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**WASTE PIT BERMS - STATUS UPDATE**

08-23-91



**Department of Energy**

**Fernald Environmental Management Project**

P.O. Box 398705

Cincinnati, Ohio 45239-8705

(513) 738-6357

**2128**

**AUG 28 1991**

**DOE-2118-91**

Mr. Graham E. Mitchell, DOE Coordinator  
Ohio Environmental Protection Agency  
40 South Main Street  
Dayton, Ohio 45402

Dear Mr. Mitchell:

**WASTE PIT BERMS - STATUS UPDATE**

Reference: Letter, J. R. Craig to G. E. Mitchell, "Concerns  
1327 Regarding Pit 5 Berm," dated May 30, 1991

As stated in the above referenced correspondence, a status report on the Berm Investigation of Waste Pits 3 & 5 and the Clearwell would be issued by August 30, 1991. The purpose of this correspondence is to provide that update and to outline the strategy to be employed by DOE in integrating the various actions being planned for Waste Pit 5.

**TASKS COMPLETED**

From June 24, 1991 through August 2, 1991, monuments for the purpose of detecting berm movement were installed on the north and west slopes of the berms which form Waste Pits 3 & 5 and the Clearwell. From August 2, 1991 through August 8, 1991, an initial survey for the purpose of establishing the baseline location and elevation for each monument was performed. The first monitoring survey of these monuments was performed on August 14, 1991 and August 15, 1991. A second monitoring survey was performed on August 22, 1991 through August 26, 1991. Data derived from the first monitoring survey indicates that movement of the berms in excess of Work Plan monitoring criteria may have occurred at several locations. Data from additional monitoring surveys is required to determine if a trend exists in the possible movement of these areas of the berm or if the suspected movement can be explained mathematically, attributed to monument settlement or other factors exclusive of berm slippage. Enclosure 1 to this correspondence contains the data from the initial survey and the first monitoring survey. Data from the second monitoring survey is not available at this time.

**TASKS PLANNED**

Weekly monitoring surveys of the monuments will continue through the week of September 2, 1991. Surveys will then be performed through the end of November 1991 at a minimum frequency of one survey per month.

The contract for soil borings and geotechnical analysis of soils was awarded on August 20, 1991. Soil boring activities are anticipated to begin around September 9, 1991, with geotechnical analysis beginning around September 16, 1991. Delivery of the final laboratory reports are expected by October 18, 1991. The Removal Site Evaluation for the Waste Pit berms is anticipated to be completed in late December.

**WASTE PIT 5 TASK INTEGRATION**

Several actions are being planned for Waste Pit 5. These actions will potentially have overlapping schedules and will require coordination to permit efficient field operations and to prevent duplicated effort.

The following three actions involving Waste Pit 5 are being planned:

- 1) Berm Investigation for Waste Pits 3 & 5 and the Clearwell: On February 5, 1991, Parsons Engineering was tasked to conduct an engineering evaluation of the Waste Pit 3, Waste Pit 5 and Clearwell berms. The primary reason for this evaluation is that the earthen berm which forms the north side of Waste Pit 5 has exhibited evidence of possible slippage. The berms that form the west side of Waste Pit 3, Waste Pit 5 and the Clearwell are similar in construction to the suspect berm and are also being evaluated.

A Work Plan document for this evaluation has been prepared and a copy has previously been provided for information. The status of this investigation was presented in the first two sections of this letter.

- 2) Waste Pit 5 Liner Repair: Waste Pit 5 is an open waste storage facility with a 60 mil thick elastomeric membrane liner placed over a secondary clay liner. In order to prevent wind erosion of the pit residues, a large portion of the waste residues stored within the pit are covered with water. The aforementioned elastomeric membrane liner extends up the interior face of the pit walls approximately five feet above the normal elevation of the water cover within the pit.

Historically, routine maintenance repairs to the Waste Pit 5 liner have been performed by the FEMP Maintenance Department as part of normal facility maintenance.

On June 21, 1991, a visual inspection of the waste pit liner was performed, and several of the liner seams require repair. A copy of this inspection report is provided as enclosure 2.

A Work Plan document for these repairs has been prepared and a copy has previously been provided to your office.

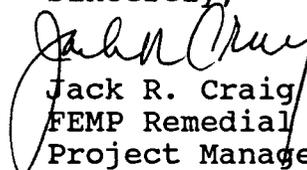
- 3) Emissions Control for Waste Pit 5: A Removal Site Evaluation (RSE) and an Evaluation of Alternatives are being prepared to address emissions from Waste Pit 5. A cover to be constructed over Waste Pit 5 to mitigate the potential for fugitive emissions from the pit is one option being evaluated. This RSE and Evaluation of Alternatives will be provided when they become available. A workplan for this action will be submitted in accordance with the draft Consent Agreement as amended on 30 March 1992.

Consideration is being given to combining these three actions into one removal action with multiple phases. Results from the liner repair activities, pit emission studies, and the berm evaluation along with the waste Pit 5 Closure Plan, could support a decision on interim controls for this waste pit.

Any comments which you may have on combining these actions would be appreciated.

If you have any questions, please contact Oba Vincent at (513) 738-6937 or FTS 774-6937.

Sincerely,



Jack R. Craig  
FEMP Remedial Action  
Project Manager

Enclosures: As stated

## cc:

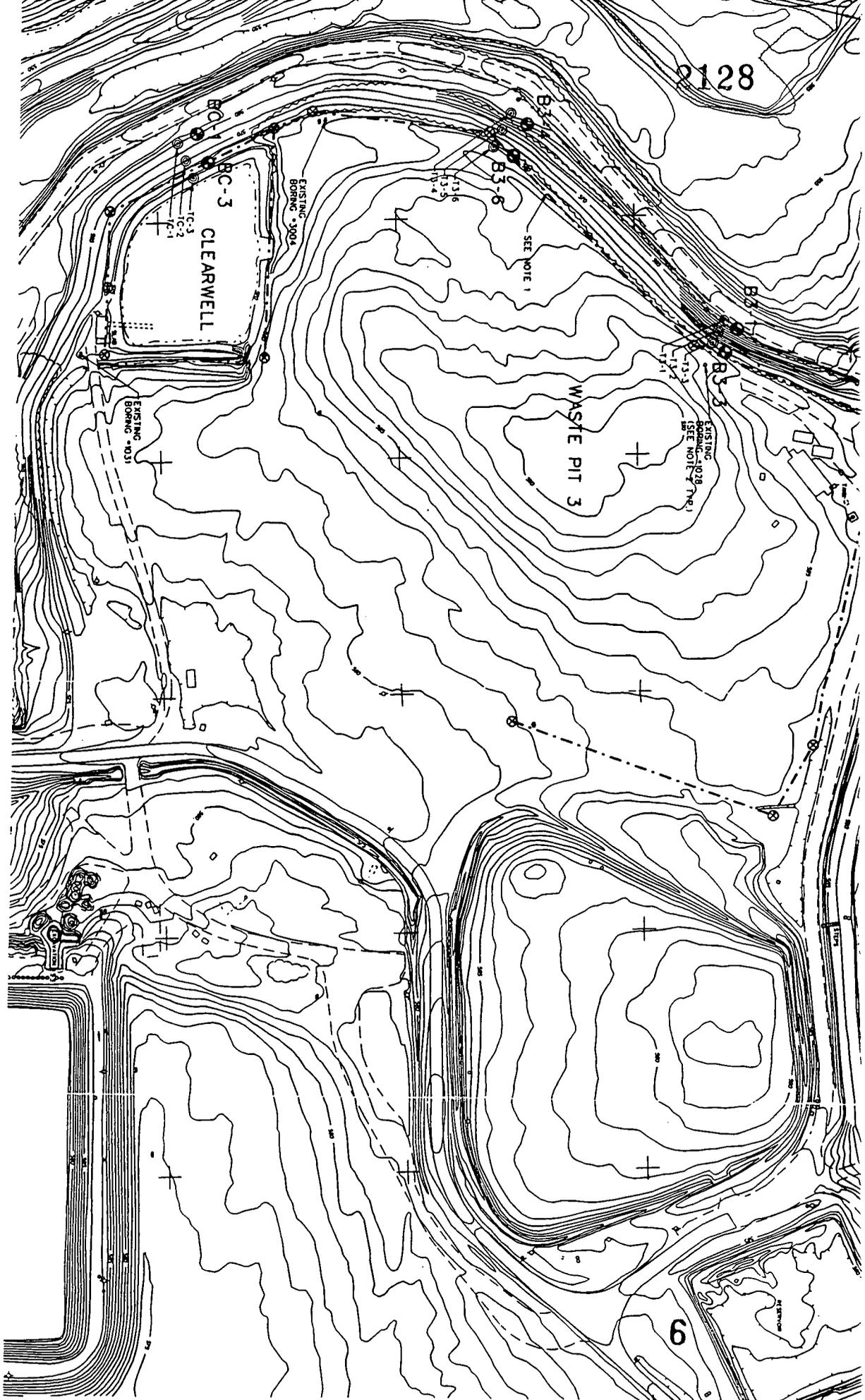
J. J. Fiore, EM-42, GTN  
K. A. Hayes, EM-424, GTN  
B. Wright, EM-424, GTN  
J. A. Saric, USEPA-V, 5HR-12  
L. August, GeoTrans  
G. G. Ioannides, OEPA-Columbus  
K. Davidson, OEPA-Columbus  
T. Snyder, OEPA  
R. E. Owens, ODH-Columbus  
R. L. Glenn, Parsons  
W. H. Britton, WMCO  
H. F. Daugherty, WMCO  
S. W. Coyle, WMCO  
J. D. Wood, ASI  
S. Mallette, Parsons  
M. Higgins, IT-Knoxville  
AR Files

BERM INVESTIGATION FOR WASTE PITS 3 & 5 AND THE CLEARWELL

APPENDIX 1

MONUMENT NO	INITIAL SURVEY			FIRST MONITORING SURVEY			CHANGE		
	NORTH COORDINATE	EAST COORDINATE	ELEV	NORTH COORDINATE	EAST COORDINATE	ELEV	NORTH COORDINATE	EAST COORDINATE	ELEV
T3-1	-918.866082	1556.663095	570.521	-918.849908	1556.658861	570.505	+0.016174	-0.004234	-0.016
T3-2	-926.656362	1565.965518	578.401	-926.637532	1565.971829	578.378	+0.018830	+0.006311	-0.023
T3-3	-936.028987	1577.495505	588.431	-936.007981	1577.503346	588.417	+0.021006	+0.007841	-0.014
T3-4	-1129.356968	1359.391743	566.561	-1129.239191	1359.435977	566.557	+0.117777	+0.044234	-0.004
T3-5	-1135.202365	1371.506260	576.071	-1135.248894	1371.487548	576.065	-0.046529	-0.018712	-0.006
T3-6	-1141.651677	1384.590490	583.614	-1141.647418	1384.603533	583.608	+0.004259	+0.013043	-0.006
T5-1	-572.226572	2403.791208	579.121	-572.230852	2403.791169	579.122	-0.004280	-0.000039	+0.001
T5-2	-584.115568	2400.301406	586.976	-584.122334	2400.296788	586.979	-0.006766	-0.004618	+0.003
T5-3	-596.674006	2396.737414	593.033	-596.671717	2396.724214	593.034	+0.002289	-0.013200	+0.001
T5-4	-518.938687	2190.132694	578.625	-518.865193	2190.151564	578.624	+0.073494	+0.018870	-0.001
T5-5	-531.156333	2187.169169	586.293	-531.146002	2187.132934	586.294	+0.010331	-0.036235	+0.001
T5-6	-544.308715	2183.964931	593.098	-544.326883	2183.964119	593.102	-0.018168	-0.001812	+0.004
T5-7	-440.892209	1868.383360	578.508	-440.818844	1868.389128	578.507	+0.073365	+0.005768	-0.001
T5-8	-453.174601	1865.317926	586.086	-453.138394	1865.337512	586.087	+0.036207	+0.019586	+0.001
T5-9	-467.974454	1861.675666	592.691	-467.969779	1861.673876	592.694	+0.004675	-0.001790	+0.003
T5-10	-415.326276	1666.724760	580.554	-415.306329	1666.727034	580.559	+0.019947	+0.002274	+0.005
T5-11	-426.061314	1671.871429	587.674	-426.080916	1671.890868	587.686	-0.019602	+0.019439	+0.012
T5-12	-437.651533	1676.042389	592.936	-437.630134	1676.049455	592.944	+0.021399	+0.007066	+0.008
T5-13	-676.378919	1658.232548	584.317	-676.364737	1658.235009	584.321	+0.014182	+0.002461	+0.004
T5-14	-667.940672	1661.174551	588.807	-667.929494	1661.168997	588.811	+0.011178	-0.005554	+0.004
T5-15	-658.724232	1663.070134	592.421	-658.694635	1663.065809	592.428	+0.029597	-0.004325	+0.007
TC-1	-1484.887858	1388.234270	563.959	-1484.886398	1388.249799	563.944	+0.001460	+0.015529	-0.015
TC-2	-1477.249633	1401.256455	572.391	-1477.248811	1401.263831	572.374	+0.000822	+0.007376	-0.017
TC-3	-1470.478453	1413.128305	578.699	-1470.471278	1413.152562	578.684	+0.007175	+0.024257	-0.015

NOTE: SEE ATTACHED DRAWINGS FOR MONUMENT LOCATIONS



**FIGURE 5: WASTE PIT 3 AND CLEARWELL DIKE SAMPLING BOREHOLE LOCATIONS**

- 9 -  
1"=100'-0"

**KEY:** SURVEY TARGET MONUMENT  
 PROPOSED BOREHOLE LOCATION

**NOTES:**  
 1. APPROXIMATE CENTERLINE OF 10'-0" WIDE DIKE CREST. DRAWING FILE # 214-5307-0-50234177/07/58  
 2. LOCATION OF BORING PERFORMED DURING RI/FS MONITORING WELL INSTALLATION.

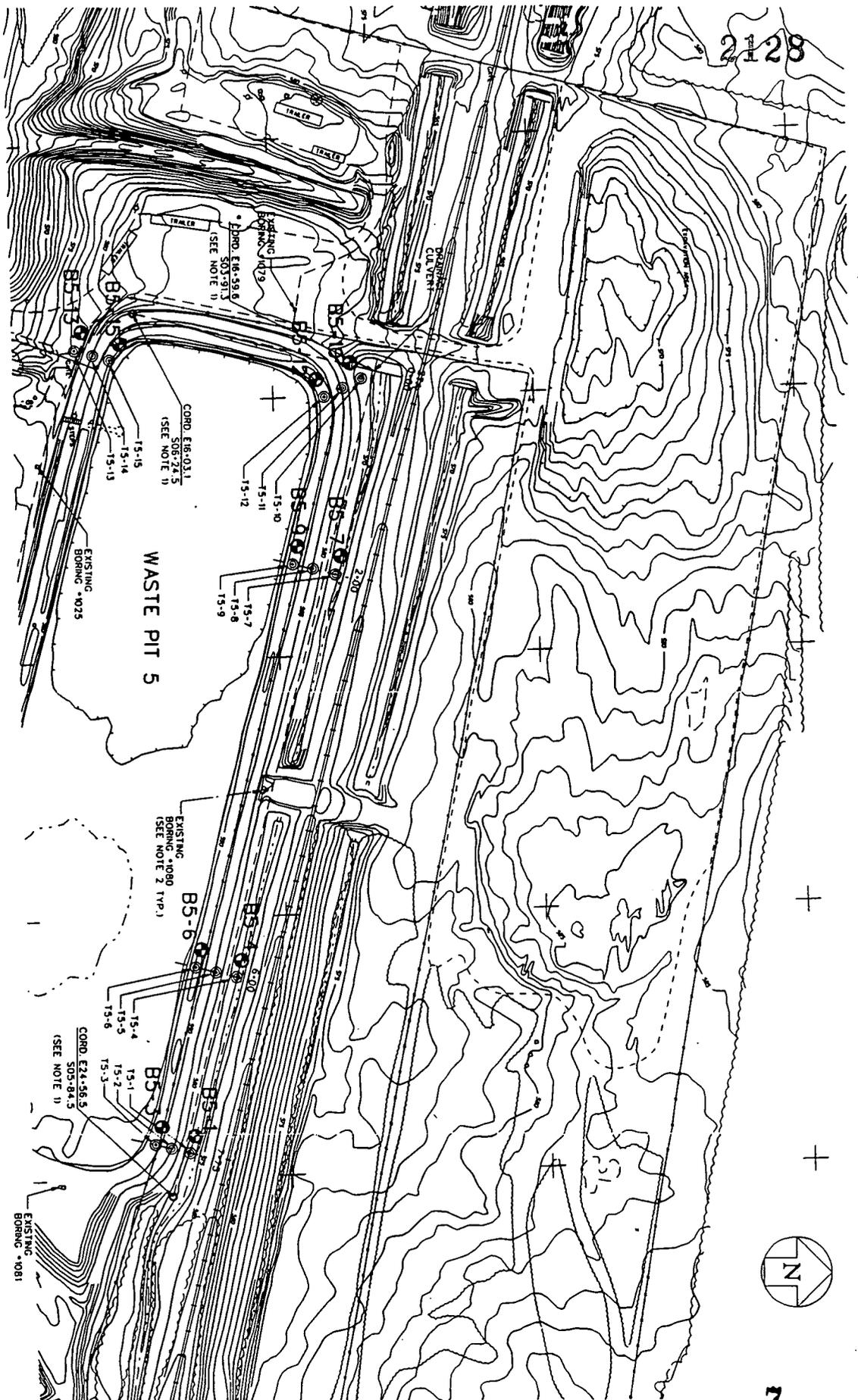


FIGURE 4: WASTE PIT 5 DIKE SAMPLING  
BOREHOLE LOCATIONS

- 8 -

KEY: SURVEY TARGET MONUMENT  
PROPOSED BOREHOLE LOCATION

NOTE:  
1. COORDINATE POINT WAS OBTAINED FROM WASTE PIT 5 CONSTRUCTION DRAWING (NATIONAL LEAD OF OHIO DWG. NO. 21A-5500-C-00196 (REV. 11/5/22/68)).  
2. LOCATION OF BORING PERFORMED DURING RI/FS MONITORING WELL INSTALLATION.

**PARSONS**

6120 South Gilmore Road  
Fairfield Executive Center  
Fairfield, OH 45014  
(513) 870-0300  
FAX (513) 870-0444

June 26, 1991

Doc. Control No. 01LD06269101  
P-M-OU1-030

Mr. Oba Vincent  
Operable Unit 1 Manager  
U. S. Department of Energy  
P. O. Box 398705  
Cincinnati, Ohio 45239-8705

Subject: Environmental Remedial Action Project  
Contract No. DE-AC05-90OR21951  
Inspection of Pit 5 Liner

Dear Mr. Vincent:

As requested by you on June 19, 1991, a visual inspection of the Pit 5 liner was performed by PARSONS (S. Versluis and S. Harrington) on June 21, 1991. The overall condition of the liner did not appear to change from our December, 1990 inspection, however, the condition of the liner remains poor. It would be prudent to initiate corrective actions as soon as possible.

Seams in the liner at Pit 5 are placed at 20 foot intervals. Starting in the northeast corner and walking to the west (see attached figure), the following observations were made:

- a. Seam in-place, cover patch not sealed.
- b. Seam in-place, cover patch not sealed.
- c. Cover patch missing, seam pulled apart.
- d. Cover patch intact and revealed.
- e. Seam pulled apart, not repaired.
- f. Seam patched and intact.
- g. Overlap patch off, seam in-place.
- h. Seam intact, no patch.
- i. Vegetation growing through seam.
- j. No patch, seam pulled-apart.
- k. Seam pulled-apart, patch loosely in-place.
- l. Patch gone, seam intact.
- m. Patch gone, seam apart, soil visible.
- n. Patch off, seam exposed, intact.
- o. Patch off, seam exposed, intact.
- p. Patch off, seam exposed, intact.
- q. Patch off, seam exposed, intact.

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Mr. Oba Vincent  
 June 26, 1991  
 Page two

r. Patch and seam sealed in-place.  
 s. Patch in-place not sealed.  
 t. Patch in-place not sealed.  
 u. Patch in-place not sealed.  
 v. No patch, seam ok.  
 w. No patch, seam open.  
 x. Patch gone, seam ok.  
 y. Patch gone, seam ok.  
 z. No patch, seam open.  
 aa. Patch and seam ok, open at water line.  
 bb. No patch, seam ok.  
 cc. No patch, seam open.  
 dd. No patch, seam open.  
 ee. No patch, seam ok.  
 ff. Patch not sealed, seam ok.  
 gg. No patch, seam sealed.  
 hh. No patch, seam open.  
 ii. No patch, seam ok.  
 jj. No patch, seam ok.  
 End of North Side

Also, as requested, this effort has been charged under Project Order 19 (A & E Technical Support Services).

If you have any questions, do not hesitate to call at 870-8155.

Very truly yours,  
 PARSONS

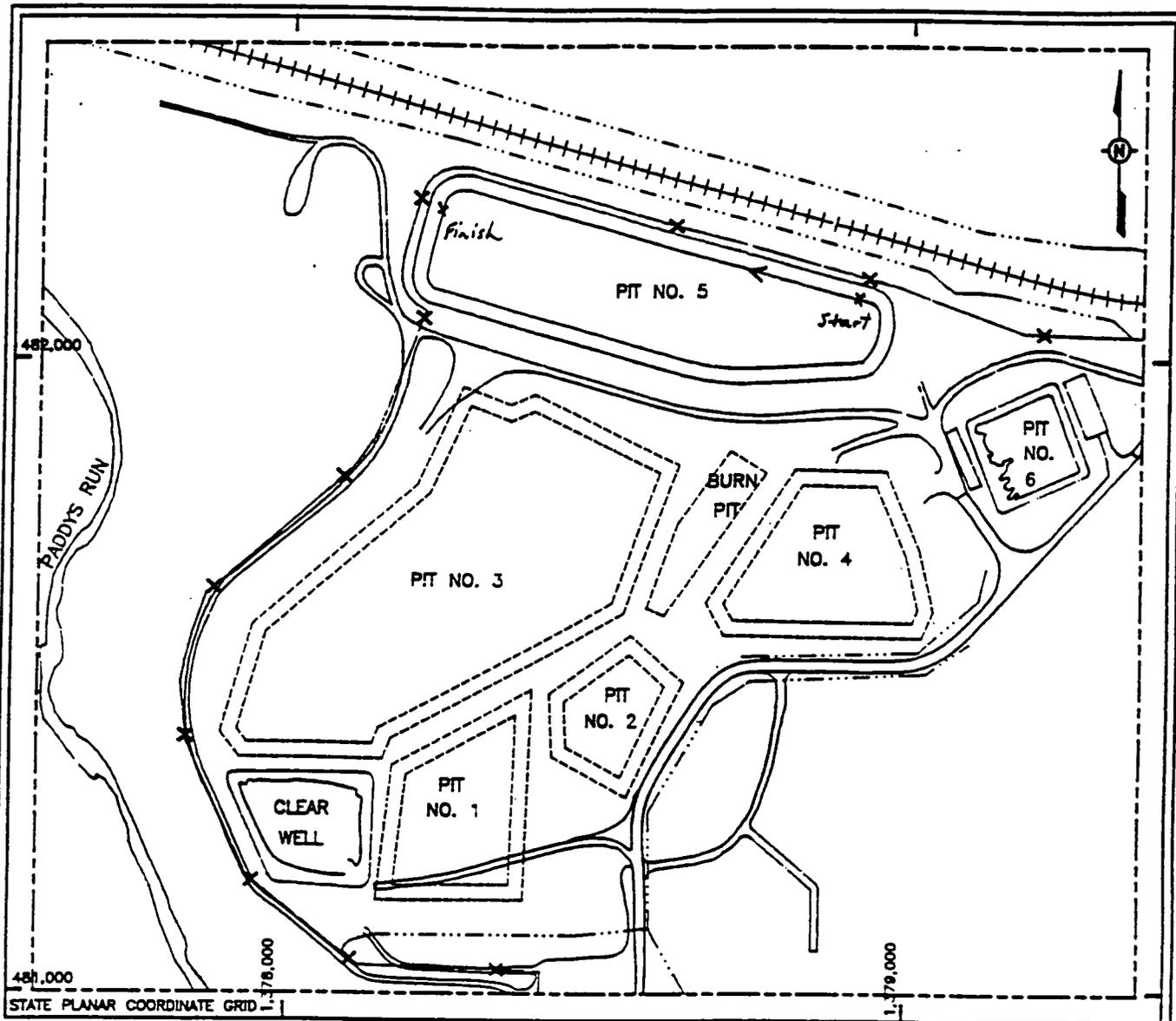


Scott Mallette  
 Manager, Operable Unit 1

SM/ah

Attachment

c: R. Nixdorf  
 S. Versluis  
 DC Code 19  
 DOE: W. Pasko  
 WMCO: J. Hopper w/o attachment  
 J. Chew w/o attachment  
 I. Diggs  
 S. Peterman



NOTES:

OPERABLE UNIT 1 CONSISTS OF THE 6 WASTE STORAGE PITS, THE CLEAR WELL, AND THE BURN PIT.

PITS 1, 2, AND 3 ARE COVERED. PIT 4 HAS AN INTERIM CAP.

THE OUTLINES OF THE COVERED PITS ARE APPROXIMATE.

LEGEND:

- OPERABLE UNIT 1 STUDY AREA
- ==== ROADWAY
- - - - DRAINAGEWAY
- x- FENCE
- + + + + RAILROAD

SCALE



303317-A-C23B/OU1-T9/KNOX

FIGURE 1-1. OPERABLE UNIT 1 STUDY AREA