



**BWX Technologies, Inc.**  
a McDermott company

3001-0302250002 BWXT of Ohio, Inc.

1 Mound Road  
P.O. Box 3030  
Miamisburg, Ohio 45343-3030  
(937) 865-4020

ER-152/02  
June 18, 2002

Mr. Richard B. Provencher, Director  
Miamisburg Environmental Management Project  
U. S. Department of Energy  
P. O. Box 66  
Miamisburg, OH 45343-0066

ATTENTION: Robert S. Rothman

SUBJECT: Contract No. DE-AC24-97OH20044  
**VARIOUS DOCUMENTS**

REFERENCE: Statement of Work Requirement C.7.1e - Regulator Reports

Dear Mr. Provencher:

Rob Rothman from your office has approved the release of the following documents to the regulators:

- PRS 21, 22, 25, 26, 27, 29 Package, Final
- PRS 28 Package, Final
- PRS 277/278 Package, Final
- PRS 421 Package, Final
- PRS 308 Package, Final

If you or members of your staff have any questions regarding the documents, or if additional support is needed, please contact Dave Rakel at extension 4203.

Sincerely,

Monte A. Williams  
Project Manager, Environmental Restoration

MAW/KMA:jdj

Enclosures

cc: Tim Fischer, USEPA, (1) w/attachments  
Brian Nickel, OEPA, (1) w/attachments  
Ruth Vandegrift, ODH, (1) w/attachments  
Paul Lucas, DOE/MEMP, (1) w/attachments  
Sue Smiley, DOE/MEMP, (1) w/attachments  
Randy Tormey, DOE/HQ, (1) w/attachments  
Dann Bird, MMCIC, (3), w/attachments  
Craig Hansen, BWXT of Ohio, (1) w/attachments  
Dave Rakel, BWXT of Ohio, (1) w/attachments  
Karen Arthur, BWXT of Ohio, (1) w/attachments  
Monte Williams, BWXT of Ohio, (2) w/attachment  
Public Reading Room, (5) w/attachments

3001-0302250002

**MOUND**



**Environmental  
Restoration  
Program**

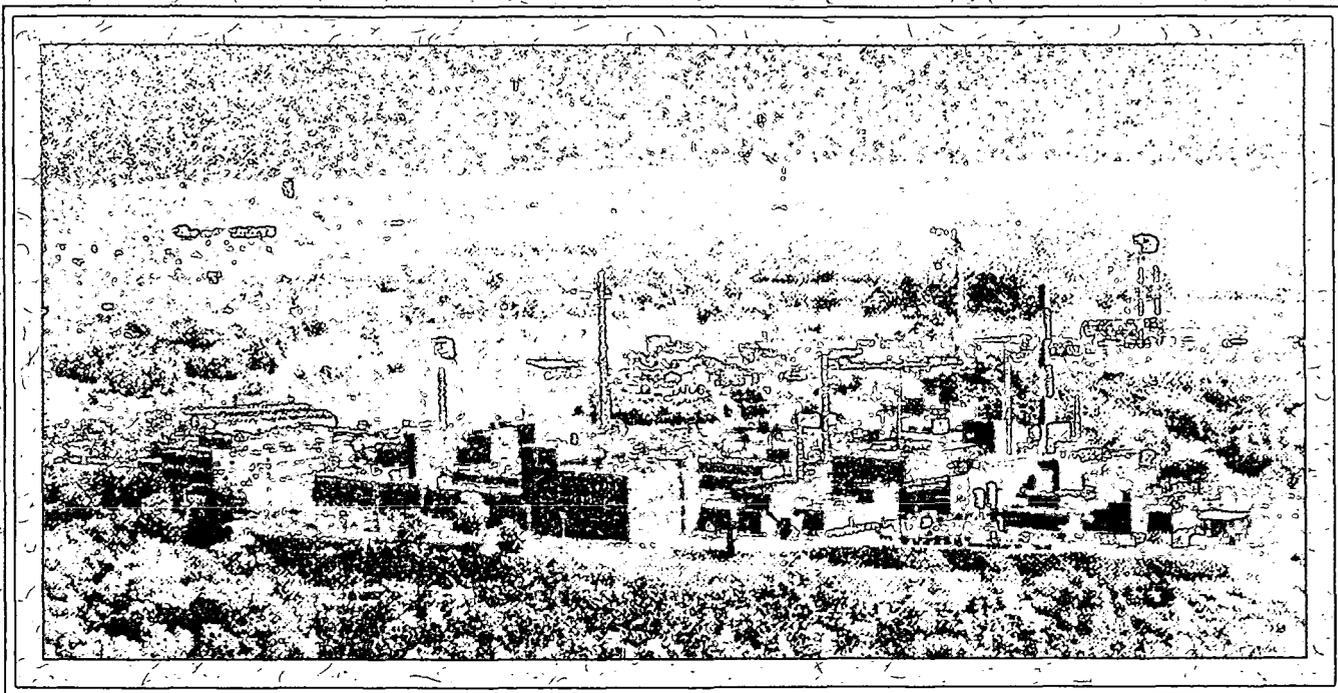


# MOUND PLANT

## Potential Release Site Package

### PRS 21/22/25/26/27/29

**FINAL  
JUNE 2002**



**MOUND**



Environmental  
Restoration  
Program

**MOUND PLANT  
POTENTIAL RELEASE  
SITE PRS PACKAGE**

*Notice of Public Review Period*



The following Potential Release Site (PRS) fact sheet is available for public review in the CERCLA Public Reading Room, 305 E. Central Ave., Miamisburg, Ohio. Public comment on this document will be accepted March 19, 2001 through April 19, 2001.

**PRS 21/22/25/26/27/29: Wastewater Transfer Structures/RCRA  
Closures**

Questions can be referred to Paul Lucas at (937) 865-4578.

**PRS 21/22/25/26/27/ 29 Tracking Sheet**

<b>REVISION</b>	<b>DESCRIPTION</b>	<b>DATE</b>
<b>WORKING DRAFT</b>		<b>21 July 2000</b>
<b>DRAFT</b>		<b>16 August 2000</b>
<b>DRAFT PROPOSED FINAL</b>	All six PRSs binned No Further Assessment on 19 September 2000. Recommendation signed on 18 October 2000 and includes adjustments requested by OEPA.	<b>7 November 2000</b>
<b>PUBLIC REVIEW DRAFT</b>	Core Team review of Draft Proposed Final is complete. No Comments received.	<b>19 April 2001</b>
<b>FINAL</b>	Response to public comments follows the tracking sheet. No changes made as a result of public review.	<b>June 2002</b>



**The Mound Core Team**  
P.O. Box 66  
Miamisburg, Ohio 45343-0066

---

Mr. Daniel Bird, AICP  
Planning Manager  
Miamisburg Mound Community Improvement Corporation  
720 Mound Road  
COS Bldg. 4221  
Miamisburg, Ohio 45342-6714

Dear Mr. Bird:

The Core Team, consisting of the U.S. Department of Energy Miamisburg Environmental Management Project (DOE-MEMP), U.S. Environmental Protection Agency (USEPA), and the Ohio Environmental Protection Agency (OEPA), appreciates your comments on the PRS 21, 22, 25, 26, 27, and 29 Data Package. Attached are our responses.

Should the responses to comments require additional detail, please contact Robert Rothman at (937) 865-3823 and we will gladly arrange a meeting or telephone conference.

Sincerely,

DOE/MEMP:

Robert S. Rothman, Remedial Project Manager

USEPA:

Timothy J. Fischer, Remedial Project Manager

OEPA:

Brian K. Nickel, Project Manager

## MMCIC Comments

### PRS 21, 22, 25, 26, 27, and 29 Data Package

Public Review Draft, April 10, 2001

#### Substantive Comments

1. Table 2 on Page 6 of this PRS Package compares site soil and sediment sampling results to  $10^{-6}$  Guideline Values. However, a statement in the second paragraph of the Recommendation Page (Page 8) indicates that the Core Team actually compared the sampling results to the acceptable risk level of  $10^{-5}$  Guideline Values when making their binning decision regarding PRSs 21, 22, 25, 26, 27, and 19. Since one of the sampling results (for Radium-226) exceeds its respective  $10^{-6}$  Guideline Value, we suggest that Table 2 be changed to present  $10^{-5}$  Guideline Values that were, in fact, used in the comparison, in order to avoid confusion or misunderstanding on the part of the public.

#### Response

The Core Team uses  $10^{-6}$  Risk-Based Guideline Values in presenting data in PRS Packages because  $10^{-6}$  risk is the "point of departure" in a risk evaluation. The Core Team believes it is better to consistently use the  $10^{-6}$  RBGV in presenting data in the PRS package and specify the factors surrounding its decision in the recommendation. Table 2 will not be changed.

#### Errata

1. No comments

## PRS 21, 22, 25, 26, 27, 29

### PRS HISTORY:

**Potential Release Site (PRS) 21** was a triangular shaped, gravel lined depression measuring approximately 50'x50'x50'x6' deep that formerly received stormwater from Buildings 1 and 43 and wastewater from the Building 1 Sump (PRS 22). The Building 1 Sump was located adjacent to Building 1, constructed of concrete, with interior dimensions of 4 feet square and 3 feet deep. Wastewater contained dilute waste solvents and trace explosives from processing operations conducted in Building 1. Explosives processing in Building 1 ceased by 1985 and subsequent explosives processing occurred at Building 27. Buildings 1 and 43 were demolished in 1999.

Building 27 operations discharged process wastewater containing spent diluted solvents and trace explosives via gravity in open troughs (PRS 27) built into the concrete floor slab of Building 27. Seven separate troughs within Building 27 (each powder processing cell houses one trough) pass through to the exterior of the building on the south side of Building 27 and merge into a t-shaped trough (PRS 26), prior to discharge into a concrete sump (PRS 29). Wastewater was filtered to remove suspended explosive contaminants from the wastewater. From the sump, wastewater was directed to a leach pit (PRS 25) located southwest of Building 27 where evaporation and absorption were responsible for reducing wastewater volumes. Both the sump and leach pit were taken out of service in 1985. In 1991, the interior and exterior troughs were taken out of service when the process equipment was modified to pipe wastewater directly into drums currently being managed in a satellite accumulation area in accordance with hazardous waste generator requirements.

All six PRSs (listed below and shown on Figures 1 through 4) were designated as RCRA units requiring closure, which occurred in June/July 2000.

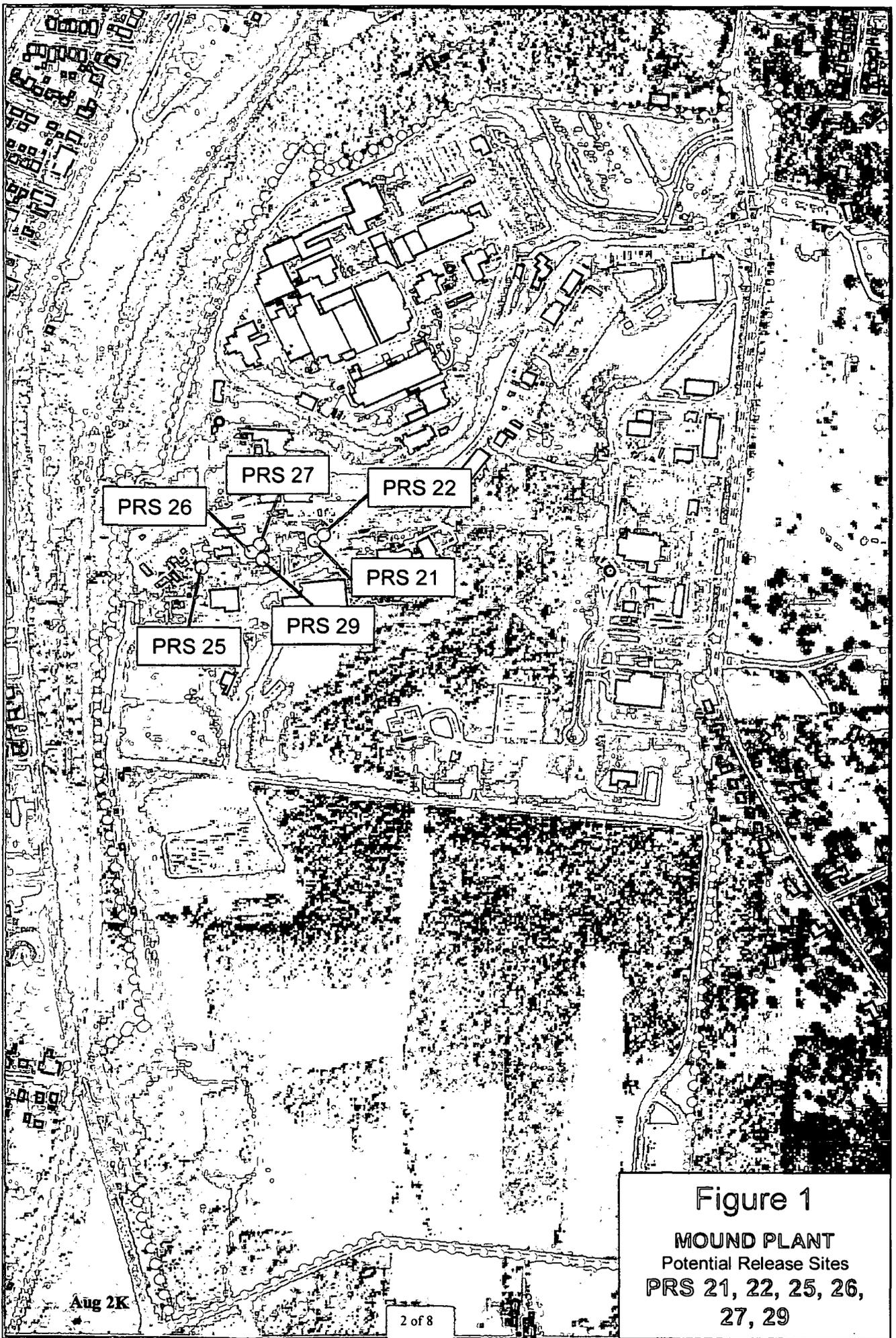
- PRS 21: Building 1 Leach Pit
- PRS 22: Building 1 Sump
- PRS 25: Building 27 Leach Pit
- PRS 26: Building 27 Exterior Trough
- PRS 27: Building 27 Interior Troughs
- PRS 29: Building 27 Sump

### CONTAMINATION:

#### **RCRA CONTAMINATION**

Based on information presented in the **RCRA Closure Plan**<sup>1</sup>, and as directed via the Ohio EPA's Closure Plan approval letter<sup>2</sup>, both leach pits and the interior troughs (PRSs 21, 25, & 27) were clean closed based on existing information and additional sampling was not required. No action was required in the Closure Plan for the interior troughs.

The sumps and exterior trough (PRSs 22, 26, & 29) were decontaminated and a rinsewater sample collected in each was analyzed for the contaminants of concern. Table 1 lists the four contaminants of concern identified in the Closure Plan as well as the maximum concentrations



**Figure 1**

**MOUND PLANT**  
Potential Release Sites  
**PRS 21, 22, 25, 26,**  
**27, 29**

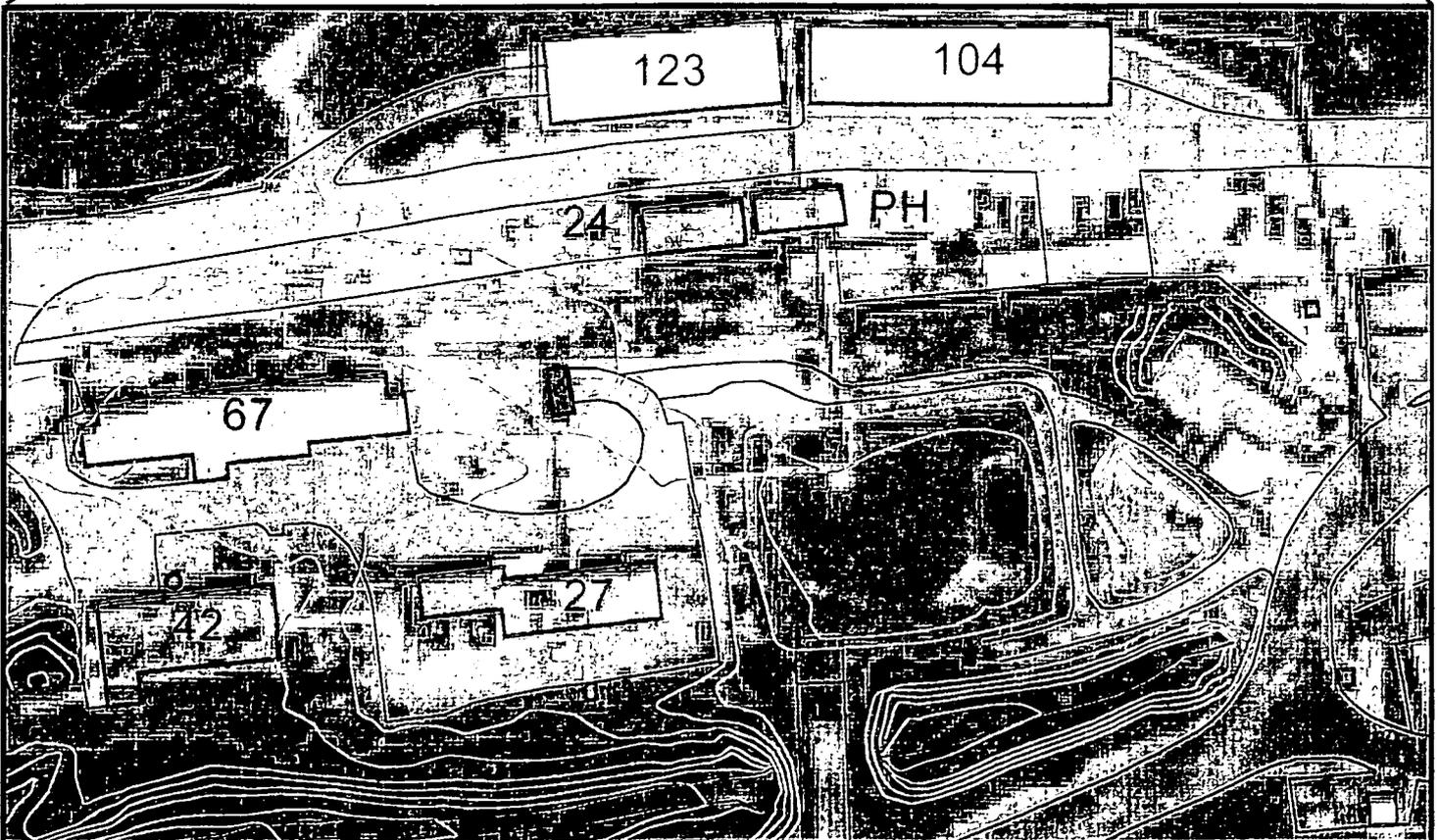
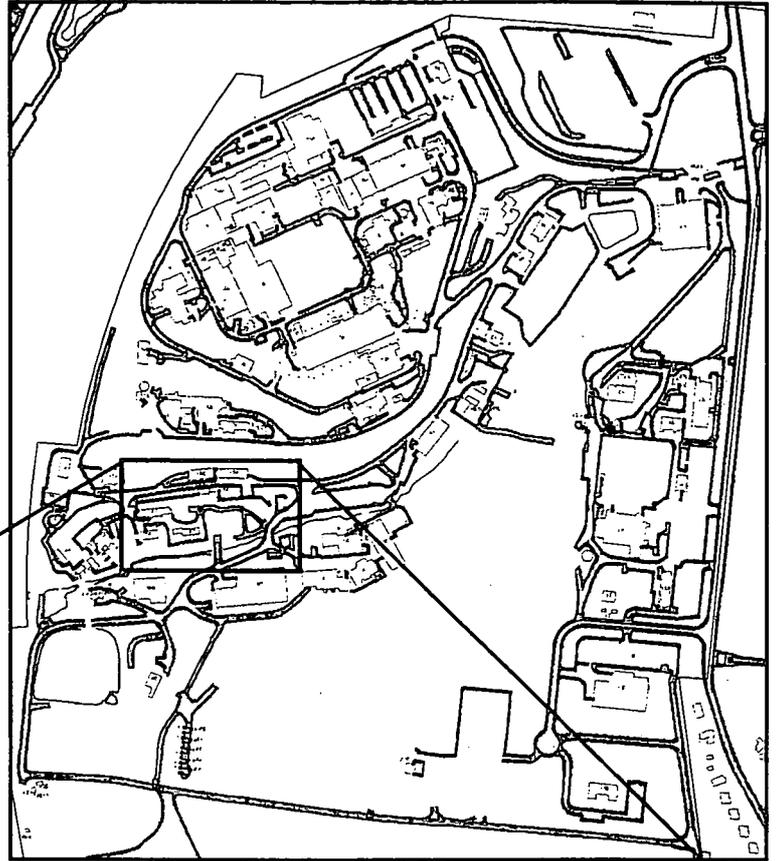
Figure 2:

# Mound Plant

PRS 21, 22, 25, 26, 27, 29  
Wastewater Transfer  
Structures

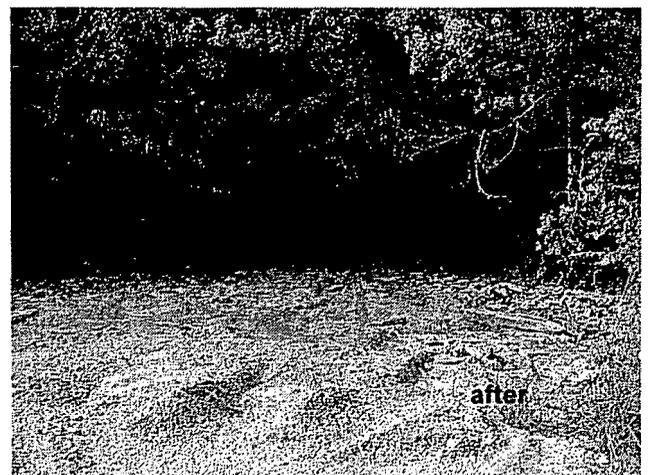
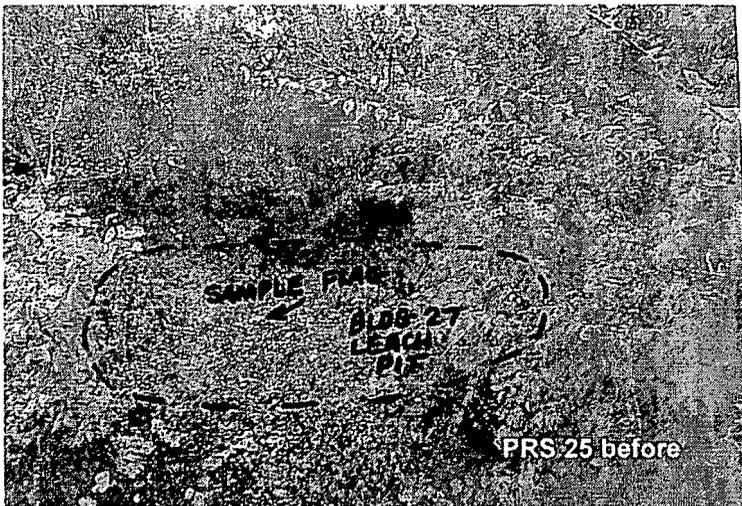
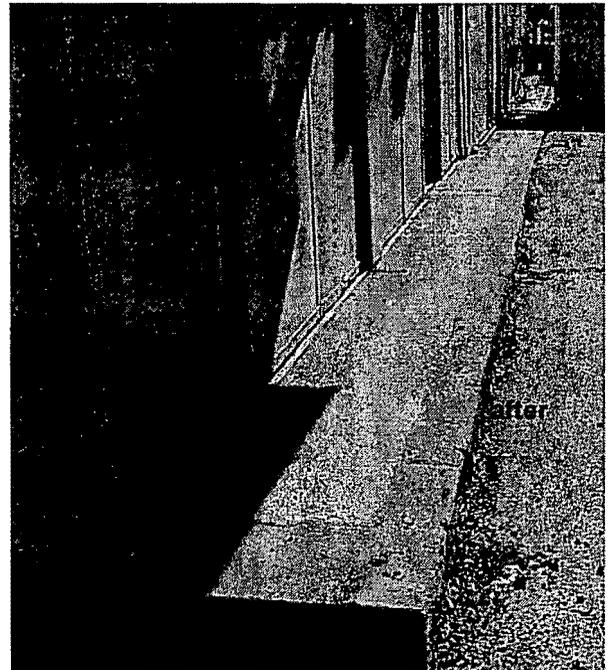
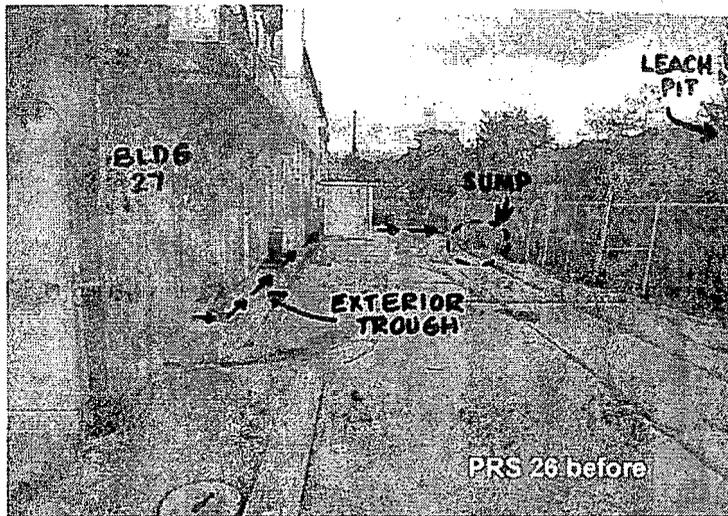
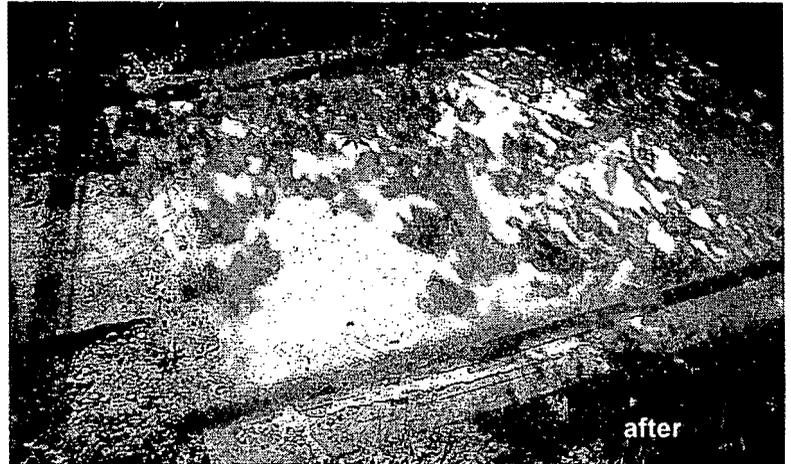
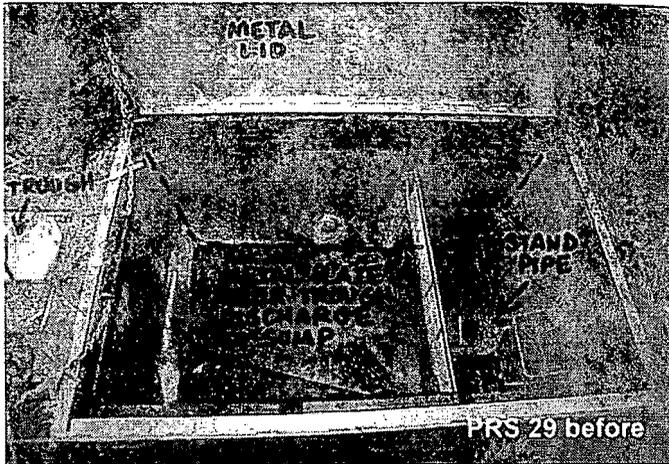
On the map below:

- Elevation contours shown in yellow
- PRS number & location shown in red
- Buildings shown in green
- Drainage channel shown in blue



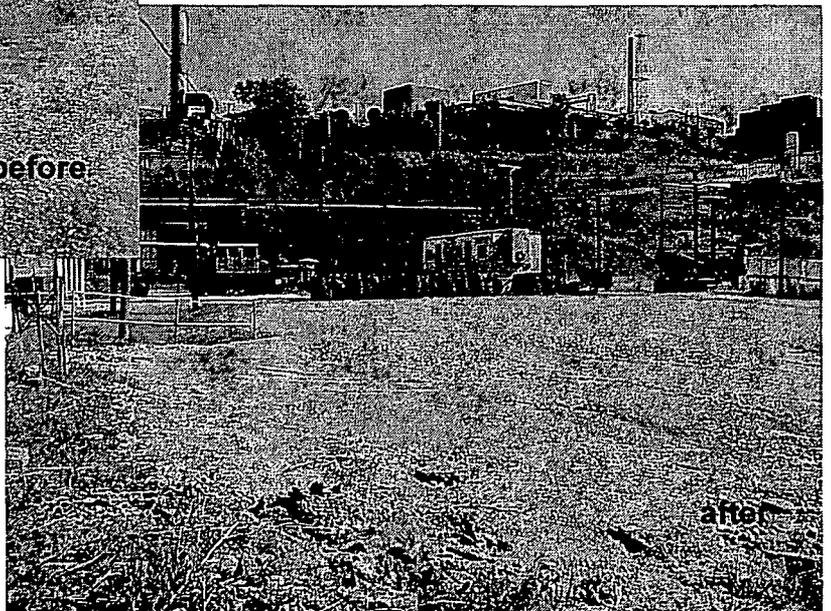
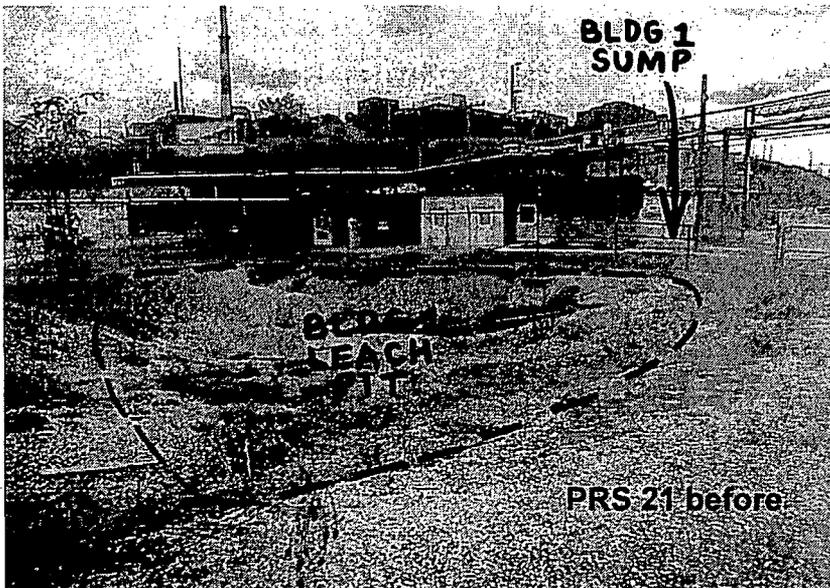
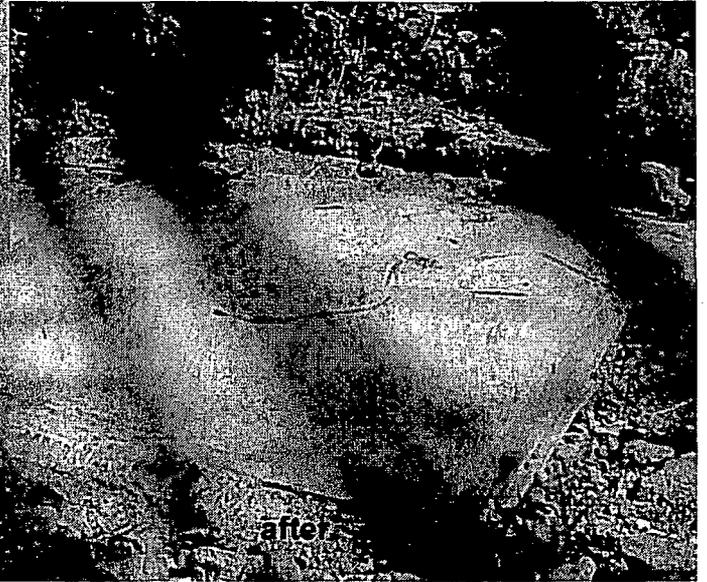
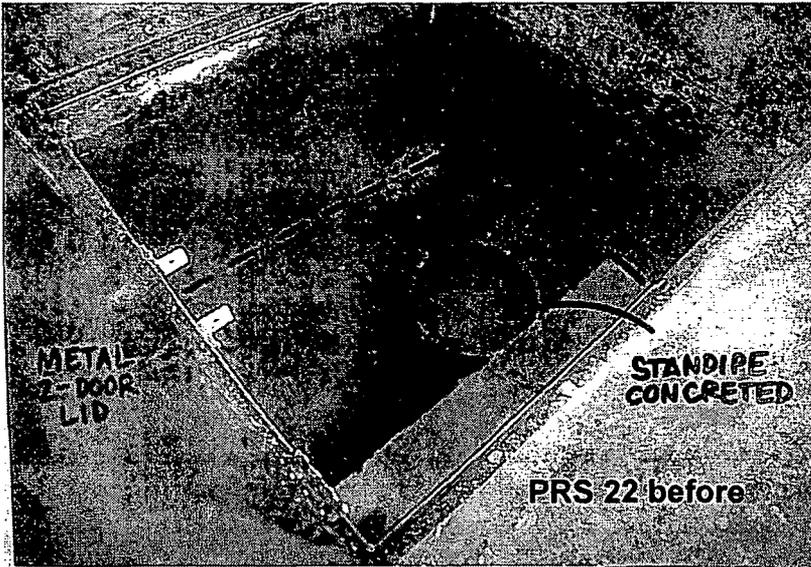
# Figure 3

## Bldg 27 Sump, Trough, & Pit



# Figure 4

## Bldg 1 Sump & Pit



detected during surface rinse sampling. All results were below the 1 mg/L criteria specified in the Closure Plan.

**Table 1: Maximum Residual Surface Contamination (mg/L)**

Analyte	Result & Data Qualifier	Guideline Value*	Cleanup Objective
acetone	0.010 U	21,000	1.0
acetonitrile	0.020 U	NC	1.0
toluene	0.001 U	250	1.0
methylene chloride	0.001 U	395	1.0

U: not detected at the detection limit (value presented)

\*most stringent scenario of  $10^{-6}$  or Hazard Index = 1

NC: not calculated

## RADIOLOGICAL CONTAMINATION

No radiological operations were conducted in either Building 1 or Building 27, and for that reason, radionuclides were not identified as a contaminant of concern for any of the six PRSs. Radiological data; however, is reported herein for completeness and documentation.

Soil/Sediment. A limited number of samples were collected as part of previous investigations from the Building 27 and Building 1 Leach Pit areas, as well as adjacent to the Building 27 Exterior Trough and Sump. Additional sediment/soil from the bottom of the structure within the Building 1 Leach Pit was collected and analyzed for radionuclide contamination<sup>6</sup>. The highest activity noted for residual soil/sediment contamination associated with PRS 21, 25, 26, and 29 is presented in Table 2. PRS 22 and PRS 27 were decontaminated and contained no residual soil/sediment.

**Table 2: Maximum Residual Soil/Sediment Contamination (pCi/g)**

Analyte	Result & Data Qualifier	Guideline Value*
Plutonium-238	25	5.5
Thorium-232	2U	0.1
Cobalt-60	0.01U	0.1
Cesium-137	0.05	0.46
Lead-210	1.62	1.7
Radium-226	1.07	0.14
Actinium-227(D)	0.05	1
Thorium-230	1.48U	**
Americium-241	0.02U	4.95

\*most stringent scenario of  $10^{-6}$  or Hazard Index = 1

\*\* currently under consideration by the Core Team

Surface/Fixed. Interior surfaces of PRSs 22, 26, 27, and 29 were surveyed to confirm the absence of alpha ( $\alpha$ ) and beta ( $\beta$ )/gamma ( $\gamma$ ) emissions. A total of 39 direct readings for alpha identification were collected on representative surfaces. The average<sup>3</sup> allowable residual surface contamination for transuranic  $\alpha$  emitters is 100 dpm/100 cm<sup>2</sup>. The maximum<sup>3</sup> allowable residual surface contamination for transuranic  $\alpha$  emitters is 300 dpm/100 cm<sup>2</sup>. **All results were below the allowable limits<sup>4</sup>.**

Surface/Removable. A total of 39 swipes were collected from the same surfaces to confirm the absence of removable contamination. Allowable residual surface contamination guidelines for removable  $\beta/\gamma$  and transuranic  $\alpha$  are 1,000 dpm/100cm<sup>2</sup> and 20 dpm/100cm<sup>2</sup>, respectively. **All results were below the allowable limits<sup>4</sup>.**

The sumps and exterior trough were filled with concrete to grade to permanently remove them from operation. Both leach pits were backfilled to grade per the plan. Pre and post-closure photographic documentation of these units is presented in Figure 2 and Figure 3. The **Closure Report** has been issued to Ohio EPA (approval letter pending) and includes required certifications<sup>5</sup> of closure.

#### **REFERENCES:**

- 1) Excerpts from Closure Plan, Buildings 1 & 27 Wastewater Transfer Structures, August 1999.
- 2) Closure Plan Approval Letter from Christopher Jones (Ohio EPA) to Oba Vincent (DOE Mound) dated 18 January 2000.
- 3) Excerpts from Work Plan for Environmental Restoration of the DOE Mound Site, the Mound 2000 Approach, February 1999.
- 4) As documented in RSDS 00-LS-151, 00-LS-157, 00-LS-161, and 00-LS-162.
- 5) Excerpt from Closure Report containing certifications of closure.
- 6) Additional Radiological data (RSDS 00-LS-062 and vistamap information).

#### **PREPARED BY:**

Karen M. Arthur, BWXTO Soils Project Engineer  
Joseph C. Geneczko, BWXTO Technical Staff

**MOUND PLANT**  
**PRS 21, 22, 25, 26, 27, 29**  
**Wastewater Transfer Structures/RCRA Closures**

**RECOMMENDATION:**

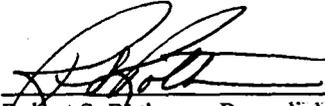
The RCRA PRSs (21, 22, 25, 26, 27, and 29), otherwise known as wastewater transfer structures, were identified as potential release sites because of the concern that residual volatile organic compounds from past operations associated with Buildings 1 & 27 remained in/on the structures.

Available data supports that radiological contamination is within acceptable risk ( $10^{-5}$ ) for industrial reuse.

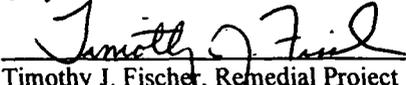
A Closure Report was submitted to OEPA, which documents that the standards established for the RCRA constituents presented in the OEPA-approved Closure Plan have been met. The Core Team, therefore, now recommends No Further Assessment for PRSs 21, 22, 25, 26, 27, and 29.

**CONCURRENCE:**

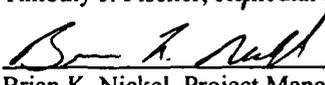
DOE/MEMP:

  
Robert S. Rothman, Remedial Project Manager (date) 10/17/00

USEPA:

  
Timothy J. Fischer, Remedial Project Manager (date) 11/16/00

OEPA:

  
Brian K. Nickel, Project Manager (date) 10/17/00

**SUMMARY OF COMMENTS AND RESPONSES:**

Comment period from \_\_\_\_\_ to \_\_\_\_\_

- No comments were received during the comment period.
- Comment responses can be found on page \_\_\_\_\_ of this package.

## **REFERENCE 1**

Excerpts from Closure Plan,  
Buildings 1 & 27 Wastewater Transfer Structures, August 1999.

# **CLOSURE PLAN**

## **BUILDINGS 1 & 27 WASTEWATER TRANSFER STRUCTURES**

**FINAL  
Revision 0**

**August 1999**

**Mound Plant  
Miamisburg, OH  
EPA I.D. No. OH6890008984  
Ohio I.D. No. 05-57-0677**



**Department of Energy  
Ohio Field Office**

**Prepared by the Soils Project of  
BABCOCK & WILCOX OF OHIO**

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# CLOSURE PLAN

## 1.0 PURPOSE

The purpose of this Closure Plan is to:

- substantiate clean closure of the Building 1 Leach Pit and Building 27 Interior Troughs and Leach Pit based on existing information and data, and
- present a plan to clean close by decontamination and surface rinse sampling the Building 1 Sump and Building 27 Exterior Trough and Sump

The associated environmental issue is the former transfer of dilute waste solvents through and subsequent effect on the following wastewater transfer structures:

- Building 1 Sump
- Building 1 Leach Pit
- Building 27 Interior Troughs
- Building 27 Exterior Trough
- Building 27 Sump
- Building 27 Leach Pit

Solvents consisted of acetone in larger quantities (purchased in 55-gallon drums), with smaller quantities of acetonitrile, methylene chloride, and toluene.<sup>o</sup> Methylene chloride and toluene were purchased in ml-size containers.<sup>o</sup> Actual documentation on the exact volume of acetonitrile used could not be located. Interview with personnel who worked at Building 27 with the solvents reported that it was not purchased in drums and was more in the range of the methylene chloride and toluene volumes.<sup>p</sup>

According to 40 CFR Part 261, the solvents are listed as follows:<sup>k</sup>

Constituent	40 CFR Listing	Characteristic of Listing
acetone	F003	ignitable
acetonitrile	D001	ignitable
methylene chloride	F002	toxic
toluene	F005	ignitable & toxic

Explosives were originally included as a contaminant of concern because of the potential for reactivity inherent in most explosives. Upon further inspection, explosives were found not to meet the characteristic of reactivity per 40 CFR 261.23 because of the following:

- the waste stream was mainly water, containing trace amounts (ppm range)<sup>d</sup> of explosives, and
- the explosives associated with Building 1 and 27 operations (HMX, RDX, PETN, HNAB, HNS, and TATB) were non-initiating by design

## **REFERENCE 2**

**Closure Plan Approval Letter  
from Christopher Jones (Ohio EPA) to Oba Vincent (DOE Mound)  
dated 18 January 2000**

State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center  
122 South Front St.  
Columbus, OH 43215

TELE: (614) 644-3020 FAX: (614) 644-2329

MAILING ADDRESS:

Lazarus Government Center  
P. O. Box 1049  
Columbus, OH 43216-1049

I certify this to be a true and accurate copy of the  
official document as filed in the records of the Ohio  
Environmental Protection Agency

By: *Zona L. Clemente* 1-18-00

**Certified Mail  
Return Receipt Requested**

January 18, 2000

U.S. DOE MOUND FACILITY  
Attn: Oba L. Vincent  
One Mound Road  
P.O. Box 66  
Miamisburg, Ohio 45343

**Re: CLOSURE PLAN APPROVAL / U.S. DOE MOUND**

Dear Mr. Vincent:

On September 24, 1999, U.S. Doe Mound submitted to Ohio EPA a closure plan for the filtration units in buildings 1 and 27 at the Mound facility located at One Mound Road, Miamisburg, Ohio. The closure plan was submitted pursuant to Rule 3745-66-12 of the Ohio Administrative Code (OAC) in order to demonstrate that the U.S. DOE Mound proposal for closure complies with the requirements of OAC Rules 3745-66-11 and 3745-66-12.

The owner or operator and the public were given the opportunity to submit written comments regarding the closure plan in accordance with OAC Rule 3745-66-12. No public comments were received by Ohio EPA.

Based upon review of Mound's submittal, I conclude that the closure plan for the above described hazardous waste units at One Mound Road, Miamisburg, Ohio, meets the performance standard contained in OAC Rule 3745-66-11 and complies with the pertinent parts of OAC Rule 3745-66-12.

The closure plan submitted to Ohio EPA on September 24, 1999, is hereby approved.

Compliance with the approved closure plan is expected. The Ohio EPA will monitor such compliance. The Director expressly reserves the right to take action, pursuant to Chapters 3734. and 6111. of the Revised Code, and other applicable law, to enforce such compliance and to seek appropriate remedies in the event of noncompliance with the provisions and modifications of this approved closure plan. Please be advised that approval of this closure plan does not release U.S. DOE Mound from any responsibilities regarding corrective action for all releases of hazardous waste or

Bob Taft, Governor  
Maureen O'Connor, Lieutenant Governor  
Christopher Jones, Director

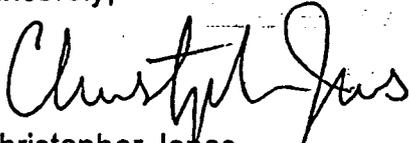
MIAMISBURG  
OHIOLEOPD. D-00728  
JAN 18 2000 30 PM '00  
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4444.07

constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit.

You are notified that this action of the Director is final and may be appealed to the Environmental Review Appeals Commission ("ERAC") pursuant to Section 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed with the Environmental Review Appeals Commission within thirty (30) days after notice of the Director's action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the ERAC. An appeal may be filed with the ERAC at the following address: Environmental Review Appeals Commission, 236 East Town Street, Room 300, Columbus, Ohio 43266-0557.

When closure is completed, Ohio Administrative Code Rule 3745-66-15 requires the owner or operator of a facility to submit to the Director of the Ohio EPA certification by the owner or operator and an independent, qualified registered professional engineer, that the facility has been closed in accordance with the approved closure plan. The certification by the owner or operator shall include the statement found in OAC 3745-50-42(D). These certifications should be submitted to: Ohio Environmental Protection Agency, Division of Hazardous Waste Management, Attn: Thomas Crepeau, Data Management Section, P.O. Box 1049, Columbus, Ohio 43216-1049.

Sincerely,



Christopher Jones  
Director

approval/eyl.ao

cc: Tom Crepeau, DHWM Central File, Ohio EPA  
Ed Lim, Manager, Engineering & Risk Assessment Section, CO, Ohio EPA  
Harriet Croke, USEPA - Region V  
Pat Willoughby, SWDO, Ohio EPA  
Tim Staiger, SWDO CLOSURE COORDINATOR  
SWDO DHWM file: OH6 890 008 984, 05-57-0677

# Tank System Closure Plan Review Form

This Closure Plan Review Form Is #		of		forms completed in the review of this closure plan.
------------------------------------	--	----	--	---

Facility Name	US DOE - MOUND	Reviewer/DO	PAT WILLOUGHBY
ID Number	OH6 890 008 984	Date of Plan	9-24-99
Date Review of Plan Completed	12-7-99	Plan Is: New, Amended, Revised	NEW

I. General	
A) Facility Permit Status (Part A, Part B, Unpermitted TSDF):	PART B FOR STORAGE
B) This is a (Partial/Full) Closure:	PARTIAL
If Partial Closure is checked, list the other regulated units remaining (unclosed) at the facility:	BLDG 72 - HW STORAGE AREA. BLDG 23 - MIXED WASTE STORAGE AREA
C) Does the submitted plan describe closure for more than one unit? If so, a separate closure plan review form shall be completed for each individual unit.	2 FILTRATION SYSTEMS

II. Description of Facility	
A) Describe the type of industry, size, products:	EXPLOSIVE FILTRATION SYSTEMS.
B) Describe the process(es) that generate the hazardous waste:	FILTRATION
C) Describe the facility's hazardous waste management methods:	CONTAINERS

III. Map of Facility	
A) Does the plan include a topographic and/or county map including a north arrow?	PROVIDED
B) Does the plan include a detailed facility map showing the location of each of the hazardous waste management units, including a north arrow, scale, and legend?	PROVIDED

IV. Description of Unit to be Closed	
A) Information regarding the tank: FILTRATION	
1) What is the age of the tank? SYSTEM	30 YEARS
2) What type of tank system is this? (reference definitions in 3745-50-10) - Aboveground, On-ground, In-ground, Underground:	ON-GROUND
3) Maximum capacity of the unit in gallons:	NA
4) Dimensions of the tank:	N/A
5) Period of use for hazardous waste management:	1980 TO 85

IV. Description of Unit to be Closed	
6) Construction details (drawings/blueprints):	YES - PROVIDED
7) Summary of geologic and hydrogeologic information	YES - PROVIDED
8) Proximity (depth) to ground water:	YES - PROVIDED
9) The ground-water plan review form must be completed. If it's not completed, provide the reason.	N/A -
B) Information regarding the secondary containment:	
1) What type of secondary containment is provided? None*, Vault, Double-wall, External liner, Equivalent device (describe)	
*Note that if the unit has no secondary containment, the facility must comply with the requirements of OAC Rule 3745-66-97(C) or 3745-55-97(C) for submitting a contingent (landfill) closure plan.	N/A
2) What material was used to construct the secondary containment system?	N/A
3) What is the age of the secondary containment?	N/A
Is the secondary containment structurally sound, free of cracks/holes, visible staining and other potential evidence/mechanisms of release? If not, describe:	
What was the basis of this determination? (i.e.: facility statements, visual observation, etc.)	N/A
C) Information regarding the ancillary equipment:	
1) What type of secondary containment (if any) is provided specifically for the ancillary equipment?	N/A
2) Describe the condition of the ancillary equipment (and if applicable, its secondary containment):	N/A
D) Are there any other structures associated with this tank system that have not been discussed above?	N/A
If so, describe in detail:	
E) Have there been any releases from the tank system?	N/A
1) If so, explain the nature of the release, when it was, and remedial measures taken at the time of the release:	N/A
2) If not, how was this determined (e.g. review of tank inspection documentation, sampling, etc.)?	N/A

V. List of Hazardous Wastes
A) Types of hazardous waste(s) currently managed in the tank (list with appropriate USEPA Codes; include potential degradation products; App. VIII constituents):

Waste Description	USEPA waste code(s)	IUPAC name and/or CAS #	Constituents and Degradation Products
ACETONE	F003		
ACETONITRILE	D001		
METHYLENE CHLORIDE	F002		
TOLUENE	F005		

LOCATION

V. List of Hazardous Wastes (cont'd)	
B) What method(s) were used to characterize the waste(s) listed above?	PROVIDED
C) Is the characterization adequate? If not, describe:	N/A
D) Are any of these waste types flammable?	PROVIDED
E) Were there any other types of wastes previously managed in the tank system?	N/A
If so, did the unit meet closure performance standards for those constituents?	

VI. Removal of Hazardous Waste	
A) Amount of waste present (in this unit only) at beginning of closure:	PROVIDED
B) Disposal Facility(ies):	PROVIDED
C) Transporter(s):	PROVIDED
D) Staging & Loading (description):	N/A
F) Will the waste be treated on-site rather than sent to a permitted TSD Facility?	N/A
If so, the Treatment Technology PRF shall be completed along with this form.	

VII. Schedule for Closure	
A) Does the plan detail all critical milestones for closure and state when a Professional Engineer (licensed and registered in the state of Ohio) will be present?	PROVIDED
B) Which activities will the inspector be notified of?	PROVIDED
C) Does the plan state that Ohio EPA will be given five working days notice before activities occur as listed in the above question?	PROVIDED

REF 2: 5/8

VII. Schedule for Closure	
D) What does the plan state regarding extensions beyond the 180 day timeframe for completing closure?	PROVIDED

VII. Other Permits	
A) Will other permits be required for successful implementation of this plan? If so, please list:	PROVIDED
B) Does the plan address NPDES, air emission, or other permit requirements?	PROVIDED

IX. Health and Safety Plan	
Does this closure plan include a Health and Safety Plan?	PROVIDED

X. Decontamination	
A) Tank Fate / Destiny - What will happen with the tank system upon completion of closure? (i.e. Will the tank be used as a <90 day storage tank? Will it be scrapped?)	PROVIDED ON PAGE 4 AND PAGE 9.
B) Will the secondary containment be removed? Decontaminated?	PROVIDED
C) Are any parts of the tank system to be recycled? If so, list:	PROVIDED
D) Based on the fate of the tank as described above, is the tank system required to be decontaminated to meet rinseate standards? If so list methods and standards in the table below:	PROVIDED

Decontamination of structures and equipment		
Structure or Equipment	Method	Standard

X. Decontamination (cont'd)	
E) Volume of rinseate expected to be generated. Describe how rinseate will be managed and disposed.	PROVIDED
F) Volume of debris expected to be generated. Describe how debris will be managed and disposed.	PROVIDED

X. Decontamination (cont'd)	
G) Will rinseate and debris be managed as hazardous waste? If not, how was that determination made?	PROVIDED
H) Description of release control (decon pad)	PROVIDED

XI. Closure Strategy/Remediation Standards		
Does the closure plan propose strategies for addressing contaminated media (soil, GW)? Identify which strategies below:		
Strategy (choose all that apply)	Describe how strategy will be applied below	Links to other PRFs
A) Clean Closure to background conditions for naturally occurring compounds (using either site specific background or BRS from the CPRG). Complete Remediation Standards Table below.	N/A	- Complete DCA PRF
B) Clean Closure to method detection limit for non-naturally occurring compounds. Complete Remediation Standards Table below.	PAGE 7. 15 TIMES MCL FOR TOLUENE + 1 FOR THE OTHER 3.	- Complete DCA PRF
C) Clean Closure to risk based standards (site specific or generic from the CPRG). Complete Remediation Standards Table below.  If the facility proposes to use an industrial clean-up standard with a deed restriction to the property, obtain legal involvement asap.	N/A	- Complete DCA PRF - Complete RA PRF
D) Waste In-Place Closure		- Complete Landfill PRF

Remediation Standards		
Constituent*	Remediation Standard(s) for Contaminated Media (if applicable)	Type of Standard (MDL, Risk-based, Background, BRS)
TOLUENE	15 mg/L	15 TIMES MCL.
ACETONITRILE	1 mg/L	DEFAULTS TO 1.0 W/ NO MCL.
METH. CHLORIDE	1 mg/L	"
ACETONE	1 mg/L	"

\* This list should match the list of hazardous waste constituents as stated in Section V.

**XII. Sampling Plan and Analytical Procedures**

Does the plan include a soil Sampling and Analysis Plan as detailed in Section 3.14 of CPRG - including sampling of cracks/holes, sump areas and areas of runoff/visible staining? If so, the DCA PRF shall be completed along with this form.

**XIII. Description of Removal Efforts and Treatment Processes**

A) Does the closure plan propose removal/excavation of contaminated media? If so provide the following information:

N/A

1) Type of contaminated media known/anticipated (this would include soil, fill material, etc.)

N/A

2) Estimated volume of contaminated soil/fill to be removed (include units)

N/A

3) Disposal Facility(ies):

N/A

4) Transporter(s):

N/A

5) LDR Status:

N/A

6) Staging & Loading (description):

N/A

B) What is the goal of this removal? (i.e., removal of "hot spots" only, clean closure by removal, clean closure demonstrated by risk assessment, other)

N/A

C) Will the media be treated on-site rather than sent to a permitted TSD Facility? If so, the Treatment Technology PRF shall be completed along with this form.

N/A

**XIV. Certification**

A) Certification will include the wording found in OAC 3745-50-42(D)? Yes \_\_\_ No \_\_\_

PROVIDED ON PAGE 11

B) What will be the status of the facility and the unit upon completion of closure? Will the unit require post-closure care?

PROVIDED ON PAGE 11

C) What documentation will be submitted with the closure certification?

PROVIDED ON PAGE 11

**XV. Financial Assurance Documentation**

Was a closure cost estimate submitted to Central Office or included with this closure plan submittal?

PROVIDED

## **REFERENCE 3**

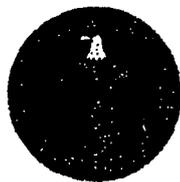
**Excerpts from Work Plan for Environmental Restoration of the DOE  
Mound Site, the Mound 2000 Approach, February 1999**

**WORK PLAN FOR ENVIRONMENTAL  
RESTORATION OF THE DOE MOUND  
SITE, THE MOUND 2000 APPROACH**

**FEBRUARY 1999**

**Final**

**(Revision 0)**



**Department of Energy**



**Babcock & Wilcox of Ohio**

REF3: 1/2

**Table 1**  
**SURFACE CONTAMINATION GUIDELINES**

Allowable Total Residual Surface Contamination (dpm/100 cm <sup>2</sup> ) <sup>1</sup>			
Radionuclides <sup>2</sup>	Average <sup>3,4</sup>	Maximum <sup>5,6</sup>	Removable <sup>6</sup>
<b>Group 1 - Transuranics, I-125, I-129, Ra-226, Ac-227, Ra-228, Th-228, Th-230, Pa-231</b>	<b>100</b>	<b>300</b>	<b>20</b>
<b>Group 2 - Th-Natural, Sr-90, I-126, I-131, I-133, Ra-223, Ra-224, U-232, Th-232</b>	<b>1000</b>	<b>3,000</b>	<b>200</b>
<b>Group 3 - U-Natural, U-235, U-238, and associated decay products, alpha emitters</b>	<b>5,000</b>	<b>15,000</b>	<b>1,000</b>
<b>Group 4 - Beta-gamma emitters (radionuclides with decay modes other than alpha emission or spontaneous<sup>7</sup> fission) except for Sr-90 and other noted above.</b>	<b>5,000</b>	<b>15,000</b>	<b>1,000</b>
<b>Tritium</b>	<b>N/A</b>	<b>N/A</b>	<b>10,000</b>

} α

} B/g

- As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by counts per minute measured by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.
- Where surface contamination by both alpha- and beta-gamma-emitting radionuclides exists, the limits established for alpha- and beta-gamma-emitting radionuclides should apply independently.
- Measurements of average contamination should not be averaged over an area of more than 1m<sup>2</sup>. For objects of smaller surface area, the average should be derived for each object.
- Dose Rate: The average and maximum dose rates associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr and 1.0 mrad/hr, respectively, at 1 cm. Since building materials have naturally occurring radioactive material, background should be accounted for.
- The maximum concentration level applies to an area of not more than 100 cm<sup>2</sup>.
- The amount of removable material per 100 cm<sup>2</sup> of surface area should be determined by wiping the area of that size with dry filter or soft absorbent paper, applying moderate pressure, and measuring the amount of radioactive material on the wiping with an appropriate instrument of known efficiency. When removable contamination on objects of surface area less than 100 cm<sup>2</sup> is determined, the activity per unit area should be based on the actual area and the entire surface should be wiped.

## **REFERENCE 4**

RSDS 00-LS-151, 00-LS-157, 00-LS-161, & 00-LS-162

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG/AREA/ROOM) <u>Bldg 27</u>	SURVEY NO. <u>00-LS-151</u>
PURPOSE: <u>External &amp; Internal Trenches, RCRA closure</u> <u>Sump South of Bldg 27</u>	RWP NO. <u>LS-001-00</u>
	DATE: <u>6-8-00</u>
	TIME: <u>1100</u>

## MAP/DRAWING

See page 3 for map & smear locations

Direct readings at smear locations

$< 100 \text{ dpm}/100\text{cm}^2$   
 $\alpha$

$< 5K \text{ dpm}/100\text{cm}^2$   
 $\beta$

# COPY

LEGEND: # = mrem/hr ( $\gamma$ ) whole body  
# E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact

$\triangle$  # = mrem/hr neutron  
 $\square$  # = air sample number

$\odot$  # = swipe number  
 $\odot$  #/ $\alpha$  or  $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

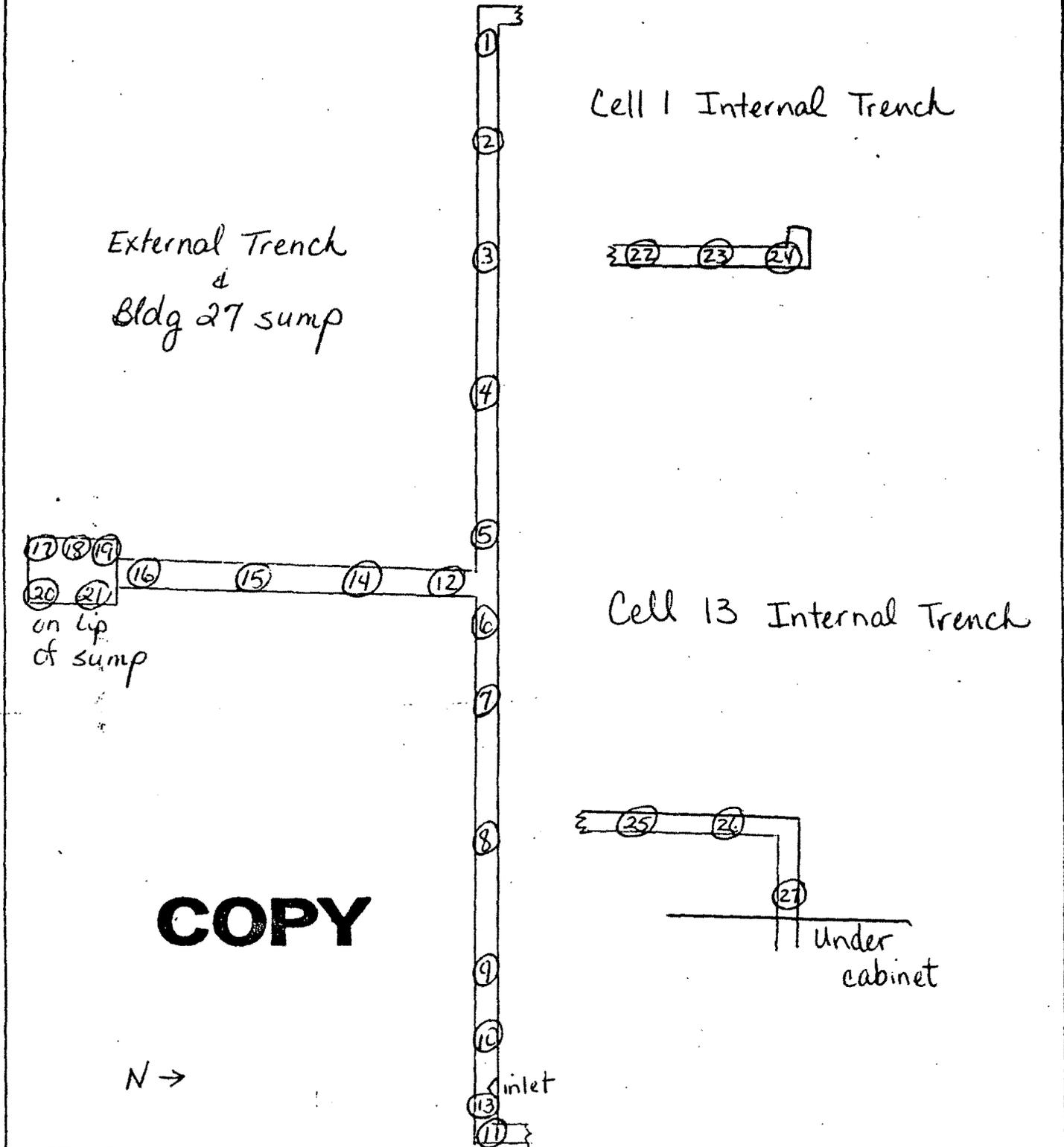
### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE Electra	5314/5468	9-10-00
<del>N</del>		
<del>A</del>		

	HP# <u>7728</u>	Date: <u>6-8-00</u>
	<u>7725</u>	
	HP# <u>5681</u>	Date: <u>6-12-00</u>
HP# <u>6144</u>	Date: <u>6/13/00</u>	
Reviewed/Appro		



MAP/DRAWING



**COPY**

LEGEND: # = mrem/hr ( $\gamma$ ) whole body       $\Delta$  # = mrem/hr neutron      # = swipe number  
 # E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact      # = air sample number      #/ $\alpha$  or #/ $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

# Alpha/Beta Analysis

Batch ID: 00-LS-151 KLINE BLDG.#27 (27) CYR

Batch File: Smear Unit 3 - 200006121109

Acquisition Date: 6/12/2000

Group: A

Device: Unit 3

Count Time (min): 1.5

Geometry: Swipe/Smear

Recalibration Date: 5/17/2001

Serial Number: 59123

<u>Sample ID</u>	<u>Carrier</u>	<u>Alpha (dpm)</u>	<u>2<math>\sigma</math></u>	<u>Beta (dpm)</u>	<u>2<math>\sigma</math></u>
1	37	7.00	8.12	13.97	8.44
2	125	2.33	4.69	7.63	6.23
3	10	4.66	6.63	11.43	7.64
4	29	9.36	9.37	6.33	5.70
5	141	9.36	9.37	6.33	5.70
6	30	2.32	4.69	11.44	7.64
7	19	11.70	10.48	5.04	5.11
8	85	9.36	9.37	7.60	6.24
9	73	7.02	8.12	3.79	4.42
10	35	2.33	4.69	8.90	6.73
11	92	7.02	8.12	5.06	5.10
12	14	0.00	0.18	10.18	7.20
13	96	0.00	0.04	2.54	3.60
14	75	0.00	0.09	5.09	5.09
15	4	4.66	6.63	12.71	8.05
16	85	4.66	6.63	11.43	7.64
17	66	2.33	4.69	7.63	6.23
18	78	0.00	0.04	2.54	3.60
19	127	4.67	6.63	8.89	6.74
20	4	2.33	4.69	6.35	5.69
21	68	0.00	0.07	3.82	4.41
22	123	0.00	0.07	3.82	4.41
23	14	7.02	8.12	3.79	4.42

COPY

REF: 4/19

PAGE 4 of 5

# Alpha/Beta Analysis

<u>Sample ID</u>	<u>Carrier</u>	<u>Alpha (dpm)</u>	<u>2<math>\sigma</math></u>	<u>Beta (dpm)</u>	<u>2<math>\sigma</math></u>
24	59	4.67	6.63	7.62	6.24
25	13	2.34	4.69	3.81	4.41
26	51	7.02	8.12	5.06	5.10
27	33	0.00	0.09	5.09	5.09

**COPY**

REF: 5/19

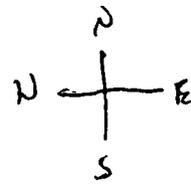
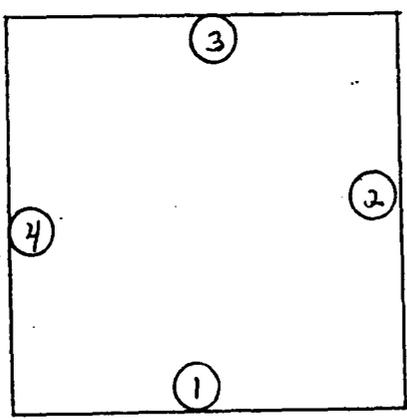
# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA/ROOM) <i>BLDG. 1 Sump</i>	SURVEY NO. <i>00-LS-157</i>
PURPOSE: <i>SURVEY UPPER INTERIOR WALLS OF BLDG. 1 Sump</i>	RWP NO. <i>LS-001-00</i>
	DATE: <i>6-13-00</i>
	TIME: <i>0840</i>

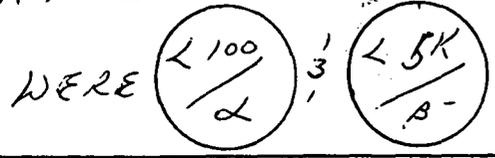
## MAP/DRAWING

# COPY

*BLDG. 1 Sump*



*DIRECT READINGS AT SMEAR LOCATIONS WERE*



*(3 SLUDGE)  
FOR WATER SAMPLE RESULTS SEE  
RSDS #00-LS-162*

LEGEND: # = mrem/hr ( $\gamma$ ) whole body       $\Delta$  # = mrem/hr neutron      # = swipe number  
 # E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact      # = air sample number      #/a or  $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
<i>NE ELECTRA</i>	<i>5314/5468</i>	<i>9-10-00</i>
	<i>A</i>	
	<i>N</i>	

	HP# <i>7728</i>	Date: <i>6-13-00</i>
	HP# <i>5681</i>	Date: <i>6-14-00</i>
	HP# <i>6144</i>	Date: <i>6-19-00</i>



# Alpha/Beta Analysis

Batch ID: 00-LS-157 KLINE BLDG.1 SUMP (4) CYR  
Batch File: Smear Unit 1 - 200006141102  
Group: A  
Device: Unit 1  
Geometry: Swipe/Smear  
Serial Number: 64937

Acquisition Date: 6/14/2000  
Count Time (min): 1.5  
Recalibration Date: 5/17/2001

<u>Sample ID</u>	<u>Carrier</u>	<u>Alpha (dpm)</u>		<u>Beta (dpm)</u>	
			<u>2<math>\sigma</math></u>		<u>2<math>\sigma</math></u>
1	45	1.91	3.83	11.44	7.25
2	93	1.91	3.83	9.15	6.48
3	17	1.91	3.83	4.57	4.58
4	103	0.00	0.01	2.29	3.24

NR

**COPY**

RF 4: 8/19

NR 6-14-00

3 4  
+ of +

Time: 2.00

Data Mode: DPM

Nuclide: SMVIAL3

Quench Set: SMVIAL3

Background Subtract: 1st Vial

	LL	UL	LCR	25%	BKE
Region A:	0.5 - 18.6		0	0.0	6.91
Region B:	2.0 - 18.6		0	0.0	6.79
Region C:	40.0 - 2000		0	0.0	10.42

Quench Indicator: tSIE/AEC

Ext Std Terminator: Count

00-LS-157 REYNOLDS/KLINE BLDG.1 SUMP (F1-F4) CYR

Luminescence Correction On

Coincidence Time(ns): 18

Delay Before Burst(ns): Normal

Protocol Data Filename: C:\DATA\PRDT6.DAT

Count Data Filename: C:\DATA\SDATA6.DAT

S#	TIME	CPMA	CPMB	CPMC	tSIE	LUM	FLAG	DPM1	2SIGMA
-1	10.00	6.91	6.79	10.42	693.41	0	B		0.00
0	2.00	543.74	524.29	1.58	562.26	0		1277.50	121.82
1	2.00	0.09	0.00	2.08	564.04	0		0.20	9.61
2	2.00	1.59	0.09	0.58	655.08	0		3.45	9.68
3	2.00	37.69	37.01	21.35	537.37	0		90.48	23.96
4	2.00	0.72	0.85	0.00	557.55	0		1.71	10.02

NR

**COPY**

# RADIOLOGICAL SURVEY DATA SHEET

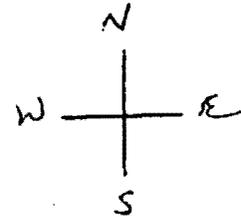
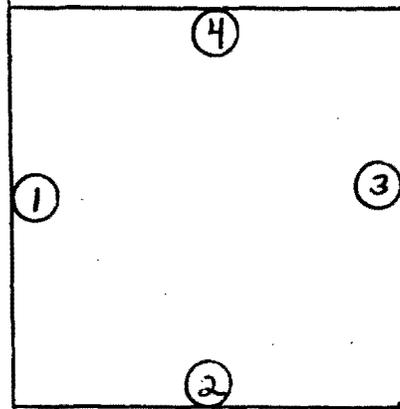
LOCATION: (BLDG./AREA/ROOM)	SURVEY NO. 00-LS-161
PURPOSE: SURVEY LOWER INTERIOR WALLS OF BLDG. 27 Sump	RWP NO. LS-001-00
	DATE: 6-14-00
	TIME: 1300

## MAP/DRAWING



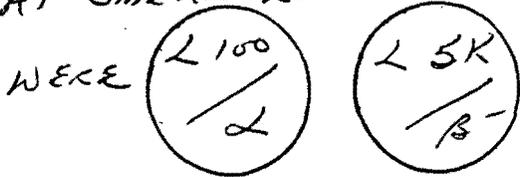
BLDG. 27 Sump

(3 SLUDGE)  
FOR WATER SAMPLES  
RESULTS SEE  
RSDS # 00-LS-162



SURVEYED SLUDGE ON  
Sump FLOOR W/ FIDLER

DIRECT READINGS  
AT SMEAR LOCATIONS



NOTE: FIDLER IS NOT CALIBRATED  
FOR QUALITATIVE OR QUANTITATIVE  
MEASUREMENTS, USED AS AN  
INDICATOR ONLY.

FIDLER MEASUREMENTS  
ON "OUT" AND #1 CHANNELS  
NONDETECTABLE ABOVE BACKGROUND

LEGEND: # = mrem/hr ( $\gamma$ ) whole body  
# E = mrem/hr ( $\beta + \eta + \gamma$ ) extremity on contact

$\Delta$  # = mrem/hr neutron  
# = air sample number

# = swipe number  
#/ $\alpha$  or #/ $\beta$  = direct cont.  
measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
NE ELECTRA	5271 / 5287	10/14/00
FIDLER	3404 / 3541	7/28/00

Completed		HP# 7728	Date: 6-14-00
Completed			
		HP# 5681	Date: 6-15-00
Revi		HP# 6144	Date: 6/19/00
Reviewed/Approve			



# Alpha/Beta Analysis

Batch ID: 00-LS-161 REYNOLDS BLDG.27 SUMP (4) CYR  
Batch File: Smear Unit 1 - 200006150830  
Group: A  
Device: Unit 1  
Geometry: Swipe/Smear  
Serial Number: 64937

Acquisition Date: 6/15/2000  
Count Time (min): 1.5  
Recalibration Date: 5/17/2001

<u>Sample ID</u>	<u>Carrier</u>	<u>Alpha (dpm)</u>	<u>2σ</u>	<u>Beta (dpm)</u>	<u>2σ</u>
1	17	7.65	7.66	16.00	8.58
2	110	5.74	6.63	2.26	3.25
3	40	0.00	0.03	6.87	5.61
4	69	1.91	3.83	6.86	5.61

YK

**COPY**

REF 4:12/19

YK 6-15-00  
3 3  
+ of +





# Alpha/Beta Analysis

Batch ID: 00-LS-162 REYNOLDS BLDG.1 SUMP (4) CYR

Batch File: Smear Unit 1 - 200006151323

Acquisition Date: 6/15/2000

Group: A

Device: Unit 1

Count Time (min): 1.5

Geometry: Swipe/Smear

Recalibration Date: 5/17/2001

Serial Number: 64937

<u>Sample ID</u>	<u>Carrier</u>	<u>Alpha (dpm)</u>	<u>2<math>\sigma</math></u>	<u>Beta (dpm)</u>	<u>2<math>\sigma</math></u>
1	17	1.91	3.83	11.44	7.25
2	110	9.57	8.56	6.83	5.63
3	40	1.91	3.83	4.57	4.58
4	70	9.57	8.56	7.97	6.08

NR

**COPY**

REF: 15/19

NR 6-19-00  
3 7  
+ of +



BWXT of Ohio, Inc.

RSDS # 00-LS-162  
PAGE 4 OF 7

REF: 16/19

### ENVIRONMENTAL/ANALYTICAL SERVICES REQUEST FOR ANALYSIS

DATE: 6-13-00	SAMPLE MATRIX: WATER	NUMBER OF SAMPLES: 2	COLLECTED BY: NEAL REYNOLDS
PROJECT/FUNCTION: RCRA/CLOSURE	PRIMARY CONTACT/PHONE NO.: NEAL REYNOLDS 3724	MAIL STOP: 102	CHARGE NUMBER: K02175
CHARGE NUMBER:	SEND DATA TO: SAME	EXTENSION: 3724	GAMMA SPEC. PERFORMED (YES/NO): NO

ANALYSES REQUESTED (check):

<input type="checkbox"/> Qualitative (identify)	<input type="checkbox"/> Qualitative (identify + proportionality of isotopes)	<input type="checkbox"/> Quantitative (concentration)
<input type="checkbox"/> 3H	<input checked="" type="checkbox"/> Characterize and Approve Water for Release	<input type="checkbox"/> Other _____
<input checked="" type="checkbox"/> Gross $\alpha$		

SUSPECTED CONTAMINANTS:

3H     Pu     U     Th     Other \_\_\_\_\_

NOTE: Attach additional information (e.g. RSDS, collection data, and gamma spec. results) if applicable

LAB IDENTIFICATION	SAMPLE LOCATION	SAMPLE #	SAMPLE VOLUME/AREA	3H =	RESULTS
0016787	BLDG. 27 Sump	27	20 mL	< LDL	< LDL
0016788	BLDG. 1 Sump	1	20 mL	< LDL	< LDL
				3H LDL = 0.9 nCi/L	2 LDL = 0.7 dpm/cc

**COPY**

COMMENTS: 3x55 GALLON DRUMS for sanitary discharge. Approved for release

ANALYZED BY: R. Schudel      DATE: 6-13-00

# SOIL ANALYSIS REPORT

FIELD SAMPLE ID:  
LAB SAMPLE ID: ML000350  
FILE ID: MG100736.S0  
PRIORITY: Y

**Description\Location:**

Sump, Building 27, #1

Collector: 7728

Date Received: 6/13/00

Date Collected:

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
Co-60 *	0.02	0.04	45,000
Cs-137 *	0.02	0.06	45,000
Pb-210	2.07	0.51	45,000
Ra-226	0.93	0.78	800
Ac-227 (D) *	0.00	0.26	40
Th-230 *	1.13	5.98	800
Th-232 (D)	0.33	0.15	130
Pu-238 *	0.00	14.62	500
Am-241 *	0.03	0.06	500

**Other Nuclides:**

Radionuclide	Activity (pCi/g)	MDA	MD-10438 Limit (pCi/g)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

$\Sigma$  DOT 0.02 nCi/g

$\Sigma$  Respirator 0.05

$\Sigma$  Respirator <1 indicates soil levels below limit.  
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

$\Sigma$  DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.  
Sample is assumed to be in secular equilibrium.

\* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

**Comments:**

COPY

Date: 6/13/00

Counted By: 6024

Analyzed By: 6086

INITIALS



EF4:17/19

# SOIL ANALYSIS REPORT

FIELD SAMPLE ID:  
LAB SAMPLE ID: ML000351  
FILE ID: MG200354.S0  
PRIORITY: Y

**Description/Location:**

Sump, Building 27, #2

Collector: 7728

Date Received: 6/13/00

Date Collected:

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
Co-60 *	0.03	0.04	45,000
Cs-137	0.08	0.06	45,000
Pb-210	4.35	1.02	45,000
Ra-226	1.70	0.79	800
Ac-227 (D) *	0.07	0.30	40
Th-230 *	0.00	9.62	800
Th-232 (D)	0.23	0.19	130
Pu-238 *	21.13	39.59	500
Am-241 *	0.06	0.09	500

**Other Nuclides:**

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

$\Sigma$  DOT 0.06 nCi/g

$\Sigma$  Respirator 0.10

$\Sigma$  Respirator <1 indicates soil levels below limit.  
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Instrument type: High Purity Germanium

$\Sigma$  DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.  
Sample is assumed to be in secular equilibrium.

\* Indicates activity < MDA. MDA used in limits calculation.

**Comments:**

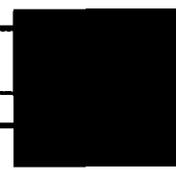
# COPY

Date: 6/13/00

Counted By: 6024

Analyzed By: 6086

INITIALS



# SOIL ANALYSIS REPORT

FIELD SAMPLE ID:  
LAB SAMPLE ID: ML000352  
FILE ID: MG100739.S0  
PRIORITY: Y

Description/Location:

Collector: 7728

Sludge Sumps #27 and #1

Date Received: 6/14/00

Date Collected:

<u>Radionuclide</u>		<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
Co-60	*	0.00	0.02	45,000
Cs-137		0.07	0.01	45,000
Pb-210		3.73	0.21	45,000
Ra-226		1.22	0.22	800
Ac-227 (D)	*	0.01	0.06	40
Th-230	*	0.00	1.73	800
Th-232 (D)		0.35	0.04	130
Pu-238	*	0.00	4.19	500
Am-241	*	0.00	0.02	500

**Other Nuclides:**

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

$\Sigma$  DOT 0.01 nCi/g

$\Sigma$  Respirator 0.02

$\Sigma$  Respirator <1 indicates soil levels below limit.  
Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

Instrument type: High Purity Germanium

$\Sigma$  DOT 2 nCi/g limit, total activity.

(D) Denotes identification by daughter emissions.  
Sample is assumed to be in secular equilibrium.

\* Indicates activity < MDA. MDA used in limits calculation.

Comments:

# COPY

Date: 6/15/00

Counted By: 6024

Analyzed By: 6086

INITIALS [REDACTED]

## **REFERENCE 5**

**Excerpt from Closure Report containing certifications of closure**

# CLOSURE REPORT

**Buildings 1 & 27  
Wastewater Transfer Structures**

**EPA I.D. No. OH6890008984  
Ohio ID No. 05-57-0677**

**Mound Plant  
Miamisburg, OH**

**Draft Final, Revision 0**

**August 2000**



**Department of Energy  
Ohio Field Office**



**BWXT of Ohio, Inc.**

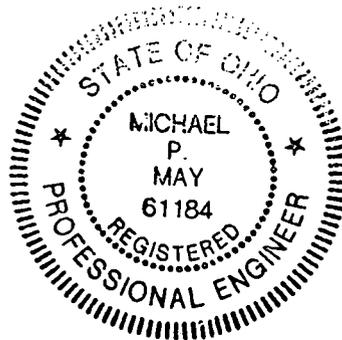
REFS:1/2

# CLOSURE REPORT

## 7.0 CERTIFICATION OF CLOSURE

### 7.1 Professional Engineer

In accordance with OAC 3745-66-15, the undersigned independent professional engineer registered in the State of Ohio hereby certifies that the Building 1 & 27 Wastewater Transfer Structures have been closed in accordance with the specifications in the approved Closure Plan and as described in this Closure Report. The certification must be signed by the owner or operator [see below] and by an independent, qualified, registered professional engineer. This Closure Report constitutes documentation supporting the independent, qualified, registered professional engineer's certification.



8/8/00

Michael P. May, P.E.  
SRW Environmental Services, Inc.  
Independent Registered Professional Engineer

### 7.2 Owner or Operator

In accordance with OAC 3745-50-42(D):

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

John W. Krueger, Manager  
Environmental Restoration/Waste Management

8/14/00

## **REFERENCE 6**

Additional Radiological data  
(RSDS 00-LS-062 and vistamap information)

# RADIOLOGICAL SURVEY DATA SHEET

LOCATION: (BLDG./AREA./ROOM) <u>RAILSPOR/PIT #1</u>	SURVEY NO. <u>00-LS-062</u>
PURPOSE: <u>MANHOLE</u>	RWP NO. <u>N/A</u>
<u>PRE-DEMOLITION</u>	DATE: <u>3-2-00</u>
	TIME: <u>1000</u>

## MAP/DRAWING

# COPY

- FIDLER NOT CALIBRATED,  
USED FOR INFORMATION ONLY

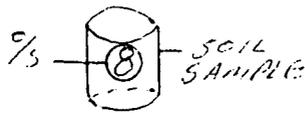
- FIDLER READINGS TAKEN ON FLOOR  
RESULTS: NO DETECTABLE ACTIVITY

→ BKGD FOUND,  
MANHOLE

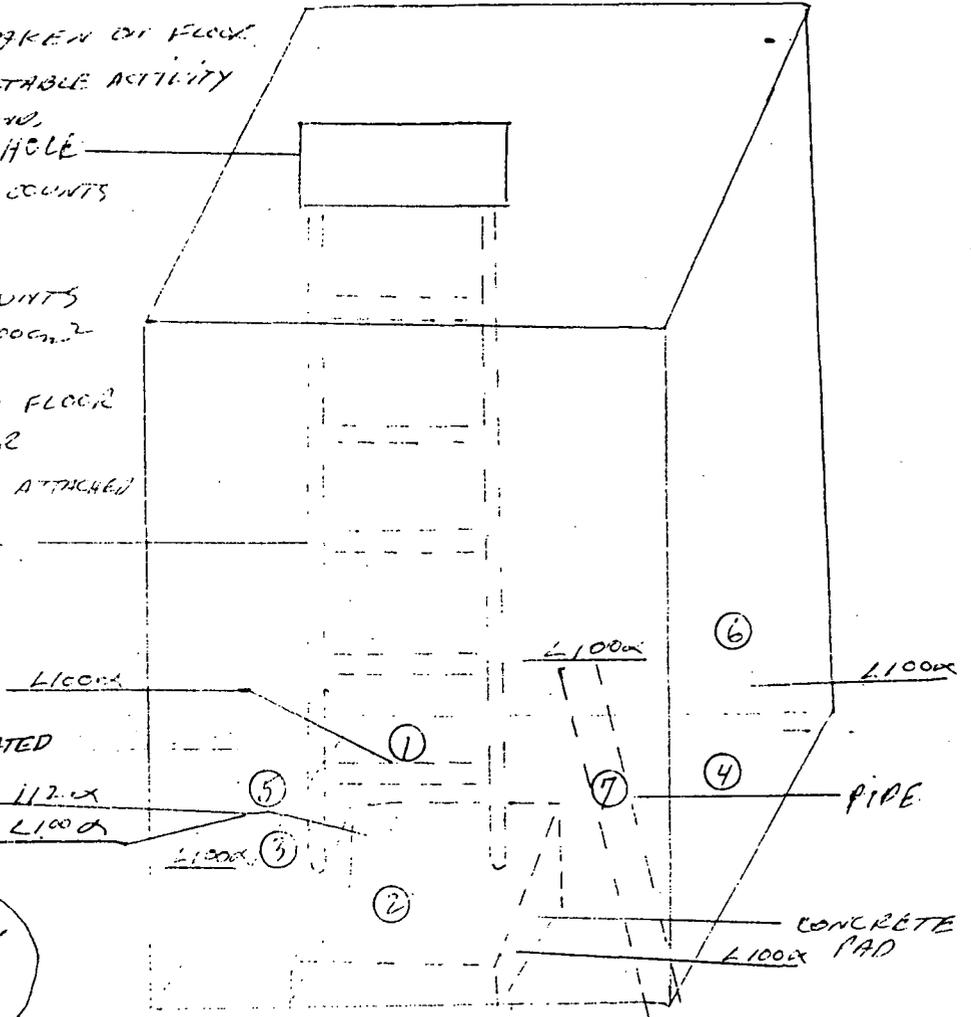
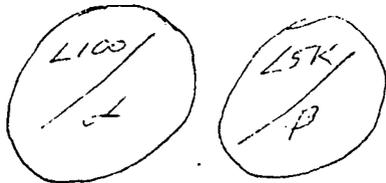
- ALL 60 SEC DIRECT COUNTS  
L 5K B

- ALL 60 SEC DIRECT COUNTS  
NOTED IN DRAM/100cm<sup>2</sup>

- SOIL SAMPLE FROM FLOOR  
SENT TO LAB FOR  
GAMMA SPEC. SEE ATTACHED  
RESULTS  
LADDER



\* RECOUNT OF ELEVATED  
L READING, AFTER  
VENTILATION OF AREA 112'x  
TO DISSIPATE  
ANTICIPATED RADON \* L 100'x



LEGEND: # = mrem/hr ( $\gamma$ ) whole body  
# E = mrem/hr ( $\beta + \gamma$ ) extremity on contact  
# = 60 SEC DIRECT COUNT

$\Delta$  # = mrem/hr neutron

$\square$  # = air sample number

# = swipa number

#/ $\alpha$  or  $\beta$  = direct cont. measurement in dpm/100cm<sup>2</sup>

### INSTRUMENTS USED

Instrument	Serial Number	Cal. Due Date
ELECTRA	5272/5327	8-9-00
FIDLER	3672/3827	N/A
ELECTRA	5508/5507	3-11-00
N/A		

Completed by: (Signature)	HP# 7730	Date: 3-2-00
Completed by: (Print Name)		
Counted by: (Signature)	HP# 7728	Date: 3-2-00
Counted by: (Print Name)		
Review	HP# 6144	Date: 3/8/00
Reviewed/A		

# SOIL ANALYSIS REPORT

FIELD SAMPLE ID:  
 LAB SAMPLE ID: ML000163  
 FILE ID: MG200295.S0  
 PRIORITY: Y

**Description/Location:**

PIT #1, RAIL SPUR

Collector: 7730

Date Received: 3/2/00

Date Collected:

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
Co-60 *	0.00	0.01	45,000
Cs-137	0.05	0.01	45,000
Pb-210	1.62	0.15	45,000
Ra-226	1.07	0.16	800
Ac-227 (D) *	0.00	0.05	40
Th-230 *	0.00	1.48	800
Th-232 (D)	0.40	0.02	130
Pu-238 *	0.00	3.76	500
Am-241 *	0.01	0.02	500

**Other Nuclides:**

<u>Radionuclide</u>	<u>Activity (pCi/g)</u>	<u>MDA</u>	<u>MD-10438 Limit (pCi/g)</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

$\Sigma$  DOT 0.01 nCi/g

$\Sigma$  Respirator 0.02

$\Sigma$  Respirator <1 indicates soil levels below limit.  
 Values > or = 1 indicate soil levels exceed limit. Limits based on MD-10438 table 4.

$\Sigma$  DOT 2 nCi/g limit, total activity.

**(D)** Denotes identification by daughter emissions.  
 Sample is assumed to be in secular equilibrium.

\* Indicates activity < MDA. MDA used in limits calculation.

Instrument type: High Purity Germanium

**Comments:**

Date: 3/7/00

Counted By: 6024

Analyzed By: 6086

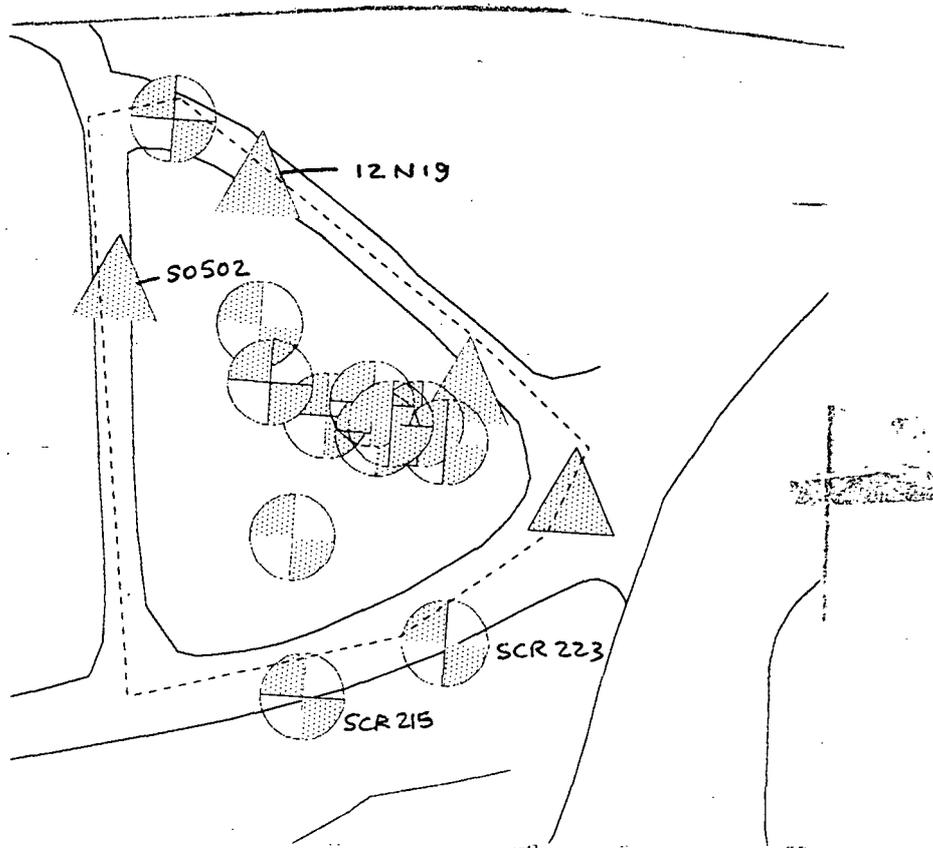
INITIALS \_\_\_\_\_



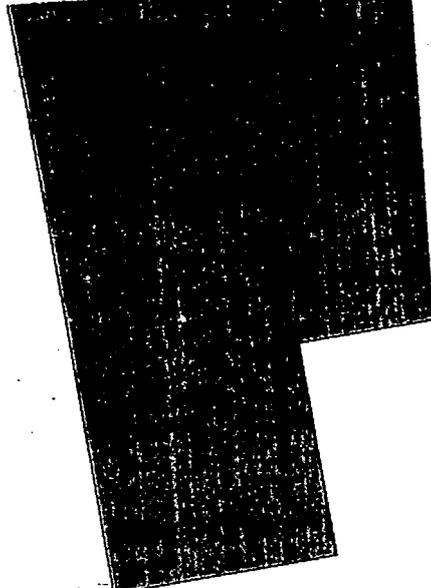


Location n	Sample id	Collection	Value name	Measured	Detector	Data qu	Lab qua	Value unit	Project code
SCR215	88052845	19880519	Thorium-232	1.4			U	PCI/G	SCRDATA
SCR215	88052845	19880519	Plutonium-238	0			U	PCI/G	SCRDATA
SCR223	88052844	19880519	Plutonium-238	25				PCI/G	SCRDATA
SCR223	88052844	19880519	Thorium-232	1.8			U	PCI/G	SCRDATA
12N19	12N19	19941004	Plutonium-238	19	19	U		PCI/G	2680
12N19	12N19	19941004	Thorium-232	0.5	0.5	U		PCI/G	2680
S0502	2993	19831001	Plutonium-238	2.32	0.01			PCI/G	RSS
S0502	2993	19831001	Thorium-232	2	2		U	PCI/G	RSS

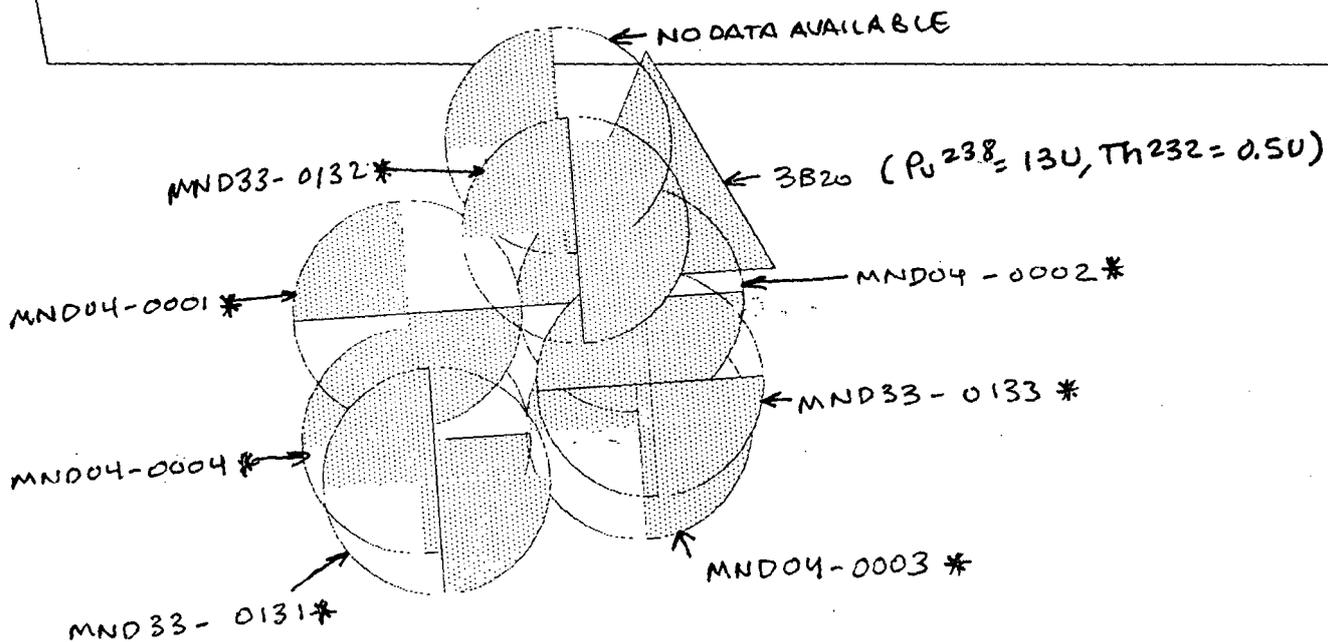
LEACH PIT 1



SAMPLE LOCATIONS W/O SAMPLE ID HAVE NO  
RAD DATA IN VISTA.



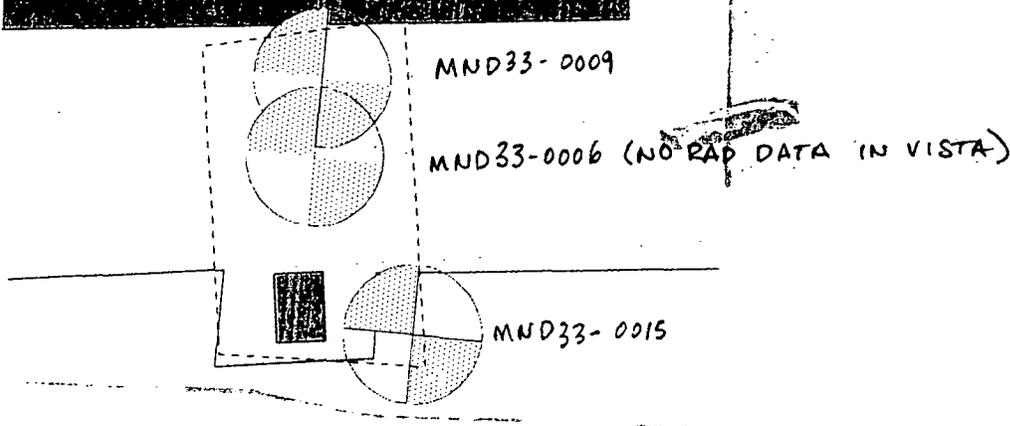
N↑



### BLDG 27 LEACH PIT

\* NO RAD DATA IN VISTA

Location name	Sample id	sample date	Value name	value	LQ
MND33-0009	9106285	19910628	Plutonium-238	13	U
MND33-0009	9106285	19910628	Thorium-232	1	U
MND33-0009	9106286	19910628	Plutonium-238	0	U
MND33-0009	9106286	19910628	Thorium-232	0.2	U
MND33-0009	9106284	19910628	Plutonium-238	9	U
MND33-0009	9106284	19910628	Thorium-232	0.8	U
MND33-0009	9106287	19910628	Plutonium-238	0	U
MND33-0009	9106287	19910628	Thorium-232	0.8	U
MND33-0015	91070229	19910702	Plutonium-238	4	U
MND33-0015	91070229	19910702	Thorium-232	1.1	U
MND33-0015	91070227	19910702	Plutonium-238	11	U
MND33-0015	91070227	19910702	Thorium-232	1.3	U
MND33-0015	91070228	19910702	Plutonium-238	14	U
MND33-0015	91070228	19910702	Thorium-232	0.6	U



BLDG 27 TROUGH/SUMP