

N83447.AR.000150
NAS FORT WORTH
5090.3a

FINAL INSTALLATION RESTORATION RCRA FACILITY INVESTIGATION WORK PLAN
ADDENDUM FOR SAMPLING AND REMOVAL OF DRUMS NAS FORT WORTH TX
2/1/1994
LAW ENGINEERING AND ENVIRONMENTAL

186 00



**NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS**

**ADMINISTRATIVE RECORD
COVER SHEET**

AR File Number 186

File: 17A-36
D.B.

186

186 01

11-3517-0115

INSTALLATION RESTORATION PROGRAM (IRP)
FIELD INVESTIGATION, SAMPLING AND REMOVAL OF IRP DRUMS

WORK PLAN ADDENDUM

Carswell Air Force Base, Fort Worth, Texas

February 1994

Final



PREPARED FOR

AIR FORCE BASE CONVERSION AGENCY (AFBCA/OL-H)
CARSWELL AIR FORCE BASE, TEXAS 76127

UNITED STATES AIR FORCE
AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE
BASE CLOSURE RESTORATION DIVISION (HQAFCEE/ESB)
BROOKS AIR FORCE BASE, TEXAS 78235-5328



February 23, 1994

Air Force Center for Environmental Excellence
HQ AFCEE/ESB
8001 Inner Circle Drive
Suite 2
Brooks Air Force Base, TX 78235-5328

Attention: Mr. Chris Hobbins (Team Chief)

Subject: **Carswell Air Force Base
Field Investigation, Sampling, and Removal of IRP Drums
Final Work Plan Addendum
Contract No. F33615-90-D-4008
Delivery Order No. 0015
Law Project No. 11-3517-0115**

Dear Mr. Hobbins:

Law Environmental, Inc., Government Services Division is pleased to submit the enclosed eight copies of the Final Work Plan Addendum for Field Investigation, Sampling, and Removal of IRP Drums to the Air Force Center for Environmental Excellence (AFCEE) for approval.

If you have questions or comments, please contact us at (404) 499-6800.

Sincerely,

LAW ENVIRONMENTAL, INC.


John F. O'Brien
Project Manager


E. Fred Sharpe, Jr., P.E.
Principal

JFO/EFS:dcl

3517-0115.05

**LAW ENVIRONMENTAL, INC.
GOVERNMENT SERVICES DIVISION**

114 TOWNPARK DRIVE, SUITE 400 • KENNESAW, GA 30144-5569
(404) 499-6800 • FAX (404) 421-3593

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect on this collection of information, including suggestions for reducing this burden to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE FEBRUARY 1994	3. REPORT TYPE AND DATES COVERED FINAL		186 03
4. TITLE AND SUBTITLE INSTALLATION RESTORATION PROGRAM FIELD INVESTIGATION, SAMPLING AND REMOVAL OF IRP DRUMS WORK PLAN ADDENDUM			5. FUNDING NUMBERS CONTRACT NO. F33615-90-D-4008/0015		
6. AUTHOR(S) LAW ENVIRONMENTAL, INC. (LAW)					
7. PERFORMANCE ORGANIZATION NAME(S) AND ADDRESS(ES) LAW ENVIRONMENTAL, INC. GOVERNMENT SERVICES DIVISION 114 TOWNPARK DR. KENNESAW, GA 30144			8. PERFORMING ORGANIZATION REPORT NUMBER (N/A)		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) AIR FORCE CENTER FOR ENVIRONMENTAL EXCELLENCE ENVIRONMENTAL RESTORATION DIVISION (AFCEE/ESRT) BROOKS AFB, TEXAS 78235-5000			10. SPONSORING/MONITORING AGENCY REPORT NUMBER (N/A)		
11. SUPPLEMENTARY NOTES					
12a. DISTRIBUTION/AVAILABILITY STATEMENT APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED			12b. DISTRIBUTION CODE		
13. ABSTRACT (Maximum 200 words) LAW ENVIRONMENTAL INC., (LAW), WILL CONDUCT A FIELD INVESTIGATION OF STORAGE DRUMS LOCATED AT CARSWELL AIR FORCE BASE, TEXAS, UNDER THE AIR FORCE INSTALLATION RESTORATION PROGRAM (IRP). THE PROJECT FOLLOWS THE REQUIREMENTS OF IRP AND THE WORK DESCRIBED IN THIS WORK PLAN ADDENDUM IS DESIGNED TO PROPERLY CONFIRM THE IDENTIFICATION AND QUANTITY OF DRUMMED MATERIAL AND DISPOSE OF THE DRUMMED MATERIAL IN ACCORDANCE WITH APPROPRIATE GUIDANCE AND REGULATIONS. IN ADDITION, SOIL ASSOCIATED WITH THE STORAGE OF DRUMS AT BUILDING 1337 WILL BE INVESTIGATED TO EVALUATE THE PRESENCE OR ABSENCE OF CONTAMINANTS.					
14. SUBJECT TERMS FIELD INVESTIGATION, SAMPLING AND REMOVAL OF IRP DRUMS			15. NUMBER OF PAGES 25		16. PRICE CODE
17. SECURITY CLASSIFICATION OF REPORT UNCLASSIFIED	18. SECURITY CLASSIFICATION OF THIS PAGE UNCLASSIFIED	19. SECURITY CLASSIFICATION OF ABSTRACT UNCLASSIFIED	20. LIMITATION OF ABSTRACT UL		

INSTALLATION RESTORATION PROGRAM (IRP)
FIELD INVESTIGATION, SAMPLING, AND REMOVAL OF IRP DRUMS
FINAL WORK PLAN ADDENDUM
FOR
CARSWELL AFB
FORT WORTH, TEXAS 76127-5000

February 1994

Prepared by:
Law Environmental, Inc.
114 TownPark Drive
Kennesaw, Georgia 30144

CONTRACTOR CONTRACT NO. F33615-90-D-4008 DELIVERY ORDER NO. 0015

United States Air Force
Air Force Center for Environmental Excellence
Base Closure Restoration Division (HQ AFCEE/ESB)
Brooks Air Force Base, Texas 78235-5328
Mr. Chris Hobbins (HQ AFCEE/ESB)

This Work Plan Addendum has been developed for the Field Investigation, Sampling, and Removal of IRP Drums at Carswell Air Force Base (Carswell AFB). Procedures outlined in this plan are designed to describe the work to be performed, explain the project objectives, and present the rationale for conducting specific project activities. The plan will be effective upon final approval by the Air Force Center For Environmental Excellence (AFCEE).

Every effort will be made to fully comply with this plan. The success of Carswell AFB's Installation Restoration Program depends on team effort and total dedication from the various parties involved. Therefore, efforts will be focused on achieving and maintaining compliance with this Work Plan and pertinent regulations.

The point of contact for this investigation is as follows:

Mr. Chris Hobbins
Team Chief
HQ AFCEE/ESB
8001 Inner Circle Drive
Suite 2
Brooks AFB, Texas 78235-5328
Phone: (210) 536-5261

**WORK PLAN
DISCLAIMER NOTICE**

186 06

This Work Plan Addendum has been prepared for the United States Air Force by Law Environmental, Inc. (LAW) for the purpose of aiding in the implementation of a final remedial action plan under the Air Force Installation Restoration Program (IRP). As the report relates to actual or possible releases of potentially hazardous substances, its release prior to an Air Force final decision on remedial action may be in the public's interest. The limited objectives of this Work Plan and the ongoing nature of the IRP, along with the evolving knowledge of site conditions and chemical effects on the environment and health, must be considered when evaluating this Work Plan Addendum, since subsequent facts may become known which may make this Work Plan Addendum premature or inaccurate. Acceptance of this Work Plan Addendum in performance of the contract under which it is prepared does not mean that the United States Air Force adopts the conclusions, recommendations or other views expressed herein, which are those of the contractor only and do not necessarily reflect the official position of the United States Air Force.

Copies of this Work Plan Addendum may be purchased from:

Government agencies and their contractors registered with the Defense Technical Information Center (DTIC) should direct their requests for copies of this report to:

Defense Technical Information Center
Cameron Station
Alexandria, VA 22304-6145

Non-Government agencies may purchase copies of this document from:

National Technical Information Service (NTIS)
5285 Port Royal Road
Springfield, VA 22161

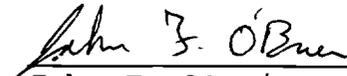
WORK PLAN
PREFACE

Law Environmental, Inc. (LAW) was contracted by the U.S. Air Force Center For Environmental Excellence (AFCEE) to perform a field investigation and disposal of stored 55-gallon drums containing materials from oil/water separator maintenance and subsurface investigations at Carswell AFB, Texas. The primary objectives of this field investigation are to:

1. Sample and characterize for disposal the contents of 106 storage drums located at the Building 1337 storage yard. These drums contain investigation-derived waste (IDW) generated from past Installation Restoration Program (IRP) investigations.
2. Dispose of the same 106 IDW storage drums located at Building 1337 storage yard as sampled and characterized by Objective No. 1.
3. Drill 3 soil borings from the ground surface to the saturation zone to sample underlying soil to assess whether constituents of concern have been released at the Building 1337 storage yard.
4. Dispose of the oil/water separator sludge contained within 65 storage drums located at Building 1190.
5. Dispose of the benzene contaminated oil/water separator sludge contained within 6 storage drums located at Building 1347.
6. Provide a written report to discuss the results of the field investigation.

Mr. John O'Brien is the Project Manager for this investigation. Members of the field team will be selected prior to commencement of field activities.

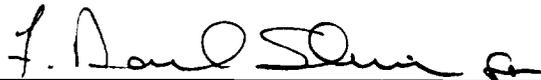
This Work Plan Addendum was prepared by Mr. Tom McComb and reviewed by Mr. John O'Brien and Mr. Fred Sharpe. The efforts of Mr. Chris Hobbins (AFCEE Team Chief) and personnel at Carswell AFB are greatly appreciated.



John F. O'Brien
Project Manager



E. Fred Sharpe, Jr., P.E.
Principal



Louis S. Karably, P.E.
Program Manager

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1-1
1.1 HISTORY OF PAST IRP WORK AT CARSWELL AFB	1-1
1.2 DESCRIPTION OF CURRENT STUDY	1-4
1.2.1 Project Objectives	1-4
1.2.2 Scoping Documents	1-5
1.2.3 Identify Subcontractors and Their Roles	1-5
2.0 SUMMARY OF EXISTING INFORMATION	2-1
3.0 INVESTIGATION TASKS	3-1
3.1 SITE OBJECTIVES	3-1
3.2 FIELD INVESTIGATION	3-1
3.2.1 Field Tasks	3-1
3.2.2 Sampling and Analysis Activities	3-11
3.3 LITERATURE SEARCH	3-11
3.4 RECORD KEEPING	3-11
3.5 DATA ASSESSMENT	3-11
4.0 REPORTING REQUIREMENTS	4-1
5.0 PROJECT SCHEDULE	5-1

LIST OF FIGURES

	<u>Page</u>
1-1	Location of Buildings 1190, 1337 and 1347 1-2
1-2	Building 1337 Storage Yard Location of Proposed Soil Borings 1-3
3-1	Soil Test Boring Record 3-3

LIST OF TABLES

	<u>Page</u>
3-1	Sampling and Analysis Plan Summary 3-8

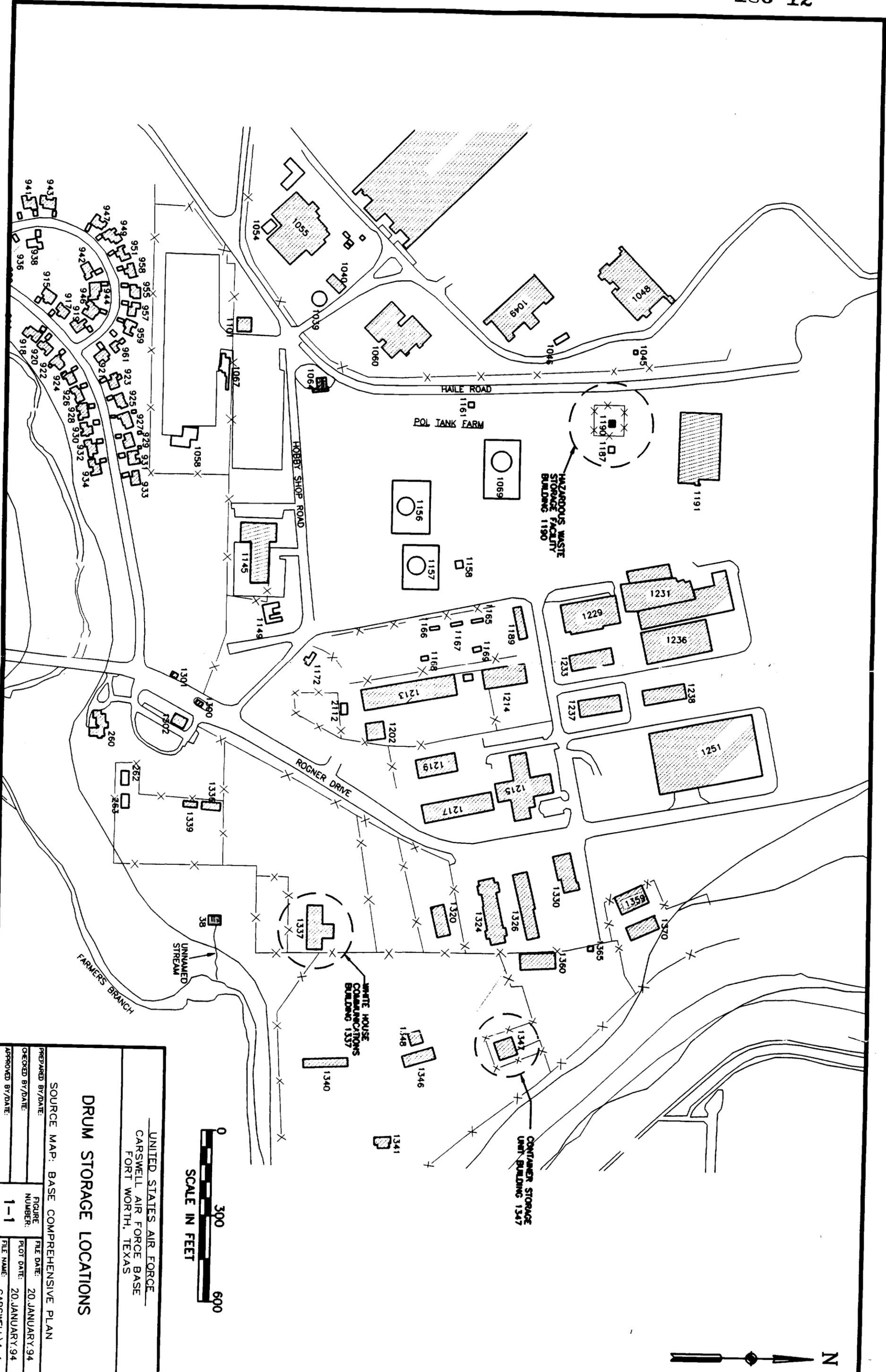
This addendum to the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994, has been developed for additional work at the Carswell Air Force Base (Carswell AFB), in Fort Worth, Texas. This addendum was prepared by Law Environmental, Inc., Government Services Branch (LAW), in response to the Scope of Work (SOW) dated September 14, 1993, under Contract No. F33615-90-D-4008 issued by the Air Force Center for Environmental Excellence (AFCEE).

The work plan addendum summarizes the proper disposal of 106 IRP storage drums of investigation-derived waste (IDW) located at the storage yard of Building 1337, 65 storage drums containing oil/water separator sludge located at Building 1190, and 6 storage drums containing benzene contaminated oil/water separator sludge located at Building 1347. Routine maintenance of the oil/water separators generated the sludge drums, and the IDW drums were generated during Installation Restoration Program (IRP) investigations at Carswell AFB. Figure 1-1 shows the location of Buildings 1337, 1347, and 1190.

The work plan addendum also summarizes the proper sampling and characterization, for disposal purposes, of the IDW drums stored at Building 1337, as well as, the placement of three soil borings at the Building 1337 storage yard (Figure 1-2) to sample underlying soils for contaminants of concern possibly released by the IDW drums.

1.1 HISTORY OF PAST IRP WORK AT CARSWELL AFB

Refer to Section 1.1 of the Installation Restoration Program (IRP) RCRA Facility Investigation Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated December 1993.



DRUM STORAGE LOCATIONS

UNITED STATES AIR FORCE
 CARSWELL AIR FORCE BASE
 FORT WORTH, TEXAS

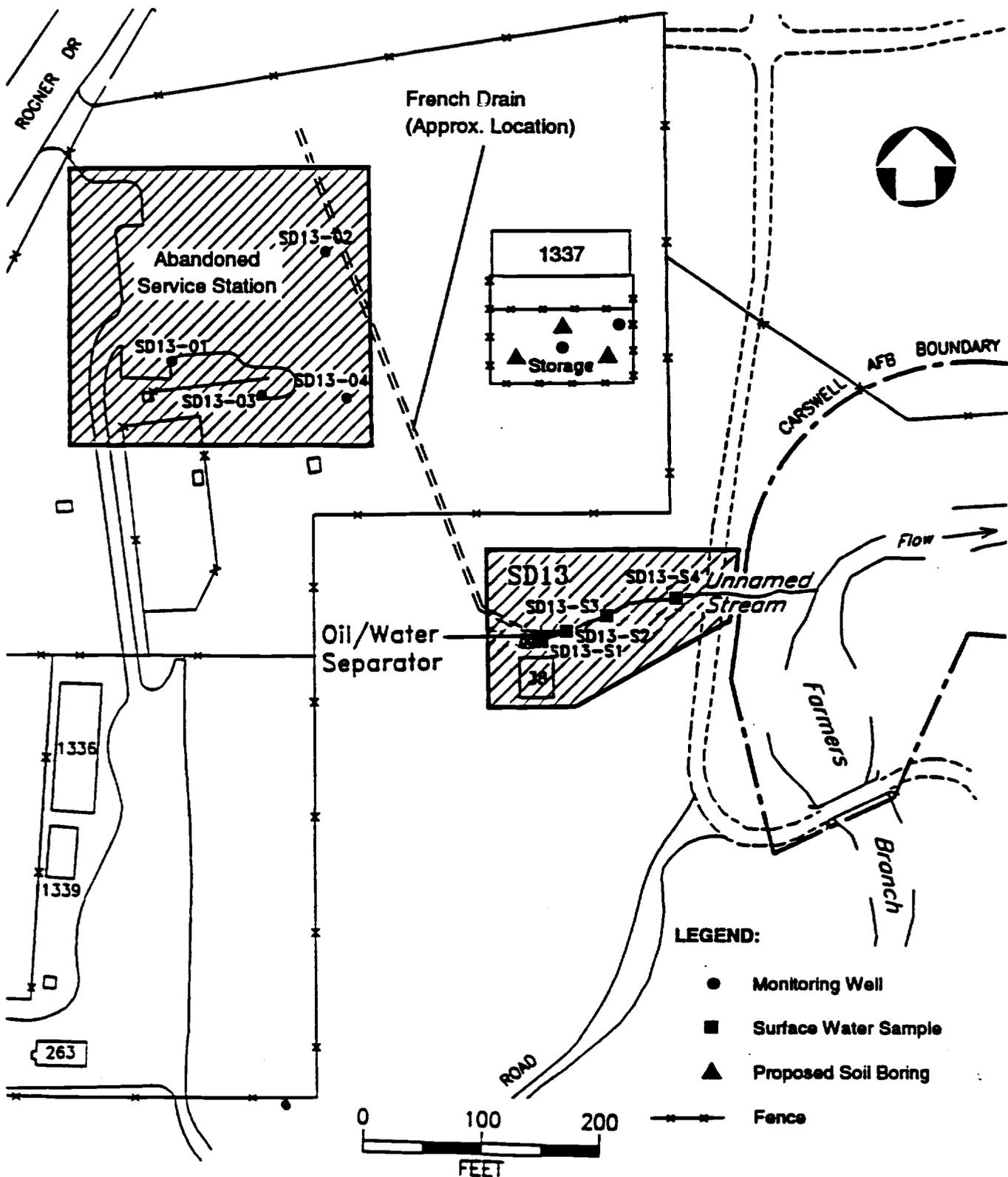


SOURCE MAP: BASE COMPREHENSIVE PLAN

PREPARED BY/DATE:	FILE DATE:
CHECKED BY/DATE:	20 JANUARY 94
FIGURE NUMBER:	1-1
APPROVED BY/DATE:	FILE NAME:
	CARSWELL V1-1

BUILDING 1337 STORAGE YARD LOCATION OF PROPOSED SOIL BORINGS

(AFTER RADIAN, 1991a)
CARSWELL AIR FORCE BASE, TEXAS



1.2 DESCRIPTION OF CURRENT STUDY

This section describes project objectives, scoping documents, and the role of subcontractors.

1.2.1 Project Objectives

The objective of this project is to:

1. Sample and characterize for disposal the contents of 106 storage drums stored at the Building 1337 storage yard which contain investigation-derived waste (IDW) generated from past IRP investigations.
2. Dispose of the same 106 IDW storage drums located at Building 1337 storage yard as sampled and characterized by Objective No. 1.
3. Drill 3 soil borings from the ground surface to the saturation zone to sample underlying soil to assess whether constituents of concern have been released at the Building 1337 storage yard.
4. Dispose of the oil/water separator sludge contained within 65 storage drums located at Building 1190.
5. Dispose of the benzene contaminated oil/water separator sludge contained within 6 storage drums located at Building 1347.
6. Provide a written report to discuss the results of the field investigation.

1.2.2 Scoping Documents

Addendums to the following documents have been prepared to reflect the additional scope of services requested by AFCEE in the Modification of Contract, Project Number F33615-90-D-4008, Delivery Order 0015, dated September 14, 1993.

- Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.
- Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Sampling and Analysis Plan for Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.
- Installation Restoration Program (IRP) RCRA Facility Investigation Final Health and Safety Plan for Carswell Air Force Base, prepared by Law Environmental, Inc., dated December 1993.

1.2.3 Identify Subcontractors and Their Roles

LAW will manage the project and provide services related to field sampling, data analysis, site characterization, and reporting. At this stage of the investigation the following subcontractors have been identified.

ENSITE, Inc. will perform drum sampling characterization, authorization, and disposal activities.

ATEC Environmental Services of Dallas, Texas, will be the subcontractor to perform the drilling services.

Law Environmental National Laboratories of Pensacola (LENL) is the Law Environmental, Inc. production chemical testing laboratory. LENL will provide sample shipping containers, chain of custody documentation, chemical analysis and reporting, and laboratory quality assurance/quality control (QA/QC). LENL has integrated QA/QC Procedures into their laboratory design and standard operating procedures. LENL has been approved for USAF analytical work via U.S. Air Force Performance Audits conducted by the MITRE Corporation, in support of AFCEE.

Details of the project organization, personnel, and subcontractor responsibility are provided in the Sampling and Analysis Plan (SAP) Addendum for this project.

2.0 SUMMARY OF EXISTING INFORMATION

The description of the environmental setting for Carswell AFB and the site specific environmental setting is included in the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.

3.0 INVESTIGATION TASKS

3.1 SITE OBJECTIVES

The objective of the scope of services for this project is for disposal purposes to confirm the identification and quantity of investigation-derived waste (IDW) contained in approximately 106 storage drums currently stored in the fenced-in storage yard of Building 1337 and to confirm the identification and quantity of material contained in approximately 71 drums of oil/water separator sludge stored at Buildings 1347 and 1190 at Carswell AFB. Based on the identity and quantity of the drummed material, arrangements will be made to handle, transport, and dispose of the material in accordance with appropriate requirements and regulations. Three soil borings will be advanced in the Building 1337 storage yard to collect soil samples for chemical analysis to assess whether constituents of concern from the drummed material have been released to the environment.

3.2 FIELD INVESTIGATION

The following section summarizes the specific field operations included in this addendum. Details of the execution of the field tasks are presented in the Addendum of the Sampling and Analyses Plan (SAP).

3.2.1 Field Tasks

During the removal of the storage drums at Building 1337, three soil borings will be advanced in the Building 1337 storage yard (Figure 1-2).

Each soil boring will be drilled from the ground surface to the saturated zone or to auger refusal via hollow stem auger to allow the collection of subsurface soil samples and to provide subsurface information on the site stratigraphy.

The drilling operations will be monitored by a qualified geologist or geotechnical engineer. The geologist/engineer will log the subsurface conditions encountered in each boring, and record the information on a soil boring log. An example of a soil boring log is shown on Figure 3-1. Soils will be classified using the Unified Soil Classification System (ASTM D 2488-69). Upon completion of the soil sampling activities, the boring will be sealed from the boring termination depth to the ground surface with a cement-bentonite grout. The cement grout will consist of Portland cement (ASTM-C150), with water added in the proportion of no less than five gallons to no more than seven gallons per 94-pound bag of cement. Additionally, three percent, by weight, of bentonite powder will be added to the mixture to reduce shrinkage. The grout will be placed into the boring using a tremie pipe equipped with a side discharge.

Surveying

Soil borings associated with the oil/water separator assessment will be located using compass bearings and taped measurements from buildings and other landmarks.

Equipment Decontamination

Refer to Section 2.1.8 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Sampling and Analysis Plan for Carswell AFB, Fort Worth, Texas, dated February 1994, prepared by Law Environmental.

Waste Handling

Refer to Section 2.1.9 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Sampling and Analysis Plan for Carswell AFB, Fort Worth, Texas, dated February 1994, prepared by Law Environmental.

3.2.1.1 Sampling of Drums - The following procedures will be followed to identify, mark, sample, and analyze the contents of the 106 IRP drums stored at Building 1337.

INVENTORY, IDENTIFICATION, AND LABELING

- Review existing chemical data for constituents.
- Identify any drums having existing chemical data.
- Determine whether existing chemical data are adequate to achieve disposal for identifiable drums.
- Identify chemical analysis to satisfy any missing disposal information for identifiable drums.
- At the storage site, use the existing inventory to provide the basis for a working inventory for remaining unidentified and/or unlabeled drums.
- Place a unique identifying mark on each drum.
- Verify condition of drum, contents, and volume. Add to inventory accessibility for sampling, need for mechanical lift to gain access, opening difficulties, and expectation of rupture during opening or movement.

- Unstable drums that must be moved will be overpacked to prevent spills. Because it is the intent to ultimately consolidate all the material into one container, movement of unstable drums will only be performed if necessary and overpacking containers will be reused.
- Identify drums containing investigation-derived waste (IDW) - (soil cuttings, drill mud, purge water, decon water, PPE, etc.) and label and prepare for laboratory sample collection.
- Identify drums containing unknown substances and label and prepare for hazardous characterization analysis in the field.

SAMPLE COLLECTION

- From each IRP drum, collect one sample of liquid and solid as appropriate.
- Composite each media in field.
- Ship samples to laboratory for analysis.

One sample of soil for each 50 cubic yards of IDW soil will be collected. For the 106 IRP storage drums there will be one proportionate composite sample of soil and liquid collected.

- Perform field hazardous characterization on each drum containing unknown substances.
- Review data in field and group drums containing compatible contents.
- Collect composite sample from each compatible group and ship to laboratory for analysis.

Analyses that will be performed are Toxicity Characteristic Leaching Procedure (TCLP) and Total Recoverable Petroleum Hydrocarbons (EPA Method 418.1), but may be modified based on findings.

- If any drums are found containing non-compatible materials, they will be conspicuously identified and if necessary restaged in a remote area within the compound.

SAMPLE COLLECTION OF IDW

The procedure for the aliquot collection from drums containing IDW will be as follows:

- Open drum with non-sparking wrench.
- Remove drum lid and log contents on drum log form. Label and prepare drum for sampling.
- With sampling tool collect aliquot from drum of solid and liquid. Place liquid aliquot in composite sample for all liquids. Place solid aliquot in composite sample for the soil.
- Ship each composite sample of water and soil to laboratory for analysis.
- Place lid back on drum and secure.

SAMPLE COLLECTION FROM UNKNOWN SUBSTANCES

The procedure for the aliquot collection from drums containing unknown substances will be as follows:

- Open drum with nonsparking wrench.
- Remove drum lid and log contents on drum log form. Label and prepare drum for sampling.
- With decontaminated sampling tool collect aliquot from drum for solid and liquid. Analyze in field to determine the hazardous characteristics of each unknown substance.
- Place lid back on drum and secure.
- Review hazardous characteristic data and identify contents that are compatible and may be grouped for disposal.
- From previously collected aliquots create proportionate composite samples for each compatible group
- Ship each group composite sample to laboratory for analysis.

The analysis for the program is shown in Table 3-1 and the sampling rate will be a minimum of one sample per 50 cubic yards per compatible group.

3.2.1.2 Disposal of Drums - Base personnel have provided LAW with chemical analytical data from investigations which generated the investigation-derived waste (IDW) and also data from samples collected from some of the drummed material. In addition, base personnel have defined all waste within the scope of work at Buildings 1337, 1190, and 1347 as Class 1 waste as described in the Texas Industrial Waste Rules, Subchapter R. Waste will be disposed by the process identified below.

TABLE 3-1

SAMPLING AND ANALYSES PLAN SUMMARY: DISPOSAL OF IRP DRUMS
RCRA FACILITY INVESTIGATION - CARSWELL AIR FORCE BASE, TEXAS

PARAMETER	TOTAL FIELD NO.		SAMPLES PER LOCATION	FIELD QC SAMPLES		FIELD EQUIPMENT		FIELD QC SAMPLES		TRIP		TOTAL NO.		2ND (c)		TOTAL LAB SAMPLES
	LOCATION	NO.		BLANK	AMB COND	BLANK	BLANK	MSD	DUPLICATE	LAB	MSD	DUPLICATE	FIELD SAMPLES	MS	DUPLICATE	
Soil Borings ICP Screen for Metals SW 3050/SW6010	3	2	1	1	0	0	0	0	0	0	0	8	1	1	0	11
Soil Borings Volatile Organic Compounds SW 8240	3	2	1	1	1	1	1	1	1	1	1	10	1	1	0	13
Drums - Soil TCLP	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
TRPH (418.1)	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
Drums - Water POTW Requirements (d)	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1
TRPH (418.1)	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1

(a) Volatile organics only; number to be initiated will depend upon number of shipments
(b) Estimated; number to be determined by batch preparation
(c) Method SW8240 will have 2nd column confirmation performed on all samples exhibiting positive results
(d) Requirements as specified by the publically owned treatment works (POTW) permit

- Total Analyses
Metals
Herbicides
Pesticides
Semi-Volatiles
Volatiles

Note:

TEST METHOD	FREQUENCY
Unknown Substances Other Than IDW Field Hazardous Characteristics	One test/drum
pH	
Water Reactivity/Solubility	
Reduction - Oxidation Potential	
Specific Gravity	
Cyanide Determination	
Sulfide Determination	
Oxidizer Determination	
Peroxide Determination	
Halogen Determination	
Ignitability	
TCLP	
Total Recoverable Petroleum	
Hydrocarbons EPA Method 418.1	

One test per 50 cy per compatible group
One test per 50 cy per compatible group

186 25
PREPARED BY/DATE: 70/22 Feb 84
CHECKED BY/DATE: 70/27 Feb 84
APPROVED BY/DATE:

- Accumulate all available chemical data and information about the waste.
- Prepare a "Request for Authorization for Disposal of a Special Waste" and forward to Carswell AFB for signatures and subsequent submittal to the Texas Natural Resources Conservation Commission (TNRCC).
- Receive authorization from the TNRCC to dispose of waste at a Class 1 permitted facility in Texas.
- Mobilize to site, bulk liquids, bulk solids, dewater or solidify sludge as appropriate, and transport waste to the appropriate treatment and disposal facility (TSDF).
- Receive disposal documentation from facilities and forward to Carswell AFB for their permanent records and annual reporting.

Drums at Building 1337

There are 106 storage drums located at Building 1337 which were generated from IRP investigations at various sites across Carswell AFB. Presently existing chemical analytical information does not exist which will allow the legal disposal of the waste. Sampling and characterization will be performed to generate the information necessary by the regulatory community and the TSDF and discussed earlier. Site visits have indicated that the integrity of the drums will not allow transport, therefore after characterization and compatibility testing indicates that mixing can safely and legally be performed the solid contents will be deposited into roll off boxes and free water will be decanted for disposal at an appropriate facility. A backhoe will be used to empty drums into the roll off during bulking procedures. Any sludges that are left

will be solidified by either addition of fly ash or by a dewatering process. The resulting solids will be transported to a permitted treatment facility.

Drums At Buildings 1190 and 1347

There are 65 fifty-five gallon storage drums located at Facility 1190 which contain sludge from oil/water separators. Existing chemical analytical data and base personnel have defined this material as Class 1 waste. In addition to these drums, there are 6 fifty-five gallon storage drums of benzene contaminated sludge stored at Building 1347 which are also defined by existing data and base personnel as Class 1 waste.

All water in the drums will be decanted for shipment to a disposal facility. It is not anticipated, but any water containing constituents other than VOCs will be transported to an appropriate disposal facility. The contents of the 65 storage drums will be bulked using a backhoe into a roll off box and either dewatered or solidified to fulfill paint filter criteria for acceptance to a permitted treatment facility. All material containing concentrations of benzene, toluene, ethyl benzene, and xylenes (BTEX) in excess of 600 ppm and total recoverable petroleum hydrocarbons (TRPH) in excess of 150 ppm will be bioremediated by the landfill to bring the soil within these criteria prior to landfilling.

Drum Management

The 106 fifty-five-gallon storage drums at Building 1337 are noted to be decaying and rusting and cannot be reused. These drums will be triple-rinsed and managed separately from the sludge drums. The drums will be trucked separately from the waste and delivered uncrushed for inspection by landfill representatives prior to disposal. These 106 storage drums will be thoroughly rinsed to

preclude the need for sampling and analyses of BTEX and TRPH and bioremediation. The 71 sludge storage drums at Building 1190 and Building 1347 are in good condition, so after they are emptied they will be triple-rinsed and left at the site for base personnel. All rinsate will be disposed in the same manner as free water collected from the drum.

3.2.2 Sampling and Analysis Activities

The samples and analyses to be performed for the for the scope of services in this addendum are summarized in Table 3-1.

3.3 LITERATURE SEARCH

Refer to Section 3.3 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.

3.4 RECORD KEEPING

Refer to Section 3.4 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.

3.5 DATA ASSESSMENT

Refer to Section 3.5 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.

4.0 REPORTING REQUIREMENTS

Refer to Section 4.0 of the Installation Restoration Program (IRP) RCRA Facility Investigation Revised Final Work Plan for the Carswell Air Force Base, prepared by Law Environmental, Inc., dated February 1994.

5.0 PROJECT SCHEDULE

The summary schedule for the Carswell AFB field investigation, sampling, and removal of IRP drums project will be updated on a quarterly basis as submitted with the respective R & D status report to show any changes for each of the projected tasks for the work plan, field activities and reports.

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE