review and approval. All risk issues need to be resolved in the next several months to minimize future disputes and schedule delays.
- RESPONSE:** PRGs for carcinogens will be based on the CERCLA goal of meeting the 10^{-4} to 10^{-6} risk range. A risk level of 10^{-6} will be used as a point of departure when determining PRGs for individual contaminants in each pathway, assuming the cumulative risk from all pathways and constituents will not exceed 10^{-4} .

ACTION: Tables of risk-based PRGs will be presented along with any identified ARARs, background levels and required detection limits in the OU 2 FS Report. 2953

2 > COMMENT: DOE continues to use a 100-year current land-use scenario in the risk assessment. Ohio EPA, in its comment letter to DOE dated February 11, 1991 concerning the January 1991 draft ISA report, stated that DOE must provide sufficient documentation to the agency as to the appropriateness of using a 100-year scenario along with assurance that access can be strictly controlled for that period of time. DOE responds first by stating that it is reasonable to assume that custodial care will be provided by the government for 100 years, then noting, however, that this period is not absolute. This latter comment is precisely what causes Ohio EPA to be concerned. Typical risk assessments consider the future to essentially be "tomorrow," not 25, 50, or 100 years into the future. If DOE bases the risk assessment on a 100-year scenario and calculates risks and compliance boundaries based on this scenario, then shortening the scenario down the road will change the compliance boundaries and increase the "baseline" risks associated with the site.

From recent discussions, it is clear that there are misunderstandings among all parties as to what is meant by the concept of "industrial controls." This is an issue that needs to be addressed in risk meetings in the near future.

RESPONSE: The risks determined for the baseline risk assessment from the site will be assessed for land use with and without access restrictions. At EPA's request, DOE has agreed to not use 100 years as the duration of site custodial control when assessing future risks from the FEMP. However, it should be noted that concentrations of the principal contaminants associated with the FEMP are not expected to change appreciably over the next 100 years due to their long lives, which implies that calculated risks for the resident farmer future scenario will remain fairly constant as well. This may be contrary to OEPA's assertion in the above comment that "shortening the scenario down the road will . . . increase the 'baseline' risks associated with the site."

The issue of industrial or institutional controls has been discussed in risk meetings with U. S. EPA and Ohio EPA participation, and has been incorporated into the Risk Assessment Work Plan.

ACTION: See response.

SPECIFIC COMMENTS -- The following nine comments are specific Ohio EPA comments that refer to particular paragraphs or tables of the Final ISA Report.

1 ► COMMENT:

PAGE # 2-1
PARAGRAPH # Last

As noted by Ohio EPA several times in the past, DOE's statement that "Where ARARs or to be considered (TBCs) are not available, PRGs will be developed based on a 1×10^{-6} risk level" is inaccurate and inconsistent with the NCP. TBCs do not determine when the 10^{-6} risk level is to be used; the 10^{-6} risk level is a TBC. The NCP states that the 10^{-6} risk level shall be used as the point of departure for determining remediation goals for alternatives when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways of exposure. The availability of TBCs has nothing to do with determining when the use of a 10^{-6} cancer risk is appropriate. Basing PRGs in the ISA report on ARARs, other criteria, advisories, or guidance also requires the use of risk-based levels (i.e., TBCs) where ARARs do not exist. Ohio EPA strongly believes that, consistent with the NCP and absent ARARs, risk-based levels must be used to calculate preliminary remediation goals. The ISA Report should be corrected accordingly.

RESPONSE:

The FS Report will reflect the following position: PRGs for carcinogens will be based on the CERCLA goal of meeting the 10^{-4} to 10^{-6} risk range. A risk level of 10^{-6} will be used as the point of departure when determining PRGs for individual contaminants in each pathway, assuming the cumulative risk will not exceed 10^{-4} .

ACTION:

See response.

2 ► COMMENT:

PAGE # 2-5
TABLE # 2-2

"Chemicals or Radionuclides in Drinking Water": An additional ARAR which must be added to this portion of Table 2-2 is OAC 3745-81-16. This ARAR includes an MCL for Strontium-90 at 8 pCi/L. OAC 3745-81-16 also states, ". . . If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed four millirem/year." The ARAR "OAC 3645-81-11" listed in Table 2-2 should be corrected to read OAC 3745-81-11.

RESPONSE: DOE agrees.

ACTION: The Strontium-90 ARAR and corrected regulatory citation will be included in the OU 2 FS Report.

3 ▶ COMMENT: PAGE # 2-6
TABLE # 2-2

Ohio's surface water quality standards cited under OAC 3745-1-07 constitutes state ARARs, not TBCs as stated in the table. These standards are promulgated and are fully enforceable. The table should be corrected.

RESPONSE: DOE agrees.

ACTION: The table will be updated as part of the FS Report to reflect the comment.

4 ▶ COMMENT: PAGE # 2-7
SECTION # 2.2.5
PARAGRAPH # 2

As mentioned in Ohio EPA comments on previous drafts of the OU 2 ISA Report, the NCP does not consider the 10^{-4} to 10^{-6} risk range to necessarily constitute an acceptable level of risk for carcinogens. The NCP also requires the use of a 10^{-6} risk point of departure for determining acceptable risks when ARARs are not available or are not sufficiently protective because of the presence of multiple contaminants at a site or multiple pathways or exposure. The text here needs to be revised appropriately to reflect the full context of the NCP with regard to this issue.

RESPONSE: The FS Report will reflect that the NCP considers acceptable exposure levels to "generally . . . represent an excess upper bound lifetime cancer risk to an individual of between 10^{-4} and 10^{-6} . . ."

ACTION: See response.

5 ▶ COMMENT: TABLE # 2-3

Contrary to what is stated in footnote "a," the table must list both the RfD and the CSF for chemicals for which they have been developed, since carcinogens and non-carcinogens behave differently in their effects on human populations. Risks for carcinogens and non-carcinogens

must be calculated and totalled separately. Presenting only the lowest concentration (irrespective of whether the effect is carcinogenic or non-carcinogenic) will result in understanding the total risks posed by each group. There are six chemicals that have reference doses in addition to cancer slope factors which should be listed in the table. These compounds are Bis(2-ethylhexyl)phthalate (RfD = 0.02 mg/kg/d); Chlordane (RfD) = 0.00006 mg/kg/d); Methylene chloride (RfD = 0.06 mg/kg/d); Tetrachloroethane (RfD = 0.01 mg/kg/d); Arsenic (RfD = 0.001 mg/kg/d); and Beryllium (RfD = 0.005 mg/kg/d). Also, for carcinogens listed on this table, a footnote should be added as to whether the given "acceptable soil concentrations" represent the 10^{-6} lifetime cancer risk level or some other risk level.

- RESPONSE:**
- A) The information will be revised so RfDs and CSFs are listed separately in the OU 2 FS Report.
 - B) Reference doses for bis(2-ethylhexyl)phthalate, chlordane, methylene chloride, tetrachloroethane, arsenic and beryllium will be included in the OU 2 FS Report.
 - C) A note explaining what risk levels were used in calculating acceptable soil concentrations will be included in the OU 2 FS Report. For noncarcinogens, an acceptable level will be determined based on the Hazard Index (HI), $HI = Intake/RfD$.

ACTION: See response.

6 ▶ COMMENT: TABLE # 2-4

The Ohio water quality criteria for the majority of the inorganic compounds listed in the table are incorrect despite previous agency comments where specific criteria were provided. This table must be corrected consistent with the criteria provided in OAC 3745-1-07 as follows:

<u>COMPOUND</u>	<u>OHIO WATER QUALITY CRITERIA (g/l) *</u>
Beryllium	▶ 2.6 (Table 7 of OAC 3745-1-07)
Cadmium	▶ 0.6 (Table 7 of OAC 3745-1-07)
Lead	▶ 30 (Table 2 of OAC 3745-1-07)
Nickel	▶ 115 (Table 7 of OAC 3745-1-07)
Selenium	▶ 34 (Table 2 of OAC 3745-1-07)
Zinc	▶ 73 (Table 7 of OAC 3745-1-07)

* Assuming a water hardness of 100 mg/l as CaCO₃

In addition, it is unclear why a number of compounds listed in earlier drafts of this table are no longer listed (e.g., pentachlorophenol, trichloroethane, etc.) while a few that were not previously listed were added (e.g., benzene, selenium, etc.). An explanation of these changes should be provided.

RESPONSE: The information in Table 2-4 will be updated in the OU 2 FS Report to reflect the most recent revision of OAC-3745-1-07.

ACTION: See response.

7 ▶ COMMENT: TABLE # 2-6

For carcinogens where only a CSF is listed, a footnote should be added as to whether the given "acceptable soil concentration" represents the 10^{-6} lifetime cancer risk level or some other risk level.

RESPONSE: A note will be included in a table in the OU 2 FS Report explaining the risk levels used in calculating acceptable soil concentrations.

ACTION: See response.

8 ▶ COMMENT: PAGE # 2-17
TABLE # 2-7

The MCL for Strontium-90 (OAC 3745-81-16) of 8 pCi/L must be included in this table.

RESPONSE: DOE agrees.

ACTION: The MCL for Sr-90 will be included in the OU 2 FS Report.

9 ▶ COMMENT: PAGE # B-11
APPENDIX # B-11

The description for the location-specific Ohio ARAR, OAC 3745-27-07, should be revised to more correctly state that this regulation governs the location of solid waste disposal facilities with respect to floodplains and sole-source aquifers.

RESPONSE: DOE agrees with the comment.

ACTION: Agreement with comment will be indicated in the OU 2 FS Report.