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G-000-102.89

GROUND WATER MONITORING
U.S. DOE FMPC-FERNALD
OH6 890 008 976

02/93/89

USEPA/DOE-FN
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LETTER

[redacted]

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

23.1

CHRISTIANSEN
SCHWARTZMAN
WEDDLE
WEINREICH
KINNETT
2/7/89

REPLY TO THE ATTENTION OF
5HR-12

FEB 03 1989

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Mr. James A. Reafsnyder
United States Department of Energy
P.O. Box 398705
Cincinnati, Ohio 45239-8705

Mr. Bruce Boswell
Westinghouse Materials Company of Ohio, Inc.
P.O. Box 398704
Cincinnati, Ohio 45239-8704

FEB 9 9 56 AM '89

Re: Ground Water Monitoring
U.S. DOE FMPC-Fernald
OH6 890 008 976

Dear Messrs. Reafsnyder and Boswell:

The United States Environmental Protection Agency (U.S. EPA) and the Ohio Environmental Protection Agency (OEPA) have [redacted] the latest version of the [redacted] submitted by the United States Department of Energy (U.S. DOE) and Westinghouse Materials Company of Ohio for the Feed Materials Production Center (FMPC) in Fernald, Ohio. In addition, the [redacted] The fo[redacted]:

[redacted] D+M

(1) The Results and Conclusions section of the May 1987 RCRA Ground-water Monitoring Report - Round 4 concluded that the distribution of radiological and non-radiological constituents appear to be localized around waste pit #4. [redacted] was performed, as required by 40 CFR 265.93(c)(2). EXPLAIN - REVISED PLAN

Rez.

(2) Page 3 - The report states that a [redacted] is planned that will include disinfection. It is not appropriate that any substance be introduced into any monitoring wells. EXPLAIN

Hist/Explan.

(3) Table 3.4 - The [redacted]. There are primary drinking water standards for several volatile organic compounds (VOC) that are not listed. The fluoride standard is out of date; the current primary

STATEMENT

40 RP

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standard maximum concentration level (MCL) is 4 mg/l and secondary standard is 2 mg/l. RP

(4) Table 2 - Samples collected for VOC analysis should be collected in 40 ml septum vials, not 1000 ml glass containers. YES EXPLAIN RP

SAMP PROC

(5) All samples collected for pesticide analysis were held past the holding times. Some samples were held for just under two months. The holding time for the sample collected from well MW-21(S) exceeded the VOC holding time limit of fourteen (14) days. The sample was held for twenty-nine (29) days. YES - RP

SAMP PROC

5TH QUARTER SAMPLING D+M

During the 5th round of ground water monitoring (the first semi-annual event), a statistically significant difference was found in pH, specific conductance, and total organic carbon (TOC). Additionally, organic compounds were detected in samples from two downgradient monitoring wells (19TP and 21S). A Ground-water Quality Assessment Program Plan was developed in response to these findings.

(1) All "TP" wells were installed with a backhoe. The newly developed well decommissioning criteria should be applied to these "TP" wells for evaluation of well decommissioning. REVISED PLAN

EVALUATE/REV.

(2) The observation of surface water flowing under the surface seal of well MW-10 and the fact that not all older wells have protective covers needs to be addressed. PROJECT

HIST/EX

(3) Page 7 - Low yielding wells should be pumped dry unless a minimum of three to five well volumes are removed from the well. NR RP

SAMP PROC

(4) Page 13 - TOC samples must have a preservative to adjust pH below 2. TOX samples must have 1 ml of 1.1 M sodium sulfite added for preservation. NR RP

SAMP PROC

(5) Page 14 - What are the sampling procedures for dissolved metals? DESCRIBE RP

S.P

(6) Page 14, Paragraph 5 - The use of acetone was not mentioned. ? RP

S.P

(7) Page 15, Item 3: The report does not detail how equipment cleaning and laboratory analytical procedures will be modified in future rounds to prevent false results. EXPLAIN RP

SP

(8) Page 16, Table 2 - VOC samples should be collected in 40 ml septum vials, not 1000 ml glass containers. YES - EXP. RP

SP

(9) Page 18 - 40 CFR 265.92(c)(2), not 40 CFR 265.90, requires four replicates. YES

STATEMENT

(10) Table 3.5 - Some of the standards are out of date. MCLs for VOCs are not given. The standard for fluoride is incorrect. YES

STATEMENT

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(11) In what order will samples for certain parameters be collected? It is desirable to establish an order.

(12) Neither the actual data used to calculate the statistics, nor the calculations, have been included.

(13) Pesticide samples were held past the seven day holding time limit for many samples.

GROUND WATER QUALITY ASSESSMENT PLAN

(1) The sampling frequency for Assessment monitoring is quarterly, not semi-annually for site-specific parameters, as required by 40 CFR 265.93(d)(7)(i) and Ohio Administrative Code (OAC) 3745-65-93(D)(7)(i).

(2) The Assessment Plan does not describe the detection monitoring system used to make the statistical comparisons.

(3) The Assessment Plan and the Sampling Plan do not present adequate information concerning the location, depth of screened intervals, or length of screen intervals.

(4) The Assessment Plan and the Ground-water Monitoring Reports need to establish the direction of ground water flow in each of the monitored aquifers. The Assessment Plan indicates that the localized direction of ground water flow is towards the east. A review of the water levels and use of three-point problems indicates that the ground water flow in the shallow aquifer is towards the northeast.

(5) Using either flow direction, east or northeast, indicates that the landfill (waste pit #4) is not monitored by the required three downgradient wells, as required by 40 CFR 265.91(a)(2) and OAC 3745-65-91(A)(2).

(6) Section 3.1, Page 11 - A 0.01 level of significance should have been used instead of 0.05 level.

(7) Section 3.1, Page 11 - The variance for TAWS values is extremely large. This is due to a two-order of magnitude increase of TAWS in background wells during the third sampling round. Elevated values of this magnitude for TAWS were not observed after round three, suggesting that the third round data may be anomalous.

(8) Section 3.2, Page 16 - The continued collection of additional RCRA ground water monitoring samples and the list of sample parameters is appropriate. However, sampling and analytical methods are not listed, as required by 40 CFR 265.93(d)(3)(ii) and OAC 3745-65-93(D)(3)(ii).

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(9) Section 3.2, Page 17 - The Assessment Plan does not provide a reason for the additional upgradient wells. No information is presented concerning the establishment of background mean and variance values for the indicator parameters. Information on new background well or wells should be provided. UPDATE

(10) Section 3.3, Page 17 - Results of the Characterization Investigation Study (CIS) should be used in selecting appropriate analytes for the assessment program.

(11) Section 3.4, Page 17 - The wells discussed in this section may be appropriate for monitoring pit #4. RI/FS WELLS. (92 ADDITIONAL)

(12) Section 4.0, Page 24-41 - This general discussion of Remedial Investigation (RI) activities does not address the specific situation at waste pit #4.

(13) Section 4.2 - There are several errors in this section, including screened intervals and zones that are to be monitored. ? NEW INFORMATION UPDATE
BASIS FOR COMPARISON

(14) Section 4.3 - The Installation Methods and Materials section needs to be rewritten to correct numerous errors with respect to screened intervals and zones to be monitored.

(15) Section 4.6, Page ~~27~~ 37 - The Assessment Plan must include sampling and analytical methods for relevant hazardous wastes and hazardous waste constituents, as required by 40 CFR 265.93(d)(3)(ii). References to the RI ground water monitoring in the Assessment Plan is not adequate, even though the RCRA and RI ground water monitoring systems have been merged. Appendix IX

(16) The facility must determine the rate, extent of migration, and concentrations of hazardous waste or hazardous waste constituents, as required by 40 CFR 265.93(d)(4) and OAC 3745-65-93(D)(4).

(17) Confirmatory sampling required by 40 CFR 265.93(c)(2) is not presented in the Assessment Plan.

(18) Please clarify what existing and newly installed Remedial Investigation (RI) wells are considered a part of the RCRA ground water monitoring system and are used in the assessment.

(19) Water samples should be taken from Paddy's Run to check local ground water flow discharging to the creek from the facility. - HOW TO SEPARATE FROM RUNOFF AND NON-RCRA ISSUE?

(20) Page 20 - If contamination is found, site-specific parameters are required by 40 CFR 265.93(d)(3)(ii) and must be monitored quarterly until final closure, as required by 40 CFR 265.93(d)(7)(i) and OAC 3745-65-93(D)(7)(i).

(21) Page 33 - Should contamination be found above the blue clay layer, additional wells should be installed immediately below the clay and at the bottom of the sand and gravel aquifer. Positioning the bottom of the screen 10 feet above the bedrock will not allow for detection of dense constituents.

REV - EXP

RI/FS

(22) Page 33 - Whether or not the clay unit is an aquitard has not been clarified. Tests may be proposed for verifying this statement.

REV.

(23) Page 33 - A 15-foot well screen is too long. The screen should span the water bearing zone with a maximum length of 10 feet. The sand pack should not exceed 15 feet.

REV + EXP.

EPA APPROVED WORK PLAN

(24) Page 35 - A minimum of three to five well volumes should be extracted during well development.

RI/FS

3. PROC.

(25) Page 36 - Identify which wells will be used for pump/slug tests.

EXP/REV.

- RI/FS HAS DONE

(26) Page 37 - Which of the wells designated to monitor Pit #4 are to be sampled for the organics and metals in item 12 What constituents will each well be sampled for? All existing and proposed wells that monitor Pit #4 should be analyzed for RCRA hazardous waste constituents, as indicated by the RI work plan.

REV

(28) Provide sampling and analytical methods, as required by 40 CFR 265.93(d)(3)(ii) and OAC 3745-65-93(D)(3)(ii).

REV.

The frequency for sampling during assessment is quarterly for site-specific parameters, not semi-annually. If ground water monitoring wells are to be used to fulfill RI/FS and RCRA requirements, sampling schedules and analytes need to be coordinated. The Ground-water Assessment Plan needs to be modified to reflect these changes. The sampling and analysis plan need to be updated to reflect current protocols.

U.S. EPA is currently evaluating enforcement alternatives regarding deficiencies in the groundwater monitoring program and in other aspects of hazardous waste management. If you have any questions regarding this matter, please contact Catherine McCord at (312 or FTS) 886-4436.

Sincerely yours,

Wm. E. Muno

William E. Muno, Chief
RCRA Enforcement Branch

cc: Graham Mitchell, OEPA-SWDO
Rich Bendula, OEPA-SWDO
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