

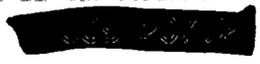
R-009-204.1

552

**ERA REMOVALS & REMEDIAL ACTIONS SOUTH
PLUME REMOVAL ACTION WORK PLAN**

03/21/90

**WMCO/WMCO
12
WORK PLAN**



E R A
Removals & Remedial Actions
South Plume
REMOVAL WORK PLAN

I. Introduction

One of the identified operable units, No. 5, of the FMPC includes those environmental media that serve as migration pathways and/or environmental receptors of radiological or chemical releases from the FMPC. Important elements of this operable unit are the on- and off-site area of the regionally important Great Miami Aquifer that exhibit elevated levels of uranium. Because of the off-site location of portions of the uranium plume within developed areas south of the FMPC and the associated potential threat to human health, the DOE is planning a removal action for this off-site area or "south plume" consistent with the implementation of a final remedial action.

II. Background

1.0 SUMMARY OF POTENTIAL THREAT

The regionally important Great Miami Aquifer underlies the FMPC site. This aquifer serves as a principal source of domestic, municipal, and industrial water throughout the region. Ground water in the regional aquifer beneath the FMPC and to the south of the plant boundary is contaminated with uranium. The extent and concentration of the uranium contamination is being defined under the RI/FS program, through ground water monitoring and the development of a ground water flow model. Preliminary results of the ground water flow/solute transport model indicate a calculated plume movement of approximately 150 feet per year.

The current belief is that the principal source of the off-site plume is historical releases of uranium contaminated water into Paddy's Run and the storm water outfall ditch. The on-site portion of the plume may be caused by a slower and more recent infiltration of uranium into the underlying aquifer from the Southfield area and possibly the fly ash piles. The probable sources are being addressed by the planned remedial actions of the other Operable Units.

The area of the South Plume study is indicated on Figure 1.

The ground water sampling methodology, as well as procedures for maintaining consistency, reliability and quality control are fully described in the Quality Assurance Project Plan (QAPP), volume 5 of the Remedial Investigation /Feasibility Study (RI/FS) Work Plan, Revision 3

(March 1988). The sample collection and analysis are conducted by International Technology Corp., a contractor on the RI/FS project. The IT Laboratories used for analysis are CLP certified. Additional information is available in the South Plume EE/CA document.

2.0 RELATED ACTIONS

Construction was completed on the second of two storm water retention basins in December of 1988. Stormwater runoff from the Production Area is now conveyed to these retention basins. The basins, designed to retain the runoff from a 10-year, 24-hour rainfall event, essentially eliminate the contribution of storm water from the Production Area to the outfall ditch.

The additional following actions have been taken to date:

The public has been notified of the South Plume contamination and well and cistern sampling has been performed by the Ohio Department of Health and on the behalf of DOE.

An alternate water supply has been provided to a private residence located along Willey Road to the north of the plume center.

An on-going ground water monitoring program is conducted for a number of wells in the South Plume area. The results of the ground water analysis are reported to the public.

Runoff from the FMPC Waste Storage Area flows west and southwest to Paddy's Run. A separate removal action is currently underway by the DOE to capture and divert the majority of this runoff to the Great Miami River following treatment. The schedule and costs for this removal action will be determined as this removal action proceeds.

3.0 ROLES OF PARTICIPANTS

Executive Order 12580 delegates Section 104 response authority to DOE for DOE sites. The state and local roles have been one of participation in the negotiations of the CERCLA Consent Agreement and technical information exchanges, and identification of state and local ARARs. The agreement between DOE and USEPA is currently being reviewed.

WMCO and ASI/IT, as subcontractors to DOE, will provide technical support and implementation for this removal action. Other participants include the owners of property on which this action will be taken and the neighborhood interested parties.

4.0 PROPOSED REMOVAL ACTIONS

An EE/CA has been prepared by ASI/IT for DOE to address the issues. The preparation of the EE/CA involved compilation of the RI data, providing a description of the site background and removal action alternatives, evaluating the alternatives with respect to effectiveness of protecting public health and the environment, and selection of a preferred alternative.

The preferred alternative recommended by the EE/CA involves an initial phase to provide an alternate water supply to two industrial users in the South Plume area. The final phase recommended by the EE/CA will be to design, construct, and operate a system to pump groundwater from the South Plume and discharge this groundwater through Manhole 175 to the Great Miami River.

5.0 RESULTS IF NO ACTION IS TAKEN

If left unattended, the plume of elevated uranium concentrations in ground water south of the FMPC would be expected to continue to migrate south-southeast along the regional ground water flow path in the buried channel aquifer. This would obviously extend the area of contamination to new potential users. The no-action alternative is not effective in preventing potential risk to public health via the drinking water pathway. For the no-action alternative, it is possible that the two industrial users of ground water from the south plume would continue to use this water.

Under the no-action alternative, the amount of uranium crossing the FMPC boundary would continue at the currently projected level until an on-site removal or remedial action was implemented as part of another operable unit. No lessening of environmental concentrations would occur except for the continued dispersion of the plume as it migrates, uncontrolled, toward the south-southeast. The potential also exists for mixing with another plume of uncharacterized contamination in the south plume area.

The recommended alternative would have no impact on sensitive habitats or the historical resources in the area. There would be no noise or air quality impacts related to this alternative and no change in existing land use practices or waste management requirements.

III. Preimplementation Activities

Activities will be undertaken to provide planning, training, design, and management for the removal actions as required to render the area reasonably free of hazard to personnel or the environment until the RI/FS process has been completed to determine if further action is required.

The following distinct engineering phases will be performed as listed by the prime participant to provide the necessary definition for development of accurate scope, cost, and schedule documents:

- 1. Project Planning WMCO
Included in this activity will be the preparation of detailed checklists, cost account plans, and work schedules (See Attachment I).
- 2. Removal Criteria ASI
Included in this activity will be the preparation of detailed criteria which is necessary to complete design documents
- 3. Design of Removal Action AMK
Included in this activity will be the preparation of detailed design documents for the removal construction work.
- 4. Training of Personnel WMCO
Included in this activity will be the preparation of detailed training plans and training for all affected workers.
- 5. Site Work RUST, Construction Mgr.
Included in this activity will be the implementation of detailed design documents for the removal construction work.

IV. SAMPLING AND ANALYSIS

As part of the on-going remediation efforts at the FMPC, the areas requiring removal actions were identified through field surveys and historical files. The South Plume is a result of contamination contribution through Paddy's Run recharge and may also be fed from groundwater contamination from other sources. The areas are to be sampled for radiological and HSL analyses.

The handling, documentation, storage, and analysis of the samples taken from these wells will be in strict compliance with the previously approved procedures and the RI/FS sampling plan. The scope of this work will not interfere with any other activity in this area. Reports will include tabulation of results as shown in the attached sample formats.

V. FIELD REMOVAL ACTIONS

The field activities will be those removal actions necessary to control or otherwise stabilize the affected area. This will specifically include the actions necessary to accomplish the work for compliance with CERCLA.

The activity will begin only after an approved plan and and personnel training is completed. The layout of the site and the method of accomplishment are key factors in keeping on schedule and within budget. Site specific actions are listed in Attachment II.

All excavated material that falls in the clean area from the equipment during the drilling process shall be cleaned up immediately and the area monitored by the R.S. technician to insure that no contaminated material was inadvertently left behind. All equipment used during the installation of equipment to be used in the removal action shall be monitored by an R.S. technician prior to being released from the excavation area. The excavated area is required to be functionally restored with clean soil for the backfill process. The area will be appropriately graded and provided with erosion control measures.

VI. HEALTH AND SAFETY PLAN

A safety analysis is to be prepared for the planned activity. A site specific Health and Safety Plan shall be developed for the planned activity and shall be designed to identify, evaluate, and control safety and health hazards, and provide for emergency response for hazardous operations. The site specific requirements are listed in Attachment III.

VII. QUALITY ASSURANCE

The overall quality assurance program at the FMPC is described in the site Quality Assurance Plan, FMPC 2139. The Quality Assurance Plan is based on the criteria specified in ASME NQA-1, Federal EPA Guideline QAMS-005/80 and DOE Orders 5700.6 and 5400.1. Specific quality assurance requirements will be incorporated into written and approved procedures and during personnel training. The Quality Assurance Department will conduct periodic surveillances to verify compliance.

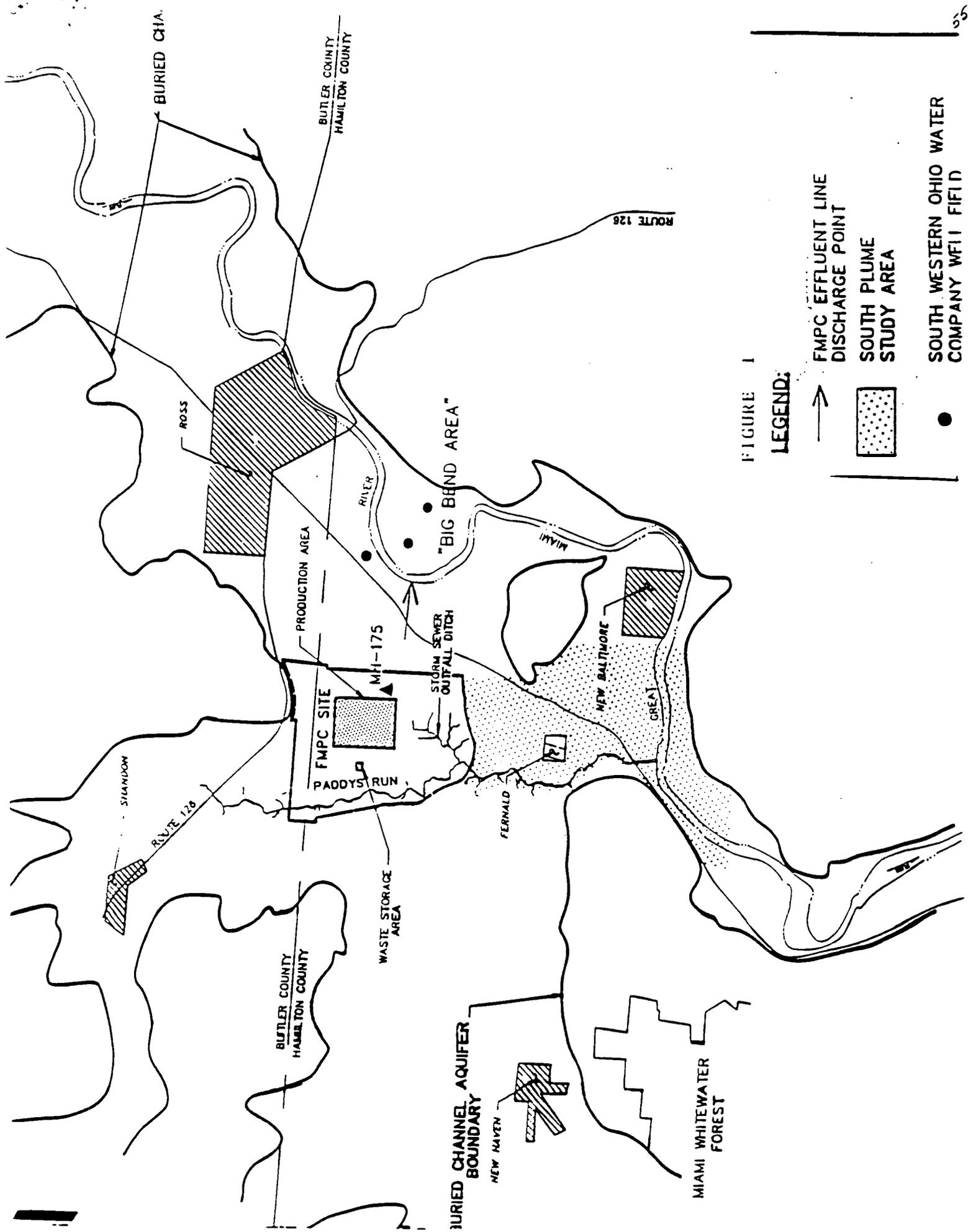


FIGURE 1

LEGEND:

- FMPC EFFLUENT LINE DISCHARGE POINT
- ▨ SOUTH PLUME STUDY AREA
- SOUTH WESTERN OHIO WATER COMPANY WFLI FIELD

ATTACHMENT I

Schedule Plan

MILESTONES

COMPLETION DATE

- Draft plan for comment
- Final plan to DOE
- Preliminary assessment
- Action memorandum
- Grid sampling
- Training and SOP's
- Design completion
- Completion of removal activities
- Certification samples
- Complete records and reports
- Closeout

- NEED TO DEVELOP SPECIFIC ACTIONS FOR EACH AREA -

ATTACHMENT II**Specific Activities**General

All areas will require similar documentation and control procedures. This removal action will include two phases. As recommended by the EE/CA, the initial phase will provide an alternate water supply to two industrial users, the final phase will be the installation and operation of a pumping and discharge system, and on-going monitoring program will be in effect during the planned __ year operation.

Alternate Water Supply

Based on the historical useage of area and the sample results to date, the following activities will be performed:

Albright & Wilson

- Contract Negotiations
- Title I/II Design
- Select Well Location
- Drill Test Well
- Complete Well
- Complete Piping
- Perform Acceptance Test
- Turn over system to A&W

Delta Steel

- Contract Negotiations
 - Title I/II Design
 - Inspect Existing Well
 - Increase Well Depth
 - Determine Need for Additional Storage Capacity
 - Complete Storage Tank if needed
 - Perform Acceptance Test
 - Turn over system to Delta Steel
- 4

Pump and Discharge System

Provide a system to remove groundwater from the leading edge of the contaminated plume and return the water to the FMPC for discharge to the Great Miami River.

- Contract negotiations with property owners
- Title I/II Design
- Inspect Existing Wells
- Determine need for additional wells
- Install new wells
- Complete pumping and piping system
- Perform Acceptance Test
- Turn over system to Operations

Monitoring Program

Sampling

Sampling grid layout from permanent benchmark
Input of sample results into site database

Documentation

Data evaluation
Periodic reporting on status

SAMPLE

TABLE 2
RADIO-ANALYTICAL DATA
from the
SITE VICINITY

NOTE: See accompanying map for sample locations

(Values given are millirem)

LOCATION	DESCRIPTION	ANALYZER HEIGHT	
		CONTACT	3 FEET
1	Roadside	.002	.002
2	Roadside (down incline)	.003	.003
3	Roadside	.002	.002
4	Manhole	.003	.003
5	Above manhole	.003	.003
6	Boundary	.002	.003
7	Within Boundary	.003	.003
8	Within Boundary	.004	.004
9	Within Boundary	.005	.004
10	Within Boundary	.004	.004
11	Within Boundary	.004	.004
12	Within Boundary	.004	.004
13	Within Boundary	.004	.004

SAMPLE

TABLE 4

(Values shown are ppm)

Certification Sample No.	TOTAL URANIUM	TOTAL THORIUM
	-----	-----
1	18	<23
2	27	<23
3	27	<23
4	<11	<23

The information in the table indicates that the levels of uranium in soil in the excavation/study area were successfully reduced to levels below the established removal criteria.

A radiation dose rate test (with a Ludlum Model 19) was run over the area after the site was restored to its original configuration. The results of that test are presented in Attachment X.

On the basis of the results of the certification sampling and the radiation levels, no further excavation is required to meet the criteria employed.

ATTACHMENT III

Health and Safety Plan

General

All areas will require similar documentation and control procedures. This will include some or all of the following:

Background

- Historical useage of area
- Site survey
- Hazard or health risk analysis
- Personal protective equipment
- Medical Surveillance
- Air monitoring, frequency and types
- Decontamination
- Training
- Site control
- Emergency response
- Confined space entry
- Spill containment

- NEED TO DEVELOP SPECIFIC ACTIONS FOR THE AREA -