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**RESPONSE TO OHIO EPA COMMENTS FOR
EXPERIMENTAL TREATMENT FACILITY (EFT)
REMOVAL ACTION FINAL REPORT**

02/05/93

**DOE-FN/OEPA
DOE-1047-93
12
LETTER**



Department of Energy
Fernald Environmental Management Project
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FEB 0 5 1993

DOE-1047-93

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

Dear Mr. Mitchell:

**RESPONSE TO OHIO EPA COMMENTS FOR EXPERIMENTAL TREATMENT FACILITY
(ETF) REMOVAL ACTION FINAL REPORT**

This letter will provide responses to comments received from your office concerning the final report for the Experimental Treatment Facility Removal Action. These comments were received on a computer diskette in late December 1992 and were never officially transmitted to our office. The ETF Removal Action project was completed in March 1992 and the Final Report was issued for your information in October 1992. The response to comments on this final report was not originally planned. However, due to the questions raised by your comments it was deemed necessary to provide the attached comment responses and clarifications. The final report has been placed in the administrative record and no further modifications to the document are planned. The comment responses attached with this letter will also be placed into the administrative record for this project.

If you should have any questions, contact Rod Warner at (513) 738-8916.

Sincerely,

A handwritten signature in black ink, appearing to read "Jack R. Craig".

Jack R. Craig
Fernald Remedial Action
Project Manager

FN:Hall

Attachment: As stated

cc:

W. E. Murphie, EM-42, TREV
K. A. Hayes, EM-424, TREV
B. Barwick, USEPA-V, 5CS-TUB-3
G. Jablonowski, USEPA-V, AT-18J
J. Kwasniewski, OEPA-Columbus
P. Harris, OEPA-Dayton
M. Proffitt, OEPA-Dayton
T. Schneider, OEPA-Dayton
J. Michaels, PRC
L. August, GeoTrans
J. D. Wood, ASI/IT
R. L. Glenn, Parsons
P. Clay, FERMCO/19
D. Dubois, FERMCO/65-2
J. W. Thiesing, FERMCO/2
AR Coordinator, FERMCO

1. Commenting Organization: Ohio EPA Commentor:
 Section #: General Comment Pg. #: Line #: Code: M
 Original Comment #

Comment: The report fails to detail the completion of work DOE committed to under the ETF Removal Action Work Plan. The December 10, 1991 letter from J. Craig to J. Saric and G. Mitchell (letter ID # DOE-484-92) listed a number of actions which DOE would undertake as part of the removal actions. Actions which were to be completed, but are not reported in the Final Report include: a) the collection of a soil sample from below the sump, b) the collection of high volume air samples in the vicinity of the work area, c) identification of the specific air sampling locations within the Final Report. DOE should review the commitments made during correspondence on the removal action work plan and describe their completion within the Final Report.

Response: a) One soil sample was collected from beneath the sump area as identified in the Work Plan. Figure 1 on page 16 incorrectly identifies the sampling location for sample number 3766 SP-5. In accordance with the Chain-of-Custody forms provided in Appendix A, a sample was collected from beneath the sump.

Action: a) A revised Figure 1 is attached to reflect the actual sample location in accordance with the requirements of the Work Plan and the Chain-of-Custody forms provided in Appendix A.

Response: b) High volume air samples were collected within the vicinity of the work area as identified in the Work Plan and the Project Specific Health and Safety Plan. The reasoning for the use of the high volume air samplers was to determine the occupational exposure that the workers were receiving. The high volume air samplers work on the principle that ambient air is drawn via a vacuum pump through an air sample filter. The air sample filters were then removed and counting was performed on a low background counter for gross alpha and beta, following a minimum seven day decay period. This seven day decay period was necessary to allow for the decay of short lived radon daughter products. The results were then used to assess airborne contamination levels in the work area. Since previous sampling and process knowledge for Pit 5 and the surrounding area has been assembled, it has been determined that the limiting nuclide is thorium-230 (Th-230). From the data that was collected, the alpha and beta results were compared against the Derived Air Concentration (DAC) for Th-230, uranium, and uranium daughter products.

Based upon the DAC for Th-230 (DAC 1.95×10^{-2} Ci/g) and natural uranium metal (DAC 6.62×10^{-7} Ci/g), the alpha and beta results are at least an order of magnitude less than the DAC for the constituents of concern.

Action: b) Since the high volume air sample data was used only for determination of occupational exposure and not for determination of off-site exposure, the data will not be provided. All data that was collected was within the exposure guidelines established by the appropriate DOE Order and FEMP site procedures.

Response: c) The location of the high volume air samplers is not possible to identify on a day to day basis since the equipment was positioned at different locations throughout the project. The exact locations were dependant upon the weather conditions, predominant wind direction, and type of work that would be performed during that specific time.

Action: c) No clarification will be provided due to the nature of the sampling operation and the use of the data.

2. Commenting Organization: Ohio EPA Commentor:
Section #: 5.0 Pg. #: 9 Line #: Code: C
Original Comment #

Comment: Sampling results from the 155 drums of waste water should be included in the Final Report. Information concerning contaminants in this waste stream will assist the DOE and EPA's in determining acceptable treatment/disposal of the water.

Response: The 155 drums of water have not been sampled yet and are currently being stored on the Plant 1 Pad. Efforts are underway to determine the number of samples that are representative of the drums, the constituents of concern, and the eventual disposition of the waste water dependant on the results of the analysis. Upon final determination of the above issues the drums will be sampled accordingly. These results will be reviewed by cognizant site personnel and the waste water will be disposed of accordingly.

Action: No action will be taken.

3. Commenting Organization: Ohio EPA Commentor:
Section #: 5.0 Pg. #: 9 Line #: Code: C
Original Comment #

Comment: The text states that two vegetation composite samples were collected for full radiological analyses, yet Table 1 only reports data for total U and Th.

All data generated should be provided within the Final Report. Revise the table to include results from full radiological analyses.

Response: At the time that the report was prepared, the full analytical data was not available. The attached Table 1 has been revised to reflect the full analytical results as identified in the Sampling and Analysis Plan and the Work Plan.

Action: The revised Table 1 is attached to incorporate the full radiological results.

4. Commenting Organization: Ohio EPA Commentor:
 Section #: 5.0 Pg. #: 9 Line #: Code: C
 Original Comment #

Comment: The text states that five samples were collected and analyzed for full radiological and TCLP. Table 2 fails to provide the results for the full radiological suite of contaminants. The Final Report should include all data generated including non-detect results. Revise the table to include results from full radiological analyses.

Response: The last sentence on Page 9 of the final report is incorrect. As stated in the Work Plan and the Sampling and Analysis Plan (which was issued as an addendum to the Work Plan), samples of the waste material would be collected and analyzed for **TOTAL URANIUM, TOTAL THORIUM, AND TCLP.**

Action: No revision to the table will be required since the requirements of the Work Plan and the Sampling Analysis Plan were fulfilled.

5. Commenting Organization: Ohio EPA Commentor:
 Section #: Table 2 Pg. #: 12 Line #: Code: C
 Original Comment #

Comment: It is unclear as to the difference between "ND" and "<...". It is preferable to list non-detects as less than the detection/quantitation limit, so the reader knows the limit of detection. Additionally, ND should not be used when a detection has actually been made (see footnotes 2-8). The preferred method would be to report the value detected and footnote the fact this concentration did not exceed regulatory limits.

Response: It is agreed that this may not be the most appropriate method of presenting the data. However Tables 1, 2 and 4 are a reproduction of the data as submitted by the laboratory. Since it is not possible to reanalyze the data, it will remain as presented.

In Tables 1 and 2, the results for the metals, volatiles, semi-volatiles, pesticides, and herbicides are grouped. In order to assist in the review of this data, a table is attached which summarizes all the constituents along with the results and the detection limits as provided by the laboratory. In addition, since this method of presenting data is acceptable to SW-846 criteria, no revisions to the text will be made.

Action: No revision to the results will be made since the data provided is a reproduction of the analysis as submitted by the laboratory. A table is attached to clarify the results and the detection limits for the individual analyses.

6. Commenting Organization: Ohio EPA Commentor:
Section #: Table 4 Pg. #: 14 Line #: Code: C
Original Comment #

Comment: The detection limits for the VOC's in soil seem to be high. DOE should provide the reason for the high VOC detection limits.

Response: The units of measurement for the analytical analysis of the soil samples is measured in ppm or mg/kg. The soil analysis was performed in accordance with Method 8260. The soil was prepared in accordance with medium level standards (ie. methanol extraction) which is in accordance with SW-846 method 8260 protocols. Utilizing the methanol extraction procedure elevates the detection limit which is fully acceptable to SW-846 criteria. Since the analysis was performed in accordance with approved procedures, no additional analysis will be performed.

Action: No modifications to the results as presented will be required.

7. Commenting Organization: Ohio EPA Commentor:
Section #: Table 4 Pg. #: 14 Line #: Code: E
Original Comment #

Comment: "1,1,1 TCE" is incorrect. It should probably be 1,1,1 TCA.

Response: Agree. This represents a typographical error.

Action: No response is necessary. Please note this response will serve as a clarification.

8. Commenting Organization: Ohio EPA Commentor:
Section #: Table 4 Pg. #: 15 Line #: Code: C
Original Comment #

Comment: It is unclear as to the difference between "ND" and "<...". It is preferable to list non-detects as less than the detection/quantitation limit, so the reader knows the limit of detection.

Response: It is agreed that this may not be the most appropriate method of presenting the data however what is provided is a reproduction of the data as submitted by the laboratory. The ND indicates that the analyze is "Not detected through a computer search of the Wiley/EPA mass spectral database". Since it is not possible to reanalyze the data or revise this data, it will remain as presented.

Action: No revision to the results will be made since the data provided is a reproduction of the analysis as submitted by the laboratory. A Table is attached to clarify the detection limits for the individual analysis.

9. Commenting Organization: Ohio EPA Commentor:
 Section #: Figure 1 Pg. #: 16 Line #: Code: C
 Original Comment #

Comment: Figure 1 suggests a sample was collected at the sump but the report fails to provide a sample ID number or any analytical results. This must be clarified within the document.

Response: a) One soil sample was collected from beneath the sump area as identified in the Work Plan. Figure 1 on page 16 incorrectly identifies the sampling location for sample number 3766 SP-5. In accordance with the Chain-of-Custody forms provided in Appendix A, a sample was collected from beneath the sump.

Action: a) A revised Figure 1 is attached to reflect the actual sample location in accordance with the requirements of the Work Plan and the Chain-of-Custody forms provided in Appendix A.

TABLE 1, VEGETATION SAMPLE RESULTS

SAMPLE ID # ANALYSIS	3781	3778	3779	3780 (Duplicate)
Sample Matrix	Plywood	Vegetation	Vegetation	Vegetation
Total Th ppm	<45	<45	<45	<45
Total U ppm	2	4	4	3
U-234 pCi/g	0.24	17	1.0	0.52
U-235 pCi/g	0.030	0.022	0.049	0.022
U-236 pCi/g	0.012	0.28	0.021	0.011
U-238 pCi/g	0.66	1.3	1.3	1.0
Ra-226 pCi/g	<2.4	<2.4	<2.3	<0.84
Ra-228 pCi/g	0.21	0.056	0.10	.013
Np-237 pCi/g	<0.70	<0.26	>0.27	<0.24
Cs-137 pCi/g	<1.3	<1.3	<1.3	<1.3
Tc-99 pCi/g	<15	41	23	22
Pu-238 pCi/g	<0.20	<0.19	<0.20	<0.19
Pu-239 pCi/g	<0.066	<0.064	<0.066	<0.062
Total Pu pCi/g	<0.27	<0.26	<0.27	<0.25
Th-228 pCi/g	1.1	<1.3	1.6	0.0
Th-230 pCi/g	1.7	1.3	1.8	0.91
Th-232 pCi/g	0.61	0.54	0.90	0.0
TCLP Metals ug/l	ND ¹	NR	NR	NR
TCLP Volatiles ug/l	ND	NR	NR	NR
TCLP Semi-vols ug/l	ND	NR	NR	NR
TCLP Pesticides ug/l	ND	NR	NR	NR
TCLP Herbicides ug/l	ND	NR	NR	NR

NR Not Requested

ND Not Detected

Samples not received for all analysis to date.

¹ Barium levels of 940 ug/l detected but below regulatory level of 100,000 ug/l.

TABLE 1 CLARIFICATIONS

LYSES	3781 ug/l	DETECTION LIMIT ug/l	REGULATORY LIMIT mg/l
—	ND	50	0.5
—	ND	50	0.5
—ene	ND	50	100.0
—	ND	50	6.0
—oethane	ND	50	0.5
—oethylene	ND	50	0.7
	ND	100	200.0
—ethylene	ND	50	0.7
—nylene	ND	50	0.5
—ride	ND	100	0.2
—	ND	0.5	5.0
	0.94	0.01	100.0
—	ND	0.01	1.0
—	ND	0.025	5.0
	ND	0.1	5.0
	ND	0.0002	0.2
—	ND	0.5	1.0
	ND	0.02	5.0
—	ND	0.7	0.03
	ND	0.3	0.02
—	ND	0.15	0.008
— epoxide	ND	4.20	0.008
—	ND	0.2	0.4
—ox	ND	8.80	10.0
—	ND	12.0	0.5
—	ND	12.0	10.0
	ND	1.7	1.0

TABLE 1 CLARIFICATIONS (cont)

TCLP	ANALYSES	3781 ug/l	DETECTION LIMIT ug/l	REGULATORY LIMIT mg/l
Semivolatiles	2-methylphenol	ND	40	200.0
	3-methylphenol	ND	40	200.0
	4-methylphenol	ND	40	200.0
	1,4-Dichlorobenzene	ND	40	7.5
	2,4-Dinitrotoluene	ND	40	0.13
	Hexachlorobenzene	ND	40	0.13
	Hexachloro-1,3- butadiene	ND	40	0.50
	Hexachloroethane	ND	40	3.0
	Nitrobenzene	ND	40	2.0
	Pentachlorophenol	ND	200	100.0
	Pyridine	ND	400	5.0
	2,4,5-Trichlorophenol	ND	40	400.0
	2,4,6-Trichlorophenol	ND	40	2.0

Notes: The sample identified was analyzed for TCLP Metals, TCLP Mercury, TCLP Volatiles, TCLP Herbicides, TCLP Pesticides, TCLP Semivolatiles by EPA method 8240.

The "ND" notation indicates that the results of the analysis was below the identified detection limit. This is a direct reproduction of the analytical laboratories results.

All analytical results and detection limits are recorded in ug/l. The regulatory limits are recorded in mg/l.

TABLE 2 CLARIFICATIONS

ANALYSES	3770 ug/l	3771 ug/l	3772 ug/l	3773 ug/l	3774 ug/l	3775 ug/l	DETECTION LIMIT ug/l	REGULATORY LIMIT mg/l
Volatiles								
Benzene	ND	ND	ND	ND	ND	ND	25	0.5
Carbon Tet	ND	ND	ND	ND	ND	ND	25	0.5
Chlorobenzene	ND	ND	ND	ND	ND	ND	25	100.0
Chloroform	ND	ND	ND	ND	ND	ND	25	6.0
1,2-dichloroethane	ND	ND	ND	ND	ND	ND	25	0.5
1,1-dichloroethylene	ND	ND	ND	ND	ND	ND	25	0.7
MEK	ND	240	ND	ND	ND	ND	50	200.0
Tetrachloroethylene	ND	ND	ND	ND	ND	ND	25	0.7
Trichloroethylene	ND	ND	ND	ND	ND	ND	25	0.5
Vinyl chloride	ND	ND	ND	ND	ND	ND	50	0.2
Metals								
Arsenic	ND	ND	ND	ND	ND	ND	200	5.0
Barium	3780	2140	467	4020	4000	2150	200	100.0
Cadmium	ND	ND	ND	ND	ND	ND	100	1.0
Chromium	ND	ND	ND	ND	ND	ND	500	5.0
Lead	222	281	ND	ND	237	280	200	5.0
Selenium	ND	ND	ND	ND	ND	ND	557	1.0
Silver	ND	ND	ND	ND	ND	ND	50	5.0
Mercury	ND	ND	ND	ND	ND	ND	0.2	0.2
Pesticides								
Chlordane	ND	ND	ND	ND	ND	ND	0.1	0.03
Endrin	ND	ND	ND	ND	ND	ND	0.1	0.02
Heptachlor	ND	ND	ND	ND	ND	ND	0.05	0.008
Heptachlor epoxide	ND	ND	ND	ND	ND	ND	0.05	0.008
Lindane	ND	ND	ND	ND	ND	ND	0.05	0.4
Methoxychlor	ND	ND	ND	ND	ND	ND	0.5	10.0
Toxaphene	ND	ND	ND	ND	ND	ND	1.0	0.5
Herbicides								
2,4-D	ND	ND	ND	ND	ND	ND	1.0	10.0
Silvex	ND	ND	ND	ND	ND	ND	0.5	1.0

