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**TRANSMITTAL OF RESPONSES TO US ENVIRONMENTAL PROTECTION
AGENCY AND OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS
THE FINAL DESIGNS OF THE ON-SITE DISPOSAL FACILITY AND THE
LEACHATE CONVEYANCE SYSTEM**

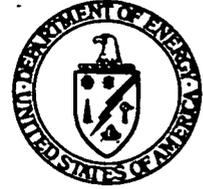
12/31/96

DOE-0320-97
DOE-FEMP EPAS
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RESPONSES



Department of Energy

**Ohio Field Office
Fernald Area Office
P. O. Box 538705
Cincinnati, Ohio 45253-8705
(513) 648-3155**



**DEC 31 1996
DOE-0320-97**

**Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region 5 - SRF-5J
77 West Jackson Boulevard
Chicago, Illinois 60604-3590**

**Mr. Thomas Schneider, Project Manager
Ohio Environmental Protection Agency
401 East Fifth Street
Dayton, Ohio 45402-2911**

Dear Mr. Saric and Mr. Schneider:

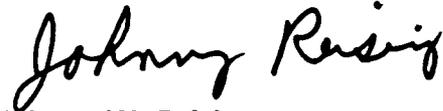
**TRANSMITTAL OF RESPONSES TO U.S. ENVIRONMENTAL PROTECTION AGENCY AND
OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE FINAL DESIGNS OF
THE ON-SITE DISPOSAL FACILITY AND THE LEACHATE CONVEYANCE SYSTEM**

Enclosed are the responses to comments from United States Environmental Protection Agency (U.S. EPA) and Ohio Environmental Protection Agency (OEPA) on the Final Designs of the On-Site Disposal Facility (OSDF) and the Leachate Conveyance System. Following final approval of the OSDF Design and OSDF Support Plans (excluding the Air Monitoring Plan and the Groundwater Monitoring Plan which are on independent approval schedules), the design packages will be issued as Revision 0.

The issues raised in the comments on the OSDF Groundwater Monitoring Plan and Post-Closure Care Plan are ones which require discussions between the Department of Energy (DOE), U.S. EPA, and OEPA in order to reach consensus. DOE believes that these discussions should take place before responses to the comments are prepared. Therefore, the comments on the OSDF Groundwater Monitoring Plan and Post-Closure Care Plan have not been answered in this submittal, but will be addressed before the next scheduled revision of each plan.

Please contact Rod Warner at (513)-648-3156 if there are any questions regarding this transmittal.

Sincerely,



Johnny W. Reising
Fernald Remedial Action
Project Manager

FN:Warner

Enclosure: As Stated

cc w/enc:

R. Beaumier, Manager TPSS/DERR, OEPA, Columbus
F. Bell, ATSDR
S. Fauver, EM-42/CLOV
T. Hagen, FDF/65-2
J. Harmon, FDF/90
G. Jablonowski, U.S. EPA
S. McClellan, PRC
T. Schneider, OEPA-Dayton (3 copies of enclosures)
R. Vandegrift, ODH
D. Ward, GeoTrans
AR Coordinator/78

cc w/o enc:

M. Hickey, FD Fernald, MS64
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J. Jenkins, FD Fernald, MS64
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R. Nace, EM-423, DOE-HQ
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R. Warner, DOE-FN, MS45
EDC, FDF/52-7

**U. S. ENVIRONMENTAL PROTECTION AGENCY TECHNICAL REVIEW COMMENTS ON
"FINAL DESIGNS OF THE ON-SITE DISPOSAL FACILITY
AND LEACHATE CONVEYANCE SYSTEM"**

GENERAL COMMENTS

1. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section #: Not Applicable (NA) **Page #:** NA **Line #:** NA
DOE Response #: 1 (Original General Comment #: NA)

Comment: The On-Site Disposal Facility (OSDF) final design package was submitted without the OSDF groundwater detection and monitoring plan and the OSDF air monitoring plan. Previous U.S. Environmental Protection Agency (U.S. EPA) comments on these plans, identified numerous technical deficiencies. U.S. EPA also identified technical deficiencies in the separately submitted Integrated Environmental Monitoring Plan (IEMP) that corresponded to those in the OSDF-specific plans. It has been agreed that additional time is needed to revise the OSDF-specific plans for consistency with the revised IEMP, which is to be submitted in January 1997. However, the U.S. Department of Energy (DOE) should provide a schedule for the submittal of the revised OSDF-specific plans.

Response: The schedules for the OSDF Groundwater Monitoring Plan and Air Monitoring Plan are currently being negotiated. The final schedules may coincide with the IEMP submittal schedule.

Action: When the schedules for the Groundwater Monitoring Plan and Air Monitoring Plan are finalized, they will be documented in a letter to U.S. EPA.

2. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section #: NA **Page #:** NA **Line #:** NA
DOE Response #: 2 (Original General Comment #: NA)

Comment: U.S. EPA original specific comments 19 and 20 on the OSDF prefinal (90 percent) design package request additional revisions to the OSDF groundwater detection and monitoring plan, DOE's responses to these specific comments should be incorporated into the revised plan.

Response: Agreed. The referenced comments will be incorporated into the revised plans.

Action: As per responses to Original Specific Comments 19 and 20 on the OSDF Prefinal Design.

SPECIFIC COMMENTS

Design Criteria Package

3. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.5.3 Page #: 2-50 Line #: NA
DOE Response #: 3 (Original Specific Comment #: 3)

Comment: DOE's response to the original specific comment on the prefinal (90 percent) design states that text will be added in Section 2.5.3 regarding the seal of the liner system around the double-walled high-density polyethylene (HDPE) pipe. However, no text has been added to this section. DOE should add the text to the certified for construction (CFC) design package in Section 2.5.3.

Response: The referenced text was inadvertently omitted from Revision G of the DCP and will be added into the next revision of the DCP.

Action: As per response.

4. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 2.8.3 Page #: 2-90 Line #: NA
Commentor: Saric
DOE Response #: 4 (Original Specific Comment #: 4)

Comment: The original specific comment requests that DOE provide additional information regarding (1) the discharge of storm water runoff from the OSDF watershed and (2) restricting the discharge rate to the predevelopment rate. DOE's response does not address the discharge rate, only the sediment storage volume. The calculations presented in Section 2.8.3 should show the predevelopment discharge rate and how OSDF storm water runoff will be restricted to the predevelopment

rate. In addition, the CFC design package should contain a drawing showing the type and size of runoff control structure to be used.

Response: The requested calculations will be performed and the information will be forwarded to OEPA within 60 days. The details as to the type and size of runoff control structures are shown on Drawing G-5C, Subgrade Grading Plan III.

Action: As per response.

Groundwater Detection and Monitoring Program

5. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section #: 4.6 **Page #:** 4-9 **Line #:** 16
DOE Response #: 5 (Original Specific Comment #: 19)

Comment: The original specific comment requests that DOE submit groundwater monitoring, leachate collection, and laboratory detection reports to U.S. EPA on a quarterly basis. However, this reporting schedule should be consistent with the reporting requirements identified in the revised IEMP. DOE should submit reports to U.S. EPA in accordance with the revised IEMP.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

6. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section #: 5.5 **Page #:** 5-9 **Line #:** NA
DOE Response #: 6 (Original Specific Comment #: 20)

Comment: The original specific comment requests that DOE discuss why the projected background values for total organic halogens are so high. The response is

inadequate because not enough detail is provided regarding the high projected background values for total organic halogens. DOE should provide significantly more detail in its revised response. In addition, DOE's response refers to revised text in Section 4.2.4. Because this section is part of the groundwater detection and monitoring plan, which is not included in the final design package, U.S. EPA's review of this response will be completed at a later date.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

OSDF Drawing Package

7. Commenting Organization: U.S. EPA
Sheet #: G-19
DOE Response #: 7 (Original Specific Comment #: NA)
- Page #: NA
- Commentor: Saric
Line #: NA

Comment: The control points previously shown in details 5 and 6/G-12 are missing in the final design package. Details 5 and 6/G-12 should be revised to include these control points.

Response: The typical control points shown in Details 5 and 6 on G-19 will be added to the CFC Package for borrow area construction.

Action: As per request.

8. Commenting Organization: U.S. EPA
Sheet #: G-40
DOE Response #: 8 (Original Specific Comment #: NA)
- Page #: NA
- Commentor: Saric
Line #: NA

Comment: Detail 130 does not show concrete reinforcement. The detail should be revised to show this reinforcement.

Response: Detail 130 on G-40 is not intended as a structural detail. The depiction of concrete reinforcement on Detail 110 on S-1 is considered adequate for the proper construction of the slab in the area of the horizontal monitoring well.

Action: No action.

9. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Sheet #: S-1 and S-2 **Page #:** NA **Line #:** NA
DOE Response #: 9 (Original Specific Comment #: 13)

Comment: DOE's response to the original specific comment states that the specifications package will be revised and notes will be added to drawings S-1 and S-2 to direct the subcontractor to Section 16100 of the specifications package. The specifications package has been revised accordingly, and drawing S-1 contains the notes; however, drawing S-2 has not been revised to incorporate the notes. Drawing S-2 should be revised to include the notes.

Response: The original response inadvertently referred to S-2. Sheet S-2 is not used in this design package.

Action: No action.

10. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Sheet #: X-7 **Page #:** NA **Line #:** NA
DOE Response #: 10 (Original Specific Comment #: NA)

Comment: The sheet contains coordinates for cone penetration tests 11630, 11651, 11661, and 11671 that appear to be inaccurate. The coordinates should be checked and corrected if necessary.

Response: The duplicate CPT tests cited by the comment are actually two different tests which were differentiated by alphanumeric characters in the original data. The Numbers 11627, 11636, 11662, and 11663 are also duplicated.

Action: These test locations will be differentiated with alphanumerics in the CFC Package for each OSDF phase.

11. Commenting Organization: U.S. EPA Commentor: Saric
Sheet #: 51 Page #: NA Line #: NA
DOE Response #: 10 (Original Specific Comment #: NA)

Comment: Note 10 on plan 109/G-11 refers to an electric service panel. This reference is incorrect and should be revised.

Response: The Note 10 on the electric panel of Detail 109 should read Note 11. Note 10 should be removed from the list of notes on S-1.

Action: The reference will be corrected in the CFC Package for each OSDF phase.

Post-Closure Care and Inspection Plan

12. Commenting Organization: U.S. EPA Commentor: Saric
Section #: 1.2 Page #: 1-1 Line #: 33
DOE Response #: 12 (Original Specific Comment #: NA)

Comment: The text states that a description of the parties responsible for post-closure care and inspection (PCCI) and related plans is presented in sections following Section 1.2. However, no such description is presented. The PCCI plan should be revised to include a description of the parties responsible for PCCI and the plans related to it.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

13. **Commenting Organization: U.S. EPA** **Commentor: Saric**
Section #: 5.3 **Page #: 5-1** **Line #: 35 and 36**
DOE Response #: 13 (Original Specific Comment #: NA)

Comment: The text states that if a leak from the OSDF is detected, DOE will consult U.S. EPA and the Ohio Environmental Protection Agency (EPA) to determine what action is required. However, the text does not indicate how soon after a leak detection DOE will consult EPA and OEPA. The PCCI plan should be revised to state how soon after a leak detection DOE will consult EPA and OEPA to determine what action is required.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

14. **Commenting Organization: U.S. EPA** **Commentor: Saric**
Section #: 8.3 **Page #: 8-2** **Line #: 26 through 29**
DOE Response #: 14 (Original Specific Comment #: NA)

Comment: The text states that the quarterly report submitted to EPA and OEPA will contain the results of contingency inspections. However, any severe damage to the OSDF or its surroundings might require immediate notification of EPA and OEPA. The PCCI plan should be revised to address the potential need for immediate notification of EPA and OEPA regarding contingency inspection results.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

15. **Commenting Organization: U.S. EPA** **Commentor: Saric**
Section #: 8.3 **Page #: 8-3** **Line #: 1**
DOE Response #: 15 (Original Specific Comment #: NA)

Comment: The text refers to a preliminary inspection and assessment report to be prepared following a contingency inspection. However, the text does not specify the contents of this report or the schedule for submitting it to EPA and OEPA. The PCCI plan should be revised to specify the minimum content of the report and the schedule for submitting it to EPA and OEPA.

Response:

Action: As discussed in the transmittal letter, this comment will be answered at a later date.

**OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS
ON THE FINAL DESIGN OF THE ON-SITE DISPOSAL FACILITY
AND LEACHATE CONVEYANCE SYSTEM AND
RESPONSE TO COMMENTS ON THE PRE-FINAL DESIGN PACKAGE**

RESPONSE TO COMMENTS

Impacted Material Placement Plan

- 1) **Commenting Organization: Ohio EPA** **Commentor: OFFO**
Section #: 8.6 **Pg #:** **Line #:** **Code:**
Original Comment #: 47

Comment: DOE has committed to performing two actions in this response: developing a list of oversized materials and performing a value engineering study on the viability of crushing concrete. It is Ohio EPA's expectation that the list of over-size materials be comprehensive. The stakeholders have expressed reservations at public meetings about the disposal of items such as large tanks, fork trucks, bicycles, etc.

Regarding the viability of crushing concrete, Ohio EPA expects that the value engineering study will be a full life cycle analysis similar to the "Scrap Metals Disposition Analysis". This evaluation should consider incremental benefits to long-term OSDF stability that would potentially result and also capital costs should consider that the crusher could be re-used at other DOE sites.

Response: Agreed. DOE is compiling a list of sub-categories of impacted equipment that are being proposed for placement into the OSDF. The OSDF A-E firm is evaluating several types of oversized equipment to develop an addendum to the IMPP. This addendum will define oversized impacted material acceptance guidelines and placement requirements to assure the structural integrity of the OSDF. The A-E firm is evaluating each specific type of oversized equipment currently slated for disposal in the OSDF. As new D&D projects are planned, the equipment list may be expanded as a collaborative effort between DOE, OEPA, and FEMP Stakeholders to assure that the FEMP OSDF is constructed and closed with sufficient input from engineers, scientists, regulators, and the public.

The DOE is currently refining the scope of work for the concrete crushing value engineering study. This study is being conducted as a joint effort between DOE Fernald and DOE Mound to evaluate the effectiveness and cost of crushing.

concrete as well as considering decontamination of crushed material for eventual use at Mound. After the completion of this value engineering study, the OSDF A-E firm must evaluate the impacts of placing layers of increased permeability crushed concrete on the long-term stability and performance of the OSDF.

Action: The results of the studies will be transmitted to OEPA upon their completion.

2) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: Pg #: Line #: Code:
Original Comment #: 48

Comment: References to the control of fugitive dusts in the IMPP should refer to the "Site-wide fugitive dust control plan" which DOE has committed to developing.

Response: The OSDF Impacted Materials Placement Plan will be revised to make references, as appropriate, to the FEMP fugitive dust control plan/principles. Please note that the fugitive dust control measures within the FEMP fugitive dust control plan/principles, recently presented to OEPA and EPA, were developed to a large degree from the fugitive dust control approaches already presented in the OSDF's Impacted Materials Placement Plan and other OSDF support plans, as well as those being employed in the implementation of the Area 1 Phase 1 work of the Soil Characterization and Excavation Project.

Action: As per response.

3) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 2.03 and 3.01 Pg #: 02270-3&4 Line#: 1-7 & 30+ Code: c
Original Comment #: 66

Comment: The failure rate of straw bales is excessive. Their use is not recommended. The comment stands.

Response: Straw bales will be used as supplemental silt control measures in addition to silt fences. Runoff will be controlled primarily with sedimentation basins and silt

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fence. Although straw bales do not exhibit long-term reliability, they still provide good temporary silt control when installed and maintained correctly. For this reason, DOE intends to use straw bales as an auxiliary measure to improve the silt capture efficiency of the total erosion and sediment control system.

Action: No action.

4) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Pg #: Line #: Code:
Original Comment #: 70

Comment: In Revision G, page 2-94, there is the statement "No formal calculations are required for temporary erosion control during OSDF construction, filling, and closure." Formal calculations are required as stated in the original comment. The comment stands. The sentence should be deleted or modified to indicate that calculations are required.

Response: DOE believes that the temporary erosion controls have been adequately defined. There may be a misunderstanding of what information OEPA is requesting. It is suggested that a conference call be held to resolve this issue. DOE will contact you within the next two weeks to schedule the discussion.

Action: No action at this time.

5) Commenting Organization: Ohio EPA Commentor: DSW
Section #: Pg #: Line #: Code: c
Original Comment #: 78

Comment: Ohio EPA concurs that use of "Water Management and Sediment Control for Urbanizing Areas" meets requirements in "Rainwater and Land Development" for basin design. However the entire drainage arm not only the disturbed area, must be used in sizing the basin. If the disturbed area constitutes the entire drainage area through use of properly designed run-on controls, then this should be

stated. Otherwise the entire drainage area must be delineated and used for sizing the basin. The second part of the comment still needs to be addressed.

Response: The sediment basin in the borrow area is designed to handle the worst-case condition. This condition is when the entire borrow area and associated tributary are draining towards the sediment basin, and 15 acres of the borrow area are disturbed. The entire drainage area is therefore used in sizing the basin. The paragraph referenced in the comment (Section 1.1 of Calculations, Page 21 of 22) discusses the calculation of the required sediment storage volume, which is only one of the calculations performed in determining the size of the sediment basin. The additional calculations are presented in Section 15.5 of the Calculations Package.

Action: No action.

6) **Commenting Organization:** Ohio EPA **Commentor:** DSW
Section #: **Pg #:** **Line #:** **Code:** c
Original Comment #: 84

Comment: The response clarifies the confusion over where the leachate will be pumped but does not explain the choice of the Bionitrification Surge Lagoon (BSL) over direct pumping to the AWWT. Ohio EPA's reservation about the use of the BSL center around the near-overflow of the BSL that almost occurred during the rainy weather this past spring. There are also concerns with the scheduling of D&D of the BSL that is scheduled for the year 2001. With only three years of use after the OSDF begins receiving wastes in the year 1998, it seems impractical to install the piping systems necessary to pump to the BSL for only a three year lifetime. The reason for choosing the BSL over the AWWT should be stated and if an alternate means of introducing these flows into the AWWT exists, then that should be used.

Response: The Bio-Surge Lagoon is actually a "head works" for the AWWT. Any flows coming to the lagoon are pumped there, including the leachate; and hence flow to the AWWT. The facility owner will not allow flows to the lagoon that would cause a potential overflow.

The current 10-year plan indicates that the Bio-Surge Lagoon is scheduled as part of Area 6 remediation which begins in FY 2004. In addition, the Leachate Conveyance System includes a future tap (shown on CFC Drawing 92X-5900-G-00261) for the AWWT to be utilized when Area 6 is scheduled for remediation.

Action: No action.

COMMENTS ON THE FINAL DESIGN PACKAGE

Final Design Drawings

- 7) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Drawing #: 90X-6000-G-00033 & 90X-6000-G-00034 Sheet #: G-23 and G-24 Code: C
Original Comment #:

Comment: In Note 2 on both of these drawings, it states non-impacted material will be used for the protective layer on future cells. What will be done with tills material when it is removed to begin construction of an active cell? Can it be used to construct inter-cell berms or other structures or will it be disposed of as waste?

Response: Note 2 on Drawing G-23A has been modified to read, "Protective layer in Cell 1 shall consist of granular material in the impacted runoff catchment area and impacted non-granular material in remaining areas. Protective layer over temporary liner system termination (Detail 16 on Drawing G-23A) shall consist of non-impacted material. Protective layer materials shall be in accordance with Specification Section 02240. Impacted protective layer material shall be obtained from west impacted material stockpile area as show on Drawing G-24A."

Non-impacted materials will be limited to granular materials in the impacted runoff catchment area in the protective layer. This material will remain in the OSDF.

Action: The referenced charge has been made.

Construction Quality Assurance Plan

8) Commenting Organization: OEPA Commentor: GeoTrans, Inc.
Section #: Table 7.1 Pg. #: 7-22 Line #: Code: C
Original Comment #:

Comments: Several of the geomembrane properties which have required values listed in Specification 2770 in the OSDF Final Specifications Package are not required to be tested and are not listed on Table 7.2 of the CQAP. These properties include Melt Flow Index, Tear Resistance, Low Temperature Brittleness, Dimensional Stability, and Environmental Stress Crack. This discrepancy should be explained or corrected.

Response: The geomembrane tests listed in Tables 7-1 and 7-2 are considered adequate indicators of compliance with the property values of Specification Section 02770 for conformance testing purposes.

Action: No action.

LEACHATE CONVEYANCE SYSTEM

Systems Plan

9) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.0 Pg#: 1 Line #: 1 Code: C
Original Comment #:

Comment: Please revise the text to state that "The low-level radioactive waste meeting waste acceptance criteria and non-characteristic Resource Conservation and Recovery Act wastes originating within the Fernald Environmental Management Project property are to be placed in the On-Site Disposal Facility (OSDF)."

Response: Agreed.

Action: The language has been revised as requested.

Drawings

10) **Commenting Organization: OEPA** **Commentor: GeoTrans, Inc.**
Drawing #: 92X-5900-N-00322 **Sheet #: N-0002** **Section #:** **Code: M**
Original Comment #: 89

Comment: As noted in the comments to the prefinal Design Package, Note 5 states that a difference of 5% between readings of the flow meters in the first and eleventh manholes will trigger an alarm condition. The difference will be 10% before the force main pumps are automatically shut off, as stated in Note 6. This is the only form of leak detection for this double contained leachate transmission system. It is possible that a leak in the primary containment pipe which is less than 5% of the total flow could fill and then breach the secondary containment without being detected. Assuming a ten-foot deep manhole, and a leak at 5% of the 200 GPM design flow, the manhole would fill in 93 minutes. Monthly inspections would not be adequate to protect the environment from leaks of this size. Placing liquid level indicators in each of the Clem Out Manholes could eliminate this potential problem. These level switches could be interfaced to the PLC to stop the pumps when a liquid level was detected in any manhole. Liquid level detectors are present in all the manholes associated with the OSDF gravity LCS and LDS systems and should be installed in the manholes of the leachate conveyance system. This modification is highly recommended, as it would bring the leachate conveyance system up to par with the OSDF gravity flow leachate collection system and gravity flow leak detection system.

Response: We agree it is possible that a less than 5% leak could go undetected. However, any leak would flow towards the lowest cleanout manhole or meter manhole from any high point in the system before breaching the secondary containment. Any major leak above 5% would continue to be detected using the flow meter readings.

Action: Provide level alarm system, including light in selected manhole(s) similar to those used on the OSDF gravity system.