

CONFIRMATION NOTICE NO. 34



TO: U.S. Army Engineering District
Attn: CEMRO-ED-EA (Ron Stirling)
215 North 17th Street
Omaha, Nebraska 68102-4978

CONTRACTOR: Radian Corporation

CONTRACT NUMBER: DACW45-89-D-0515

DELIVERY ORDER NUMBER: 5023

TITLE: Investigation, Study and Recommendations for 29 Waste Sites

DATE OF THIS REPORT: 8 February 1994

SUBJECT: RCRA Corrective Action Meeting
U.S. Environmental Protection Agency, Region VI
Dallas, TX
1 February 1994

PARTICIPATING PERSONNEL: See Attached List

1. Mr. Bob Johnson started the meeting by stating its objective: to determine a review schedule for Holloman AFB documents that have been submitted to U.S. EPA, Region VI for review. Mr. Tom Holcomb presented the project history for the Table 1 SWMUs, and an overview of the Table 2 RFI, Table 3 RFI Work Plan, and Investigation of Four Waste Sites. Ms. Jane Hixson gave an overview of risk assessment's role in Subpart S and a general description of how the risk assessment was completed for the Table 1 SWMUs. Mr. Robert Michna gave an overview of the Feasibility Study (FS) for the Table 1 SWMUs. An agenda for the meeting is attached.
2. U.S. EPA Region VI submitted an approval letter for the *Table 1 Phase 2 RFI Work Plan* (April, 1993) to the Base on 25 January 1994. Holloman AFB has 60 days to commence the field activities. However, Holloman AFB may request a 30-day extension for commencement of the field activities. In the future, U.S. EPA, Region VI will allow 90 days between approval of plans and commencement of field activities.
3. Mr. Lowell Seaton's primary concern with the *Draft Final Feasibility Study* (Radian, 1993) is the selection of the source containment (asphalt capping) alternative for IRP Sites 8 and 14 (SWMUs 82 and 197). In general, U.S. EPA, Region VI prefers excavation and disposal (or excavation, treatment, and disposal) rather than options leaving untreated

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Table 2 Phase 1 RFI, Holloman AFB

waste at a site. However, it was agreed that innovative treatment technologies were not practical to address the volume and types of constituents present at these sites. Mr. Seaton said that the presentation for the FS clarified several issues that may help support the approval of the source containment alternatives. Attached to this confirmation notice are fact sheets that provide the rationale behind the recommendation of the source containment alternatives for those sites.

4. Mr. Seaton indicated that the U.S. EPA, Region VI requires review of design plans prior to the implementation of remedial action.
5. Mr. Seaton will determine what is required for the Statement of Basis for a RCRA Corrective Action Decision Document. Holloman AFB will support Mr. Seaton, as necessary, to accomplish this task. Following preparation of the Statement of Bases, U.S. EPA, Region VI will initiate the required 45-day review period for the Class 3 permit modification request (July, 1993).
6. Mr. Seaton indicated that he will submit a letter to Holloman AFB indicating that U.S. EPA, Region VI has received the remainder of the permit-required plans for the Table 2 RFI [*Health and Safety Plan (HSP)* and *Project Management Plan (PMP)*]. He will also indicate that U.S. EPA, Region VI does not formally review these types of documents for technical content.
7. Mr. Seaton indicated that he is initially very pleased with the technical approach and format for the Table 3 RFI Work Plan.
8. The following priorities and target dates were determined for review of the documents:

Priority	Document	Target Date
1	<i>Draft Final Feasibility Study, Investigation, Study and Recommendation for 29 Waste Sites</i>	21 February
2	Prepare Statement of Basis for the RCRA Corrective Action Decision Document	14 March
3	Table 3 RFI Work Plan <i>Preliminary Assessment and Site Investigation Report, Investigation of Four Waste Sites</i>	1 April

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Table 2 Phase 1 RFI, Holloman AFB

Priority	Document	Target Date
4	<i>Waste Management Plan (Table 2 RFI)</i> <i>Base-Wide Background Study (Appendix B of the Phase 1 Groundwater Assessment Monitoring Report)</i>	11 April
5	<i>Phase 2 RCRA Facility Investigation for Lakes Holloman and Stinky, Sewage Lagoons and Lakes Investigation</i>	2 May
6	Approval Letter for the Table 2 HSP and PMP	21 February

9. Mr. Seaton indicated that he will look over the proposed review schedule provided during this meeting (reference the attached timeline) and submit a letter to Holloman AFB stating his proposed agenda for review.
10. Holloman AFB and EPA, Region VI agreed to hold regular monthly calls to facilitate review of documents and open communication between the agency and Base. The first such call has been scheduled for Tuesday, 8 March 1994. Holloman AFB will contact the participants regarding the time of the call.

HOLLOMAN - EPA, REGION 6 MEETING

February 1, 1994

Name	Organization	Phone
Lowell Seaton	EPA, Region 6	214-655-8304
Ron Stirling	USACE - Omaha	402-221-7664
Danielle Lakin	USACE - Omaha	402-221-7740
Steve Pearson	USACE - Omaha	402-221-7739
Tom Holcomb	Radian	512-454-4797
Robert Michna	Radian	512-454-4797
Jane Hixson	Radian	512-454-4797
Bob Johnson	Holloman AFB	505-475-3931
Fred Fisher	Holloman AFB	505-475-3931

**HOLLOMAN AFB CORRECTIVE ACTION PROGRAM
MEETING AGENDA**

**U.S. Environmental Protection Agency, Region VI
Dallas, Texas
1 February 1994**

- I. Introduction and Overview of Meeting Objectives
- II. Discussion of Projects/Documents Under Review
- Table 1 SWMUs
 - Project History
 - Risk Assessment Overview
 - Table 1 Phase 2 RFI Work Plan
 - Class 3 Permit Modification (Proposed Plans)
 - Feasibility Study
 - Phase 2 RFI for Lakes Holloman and Stinky
- Break--
- Investigation of Four Waste Sites (PA/SI Report)
 - Table 2 SWMUs
 - Project Management Plan
 - Health and Safety Plan
 - Waste Management Plan
 - Table 3 SWMUs
- Lunch --
- III. Holloman AFB Schedule for Current and Future Activities
- IV. U.S. EPA, Region VI Review Process
- V. Review of Meeting Objectives
- Agreement on Follow-on Actions
 - Schedule Next Meeting/Conference Call

Attendees:

U.S. EPA, Region VI
Holloman AFB
USACE
Radian

Lowell Seaton
Bob Johnson, Dr. Fred Fisher
Ron Stirling, Danielle Lakin, Steve Pearson
Tom Holcomb, Dr. Jane Hixson, Robert Michna

SWMU NO. 82, REFUSE COLLECTION TRUCK WASHRACK (IRP SITE 8)

Remedial Investigation/Predesign Investigation Results

- Organochlorine pesticides and metals were detected in soil.
- Area of contamination: 20,800 square ft
- Depth of contamination: 2 to 4 ft BGL
- Volume of contaminated soil: 1610 cubic yards
- Some soil is likely to be considered hazardous for disposal purposes (This is based on a conservative calculation which assumes that TC concentrations can be estimated using the total analyte concentration divided by a factor of 20).
- Contamination is not homogeneous and "hot spots" may exist; therefore, it is likely that soil ranges from hazardous to nonhazardous for disposal purposes.

Risk Assessment Results

- Unacceptable human health risks were determined based on occupational exposure through dermal and inhalation pathways.
- No ecological risks were calculated because the site is an industrial area and not wildlife habitat. It is located in the Main Base near the Civil Engineering Complex. Only trucks, empty waste receptacles, and a washrack are present on site.
- Complete ecological risk assessments, however, were conducted for SWMUs where wildlife habitat are present or possible. Furthermore, a complete biological assessment (required by Section 7 of the Endangered Species Act) is being prepared for the sewage lagoons at the Base where there is abundant bird activity.

Remedial Action Objectives (RAOs)

- Acceptable exposure concentrations were back-calculated using the risk assessment.
- RAOs were established to prevent dermal contact with contaminated soil:

<i>4,4'-DDD</i>	<i>4000 µg/kg</i>
<i>4,4'-DDE</i>	<i>3300 µg/kg</i>
- RAOs were established to prevent inhalation of contaminated soil:

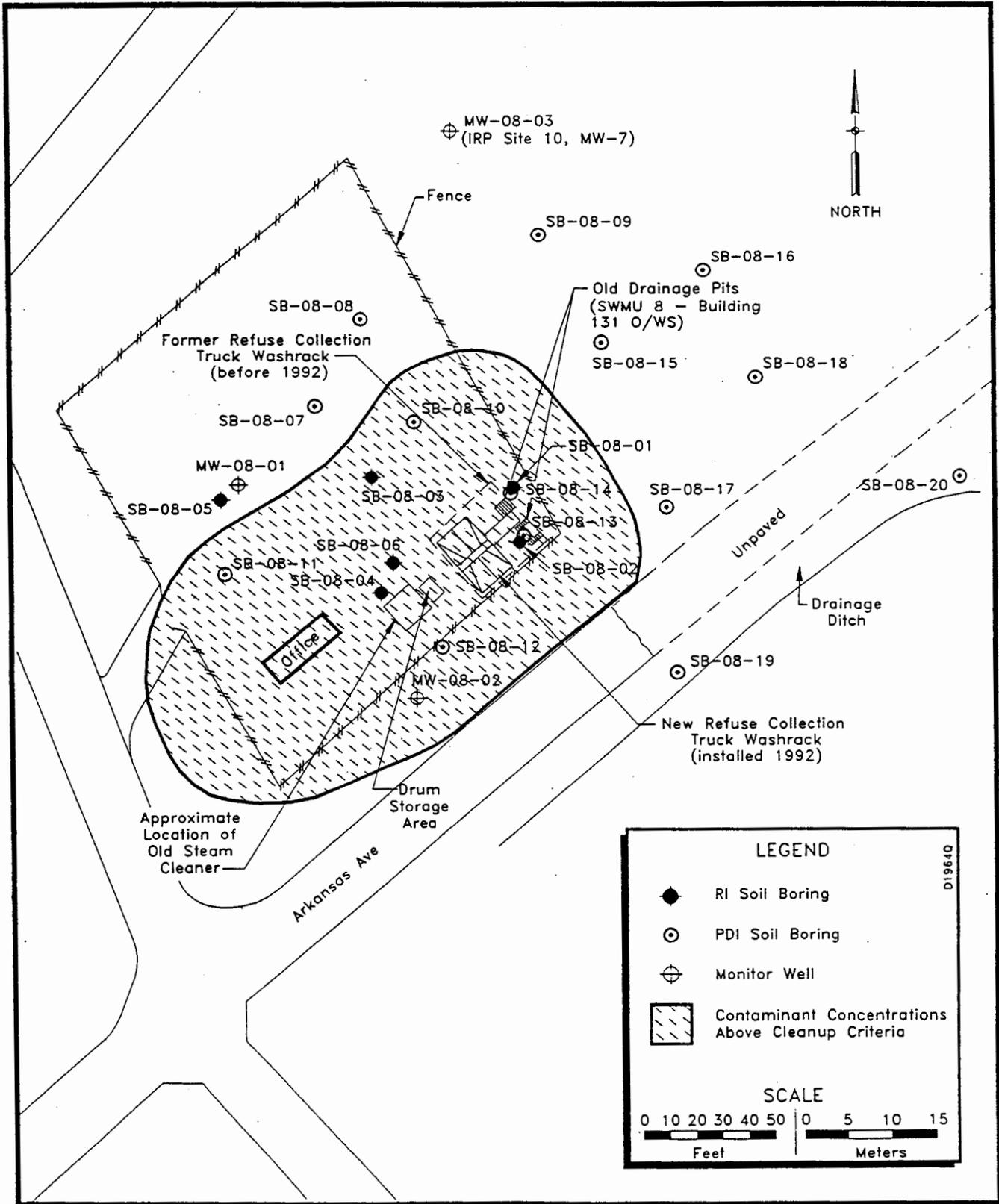
<i>4,4'-DDT</i>	<i>1100 µg/kg</i>
<i>Chlordan</i>	<i>140 µg/kg</i>
<i>Cadmium</i>	<i>0.290 mg/kg</i>
<i>Lead</i>	<i>12.000 mg/kg</i>
<i>Mercury</i>	<i>0.016 mg/kg</i>
- RAOs are as protective as RCRA Subpart S levels.

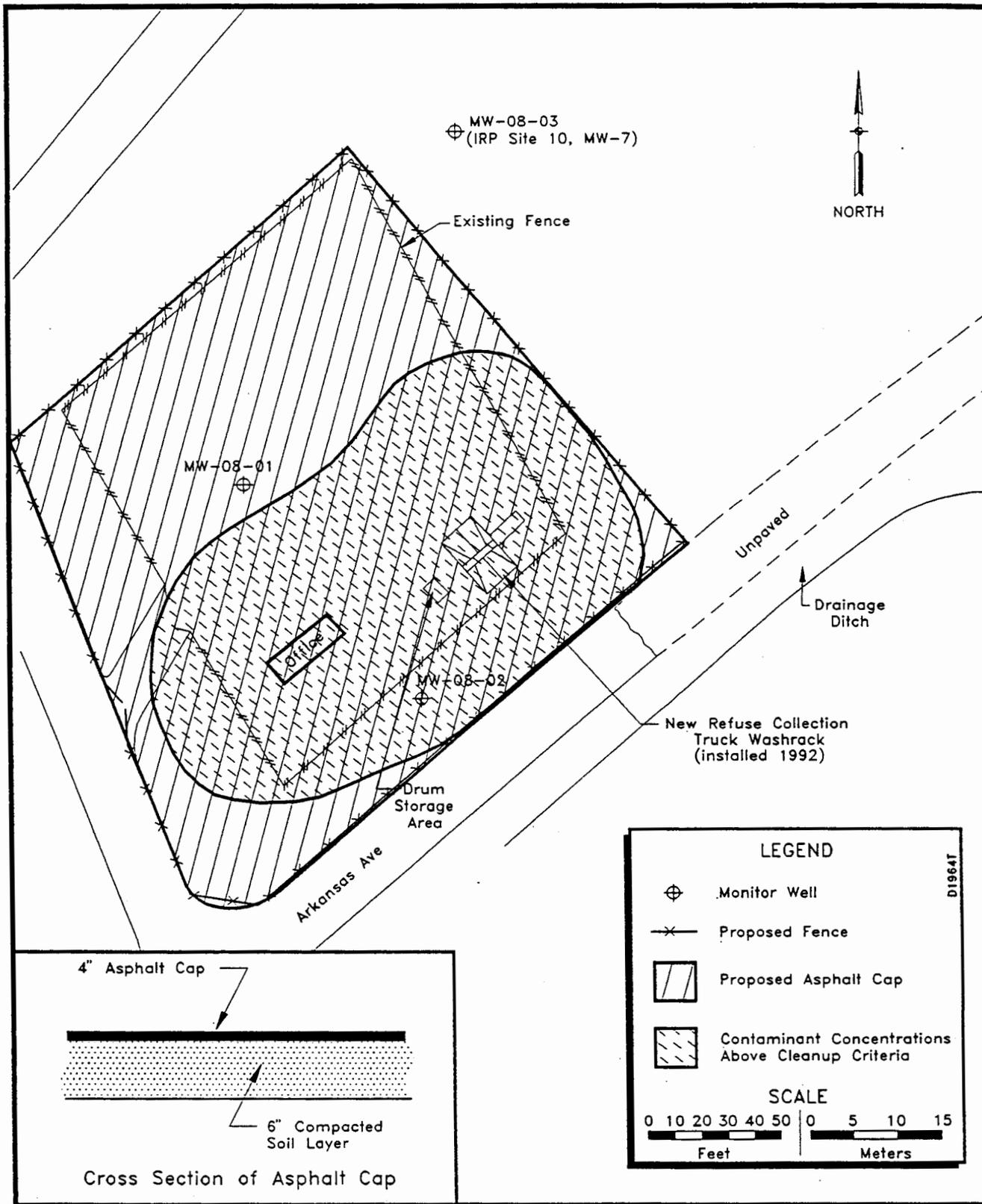
Alternatives Screening

- No action
Would not meet RAOs
- Limited action (Fencing)
Would not meet RAO.
- Limited action (Partial capping of work area only)
Poor potential for meeting RAOs
- Source containment (Asphalt capping of entire area exceeding RAOs)
Meets RAOs
Inspection and 30-year maintenance program is provided
\$360,000
- Excavation/Off-site treatment (Incineration)
Meets RAOs
Short-term health risks due to excavation
\$4,500,000
- Excavation/Off-site disposal (Nonhazardous soil)
Meets RAOs
Short-term health risks due to excavation
\$441,000
- Excavation/Off-site disposal (Hazardous soil)
Meets RAOs
Short-term health risks due to excavation
\$1,600,000

Recommended Alternative

- Source containment (asphalt capping) is recommended for SWMU No. 82.
- Source containment is effective, implementable, and meets the RAOs.
- The site would be inspected annually and reports would be submitted to U.S. EPA, Region VI. Any observed damage would be repaired promptly.
- Source containment protects human health and the environment.
- Source containment is the lowest cost alternative that meets RAOs:
Cost is 12 times less than incineration
Cost is three times less than excavation/disposal for hazardous soil





SWMU NO. 197, FORMER ENTOMOLOGY SHOP (IRP SITE 14)

Remedial Investigation Results

- Organochlorine pesticides were detected in soil.
- Area of contamination: 9300 square feet
- Depth of contamination: 2 to 4 ft BGL
- Volume of contaminated soil: 740 cubic yards
- Some soil is likely to be considered hazardous for disposal purposes (This is based on a conservative calculation that assumes that TC concentrations can be estimated using the total analyte concentration divided by a factor of 20).
- Soil contamination is not homogeneous and "hot spots" may exist; therefore, it is likely that soil ranges from hazardous to nonhazardous for disposal purposes.

Risk Assessment

- Unacceptable human health risk was determined based on occupational exposure through dermal contact with soil.
- No ecological risks were calculated because the site is an industrial area and not a wildlife habitat. It is located in the Main Base near the Civil Engineering Complex.
- Complete ecological risk assessments, however, were calculated for SWMUs where wildlife habitat are present or possible. Furthermore, a complete biological assessment (required by Section 7 of the Endangered Species Act) is being prepared for the sewage lagoons at the Base where there is abundant bird activity.

Remedial Action Objective

- Acceptable exposure concentrations were back-calculated using the risk assessment.
- RAOs were established to prevent dermal contact with contaminated soil:

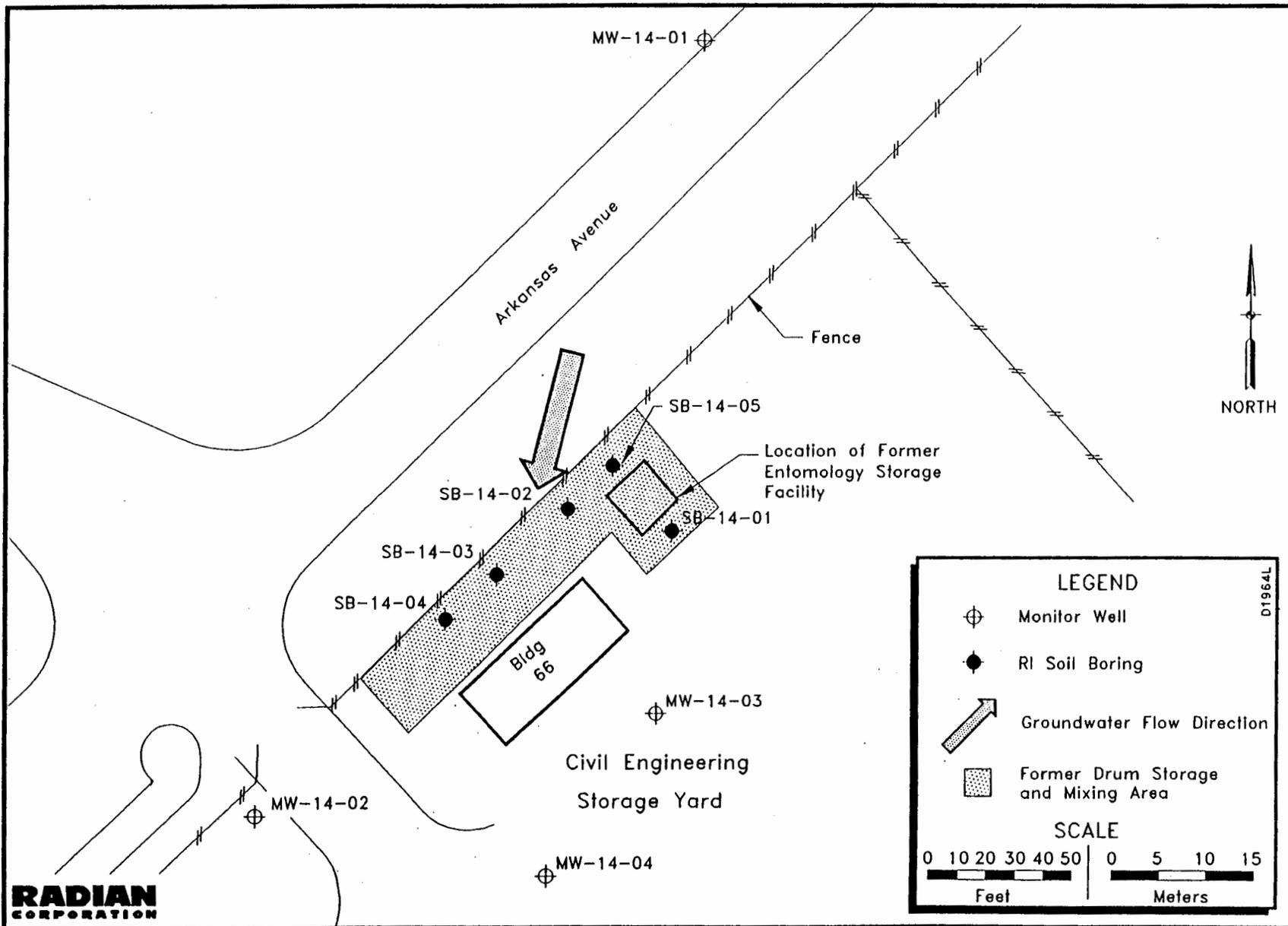
<i>4,4'-DDD</i>	<i>1500 µg/kg</i>
<i>4,4'-DDE</i>	<i>1000 µg/kg</i>
<i>4,4'-DDT</i>	<i>1300 µg/kg</i>
<i>Aldrin</i>	<i>10 µg/kg</i>
<i>Chlordane</i>	<i>200 µg/kg</i>
<i>Heptachlor</i>	<i>100 µg/kg</i>
<i>gamma-BHC</i>	<i>700 µg/kg</i>
- RAOs are as protective as RCRA Subpart S levels.

Alternatives Screening

- No action
Would not meet RAOs
- Limited action (Fencing)
Would not meet RAOs
- Source containment (Asphalt capping of entire area)
Meets RAOs
Inspection and 30-year maintenance program is provided
\$230,000
- Excavation/On-site treatment (Thermal desorption)
Likely to meet RAOs
Not well proven for pesticide contamination
\$630,000
- Excavation/Off-site treatment (Incineration)
Meets RAOs
Short-term health risks due to excavation
\$2,100,000
- Excavation/Off-site disposal (Hazardous soil)
Meets RAOs
Short-term health risks due to excavation
\$770,000

Recommended Alternative

- Source containment (asphalt capping) is recommended for SWMU No. 197.
- Source containment is effective, implementable, and meets the RAOs
- The site would be inspected annually and reports would be submitted to U.S. EPA, Region VI. Any observed damage would be repaired promptly.
- Source containment protects human health and the environment.
- Source containment is the lowest cost alternative that meets RAOs:
Cost is nine times less than incineration
Cost is three times less than excavation/disposal for hazardous soil



MW-14-01

Arkansas Avenue

Fence

NORTH

SB-14-05

Location of Former Entomology Storage Facility

SB-14-02

SB-14-01

SB-14-03

SB-14-04

Bldg 66

Civil Engineering Storage Yard

MW-14-03

MW-14-02

MW-14-04

