Environmental Health and Safety Plan

Remedial Construction Services, L.P. (Recon)
Thorium Remediation Project
Tulsa, Oklahoma

Project No. 2-1719

February 2004

Prepared by:
Remedial Construction Services, L.P.
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Houston, Texas 77064
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RECON
Remedial Construction Services, Inc.

Environmental Health and Safety Plan

Remedial Construction Services, L.P. (Recon)
Thorium Remediation Project
Tulsa, Oklahoma

Project No. 2-1719

February 2004

Approval

The plan has been approved by:

24 FEB '04

Danny P. Brown — **Date**
Project Manager

Reviewed by:

Kevin A. Ward — 24 FEB 04

Kevin Ward — **Date**
Health and Safety Manager

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Final
February 2004

Environmental Health and Safety Plan
Kaiser Aluminum & Chemical Corporation
Thorium Remediation Project
Tulsa, Oklahoma

1.0 Introduction

This Environmental Health and Safety Plan (EHASP) is consistent with the basic policies, objectives, organizational structure, and guidelines of the Kaiser HASP and governs all nonradiological aspects of the Thorium Remediation Project at the Kaiser Tulsa, Oklahoma facility. This EHASP was written in accordance with Occupational Safety and Health Administration (OSHA) standards codified in 29 Code of Federal Regulations (CFR) 1910.120.

1.1 Purpose

The Recon EHASP identifies potential hazards and specifies an appropriate level of response to protect the health and safety of workers and the general public. In addition to the guidelines established in the EHASP, additional safety guidelines and procedures are provided in the Recon Radiation Health and Safety Plan (RHASP).

1.2 Quality Assurance

1.2.1 Records and Documentation

- Records required by regulations, permits, plans, and procedures implementing the health and safety program shall be maintained on site, and preserved.
- Records may be the original document, a reproduced copy or microform, if such reproduced copy or microform is duly authenticated by authorized personnel and capable of producing a clear and legible copy after storage.

1.2.2 Record Retention and Ownership

Records shall be maintained, as a minimum, for the period of time specified in the applicable regulations, unless disposition is otherwise directed by the Nuclear Regulatory Commission (NRC)/OSHA/U.S. Environmental Protection Agency (USEPA)/Department of Transportation, or other regulatory agency which maintains jurisdiction over those records.

1.2.3 Variances

If conditions develop requiring a deviation from the EHASP, a written request for variance shall be made to one or more persons in a position authorized to approve the Plan.

1.2.4 Safety Work Permit

The purpose of the Safety Work Permit (SWP) is to identify special instructions or precautions pertinent to performing work in a safe manner not covered or detailed by the EHASP or a standard operation procedure or instruction. SWPs are prepared at the discretion of Recon's Health and Safety Officer (H&S Officer). A copy of the SWP is provided in Attachment No.1. In addition, prior to any new intrusive work task or activity, the Recon Health and Safety Officer and site workers that will be performing the work will perform a Job Hazards Analysis (JHA). A copy of the JHA form is located in Attachment No. 9.

2.0 Policy and Standards

2.1 Policy

It is the policy of Recon to conduct its operations in a manner that minimizes health and safety risks to its employees, contractors, and the general public. This EHASP applies to Recon employees, contractors, subcontractors, and visitors to the site including local, state, and federal government employees.

2.2 Visitors

Persons visiting or conducting work at the Kaiser facility in Tulsa, Oklahoma are required to be familiar with Kaiser and Recon's health and safety requirements of the site. Visitors will be required to read and understand the Visitor Health and Safety Plan Synopsis, sign in and out on the Visitor Log, and be accompanied by facility personnel while on the site. A copy of the Visitor's Health and Safety Plan Synopsis is located in Attachment 4.

2.2.1 Visitor Activities

Visitor activities are limited to observation. Visitors are not to be present in restricted areas when remediation activities are being conducted. Under these conditions, visitors will have a limited potential for contact with contaminated materials. Persons accessing active remediation areas, exclusion zones, or contamination reduction zones; conducting activities other than observation; and unescorted visitors will be required to read and understand the EHASP and complete the facility orientation program.

2.2.2 Visitor Responsibilities

Visitors to the Kaiser facility are admitted as a courtesy and must leave when requested to do so. Visitors are responsible for signing in and out. All visitors are responsible for behaving in a mature manner and following instructions, particularly in emergency situations.

2.2.3 Prohibited Activities

Visitors may not smoke, drink, eat, chew gum or tobacco, or apply cosmetics while in the restricted areas of the Kaiser facility. Visitors may not enter the restricted areas unescorted.

2.2.4 Personal Protective Equipment

Visitors accessing the restricted areas of the site must wear the required personal protective equipment (PPE) for the area. As a minimum, visitors will wear rubber overboots. Hard-toe boots, hard hats, cotton coveralls, safety glasses, and gloves, and/or rain gear may be required depending on site conditions and operations at the time of the visit. Visitors who enter areas where respiratory protection is necessary must provide evidence that they possess the training, medical surveillance, and fit testing required by OSHA regulations.

3.0 General Site Information

The former Kaiser Aluminum Specialty Products facility is located at 7311 East 41st Street in Tulsa, Oklahoma (Figure 3-1). It is situated in Tulsa County, Oklahoma, about 5 miles southeast of the downtown center of the City of Tulsa. The site initially occupied approximately 23 acres of land on both sides of 41st Street. Currently, a 3-acre parcel south of 41st Street contains an active aluminum extrusion and fabrication facility. North of East 41st Street are several parcels of land previously devoted to refining, processing, and waste disposal functions. This acreage is split by the Union Pacific Railroad right-of-way. An approximate 3.5-acre parcel south of the railroad (known as the former operational area) houses an active office building and several inactive industrial structures. An approximate 14.0-acre land area (known as the pond parcel) located north of the railroad contains a freshwater pond, a retention pond, a former reserve pond area, and the Flux Building area. The Thorium Remediation Project involves the former operational area and the pond parcel.

The Retention Pond currently occupies 8 acres of the 14-acre land parcel north of the railroad. The water level in the Retention Pond varies, based on seasonal precipitation. The Retention Pond is surrounded by a well-maintained berm and there are no surface water discharges from the pond. The Retention Pond is permitted by the Oklahoma Water Resources Board. Occupying approximately 4 acres on the western portion of this parcel is the area of the former Freshwater Pond. The Freshwater Pond was backfilled in October and November 2002. Northeast of the Retention Pond is the area of the former Reserve Pond (approximately 1.5 acres). The Reserve Pond was backfilled in the late 1960s and is currently covered with grass.

Extensive site characterization activities have been conducted since 1994 within the 14.0-acre land area of the facility known as the pond parcel. These characterization activities have indicated the presence of residual radioactive material within a 10-acre portion of the pond parcel. The radioactive material identified within this portion of land is a thorium-bearing dross containing the isotopes Th-232, thorium-230 (Th-230), and thorium-228 (Th-228). The affected portion of the parcel contains the Retention Pond and former Reserve Pond area. The unaffected portion of the pond parcel contains a former Freshwater Pond area.

The pond parcel area considered for remediation is bounded by the south fence line, the former Fresh Water Pond embankment on the west, Fulton Creek ditch on the north, the east fence line, and the northern and eastern edges of the Flux Building and paved area. A central feature of this area is the Retention Pond and associated embankments. Thorium-bearing dross was present on land adjacent to current Kaiser property along the east and south fence lines and represented the margins of the material. Kaiser has remediated this land by excavation and storing affected soil within the pond parcel. Affected soil generated during remediation of the adjacent land is considered as part of the on-site decommissioning.

4.0 Responsibilities

4.1 Key Personnel

The following personnel and organizations will be responsible for all environmental health and safety aspects during site activities at the Kaiser remediation site. The Health and Safety Officer (HSO) responsibilities are discussed later in this section. The Radiation Safety Officer (RSO) responsibilities are discussed in the RHASP. The RSO will be responsible for all aspects of radiation health and safety.

NAME/TITLE/ORGANIZATION

Mike Phillips II	(713) 875-0711
Health and Safety Officer	9720 Derrington Rd.
Recon	Houston, TX 77064

(To be supplemented by contractors as applicable)

4.2 Responsibilities

The Recon Project Manager is responsible for the general management, oversight, and administration of the project. The Recon Project Manager, working with the Recon H&S Officer, is responsible for planning and controlling site activities in compliance with the project EHASP, as well as notifying the Kaiser Site Administrator (SA) of deficiencies and/or deviations.

The Recon H&S Officer has responsibility for developing, implementing, and maintaining the Health and Safety Program. The Recon H&S Officer is functionally separate from project operations management, and has the authority to stop any activity that is not being conducted in a safe manner in accordance with the EHASP. Specific responsibilities may be delegated in part to qualified health and safety personnel.

Recon's H&S Officer is responsible for on-site direction and oversight of project activities in compliance with the project EHASP.

Recon's H&S Officer or his designee shall be present at all times during site activities. Respective functions will primarily include the following duties:

- advising on-site personnel, Recon's Project Manager, and the Kaiser SA of potential health and safety hazards during field investigations
- ensuring potential hazards are monitored as stipulated in this plan
- evaluating potential changes of on-site activities and personnel protective equipment as needed to ensure employee safety
- terminating field work if unsafe conditions develop or an imminent hazard is perceived
- preparing procedure deviation, variances, and interim-change notices from this plan, if needed
- maintaining health and safety oversight of field activities with subcontractor personnel or visitors

4.3 Recon and Contractor Site Personnel

Report to Recon's H&S Officer and Project Manager on matters of safety. Subcontractor personnel shall be classified as site personnel. Specific responsibilities include:

- performing tasks in compliance with the project EHASP as well as posted, verbal, and other written safety instructions
- stopping work upon discovering, and reporting to the Recon's Project Manager and/or H&S Officer, any condition which jeopardizes industrial safety
- stopping work and reporting to Recon's H&S Officer and/or the Recon Project Manager anytime he or she is unsure that their action or work environment is safe
- promptly obeying "Stop Work" orders
- reporting to the Recon Project Manager and Recon H&S Officer noncompliance with the project EHASP
- assisting the Recon H&S Officer with investigations as necessary
- not eating, drinking, smoking, chewing, or applying cosmetics in any controlled area

- wearing protective clothing properly and wherever required by the SWP, procedure, or the Recon's H&S Officer
- removing protective clothing properly
- reporting the presence of treated or open wounds to Recon'sProject Manager or the H&S Officer prior to working in a controlled area, and immediately exiting if a wound occurs while in such an area

5.0 Hazard Identification and Risk Assessment

5.1 Chemical Hazards

No potential chemical hazards have been identified at the site that has the potential to be present in the water or the subsurface soils being remediated or sampled. However, Recon will perform limited organic chemical monitoring with a photoionization detector (PID) should organic contaminates be discovered. While organics are not believed to be encountered at the site, should a visible sheen or oily substance be discovered or a substantially visible change in the material occurs, a PID will be utilized to verify if the material has volatile organics. The Kaiser SA will be notified immediately should substantially differing material be encountered. The PID and its use are discussed further in Section 8.0.

In addition, particulate/dust emissions will be monitored daily utilizing an MIE Personal DataRAM (PDR) Model 1000, or equivalent.The PDR is adirect reading particulate monitor with data logging capabilities which is discussed further in Section 8.0.

5.2 Indigenous Biological Hazards

Insects including ticks, mosquitoes, ants, and spiders at the Kaiser site are common to the general area as well as both poisonous and nonpoisonous snakes. However, these indigenous biological hazards are not considered likely.

In the unlikely event that an employee comes into contact with a poisonous plant or is bitten by a snake or rodent, the Recon H&S Officer shall immediately be notified. The employee will be transported to a medical facility for medical attention, if warranted.

5.3 Adverse Weather Procedures

Adverse weather conditions can severely affect field operations. The Recon Project Manager and/or Recon H&S Officer will make the determination to "stop work" if inclement weather jeopardizes employee safety or field operations.

6.0 Personal Protective Equipment

This section describes the general requirements of the USEPA designated Levels of Protection (A-D), and the specific levels of protection required for each task at the Kaiser site. The rationale for selected levels of protection and modification procedures are also discussed. Recon's H&S Officer will monitor for dust emissions daily and perform limited real-time organic chemical monitoring should suspected organic contamination be discovered as discussed in Section 5.1. After monitoring data is available, then an objective decision will be made to don respiratory protection, if required. Should respiratory equipment be required, this plan shall be modified as necessary to conform to applicable regulations.

Disposable PPE, such as gloves and coveralls, will be of a type suitable for disposal at a sanitary landfill. Specifically, PPE will not be of a color or bear markings identifying it as hazardous or radioactive waste.

6.1 Designated Levels of Protection

Site Personnel shall wear protective equipment when activities involve known or suspected atmospheric contamination; when vapors, gases, or particulates may be generated by site activities; or when direct contact with skin-affecting substances may occur. Full face-piece respirators protect lungs, gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with skin-destructive and absorbable chemicals.

The specific levels of protection and necessary components have been established by the USEPA (USEPA, 1984) into four categories, according to the degrees of protection afforded.

Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed.

Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection. Level B is the primary level of choice when encountering unknown environments.

Level C: Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed.

Level D: Should be worn only as a work uniform and not on any site with respiratory or skin hazards. It provides minimal protection against chemical hazards.

The level of protection selected for this project is based upon the following criteria:

- type and measured concentration of hazardous chemical
- potential for exposure to hazardous chemicals in air, splashes of liquids, or other direct contact with material due to work being done

6.2 Modification of Protection Program

The prescribed level of protection shall be upgraded or diminished as warranted by a change in site conditions or findings of investigations. When a significant change occurs, the hazards shall be reassessed. Some examples of the need for reassessment include:

- contaminants other than those previously identified are encountered
- change in work scope which affects the degree of contact with contaminants
- temperature extremes or individual medical considerations limit the effectiveness of PPE
- change of season/weather
- change in job tasks during a work phase

A modified Level D is expected to be required. The following is a description of the modified Level D PPEs:

- steel toed boots
- safety glasses
- gloves
- leather gloves for heavy labor

Should a one-step upgrade in PPE prove necessary (i.e., Level D to Level C), site activities shall be temporarily halted until the appropriate PPE upgrade is accomplished. The Recon H&S Officer shall provide documentation of such action, and shall notify both the Recon Project Manager and Kaiser SA. Should a two-step upgrade be necessary (i.e., Level D to Level B), site activities shall be halted until such time that both the Recon Project Manager and Kaiser SA have been advised of the situation and have provided written concurrence that work may proceed with the upgraded level of protection.

NOTE

Half-face respirator with particulate cartridges will be provided to personnel to be used only at the direction of the Recon H&S Officer.

7.0 Accident/Incident Reports

Accidents or incidents that occur during activities at the Kaiser remediation site shall be reported in writing to the Kaiser SA and the Recon Project Manager, and investigated where appropriate to prevent reoccurrence. A copy of the Incident/Accident report form is located in Attachment 10. Examples of incident reports include:

- a recordable occupational injury, i.e., a cut, fracture or sprain which results from a work accident or from an exposure involving a single incident
- animal bites and one-time exposure to chemicals
- a recordable occupational illness caused by exposure to environmental factors associated with employment including acute and chronic illnesses that may be caused by inhalation, absorption, ingestion, or direct contact
- in the event of an accident, a medical accident/incident form shall be completed and sent to the Recon Medical Program Coordinator located in the Recon main office.

7.1 Employee Information

The standards concerning employee's right-to-know OSHA requirements of 29 CFR 1910.120 will be available at the work site.

8.0 Chemical Monitoring

8.1 Organic Monitoring

No chemical hazards have been identified to date by Kaiser. However, since the site has not been completely characterized for potential chemical hazards, limited organic monitoring with a photoionization detector (PID) will be performed if suspected organic contamination is discovered. The Recon Health and Safety Officer (HSO) will have an instrument onsite to perform the initial monitoring of a suspected organic material.

Site workers will be trained to notify the Recon HSO and Kaiser SA as soon as a material is discovered that has a sheen, discoloration, or looks similar to an oily/grease type substance. Once notified, the Recon HSO will calibrate the PID per the manufacturers recommendations. A copy of the calibration form is located in Attachment No. 6. Measurements from the PID will be logged on a form. A copy of the form is located in Attachment No. 8.

8.2 Particulate Monitoring

Recon will utilize a PDR to perform particulate/dust monitoring on a daily basis. The real-time meters will be used to determine particulate levels onsite so that an immediate response can be taken. An instrument such as the MINIRAM or *personal* DataRAM (PDR), both manufactured by MIE, Inc. will be used. Both instruments are light-scattering photometers that incorporate a pulsed, high output near-infrared light emitting diode source, a silicon detector/hybrid preamplifier, collimating optics and a source reference feedback PIN silicon detector. The intensity of the light scattered of the forward angle of 45° to 95° by airborne particles passing through the sensing chamber is linearly proportional to their concentration. The optical configuration produces optimal volume response to particles in the size range of 0.1 to 10 μm, achieving high correlation with standard gravimetric measurements of the respirable and thoracic fractions. The instruments are battery operated and highly portable and therefore can be moved as necessary to maintain downwind position. The instrument's detection limit is 0.01 mg/m^3. The manufacturer's instructions and recommendations regarding calibration and use will be followed.

Prior to use, a calibration will be performed on each monitor (Attachment 5). The monitors will be strategically placed, one upwind and one downwind, in areas that have the highest potential for generating dust. The Recon H&S Officer will also, at his/her discretion place a PDR in the cabs of the heavy equipment to monitor dust in the breathing zones of the operators. The PDR's will datalog the monitoring throughout the day and be downloaded to a computer for printing. A copy of the data log is located in Attachment No. 7. Should excessive dust be observed by anyone working on the site or the monitors exceed 1 mg/m^3 for a sustained period, Recon will take the necessary steps to reduce airborne dust. This could include revising material handling procedures, watering down the area, or other means necessary to suppress the dust.

9.0 Standard Safety Procedures

9.1 Buddy System

The potential hazards associated with field activities at the Kaiser remediation site do not warrant utilizing the buddy system concept. However, as an additional safety precaution, and as a means of expediting field activities, a team of at least two people will be used when the supervisor or Recon H&S Officer specifies so.

9.2 Communications

Due to the nature of planned field activities, the use of communication devices such as radios, megaphones, and air horns will not be necessary. However, all personnel shall be familiar with the following hand signals.

SIGNAL	DEFINITION
Hands clutching throat	Out of air/cannot breath
Hands on top of head	Need assistance
Thumbs up	OK/I am alright/I understand
Thumbs down	No/negative
Arms waving upright	Send back support
Grip partner's wrist	Exit area immediately

9.3 Safe Work Practices

The following safe work practices shall be followed:

- Designated personal protective and safety equipment shall be worn while working within work and decontamination areas.
- Eating, drinking, chewing gum or tobacco, smoking, or applying cosmetics is prohibited in the contaminated or potentially contaminated areas.
- Contact with potentially contaminated substances shall be avoided to the extent practicable; placing monitoring equipment on potentially contaminated surfaces should be avoided.
- Field staff will be alert for potentially dangerous situations (e.g., presence of strong, irritating or nauseating odors), and immediately take appropriate measures.

- Good housekeeping shall be practiced; equipment and materials shall be kept orderly and out of potentially harmful situations.

- Site workers will be familiar with the physical characteristics of the site including the following:

  - the nearest emergency assistance
  - prevailing wind direction
  - access to associates, equipment, and vehicles
  - communication facilities at and near the site
  - areas of known or suspected contamination
  - site access and egress

- The number of personnel and amount of equipment in the contaminated area shall be minimized to the extent consistent with safety requirements.

- Waste generated during activities at the site shall be contained appropriately.

- Injuries shall be reported, regardless of how minor.

- Daily and weekly health and safety meetings shall be conducted by Recon's H&S Officer or his designee for personnel involved in field activities; and prior to commencing a new task, these meetings shall address health and safety concerns related to the planned activities and shall review emergency response plans.

9.4 Site Map

A site map will be provided to field personnel to familiarize them with the work area. The map shall be detailed with important features, such as the location of medical facilities (Figure 11-3) and evacuation routes. This information will be disseminated to all Recon employees and subcontractors at a site orientation meeting prior to workers commencing work on site.

10.0 Routine and Special Training

10.1 Site Orientation

Site orientation concerning site-specific health and safety shall be administered to all personnel. Health and Safety Plan acceptance forms shall be completed by site personnel to document their understanding of the health and safety requirements.

10.2 Training

If on-site personnel engage in hazardous waste activities, they shall receive classroom training and supervised field experience as required by 29 CFR 1910.120. The training they will receive will cover hazard awareness, personnel protection, toxic properties of hazardous materials, site control, and sampling hazardous materials as per 29 CFR 1910.120. A training outline for site activities is provided below:

Training Outline – Site Activities

I. Purpose and objectives of training.

II. Recognizing and identifying health and safety hazards at the Kaiser Tulsa, Oklahoma site.

A. Physical hazards

- structures
- equipment (operators of heavy equipment will have a certified training card)
- terrain
- weather

B. Biological hazards

- indigenous site hazards (insect, snake, plant)

C. Potential health effects

III. Safety and monitoring requirements

A. Controlled area restrictions
- eating/drinking/smoking
- access control points

B. Protective equipment requirements
- clothing, boots, gloves, coveralls, goggles

C. Procedures for using protective equipment
- clothing
- respirator

D. Personal contamination monitoring and decontamination

IV. Emergency response requirements

A. Getting emergency assistance

B. Emergency notification procedures

C. Names of personnel and alternates responsible for site safety and health

11.0 Emergency Response and Notification

The purpose of this section is to provide guidance for responses to emergency situations.

11.1 Contingency Plans and Emergency Contacts

Emergency response contingency plans in this section shall be followed during field investigations. A copy of this plan will be available at the work site, and personnel working on the site shall be familiar with the plan. Evacuation plans and routes shall be discussed with field personnel before field activities begin.

Persons and services to contact in case of emergencies are identified in Figure 11-1. This emergency contact form will be posted at the work site.

11.1.1 Fire/Explosion

A fire emergency will be handled by evacuating the work area and immediately notifying the Tulsa Fire Department (911). Field personnel should attempt to put out the fire only if it appears to be small and easily extinguishable. The Fire Department shall be notified of such an occurrence. In the event of an explosion, personnel will be evacuated and no one shall enter the work area until clearance is given by the appropriate Tulsa authorities.

11.1.2 Personnel Injuries

In case of minor injuries to personnel, first aid treatment shall be initiated in the field. In case of serious injuries, the victim shall be transported to a hospital as soon as possible.

11.1.3 Severe Weather

In the event that severe weather threatens the safety of employees, contractors, and visitors, it is important that each person minimize the chance for injury and proceed to the nearest designated shelter.

11.2 Notification Requirements

Should any doubt be encountered as to who or what authority should be contacted, a conservative approach shall be used so as to contact all appropriate authorities. The SA shall also be informed of any emergency situation.

Any reporting and notification of emergency situations shall be documented. Recon's H&S Officer has the major responsibility for overseeing the response to emergency situations and shall ensure that the appropriate actions are taken.

11.3 Emergency Route to Hospital

A map of the emergency route will be provided to each field staff member (see Figures 11-2 and 11-3).

Emergency Contacts
Figure 11-1

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Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

Map to St. Francis Hospital
Figure 11-2

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

FIGURE 11-1

EMERGENCY CONTACTS

RECON's HEALTH AND SAFETY OFFICER

Mike Phillips II @ 713-875-0711

KAISER ALUMINUM (Paul Handa)

Call: (918) 384-3169

FIRE ! Call: 911

AMBULANCE ! Call: 911

POISON CENTERS

National Poison Control Center, 404-588-4400

Regional Poison Control Center, 1-800-672-1697

Medical Center Poison Control Center, 716-5900

POLICE ! Call: 911

YOU ARE LOCATED AT:

7311 East 41st Street, Tulsa, Oklahoma 74145

THE NEAREST EMERGENCY MEDICAL SERVICES ARE LOCATED AT:

St. Francis Hospital

6161 South Yale Avenue Phone Number: 918-494-1225

THE NEAREST NONEMERGENCY MEDICAL SERVICES ARE LOCATED AT:

Med Center

2929 South Garnett Road Phone Number: 918-665-1520

Map to Medical Center
Figure 11-3

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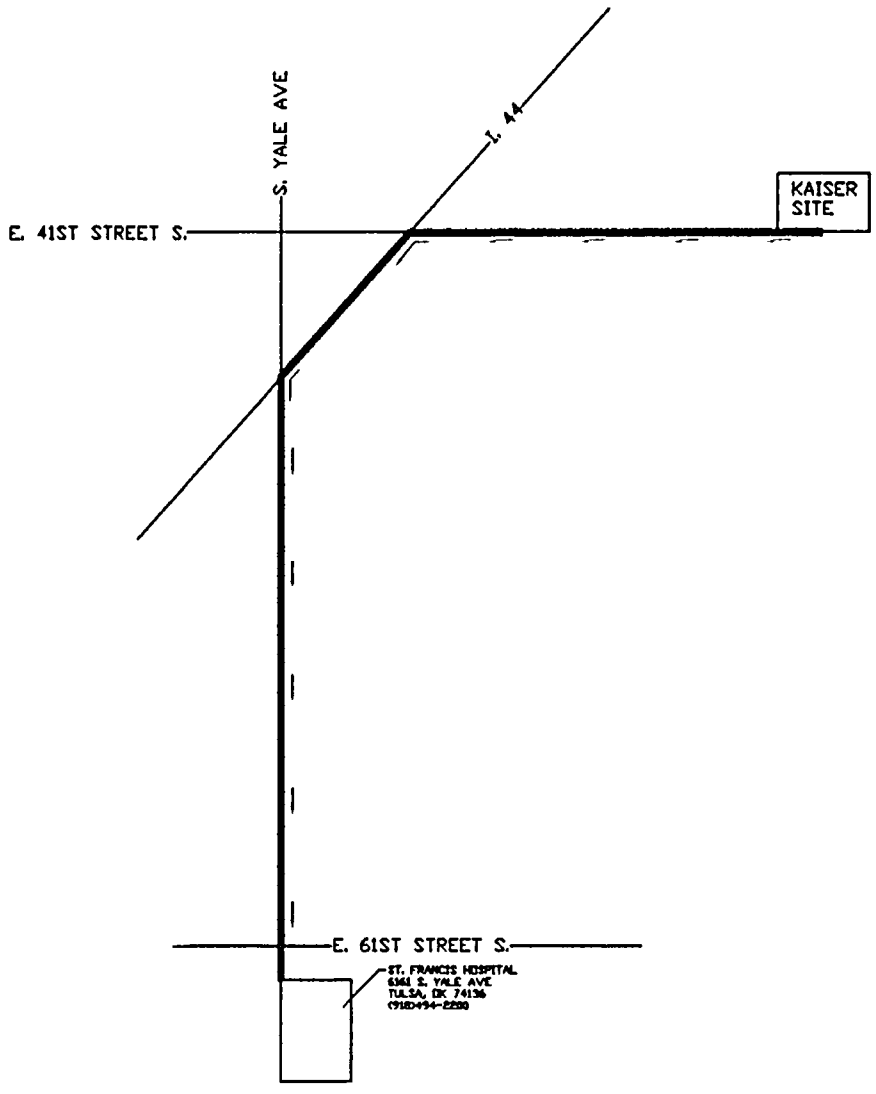
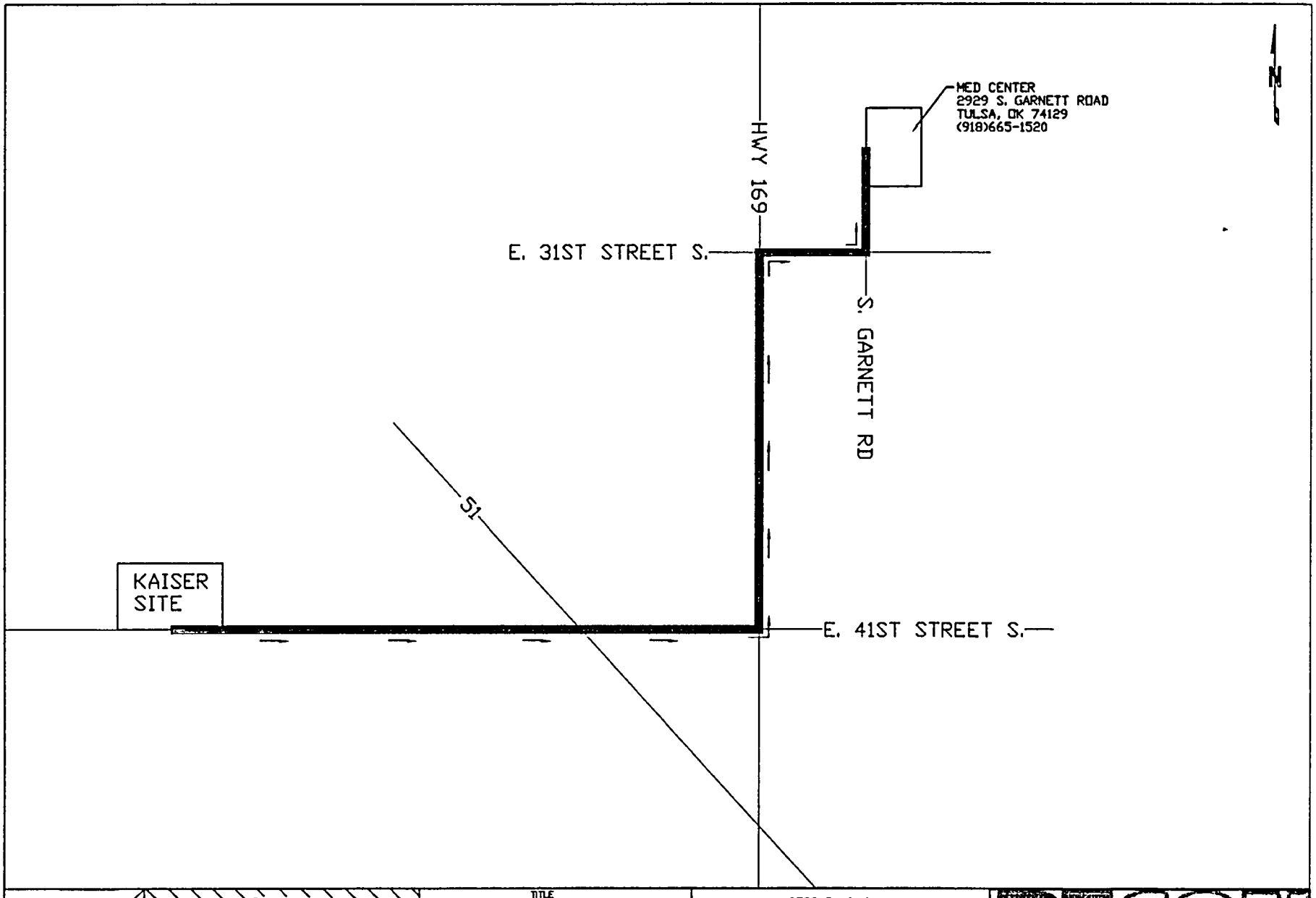
Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442



1 / 1	Revisions: No. / By / Description / Date	TITLE: EHASP FIGURE 11-2 ROUTE TO ST. FRANCIS HOSPITAL	9720 Derrington, Houston, TX 77064. Phone: (281)955-2442 Fax: (281)890-5172. www.recon-net.com. FIELD BOOK: DRAWN: Josh Buchholt DATE: 2-20-04. CHECKED: SCALE: nts. CAD File Name: \\kaiser\safety\11-3 EHASP.dwg

RECON Remedial Construction Services, Inc.

SIGNED BY:



1 / 1	Revisions: No. By Description Date	TITLE: EHASP FIGURE 11-3 ROUTE TO MEDICAL CENTER	9720 Derrington, Houston, TX 77064. Phone: (281)955-2442 Fax: (281)890-5172. www.recon-net.com. FIELD BOOK: DRAWN: Josh Buchholt DATE: 2-20-04. CHECKED: SCALE: n.t.s. CAD File Name: \\exlsrv\acad\11-3 EHASP.dwg. SIGNED BY:

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Remedial Construction Services, Inc.

Kaiser Aluminum Site
Figure 11-4

Project No. 2-1719

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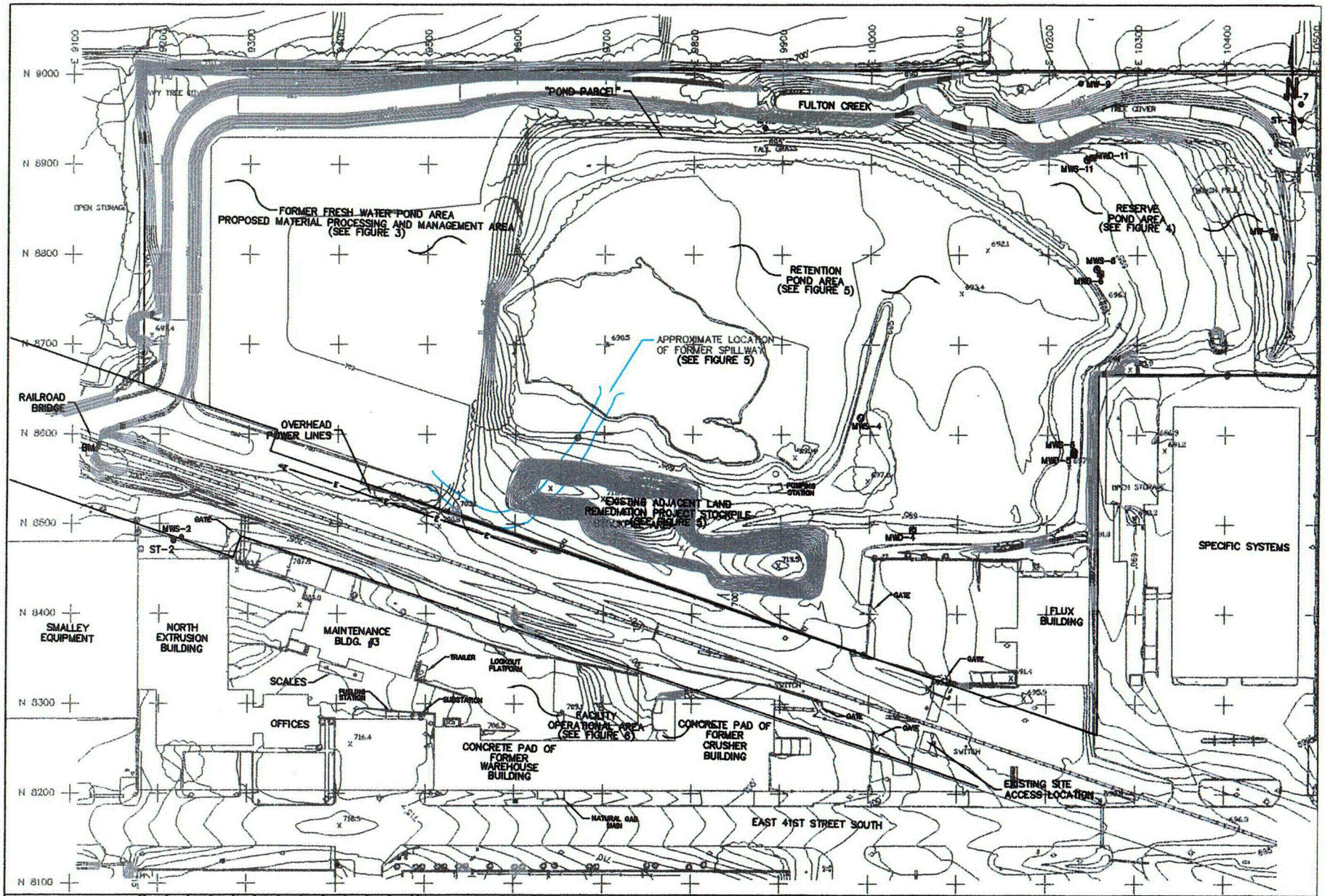
Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442



1	Revisions			TITLE	9720 Derrington Houston, TX 77064 Phone: (281)955-2442 Fax: (281)890-5172 www.recon-net.com	RECON Remedial Construction Services, Inc.
1	No.	By	Description / Date	*FIGURE 11-4* *SITE MAP*	FIELD BOOK: DRAWN: Josh Buchheit — DATE: 2-20-04 CHECKED: — SCALE: CAD File Name: \\job\name.DWG	SIGNED BY:

C01

Safety Work Permit (SWP)
Attachment 1

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

ATTACHMENT 1

Safety Work Permit **Copy To Be Posted In The Work Area**		
Project Name:	Start Date:	Expiration Date:
Emergency Contact(s):	Phone No.:	
Job Description:		

Personnel Monitoring	Protective Equipment and Clothing
Whole Body Count/Bioassay:	Respiratory Protection:
SRD/TLD	
Area Airborne Monitoring	Protection Clothing:
Breathing Zone on Representative Workers	
	Other:
Other	

Waste Disposal Instructions	Radiological Conditions
	Exposure Rate:
	Contamination:
	Air Sample Results:

Access Control Instructions	Survey Requirements

Review and Approvals	
Review:	**Date:**
Approval:	**Date:**

EHASP Permit Authorized Personnel List
Attachment 2

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Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

ATTACHMENT 2

SWP Authorized Personnel List

****To Be Signed By All Personnel Performing Work On-Site****

By signing the form below, the Radiation Worker agrees to comply with all of the requirements listed in the Safety Work Permit and the instructions given by the RSO or Project RSO.

Name (Print):	Signature:	ID Number	Date

Attach to SWP

EHASP Acceptance Form
Attachment 3

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February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

ATTACHMENT 3

REMEDIAL CONSTRUCTION SERVICES, L.P. (RECON)
THORIUM REMEDIATION PROJECT

HEALTH AND SAFETY PLAN
ACCEPTANCE FORM

Instructions: This form is to be completed by each person prior to working on the subject project work site and returned to the Project Radiation Safety Officer or Health and Safety Officer.

Project: _____

Date: _____

I understand my health and safety responsibilities and agree to perform my work in accordance with those responsibilities.

Signed _____

Print Name _____

Company Name _____

Date_____

Visitor Health and Safety Plan Synopsis
Attachment 4

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

EHASP Attachment No. 4

Kaiser Aluminum & Chemical Corporation
7311 East 41st Street
Tulsa, Oklahoma
Visitor Health and Safety Plan Synopsis

Persons visiting or conducting work at the Kaiser Aluminum & Chemical Corporation facility in Tulsa, Oklahoma are required to be familiar with the health and safety requirements of the site. This document is a synopsis of the Health and Safety Plan for this facility. It is designed to impart the necessary health and safety information to site visitors in a condensed format. Visitors will be required to read and understand this synopsis, sign in and out on the Visitor Log, and be accompanied by facility personnel while on the site. This synopsis is not intended to be a replacement for the Health and Safety Plan for site workers and facility employees.

General Site Description

The Kaiser facility is located at 7311 East 41st Street in Tulsa, Oklahoma. It includes property on both sides of 41st Street and the fenced area located to the north of the facility buildings referred to as the remediation area. Except for specifically designated support and office areas, access to all site properties is restricted to authorized and trained personnel. The restricted areas include, but may not be limited to exclusion zones, contamination reduction zones, the fresh water pond, the retention pond, and the backfilled reserve pond. These restricted areas will be separated from free access areas by fencing and locked gates. Signs indicating restricted areas will be posted as necessary.

Visitor Activities

For the purpose of this document, visitor activities are limited to observation. Visitors are not to be present in restricted areas when remediation activities are being conducted. Under these conditions, visitors will have a limited potential for contact with contaminated materials. Persons accessing active remediation areas, exclusion zones, or contamination reduction zones; conducting activities other than observation; and unescorted visitors will be required to read and understand the facility Health and Safety Plan and complete the facility orientation program.

Visitor Responsibilities

Visitors to the Kaiser facility are admitted as a courtesy and must leave when requested to do so. Visitors are responsible for signing in and out. They must be familiar with the contents of this document and

applicable information from the Health and Safety Plan. All visitors are responsible for behaving in a mature manner and following instructions, particularly in emergency situations.

Site Hazards

The principal hazard at the Kaiser site is radioactivity associated with Thorium 232 and its decay products. Thorium 230 has also been found at the site. The exposure levels are kept as low as reasonably achievable for the forms of radioactivity at the site. It is not anticipated that visitors would be exposed to radiation levels exceeding the annual worker exposure limits defined in the standards for protection against radiation. Exposure levels for declared pregnant women are restricted to 1/10 the annual dose for the gestation period by this standard.

Prohibited Activities

Visitors may not smoke, drink, eat, chew gum or tobacco, or apply cosmetics while in the restricted areas of the Kaiser facility. Visitors may not enter the restricted areas unescorted.

Exposure Control

At the discretion of the health physics technician, visitors may be required to wear dosimeters to evaluate exposure to radioactivity. Visitors may be requested to submit to a direct personal survey to detect incidental radiological contamination and prevent the spread of contamination to clean areas.

Personal Protective Equipment

Visitors accessing the restricted areas of the site must wear the required PPE for the area. As a minimum, visitors will wear rubber overboots. Hard toe boots, hard hats, cotton coveralls, safety glasses, and gloves, and/or rain gear may be required depending on site conditions and operations at the time of the visit. Visitors who enter areas where respiratory protection is necessary must provide evidence that they possess the training, medical surveillance and fit testing required by OSHA regulations.

Decontamination

Decontamination procedures will be utilized to remove contamination from persons, clothing, or objects. Overboots will be washed at the boot wash station and removed before leaving the contamination reduction zone. Disposable PPE and items requiring additional cleaning will be carefully removed and placed in the designated containers. Decontamination of the skin will consist of washing the affected area with soap and water. Visitors leaving a restricted area must wash their hands and face before returning to the support or clean areas of the site.

PDR Calibration and Inspection Form
Attachment 5

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

Attachment 5

RECON

Personal DataRAM(PDR)

Daily Inspection and Zero Form

Date: _____

Wind Direction: _____

Weather: _____

PDR # : _____

Condition : _____

Zeroed: ☐ Yes ☐ No

Location _____

_____

_____

Notes: _____

_____

_____

_____

PDR # : _____

Condition : _____

Zeroed: ☐ Yes ☐ No

Location _____

_____

_____

Notes: _____

_____

_____

_____

PDR # : _____

Condition : _____

Zeroed: ☐ Yes ☐ No

Location _____

_____

_____

Notes: _____

_____

_____

_____

PDR # : _____

Condition : _____

Zeroed: ☐ Yes ☐ No

Location _____

_____

_____

Notes: _____

_____

_____

_____

PID Calibration Form
Attachment 6

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

Attachment 6

MiniRAE PID (photoionization detector) Handheld VOC Monitor

CALIBRATION(CAL) SHEET

Date: _____ CAL-LOT# : _____

CAL-GAS, ISOBUTYLENE AT 100PPM

PID# : _____

PRE-CAL READING _____ PPM TIME: _____

POST-CAL READING _____ PPM TIME: _____

TECHNICIAN _____

SIGNATURE _____

PDR Data Log
Attachment 7

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

PDR # 4799

pDR-1000 S/N: 0000032User ID: RECON TEX-TIN32Tag Number: 0432Number of logged points: 10232Start time and date: 07:15:23 02-Oct 32Elapsed time: 08:30:0032Logging period (sec): 30032Calibration Factor (%): 10032Max Display Concentration: 0.742 mg/m³32Time at maximum: 07:18:07 Oct 0232Max STEL Concentration: 0.217 mg/m³32Time at max STEL: 15:48:54 Oct 0232Overall Avg Conc: 0.164 mg/m³32Logged Data:32Point, Date , Time , Avg.(mg/m³)32
1, 02 Oct, 07:20:23, 0.26232
2, 02 Oct, 07:25:23, 0.19332
3, 02 Oct, 07:30:23, 0.14932
4, 02 Oct, 07:35:23, 0.12432
5, 02 Oct, 07:40:23, 0.11832
6, 02 Oct, 07:45:23, 0.11232
7, 02 Oct, 07:50:23, 0.11032
8, 02 Oct, 07:55:23, 0.11032
9, 02 Oct, 08:00:23, 0.10932
10, 02 Oct, 08:05:23, 0.10632
11, 02 Oct, 08:10:23, 0.10232
12, 02 Oct, 08:15:23, 0.10532
13, 02 Oct, 08:20:23, 0.10232
14, 02 Oct, 08:25:23, 0.10132
15, 02 Oct, 08:30:23, 0.10032
16, 02 Oct, 08:35:23, 0.10132
17, 02 Oct, 08:40:23, 0.10632
18, 02 Oct, 08:45:23, 0.10532
19, 02 Oct, 08:50:23, 0.10632
20, 02 Oct, 08:55:23, 0.10532
21, 02 Oct, 09:00:23, 0.10532
22, 02 Oct, 09:05:23, 0.10832
23, 02 Oct, 09:10:23, 0.10932
24, 02 Oct, 09:15:23, 0.11132
25, 02 Oct, 09:20:23, 0.11332
26, 02 Oct, 09:25:23, 0.11832
27, 02 Oct, 09:30:23, 0.11632
28, 02 Oct, 09:35:23, 0.12532
29, 02 Oct, 09:40:23, 0.13032
30, 02 Oct, 09:45:23, 0.12932
31, 02 Oct, 09:50:23, 0.13132
32, 02 Oct, 09:55:23, 0.13632
33, 02 Oct, 10:00:23, 0.13332
34, 02 Oct, 10:05:23, 0.13832
35, 02 Oct, 10:10:23, 0.14032
36, 02 Oct, 10:15:23, 0.13832
37, 02 Oct, 10:20:23, 0.14332
38, 02 Oct, 10:25:23, 0.14332
39, 02 Oct, 10:30:23, 0.14632
40, 02 Oct, 10:35:23, 0.15032
41, 02 Oct, 10:40:23, 0.14932
42, 02 Oct, 10:45:23, 0.15232
43, 02 Oct, 10:50:23, 0.15432
44, 02 Oct, 10:55:23, 0.15732
45, 02 Oct, 11:00:23, 0.16232
46, 02 Oct, 11:05:23, 0.16832
47, 02 Oct, 11:10:23, 0.17332
48, 02 Oct, 11:15:23, 0.17232
49, 02 Oct, 11:20:23, 0.17532
50, 02 Oct, 11:25:23, 0.17832
51, 02 Oct, 11:30:23, 0.17932
52, 02 Oct, 11:35:23, 0.18132
53, 02 Oct, 11:40:23, 0.18432
54, 02 Oct, 11:45:23, 0.18732
55, 02 Oct, 11:50:23, 0.18632
56, 02 Oct, 11:55:23, 0.18832
57, 02 Oct, 12:00:23, 0.18832
58, 02 Oct, 12:05:23, 0.18932
59, 02 Oct, 12:10:23, 0.18932
60, 02 Oct, 12:15:23, 0.18832
61, 02 Oct, 12:20:23, 0.18832
62, 02 Oct, 12:25:23, 0.19032
63, 02 Oct, 12:30:23, 0.19032
64, 02 Oct, 12:35:23, 0.19032
65, 02 Oct, 12:40:23, 0.19032
66, 02 Oct, 12:45:23, 0.19132
67, 02 Oct, 12:50:23, 0.19332
68, 02 Oct, 12:55:23, 0.19132
69, 02 Oct, 13:00:23, 0.19132
70, 02 Oct, 13:05:23, 0.19132
71, 02 Oct, 13:10:23, 0.19332
72, 02 Oct, 13:15:23, 0.19432
73, 02 Oct, 13:20:23, 0.19232
74, 02 Oct, 13:25:23, 0.19432
75, 02 Oct, 13:30:23, 0.19432
76, 02 Oct, 13:35:23, 0.19332
77, 02 Oct, 13:40:23, 0.19332
78, 02 Oct, 13:45:23, 0.20032
79, 02 Oct, 13:50:23, 0.19532
80, 02 Oct, 13:55:23, 0.19232
81, 02 Oct, 14:00:23, 0.20332
82, 02 Oct, 14:05:23, 0.19832
83, 02 Oct, 14:10:23, 0.19432
84, 02 Oct, 14:15:23, 0.19432
85, 02 Oct, 14:20:23, 0.19332
86, 02 Oct, 14:25:23, 0.19332
87, 02 Oct, 14:30:23, 0.19732
88, 02 Oct, 14:35:23, 0.19332
89, 02 Oct, 14:40:23, 0.19532
90, 02 Oct, 14:45:23, 0.19432
91, 02 Oct, 14:50:23, 0.19332
92, 02 Oct, 14:55:23, 0.19432
93, 02 Oct, 15:00:23, 0.19432
94, 02 Oct, 15:05:23, 0.19432
95, 02 Oct, 15:10:23, 0.19432
96, 02 Oct, 15:15:23, 0.19632
97, 02 Oct, 15:20:23, 0.19732
98, 02 Oct, 15:25:23, 0.21532
99, 02 Oct, 15:30:23, 0.20032
100, 02 Oct, 15:35:23, 0.22232
101, 02 Oct, 15:40:23, 0.21332
102, 02 Oct, 15:45:23, 0.20732

Down wind FL (north wind)

PID Monitoring Log
Attachment 8

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

Attachment 8

RECON

MINI-RAE PID (photoionization detector) Handheld VOC Monitor

Field Form

Date: _____

Location: _____ Background: _____ ppm

Contaminated Area: _____ ppm

Wind Direction: _____ Breathing Zone: _____ ppm

Description of Area: _____

_____

Description of Contamination: _____

_____

Notes: _____

_____

Was the PID Calibrated: ☐ YES ☐ NO

TECHNICIAN _____

SIGNATURE _____

Job Hazards Analysis Form
Attachment 9

Project No. 2-1719

February 2004

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Houston, Texas 77064
(281) 955-2442

Attachment No. 9

JOB HAZARD ANALYSIS

Task Description (Sequence of Steps):

1.
2.
3.
4.
5.

Hazard Identification (Problem)	Hazard Control (Possible Recommendation)
☐ Asphyxiation	☐ Ventilation ☐ Supplied Air ☐ Air Monitoring
☐ Chemical Exposure	☐ Isolation, Lockout/Tagout ☐ PPE ☐ Decontamination ☐ Body Position ☐ Exposure Monitoring
☐ Harmful Dust	☐ Dust Suppression ☐ Exposure Monitoring ☐ PPE
☐ Thal Burns ☐ Hot Surface ☐ Welding Slag	☐ Splash Guard ☐ Isolation, Lockout/Tagout ☐ PPE ☐ Equipment Covers ☐ Barricades
☐ Slips, Wet Surfaces	☐ Clean Surface ☐ Barricade ☐ Eyes on Path ☐ Use Alternate Route
☐ Cleaning Equipment	☐ PPE ☐ Stand Upwind ☐ Waste Containers
☐ Falls ☐ Less than 6 feet ☐ More than 6 feet	☐ Construct Platform ☐ Tie-Off ☐ Move Work to Ground ☐ Fall restraint, Guardrails, Short Lanyard
☐ Electrical Shock	☐ Isolate, Lockout/Tagout ☐ Testing ☐ Grounding ☐ Shielding on Equipment ☐ PPE ☐ GFCI ☐ Electrically Qualified
☐ Airborne/Flying Material	☐ Cover/Shield Source ☐ PPE, Eye & Face ☐ PPE, Arms & Body ☐ Positioning
☐ Fire Explosion	☐ Isolate, Lockout/Tagout ☐ Air Testing/Monitoring ☐ PPE
☐ Heat/Cold Stress	☐ Ventilation ☐ Cooling Vests, etc. ☐ Task Rotation, Shared Tasks ☐ Work/Rest Regimen
☐ High Noise	☐ Hearing Protection ☐ Relocate Work ☐ Muffle Source
☐ Lifting, Pulling, Pushing	☐ Get Proper Equipment ☐ Proper Technique ☐ Smaller, Lighter Loads ☐ Move Feet to Turn Load
☐ Lighting	☐ Adequate for Task ☐ Nighttime Considerations
☐ Fire, Combustible Materials	☐ Remove Materials ☐ Relocate Work ☐ Shields ☐ Wet Area ☐ Fire Extinguishers ☐ Fire Watch ☐ PPE
☐ Repetitive Motion	☐ Proper Technique ☐ Proper Tools ☐ Get Help, Take Breaks ☐ Seek Advice
☐Rotating Equipment	☐ Isolate, Lockout/Tagout ☐ Guarding, Barricading ☐ No Loose Clothing ☐ Positioning
☐ Utility Lines	☐ Call Local Authorities ☐ Hand Dig
☐ Sharp Objects	☐ Guarding ☐ PPE, Gloves, etc. ☐ Positioning
☐ Falling Objects	☐ Secure Objects ☐ Guarding, Covers ☐ PPE ☐ Barricades
☐ Hazards from others working in vicinity	☐ Communication ☐ Barricading ☐ Shielding
☐ Environmental Spill	☐ Containment ☐ Waste Plan ☐ Waste Containers ☐ Other
☐ Reactive Chemicals	☐ Chemical OK'd ☐ Containers Labeled ☐ Like for Like
☐ Pressure	☐ Communication ☐ Barricading ☐ Shielding ☐ Positioning
☐ Fire Protection	☐ Accessible ☐ Correct Type for Purpose
☐ Radiation	☐ Exposure Monitoring ☐ PPE
☐ Heavy Equipment	☐ Spotter ☐ Back-Up Alarms ☐ Complete Inspection Checklist
☐ Hazards, Not Listed	☐ Description:

	YES	NO	N/A
Is a permit required?	☐	☐	☐
Is the client's procedure/policy supplied?	☐	☐	☐
Do you have proper tools and/or equipment?	☐	☐	☐
Have you planned the escape route?	☐	☐	☐
Do you know where safety equipment is?	☐	☐	☐
Did you review AHA with crew?	☐	☐	☐
Is barricade tape required?	☐	☐	☐
Are danger signs posted, if required?	☐	☐	☐

Signed: _____

Certified by: _____ Date: _____

Incident Report Form
Attachment 10

Project No. 2-1719

February 2004

Remedial Construction Services, L.P.
9720 Derrington
Houston, Texas 77064
(281) 955-2442

ACCIDENT/INCIDENT REPORT

Person Completing Report _____ Incident Date _____

Incident Time: _____ Location _____ Project # _____

Person Involved in Incident _____ Telephone _____

Driver Name (if motor vehicle accident) _____ Telephone _____

Type of Incident:

- ☐ Personal Injury/Illness
- ☐ Chemical Exposure
- ☐ Equipment Damage
- ☐ Theft
- ☐ Property Damage
- ☐ Pit/Code Compliance
- ☐ Near Miss Event
- ☐ Unsafe Condition/Action
- ☐ Fire/Explosion
- ☐ Spill/Release
- ☐ Customer Incident
- ☐ Newspaper/Radio/TV
- ☐ Motor Vehicle Accident
- ☐ Other _____

Circle one, based on initial findings:
Preventable/Non-Preventable

Personal Injury ☐ Yes ☐ No (If no, go to next section)

- ☐ First Aid Only
- ☐ Hospitalization
- ☐ Medical Treatment
- ☐ Possible Injury, Not Confirmed

Person Injured:
Employee (If so, complete First Report of Injury)
- ☐ Subcontractor
- ☐ Client/Public/Other

Nature of Injury, Illness, or Exposure:

_____

_____

_____

_____

Describe nature of incident, how it occurred, who was involved, witnesses and possible causal factors: (Attach additional sheets if necessary)

_____

_____

_____

☐ First Report of Injury Attached ☐ Police Report Attached

Describe immediate actions taken and persons notified: (Attach additional sheets if necessary)

_____

_____

_____

Action Taken to Prevent Recurrence (Attach additional sheets if necessary)

_____

_____

_____

Report Prepared by (signature): _____ Date: _____

Employee's Signature _____

Date: _____