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FINAL REMEDIAL ACTION PLAN FOR LOW LEVEL RADIOACTIVE WASTE BURIAL SITE NAS FORT WORTH TX

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UNITED STATES AIR FORCE

INSTALLATION RESTORATION PROGRAM

FINAL
REMEDIAL ACTION PLAN

INTERIM REMEDIAL ACTION
LOW-LEVEL RADIOACTIVE WASTE
BURIAL SITE

CARSWELL AIR FORCE BASE, TEXAS

April 1996

UNITED STATES AIR FORCE
INSTALLATION RESTORATION PROGRAM

FINAL REMEDIAL ACTION PLAN

INTERIM REMEDIAL ACTION
LOW LEVEL RADIOACTIVE WASTE BURIAL SITE

Carswell Air Force Base, Texas

April 1996

Prepared for:

Air Force Center For Environmental Excellence
Base Closure Restoration Division (AFCEE/ERB)
3207 North Road
Brooks Air Force Base, Texas 78235-5363
Contract #F41624-92-D-8002
Delivery Order #0012

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This Remedial Action Plan has been prepared to support environmental restoration efforts under the Air Force Center for Environmental Excellence Installation Restoration Program as described in contract Statement of Work for removal/disposal and site restoration of solid waste management unit 60 (SWMU-60) to include associated soil at Carswell AFB, TX, 26 March 96.

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REMEDIAL ACTION PLAN

CONTENTS

Section		Page
1	INTRODUCTION	1-1
	1.1 General	1-1
	1.2 Site Background - SWMU 60	1-1
	1.3 Purpose and Scope	1-1
2	MOBILIZATION	2-1
3	SITE PREPARATION	3-1
4	BACKGROUND SOIL BORING INSTALLATION	4-1
5	PROPOSED INTERIM REMOVAL/REMEDIAL ACTIONS - SWMU 60	5-1
6	WASTE MANAGEMENT	6-1
	6.1 Soil and Tube Staging Area	6-1
	6.2 Waste Minimization	6-2
	6.3 Field Screening	6-2
	6.4 Field Packaging	6-2
	6.5 Reusing Disposable Equipment	6-2
	6.6 Material and Waste Handling	6-3
	6.6.1 Types and Quantities of Materials Generated	6-3
	6.6.2 Drum Labeling	6-3
	6.6.3 Materials Handling and Drum Transport Within SWMU	6-4
	6.7 Documentation	6-4
7	SAMPLING AND ANALYSIS	7-1
8	TRANSPORTATION AND DISPOSAL	8-1
9	SITE RESTORATION	9-1
10	DEMOBILIZATION	10-1
11	REPORTING	11-1
	11.1 Background Soil Summary Letter Report	11-1
	11.2 Final Report	11-1

REMEDIAL ACTION PLAN

CONTENTS (Continued)

FIGURES

1-1 Location Map Carswell AFB 1-2

1-2 Site Location Map Carswell AFB 1-3

1-3 SWMU 60 Site Location and Temporary Facilities 1-4

1-4 "As Built" Details of LLRW Disposal Tube 1-5

1-5 Project Schedule. 1-7

4-1 Background Soil Boring Locations 4-2

APPENDICES

APPENDIX A PROCEDURES FOR CALCULATING ACTIVITY USING RADIATION INSTRUMENT READINGS

APPENDIX B TRANSPORTING WASTES OFF-SITE

1.0 INTRODUCTION

1.1 General

Under a contract with the Air Force Center for Environmental Excellence (AFCEE), Brooks AFB, Texas, the Contractor has been issued a delivery order to remove and dispose of low level radioactive wastes (LLRW) and affected soils buried at SWMU 60 at Carswell AFB in Fort Worth, Texas. Figure 1-1 is a location map for Carswell AFB. Figures 1-2 shows the site location for SWMU 60. Figure 1-3 shows the site layout for SWMU 60.

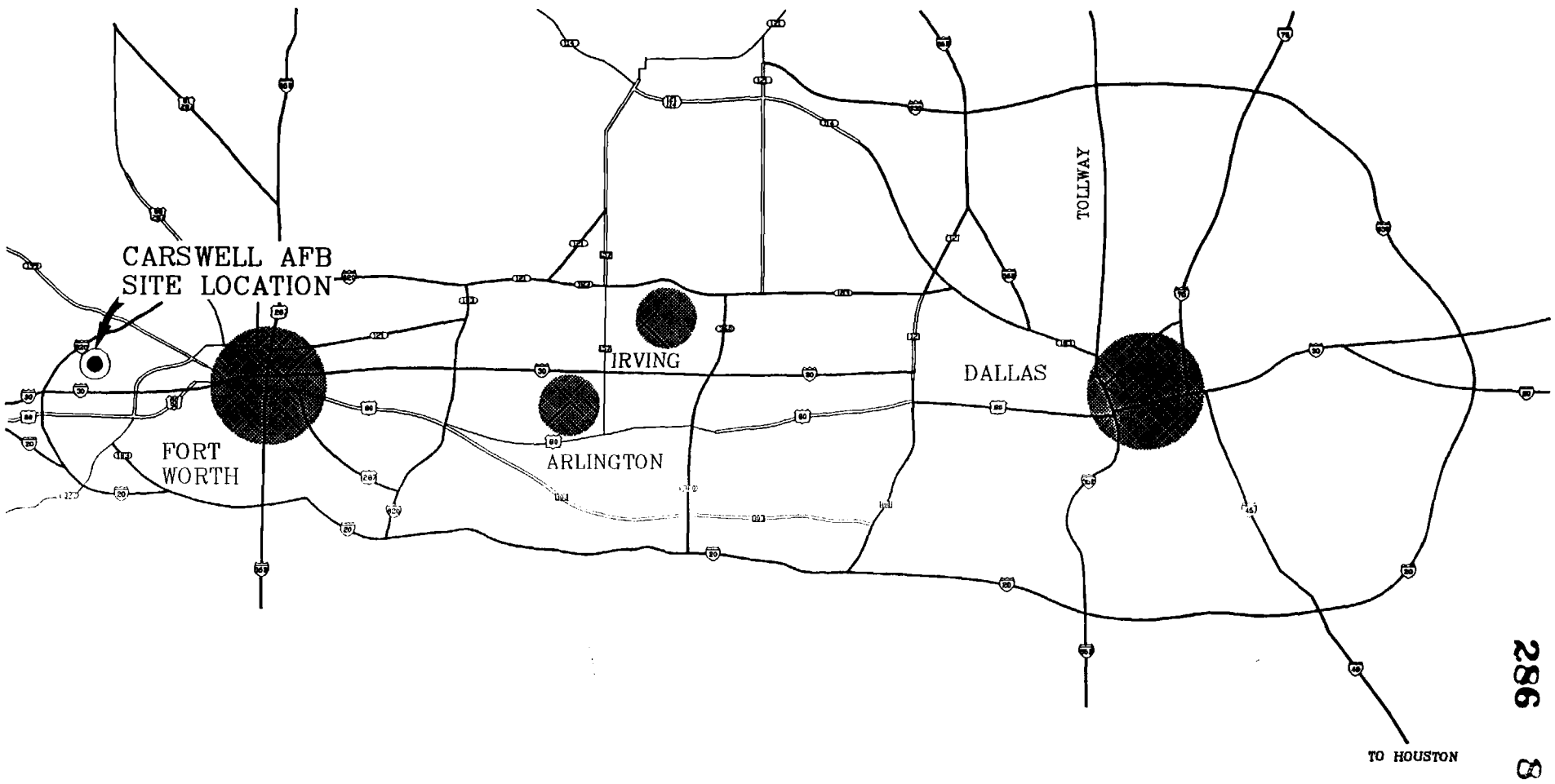
The work plans for this project include the Health and Safety Plan (HSP), the Remedial Action Plan (RAP), and the Sampling and Analysis Plan (SAP). The HSP covers topics such as personal protective equipment, decontamination, emergency procedures, and other related health and safety issues. The RAP describes the waste and soil excavation, transportation and disposal activities. The SAP consists of two sections, the Quality Assurance Project Plan (QAPP) and the Field Sampling Plan (FSP). The SAP describes the sampling, analytical, and quality assurance/quality control activities for both the laboratory and the field.

1.2 Site Background - SWMU 60

SWMU 60 is located five miles west of Carswell AFB at the Off-Site Weapons Storage Area. A chain-link fence approximately 10 feet by 20 feet encompasses the site which contains three buried tubes. Based upon "as built" drawings supplied by the Air Force, the tubes are constructed of cast iron with a diameter of 12 inches and extend approximately 12 inches above the ground surface. The length of each tube is 18 feet, thus extending approximately 17 feet below the ground surface. The bottom of each tube was capped with a cast iron plug and lead caulk. At the surface, each tube was closed with a welded steel cap set over the top of the tube. Each tube is surrounded by approximately 3 inches of grout. The LLRW consisting of radium-painted aircraft instrument dials was disposed of in the tubes according to rules and practices acceptable at the time of construction. Based on visual inspection by Air Force representatives, no evidence of any release of hazardous constituents to the environment has occurred. Figure 1-4 is a copy of the "as built" drawings provided by the Air Force.

1.3 Purpose And Scope

This RAP prescribes the field activities to be performed to accomplish the project objective of attaining complete removal of the LLRW material and affected soils, if any, at SWMU 60. It describes the procedural and equipment requirements for the following principal tasks:



DESIGNED	DAP	SCALE: NTS	LOCATION MAP CARSWELL AFB, TEXAS FIGURE 1-1
DATE	10/94		
ENGINEER	DJS		
APPROVED	MJT		

JOB NO. 016021
FILE NO. FIG-2
DWG. NO.

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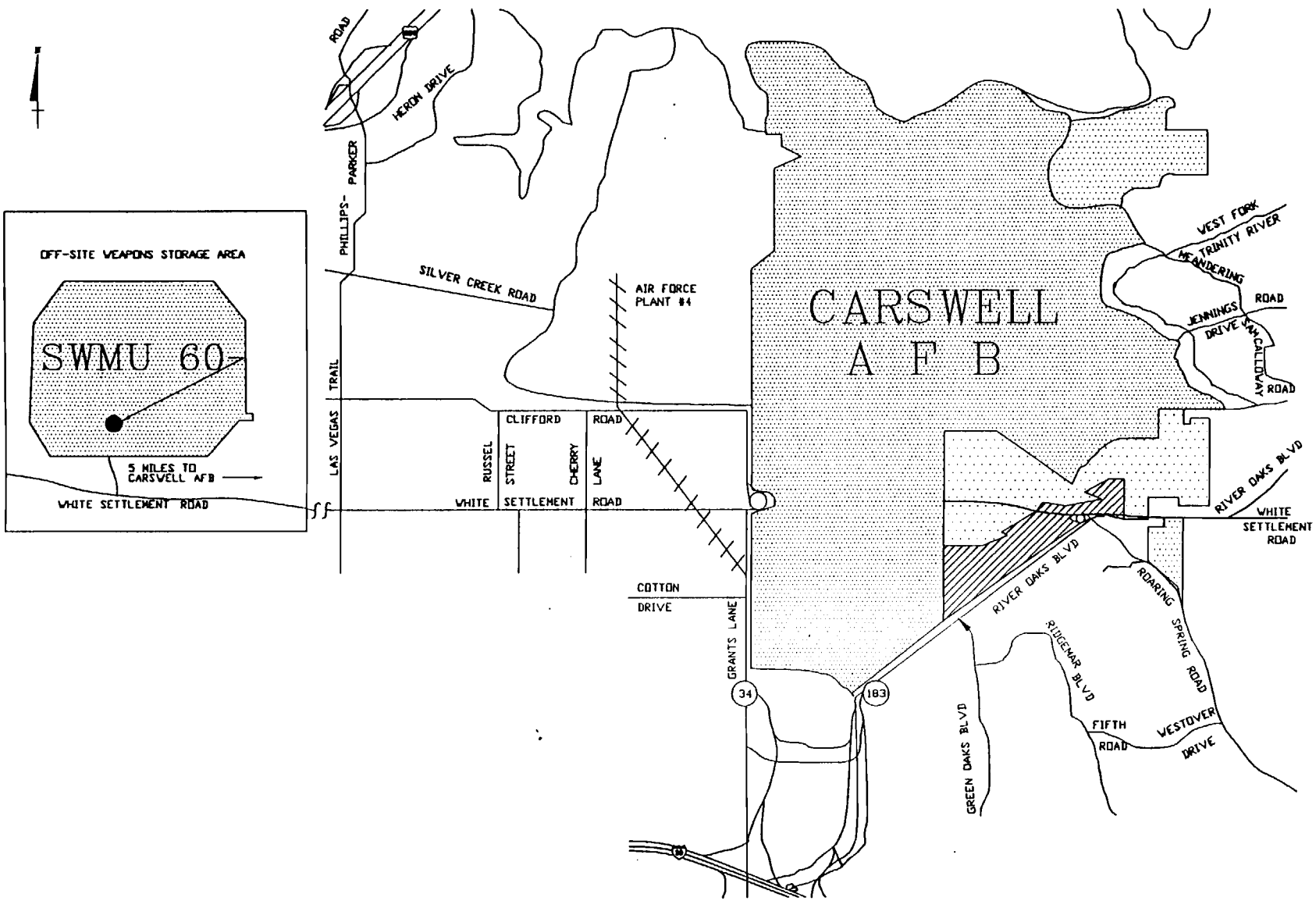

DESIGNED DAP	SCALE: NTS	SWMU 60 SITE LOCATION MAP CARSWELL AFB, TEXAS FIGURE 1-2	JOB NO. 016821
DATE 10/94			FILE NO. FIG-1
ENGINEER DJS			DWG. NO.
APPROVED MJT			

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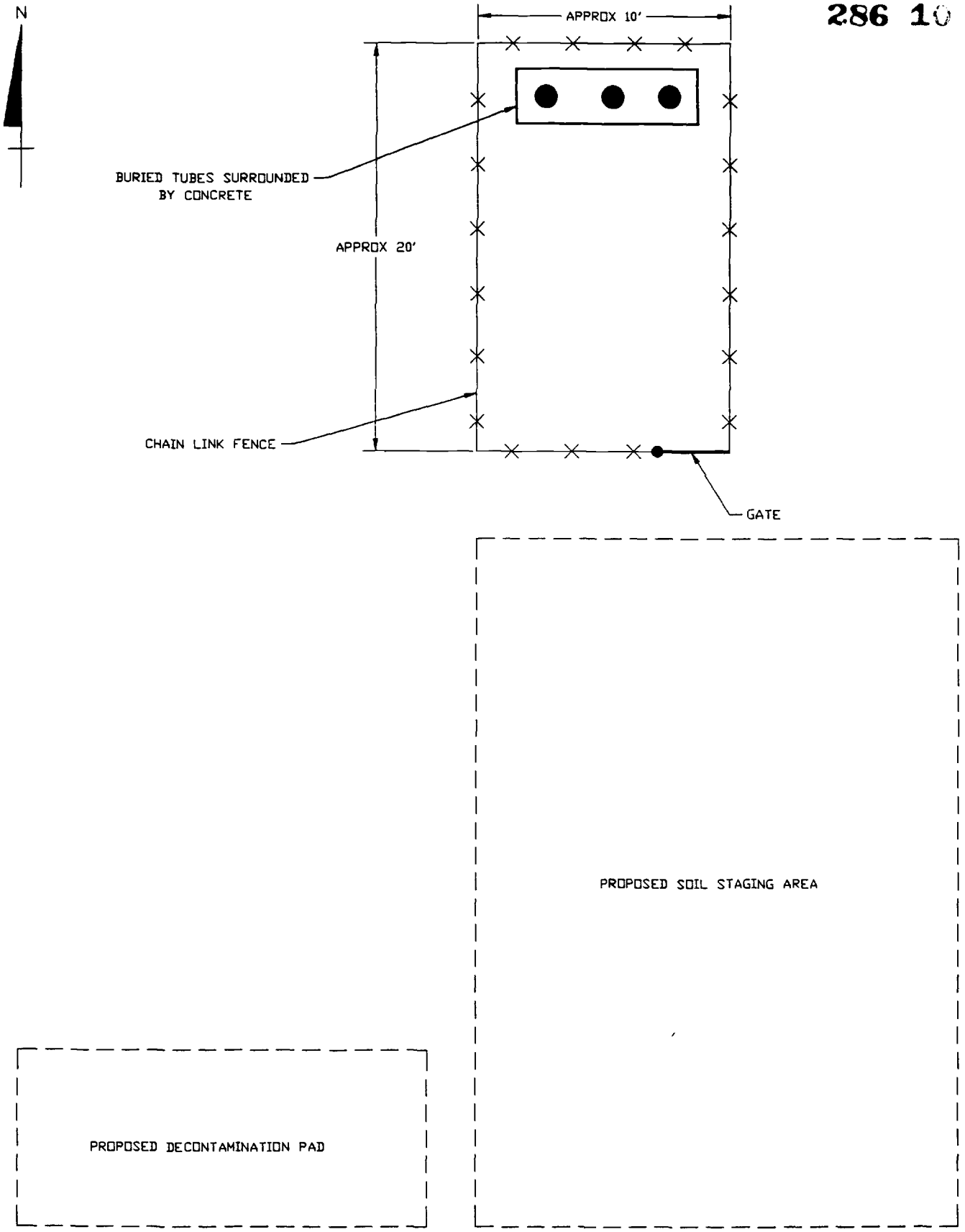

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SWMU 60 SITE LAYOUT AND TEMPORARY FACILITIES
CARSWELL AFB, TEXAS

SCALE: NONE	DAP	4-18-96	FIGURE 1-3

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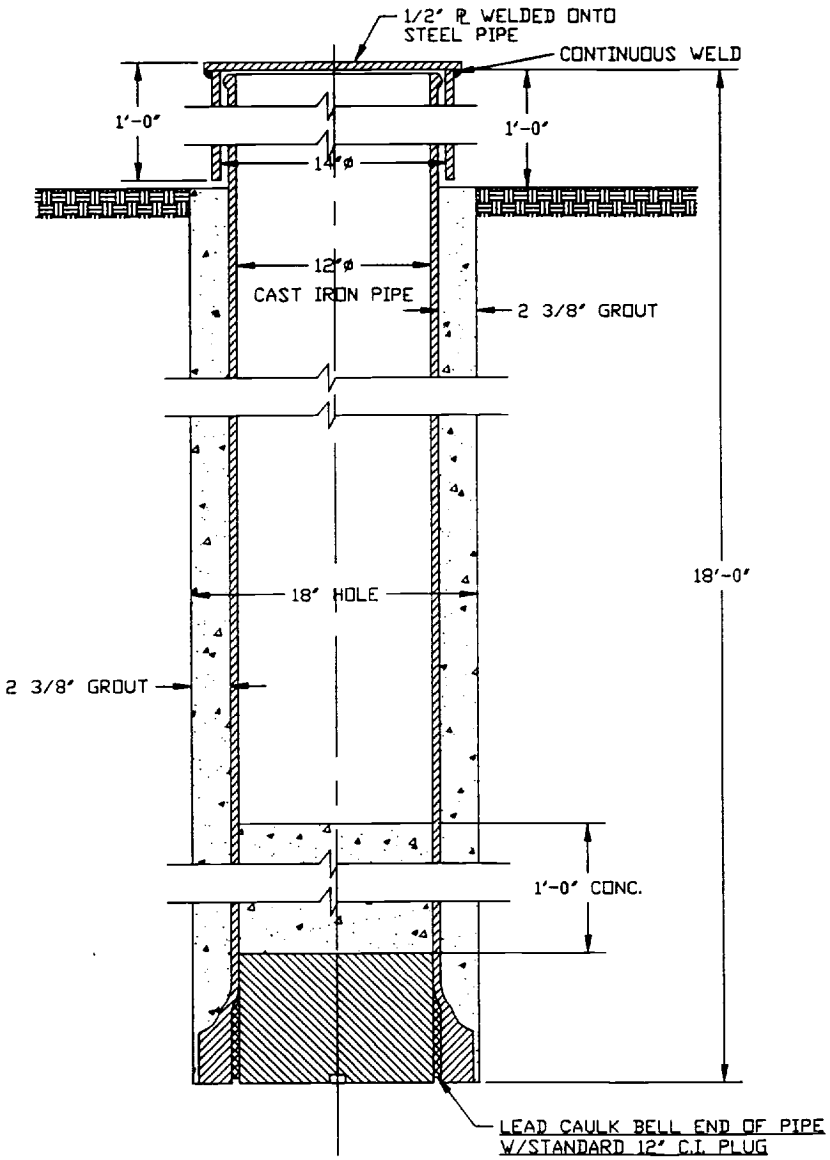

M&E METCALF & EDDY	"AS-BUILT" DETAIL OF LLRW DISPOSAL TUBE CARSWELL AFB, TEXAS			
	SCALE:1"=1'-0"	DAP	4-18-96	FIGURE 1-4

STDA - 08-07-92

1. Mobilization of personnel, equipment, material, and subcontractors.

2. Preparation of the sites.

3. Installation of background soil borings.

4. Performance of interim removal/remedial actions.

5. Management of wastes.

6. Sampling and analysis.

7. Transportation and disposal.

8. Site restoration.

9. Demobilization.

10. Reporting.

Figure 1-5 provides the anticipated schedule for performance of this work. This schedule also includes work to be performed concurrently at England AFB, Louisiana.

FIGURE 1-5
PROJECT SCHEDULE
LLRW INTERIM REMEDIAL ACTION
CARSWELL/ENGLAND AFBs

Description	Orig Dur	Early Start	Early Finish
Modification Notice of Award	0	01APR96	
Mobilization and Prep Work	35d *	01APR96	17MAY96
Revise Work Plans (HSP, SAP, RAP)	15d	01APR96	19APR96
Agency Review of Work Plans	10d	22APR96	03MAY96
Submit Final Work Plans	10d	06MAY96	17MAY96
Perform Records Review	1d	05APR96 A	10APR96 A
Refurbish REDCAP Equipment	15d	29APR96 A	17MAY96 A
Sampling and Excavation	20d *	20MAY96	17JUN96
Receive NTP	1d	20MAY96	20MAY96
Mobilize to Carswell AFB	1d	20MAY96	20MAY96
Receive LLRW Training	1d	21MAY96	21MAY96
Perform Non-Intrusive Survey	1d	21MAY96	21MAY96
Install Borings and Collect Bckgrnd	3d	22MAY96	24MAY96
Excavate Tubes	2d	22MAY96	23MAY96
Collect Confirm. and Char. Samples	1d	24MAY96	24MAY96
Analyze Samples	10d	28MAY96	10JUN96
Secure Stockpile and Tubes	1d	24MAY96	24MAY96
Mobilize to England AFB	1d	28MAY96	28MAY96
Perform Non-Intrusive Survey	1d	29MAY96	29MAY96
Perform Geophysical Survey	1d	29MAY96	29MAY96
Install Borings and Collect Bckgrnd	2d	30MAY96	31MAY96
Excavate Drums	2d	30MAY96	31MAY96
Collect Confirm. and Char. Samples	1d	03JUN96	03JUN96
Analyze Samples	10d	04JUN96	17JUN96
Secure Stockpile and Drums	1d	03JUN96	03JUN96
Waste Shipment	26d *	11JUN96	17JUL96
Prepare Waste Profiles	15d	11JUN96	01JUL96
Mobilize to Carswell AFB	1d	02JUL96	02JUL96
Ship LLRW and Soils	3d	03JUL96	08JUL96
Restore Site	1d	09JUL96	09JUL96
Mobilize to England AFB	1d	10JUL96	10JUL96
Ship LLRW and Soils	3d	11JUL96	15JUL96
Restore Site	1d	16JUL96	16JUL96
Demobilize Site	1d	17JUL96	17JUL96
Post-Construction Reports	66d *	11JUN96	12SEP96
Prepare Soil Background Report	15d	11JUN96	01JUL96
Prepare Draft Final Report	20d	18JUL96	14AUG96
AFCEE Review of Report	10d	15AUG96	28AUG96
Prepare Final Report	10d	29AUG96	12SEP96
Project Closeout	30d	13SEP96	24OCT96
Management	146d	01APR96	24OCT96
Administration	146d	01APR96	24OCT96

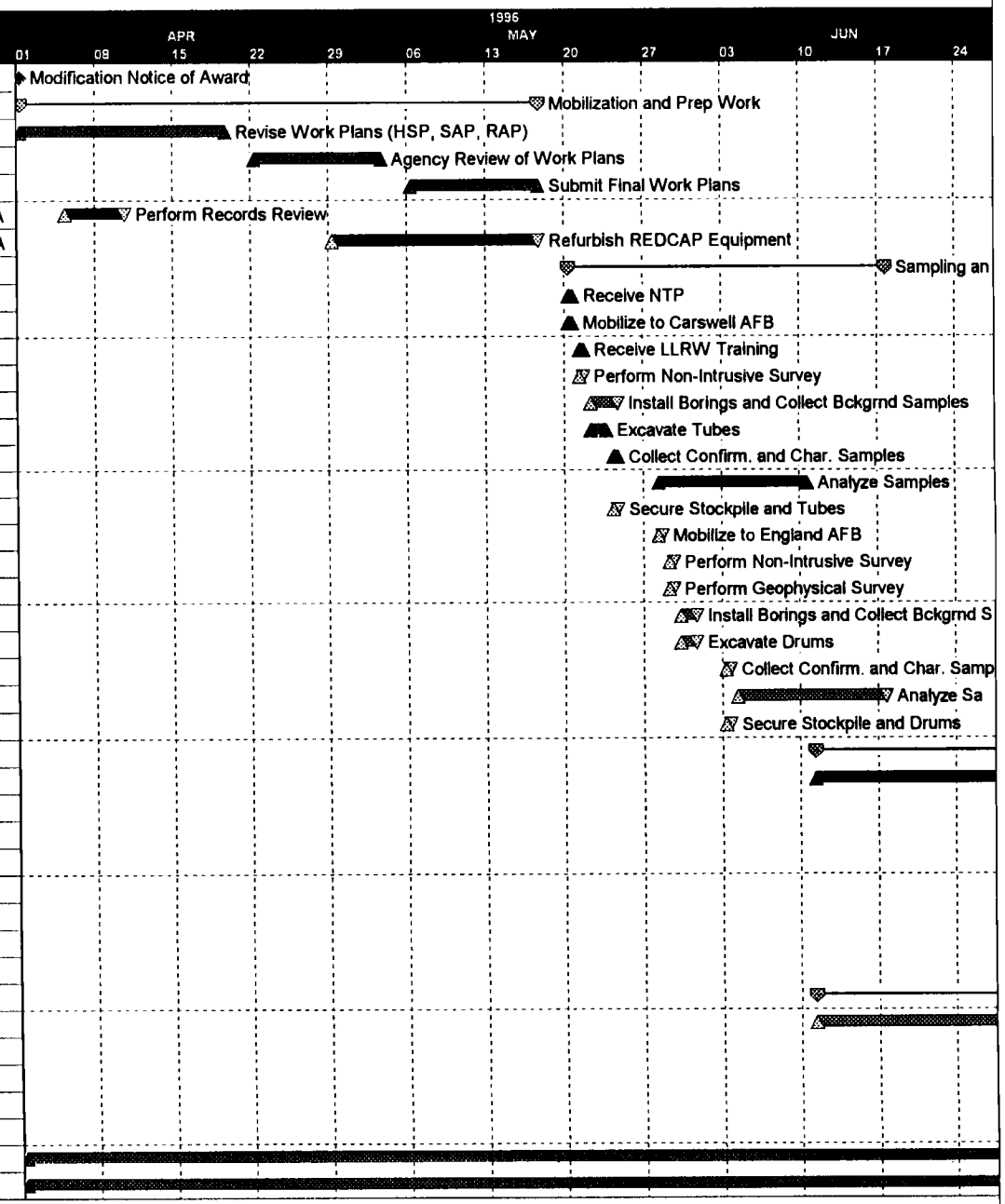

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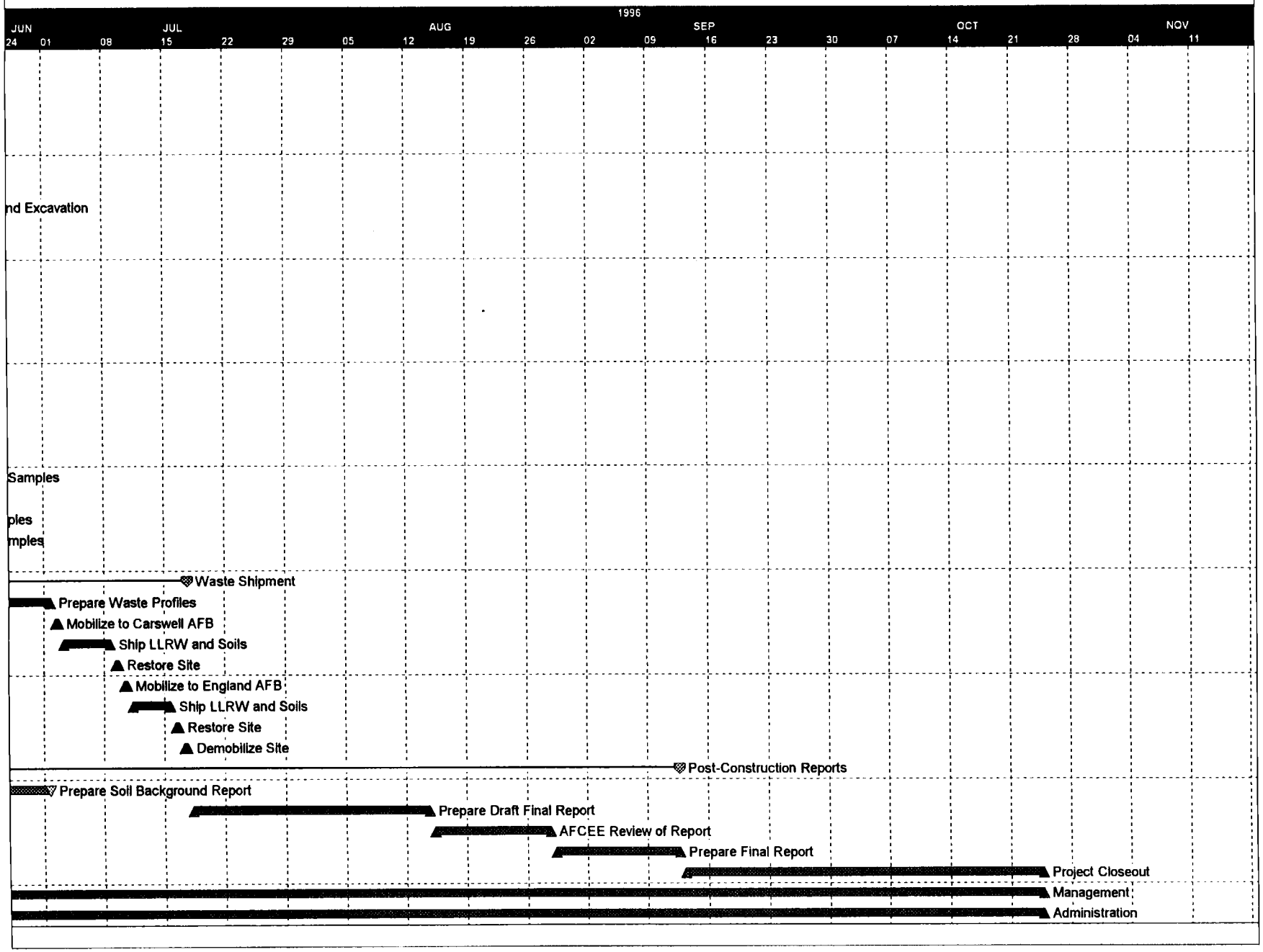
FIGURE 1-5
PROJECT SCHEDULE
LLRW INTERIM REMEDIAL ACTION
CARSWELL/ENGLAND AFBs



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2.0 MOBILIZATION

Prior to mobilization, the Contractor will obtain all necessary Federal, State, and/or installation environmental permits, licenses, and/or certificates required to perform and complete the scope of work. Prior to the start of any field activities the contractor will purchase and arrange for materials, equipment, and services required to complete the scope of work. The services include provision of a company licensed by the Nuclear Regulatory Commission to perform decontamination of facilities and equipment contaminated with Naturally Occurring Radioactive Materials (NORM). This company will provide a Radiation Safety Officer (RSO) to provide radiation safety training to site personnel prior to working at the site and to oversee site operations.

This project requires two mobilizations to the site. The Contractor will mobilize all necessary personnel and equipment to Carswell AFB, Texas to perform the drilling, excavation, stockpiling, and sampling tasks. An eight week period is anticipated for receipt and evaluation of analytical results from the verification and stockpile sampling efforts, profiling of the wastes for disposal, and coordination of transportation and disposal efforts. Upon completion of these tasks, the contractor will remobilize the required personnel and equipment to Carswell AFB for the transportation, disposal and site restoration activities.

During the eight week period prior to transportation and disposal of wastes, site control will be maintained by existing Air Force security measures. In addition, the excavation will be demarcated with caution tape and signs. Engineering controls designed to avoid the spread of possible contaminants will be in place in the soil staging area. Additional details are provided in Section 6.0. The site will be monitored by Air Force personnel during regular operating procedures. Should the safety markings or engineering controls require repair or alteration, the Contractor will be notified to make the necessary repairs.

3.0 SITE PREPARATION

Upon arrival at each site and prior to any remedial activities, the Contractor will set up temporary construction facilities. These temporary facilities will include a decontamination station, construction equipment staging area, and fencing/barricades required to demarcate and secure the areas of excavation and drilling. Location and marking of any underground utilities will be done at this time. A non-intrusive radiological survey will be performed by the RSO at the tubes and the surrounding area for guidance during excavation activities. Also, a site orientation consisting of a review of the HSP and a site walkthrough will be conducted for all Contractor and subcontractor personnel before any excavation or drilling begins.

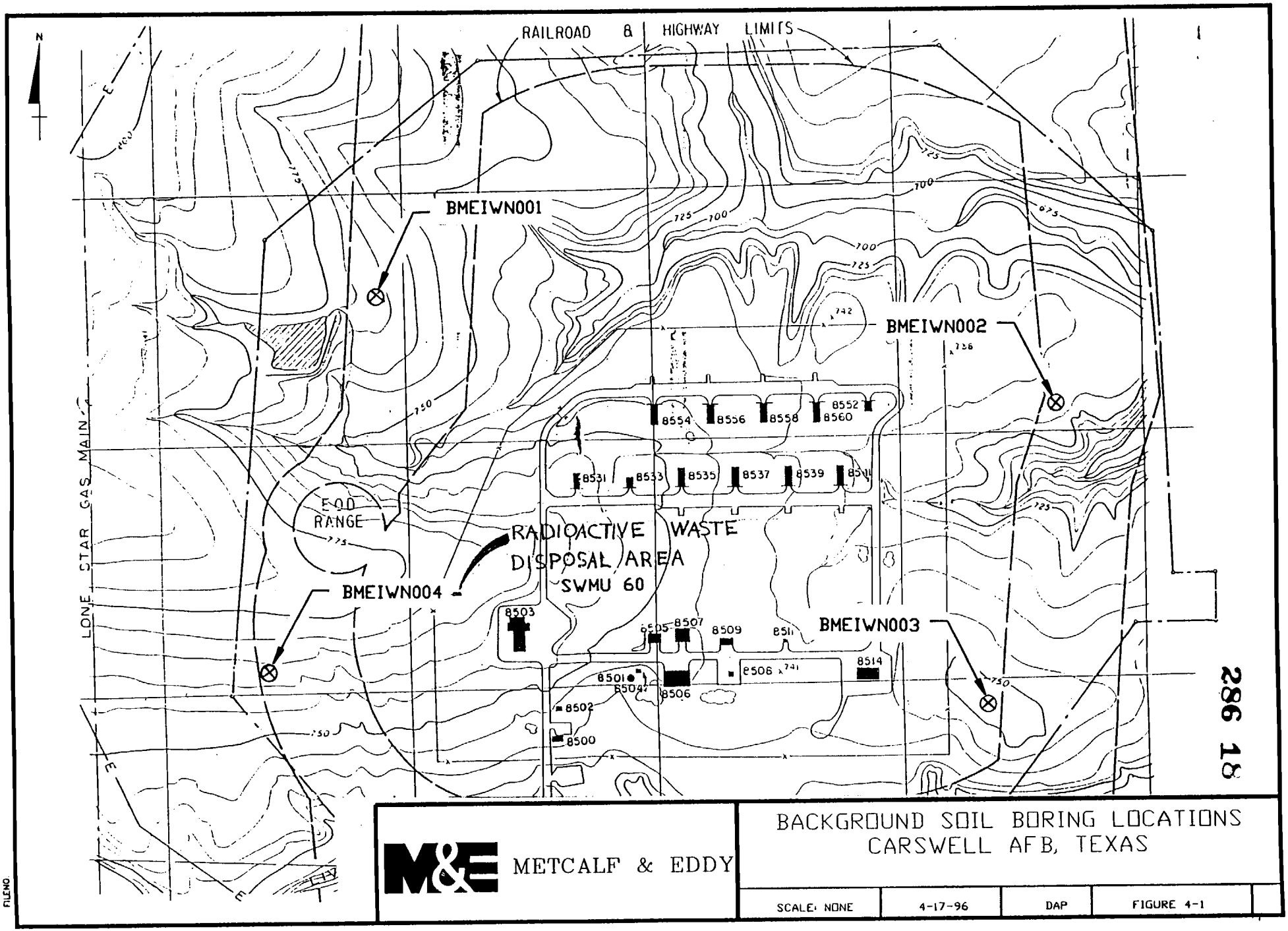
4.0 BACKGROUND SOIL BORING INSTALLATION

At SWMU 60 at Carswell AFB, the contractor will install four (4) soil borings to determine background radioisotope concentrations at the locations shown on Figure 4-1. These proposed soil boring locations were selected by the Contractor with assistance from an Air Force site representative. The locations were determined after an evaluation of the local geology/soil maps, elevation relative to the buried LLRW, and local site constraints/accessibility. Final locations may require adjustment in the field.

The borings will be installed using a drilling rig with decontaminated hollow-stem augers (HSA). Soil samples will be collected using a clean split spoon sampler. Should site geology/conditions warrant the use of different drilling methods, continuous chip sampling in conjunction with solid-stem augers, or coring with a rotary drilling rig using clear water as the drilling fluid will be considered and implemented.

Soil samples will be collected from the intervals 0-1 feet, 5-6 feet, 11-12 feet, and 17-18 feet bgs for a total of sixteen (16) samples. Each sample will be logged for geological conditions and field screened for possible contamination using direct reading instruments. The soil samples will be collected, logged, and shipped off-site for analysis by gamma spectroscopy.

Prior to drilling, plastic sheeting will be placed beneath the drill rig to contain the soil cuttings and any possible leaks or spills. The soil cuttings generated during drilling will be placed in the soil staging/stockpile area for temporary storage and later disposal. Any disposable items that may be contaminated, such as plastic and PPE used during drilling, will be placed in separate labeled plastic-lined drums for temporary storage and later disposal. Upon completion of each boring, the borehole will be backfilled with bentonite/cement grout in accordance with state, federal, or Air Force-approved methods.



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BACKGROUND SOIL BORING LOCATIONS
CARSWELL AFB, TEXAS

SCALE: NONE	4-17-96	DAP	FIGURE 4-1

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5.0 PROPOSED INTERIM REMOVAL/REMEDIAL ACTIONS - SWMU 60

SWMU 60 is located five miles west of Carswell AFB at the Off-Site Weapons Storage Area. The site contains three buried cast iron tubes containing LLRW consisting of radium-painted aircraft instrument dials. Each tube has a diameter of 12 inches and a length of 18 feet. The tubes were installed vertically in the ground with approximately 12 inches above the surface and 17 feet below the surface. Each tube is surrounded by approximately 3 inches of grout. Based on visual inspection by AFCEE, there is no physical evidence of any release of hazardous constituents to the environment.

Prior to any excavation the contractor will construct a staging area for stockpiling and temporary storage of soils and other excavated materials. The excavation of soil will be limited to that which is required to facilitate tube removal. Prior to beginning excavation, plastic sheeting will be placed underneath the excavator and swing arm to prevent contact of possibly contaminated soil with the ground surface.

Excavation will be performed using a Caterpillar 426 backhoe loader (or equivalent). During excavation, the three tubes will be exposed, removed from the excavation area using appropriate lifting tools (nylon or fabric slings), and transported to the staging area. The tubes and concrete will be handled in a manner that reduces the potential for release of their contents. Soils excavated during the tube removal process and those soils determined potentially hazardous will be removed and stored at the staging area. Approximately 50 cubic yards of soil will be removed and staged at SWMU 60.

6.0 WASTE MANAGEMENT

The Waste Management actions presented in this section describe procedures to be implemented during generation, handling, and temporary storage during the remedial activities at SWMU 60.

6.1 Soil and Tube Staging Area

Excavated soil and tubes will be stockpiled at the site until characterization results on the soil and other potentially hazardous materials is available. Stockpiled material will be placed on and covered with polyethylene sheeting in a manner to control run-on and run-off of precipitation. The plastic cover will be secured with sand bags and rope to prevent damage from adverse weather that may occur during this period. The soil staging areas will be bermed in a manner to prevent stockpiled material from spreading beyond the controlled area. The staging area will be approximately 20 feet by 40 feet and will contain 50 cubic yards of excavated soil, the tubes that were removed, and drums/containers of other waste materials.

The floor of the staging area will be double-lined with 6-mil plastic sheeting. Berms constructed of timbers, piping, or similar material will be placed at the sides of the staging area and between the soils and tubes. The 6-mil plastic sheeting will be wrapped over and under the berms.

The staging area will be surrounded with flame-orange posts and caution tape reading "Caution-Authorized Personnel Only." Appropriate signs will be posted on the outside of the storage-area, as necessary. Caution tape will also be placed around the excavation.

After placement of the tubes in the lined staging area, the RSO will inspect the outside of the tubes for holes and leaks and monitor the outside of the tubes for radioactivity and organic vapors. If radioactivity is within acceptable levels, as expected, the tubes will be packaged in Schedule 40 PVC containers for shipment to U.S. Ecology for proper disposal.

Samples will be collected from the stockpiled soils and shipped to Mountain States Analytical for characterization and to Envirocare in accordance with their permit requirements. The characterization results will be used to develop the waste profiles to be submitted to Envirocare.

Following Envirocare's acceptance of the waste profiles for the stockpiled soils, both the tubes and the soil will be manifested and transported off-site to the appropriate disposal facility.

6.2 Waste Minimization

All activities will be planned and performed in a manner that will minimize the generation of waste during the remedial action at SWMU 60. The practices that will minimize the accumulation of waste include the following:

- Segregation of materials based on field screening and field analysis;
- Segregation of sanitary waste from potentially contaminated materials;
- Performance of decontamination techniques designed to avoid generation of radioactive or hazardous liquid materials and minimize the volume of liquid waste generated; and
- Re-use of disposable equipment, if possible.

6.3 Field Screening

Field screening of all derived wastes will be performed by the RSO for the presence of gross alpha and beta/gamma activity. Appendix A provides the screening procedures.

6.4 Field Packaging

Following completion of each activity, personal protective equipment (PPE) and other disposables will be placed into sealable plastic bags; labeled with the location, date, and screening information; and placed in a lined drum. Soil cuttings will be placed within the staging area.

6.5 Reusing Disposable Equipment

As part of the Spill Prevention, Control and Countermeasures Implementation Plan, plastic sheeting will be placed beneath the drill rig at each borehole location to contain equipment leaks or fuel spills. This sheeting will extend into the driller work area and will be used as temporary containment of soil cuttings prior to placing the cuttings in the soil staging area. Sheeting will be reused to minimize waste plastic generated at the site unless field screening of soils encountered at the boreholes indicates that it is potentially contaminated. At the end of drilling operations, plastic sheeting will be placed in a plastic bag, sealed, labeled, and placed in a lined drum dedicated to suspected contaminated material.

6.6 Material and Waste Handling

This section presents a discussion of the types and quantities of investigation-derived materials that will be generated; procedures for drum labeling, transport, and temporary storage; and characterization procedures for investigation-derived materials.

6.6.1 Types and Quantities of Materials Generated

The types of materials that will be generated during investigation activities at SWMU 60 will include both solid and liquid materials. Solid materials generated will include:

- Drill cuttings (including soils and previously disposed of sanitary wastes) and decontamination sludge which may contain radiological constituents.
- Protective clothing including gloves, Tyvek coveralls, ear plugs, etc.
- Other disposable items such as disposable scoops, wipes, plastic baggies, paper and plastic wrappers, and worn, discarded equipment used during drilling and sampling activities.
- Non-hazardous and exempt sanitary waste (e.g., bentonite) generated in the support zone.

Liquids generated will include:

- Rinsate from decontamination of augers, sampling equipment, drill rig, and down-hole tools.
- Sampling-equipment wash and rinse water including potable water with Liquinox/Alconox™ cleaning solution and possibly de-ionized water containing traces of methanol.

6.6.2 Drum Labeling

All materials generated during the site investigation, including PPE, other disposable items, and liquid wastes will be placed into DOT-approved containers (i.e., 55-gallon drums). Liquid wastes will be placed in closed-top, bunged 55-gallon drums.

All empty drums stored on-site will be labeled as "Empty." Drums which receive any type of material generated as a result of field activities (e.g., PPE, decontamination fluids, etc.) will be labeled immediately upon placement of material in the container. Drum labels will include:

- "Carswell Air Force Base Environmental Restoration Program";
- The investigation site ID (i.e., SWMU Number);
- Date on which material was first placed in the drum (generation date); and
- The specific type of material in the drum.

In addition to the above labeling, a unique number will be assigned and marked on each drum using a paint pen. An additional set of labels will be contained in a clear, waterproof, sealable pouch which will be attached to the drum. The following information will be typed in bold letters and placed inside the pouch:

"PENDING ANALYSIS"
"for additional information call:"
(Site Manager Name and Phone Number)

6.6.3 Materials Handling and Drum Transport Within SWMU

The Site Manager will maintain a logbook with information regarding the generation date, origin, type, temporary storage location, and disposal of all materials generated during site activities. PPE and other disposables from site activities will be kept in 4-mil thick, 55-gallon plastic bags. Following completion of specific activities, the bag(s) will be sealed and labeled.

6.7 Documentation

The Site Manager will maintain a detailed logbook of all materials placed in each drum. As previously noted, each drum will be labeled with a unique number corresponding to the number in the logbook. Copies of information documenting the generation, field testing, and transport of investigation-generated materials will be maintained on-site for inspection.

7.0 SAMPLING AND ANALYSIS

The sampling and analysis for SWMU 60 is described in the Sampling and Analysis Plan (SAP).

8.0 TRANSPORTATION AND DISPOSAL

All waste generated from the remedial action at SWMU 60 that will be transported from the site to a repository will be carried out in accordance with 10CFR71. Exemptions to this regulation may be found in Subpart B of 10CFR71, which states that "a licensee is exempt from all requirements of this part with respect to shipment or carriage of a package containing radioactive material having a specific activity not greater than 0.002 microcurie/gram." Appendix A provides the procedures to be used to ensure that the specific activity of the material is not greater than 0.002 microcurie/gram. Information regarding obtaining a license to transfer the material may be found in Subpart C of 10CFR71. Applications for package approval is found in Subpart D, which contains information on package description, package evaluation, and Quality Assurance.

The tubes containing LLRW materials will be transported to U.S. Ecology for proper disposal. All other waste streams requiring disposal will be transported to Envirocare.

See Appendix B for performance requirements for transportation of wastes off-site.

9.0 SITE RESTORATION

After the analytical results for the verification samples are reviewed and approved by the AFCEE representative and the U.S. Air Force Radioisotope Committee, the Contractor will backfill the excavations using material from an approved off-site borrow source. The surface of the site will then be restored to conditions approximating the surrounding area.

10.0 DEMOBILIZATION

Two demobilizations will be performed for the site. The Contractor will demobilize at Carswell AFB, Texas upon completion of excavation, drilling, stockpiling, and sampling activities. An eight week period is anticipated for receipt of analytical results from our verification and stockpile sampling efforts and for profiling the wastes to be disposed of. Open excavations and stockpiles will be demarcated with caution tape and signs during this time frame. Upon acceptance of the profiles, the Contractor will complete the transportation, disposal and site restoration activities. Upon completion of site restoration at the site, the following demobilization tasks will be implemented.

1. Removal of temporary construction facilities;

2. Final clean up;

3. Final walkthrough with AFCEE representative; and

4. Demobilization of contractor personnel and construction equipment.

11.0 REPORTING

11.1 Background Soil Summary Letter Report

The Contractor will provide a written letter report summarizing the results of the background soil sampling completed at SWMU 60. The report will contain the analytical results and the statistical methods and results used to determine the range of naturally occurring isotopes near SWMU 60.

11.2 Final Report

The Contractor will provide a site specific, written report summarizing all analytical and field results. The report will contain documentation consisting of laboratory analytical reports, photographs, tables, field log reports, HSP monitoring reports, the method in which soil disposal was completed, and site drawings. The final report will be completed upon review of all field and analytical findings by the contractor's Project Manager.

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APPENDIX A

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PROCEDURES FOR CALCULATING ACTIVITY USING RADIATION INSTRUMENT READINGS

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PROCEDURES FOR CALCULATING ACTIVITY USING RADIATION INSTRUMENT READINGS

The following procedures will be used to determine appropriate DOT shipping categories for dials, swipes, soil samples, and drums of contaminated materials (PPE, dials, etc.).

Radium-Painted Dials (Type A Article)

Use the following procedure to determine whether a dial can be shipped as a DOT Type A article.

Step	Action
1	Obtain the most recent background reading in counts per minute (cpm).
2	Hold the NaI 2x2 instrument 1 ft. from the radium-painted dial; have the painted side of the dial facing the instrument.
3	Take a 1-minute count.
4	Calculate as follows: Dial can be shipped as a DOT Type A article if 1-minute dial count (cpm) - background count (cpm) $< 2 \times 10^6$

Swipe (Smear) Sample (Exempt Quantity)

Use the following procedure to determine if a swipe taken to identify removable radioactive contamination can be shipped as a DOT exempt quantity.

Step	Action
1	Weigh a similar, unused swipe in grams (g).
2	Obtain the efficiency of the alpha sample counter (a number less than one; if in percent, convert to a fraction) from the instrument manual.
3	Obtain the most recent background reading in counts per minute (cpm).
4	Count the used swipe to be shipped following instructions in the instrument manual.
5	Calculate as follows: Swipe can be shipped as a DOT exempt quantity if [swipe count (cpm) - background count (cpm)] x instrument efficiency $<$ 2200 x weight of swipe (g)

Soil in Sample Container (Exempt Quantity)

Use the following procedure to determine if a small sample of loose soil that is put into a container (such as a bottle, vial, or bag) can be shipped as a DOT exempt quantity.

Step	Action
1	Weigh the soil in its container in grams (g).
2	Obtain the most recent background reading in counts per minute (cpm).
3	Hold the NaI 2x2 instrument 1 ft. from the container of soil.
4	Take a 1-minute count.
5	Calculate as follows: Container of soil can be shipped as a DOT exempt quantity if 1-minute soil count (cpm) - background count (cpm) < 8 x weight of soil in container (g)

Soil in Container More than 1 Ft. Long (Exempt Quantity)

Use the following procedure to determine if a core sample or other soil sample that is more than 1 ft. long can be shipped as a DOT exempt quantity.

Step	Action
1	Weigh the soil in its container in grams (g).
2	Measure the length of the container in centimeters (cm).
3	Obtain the most recent background reading in counts per minute (cpm).
4	Hold the NaI 2x2 probe so that the distance from the center point of the container is the same as the length of the container.
5	Take a 1-minute count.
6	Calculate as follows: Container of soil can be shipped as a DOT exempt quantity if 1-minute soil count (cpm) - background count (cpm) < 6905 x weight of soil in container (g) / length of container (cm)

Material in Large Container (Exempt Quantity)

Use the following procedure to determine whether a 55-gal. drum of PPE, contaminated soil, or other material can be shipped as a DOT exempt quantity.

Step	Action
1	Obtain the most recent background reading in counts per minute (cpm).
2	Hold the NaI 2x2 instrument on the lid of the closed drum.
3	Take a 1-minute count.
4	Calculate as follows: Drum can be shipped as a DOT exempt quantity if 1-minute soil count (cpm) - background count (cpm) $< 1.6 \times 10^6$

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APPENDIX B

APPENDIX B

TRANSPORTING WASTES OFF-SITE

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TRANSPORTING WASTES OFF-SITE

1.0 Performance Requirements.

1.1 All vehicles leaving the exclusion zone will be decontaminated prior to leaving the project site. The contractor will inspect all vehicles prior to their leaving the project site to ensure that the least possible amount of soil adheres to wheels and undercarriages.

1.2 The contractor will not deliver site materials to any facility other than the approved disposal facility(ies) listed on the shipping manifest.

1.3 The contractor will be responsible for any and all actions necessary to remedy situations involving transit mud, soil, contaminants, or waste materials tracked off-site.

1.4 The contractor will ensure that trucks are protected against contamination by properly covering and lining them with compatible materials or by decontaminating them prior to any use other than hauling contaminated materials.

1.5 Prior to leaving the site, a load inspection of all shipments will be conducted by a designated responsible party approved by the Contracting Officer's Representative (COR) and the contractor's Site Manager. A load inspection report will be submitted to the COR, which will verify and provide written documentation of the following:

1.5.1 A complete and accurate manifest.

1.5.2 Utilization of the proper DOT approved shipping container in accordance with 49 Code of Federal Regulation (CFR).

1.5.3 Labeling in accordance with DOT regulations specified by 49 CFR.

1.5.4 A Bill of Lading traceable to the manifest, if required.

1.5.5 Validation that all waste shipment containers are in good condition and are not leaking.

1.5.6 A statement that the driver is physically fit to perform his duties.

1.5.7 Validation that the driver has written documentation in his possession of completion of the required DOT safety training and health monitoring.

1.5.8 A statement that the driver's log is current.

1.5.9 Validation that a certificate of insurance is in force.

1.6 Hazardous materials will be transported in bulk containers when practical.

1.7 Hazardous materials will be transported by a licensed hazardous waste hauler.

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE