

927

**GROUNDWATER MONITORING WELLS  
FEED MATERIALS PRODUCTION CENTER  
FERNALD, OHIO  
OH6 890 008 976**

**06/14/90**

**USEPA/DOE-FMPC  
4  
LETTER**

LRA [redacted]  
A2 [redacted]

ACTION: HOPPER



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5  
230 SOUTH DEARBORN ST.  
CHICAGO, ILLINOIS 60604

COPY: PATTERSON  
SAVAGE  
SCHWARTZMAN  
RHODUS  
6/19/90

JUN 14 1990

*Hopper action  
(Car)*

REPLY TO: 927

*L. England  
info*

SHR-12

*John Razon*

Mr. Bobby Davis  
United States Department Of Energy  
Feed Materials Production Center  
P.O. Box 398705  
Cincinnati, Ohio 45239-8705

Re: Groundwater Monitoring Wells  
Feed Materials Production Center  
Fernald, Ohio  
OH6 890 008 976

Dear Mr. Davis:

On May 15, 1990, the United States Department of Energy (U.S. DOE) submitted a request for an addendum to the Remedial Investigation (RI) work plan for the Feed Materials Production Center in Fernald, Ohio. The proposed addendum is for 31 additional groundwater monitoring wells to further characterize the groundwater contamination at the site.

The United States Environmental Protection Agency (U.S. EPA) has the following comments regarding the proposal:

GENERAL COMMENTS

1. Groundwater monitoring results from rounds seven and eight and monthly water level measurements should be submitted to U.S. EPA and the Ohio Environmental Protection Agency (OEPA) before a final evaluation of the proposal.
2. Two areas were not addressed by the well proposal, the northern portion of the waste pit area and the area west of Paddy's Run Road. Waste pit area wells 3030, 3084, 3019, and 3013 have uranium concentrations of 34, 93, 40, and 490 ppb, respectively. Additional sampling is necessary to support remedy selection for groundwater remediation for this area. In the South Plume area, infiltration of uranium contaminated surface water from Paddy's Run and the stormwater outfall ditch is suspected to be the likely source of groundwater contamination. However, only one well (2392) is proposed to investigate this portion of the south groundwater plume. Additional wells south of Willey Road and west of Paddy's Run Road are necessary.
3. The proposal needs to include an installation, development, and sampling schedule for all initial and contingency wells.

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4. In accordance with the requirements of the 1990 Consent Agreement, it is U.S. DOE's responsibility to make best efforts to assure that proper funding is in place so that work is not delayed. Because of the nature of work required to characterize a large groundwater contaminant plume, it should be expected that additional wells will be required. Arrangements for funds should be made in advance, so that no additional delays (like the one that earlier this year) occur.

#### SPECIFIC COMMENTS

5. Page 1, paragraph 4: Given the recent detection of volatile organic compounds (VOCs) in the perched groundwater under plants 6 and 9, analysis of samples for some of the wells should be analyzed for the extended hazardous substance list (HSL) parameter. Specific wells should be proposed. A proposal for additional extended HSL analysis for South Plume wells is also necessary.
6. Page 4, paragraph 3: Well 2033 should be a high priority well because of groundwater samples from well 2008 (400 feet north) and well 2034 (300 feet south) detected elevated levels of uranium in past sampling events. Well 2033 would provide information on the uranium concentration directly downgradient of a suspected source.
7. Page 4, paragraph 3: Because groundwater samples from two of the 2000-series wells near the K-65 silos have detected above background concentration of uranium, a monitoring well further downgradient are required as a contingency well depending on the sample results of well 2033.
8. Page 4, paragraph 3: Well 2028 should not be considered the only upgradient well for the waste pit area. Well 2004 is also between the waste pit area and Paddys Run. Groundwater samples from well 2004 have detected above background levels of uranium during past sampling events.
9. Page 5, paragraph 5: While it is possible that the major shifts in groundwater flow direction may be the cause for uranium fluctuations in wells 2046 and 2049, there may be other causes since uranium levels in other wells are not being affected in a similar manner.
10. Page 9, paragraph 1: Wells 3060 and 3061 should also be installed to "satisfy the commitment made in the RI/FS work plan to install deeper wells if high levels of uranium are found in any well". Groundwater in wells 2060 and 2061 is contaminated with up to 250 and 292 ppb of uranium, respectively.

11. Page 9, paragraph 2: Proposed well 2385 will provide the information on the potentially high levels (greater than 100 ppb) of uranium contamination east of well 2046. However, it will not define the eastern extent of the plume in this area because well 2065 (farthest east) has above background levels of uranium (13 ppb).
12. Page 9, paragraph 3: Proposed well 2390 will provide useful information on the level of uranium contamination and the probable connection of the contamination in the South Plume to the South Field area. However, the uranium concentrations in groundwater samples from wells 2015 (199 ppb) and 2060 (250 ppb) directly south already provide strong support for this connection.
13. Page 9, paragraph 3: As discussed above, other wells in the South Field and South Plume areas are necessary to define the extent of the elevated levels of uranium in wells 2060 and 2061.
14. Page 9, paragraph 3: Groundwater samples from well 3062 have uranium concentration of up to 62 ppb. This is the highest uranium concentrations in the groundwater south of the production area. A 2000 and 4000-series well is required at this location.
15. Page 10, paragraph 2: The analytical database indicates that a duplicate sample was collected from well 2127 in May 1989. The uranium concentration in this sample was 14 ppb; therefore, the variation of uranium concentration is not as great as reported in the proposed work plan addendum.
16. Page 10, paragraph 3: The location of the additional seven wells in the South Plume area needs to be shown in Figure 1.
17. Page 10, paragraph 4: The results of the contaminant transport model do not appear to be consistent with the uranium concentrations reported in the analytical database.

First, none of the reported uranium concentrations from the groundwater samples collected from the wells in the South Plume area south of Willey Road are greater than 300 ppb. Furthermore, there are no wells in this area of the South Plume to verify the 400 and 600 ppb concentrations predicted by the model. Using higher than observed values in the source area to match downgradient observed values may result in overestimating retardation and decay processes.

Second, well 3062 (62 ppb) along Paddys Run Road is outside the 30 ppb isoconcentration line. While this discrepancy is not too far outside the accuracy expected from contaminant transport models, the groundwater at the 2000-series level has not been samples. The 2000-series wells in this area of the site typically have higher uranium concentrations.

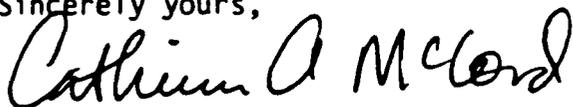
Finally, it is necessary to install additional wells to clarify the apparent inconsistencies described above. 2000 and 3000-series wells in the area inside the 400 and 600 isoconcentration contours of Figure 5 are necessary to confirm the model's accuracy. In addition, a 2000 and 4000-series well at location 62 is necessary to provide additional information regarding the extent of the plume in this area of the site.

18. Page 10, paragraph 4: The model should define isoconcentration contours down to background, not just to 33 ppb.
19. Page 12, paragraph 4: Given the variation of uranium concentrations between sampling rounds, the results from one sampling round collected from well 2391 should not absolutely determine the direction of the sampling program in the area of the South Plume. It is necessary to sample well 2391 during several additional rounds.

~~U.S. DOE should proceed with installation of the initial wells presented in the draft proposal and submit a revised document within thirty (30) days of the date of this letter. The revised proposal is required to address the deficiencies cited in this letter.~~

Please contact me at (312/FTS) 886-4436 if you have any questions.

Sincerely yours,



Catherine A. McCord  
Remedial Project Manager

cc: Bruce Boswell, Westinghouse  
Maury Walsh, OEPA  
Graham Mitchell, OEPA-SWDO