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**OPERABLE UNIT (OU) 2 TREATABILITY STUDY PRELIMINARY STAGE II
SCREENING**

11/21/91

**DOE-378-92
DOE-FN EPA
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LETTER**



Department of Energy
Fernald Environmental Management Project
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DOE-378-92

Mr. James A. Saric, Remedial Project Director
U. S. Environmental Protection Agency
Region V - 5HR-12
230 South Dearborn Street
Chicago, Illinois 60604

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

Dear Mr. Saric and Mr. Mitchell:

OPERABLE UNIT (OU) 2 TREATABILITY STUDY PRELIMINARY STAGE II SCREENING

Preliminary Stage I Screening of the OU 2 Treatability Study work plan consists of developing a matrix of experimental formulations to evaluate their effectiveness in treating the various wastes. After 28 days curing, the molds developed for evaluating the cement stabilization technology are subjected to Unconfined Compressive Strength (UCS) tests. If the molds achieve a UCS of approximately 500 psi, they are considered to be successful. These successful formulations are then subjected to a Modified TCLP (MTCLP) test. Formulations that pass both the USC and the MTCLP are then subjected to the Advanced Phase testing.

The work plan states that a minimum of six formulations per waste type must pass UCS and MTCLP before being subjected to Advanced Phase testing. The work plan also states that if less than six formulations for each waste stream are judged to be successful, Preliminary Stage II will be initiated to develop new formulations.

Preliminary results obtained for the South Field Waste indicate there are four formulations that meet the UCS criterion. The Department of Energy (DOE) is proposing to subject these four formulations to Advanced Phase Testing if they also pass MTCLP, and not to develop additional new formulations in a Preliminary Stage II testing.

555 8

The rationale for moving forward with the evaluation of the four successful formulations and not developing a total of six that pass the UCS and MTCLP is as follows:

- Constituent variation is exhibited in the four successful formulations (see enclosed preliminary results)
- As stated in the work plan, the range of formulations will be evaluated during the remedial design phase.
- The estimated cost to develop and evaluate an additional six formulations is approximately \$48,000.
- The four successful formulations illustrate that a desirable UCS can be achieved.
- These formulations must pass the MTCLP prior to being subjected to Advanced Phase Testing.
- Preliminary Stage II testing may impact timing of final results.

I would appreciate an opportunity to discuss this matter with you in the near future.

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

Sincerely,



Jack R. Craig
Fernald Remedial Action
Project Manager

FO:Reising

Enclosure: As Stated

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PRELIMINARY RESULTS

South Field Waste

Constituents for Stabilization (in grams)

| Run | Waste | Type 1 Port. Cement | FEMP Flyash | Sodium Silicate | Attapulgitite & Clinoptilolite | Water Weight | USC (psi) |
|-----|-------|------------------------|----------------|--------------------|-----------------------------------|-----------------|--------------|
| A | 300 | 75 | 75 | 15 | 0 | 150 | 354 |
| B | 300 | 150 | 150 | 0 | 10 | 225 | 469 |
| C | 300 | 150 | 75 | 0 | 10 | 225 | 478 |
| D | 300 | 150 | 75 | 15 | 0 | 180 | 481 |

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cc w/encl.:

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10