5-410.10

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

1749

OCT 05 1998

Mr. Carl Summe
3300 Millville Shandon Road
Hamilton, Ohio 45013-9294

DOE-1105-98

Dear Mr. Summe:

PLAN FOR RADIOLOGICAL MEASUREMENTS AND COLLECTING SOIL SAMPLES

The Department of Energy, Fernald Environmental Management Project (DOE-FEMP) is interested in meeting with you to discuss accessing portions of your property to take radiological measurements and to collect soil samples. The portions of your property that DOE-FEMP is interested in accessing are those that are immediately east of the Fernald Site. DOE-FEMP has developed a plan to ensure that the portions of your property potentially affected by Fernald's production operations are tested for contaminants and, if contaminants are found to exist above approved, health based remediation levels, to excavate and remove contaminated soils.

DOE-FEMP's plan for addressing potentially contaminated soil on your property is consistent with the approach being taken on site and has been approved by the U.S. Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA). An overview of the entire process is presented below, and a detailed explanation of Step 1 is provided in the enclosed Project Specific Plans. In addition, a summary of the entire process has been enclosed for your information.

Step 1 of the plan is to establish an access agreement between you and DOE-FEMP to take radiological measurements and to collect physical soil samples to identify whether the soil meets approved cleanup criteria. The purpose of the initial round of measurements and samples is to identify soil that may require excavation and to help appropriately plan for the next round of sampling as described below in Step 3. Once the measurements and samples are collected and analyzed, the results will be provided and explained to you.

Step 2 of the plan will be the excavation of any soil from your property that does not meet the approved cleanup criteria, if any is identified. Prior to any action, DOE-FEMP would propose that a second agreement be established with you specifically identifying any areas

1

where the excavation of contaminated soil is required on your property. Any areas where soil excavation occur will be restored by replacing topsoil and regrading at no cost to you. However, based on data collected on the Fernald site adjacent to your property, the DOE believes that it is unlikely that excavation on your property will be necessary.

Step 3 of the plan will involve the collection of a final set of physical soil samples and will be carried out after the excavation of any contaminated soil or immediately after Step 1, if the excavation of contaminated soil is not necessary. Again, DOE-FEMP would propose that an agreement be established with you specifically addressing the collection of the physical soil samples. Sampling during this step will be more concentrated than in Step 1, and will confirm that soil on your property meets approved cleanup criteria. In the unexpected event that soil is found during this step that exceeds the cleanup criteria, additional soil excavation would be required. The results of this round of soil sampling will also be provided to you and will be issued to the U.S. EPA and OEPA for their approval.

Representatives from DOE-FEMP and Fluor Daniel Fernald (FDF) would like to meet with you at your earliest convenience to discuss this plan as a whole and the timing for Step 1 of the plan. A representative from my office will be in touch with you in the near future to set up a meeting time.

If any questions, please contact Robert Janke at (513) 648-3124, or Johnny Reising at (513) 648-3139.

Sincerely,

Glenn Griffiths

FEMP:Nickel

Glenn Griffiths
Acting Director

Enclosures

cc w/enclosures:
S. Bogart, OH/OCC
R. J. Janke, OH/FEMP
J. Reising, OH/FEMP
G. Stegner, OH/FEMP
D. Carr, FDF/52-2
J. D. Chiou, FDF/52-5
W. Woods, FDF/65-2
AR Coordinator, FDF/78

cc w/o enclosures:
A. Tanner, OH/FEMP

2

FERNALD
Environmental Management Project

1749

THE CERTIFICATION OF OFF-PROPERTY SOIL - AREA 9, PHASE I

The FEMP processed uranium metal products in support of national defense programs until 1989, when the mission shifted exclusively to environmental clean up (i.e., remediation). As part of site remediation, the U.S. Department of Energy (DOE) has a commitment to certify off-property soil east of the FEMP as clean to the off-property final remediation levels (FRLs) for all FEMP related contaminants. These risk-based FRLs were determined to be protective of public health by DOE, the U.S. EPA, and the Ohio EPA. After an extensive public involvement process, the FRLs were documented in the Operable Unit 5 Record of Decision, and approved by the Ohio and U.S. EPAs.

The off-property areas to be certified clean are adjacent to the areas where excavation took place on FEMP property. Area 9, Phase I extends from State Route 126 in the north, down to the FEMP Sewage Treatment Plant in the south. Initially, this area will be certified to 750 feet from the FEMP fence line. However, this distance will be increased if data indicate that contamination may extend further to the east. After any contaminated soil has been excavated and removed, the area will be certified clean. Then use of the property will not be restricted as a result of any FEMP-related contamination.

GENERAL CERTIFICATION STRATEGY

The certification process consists of two rounds of sampling, precertification and certification. Each round of sampling provides information to identify contaminated soil that must be removed. Results of final certification sampling will be used to officially determine that the soil is clean to the FRLs. The Ohio EPA and the U.S. EPA will approve the precertification approach, the certification approach, and the final Certification Report.

I. PRECERTIFICATION

Precertification activities provide general information on soil radiological contamination in order to determine if contaminated soil needs to be removed before certification. The information will also be used to design the certification sampling approach. It includes several different types of sampling, as follows:

1) Mobile Detector

The mobile detector is a radiation detector attached to the back of a John Deere tractor. This tractor will be used to take radiation readings over the entire area to be certified, except where access is limited by trees and/or steep terrain. Information obtained from the mobile detector will be used to identify patterns of radiological contamination in surface soil, and to select locations for the stationary detector and will play a role in determining certification units.

2) Stationary Detector

The stationary detector is a more sensitive radiation detector that has been mounted on a tripod. This detector is used to obtain surface radiation readings in areas that the mobile detector cannot access. It is also used to get readings of the actual radiological contaminants anywhere the mobile detector finds higher levels of radiation. Information obtained from the stationary detector will be used to determine if any soil needs to be removed prior to beginning certification sampling.

3

3) Physical Soil Samples

Physical soil samples are small amounts of soil collected for laboratory analysis. A total of 42 physical samples will be collected in the plowed portion of the property. These samples will be collected from seven locations, and at six depths per location, to a maximum of three feet. Additional surface samples may also be collected in unplowed areas, as appropriate to investigate soil contamination in these areas.

Physical soil samples provide information that the detectors cannot, such as if there is contamination below the surface soil, and what the vertical distribution of contamination is in the plowed area. They can also be used to get information on contaminants like heavy metals that can't be obtained by the mobile or stationary detectors. Information obtained from these physical samples will be used to determine if radiological or non-radiological contamination at and/or below the surface will need to be removed. This information will also be used to help determine how to select the subsequent certification sampling locations.

As a whole, the information gathered from precertification will determine if contaminated soil exists and needs to be removed to meet the FRLs. If not (or after necessary excavation) the soil is ready for certification to begin, and this information will be used to help determine how certification should be conducted.

II. CERTIFICATION

Certification is the process of collecting enough physical samples to demonstrate that soil is clean to the FRLs.

The first step of certification is to establish Certification Units (or CUs). CUs are sections of the property that will be evaluated individually during certification. CUs are established based on:

- Patterns of radiological contamination found during precertification
- Natural features such as drainage
- Past and present land uses.

These factors determine CU size, shape, and location. CUs located directly adjacent to the fenceline will typically be 250 feet by 250 feet in size. The CUs located farther away from the fenceline will typically be 500 feet by 500 feet in size. It is estimated that about 30 CUs will be used to certify the Area 9, Phase I soil. This information will be presented in the "Certification Design Letter," along with the actual certification sampling locations. The Certification Design Letter must be approved by the Ohio and U.S. EPAs before the certification process can continue.

The next step in certification is to collect certification samples. This is done by analyzing 12 to 16 physical soil samples per CU at locations selected randomly by computer. These samples are then sent to an EPA approved laboratory for analysis. The lab results from each individual CU are statistically evaluated against the FRL. If the results show that a CU statistically fails certification, or if any contaminant result is more than two-times the FRL, then the need for additional remediation will be evaluated. If additional excavation is conducted, another 12 to 16 certification samples will be collected and analyzed after soil removal. This process continues until samples show that all certification criteria are met. Once all CUs have passed certification criteria, the area is considered to be clean to the FRLs.

The final step of certification is to present all precertification and certification data to the Ohio and U.S. EPA in the form of a Certification Report. Both the Ohio and U.S. EPA must again approve of the Certification Report and the results that it presents before the area is officially "certified" as clean to FRLs.

TIME FRAME

DOE would like to carry out this sampling in a manner that is not disruptive to the agricultural activities occurring on the property.

Precertification activities will take place in the winter of 1998-99, beginning with the mobile detector scan. This will take approximately three weeks to perform, and will immediately be followed by the stationary detector scan, as necessary. Next, the precertification physical samples will be collected, which will take only several days.

At this point, all data will be evaluated, and a decision will be made if excavations are necessary. If so, this will be done as soon as possible. If not, the data will be used to finalize the certification approach, and a Certification Design Letter will be sent to the EPA for their review and approval. Once EPA approval is obtained, certification sampling can begin.

Certification sampling can be accomplished with minimal disruption to crops or other land-use activities. It is anticipated that this will take place during the Summer of 1999, and field activities will take about three weeks. As long as certification results pass the statistical criteria, a certification report will be submitted to the EPA before the end of 1999.

DOE CONTACT

Please contact Rob Janke at 648-3124, or Kathi Nickel at 648-3166 regarding any questions about the certification of off-property soil.