

124

5-402.4

**TRANSMITTAL OF REVISED PROJECT-SPECIFIC PLAN FOR THE SOUTH
FIELD EXTRACTION SYSTEM - (ALSO CONTAINS RESPONSE TO
COMMENTS DOCUMENT)**

08/11/95

DOE-1352-95
DOE-FN EPAS
125
PSP



Department of Energy
Fernald Environmental Management Project
 P. O. Box 538705
 Cincinnati, Ohio 45253-8705
 (513) 648-3155

AUG 11 1995

DOE-1352-95

Mr. James A. Saric, Remedial Project Director
 U.S. Environmental Protection Agency
 Region V - 5HRE-8J
 77 W. Jackson Boulevard
 Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
 Ohio Environmental Protection Agency
 401 East 5th Street
 Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

TRANSMITTAL OF REVISED PROJECT-SPECIFIC PLAN FOR THE SOUTH FIELD EXTRACTION SYSTEM

- References: 1) Letter, J.A. Saric (U.S. EPA) to J.R. Craig (DOE-FN), "Disapproval of the OU5 PSP for the South Field Groundwater Extraction System," dated June 19, 1995
- 2) Letter, T.A. Schneider (OEPA) to J.R. Craig (DOE-FN), "Disapproval-PSP Southfield Extraction System," dated June 7, 1995

This letter transmits, for your review and approval, the U.S. Department of Energy's (U.S. DOE) responses to agency comments and a revised Project Specific Plan for the Installation of the Southfield Extraction System. Comment responses for the Design Basis document will be incorporated into the next design submittal.

Please contact Robert Janke at (513) 648-3124 or John Kappa at 648-3149 if you have questions concerning this transmittal.

Sincerely,

Johnny Rensing

FN:R.J.Janke

JR Jack R. Craig
 Fernald Remedial Action
 Project Manager

Enclosure: As Stated

cc w/enc:

K. H. Chaney, EM-423/GTN
B. Skokan, EM-423/GTN
G. Jablonowski, USEPA-V, 5HRE-8J
J. Kwasniewski, OEPA-Columbus
P. Harris, OEPA-Dayton
M. Proffitt, OEPA-Dayton
S. McClellan, PRC
D. Ward, GeoTrans
F. Bell, ATSDR
R. Owen, ODOH
K. Broberg, FERMCO/52-5
D. Carr, FERMCO/52-5
M. J. Cherry, FERMCO/52-5
R. D. George, FERMCO/52-2
T. Hagen, FERMCO/65-2
W. A. Hertel, FERMCO/52-5
J. R. Hughes, FERMCO/52-5
M. A. Jewett, FERMCO/52-5
AR Coordinator, FERMCO

cc w/o enc:

C. Little, FERMCO
M. Yates, FERMCO

**RESPONSES TO U.S. EPA COMMENTS
ON THE SOUTH FIELD EXTRACTION SYSTEM FUNCTIONAL REQUIREMENTS
AND DESIGN BASIS DOCUMENT
JUNE 1995**

1. Commenting Organization: U.S. EPA Commentor: Saric
Section#: NA Pg.#: NA Line#: NA Code:
Original General Comment# 1
Comment: The document does not address the frequency of sampling to be conducted at the wellhead to determine if the extracted groundwater should be routed to the treatment unit, the Great Miami River, or if it should be reinjected. This item was also not addressed in the project-specific plan for the installation of the southfield extraction system. The U.S. Department of Energy (DOE) should address this monitoring schedule in detail.
Response: Specifics on the frequency of sampling at each wellhead have not been finalized yet but will be addressed in an upcoming Operations and Maintenance (O&M) plan. It is anticipated that the frequency at which each well is monitored will need to be addressed individually. The monitoring will not only focus on the mass of uranium removed but also on the well efficiency (i.e., specific capacity over time). The relative position of the well in relation to the uranium plume, the rate at which the well is pumped, and the surrounding lithology will all effect how often the well is sampled to determine whether or not the pumped water will be sent to treatment or the Great Miami River. Monitoring at the wellhead will supplement the monitoring planned in surrounding monitoring wells which will be used to document the effectiveness of the extraction system (see comment response to General Comment 2).
Action: Wellhead monitoring will be addressed in the system O&M manual.
2. Commenting Organization: U.S. EPA Commentor: Saric
Section#: NA Pg.#: NA Line#: NA Code:
Original General Comment# 2
Comment: The document does not address which wells will be sampled or the groundwater monitoring schedule to be used to determine the effectiveness of the extraction system. This evaluation is a vital component for future decisions and should be included in the design.
Response: Specifics as to which particular wells will be sampled and the sampling frequency have not been finalized. Both criteria are dependent upon whether or not reinjection is supplemental to the extraction process. Guidelines as to what the monitoring will achieve have been added to the PSP for the South Field Extraction System. The specifics will be provided in the O&M plan (that will be submitted to EPA as a followup document) and in the remedial design documents submitted under the OU5 RD work plan.
Action: The following text is being added to Section 4.5 of the PSP for the South Field Extraction System to provide monitoring criteria. "It is anticipated that monitoring of the effectiveness of the recovery wells will include such items as:
- Monitoring the shape and volume of the 20 ppb total uranium plume to document how effective the remediation strategy is in not enlarging the plume.
 - Monitoring to document whether or not total uranium concentrations greater than 20 ppb are avoiding capture by slipping around or beneath extraction wells.

000003

- Monitoring for total uranium in pumped groundwater at individual wellheads to document how close the total uranium concentrations in the actual pumped groundwater are to predicted concentrations, and to decide whether or not the pumped water needs to be routed to a treatment system.
- Monitoring the specific capacity of each well to determine if efficiency is decreasing over time.
- Monitoring the shape and extent of the net radius of influence to determine how close the overall hydraulic impact to the Great Miami Aquifer is to modeled predictions.

3. Commenting Organization: U.S. EPA Commentor: Saric
 Section#: NA Pg.#: NA Line#: NA Code:
 Original General Comment# 3

Comment: The analysis presented in Appendix F indicates that when DOE's design is modeled, it results in the removal of a significant volume of noncontaminated groundwater. This volume of noncontaminated groundwater results in a dilution factor ranging from 8 to 50. This dilution factor appears to be excessive and may reflect an inefficient extraction well design. DOE should examine the depth of the proposed extraction wells and the extraction rate to ensure maximum system efficiency.

Response: The methods being followed to locate and design well screens for the extraction wells should result in very efficient uranium removal. The horizontal extent of the total uranium plume is well documented in the Operable Unit 5 RI Report. Care is being taken to define the vertical extent of the total uranium plume during the drilling of each extraction well. Screens are being customized for each location to intercept only the 20 ppb plume.

The screen-length range given in Section 4.1 is not rigidly fixed. As the plan presents, efforts will be made to screen each extraction well across the 20 ppb plume to maximize efficiency and decrease dilution. Groundwater samples will be collected every 10 feet and analyzed for total uranium to determine the vertical extent of the 20 ppb plume. Sieve analyses will be collected to determine if a preferential textural pathway exists and, if present, the relation of the pathway to the uranium plume. Screens shorter than 20 feet or longer than 40 feet may be used, but only if the water quality and textural data supports their use. Given what is known about the plume, most screens will probably be 20 feet or less in length.

DOE is conducting optimization analysis of the extraction rate considering the constraints on the treatment capacity. Initial results of this analysis have been presented to EPA on July 25. The O&M plan will further describe the operational schedule and extraction rate.

Action: None

4. Commenting Organization: U.S. EPA Commentor: Saric
 Section#: 1.6.3 Pg.#: 1-9 Line#: NA Code:
 Original Specific Comment# 1

Comment: This section does not include an evaluation of the effectiveness of the extraction system. Effectiveness of hydraulically capturing the contaminant plume and the removal of the contaminants must be addressed. The details presented in Sections 2.5.1 and 5.1.2 are not adequate. In most cases water level or water quality measurements are being collected at a single horizontal point. This is not sufficient to evaluate either groundwater flow direction or gradient, which are essential to determine if the aquifer is responding to the modeling and design of the extraction system. This information should be added to the functional requirements.

Response: An attachment has been added to the PSP for the South Field Extraction System that discusses the effectiveness of different pumping scenarios. Capture zone and particle track maps are provided. Specifics concerning monitoring have not been finalized. It is recognized that a 3-dimensional approach is needed. Monitoring guidelines have been added to the PSP for the South Field Extraction System, along with an identification of which future deliverables will specify the monitoring requirements and strategy. See response to Comment 2 (General Comment 2).

Action: See action for Comment 2 (General Comment 2).

5. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section#: 4 **Pg.#:** 4-1 **Line#:** NA **Code:**
Original Specific Comment# 2

Comment: The piping and instrumentation diagrams presented in Appendix E seem to omit sampling ports in the existing south field extraction system (SFES) force main before and after treatment in the south plume valve house. In addition, a sampling port is not present after water exits the SFES valve house and mixes with water discharged from other wells prior to its discharge to the Great Miami River. Sampling at these locations should be conducted to evaluate the effectiveness of the treatment as well as to determine the loading to the Great Miami River. DOE should reevaluate the design and consider these potential sampling locations.

Response: Existing sampling ports are located on the effluent header of each treatment process and the sampling and monitoring station (located before discharge to the Great Miami River) provide an overall composite of the discharge to the Great Miami River. All water discharges to the Great Miami River pass through this station.

Action: Sampling port locations will be reevaluated during Title II design.

6. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section#: 4.2 **Pg.#:** 4-1 **Line#:** NA **Code:**
Original Specific Comment# 3

Comment: The site plan found in Appendix D does not appear to match the piping and instrumentation diagrams presented in Appendix E. The site diagram in Appendix D states that one line to treatment and one line to discharge will extend from each well. The diagram in Appendix E shows that treatment and discharge lines from individual wells are combined prior to reaching a treatment or discharge point. The drawings and diagrams should be checked for accuracy and revised accordingly.

Response: Agree that the note on the site drawing in Appendix D is not clear. The intent was to infer a two-pipe header system, one for treatment and one for discharge. The diagrams in Appendix E are correct. The intent is that each well has the option of being diverted to either a common header going to treatment or a common header going to the Great Miami River via the sampling and monitoring station.

Action: All drawings will be reviewed for clarity and accuracy and will be revised accordingly during Title II design.

7. **Commenting Organization:** U.S. EPA **Commentor:** Saric
Section#: 4.2 **Pg.#:** 4-1 **Line#:** NA **Code:**
Original Specific Comment# 4

Comment: Sheet 2 of 2 of the piping and instrumentation diagrams in Appendix E indicates that extracted groundwater from extraction wells 13, 14, 15, 16, and 17 goes to "pumps" or to treatment. It is unclear to what the word "pumps" refers. At this point, U.S. Environmental Protection Agency (U.S. EPA) has not approved reinjection. In addition, no extracted groundwater with a concentration above 20 parts per billion (ppb) is suitable for reinjection without treatment.

DOE should review the diagrams for accuracy and consistency with the objectives stated in the proposed plan.

Response: The use of the word "pumps" is misleading and incorrect. "To pumps" does not mean reinjection, but should have read "To 24-inch discharge." Also, the drawing numbers in the flags are wrong.

Action: All drawings will be reviewed for clarity and accuracy and will be revised accordingly during Title II design.

8. Commenting Organization: U.S. EPA Commentor: Saric

Section#: 4.2 Pg.#: 4-1 Line#: NA Code:

Original Specific Comment# 5

Comment: Sheet 2 of 2 of the piping and instrumentation diagrams in Appendix E indicates that extracted groundwater from extraction wells 13, 14, 15, 16, and 17 can either be routed to "pumps" or to treatment. Groundwater with a concentration of greater than 20 ppb cannot be reinjected to the aquifer. Therefore, the drawing indicates that all groundwater with a uranium concentration greater than 20 ppb that is extracted from these wells will be combined and then combined again with the with groundwater extracted from the remaining wells. The groundwater will then be routed to the south plume valve house for treatment. This situation does not allow for the priority treatment of contaminated groundwater on a well-by-well basis. Also, this method does not meet the objectives of the proposed plan that require extracted groundwater to be routed to treatment or discharge based on its uranium concentration at the extraction point. To meet the objective of the proposed plan and to allow for reinjection, it appears three lines should be installed; one each to route groundwater to treatment, discharge, and reinjection. DOE should review the diagrams for accuracy and consistency with the objectives stated in the proposed plan.

Response: See response to Comment 7 (Specific Comment 4).

Action: See action for Comment 7 (Specific Comment 4).

**RESPONSES TO U.S. EPA AND OEPA COMMENTS ON THE PROJECT-SPECIFIC PLAN
FOR THE SOUTH FIELD GROUNDWATER EXTRACTION SYSTEM
JUNE 1995**

U.S. EPA Comments

1. Commenting Organization: U.S. EPA Commentor: Saric
Section#: 1.2 Pg.#: 3 Line#: 35 Code:
Original Specific Comment# 1
Comment: The text states that groundwater extracted from the aquifer will be treated as necessary to meet the discharge requirements for release to the Great Miami River. It is stated in the proposed plan that groundwater will be routed to the treatment units up to the treatment unit capacity on a priority (that is, most contaminated first) basis. The text should be revised to more closely reflect the requirements of the record of decision (ROD).
Response: Agree
Action: Delete referenced sentence; add at end of paragraph the following, "The remaining portions of recovered groundwater exhibiting lower uranium concentrations will be blended with treated water to maintain a discharge to the Great Miami River at or below the discharge limits that will be set in the ROD."
2. Commenting Organization: U.S. EPA Commentor: Saric
Section#: 1.4 Pg.#: 5 Line#: 18 Code:
Original Specific Comment# 2
Comment: The text states that the implementation of this project is subject to funding availability and that it is possible that the lack of funding could cause the project to revert to the original operable unit (OU) 5 schedule. After the project-specific plan and its schedule are approved, deviations due to a lack of funding are not sufficient justification for noncompliance with the schedule. The text should be revised to eliminate all references to extending schedules due to a lack of funding.
Response: DOE recognizes U.S. EPA's desire to expedite the completion of this project through the establishment of a project schedule subject to the enforceability provisions of the Amended Consent Agreement. DOE cannot, however, at this time concur with such a request. DOE is proceeding with the design of the system utilizing FY-95 funding. In fact, it is the intent of DOE to complete all design activities utilizing FY-95 funding.
- Recently, as you are aware, DOE prepared a 10-year accelerated remedial schedule for the FEMP in an effort to properly frame the cost implications of adopting a longer cleanup strategy at the FEMP. This 10-year schedule has received favorable review from DOE senior management and stakeholders. As such, the FEMP has adopted this 10-year schedule as the planning base for the facility. The 10-year schedule lays out a logical sequence of remedial activities at the FEMP to accomplish an expeditious cleanup of the site. The FEMP is presently proceeding with detailed budget planning for FY-96 in recognition of the need to position the site for accelerated FY-97 funding for the 10-year remedial schedule. While indications are that this project will be funded in FY-96, DOE cannot be certain until the detailed planning is complete. As such, DOE cannot subject the project schedule to the enforceability provisions of the Amended Consent Agreement at this time. In the event funding does not become available to complete the construction phase of the project in FY-96 the project schedule will be included in the Operable Unit 5 RD Work Plan and subject to the Amended Consent Agreement enforceability provisions at that time.
- Action: None

3. Commenting Organization: U.S. EPA Commentor: Saric
Section#: 4.3 Pg.#: 24 Line#: 37 Code:
Original Specific Comment# 3
Comment: Desorption batch tests will be conducted on soil samples collected from the exploratory boreholes. The desorption batch test method that will be used should be provided or referenced if the U.S. Environmental Protection Agency (U.S. EPA) approved it in the past.
Response: The batch test procedure that will be used is consistent with the procedure used during the EPA-approved Operable Unit 5 K₁ soil sampling and analysis project, "Project-Specific Plan for Operable Unit 5 K₁ Soil Sampling Analysis," Revision 0.
Action: The following text will be added on line 37, pg. 24: "The batch test procedure that will be used is consistent with the procedure used during the EPA-approved Operable Unit 5 K₁ soil sampling and analysis project."

4. Commenting Organization: U.S. EPA Commentor: Saric
Section#: 4.4 Pg.#: 27 Line#: 11 Code:
Original Specific Comment# 4
Comment: The stated dilution factor of about 4 that occurs in Well 31550 appears excessive indicating that the extraction system design may be inefficient. This lack of efficiency could result in the dilution and subsequent nontreatment of contaminated groundwater. Additionally, the groundwater modeling estimates presented in Appendix F of the "South Field Extraction System Functional Requirements and Design Basis Document" indicate that the dilution factor present in the extraction wells is considerably greater than 4. The screen length listed in Section 4.1 should be reevaluated so that minimal dilution results from extracting contaminated groundwater, while continuing to extract all groundwater that has a uranium concentration above 20 parts per billion (ppb).
Response: DOE agrees that the text concerning the predicted efficiency of the extraction wells, reported in the Project-Specific Plan (PSP), could be interpreted to mean that the system will be inefficient. This was not the intent of the text; DOE feels that the planned system will be very efficient.

The reported high dilution factor results from honoring the available data for the concentration of groundwater pumped from Well 31550. As is explained below, a pumping test conducted right after drafting the PSP supports that Well 31550 is much more efficient than the development data indicated.

The dilution factor presented on page 27 of the PSP was calculated using drilling and development data collected from Well 31550. Groundwater samples collected from the upper saturated portion of the Great Miami Aquifer, when Well 31550 was being drilled, had a measured total uranium concentration of 381 ppb at 67 feet below ground surface (bgs) and 16.3 ppb at 77 feet bgs. The water table was at 54 feet bgs, indicating that the 20 ppb total uranium plume was located within the upper 20 feet of saturation. An average concentration for the upper 20 feet of saturation (183 ppb) was calculated by assuming that the upper 5 feet was at 381 ppb, the next five feet at 200 ppb, the next 5 feet at 100 ppb, and the lower 5 feet at 50 ppb. During development of Well 31550 the discharged water had a concentration of approximately 48.1 ppb. This calculates out to roughly 26.3 percent of the estimated average concentration of the screened interval. This was the figure used in estimates made in the PSP.

000008

During May, Well 31550 was pumped at 700 gpm for 10,000 minutes to conduct a pumping test in the Great Miami Aquifer. The average total uranium concentration of the discharge water was 132 ppb, much higher than the development concentration of 48.1 ppb, indicating that the PSP estimates were too low; 132 ppb represents 72 percent of the estimated average concentration of the total uranium plume (183 ppb).

It is reported in Appendix F of the "South Field Extraction System Functional Requirements and Design Basis Document" that "Concentrations of uranium in the contaminated water from samples taken at monitoring wells in the area range from 300 ppb to 2000 ppb." The report goes on to state that modeling was done using a range of 6 ppb to 242 ppb. This gives a first impression that the system being designed is inefficient. This is not the case, however.

The eight extraction wells are positioned in parts of the plume that have total uranium concentrations ranging up to approximately 950 ppb. The higher total uranium concentrations are located under planned excavation areas where extraction wells cannot be positioned until excavation has been completed. This means that wells will be placed slightly downgradient and pumped to pull the uranium contamination out from beneath the excavation areas. The 6 ppb to 242 ppb total uranium concentration reported for the groundwater being pumped in the system also represents a blended concentration, not individual wellhead concentrations.

The methods being followed to locate and design well screens for the extraction wells should result in very efficient uranium removal. The horizontal extent of the total uranium plume is well documented in the Operable Unit 5 RI Report. Care is being taken to define the vertical extent of the total uranium plume during the drilling of each extraction well. Screens are being customized for each location to intercept only the 20 ppb plume.

The screen-length range given in Section 4.1 is not rigidly fixed. As the plan presents, efforts will be made to screen each extraction well across the 20 ppb plume to maximize efficiency and decrease dilution. Groundwater samples will be collected every 10 feet and analyzed for total uranium to determine the vertical extent of the 20 ppb plume. Sieve analyses will be collected to determine if a preferential textural pathway exists and, if present, the relation of the pathway to the uranium plume. Screens shorter than 20 feet or longer than 40 feet may be used, but only if the water quality and textural data supports their use. Given what is known about the plume, most screens will probably be 20 feet or less in length.

Action: None.

5. Commenting Organization: U.S. EPA Commentor: Saric
 Section#: 4.5 Pg.#: 28 Line#: 4 Code:
 Original Specific Comment# 5

Comment: The text states that the remedial action work plan will address specifics concerning the groundwater monitoring that will occur to evaluate how effective the extraction system is in meeting its objectives. These details should be presented early in the remedial design process so that they can be included as part of the design and can begin functioning during system startup. The text should be revised so that specifics concerning monitoring the extraction system effectiveness are incorporated in the remedial design work plan.

Response: DOE agrees; the text will be revised to state that objectives concerning monitoring the extraction system effectiveness will be incorporated in remedial design documents submitted to the EPA in accordance with the OU5 RD work plan. Monitoring requirements will also be specified in the O&M plan that will be submitted as a follow up to this PSP.

Action: The following text will be added to Section 4.5. "It is anticipated that monitoring the effectiveness of the recovery wells will include such items as:

- Monitoring the shape and volume of the 20 ppb total uranium plume to document how effective the remediation strategy is in not enlarging the plume.
- Monitoring to document whether or not total uranium concentrations greater than 20 ppb are avoiding capture by slipping around or beneath extraction wells.
- Monitoring for total uranium in pumped groundwater at individual wellheads to document how close the total uranium concentrations in the actual pumped groundwater are to predicted concentrations, and to decide whether or not the pumped water needs to be routed to a treatment system.
- Monitoring the specific capacity of each well to determine if efficiency is decreasing over time.
- Monitoring the shape and extent of the net radius of influence to determine how close the overall hydraulic impact to the Great Miami Aquifer is to modeled predictions.

Ohio EPA Comments

6. Commenting Organization: Ohio EPA Commentor: TMO
 Section#: Pg.#: Line#: Code: G
 Original Comment# 1
 Comment: The Ohio EPA would prefer to utilize the capabilities of our in-house Geographic Information Systems (GIS) to the fullest extent practicable. Please provide tape or disk copies of all maps or drawings produced in this document to the OFFO GIS manager, Randy Earle. We would like those maps and drawings which were produced with the Intergraph system as well as all other maps which were produced by other software packages. Mr. Earle may be reached by phone at (513)-285-6038.
 Response: Acknowledged
 Action: DOE will work with Mr. Earle to gather the requested information.
7. Commenting Organization: Ohio EPA Commentor: TMO
 Section#: Figure 1-2 Pg.#: 6 Line#: Code: C
 Original Comment# 2
 Comment: It is not clear why procurement of Pipeline System Contractor doesn't begin until October, 1995 and why this procurement should require six months. The procurement of the wellfield contractor takes less than six weeks.
 Response: The procurement planning and bidding cycle is nominally a 90- to 120-day cycle (public advertising, bid time, DOE review and approval, etc.). Also, lessons learned from the South Plume pipeline installation showed that pipe installation during winter weather is both counterproductive and costly. Therefore, we have chosen to delay a contract award on the pipeline until spring.
 The procurement of the wellfield contractor went faster because a competitively bid site drilling contract was already in place and an amendment to the task order was all that was required for this project. This resulted in a shortened procurement time.
 Action: None
8. Commenting Organization: Ohio EPA Commentor: TMO
 Section#: 4-3 Pg.#: 24 Line#: bullet 3 Code: C
 Original Comment# 3
 Comment: Please give a reference in the QAPP for the procedure to collect soil samples from the rotonomic core.
 Response: Section K.5.3 in the SCQ (which supersedes the QAPP) pertains to subsurface soil sampling. The rotonomic drilling bit is used to extract the soil sample. The sample is contained within a plastic sleeve. The sample is collected from the sleeved soil and each sample is labeled and chain of custody records, field collection reports and requests for laboratory analysis are prepared.
 Action: The following text will be added to Section 4.3 following line 13: "All sampling will be conducted in accordance with guidelines presented in the SCQ, Appendix K."
9. Commenting Organization: Ohio EPA Commentor: DDAGW
 Section#: 4.1 Pg.#: 17 Line#: Code:
 Original Comment# 4
 Comment: The document does not include the technical justifications for locating the proposed extraction injection wells in this system. The basis for the system design and well placement are unclear. The PSP fails to discuss re-injection and how the system was designed to evaluate re-injection during operations. Additionally, the document does not discuss how data generated will meet the needs of the technology development program. This section also makes no mention of the results of the recent pumping test, projected capture zones, or any detailed description of hydrogeologic properties.

000011

Response: The scope of this PSP was limited in nature, the intent was to set forth physical activities associated with an early start installation of eight extraction wells. It was felt that the rationale used to locate the wells had been previously presented in the Operable Unit 5 FS Report. A summary of what had been presented in the Operable Unit 5 FS was presented to both the EPA and OEPA on June 14. At this meeting EPA stated that they wanted to see a summary of the earlier modeling work which was conducted for, but not documented in the Operable Unit 5 FS Report. A follow up presentation was made to the agencies in Chicago on June 28. A report is being prepared that will provide details on the pumping test which was conducted in May in the South Field area. This report will be issued to the EPAs and should satisfy the request for information and results.

Action: An attachment that provides background on the selection of extraction well locations will be added to the PSP as requested by EPA; Attachment E will consist of the information presented to the agencies on June 14 and June 28.

10. **Commenting Organization:** Ohio EPA **Commentor:** DDAGW
Section#: 4.2 **Pg.#:** Figure 4-3 **Line#:** **Code:**
Original Comment# 7

Comment: We are unable to discern the reason(s) for the areas on the map being labeled "Area to be protected. Do not disturb. No excavation."

Response: The findings of the cultural and archeological resources survey deemed the labeled areas to be of prehistoric significance and possibly eligible for inclusion on the National Register of Historic Places.

Action: None

11. **Commenting Organization:** Ohio EPA **Commentor:** DDAGW
Section#: 4.3 **Pg.#:** 24 **Line#:** 24-30 **Code:**
Original Comment#

Comment: This description of ground water sampling is not clear. Does DOE intend to take samples from inside of a monitoring well using a packer and a well point, as stated in the paragraph, or will samples be taken from the bore hole, as the boring is advanced? Has a methodology for this sampling technique been defined in the QAPP?

Response: DOE agrees that the clarity of the sentence can be improved. The intent is to use a recognized approach to collect groundwater samples from within the boring as the boring is being drilled using a friction packer and wellpoint.

Action: The text on page 24, line 24 will be revised to read: "Groundwater samples will be collected (pumped) from each boring every 10 feet during drilling, beginning at the water table." The following text will be added to Section 4.3 following line 13: "All sampling will be conducted in accordance to guidelines presented in the SCQ, Appendix K."

12. **Commenting Organization:** Ohio EPA **Commentor:** TMO
Section#: 9.0 **Pg.#:** 30 **Line#:** **Code:** C
Original Comment# 11

Comment: Please provide a complete reference in this section for the document "General Methods for Remedial Operation Performance Evaluations for Pump-and-Treat Remediation". This document is referred to on page 4, line 22.

Response: The document title given in the PSP was not correct.

Action: The text will be revised to read "General Methods for Remedial Operation Performance Evaluations" (EPA 1992).

The following will be added to the references section; U.S. Environmental Protection Agency, 1992, "General Methods for Remedial Operation Performance Evaluations," EPA/600/R-92/002, Kerr Env. Research Lab, Ada, OK.

000012