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AGENDA AND HANDOUTS FROM NOVEMBER 12, 1994 TASK FORCE MEETING

11/12/94

APPLEGATE TASK FORCE
50
AGENDA

FERNALD CITIZENS TASK FORCE

A U.S. DEPARTMENT OF ENERGY SITE-SPECIFIC ADVISORY BOARD

Chair:

John S. Applegate

Members:

James Bierer
Marvin Clawson
Lisa Crawford
Pam Dunn
Dr. Constance Fox
Guy Guckenberger
Darryl Huff
Jerry Monahan
Tom B. Rentschler
Robert Tabor
Warren E. Strunk
Thomas Wagner
Dr. Gene Willeke

Alternates:

Russ Beckner
Jaokie Embry

Ex Officio:

J. Phillip Hamric
Graham Mitchell
Jim Saric

AGENDA

November 12, 1994

1. *Time and Place*

The next regularly scheduled meeting of the Task Force will be on Saturday, November 12, 1994, from 8:30 a.m. to 12:30 p.m., at the Joint Information Center, 6025 Dixie Highway, Fairfield, Ohio. We will begin the meeting promptly at 8:30.

2. *Subjects*

8:00	Continental breakfast (optional)
8:30	Call to order
	Approval of minutes
	Chair's remarks
	Status of action items and initiatives
8:45	Consortium for Environmental Risk Evaluation project (Pam Dunn)
8:55	Review new information
9:15	Grazing issues and future use options
10:00	Break
10:15	Future use discussion (continued opportunity for public participation)
11:15	Discussion of Interim Report
12:15	New Business
12:30	Adjourn

3. *Documents*

The documents and other materials relevant to the meeting's subjects are being developed by the Task Force staff. They will be distributed at the meeting.

4. *Chair's Announcements*

5. *Other Meetings of Interest (calendars enclosed)*

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November 1994

PUBLIC PARTICIPATION

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
6	7	1	2	3	4	5
13	14	8 7:00pm OU2 FS/PP Public mtg. - Plantation	9	10	11	12 8:30am Fernald Citizens Task Force Meeting
20	21	15 7:00pm UNH Public meeting - Crosby Elementary school	16	17 7:30pm FRESH meeting - Venice Presbyterian Church	18	19
27	28	22	23	24	25	26
		29	30			

December 1994

PUBLIC PARTICIPATION

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
4	5	6	7	8 5:30pm Fernald Citizens Task Force Meeting-(Tentative)	9	10
11	12	13	14	15	16	17
18	19	20	21	22 FRESH - NO MEETING THIS MONTH	23	24
25	26	27	28	29	30	31

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FERNALD CITIZENS TASK FORCE ⁶²⁶²

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MEMORANDUM

TO: John S. Applegate
FROM: Pam Dunn
DATE: November 10, 1994
RE: Report on CERE Workshop 10/18 and 19th

The purpose of this workshop was to obtain external input on the Consortium for Environmental Risk Evaluation (CERE) Risk Evaluation process. The CERE is a Tulane/Xavier Universities program for DOE to provide an independent evaluation of risks, costs, and public concerns for remediation, waste management and decontamination and decommissioning associated with compliance agreements and to assess how well the weapons complex risks and costs are understood. The information developed from this program will be used by DOE's Office of EM and Office of Integrated Risk Management (EM-6) as background for a June 1995 Report to Congress on risk and costs associated with cleaning up the weapons complex. (This report to Congress is required under Public Law 103-126, enacted on 10/28/93.) The six sites being studied are: Fernald Environmental Management Project, Hanford Site, Idaho National Engineering Lab, Oak Ridge Reservation, Rocky Flats Plant, and Savannah River Site.

Numerous issues were discussed during the workshop concerning the CERE Process/Program. The following are issues which require additional attention. (Note: This summary is not inclusive of all issues discussed, but rather areas which warrant further review and/or monitoring.)

COMMUNICATION

At this juncture in the program there has been limited interaction between CERE and the SSABs, the community, and state and federal regulators. Currently CERE has been relying on comments contained within DOE documents. While this is one avenue for reviewing public and regulator concerns, these documents are activity specific and not representative of views

and concerns pertaining to the site as a whole. Direct interaction with the above listed parties could provide additional insight into the particularities of each site and avoid a report which could potentially be in conflict with recommendations from the SSABs and the local focus associated with each site.

There also appears to be a difference in opinion and interpretation of the ranking method and terminology used within the program. This is not only true for the participants at the workshop, but between the site teams and program coordinators. A standard definition and /or explanation of this needs to be identified and implemented by everyone involved with this program to provide consistency in the report. This would also assist in clarifying difference in interpretation of terminology between the site teams and representative of each site, *e.g.* the South Plume was classified as historic, whereas we felt it to be continual.

PROCESS Qualitative Risk Evaluation (QRE) Approach and Methodology

Part of the QRE procedure is a "screening down" process which will sort from 1000's of problem areas down to 100s. While this is intended to give a status of each site and not attempt to prioritize, it does resemble a hazard ranking system. The necessity of this procedure and the fate of the problem areas not included should be stated in the reports, so as to address this possibility. Again in the comparison of issues at each site care should be taken to reiterate that this is not an attempt to rank the sites, but to illustrate the "big picture."

There should also be included within the context of this report the basis for excluding certain risk (*e.g.*, transportation, disposal) at this phase of the project.

GENERAL

- It would be helpful in reviewing this program if a list of objectives relevant to each phase of the program were provided.
- There exists the potential for misuse of this report, *e.g.*, ranking of sites: use in determining/establishing budgets. While this may not be the intent

Memorandum
November 9, 1994
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of this report, it is a real possibility and should be addressed so that it is not misused by people who may wish to do so.

- Various entities involved with this program have previously been associated with DOE, EPA, and other government agencies. While it is difficult to find qualified organizations relevant to this program without prior association to these agencies this should be addressed in the report. This is not intended to imply that this diminishes the independence factor this report was to provide, but rather to enhance the issue of an independent evaluation by confronting this issue in the beginning phase of the program.
- The rationale for referring to the sites as installations, the term installation is associated with military activities rather than an Em/ERWM site.
- In conclusion it must be noted that the representatives from the CERE program appear willing to listen and hopefully respond to the concerns and criticism resulting from this workshop. It is a positive step that this workshop was held and external input was sought. However, given the complexity of the issues involved, and the limited time given to provide this report, this interaction between the program personnel and the workshop participants is essential.

C

E Consortium for Environmental Risk Evaluation**R** *A Tulane/Xavier Program for the U.S. Department of Energy***E**

Tulane/Xavier CERE Program

Qualitative Risk Evaluation Fact Sheet

The Tulane/Xavier Consortium for Environmental Risk Evaluation (CERE) is a partnership of universities and corporations established to conduct a comprehensive, technically sound, independently managed, and credible review and evaluation of existing risks, costs, and public concerns for remediation, waste management, and decontamination and decommissioning associated with compliance agreements linked to cleanup of the U.S. Department of Energy (DOE) weapons complex. Information developed in the CERE program will be used by the DOE Office of Environmental Management (EM)/Office of Integrated Risk Management (EM-6) as background for a June 1995 report to Congress describing the risks and costs associated with cleaning up the weapons complex. (This report to Congress is required under Public Law 103-126, enacted on October 28, 1993.) Managed by Tulane University, in partnership with Xavier University, the CERE program is funded by EM and directed by Dr. James L. Regens.

Background

Weapons Complex Contamination and Cleanup

The federal government's nuclear weapons research, development, testing, and production activities during the past 50 years have resulted in radioactive, hazardous, and mixed-waste contamination of groundwater, soil, sediments, and surface water. Factors contributing to this contamination problem include manufacturing processes that are inherently waste-producing; the historical emphasis on national security (that is, weapons production) at the expense of health and environmental considerations; ignorance of and lack of attention to the consequences of environmental contamination; and self-regulation, free of independent oversight or meaningful public scrutiny. Affected Department of Energy (DOE)--or predecessor agency--sites and facilities encompass more than 3,300 square miles in 34 states and territories.

As DOE makes the transition from weapons design and production to environmental remediation and restoration, the department must develop reliable means of defining and understanding health and environmental risks so remediation and restoration activities and expenditures can be appropriately directed. At present, the comprehensiveness, reliability,

and even relevance of some weapons complex risk assessments and remediation cost estimates are in question. This situation is exacerbated by a credibility gap that exists both because segments of the public reject risk and cost assessments conducted by the organization that created the problem and because of insufficient meaningful involvement of interested and affected parties.

EM Program

The DOE Office of Environmental Management (EM) is responsible for identifying and reducing health and environmental risks and managing wastes. The largest environmental management endeavor in the world, EM must address a complex interplay of risks, costs, and public concerns, while meeting the requirements of various federal, state, and local health and environmental laws, regulations, and compliance agreements. DOE currently retains oversight for its own worker health and safety programs, but has committed to meeting Occupational Safety and Health Administration (OSHA) guidelines.

In 1994, DOE established the Office of Integrated Risk Management (EM-6). The mission of this office is to develop policy options and a supporting framework for risk-based environmental management decisions, to

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integrate risk-related activities in EM, and to facilitate EM's coordination with other DOE departments concerning risk--all with meaningful involvement of stakeholders.

DOE's assessment and cleanup activities for each site are to be conducted according to a procedural framework established in compliance agreements (Federal Facility Agreements) among DOE, the Environmental Protection Agency (EPA), and the state. Intended to ensure that sources of contamination are thoroughly investigated and that timely remedial action is undertaken, these agreements are structured to identify relevant criteria, laws, and standards; establish cleanup milestones; and facilitate effective public participation in the cleanup process.

Public Policy Considerations

In planning and performing the cleanup of the weapons complex, EM must consider a number of important factors, including health and environmental risks; future uses of contaminated sites; cleanup costs; availability of effective cleanup technologies; compliance with national, state, and local laws, regulations and agreements; and other issues of concern to the public, such as economic redevelopment and ethical responsibilities to future generations.

The challenge of balancing these factors is complicated by a general lack of agreement as well as a lack of scientific consensus concerning some of the basic terms of the discussion, particularly how great the risks and costs of cleanup are or could be. The CERE program's independent evaluation of risks, costs, and public concerns for remediation, waste management, and decontamination and decommissioning associated with compliance agreements is designed to assess how well the weapons complex risks and costs are understood.

Tulane/Xavier CERE Program Overview

Program Purpose

The purpose of the CERE program is to provide DOE with: (1) an independent, credible evaluation--developed with the meaningful involvement of external experts/interested and affected parties--of immediate threats and long-term risks to the public, workers, and the environment caused by remediation, waste-management, and decontamination and decommissioning associated with compliance agreements at weapons complex sites and facilities; (2) documentation,

development, and evaluation of the cost estimates for EM-Managed activities; and (3) a review of the public concerns related to risks associated with those activities.

Program Focus

The CERE program will focus on three areas:

Qualitative Risk Evaluation

The CERE program will systematically compile and summarize available information pertaining to risks at six major DOE nuclear weapons complex sites, using existing quantitative and qualitative risk assessments and related data and analyses. In addition, the CERE program will identify information gaps and important uncertainties.

In making judgements concerning immediate threats and long-term risks to community health, to the health of site workers, and to the integrity of ecological systems at or near the sites, the CERE program will evaluate the nature, quality, and extent of information used and will assess the significance of information gaps and uncertainties.

While the major emphasis will be on risk issues addressed in existing compliance agreements, the CERE program qualitative risk evaluation will not overlook risk issues that are potentially important to future DOE EM program management for the sites. Accidental releases related to EM-managed activities also will be noted.

Specific elements of the CERE program qualitative risk evaluation include:

- Off-site contamination and associated current and/or long-term risk for human and/or ecological receptors.
- On-site contamination that is currently moving off site and the potential for increasing exposures to humans and/or ecological receptors.
- On-site conditions--either of immobile contamination or of uncontaminated areas--for which risk considerations will necessarily need to be integrated with future-use considerations, remedial options, and community concerns.
- Worker risks from current and potential future exposures related to EM-managed activities.

In evaluating existing information regarding potential site-related risks, the CERE program will consider numerous factors, including the extent of contamination, mobility, toxicity, bioavailability, and exposure potential. The CERE program will identify the implications of its qualitative risk evaluation findings with regard to future data requirements, analysis, and potential revision of risk assessment procedures.

The CERE program will not conduct new quantitative risk assessments or collect new site characterization data.

Cost Estimation

The CERE program will assist DOE in the documentation, development, and evaluation of remediation cost estimates associated with EM-managed activities to support the Baseline Environmental Management Report (BEMR).

Public Concerns

The CERE program will identify the concerns of stakeholders, including minority and disadvantaged groups, to provide an independent review of concerns about risks associated with EM-managed activities at six major DOE sites.

Qualitative Risk Evaluation Scope

The CERE program will work with both DOE staff and external experts/interested and affected parties to ensure that the qualitative risk evaluation is credible and independent. The CERE program--which does not duplicate the tasks outlined in the notice of program interest (NOPI) published in the *Federal Register* on April 6, 1994 (59 FR 8462)--will proceed in two phases:

Phase I: June 1994-May 1995

Review and evaluate immediate threats and long-term risks at six DOE sites:

Fernald Environmental Management Program	Fernald, Ohio
Hanford Site	Richland, Washington
Idaho National Engineering Laboratory	Idaho Falls, Idaho
Oak Ridge National Laboratory	Oak Ridge, Tennessee
Rocky Flats Plant	Jefferson County, Colorado
Savannah River Site	Aiken, South Carolina

These sites were selected because of the high likelihood that site-specific information will have significant value for DOE's environmental restoration and waste management activities. Each of these sites has a compliance agreement, offers readily available data regarding risk, and is on the National Priorities

List (NPL). In addition, together these six sites receive a substantial percentage of the total EM budget.

Phase II: Beginning June 1995

Review and evaluate remaining sites, while performing follow-up analyses of Phase I sites.

External Involvement in the Qualitative Risk Evaluation

External involvement in the CERE qualitative risk evaluation will be accomplished primarily through a series of workshops, attended by national and local experts in risk assessment in general and in risk assessment as it pertains to each of the six sites. Site experts will include state and EPA regulators, along with others who are recognized by interested and affected parties as knowledgeable and credible. The CERE risk team will contact DOE public involvement personnel, members of Tribes, site-specific advisory boards (SSABs), labor unions, and other advisory and interest groups to ask for suggestions about whom to invite to the workshops.

As the CERE study progresses, the risk evaluation team will continue to confer with the external experts and others who have expressed an interest in participating in the study. The risk evaluation team also will continue to interact with and update groups such as SSABs, Tribes, labor unions, and others on the CERE risk evaluation process and on how the input of external experts has been used.

CERE Risk Workshops

- | | |
|---|------------------|
| Workshop 1: October 18-19, 1994 | Phoenix |
| Focus: Assessment of the feasibility and appropriateness of the CERE qualitative risk evaluation methodology. | |
| Workshop 2: November 29-30, 1994 | Salt Lake City |
| Focus: Discussion of preliminary study results and information gaps. | |
| Workshop 3: February 15-16, 1995 | Washington, D.C. |
| Focus: Review of draft CERE risk report findings. | |

External Involvement vs. Public Concerns Review

External involvement in the risk aspect of the CERE program will be coordinated with but distinct from the involvement of interested and affected parties in the analysis of public concerns. External involvement in the qualitative risk analysis, under the direction of Tulane University, will feed the information and views of a relatively small number of external experts into the risk analysis. The public concerns review, under the direction of Xavier University, will cast a far wider net in an effort to learn about the concerns of the

entire public, including previously under-represented and disadvantaged groups.

Tulane/Xavier CERE Program Organization

Tulane University, in partnership with Xavier University, is responsible to DOE for program performance and results in each focus area. Tulane University is providing the principal investigator (program manager); oversight, coordination, and integration of the qualitative risk evaluation and cost estimation focus areas and site-specific results; and quality-assurance/quality-control for the program. Xavier is providing a co-principal investigator and personnel who will ensure that the concerns of stakeholders, including minority and disadvantaged groups, receive an independent review. Xavier is organizing focused activities to identify and track public concerns associated with the cleanup of major DOE sites and facilities.

In addition, the Medical University of South Carolina, acting in concert with Tulane University Medical Center, is reviewing and evaluating existing assessments and related information about worker health risks associated with cleanup of major DOE sites and facilities to identify occupational hazards and exposures as part of the qualitative risk evaluation.

Program Management

Program Manager/Principal Investigator

Dr. James L. Regens
Freeport-McMoRan Professor and Director
ENTERGY Spatial Analysis Research Laboratory
School of Public Health and Tropical Medicine
Tulane University Medical Center
504 586-3824 fax 504 585-6954

Co-Principal Investigator

Dr. Sally O'Connor
Director
Center for Environmental Programs
Xavier University
504 483-7508 fax 504 488-7977

CERE Consortium Members

In addition to Tulane, Xavier, and the Medical University of South Carolina, the CERE consortium includes the University of Cincinnati; Creighton & Creighton; Duke University; Decision Focus, Inc.; Erin Engineering; the University of Florida; Front Range Community College; Heritage College; ICF Kaiser; Idaho State University; Illinois Institute of Technology; JK Research Associates; Labat-Anderson; ManTech Environmental; the University of New Orleans; Sciences International; the University of South Carolina at Columbia; Southern University; the University of Tennessee; Walk, Haydel; and the Waste Policy Institute.

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WHAT IS A SOLE SOURCE AQUIFER?

A Sole Source Aquifer (SSA), which has been designated by the U.S. EPA, is an aquifer needed to supply 50 percent or more of the drinking water for an area and for which there are no reasonably available alternative sources should the aquifer become contaminated.

OKI's PROPOSED DESIGNATED/PROJECT REVIEW AREA

WHAT ARE THE BENEFITS OF SSA DESIGNATION?

- Heightened local public awareness of the aquifer and the need to protect it
- EPA review of proposed federal financially-assisted projects that could potentially contaminate the aquifer
- Eligibility to apply for possible federal funding to develop innovative land use management programs and other strategies to protect groundwater in particularly sensitive settings

THERE ARE FOUR STEPS IN THE DESIGNATION PROCESS:

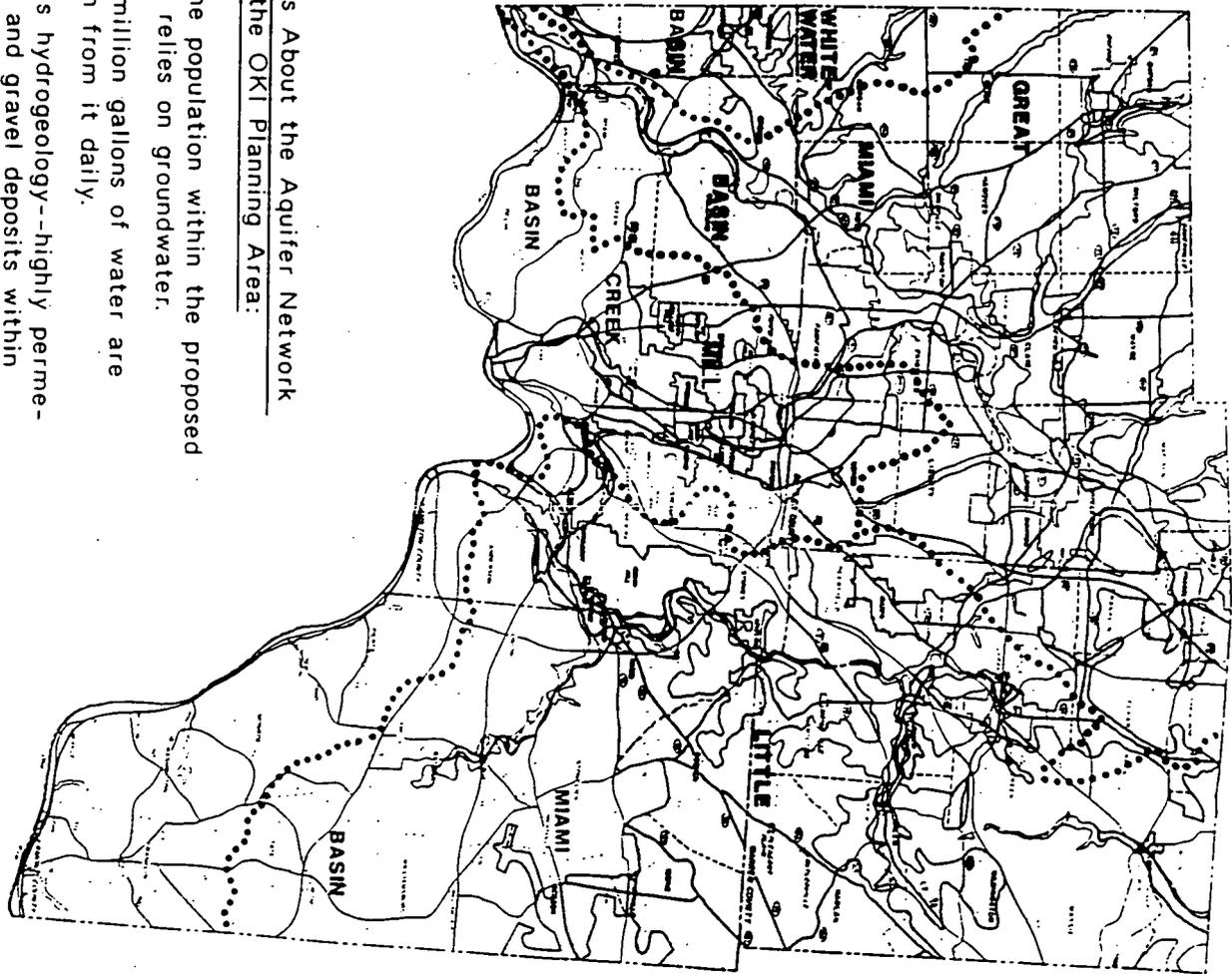
- OKI's preparation of a petition
- EPA's initial review/completeness determination
- EPA's detailed review/technical verification
- Final designation determination by the EPA Regional Administration

One of the most extensive buried valley aquifer networks in North America, the Great Miami Buried Valley Aquifer System, underlies portions of 13 Ohio counties. OKI is currently seeking SSA designation for the southern portion of the aquifer system in Butler, Clermont, Hamilton and Warren Counties. The northern portion of the aquifer, extending as far north as Logan County, received SSA designation in April 1988.

- 83% of the population within the proposed SSA area relies on groundwater.
- Over 73 million gallons of water are withdrawn from it daily.
- The area's hydrogeology--highly permeable sand and gravel deposits within confining borders of bedrock--makes the aquifer extremely vulnerable to contamination.

- Currently developed alternative water sources are inadequate to replace the amount of water supplied by the aquifer system.

Key Facts About the Aquifer Network in the OKI Planning Area:



LEGEND

- Proposed Area
- Drainage Basin Boundary



SOLE SOURCE AQUIFER GLOSSARY

AQUIFER

Geological formation, group of formations, or part of a formation that is capable of yielding a significant amount of water to a well or spring

AQUIFER SERVICE AREA

Area above the aquifer and including the area where the entire population served by the aquifer lives

DESIGNATED AREA

Surface area above the aquifer and its recharge area(s)

PROJECT REVIEW AREA

Area within which Federal financially-assisted projects will be reviewed, which could include all or part of the designated area and streamflow source area(s)

RECHARGE AREA

Surface expression of the area where the bulk of precipitation or surface water replenishes the aquifer

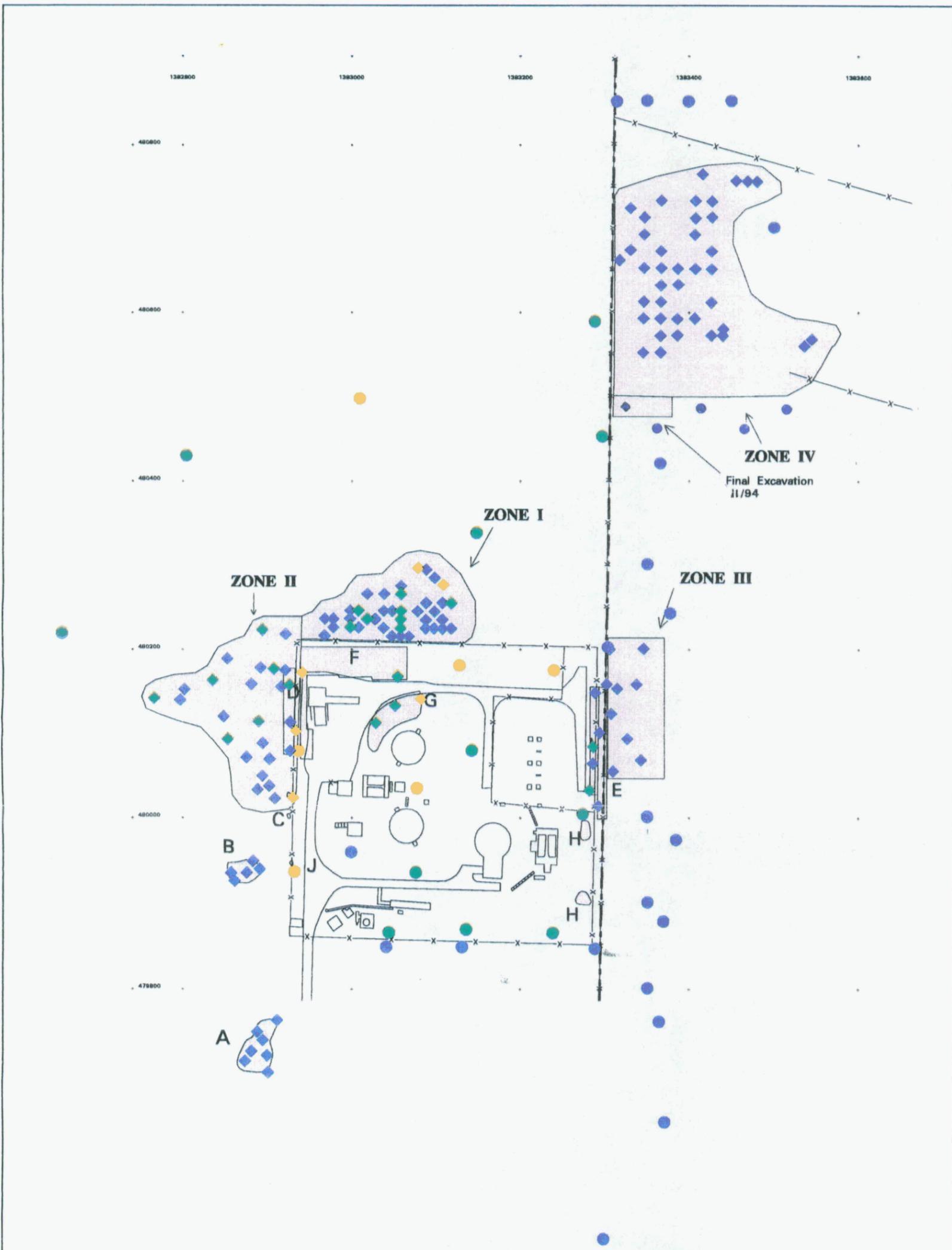
FOR ADDITIONAL INFORMATION, CONTACT:

Ohio-Kentucky-Indiana Regional
Council of Governments
801-B W. Eighth Street
Cincinnati, Ohio 45203
(513) 621-7060

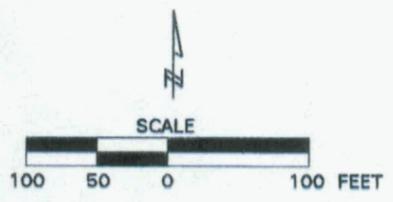
SOLE SOURCE AQUIFER DESIGNATION:

What and Why





- Total Uranium ≤ 50 ppm
- Total Uranium > 50 ppm and ≤ 150 ppm
- Total Uranium > 150 ppm and ≤ 450 ppm
- Total Uranium > 450 ppm
- Excavation Areas
- - - FEMP Boundary
- X-X Fence
- Removal Action No. 14 Sampling Points
- ◆ Removal Action No. 14 Verification Sampling Points



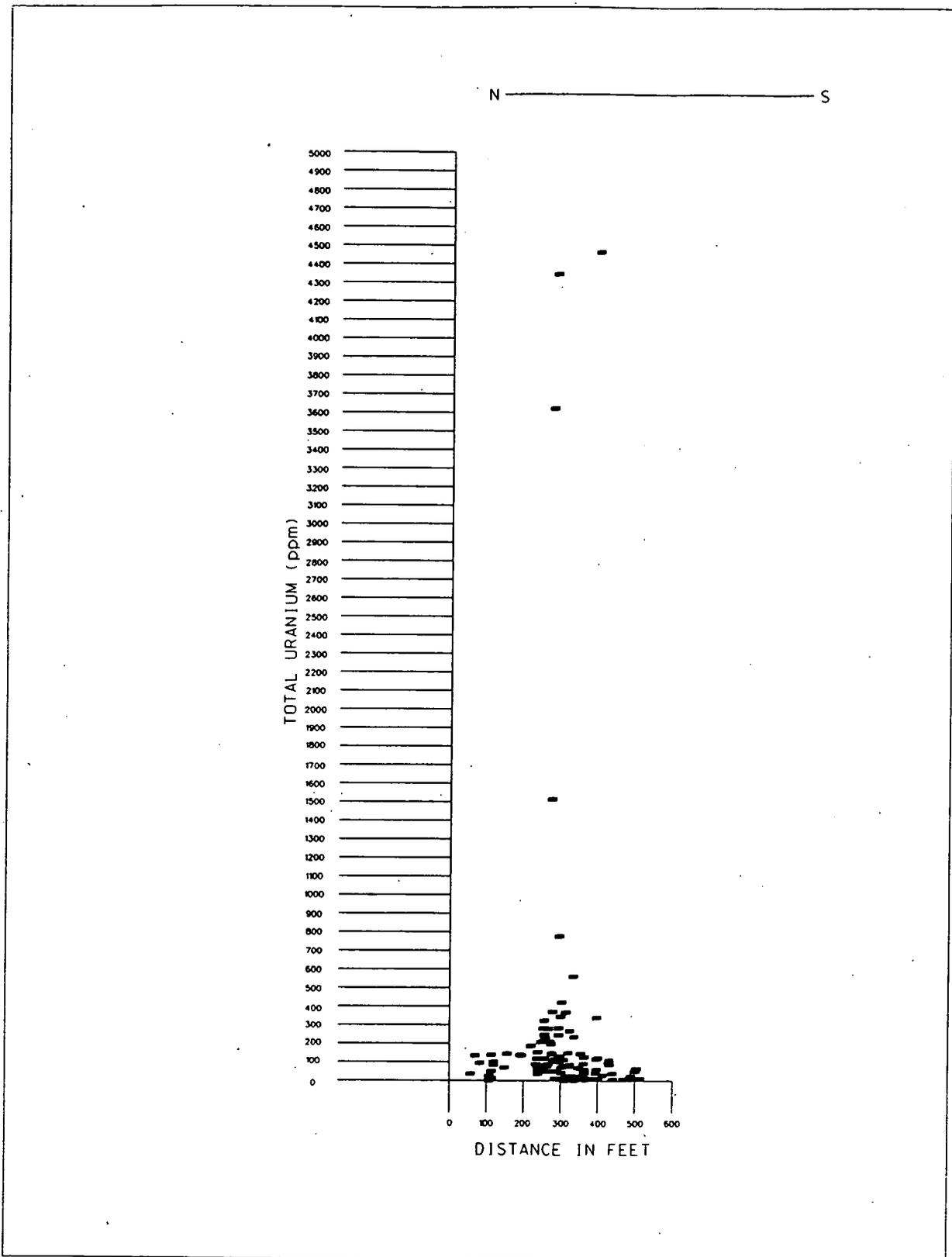
**URANIUM CONCENTRATIONS IN SOILS SURROUNDING
SEWAGE TREATMENT PLANT FOLLOWING REMOVAL ACTION**

VI-11

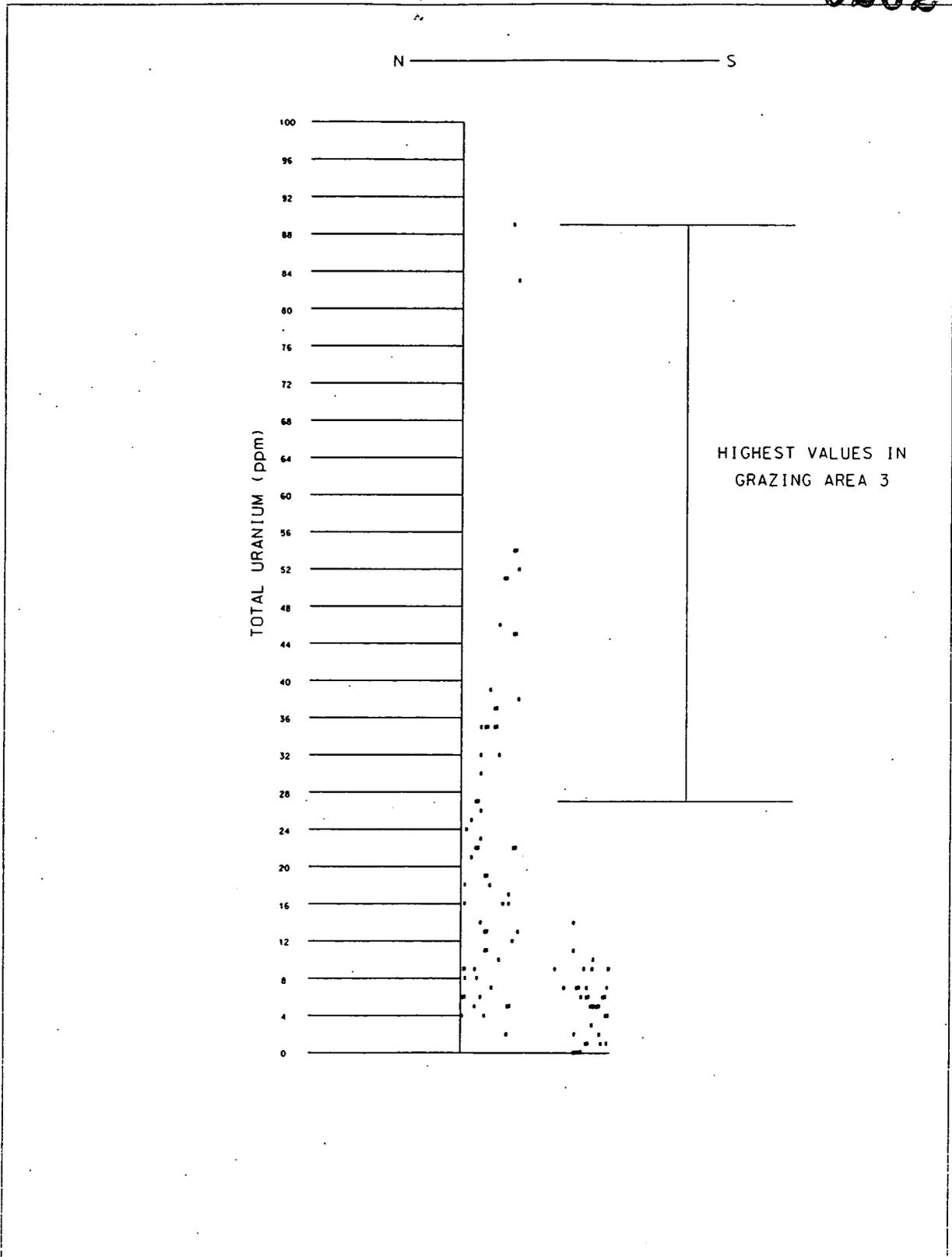
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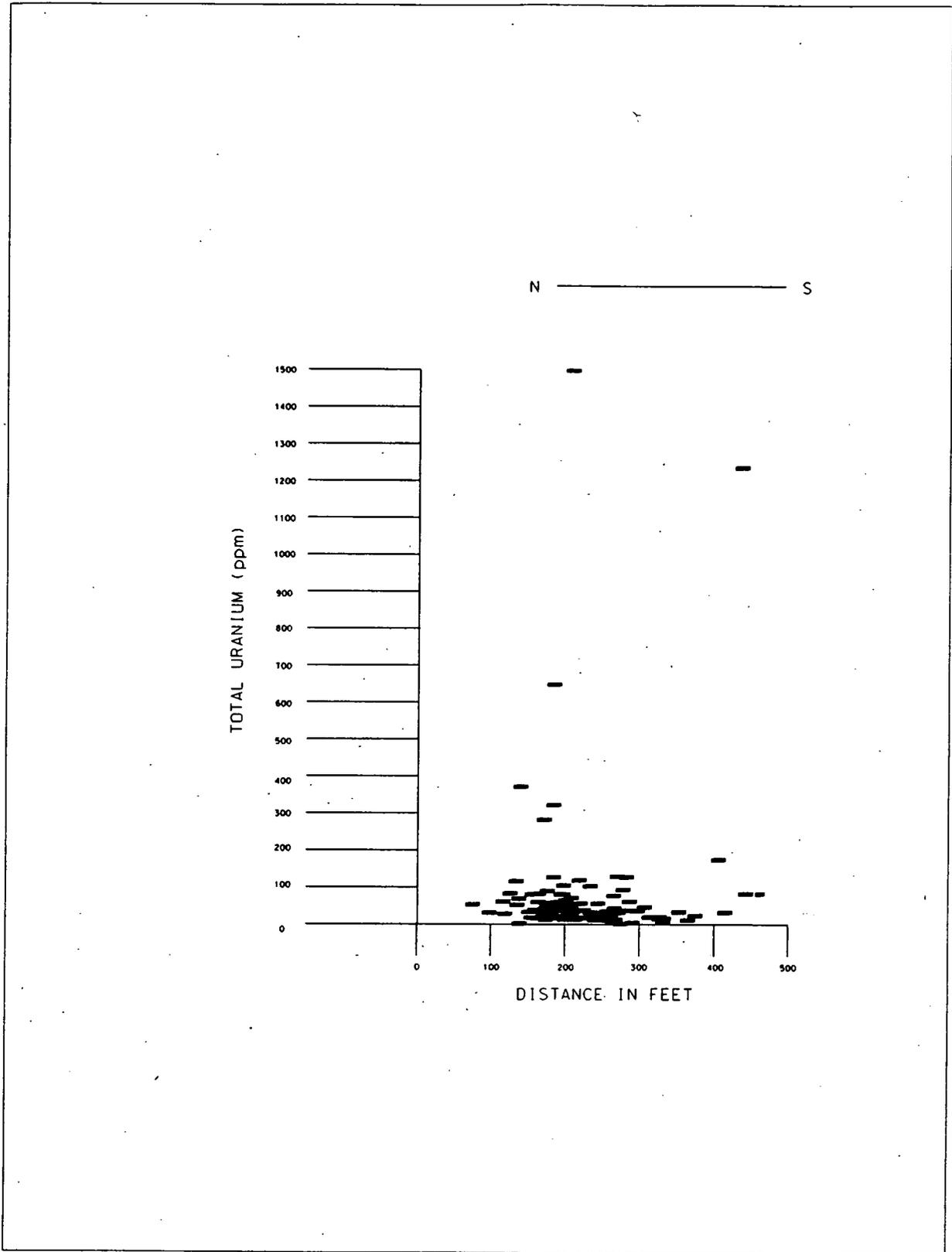
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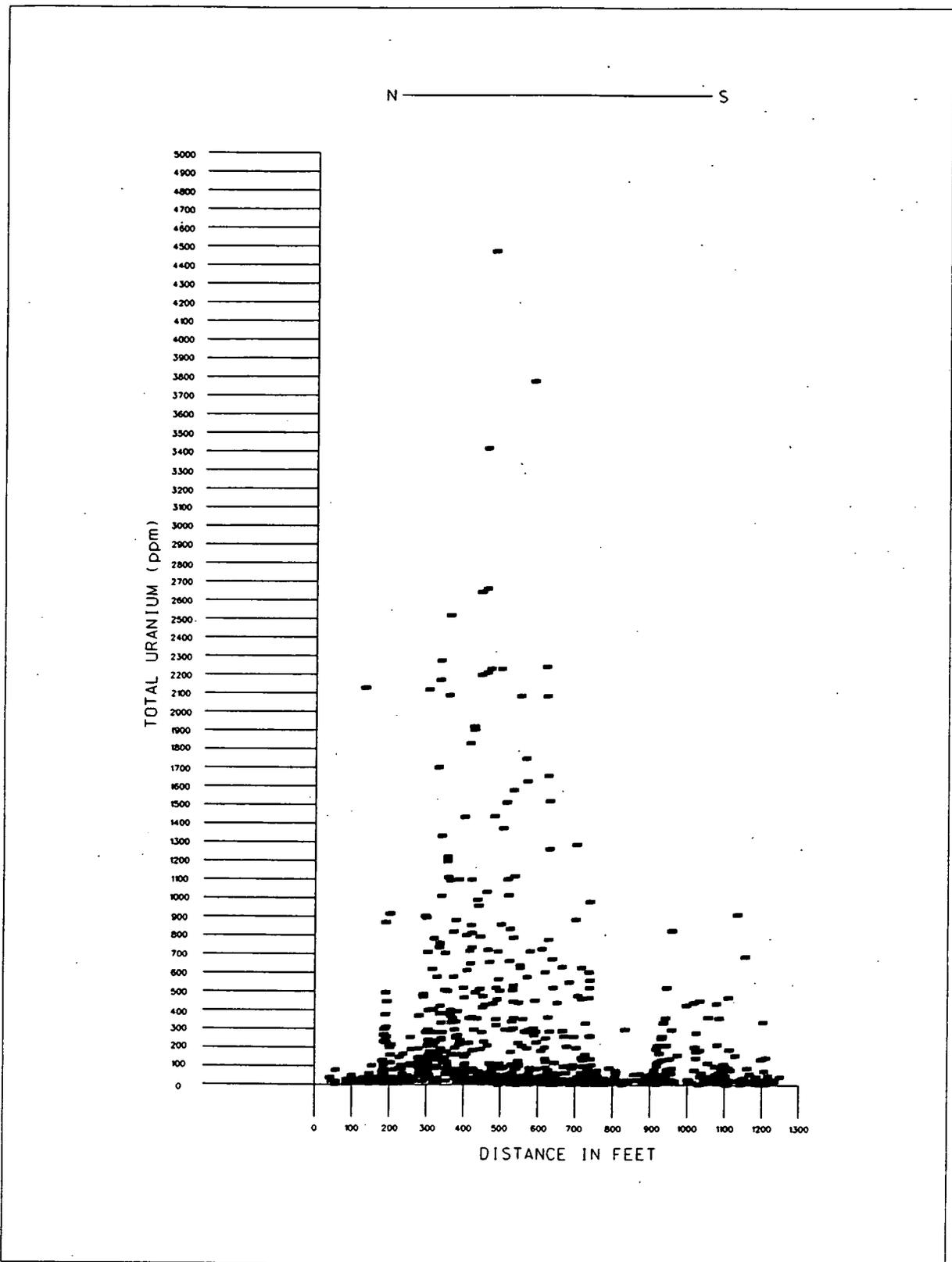
**PLOT OF TOTAL URANIUM CONCENTRATIONS:
FORMER PRODUCTION AREA SOILS**



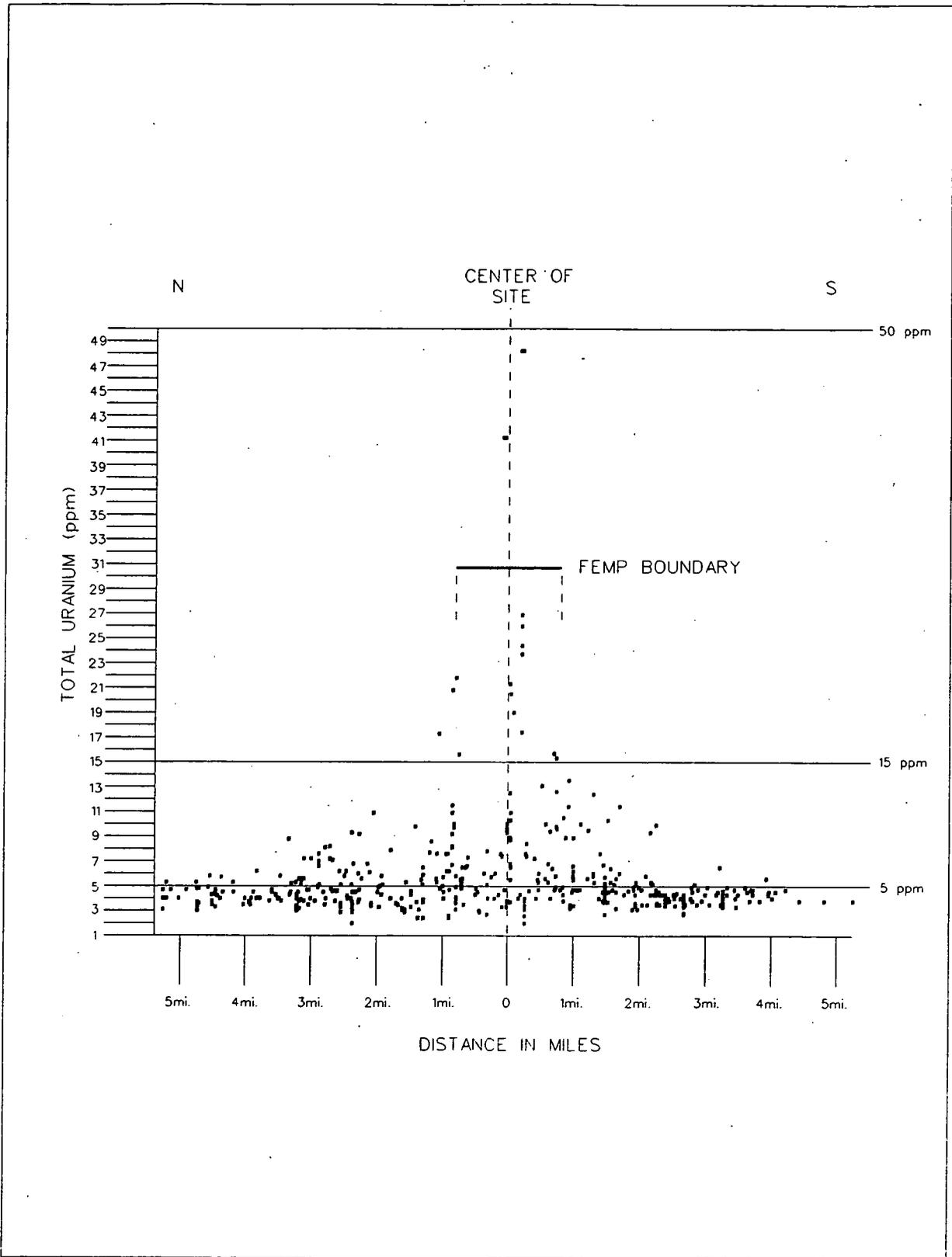
**PLOT OF TOTAL URANIUM CONCENTRATIONS:
LEASED GRAZING AREAS SOIL**



**PLOT OF TOTAL URANIUM CONCENTRATIONS:
FLYASH PILE AREA SOILS**



**PLOT OF TOTAL URANIUM CONCENTRATIONS:
SEWAGE TREATMENT AREA SOILS**



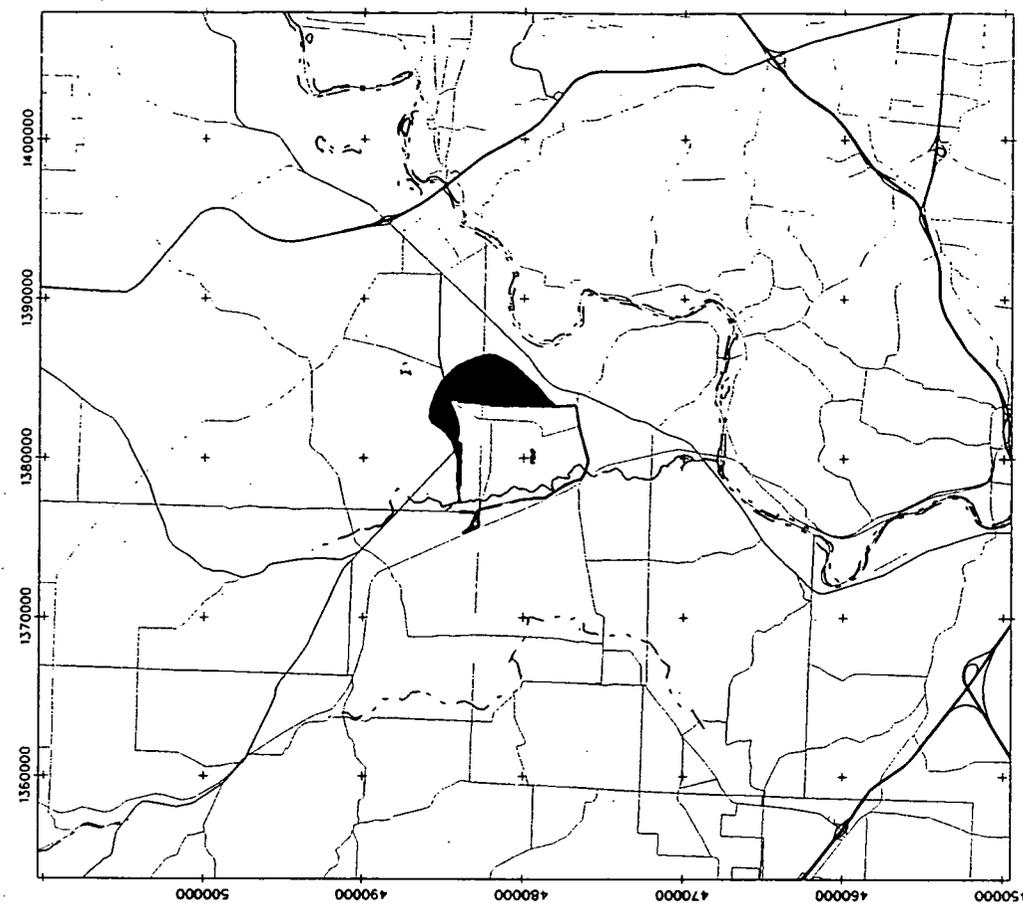
**PLOT OF TOTAL URANIUM CONCENTRATIONS:
OFF-PROPERTY SOILS**

COMARISON OF SOIL CLEANUP LEVELS

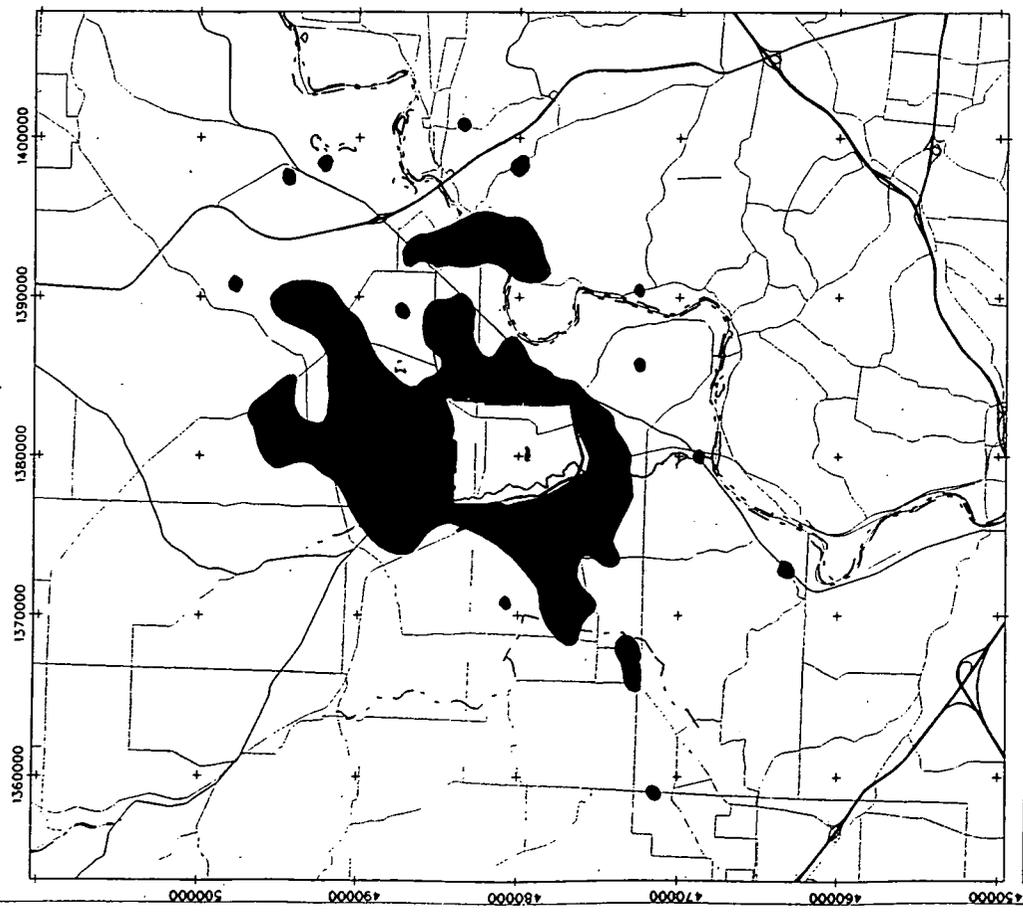
FUTURE USE CATEGORY	EXPOSURE ASSUMPTIONS	SOIL LEVELS AT 10 ⁻⁴ RISK	SOIL LEVELS AT 10 ⁻⁵ RISK	SOIL LEVELS AT 10 ⁻⁶ RISK	SOIL LEVELS AT HI=1
Resident Farmer	Assumes full-time life-long resident growing crops for human consumption and grazing livestock.	130 ppm	15 ppm	5 ppm	50 ppm (Child)
Industrial	Assumes maximum exposure to on-site groundskeeper.	1200 ppm	125 ppm	15 ppm	250 ppm
Developed Park	Assumes free access recreational facility with developed sports, picnic, and rest room facilities.	3490 ppm	350 ppm	40 ppm	1080 ppm
Green Space	Assumes unlimited access to nature trails, but with no developed facilities.	8820 ppm	885 ppm	90 ppm	1470 ppm
Protection of Aquifer in Zone I: Production Area	Soil concentrations required to prevent contamination leaching into aquifer above MCLs. Higher solubility uranium in Zone I drives lower cleanup levels.	10 ⁻⁴ levels do not protect GMA to at least MCLs	20 ppm	5 ppm	--
Protection of Aquifer in Zone II: Site Border	Soil concentrations required to prevent contamination leaching into aquifer above MCLs. Zone II contains lower solubility uranium but also thinner clays. Most stringent level assumed for entire zone.	10 ⁻⁴ levels do not protect GMA to at least MCLs	100 ppm	10 ppm	--

11/10/94 Replaces all Undated Versions

VIII-2



**OFF-SITE SOILS REQUIRING
REMEDICATION AT 10-5 RISK**

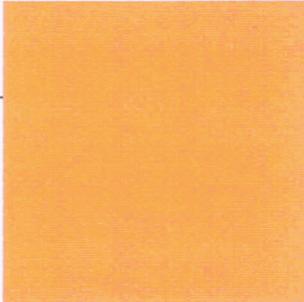
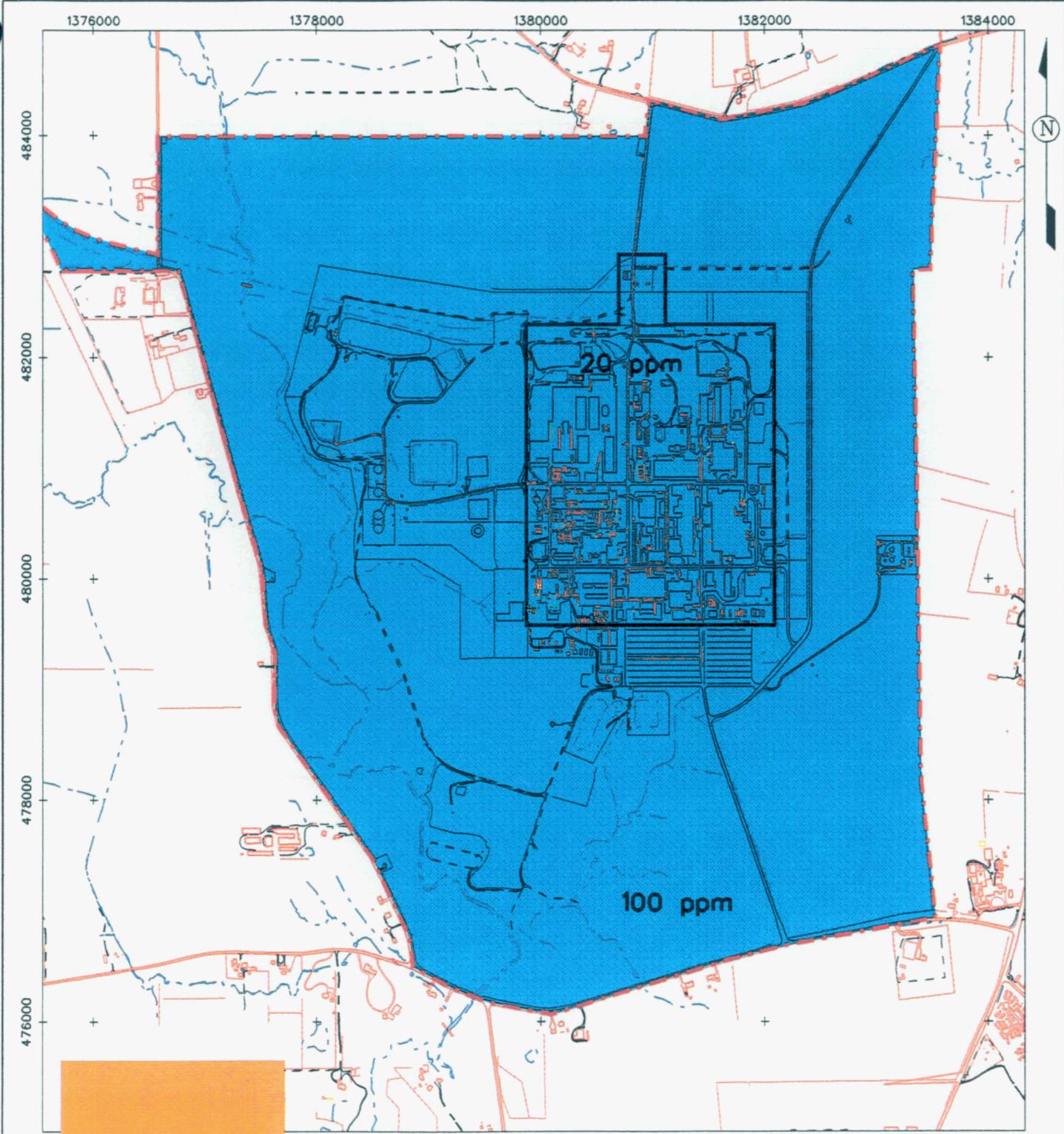


**OFF-SITE SOILS REQUIRING
REMEDICATION AT 10-6 RISK**

OFF-SITE SOILS REQUIRING REMEDIATION

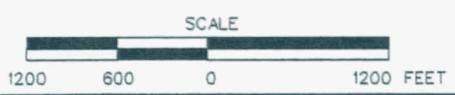
CLEANUP SCENARIO TO MEET MCLs AND 10⁻⁴ FOR RESIDENT FARMER

6262



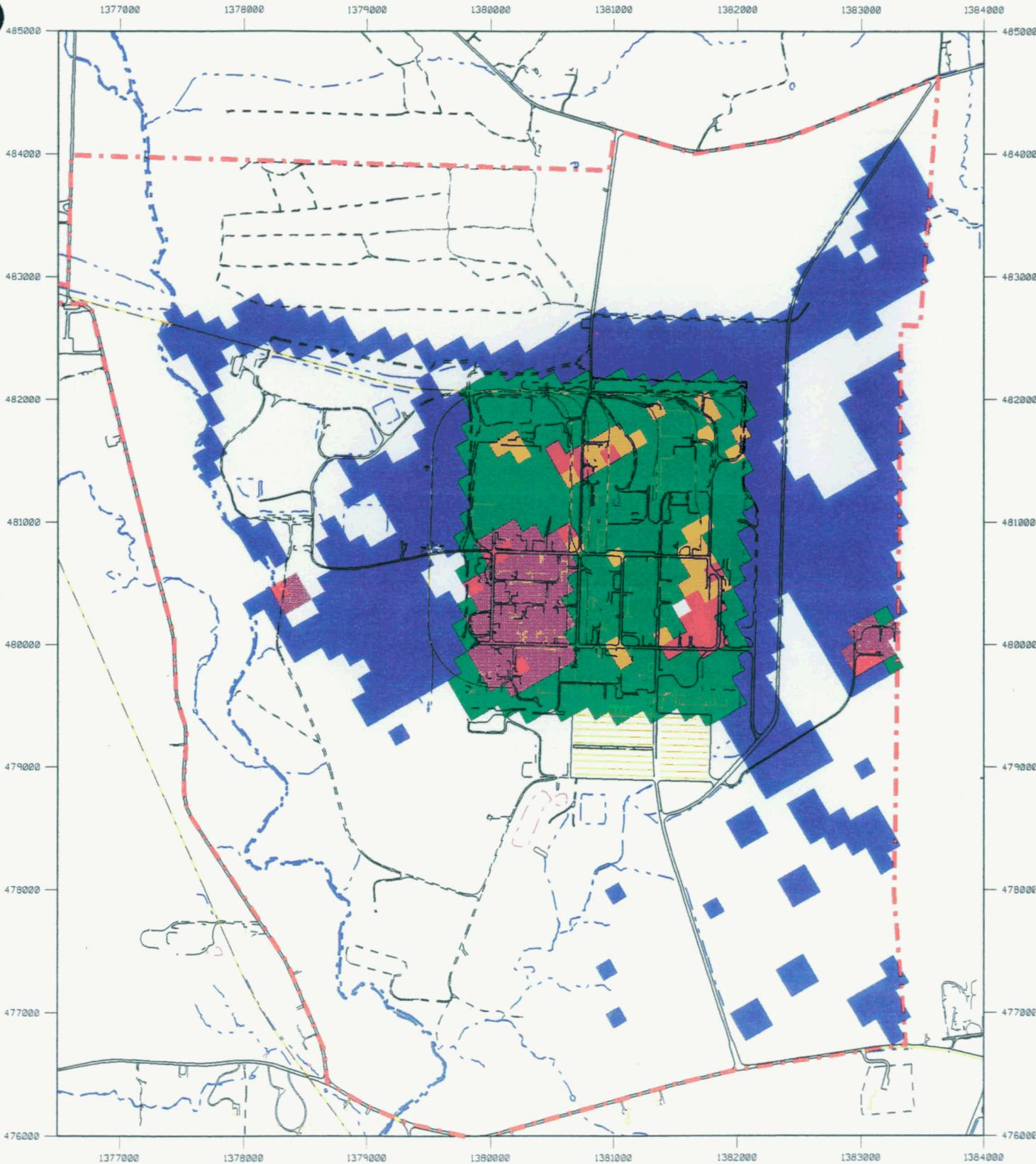
CELL SIZE: 2000' x 2000'
 OUS SOIL - 1,616,000 Yd³
 OFF SITE SOIL - 0 Yd³
 COST - \$400 million

--- FEMP PROPERTY BOUNDARY



EXCAVATION PROFILE TO MEET MCLs AND 10^{-4} FOR RESIDENT FARMER

6262



BORDER USE : INDUSTRIAL, CENTER USE : INDUSTRIAL, RISK LEVEL 1.E-5 (PRG + CPRG)

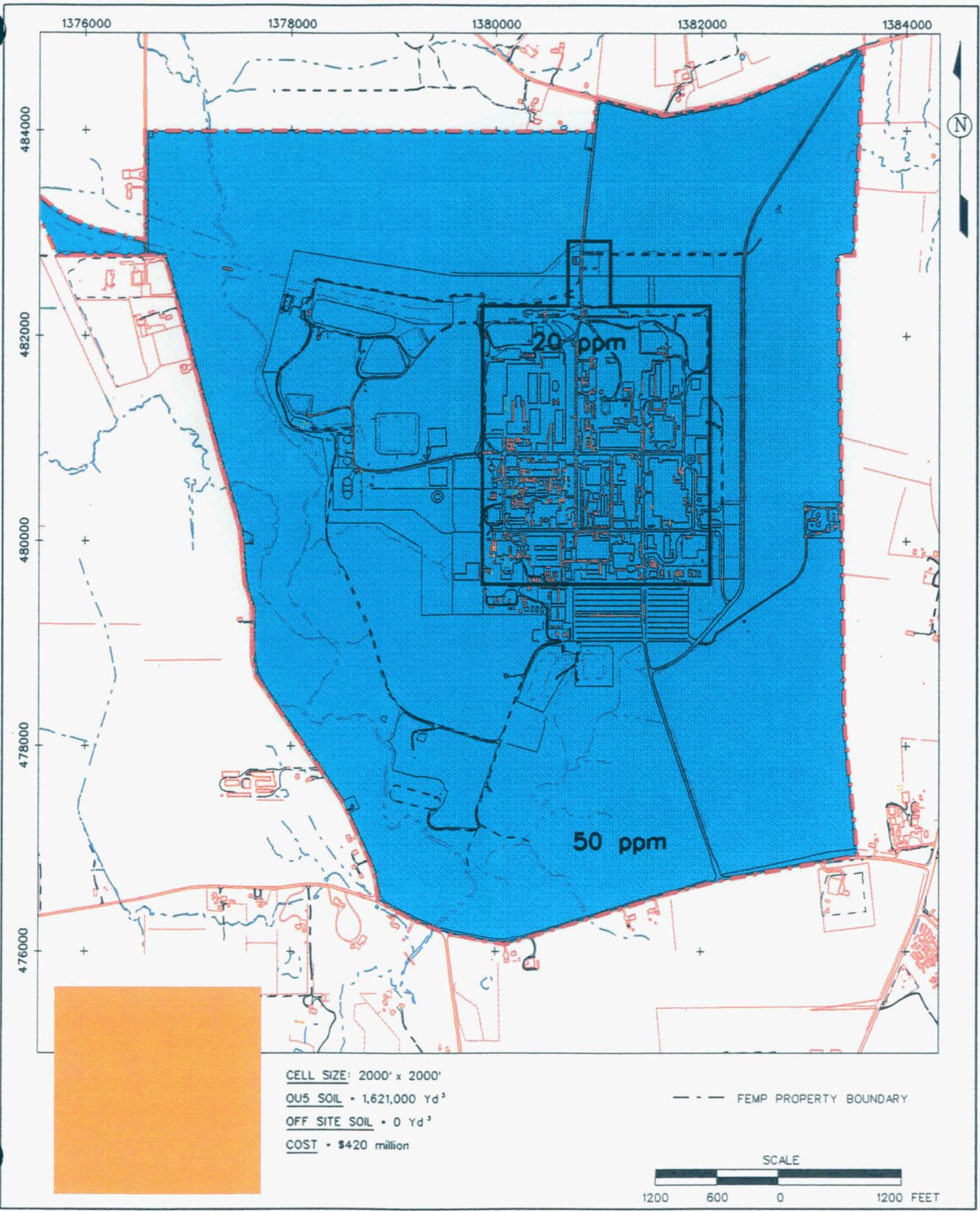
- 0 to 6'
- 6' to 2.5'
- 2.5 - 5'
- 5 - 10'
- 10 - 15'
- > 15'

X-32

000022

CLEANUP SCENARIO TO MEET MCLs AND HI OF 1 FOR RESIDENT FARMER

6262

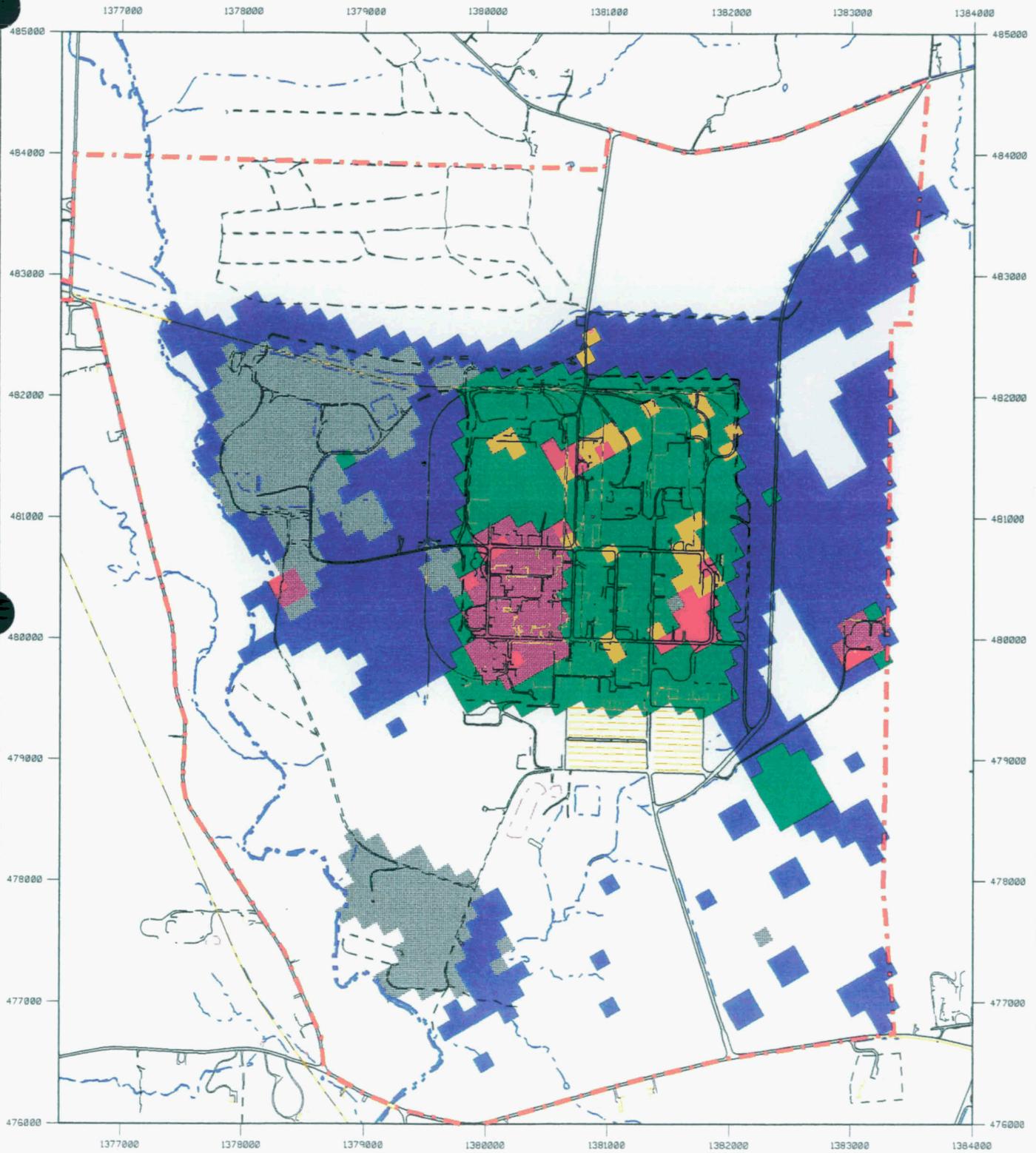


000023

X-33

EXCAVATION PROFILE TO MEET MCLs AND HI OF 1 FOR RESIDENT FARMER

6262



ON-PROPERTY SOIL EXCAVATION FOOTPRINT, ALTERNATIVES 3A AND 3C, CASE 7

- 0 to 6'
- 6' to 2.5'
- 2.5 - 5'
- 5 - 10'
- 10 - 15'
- > 15'
- OTHER DU's
- CPRG
- + Other COCs

MEMBERS

John Applegate
University of Cincinnati
Room 415
College of Law
Cincinnati, OH 45221-0040
513-556-0114
513-556-1236 (fax)
513-281-7160 (h)

James Bierer
407 Marcia Avenue
Hamilton, OH 45013
513-896-1488 (h)
513-863-1251 (o)

Marvin Clawson
586 Charlberth Drive
Hamilton, OH 45013
513-867-9900

Lisa Crawford
10206 Crosby Road
Harrison, OH 45030
513-738-1688 (h)
513-738-8055 (fax)

Pam Dunn
7781 New Haven Road
Harrison, OH 45030
513-738-2293 (h)

Dr. Constance Fox
58 E. Hollister
Cincinnati, OH 45219
513-721-1737 (o)
513-287-7465 (fax)
513-281-5016 (h)

Guy Guckenberger
138 E. Court St.
Room 603
Cincinnati, OH 45202
513-632-8222
513-632-5797 (fax)
513-421-9010 (h)

Darryl Huff
1755 Indian Woods Lane
Okeana, OH 45053
513-756-9311

Jerry Monahan
Secretary/Treasurer
Greater Cincinnati Building
and Construction Trades Council
1550 Chase Avenue
Cincinnati, OH 45223
513-541-0328 (o)
513-541-2133 (fax)

Tom Rentschler
1030 New London Road
Hamilton, OH 45013
513-863-8633 (h)

Robert Tabor
214 Citation Circle
Harrison, OH 45030
513-367-1177 (h)
513-738-8421 (o)
513-269-0460 (beeper)
513-738-8900 (fax)

FERNALD CITIZENS TASK FORCE
Roster of Members and Staff

6262

MEMBERS

Warren E. Strunk
9129 New Haven Road
Harrison, OH 45030
513-861-6767 (o)
513-367-6556 (h)

Thomas Wagner
1086 W. Galbraith Road
Cincinnati, OH 45231
513-522-3618 (h)
513-556-2041 (o)

Dr. Gene Willeke
Miami University
Institute of Environmental Sciences
102 Boyd Hall
Oxford, OH 45056
513-529-5811 (o)
513-529-5814 (fax)
513-523-3321 (h)

Russ Beckner (alternate)
4210 Morgan Ross Road
Hamilton, OH 45013
513-738-1335 (h)

Jackie Embry (alternate)
644 Linn Street
Suite 301B
Cincinnati, OH 45203
513-352-2471 (o)
513-352-3933 (fax)

Jim Saric (*ex officio*)
Remedial Project Manager
U.S. EPA Region V
HRE-8J
77 W. Jackson Blvd.
Chicago, IL 60604
312-886-0992 (o)
312-353-4788 (fax)

Graham Mitchell (*ex officio*)
Project Coordinator
Ohio Environmental Protection Agency
Southwest District Office
401 East Fifth Street
Dayton, OH 45402-2911
513-285-6018 (o)
513-285-6249 (fax)
513-777-0212 (h; local Cincinnati)

J. Phillip Hamric (*ex officio*)
Manager
Ohio Field Office
U.S. Department of Energy
P.O. Box 3020
Miamisburg, OH 45343-3020
513-1-865-3977 (o)
513-1-865-3426 (fax)

November 12, 1994

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FERNALD CITIZENS TASK FORCE
Roster of Members and Staff

6262

SUPPORT STAFF

Douglas J. Sarno
Phoenix Environmental Corporation
5991 Marilyn Drive
Alexandria, VA 22310
703-971-0030 (o)
703-971-0006 (fax)

Sarah Snyder
FERMCO
Mail Stop 82-3
25 Merchant Street
Cincinnati, OH 45246
513-868-0255 (h)
513-648-6318 (o)
513-589-2269 (beeper)
513-648-6903 (fax)

Judy Armstrong
FERMCO
Mail Stop 82-3
25 Merchant Street
Cincinnati, OH 45246
513-887-8162 (h)
513-648-6510 (o)
513-648-6903 (fax)

INTERNS

Chris Varner
356 Probasco
Cincinnati, OH 45220
513-221-4504 (h)
513-648-6412 (o)

Tina Krueger
787 Ludlow Avenue
Cincinnati, OH 45220
513-751-3184 (h)
513-648-6532 (o)

Dave Stickney
590 Terrace Avenue
Cincinnati, OH 45220
513-751-7623 (h)
513-648-6435 (o)

November 12, 1994

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Appendix A

SUMMARY OF 1994 COMMUNITY ASSESSMENT RESULTS AND COMMUNITY LEADER/GENERAL PUBLIC INTERVIEW FORMS

Overview of Approach

While the community assessment was not designed to be a scientifically valid social survey, the goal was to seek a statistically significant sample of the population living within the 5- and 20-mile radius of the Fernald facility, in addition to reaching community leaders. A discussion of the considerations and methodology follows.

Community Assessment Process Considerations and Methodology

During the community assessment, 50 interviews were conducted with selected community leaders, including business owners, representatives from local chambers of commerce, government officials, educators, members of FRESH, members of the Fernald Citizens Task Force, representatives of the local media and area professionals. Most of the community leader interviews were person-to-person; however, a few were by phone. Community leaders were asked 59 questions during their interviews.

An additional 365 telephone interviews were conducted with residents inside a 5-mile radius and a 20-mile radius of the Fernald facility. The telephone interviews were conducted to reach a broader cross-section of the public. These respondents were asked 26 of the questions included in the community leaders' questionnaire.

Residents in the two geographical areas (referred to as general public respondents) were interviewed by telephone from 5 p.m. to 10 p.m. during the week of May 2 through 5, 1994. Cincinnati Bell Lists, a subsidiary of Cincinnati Bell Telephone, provided randomly chosen phone numbers of residential customers from the area within a 5-mile radius and the area between a 5-mile radius and a 20-mile radius of the Fernald facility. Zip code maps were used to minimize overlap between the areas. Business and unlisted numbers were excluded.

For the telephone interviews, it was determined that the number of interviews conducted should provide a statistically significant sample of the entire population within the 5- and 20-mile radius of the Fernald facility. The initial sample size for each of the geographical areas was determined to be 166 respondents. The initial sample size of 166 interviewees identified for each area was based on the

1 following assumptions: 1) the results were assumed to be a normally
2 distributed bell curve; 2) the desired level of confidence in the result
3 was 99 percent; 3) an average score of "5" for values was anticipated;
4 4) a standard deviation of "2.5" was anticipated; and 5) the actual
5 mean was desired to be within ± 0.5 of the calculated mean of the
6 sample.

7 After two days of telephone interviews, the minimum sample sizes
8 were adjusted to 150 interviewees for the 5-mile radius and 114
9 interviewees for the 20-mile radius. To determine the minimum
10 sample size required, each interview conducted during the first two
11 days was scored. "Knowledge" and "interest" were the two values
12 used to score the interviews. The knowledge variable was scored
13 based on responses to five specific questions. Similarly, interest was
14 determined by responses to five specific questions.

15 Open-ended questions were difficult to use in statistical analysis
16 because in order to provide a response, the interviewee was assumed
17 to have some level of knowledge about the Fernand site. Choices were
18 not presented to respondents in these open-ended questions; rather,
19 they freely presented their own views. As a result, responses to the
20 open-ended questions varied considerably; some responses were not
21 even relevant to the revision of the *Community Relations Plan*.

22 For many of the open-ended questions, community leaders identified
23 multiple responses or categories of responses. For some of these
24 questions, the multiple responses were counted separately if they
25 contained independent or unrelated thoughts.

26 However, open-ended questions provided an idea of the range of
27 responses. For statistical interpretation of the open-ended questions,
28 major responses would need to be presented in another survey, which
29 would allow respondents to either choose or rank items presented in a
30 list.

31 Following completion of 55 telephone interviews in the 5-mile radius
32 and 98 telephone interviews in the 20-mile radius, the sample size was
33 evaluated to determine if the initially determined sample sizes for both
34 areas were valid or needed to be adjusted. After the telephone
35 interviews were completed, the sample size was calculated again to
36 assure attainment of the minimum number of interviews.

At the conclusion of the week of telephone interviews, 221 interviews were completed for the 5-mile radius and 144 interviews were completed for the 20-mile radius. The results of the completed interviews provide a 99 percent confidence, with a margin of error of 3.8 percent for the 5-mile radius, and 4.2 percent for the 20-mile radius sample.

Independent from the community assessment, an internal communications audit, initiated in July 1994, was conducted by the University of Cincinnati. As a supplement to the community assessment, preliminary data from the internal communications audit was provided by the University of Cincinnati for inclusion in this revised *Community Relations Plan*.

The conclusions drawn in this document reflect only the opinions of those interviewed as part of the community assessment.

Where is the public getting information about Fernald?

The 1994 community assessment contained a series of questions designed to identify the forms of information reaching the community and how the community was responding to that information.

Table A.1: Principle and Preferred Information Sources

<i>Respondent Group</i>	<i>Principle Information Sources</i>	<i>Preferred Information Sources</i>
Community Leaders	Personal forms of communication (82%)	Directly from Fernald sources (86%)
General Public Respondents (5-mile area)	Newspapers (71%) Television (45%)	Newspapers (22%) Television (20%)
General Public Respondents (20-mile area)	Newspapers (75%) Television (61%)	Television (37%) Newspapers (29%)

Principle Information Sources
 Most community leaders provided more than one category of principle information sources. Overall, forms of personal communication (i.e., one-on-one conversations, meetings, word of mouth, direct references

1 to organizations or Fernald employees, etc.) are the community
2 leaders' most frequently identified principle information source, and
3 mass media is mentioned most frequently as the principle information
4 source of general public respondents. However, 52 percent of the
5 community leaders also identified the media as a principle information
6 source. Nineteen percent of those who identify media as their
7 principle information source comment negatively about media
8 accuracy or objectivity. In contrast, general public respondents
9 indicate more substantial reliance on media as information sources.
10 Less than 2 percent of the general public respondents identify Fernald
11 organizations as their principle sources of information. About 24
12 percent of the general public respondents receive information through
13 "word of mouth."

14 *Preferred Information Sources*

15 Community leaders (86 percent) *prefer* to receive information directly
16 from Fernald sources, including: mailings, telephone calls and
17 conversations with employees, and meetings. For a specific concern,
18 52 percent would contact FERMCO, and 38 percent specified a
19 personal contact by name. Twenty-eight percent would contact the
20 DOE for a Fernald-related concern, and 20 percent specified a DOE
21 employee by name. In contrast, general public respondents in both
22 the 5- and 20-mile areas (27 percent) *prefer* to receive information
23 through mass media. Although approximately 33 percent of the
24 general public respondents do not know who to contact for specific
25 Fernald-related concerns, approximately 17 percent say they would
26 contact elected officials.

27 *Fernald Community Meetings*

28 Community leaders identify community meetings as useful information
29 sources - 30 percent say meetings are a principle information source.
30 Only 6 percent of the community leaders rate the meetings' usefulness
31 below average; 32 percent have no opinion. Sixty percent of the
32 community leaders prefer that community meetings be held on
33 Wednesday; Tuesday is the second choice. The most popular starting
34 times are 7 p.m. or 7:30 p.m.

Table A.2: Respondents' Ratings of Fernald Community Meetings

Respondent Group	Attended A Meeting in Last Year	Percentage Who Gave Above-average Ratings of Meetings' Usefulness	Average Rating of Meetings' Usefulness
Community Leaders	70%	62%	7.1
General Public Respondents (5-mile area)	8%	Approximately 59%	6.5
General Public Respondents (20-mile area)	Less than 2%	Approximately 87%	6.8

Public Environmental Information Center (PEIC)

Feedback from the 1994 community assessment indicates the PEIC is not a commonly used source of information, especially among general public respondents. Only 38 percent of the community leaders have used the PEIC. Of those who have used the PEIC, 63 percent give above-average ratings for its usefulness. Less than 4 percent of the general public respondents have used the PEIC.

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Assessment feedback from community leaders indicates lack of use of the PEIC is not attributable to its location or operating hours: 32 percent say the location is convenient, and 22 percent said the hours are convenient. However, a majority of the community leaders did not respond to either question. Two percent of the community leaders who believe the location is inconvenient suggest providing a means to access PEIC information via computer network.

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How does the public evaluate information from Fernald?

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Community leaders' evaluations of the information they receive from Fernald are mixed. Overall, community leaders who respond are generally very positive; however, general public respondents' evaluations are not positive.

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Assistance or Information Provided by Fernald Organizations

When asked if they had ever contacted any organizations involved in the Fernald site cleanup, 58 percent of the community leaders respond

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1 by identifying organizations they have contacted. Of those who
 2 respond: 95 percent give DOE above-average ratings; 90 percent give
 3 FERMCO/Fluor Daniel above-average ratings; 90 percent give U.S.
 4 EPA above-average ratings; and 100 percent give Ohio EPA above-
 5 average ratings. In addition, 72 percent of the community leaders say
 6 information they have received has changed their understanding of
 7 Fernald problems and issues. General public respondents were not
 8 asked to rate assistance or information provided by Fernald
 9 organizations.

10 *Bias/Balance of Information from the Fernald Site*

11 Seventy-eight percent of the community leaders indicate information
 12 they receive from Fernald is moderately to significantly unbiased and
 13 balanced; 16 percent do not respond. The average rating of the
 14 bias/balance of information from Fernald organizations was "7.4"
 15 ("10" being totally unbiased/balanced). General public respondents
 16 were not asked to rate the bias/balance of Fernald site information.

17 *Rating of Fernald Management's Efforts to Inform the Public About*
 18 *Fernald Site Cleanup*

19 Community leaders overwhelmingly indicate that, in recent years,
 20 Fernald management has made an outstanding effort to keep the public
 21 informed. In contrast, general public respondents are *not* positive
 22 about Fernald's efforts to keep the public informed.

Table A.3: Respondents' Ratings of Fernald Management's Efforts to Inform the Public about Fernald Site Cleanup

<i>Respondent Group</i>	<i>Ratings of Fernald Management's Efforts to Inform the Public</i>	<i>Average Ratings of the Respondents</i>
Community Leaders	86% above average	7
General Public Respondents (5-mile area)	70% below average	4.6
General Public Respondents (20-mile area)	79% below average	3.9

The lowest rating, by 4 percent of the community leaders, is "2."	1
Two percent giving low ratings believe there has been no information about the types of jobs which will be needed during Fernald site cleanup. With respect to openness, honesty and willingness to make information available, more than half of the community leaders note improvements in communication and compliment the quality of information provided to them. Several note the public must be <i>interested and willing</i> to be informed.	2 3 4 5 6 7 8
Six percent of the community leaders perceive the public as being overwhelmed with information. Two percent suggest people receive so much written material they do not read it. To prevent overload, 2 percent suggest better decisions are needed for disseminating "essential" information to the public. Two percent also feel there are too many community meetings. Four percent suggest enhancing availability of Fernald information to the public through computer bulletin board systems.	9 10 11 12 13 14 15 16
<i>Respondents' Opinions of Frequency of Fernald Site Communications</i>	17
Fifty-eight percent of the community leaders say the frequency of communications from the Fernald facility is about right; 32 percent did not respond. Six percent say communications are too frequent, and 4 percent say communications are not frequent enough. General public respondents were not asked to evaluate the frequency of communications.	18 19 20 21 22 23
<i>Respondents' Receipt of Sufficient Information to Become Involved in the Decision-Making Process</i>	24
Half of the community leaders indicate they are receiving sufficient information to become involved in the decision-making process at Fernald. Of the 50 percent who said they <i>are not</i> receiving sufficient information to become involved in the Fernald site decision-making process, 12 percent offered specific comments. Two percent feel they can make no impact in the decision-making process; 2 percent simply do not envision themselves in the decision-making process, and 2 percent imply information is not easily accessible to enable the general public to become involved in the decision-making process.	25 26 27 28 29 30 31 32 33 34
General public respondents are <i>not</i> positive about Fernald management's efforts to involve the public in the decision-making process. In the 5-mile area, "3.9" is the average rating; 78 percent of	35 36 37

1 the ratings are below average. In the 20-mile area, "3.2" is the
2 average rating, and 88 percent of the ratings are below average.

3 **Does the public want to be involved in Fernald's**
4 **decision-making process?**

5 *Respondents' Involvement in Fernald-Related Activities/Issues*

6 Generally, community assessment results indicate the community
7 leaders interviewed are satisfied with their level of involvement in
8 Fernald-related activities. Although 10 percent are unsure about
9 becoming more involved, 28 percent indicate they *would* like to be
10 more involved in Fernald site activities and issues. Some areas of
11 interest include: radionuclide migration and hazardous material
12 releases; the Public Water Supply; public participation activities,
13 particularly during remedial design and remedial action; cleanup
14 methods and experimental technologies; educational outreach;
15 economic impacts and future use of the Fernald site.

16 The 62 percent of community leaders who *do not* want to become
17 more involved mention the following as some reasons: they are
18 already very involved with Fernald site activities and issues; they do
19 not feel a need to become more involved; or they are too busy with
20 other matters. General public respondents were not asked whether
21 they would like to become more involved.

22 **What is the public's understanding of Fernald**
23 **problems, issues and solutions?**

24 Another important dimension of the 1994 community assessment was
25 an effort to ascertain community awareness.

Table A.4: Respondents' Understanding of Fernald Problems, Issues and Solutions

<i>Respondent Group</i>	<i>Average Self Rating on Understanding of Problems/Issues</i>	<i>Average Self Rating on Understanding of Solutions</i>	<i>Average Rating on Public Understanding of Problems/Issues</i>	<i>Average Rating of Public Understanding of Solutions</i>
Community Leaders	6.9	6	3.6	3.4
General Public Respondents (5- and 20-mile)	4.8	3.7	4	3.5

Respondents' Own Level of Understanding of Fernald Site Problems, Issues, and Solutions

Individually, community leaders believe they have a high level of understanding of Fernald problems and proposed solutions. In contrast, feedback from the general public respondents indicates they have lower levels of understanding of Fernald problems, issues and solutions.

Respondents' Opinions of Public Understanding of Fernald Site Problems, Issues and Solutions

The community leaders do not believe the public, in general, has a good understanding of Fernald problems and issues. Two percent of the community leaders believe there is a lack of easy-to-understand information. Competing interests was another reason given by 2 percent of the community leaders, one of whom says, "It involves something that doesn't affect families directly. There are too many other issues. I don't think it's so much a public relations problem -- I think it's a 'people' problem. It's our problem because we don't take the time."

Respondents' Opinions of Public Understanding of Solutions

Overall, the community leaders and general public respondents do not feel the public has a good understanding of solutions being considered or proposed for Fernald site cleanup. In fact, both sets of respondents believe the public better understands Fernald site problems and issues, as opposed to the solutions. One community leader says, "Except for

1 people who are technically oriented or familiar with Fernald . . .
2 I don't think the average citizen of the Greater Cincinnati area
3 understands the degree of 'pollution' of the facility, nor do I believe
4 they understand the technical abilities to clean it up. I just don't think
5 the general public has a perception of the scope of the problem, nor of
6 the technical complexities of the problem."

7 **How does the public perceive the organizations**
8 **involved with Fernald?**

9 *Respondents' Awareness of Agencies/Organizations Involved in*
10 *Fernald Site Cleanup*

11 Generally, the community leaders are familiar with organizations
12 involved in Fernald cleanup and evaluate them favorably. (General
13 public respondents were not asked.) Most recognized among
14 community leaders are FERMSCO (or Fluor Daniel), 78 percent; DOE,
15 62 percent; EPA, 38 percent; OEPA, 36 percent; WEMCO (or
16 Westinghouse), 20 percent; FRNSH, 16 percent; Fernald Citizens
17 Task Force, 10 percent. Other organizations or agencies mentioned
18 include: Agency for Toxic Substances and Disease Registry, Centers
19 for Disease Control and Prevention, Fernald Atomic Labor and Trades
20 Council, and the Greater Cincinnati Building and Construction Trades
21 Council.

22 *Respondents' Ratings of Organizations' Performance in Fernald Site*
23 *Cleanup*

24 Although community leaders and general public respondents'
25 performance ratings of FERMSCO, DOE, U.S. EPA and Ohio EPA
26 are generally positive, a significant portion of general public
27 respondents do not evaluate each organizations' performance (Figure
28 A.1). Sixty-two percent of the community leaders give above-average
29 ratings for the DOE's performance; 20 percent give below-average
30 ratings; and 18 percent do not comment. Seventy-four percent give
31 above-average ratings for FERMSCO's performance; 16 percent give
32 below-average ratings; and 10 percent do not comment.

Figure A.1: Respondents' Evaluations of Organizations' Performance

DRAFT

1 Twenty-two percent of the community leaders did not comment on
2 EPA's performance; however, 50 percent gave above-average ratings,
3 and 28 percent did not comment at all. Fifty-two percent give
4 OEPA's performance above-average ratings; 24 percent give below-
5 average ratings; and 24 percent do not respond.

6 **How does the public perceive the cleanup at Fernald?**

7 *Respondents' Familiarity with Fernald Site Cleanup Projects and* 8 *Activities*

9 Sixty-eight percent of the community leaders say they are familiar
10 with specific Fernald site activities. Overall, they seem most familiar
11 with projects and activities related to groundwater (50 percent), as
12 well as decontamination and dismantling (30 percent). Twenty-six
13 percent are familiar with projects or activities related to waste
14 management/shipments/cleanup. Two percent indicate familiarity with
15 projects and activities related to Operable Unit 4, including the K-65
16 Silos, Minimum Additive Waste Stabilization (MAWS) and
17 vitrification technologies. One percent are generally familiar with
18 Operable Units 1 through 5. General public respondents were not
19 asked about familiarity with specific Fernald activities.

20 *Respondents' Opinions about Fernald Site Cleanup Progress*

21 Among the community leaders, opinions regarding Fernald site
22 cleanup progress are mixed. Forty-two percent believe cleanup
23 progress is slow, but 30 percent perceive cleanup is progressing.
24 Four percent believe cleanup has been stalled or delayed; 16 percent
25 are either uncertain or have no response; and four percent imply the
26 paper work required during cleanup is burdensome. In addition, two
27 percent comment about costs and ensuring cleanup is adequate.
28 General public respondents were not asked for opinions on Fernald
29 cleanup progress.

30 **Is the public aware of Fernald community relations** 31 **programs and initiatives?**

32 *Respondents' Awareness of the Fernald Citizens Task Force*

33 Eighty-eight percent of the community leaders are aware of the
34 Fernald Citizens Task Force, and 36 percent have actually attended a
35 meeting.

Table A.5: Respondents' Awareness of Fernald Programs and Initiatives

<i>Respondent Group</i>	<i>Fernald Citizens Task Force</i>	<i>Fernald Envoy Program</i>	<i>Fernald Math/Science Literacy Programs</i>
Community Leaders	88%	24%	50%
General Public Respondents (5-mile and 20-mile areas combined)	33%	Not applicable	Not applicable

Of the 66 percent who have not attended a task force meeting, 6 percent do not like the meetings being held on Saturday mornings, and 3 percent do not like the meetings being held at a location so far from the Fernald facility. Forty-two percent of the community leaders would like more information about the task force. In comparison, 35 percent of the general public respondents in the 5-mile area and 30 percent in the 20-mile area indicated awareness.

Respondents' Awareness of the Fernald Envoy Program
 Only 24 percent of the community leaders say they are aware of the Fernald Envoy Program. Eighteen percent evaluated the program's usefulness, gave above-average ratings. (Among the 18 percent evaluating the program's usefulness, almost half gave the highest ratings possible.) One interviewee felt that FERMCO should provide more information on the envoy program at community meetings. General public respondents were not asked about their awareness of the Fernald Envoy Program.

Respondents' Awareness of the Fernald Math/Science Literacy Programs
 Half of the community leaders are aware of Fernald's math/science literacy programs, and 28 percent give above-average ratings for the programs' usefulness. Four percent indicate personal involvement with Fernald facility math/science literacy programs. Although several community leaders are aware of the programs, they do not understand the programs' purposes, goals, objectives and achievements. Among the 30 percent of the community leaders who evaluated Fernald's Math/Science Literacy programs, "8.5" is the

1 average rating. General public respondents were not asked about their
 2 awareness of Fernald facility math/science literacy programs.

3 **What are the public's impressions of the Fernald**
 4 **facility?**

5 The 1994 assessment included three questions to obtain information
 6 about interviewees' personal feelings about the Fernald facility.
 7 Overall reactions are negative, but some positive trends emerge.

Table A.6: Respondents' Initial Impressions about the Fernald Site

<i>Respondent Group</i>	<i>First Thoughts about Fernald</i>	<i>Most Negative Statement about Fernald</i>	<i>Most Positive Statement about Fernald</i>
Community Leaders	Government Mismanagement (26%)	Government Mismanagement (25%)	Improvements in Public Involvement (24%)
General Public Respondents (5-mile area)	Contamination (55%)	Contamination (27%)	Jobs and Economic Benefits (24%)
General Public Respondents (20-mile area)	Contamination (58%)	Contamination (32%)	Nothing (28%)

8 *First Thoughts When Respondents Hear About Fernald*

9 Several community leaders mention more than one impression when
 10 expressing what first comes to mind when they think of Fernald.
 11 Twenty-six percent identify first impressions associated with
 12 government mismanagement and problems at the facility. Equal
 13 numbers of responses are associated with environmental contamination
 14 (12 percent of the responses), radiation (12 percent of the responses),
 15 and Fernald production (12 percent of the responses). Ten percent of
 16 the responses are related to health, safety and risk issues, and 6
 17 percent of the responses are associated with cleanup.

18 In the 5-mile area, 55 percent of general public respondents'
 19 statements relate to contamination. Associated with contamination

include: "Radiation/Nuclear Materials," 23 percent; 1
 "Pollution/Contamination," 13 percent; "Toxic/Hazardous/Nuclear 2
 Waste," 10 percent; "Uranium," 7 percent; "Chemicals," 2 percent. 3

In the 20-mile area, similar responses are provided. 58 percent 4
 identify contamination as a first impression. Associated responses 5
 include: "Radiation/Nuclear Materials," 24 percent; 6
 "Toxic/Hazardous/Nuclear Waste," 18 percent; 7
 "Pollution/Contamination," 11 percent; "Uranium," 2 percent; 8
 "Chemicals," 3 percent. 9

Respondents' Most Negative Statements about the Fernald Site 10
 When asked for the most negative thing they could say about the 11
 Fernald facility, the community leaders' most frequent responses (50 12
 percent) relate to government mismanagement of the facility, (includes 13
 lack of truthfulness, bureaucracy, and poor decisions). The second 14
 most frequent responses are related to the cost, progress and future of 15
 cleanup activities (10 percent of the responses). Other frequent 16
 comments relate to environmental contamination (6 percent of the 17
 responses); waste storage (6 percent of the responses); and health and 18
 safety hazards (6 percent of the responses). 19

General public respondents' most frequent comments relate to 20
 contamination (27 percent in the 5-mile area and 32 percent in the 20- 21
 mile area). Their second most frequent responses relate to health 22
 hazards (15 percent in the 5-mile area and 20 percent in the 20-mile 23
 area). Their third most frequent responses relate to mismanagement 24
 of the facility (7 percent in the 5-mile area and 10 percent in the 20- 25
 mile area). 26

Respondents' Most Positive Statements about the Fernald Site 27
 Community leaders' most frequent, positive comments about Fernald 28
 relate to improvements in public involvement (24 percent of the 29
 responses). The second most frequent responses relate to management 30
 improvements and changes from past practices. Community leaders 31
 mention attempts to "rectify past mistakes" and "work hard to solve 32
 problems." Their third most common statements (18 percent of the 33
 responses) relate to cleanup progress. Other positive statements 34
 include satisfaction with Fernald employees (10 percent of the 35
 responses); jobs/economic benefits (8 percent of the responses); 36

1 facility closure (8 percent of the responses); and national security (6
2 percent of the responses).

3
4 In comparison, 24 percent of general public respondents in the 5-mile
5 area (11 percent in the 20-mile area) most frequently identify jobs and
6 other economic benefits as positive aspects of the Fernald facility.
7 However, in the 20-mile area, 28 percent of the general public
8 respondents (23 percent in the 5-mile area) say "nothing" is positive
9 about Fernald. Other positive attributes cited are cleanup (10 percent
10 in the 5-mile area and 12 percent in the 20-mile area); Fernald facility
11 no longer operational (5 percent in both areas); and the facility's
12 military use (4 percent in the 5-mile area and 3 percent in the 20-mile
13 area).

14 *Visits to the Fernald Facility*

15 Ninety-two percent of the community leaders say they are not
16 apprehensive about visiting the Fernald facility, and 74 percent have
17 actually visited. More than 20 percent of general public respondents
18 in the 5-mile area and less than 8 percent in the 20-mile area have
19 visited the Fernald facility.

20 **What are the public's perceptions of priorities at** 21 **Fernald?**

22 A significant portion of the community assessment was aimed at
23 gathering input regarding community leaders' and general public
24 respondents' perceptions of Fernald management's goals and priorities
25 and documenting the concerns of those interviewed (Figure A.2).

26 *Respondents' Perceptions Regarding Fernald Site Management's Top* 27 *Priorities*

28 A majority (54 percent) of community leaders believe cleanup is
29 Fernald management's *current* top priority. However, less than half
30 of the general public respondents *and* employees believe management
31 is focusing on cleanup, which they believe *should be* the top priority.
32 Although 52 percent of the community leaders, 46 percent of *all* the
33 general public respondents, and 46 percent of employees agree
34 cleanup *should be* Fernald management's priority, only the community
35 leaders, as a whole, perceive cleanup to actually be management's
36 *current* priority.

Preliminary internal communication audit results indicate 32 percent of employees perceive Fernald management's *current* priority to be making a profit, rather than cleanup, which is the employees' second most common response (30 percent).

Though perhaps assumed or implied, *most* community leaders, general public respondents and employees do not perceive safety to be Fernald management's *current* top priority, nor do they identify safety as what they believe *should be* management's top priority. Only 8 percent of the community leaders specify safety/health as the current top priority of Fernald management, and they also indicate safety/health *should be* management's top priority. Safety is the second most commonly perceived *current* priority among *all* general public respondents (18 percent). Among employees, 8 percent perceive safety to be the current priority and 19 percent believe it should be management's number one priority.

Figure A.2: Public Perceptions of Fernald Management's Top Priority

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What specific concerns were identified by the public? 1

Community Concerns and Comments, by Order of Importance 2

As community leaders and general public respondents identified their 3
 specific concerns about Fernald, *in order of importance*, several 4
 common themes developed, and many respondents expressed more 5
 than one concern. Following are the respondents' primary concerns, 6
 listed by order of importance, as specified by each respondent. 7

Table A.7: Top 3 Community Concerns

<i>Respondent Group</i>	<i>First-ranked Concern</i>	<i>Second-ranked Concern</i>	<i>Third-ranked Concern</i>
Community Leaders	Groundwater and surface water contamination (20%)	Future use of the Fernald facility (16%)	Public and worker safety and health (14%) <i>and</i> Budget and Costs (14%)
General Public Respondents (5-mile area)	Public and worker safety and health (12%) <i>and</i> Fernald site cleanup progress (12%)	Environmental, economic and mental impacts of Fernald facility operations on the community (10%)	Public involvement, public information and communication (7%)
General Public Respondents (20-mile area)	Public and worker safety and health (13%)	Fernald site cleanup progress (8%)	Groundwater and surface water contamination (7%)

- Groundwater and Surface Water Contamination is ranked 8
 FIRST among community leaders (*top* concern of 20 percent), 9
 fourth among general public respondents in the 5-mile area (3 10
 percent), and third in the 20-mile area (7 percent). 11

1 Community leaders' concerns include: off-site migration of
2 the contaminated groundwater (South Groundwater
3 Contamination Plume); uncertainties and problems associated
4 with the Public Water Supply; potential for irreversible harm
5 to the Great Miami River and the facility's impact on the
6 Great Miami Aquifer.

- 7 • Future Use of the Fernald Site is the second most commonly
8 identified concern among community leaders (*top* concern of
9 16 percent). Community leaders' concerns included: what the
10 facility will become and how clean it will be; whether the
11 property will be used for on-site waste disposal; adequacy of
12 cleanup; and impacts of on-site waste disposal on future
13 development of the land. General public respondents do not
14 state related concerns.

- 15 • Public and Worker Safety and Health is ranked third among
16 community leaders (*top* concern of 14 percent), tied for FIRST
17 among general public respondents in the 5-mile area (12
18 percent), and FIRST in the 20-mile area (13 percent).

- 19 • Budget and Costs is also ranked third among community
20 leaders (*top* concern of 14 percent). Ten percent indicate
21 concerns regarding the ultimate and expensive cost of cleanup,
22 and 6 percent are concerned about availability of funds to
23 complete Fernald site cleanup. General public respondents do
24 not state related concerns.

- 25 • Waste Handling and Storage is ranked fourth among
26 community leaders (*top* concern of 10 percent). The
27 following concerns or comments specifically mentioned
28 include: what is being done to decrease the dangers of on-site
29 hazardous materials; waste disposal is overregulated; that
30 underground storage tanks are handled appropriately; and the
31 waste pits, in general. General public respondents do not
32 state related concerns.

- 33 • Fernald Site Management is ranked fifth among community
34 leaders (*top* concern of 6 percent). Community leaders'
35 concerns included: oversight of contractors and a need for
36 strong DOE presence; truthfulness of the prime contractor;

- and changes in contractor leadership. General public respondents do not state related concerns. 1
2
- Operable Unit 4 Silos 1 and 2 (K-65 Silos) is also ranked fifth among community leaders (*top concern of 6 percent*). Among concerns was the potential for a tornado or airplane to hit the K-65 Silos. General public respondents do not state related concerns. 3
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 - Environmental, Economic and Psychological Impacts of Fernald Facility Operations on the Community is ranked sixth among community leaders (*top concern of 2 percent*), second among general public respondents in the 5-mile area (10 percent), and fourth in the 20-mile area (6 percent). Issues mentioned by community leaders include: real versus perceived dangers, lawsuit settlements, inability to sell property, property values and quality of life. 8
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 - Fernald Site Cleanup Progress is ranked sixth among community leaders (*top concern of 2 percent*), tied for FIRST among general public respondents in the 5-mile radius (12 percent), and ranked second in the 20-mile area (8 percent). Although only 2 percent of the community leaders state a primary concern related to Fernald site cleanup progress, the concern, as with several others, is related to the need for assurance that cleanup work is actually being done. 16
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 - Transportation is also tied for sixth among community leaders (*top concern of 2 percent*). Examples of the transportation-related concerns reported include: potential for accidents, adequacy of safety when transporting hazardous or radioactive waste and materials; public uncertainty as to whether potential for danger will increase during waste removal. General public respondents do not state related concerns. 24
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 - Air Emissions is ranked seventh among community leaders (no *top concerns identified*). Concerns include: the type of monitoring to be performed during demolition of Silos 1 and 2 (K-65 Silos) and Plant 7. General public respondents do not state related concerns. 31
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- 1 ● Public Involvement, Public Information and Communication is
2 ranked eighth among community leaders (no *top* concerns
3 identified), third among general public respondents in the 5-
4 mile area (7 percent), and fifth in the 20-mile area (2 percent).

5 Several community leaders comment positively about
6 communication improvements and how the community is being
7 recognized as a "stakeholder" which, through public
8 involvement, can actually influence the Fernald decision-
9 making process. Other community leaders mention a need for
10 continued public involvement opportunities in the decision-
11 making process. Several community leaders express the need
12 for individuals in the community to make involvement in the
13 Fernald site decision-making process more of a personal
14 priority.

15 In addition to public involvement issues, comments are
16 provided on the Fernald facility's emergency/severe weather
17 warning system. Two percent of the community leaders
18 complain about frequent testing of the system, which includes
19 11 sirens on-site and within Ross, Morgan and Crosby
20 townships. Also, 2 percent suggest the sirens remind people
21 of dangers at the Fernald facility.

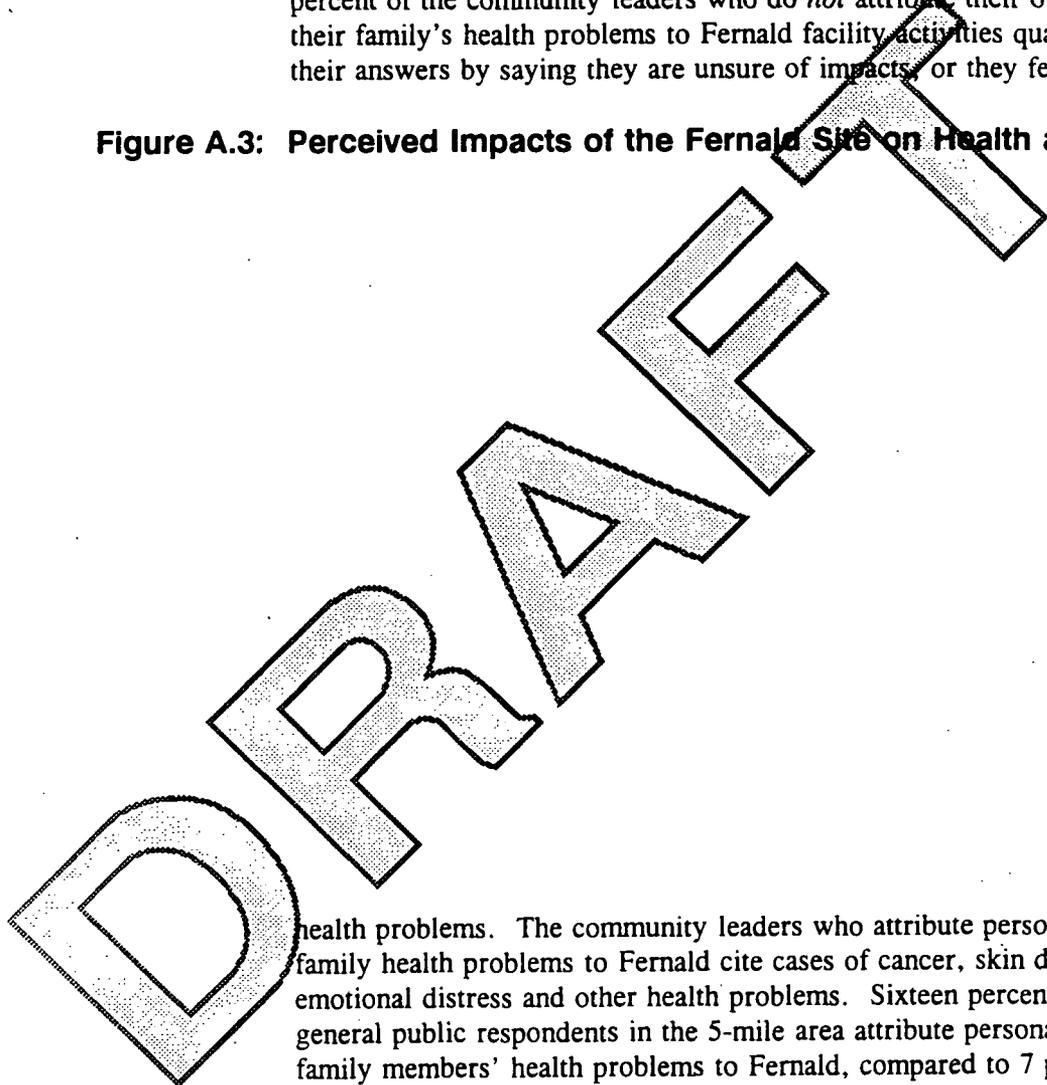
22 Another issue raised by more than one community leader
23 involves the Fernald Citizens Task Force. Four percent of the
24 community leaders complain about the type and amount of
25 information provided to task force members. Two percent
26 believe the task force is involved in areas which should not be
27 its concern and say the task force is becoming a watchdog
28 group seeking credibility and creating worse red tape.

29 **Does the public believe Fernald affects personal health**
30 **or property values?**

31 Results of the 1994 community assessment indicate the community still
32 has some Fernald-related concerns regarding health and property
33 (Figure A.3).

<i>Health Problems Believed to be Caused by Fernald Site Activities</i>	1
Eighty-four percent of the community leaders report no personal or family health problems which they attributed to Fernald. Nineteen percent of the community leaders who do <i>not</i> attribute their own or their family's health problems to Fernald facility activities qualify their answers by saying they are unsure of impacts, or they fear future	2 3 4 5 6

Figure A.3: Perceived Impacts of the Fernald Site on Health and Property



health problems. The community leaders who attribute personal or family health problems to Fernald cite cases of cancer, skin disorders, emotional distress and other health problems. Sixteen percent of general public respondents in the 5-mile area attribute personal or family members' health problems to Fernald, compared to 7 percent of those in the 20-mile area.	7 8 9 10 11 12
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<i>Others, Known by Respondents, Who Attribute Health Problems to the Fernald Site</i>	13
Sixty-eight percent of the community leaders say they know other people, outside their own families, who attribute health problems to Fernald site activities. General public respondents were not asked if	14 15 16 17

1 they know others, outside of their immediate family, who attribute
2 health problems to the Fernald site.

3 *Respondents' Perceptions of Fernald Site Impacts on Property*

4 Forty-six percent of the community leaders believe their property or
5 family members' property, have been impacted by the Fernald facility,
6 primarily in the area of lower property values. Four community
7 leaders mention groundwater contamination as an example of how
8 Fernald has negatively impacted local property values, as well as some
9 residents' quality and cost of living.

10 Although most community leaders associate negative impacts with the
11 Fernald facility, one considers a potential positive impact: "I think it
12 has hindered a natural progression of growth in the community. The
13 growth of Cincinnati is coming out to the north. I think Fernald has
14 had a negative impact to property values over the past 15 years. That
15 may not be negative. Some people may not want growth."

16 In comparison, 19 percent of general public respondents in the 5-mile
17 area believe their, or a family member's property has been impacted
18 by the Fernald site, compared to 8 percent in the 20-mile area.

19 **How clean does the public want the Fernald site?**

20 Another important function of the 1994 community assessment was to
21 gather input from the community concerning how the cleanup of
22 Fernald should proceed.

23 *Should the Fernald Site be Cleaned to "Pristine" Condition?*

24 When asked if the Fernald site should be cleaned to pristine condition,
25 even if it means spending more taxpayer money than needed to meet
26 basic government cleanup regulations, 70 percent of the community
27 leaders say "no." (Figure A.4) Of the community leaders (30
28 percent) who say the Fernald site *should* be cleaned to pristine
29 condition, several question the adequacy of government cleanup
30 standards. Some community leaders believe they must press for
31 pristine conditions to ensure minimal expectations for cleanup are
32 achieved. Others imply there is a moral obligation to return the land
33 to a condition similar to that which existed before construction of the
34 Fernald facility.

Fifty-one percent of general public respondents in both the 5- and 20-mile areas believe the Fernald facility should be cleaned to pristine condition. 1
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Preliminary 1994 internal communication audit results reveal 77 percent of employees believe the Fernald site should not be cleaned to pristine condition, and cost is the most common reason. Other comments are that "pristine" may not be possible, and the term "clean" lacks clear definition. 4
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Figure A.4: Should the Fernald Site Be Cleaned to a Pristine Condition?

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What are the public's recommendations for disposal of Fernald wastes? 9
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Respondent Preferences for Waste Disposal 11

Among community leaders, opinions vary on the ultimate disposal location for Fernald facility waste. (Figure A.5) Thirty-six percent identify the following for disposal of some or all Fernald facility 12
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1 waste: the desert or a location in an arid climate; Nevada -- some
2 mentioned the Nevada Test Site by name; Utah, Arizona or New
3 Mexico; or the west, in general. Eighteen percent acknowledged or
4 suggested that some waste would remain at the Fernald facility.
5 Several mention that moving waste from Fernald to another location is
6 not fair or will only cause problems elsewhere. "Not in my back
7 yard" are specific words mentioned by 6 percent of the community
8 leaders.

9 Among general public respondents, 42 percent in the 5-mile area and
10 53 percent in the 20-mile area suggest wastes be shipped to western
11 states or the desert. Only 7 percent in the 5-mile area and 2 percent
12 in the 20-mile area mention storing waste at the Fernald facility.

13 While 44 percent of Fernald employees suggest shipping waste to
14 government sites in the west, 23 percent suggest that at least some
15 waste can be securely stored at the Fernald facility.

Figure A.5: Most Frequent Recommendations for Disposal of Fernald Wastes

What are the public's recommendations for future use of the Fernald facility?

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Comments/Recommendations for Future Use of the Fernald Facility
 When community leaders and employees were asked what they would do with the Fernald facility -- once cleanup was completed -- if the decision were theirs alone -- most said they would like the facility to return to a natural setting, such as a wildlife/nature preserve.

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Table A.8: Fernald Facility Future Use Options Receiving the Most Comments

<i>Respondent Group</i>	<i>Option Receiving the Highest Number of Related Comments</i>	<i>Option Receiving Second Highest Number of Related Comments</i>	<i>Option Receiving Third Highest Number of Related Comments</i>
Community Leaders	Nature/Wildlife Preserve or Park (30% responses)	No Opinion/Undecided/Non-specific (22% responses)	Technology Center/Museum (16% responses)
General Public Respondents (5-mile area)	No Opinion/Undecided/Non-specific (32% responses)	Open Space/Permanent Closure (15% responses)	Nature/Wildlife Preserve or Park (9% responses)
General Public Respondents (20-mile area)	No Opinion/Undecided/Non-specific (34% responses)	Open Space/Permanent Closure (22% responses)	Nature Wildlife Preserve or Park (4% responses)
Employees	Nature/Wildlife Preserve or Park (29% responses)	Isolate and Secure the Waste the Facility (21% responses)	Industrial Use (14% responses)

1 1) Nature/Wildlife Preserve or Park

2 Two percent of the community leaders make recommendations related
3 to converting the Fernald facility to a nature/wildlife preserve or park.
4 Some qualify their comments with the following recommendations
5 and/or conditions regarding a nature/wildlife preserve: plant trees and
6 provide unrestricted use of the property; create a nature preserve, with
7 educational tours of a small building to feature a "living" history of
8 the facility for future generations; convert Fernald facility property
9 into a wildlife preserve for a minimum of 100 years, after which other
10 uses could be considered; creation of a wildlife preserve should be
11 dependent on cleanup levels and whether contamination is contained
12 and the facility itself does not pose any dangers. Regarding a park,
13 one community leader believes people would not use such a facility, if
14 one were to be built. Though in favor of a park, another community
15 leader is concerned about liability issues.

16 In comparison, although general public respondents do not make
17 recommendations specific to a park, 9 percent in the 5-mile area want
18 the Fernald facility to become some kind of natural site and 4 percent
19 in the 20-mile area make similar statements.

20 The most common suggestion from employees (25 percent) also
21 centers on using the Fernald facility as a nature preserve (or park).

22 2) No Opinion/Undecided/Non-Specific

23 Twenty-two percent of the community leaders are non-specific about
24 future use options for the Fernald facility. Two percent do not know
25 any potential future use options for the Fernald facility, and 2 percent
26 do not care about the future use issue. Six percent of the community
27 leaders' comments indicate that future use of the Fernald facility
28 should be determined by the community, although one community
29 leader says people probably do not want to go there. Ten percent of
30 the community leaders' comments imply it is too early to make a
31 future use determination for various reasons, including cleanup costs,
32 cleanup levels and infrastructure possibilities and limitations.

33 Thirty-two percent of the general public respondents in the 5-mile area
34 and 34 percent in the 20-mile area do not know what should be done
35 with the Fernald facility once cleanup is completed.

3) Technology Center/Museum

Sixteen community leaders' responses are related to establishment of a technology center or museum as a future use consideration for the Fernald facility. Six percent expressed the need to document the Fernald facility's history for future generations to learn from mistakes of the past. In the 20-mile area, 2 percent of general public respondents want the Fernald facility to become a monument. General public respondents in the 5-mile area make no related recommendations.

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94) Industrial/Commercial Use

Fourteen percent of the community leaders offer suggestions related to using Fernald property for industrial/commercial purposes. Four percent specifically favor an option which would benefit the local community economically, such as donating the property to local schools/churches or using the property for an industry or factory to create jobs, if the land is proven clean. Fourteen percent of general public respondents in the 5-mile area and 3 percent in the 20-mile area favor development of an industrial or commercial facility.

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185) Recreational Use

Eight percent of the community leaders' suggestions are related to recreational use. For example, 4 percent specify possibilities of establishing a golf course or a park with a fishing lake. Nine percent of the general public respondents in the 5-mile area and 4 percent in the 20-mile area would like to see the site used for recreational use.

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246) Low-level Radioactive Waste Repository

Six percent of the community leaders make comments related to the Fernald facility being used as a low-level radioactive waste repository. General public respondents do not provide related comments.

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287) Farm Land/Agricultural Use

Six percent of the community leaders provide comments related to using Fernald facility property for farm land or agricultural purposes. One community leader suggests the property be used for cattle grazing. Less than one percent of general public respondents made related recommendations.

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1 8) Sell Fernald Facility Property

2 Six percent of the community leaders suggest selling the Fernald
3 facility property. One community leader suggests selling it to the
4 highest bidder; another suggests selling it to Ross Township; and one
5 suggests selling the property to a business which can provide jobs for
6 people in the area. General public respondents do not make related
7 recommendations.

8 9) Open Space/Permanent Closure

9 Six percent of the community leaders favor either leaving the property
10 as "open space" or using it for nothing at all. General public
11 respondents who identify a disposition option rank permanent closure
12 highest (15 percent in the 5-mile area and 22 percent in the 20-mile
13 area). Five percent in the 5-mile area and 6 percent in the 20-mile
14 area doubt the facility will ever be clean enough to be used.

15 10) Residential Development

16 Four percent of the community leaders offer comments regarding
17 residential development as a potential option for future use of Fernald
18 facility, based upon two conditions: adequate remediation of the
19 waste pits and K-65 Silos and remediating the Fernald facility to
20 pristine condition. Less than one percent in either the 5- or 20-mile
21 areas prefer residential development. Approximately 1 percent of the
22 general respondents in both the 5- and 20-mile areas prefer residential
23 development.

24 11) Yard Waste Recycling Site

25 Two percent of the community leaders suggest converting the Fernald
26 facility into a yard waste recycling site. General public respondents
27 do not make related recommendations.

1994 Community Assessment Community Leader Interview Form

Respondent's Name: _____

Interviewer's Name: _____

Date of Interview: _____

Location of Interview: _____

First, I'd like to ask you how knowledgeable you feel you are about the Fernald cleanup.

1. On a scale of 1-10, with 10 being the highest, how would you rate your level of understanding of the problems and issues involved in the cleanup of the Fernald site?

Why do you say that?

2. On a scale of 1-10, with 10 being the highest, how would you rate your level of understanding about the solutions being considered or proposed to solve the problems?

3. On a scale of 1-10, with 10 being the highest, how would you rate the public's understanding of problems and issues involved in the cleanup of the Fernald site?

Why do you say that?

4. On a scale of 1-10, with 10 being the highest, how would you rate the general public's understanding of the solutions being considered or proposed to solve the environmental problems at Fernald?

5. What do you consider is the number one priority of Fernald management?

Next, I'd like to know how you get information about Fernald.

6. On a scale of 1-10, with 10 being the highest, how would you rate the job Fernald has done at keeping the public informed about cleanup activities?

Why do you say that?

7. Do you receive information from any of the agencies or companies involved in the cleanup of Fernald?

Yes
 No

If yes, what type of information do you receive? If no, please skip to question No. 9.

8. Are the communications you receive from Fernald:

Too frequent
 Not frequent enough
 About right

9. On a scale of 1-10, how do you perceive information you receive from Fernald?

10 = unbiased/balanced information 0 = biased/unbalanced information)

10. Has your understanding of an issue at Fernald changed because of information you received from Fernald?

Yes
 No

If yes, please explain.

11. What are your principle sources of information about Fernald?
(Prompt respondent, if necessary, with the following sources: newspapers, radio, television, Fernald publications, meetings, word of mouth, speakers bureau, environmental organizations, regulatory agencies.)

12. From what sources do you prefer to receive information about Fernald?

1994 Community Assessment Community Leader Interview Form

13. Have you ever used the Fernald Public Environmental Information Center?

- Yes
 No

If yes, ask questions 14-16. If no, skip to question 17.

14. Is the location of the Public Environmental Information Center convenient?

- Yes
 No

15. Are the hours for the Public Environmental Information Center convenient?

- Yes
 No

16. On a scale of 1-10, with 10 being the highest, how useful would you rate the Public Environmental Information Center?

17. Have you attended any community meetings conducted by Fernald?
(This includes the RI/FS Community Meeting, roundtables, public hearings, workshops.)

- Yes
 No

If yes, how many within the past 12 months? If no, skip to question

18. On a scale of 1-10, with 10 being the highest, how useful would you rate the community meetings?

19. What issues about Fernald would you like discussed at a community meeting?

20. What day(s) and time(s) are most convenient for you to attend community meetings?

Preferred Day(s) _____

Preferred Time(s) _____

Next, I'd like to inquire about your concerns regarding Fernald.

21. Do you have any concerns about the Fernald site?

Yes

No

If yes, ask question No. 22; if no, skip to question No. 23.

22. Please identify the concerns you have about Fernald in order of importance:

23. If you have questions or concerns about the site, who would you contact for an answer?

24. Would you like to be more involved in issues and activities concerning Fernald?

Yes

No

Unsure

If yes, ask question No. 25; if no, skip to question No. 26.

25. In order of importance, please identify the issues or activities you would be most interested in being involved in at Fernald:

Now I'd like to know a little about your personal experiences with Fernald.

26. What is the first thing you think of when you hear about Fernald?

1994 Community Assessment Community Leader Interview Form

27. What is the most positive thing you can say about Fernald?

28. What is the most negative thing you can say about Fernald?

29. Have you visited the Fernald site before?

- Yes
 No

If yes, ask question No. 31; if no, ask question No. 30.

30. Would you be apprehensive about visiting the Fernald site?

- Yes
 No

If yes, why?

31. Do you feel you or anyone in your immediate family have experienced any health problems because of Fernald?

- Yes
 No

If yes, ask question No. 32; if no, skip to question No. 33.

32. What health problems have you or someone in your immediate family experienced?

(This is a personal question which some may choose not to answer.)

33. Do you know anyone, other than you or a member of your immediate family, who believes he or she has experienced any health problems because of Fernald?

- Yes
 No

34. Do you feel your property, or the property of anyone in your immediate family, has been impacted by the Fernald site?

- Yes
 No

If yes, ask question No. 35; if no, skip to question No. 36.

35. Please describe the impacts to your property, or your immediate family's property, which you feel were the result of the Fernald site.

Next, I'd like to know about your experiences with the organizations working at Fernald.

36. What agencies, companies, organizations can you name which are involved in the cleanup of Fernald?

37. Have you ever contacted any of the government agencies or companies involved in the cleanup of Fernald?

- Yes
 No

If yes, ask questions No. 38 and 39; if no, skip to question No. 40.

38. Please identify the agencies or companies involved in the cleanup at Fernald which you have contacted.

39. On a scale of 1-10, with 10 being the highest, how satisfied were you with the assistance or information you were given by the agencies or companies which you contacted?

40. On a scale of 1-10, with 10 being the highest, how would you rate the performance of the following organizations involved in the cleanup of the Fernald site:

- FERMCO
 Department of Energy

1994 Community Assessment Community Leader Interview Form

- USEPA
 Ohio EPA

41. Are you aware of the *Fernald Envoy Program*?

- Yes
 No

If yes, ask question No. 42; if no, skip to question No. 43.

42. On a scale of 1 - 10, with 10 being the highest, how useful would you rate the Envoy Program?

43. Are you aware of Fernald's science and math literacy program for K-12 students and teachers?

- Yes
 No

If yes, ask question 44; if no, skip to question 45.

44. On a scale of 1 - 10, with 10 being the highest, how useful would you rate the science and math literacy program?

Finally, I'd like to know your opinions on current and future cleanup activities at the Fernald site.

45. What do you think should be the number one priority at Fernald?

46. Are you familiar with any current cleanup projects/activities at Fernald?

- Yes
 No

If yes, ask questions No. 47 and 48; if no, skip to question No. 49.

47. Please identify the projects or activities to which you are familiar.
48. Of the projects or activities at Fernald with which you are familiar, have you received sufficient information to enable you to become involved in the decision-making process?
 Yes
 No
49. How do you feel about cleanup progress at the Fernald site?
50. Do you think the Fernald site should be cleaned to a pristine condition, even if it means spending additional taxpayer money *that needed to* meet basic government cleanup regulations?
 Yes
 No
- Why do you say that?
51. If the decision were yours alone, what would you do with the Fernald site once cleanup is complete?
52. Where do you think wastes generated during cleanup of Fernald should be disposed?
53. Are you aware that DOE has created a Fernald Citizens Task Force to make recommendations on future use of the site and related cleanup issues?
 Yes
 No

1994 Community Assessment Community Leader Interview Form

If yes, ask question No. 54; if no, skip to question No. 56.

54. Have you attended a Fernald Citizens Task Force meeting?

Yes

No

If yes, skip to question No. 56; if no, ask questions No. 55 and 56.

55. Would you be interested in attending a Fernald Citizens Task Force meeting in the future?

Yes

No

Unsure

56. Would you like more information about the Fernald Citizens Task Force?

Yes

No

If yes, complete information at the end of this survey if respondent is NOT on the Fernald community mailing list.

57. Is there anyone else you would recommend we talk to about the Fernald cleanup?

58. Are there any other comments about Fernald you would like to make?

59. Would you like to be on the Fernald community mailing list?

Yes

No

If yes, obtain full name, street, or post office box, city, state, zip code, phone number and, if applicable, fax number).

1994 Community Assessment Community Leader Interview Form

Name

Street address or P.O. box

City

State

Zip code

Phone number

Fax number

Thank you for your time and cooperation.

DRAFT

1994 Community Assessment General Public Interview Form

Hello, I'm _____ . I am calling on behalf of FERMCO, the environmental contractor for the U.S. Department of Energy at Fernald. We're doing a phone survey about the Fernald site. If you have a few minutes, I'd like to ask some questions about your interest in and knowledge about Fernald.

Attempts

First

Second

Third

Contacted respondent/date _____

No answer _____

Busy _____

Answering machine _____

Declined to participate _____

Respondent's name _____

Telephone number _____

Interviewer's name _____

Five-mile radius _____

Twenty-mile radius _____

- Are you, or is anyone in your immediate family, an employee at the Fernald plant?
 Yes
 No

If no, continue with survey. If yes, thank respondent, explain that this survey is for individuals who are not employed, or who do not have family employed, at the Fernald site.

2. What is the first thing you think of when you hear about Fernald?
3. What is the most positive thing you can say about Fernald?
4. What is the most negative thing you can say about Fernald?
5. What do you consider is the number one priority of Fernald management?
6. On a scale of 1-10, with 10 being the highest, how would you rate the following:
___ Fernald's effectiveness in informing the public about the environmental cleanup program at Fernald?
___ Fernald's effectiveness in involving the public in the decision-making process used to make cleanup decisions at Fernald?
7. On a scale of 1-10, with 10 being the highest, how would you rate these items?
___ Your *understanding* about the environmental problems at Fernald?
___ Your *understanding* of the environmental cleanup plans being considered or implemented at Fernald?
___ The general public's *understanding* of the environmental problems at Fernald?
___ The general public's *understanding* of the environmental cleanup plans being considered or implemented at Fernald?

8. From what sources have you received information about Fernald?

(Prompt respondent, if necessary, with the following sources: newspapers, radio, television, Fernald publications, meetings, word of mouth, speakers bureau, environmental organizations, regulatory agencies.)

9. From what sources would you prefer to receive information about Fernald?

10. Have you ever used the Public Environmental Information Center?

Yes
 No

11. Are you aware that DOE has created a Citizens Task Force to make recommendations on future use of the site and related cleanup issues?

Yes
 No

12. Have you attended any community meetings conducted by Fernald?
(This includes the Remedial Investigation/Feasibility Study Community Meeting, roundtables, public hearings, workshops.)

Yes
 No

If yes, how many within the past 12 months? If no, skip to question No. 14.

13. On a scale of 1-10, with 10 being the highest, how would you rate the value of the community meetings?

14. Have you ever visited the Fernald site?
 Yes
 No
15. Do you feel you or anyone in your immediate family have experienced any health problems because of Fernald?
 Yes
 No
16. Do you feel your property, or the property of anyone in your immediate family, has been impacted by the Fernald site?
 Yes
 No
17. Do you have any concerns about the Fernald site?
 Yes
 No

If yes, ask question 18, if no, skip to question 19.

18. Please identify the concerns you have about Fernald in order of importance.
19. If you had questions or concerns about the site, who would you contact for an answer?
20. What do you think should be the number one priority at Fernald?
21. Do you think the Fernald site should be cleaned to a pristine condition, even if it means spending additional taxpayer money *than needed* to meet basic government cleanup regulations?
 Yes
 No

Why do you say that?

- 22. If the decision were yours alone, what would you do with the Fernald site once cleanup is complete?
- 23. Where do you think wastes generated during cleanup of Fernald should be disposed?
- 24. On a scale of 1-10, with 10 being the highest, how would you rate the performance of the following organizations to cleanup the Fernald site:
 - FERMCO
 - Department of Energy
 - USEPA
 - Ohio EPA
- 25. Are there any other comments about Fernald you would like to make?
- 26. Would you like to be on the Fernald community mailing list?
 - Yes
 - No

If yes, obtain full name, street, or post office box, city, state, zip code, phone number and, if applicable, fax number)

Name _____

Street address or P.O. box _____

City _____ State _____ Zip code _____

Phone number _____ Fax number _____

Thank you for taking the time to answer our questions.

FERNALD CITIZENS TASK FORCE

INTERIM REPORT:
PRELIMINARY RECOMMENDATIONS
ON FUTURE USE AND CLEANUP LEVELS
FOR THE FERNALD SITE

DRAFT 11/1/94

DRAFT

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DRAFT

I. TASK FORCE BACKGROUND AND MISSION

The Fernald Citizens Task Force was established in August 1993 to provide the U.S. Department of Energy (DOE) with stakeholder recommendations regarding remediation of the Fernald Environmental Management Project. The Task Force is the facility's Site-Specific Advisory Board. It consists of fourteen stakeholders selected from communities in the vicinity of the Fernald facility. In addition, there are three *ex officio* members representing DOE, the U.S. Environmental Protection Agency (EPA), and the Ohio Environmental Protection Agency (OEPA). Members were selected to represent the broad spectrum of interests and backgrounds that are critical to the cleanup decisions at Fernald. The Task Force holds regular meetings on the second Saturday of each month and all of these meetings are open to the public. The Task Force mission and charter are provided in Appendix A (NOT INCLUDED IN THIS DRAFT) and profiles of members are provided in Appendix B (NOT INCLUDED IN THIS DRAFT).

The Task Force was chartered to develop recommendations on the following issues: future use(s) of the Fernald property; cleanup levels; cleanup priorities; and waste management options.

Significance of This Report

This interim report has been developed to transmit the first phase of recommendations from the Fernald Citizens Task Force to DOE, EPA, and OEPA. It covers the first two of the four areas in which the Task Force will develop recommendations: future use of the Fernald property following cleanup and cleanup levels. As such, the report is focused on presenting the Task Force vision for the ultimate condition of the Fernald property: the degree of cleanliness and the allowable use of land and natural resources.

This report presents the consensus recommendations of the Task Force. It is not meant to replace additional input from the general public surrounding the Fernald site; the Task Force recognizes that it does not and cannot replace a vigorous outreach program by DOE to the broadest possible public. Nevertheless, the Task Force has taken active measures to ensure that a broad cross-section of public opinion is heard in the Task Force process and is reflected in its recommendations. A summary of comments received from the broader public has been included as Appendix D (NOT INCLUDED IN THIS DRAFT).

Though all recommendations presented in this report are consensus positions of the Task Force, they are preliminary and subject to change as new information becomes available.

Next Steps

The Task Force will continue to work on developing recommendations for the final two areas of its mission (cleanup priorities and waste management options) and will develop a final report in July 1995. All public comment received regarding this report will be carefully considered in developing final recommendations and the final report.

Report Organization

Section II provides a broad overview of the process taken by the Task Force in developing its recommendations. Section III presents Consensus Values developed by the Task Force in order to identify important considerations for all current and future activities at the site. Specific recommendations of the Task Force are presented in Section IV. These recommendations represent consensus positions of the Task Force regarding groundwater protection and cleanup, allowable risk, and future use of the Fernald property.

II. APPROACH

The Fernald Citizens Task Force's primary role is to create a vision of the appropriate future use of the property at Fernald. This includes the expected use or uses of the land and natural resources and the level of residual contamination that those uses permit. In January 1994, the Task Force approved a work plan that identified important issues, a decisionmaking process, and milestones for developing recommendations on each of the issues. The process outlined in the work plan was followed in developing the recommendations identified in this report. The Task Force work plan is included in Appendix C (NOT INCLUDED IN THIS DRAFT).

In addition to the activities outlined in the work plan, the Task Force has emphasized getting broader public input into its work. Specific activities conducted to ensure public understanding of and comment on the Task Force's process and recommendations have included:

- Open monthly meetings with time set aside for public input and discussion
- A June 9, 1994 public workshop on the *FutureSite* exercise
- Presentations at the February, June, and October DOE community meetings
- A Task Force mailing address and message line for public comment
- Disseminating information through community channels
- News releases
- Advertisement of all meetings in local papers

Early on, members of the Task Force realized that decisionmaking could not proceed until some vision of the future use of the Fernald property was established. The work plan and the entire Task Force approach was built upon this understanding. Therefore, the future use of land and natural resources on and surrounding Fernald have been the first order of business for the Task Force. The process began by identifying all possible uses for the Fernald facility following cleanup and narrowing these options through application of known financial and technical constraints and through development of criteria relating to the concerns and needs important to members. These criteria were later refined and now stand as the Consensus Values identified in Section III. These Consensus Values are used by the Task Force as guiding principles in all decisionmaking.

In trying to determine future use, it was determined that cleanup levels and risk are necessarily tied to land use and must be evaluated simultaneously by understanding the impact that each has on the other and the total impact on issues important to local communities. These issues emerged over the course of evaluation and as a result of developing the Consensus Values. We organized these issues into the discrete evaluation criteria listed below, most of which are directly reflected in the Consensus Values.

Long-Term Safety: effectiveness of available technologies over time, long-term monitoring, and ownership of the Fernald property are seen as crucial to the long-term acceptability of any cleanup scenario.

Short-Term Risks: risks to workers and residents resulting from the cleanup activities themselves are of paramount concern.

On-Site Disposal Requirements: The volume of soil that will be excavated and the ultimate size of any on-site disposal facility will greatly determine the overall impact of the cleanup on local communities during and after construction.

Impact on Natural Resources: excavation of the large quantities of contaminated soil present at Fernald will have a significant impact on the flora, fauna, sensitive habitats, farmlands, and wetlands that comprise the Fernald site and surrounding properties.

Transportation and Off-Site Disposal Requirements: the Task Force is sensitive to the impacts on and potential risks to communities along transportation routes and at the ultimate disposal facility.

Community Impacts and Benefits: disruption of adjacent lands and the long-term economic, social, and aesthetic impacts on local communities and work force of the Fernald cleanup are of significant importance.

Cost: as a taxpayer-funded project, the total cost of cleanup is important. Moreover, DOE budget projections indicate real limitations of available resources.

The constant weighing of the costs and benefits of available approaches against these criteria was the basis for narrowing options and ultimately reaching consensus. The Task Force did not use any formal quantitative models to conduct these analyses, and no one criteria was clearly ranked as more important than another. However a number of tools were developed to help in creating overall understanding of the opportunities, constraints, costs, and benefits.

In order to keep track of issues and their impacts on decisions, the Task Force relied on information presented as maps, graphs, and charts for their accessibility and completeness. These materials were collected in an overall volume referred to as the "Tool Box" which was organized by different topics for easy reference. All of the information in the Tool Box was geared to providing the knowledge needed to understand the risk presented by the Fernald site and the various costs and benefits of different cleanup approaches and levels of cleanup. Key information in the Tool Box includes physical and chemical characteristics of Fernald and surrounding lands, current land and natural resource uses, information on risk and risk analysis, alternative cleanup levels, waste management options, and detailed descriptions of alternative future use scenarios. Key to these future use descriptions are charts and maps showing volume, cost, disposal cell size, and off-site transportation requirements for different options. Also included were color-coded maps that identify the scope and depth of excavation required for each alternative. The table of contents for the Tool Box and example resources are included in Appendix E (NOT INCLUDED IN THIS DRAFT).

One of the most important tools developed for use by the Task Force was a three-dimensional exercise called *FutureSite*. This exercise allowed participants to visualize the volume of contaminated soil requiring management in order to achieve alternative land uses and residual risks on the site. This tool was instrumental in developing the future use alternatives which the Task Force ultimately evaluated. An overview of *FutureSite* is included in Appendix F (NOT INCLUDED IN THIS DRAFT). In working through scenarios, the Task Force also used a magnetic white board which was developed to visualize different land use configurations and excavation impacts on the property. The board contains a permanent map of the site and allows the use of wipe-off markers to draw on different scenarios for discussion and comparison. Other elements, such as scale-sized disposal cells, can be placed on the board via magnets and moved around to evaluate alternative locations and their impacts. The board can be modified for specific discussions with vinyl tape to identify temporary items of importance to that discussion. Overall, these visual aids have been instrumental in understanding the impacts of different alternatives on the issues that are most important to the different members of the Task Force.

Each Task Force meeting is organized beforehand to focus on a specific set of issues as laid out in the work plan. Following Task Force administrative business, members spend time walking through the information that has been prepared that month. This information is then placed directly in the Tool Box for reference. The second half of the meeting is generally used for open discussion of the members and decision making as well as public input. Consensus is achieved by hearing direct motions from the group and unanimous vote.

III. FERNALD CITIZENS TASK FORCE CONSENSUS VALUES

The Task Force believes that the future use of the Fernald property should protect human health and the environment, affirmatively benefit the communities impacted while the site was operational, and eliminate the potential for activities similar to those which generated the current situation. In an effort to promote this vision, the Task Force has identified the following values to be applied throughout decisionmaking for the Fernald facility.

ENVIRONMENTAL VALUES

- Identify and preserve significant natural ecosystems with a special emphasis on naturally occurring wetlands, Paddys Run, and threatened and endangered species.
- Minimize impacts on the environment during remediation and maximize restoration of the environment after remediation.
- Ensure that any waste left on the site be controlled to prevent further contamination of the Great Miami Aquifer, air, and soils on- and off-site.
- Any future site use must be protective of the environment.

SOCIAL AND HUMAN VALUES

Future uses must have a positive impact on the surrounding communities, including:

- Acceptable risks to the current and future residents and workers of the Fernald community, with a special emphasis on the effects on children and future generations.
- Input and involvement from the public at large.

- Compatible with current and projected off-site uses.
- Special emphasis on promoting history, research, and education.
- Demonstrating how a negative situation can be turned into a positive by not repeating the mistakes of the past which resulted in the current conditions at Fernald.

ECONOMIC VALUES

- Emphasis should be placed on future uses that provide some level of continuing employment for area residents, but not necessarily in categories that have traditionally been present at the site.
- Future uses and ownership should be structured so that local tax revenues or payments in lieu of taxes are provided.
- Where practical, infrastructure should be used to enhance the suitability of the property for future use subject to environmental and health values.
- The cleanup of the Fernald facility should be done in such a way as to reduce the stigma of past practices at the site and assist in the continuing use and development of surrounding properties.

LONG-TERM MANAGEMENT VALUES

- A long-term control mechanism for the site must be established to ensure the perpetual moral and financial responsibility of the Federal government for the continued management, monitoring, and emergency response capability regarding all wastes left on the facility.
- Long-term uses and institutional control mechanisms must be reconciled with local zoning and planning.
- All selected uses resulting in waste being left on site must have the built-in flexibility to provide for future changes in use and for more complete cleanup should financial, technical, or demographic changes warrant.
- A long-term mechanism must be established to ensure citizen involvement in the control, management, and future decisions at the site

GENERAL USE VALUES

- Any future use plan must recognize that a mixed use strategy may be the most effective for the long-term use of the site.
- Emphasis should be placed on reducing the physical barriers and physical evidence of the past use of the site and focus on ways that Fernald can be a better neighbor to the surrounding community
- Under no circumstances should a post-remediation future use be permitted at the facility which requires the importing of hazardous, radioactive, mixed or solid waste for any reason.
- All uses and cleanup plans for all waste, shipments, and treatments must explicitly recognize all political, safety and health impacts.
- Future uses of the site must be focused on non-hazardous activities.

IV. PRELIMINARY RECOMMENDATIONS OF THE TASK FORCE

The primary goal of the Task Force in making recommendations is to ensure a safe cleanup of the Fernald property. Safety is paramount in our minds: the safety of local residents, site workers, residents of the communities that would be impacted by off-site transport and disposal of Fernald wastes, and future generations. Secondly, we want to recommend an approach to cleanup that maximizes reduction in contamination while minimizing adverse impacts of remediation activities on the local community. In keeping with this overall approach and our Consensus Values, the Task Force has reached consensus recommendations in the areas of aquifer protection and cleanup, allowable risk and cleanup levels for soils, and future land uses. Specific recommendations and a discussion of the Task Force rationale for each of these issues is presented below.

Aquifer Protection and Cleanup

Recommendation

- Past impacts of the Fernald site on the Great Miami Aquifer must be remediated and any future impacts controlled so that groundwater quality meets the proposed uranium standard for the Safe Drinking Water Act.

Discussion

The Task Force took an in-depth look at the options for dealing with groundwater contamination. We evaluated three distinct endpoints: cleaning to a 10^{-6} drinking water risk (3 ppb), cleaning to the proposed maximum contaminant levels (MCLs, at 20 ppb), and not cleaning at all, but letting the aquifer flush itself over time.

Due to the prevailing groundwater flow, all contamination would ultimately reach the Great Miami River where the volume of water would dilute the contamination to low levels. The direct threat of the contamination to drinking water sources has been largely eliminated by homeowners using alternate sources and a new water line currently being installed. On the surface, it appeared that dilution might be a viable approach to dealing with groundwater contamination. However, if left unchecked, as much as four thousand surface acres and 32 billion gallons of water would ultimately be impacted requiring widespread condemnation of the aquifer for thousands of years. The Task Force views the social, environmental, and potential legal and administrative costs of such an approach as unacceptable.

The Task Force also evaluated measures to contain the contaminated groundwater within the site boundaries. The current pumping wells appear to have successfully stopped further migration of the south plume. However, any interim or containment measure would only result in the need for perpetual action due to the long half-life of uranium. Interim or containment measures would require a perpetual replacement of water treatment facilities at the end of their useful lives, approximately every thirty to forty years. With the constant risk of losing funding for new construction activities, the Task Force was not willing to take such an approach. Ultimately, such approaches would result in higher costs than for a total and rapid cleanup today. Decisive action now will be able to provide cleanup to MCLs within the life span of a single treatment plant.

The Task Force opted to recommend cleaning groundwater to MCLs (20 parts per billion), rather than to a 10^{-6} risk level (3 parts per billion) for several reasons: 1) MCLs is fully protective of human health and the environment, 2) cleaning the aquifer to 3 parts per billion, is not as technically feasible, and 3) the 3 parts per billion and background concentrations of 1-2 parts per billion are very difficult to distinguish, given current sampling and analysis protocols.

As a result, the Task Force came to the conclusion that Fernald's impact on the Great Miami Aquifer is a significant concern and the only viable course of action is to seek a complete and rapid cleanup. As acceptable standards exist in the form of proposed MCLs and these standards are both technologically and practically achievable, the Task Force recommends seeking these levels in cleanup.

Allowable Risk and Cleanup Levels for Soils

Recommendations

- Residual risks posed by exposure to Fernald contamination under any use of land on and off the Fernald property shall never exceed 1×10^{-6} . Other recommendations of the Task Force may override this risk level only to make cleanup more stringent. Additionally, the Task Force reserves the right to limit land use even in cases where the concentrations achieved in the soil would allow for less restrictive uses.
- All contaminated soils and other waste sources both on and off the Fernald property must be reduced to levels that will prevent contaminants from leaching into the aquifer at concentrations exceeding Safe Drinking Water Act levels.

Discussion

The Task Force evaluated risks throughout the EPA risk range of 10^{-4} to 10^{-6} , and across all land uses, in seeking overall guidance to the level of cleanup that should be required at Fernald. These risk levels differ in a number of important ways, all of which the Task Force considered: soil volume, off-site solid, disposal cell size, cost, implementability (political, sampling/analytical cost, legal concerns, protection) ecosystem impacts, and land use. The most striking concern in making this decision was the volume of soil that would require excavation beyond the Fernald property boundary if a 10^{-6} residential scenario were chosen. A total of 5,200,000 cubic yards of soil would be removed from off property alone. A disposal cell for this amount of material combined with the on-site volumes would cover almost 400 acres of the 1,050 acre site. If the soils were sent off site, approximately 430,000 truckloads or 1,350 trainloads would be required. The risk to Fernald residents and to other communities -- and to a lesser extent, the cost -- of this degree of movement of radioactive waste is excessive.

The Task Force is also concerned about the serious ecological damage that would occur from such widespread excavation. This amount of excavation would rob many square miles of surrounding homes and farmlands of vital top soil and mature trees and vegetation and cause enormous disruption to lives and livelihoods during construction. Though ultimately the lands would be restored, it would be generations before the ecosystems fully recovered. The short-term risks to this generation due to resuspension of contamination and construction accidents far outweigh the very small reductions in long-term risk that would be achieved. Moreover, because the 5 ppm cleanup level for resident farmer at 10^{-6} is so close to background levels of uranium of 3.7 ppm, it would be difficult to even distinguish where this

contamination occurs. Finally, a 10^{-6} level would be inconsistent with the allowable risk for groundwater.

The Task Force looked carefully at the levels of contamination that are found off the Fernald property. Several removal actions and the tilling action of farming on much of the off property lands has resulted in eliminating much of the detectable contamination. In all cases, the contamination is well below the resident farmer requirements of 1×10^{-4} (130 ppm), and only marginally above the resident farmer requirements at 1×10^{-5} (15 ppm). It is only as we approach background (3.7 ppm) that uncertainty would drive high volumes of soil removal. Taking into consideration the existing low levels of contamination found off the Fernald property and the desire to limit the disruption of off-site homes and farms, the Task Force decided on a maximum residual risk from Fernald soils of 1×10^{-4} .

The Task Force selected the 1×10^{-4} risk, however, with the understanding that in order to meet its goal of fully protecting the aquifer to MCLs over the long term, cleanup levels for soil would actually have to be even more stringent than the resident farmer scenario at 1×10^{-4} . In taking this approach, the Task Force has deliberately provided a level of redundant protection above the stated risk maximum.

The cleanup levels required to protect the aquifer are 20 ppm total uranium in the former production and wastewater treatment areas due to the high solubility of uranium found there and 100 ppm in all other locations both on and off the Fernald property. These then, are the specific cleanup levels recommended by the Task Force for the Fernald facility. If we look at equivalent land use at all risk levels, the 100 ppm cleanup level provides for a minimum of residential use at 1×10^{-4} , industrial/commercial use at 1×10^{-5} , and green space at 1×10^{-6} . Actual sampling results show that most of the soil is contaminated with uranium at concentrations of about 50 parts per million or less. With most of the soil at concentrations below the clean-up levels recommended by the Task Force, there will be even more protection of the aquifer and public health. Thus, for the land uses specified below, the on-site risk level will be no greater (and usually much less than) 10^{-5} which is consistent with the groundwater risk level.

Future Land Uses

NOTE: ITALICS INDICATE ISSUES FOR WHICH CONSENSUS DECISIONS HAVE NOT BEEN REACHED BY THE TASK FORCE AND WILL BE DISCUSSED IN THE NOVEMBER MEETING. THIS INFORMATION IS INCLUDED ONLY AS A PLACEHOLDER FOR PENDING ISSUES AND NOT AS A RECOMMENDATION.

Recommendations

- All off-property land is to be considered available for the most stringent use (resident farmer).
- New residential or agricultural use on the Fernald property is expressly prohibited.
- *[Grazing decision]*
- *[Commercial use decision]*

Discussion

After safety, the Task Force is primarily concerned with the ability of area residents to maintain their homes and livelihoods without undue disruption and additional hazards. The Task Force is seeking to minimize negative impacts on area residents from the cleanup activities and ultimate use of the Fernald property, while still protecting public health and the environment.

In the opinion of the Task Force, on-site property is not suitable for residential or agricultural uses, even quantitative measurements would permit such uses. The proximity to a long-term disposal facility and the Task Force's desire for a margin of safety or buffer between the long-term disposal of radioactive material and the surrounding communities lead us to the conclusion that uses which allow for a high level of activity and exposure should not be permitted on the Fernald property at any time in the future.

At the same time, the Task Force recognizes that some use of the site is desirable and that local communities would like to see some ultimate benefit from the cleanup of Fernald. The Task Force evaluated several uses and determined that a combination of uses was most beneficial.

The Task Force recognizes that DOE has recommended that some portion of the site be dedicated to a disposal facility and required buffer. A formal position on that issue will not be presented until our final report. During the course of the second half of our evaluation, we will look more closely at the prospect of on-site waste disposal and a suitable location for such disposal within the site borders. Our final report will identify specifically how the site property should be organized according to different uses.

The Task Force has broadly identified the following uses as acceptable for the Fernald property. The Task Force stresses that any on-property uses ultimately selected must be consistent with the Consensus Values.

Green Space

Recreational space to provide for non-intrusive outdoor activities and natural habitats for local wildlife and to provide the maximum protection of the sensitive habitats and species, particularly in the Paddys Run corridor.

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