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PUBLIC SERVICE COMPANY OF NEW MEXICO

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July 09, 1991

Certified Mail
Return Receipt Requested

Mr. Rich Mayer
Environmental Protection Agency
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mr. Mayer

Subject: Proposed Remediation Workplan,
Natural Pit SWMU, Person
Generating Station, NMT360010342

Public Service Company of New Mexico (PNM) is seeking approval from EPA to excavate and remove contaminated soil from the Solid Waste Management Unit (SWMU) identified in RCRA permit NMT360010342 as the "Natural Pit".

PNM is hereby submitting a proposed RCRA Facility Investigation (RFI) Remediation Work Plan for the Natural Pit and is requesting approval from EPA to conduct this activity. The enclosed remediation plan follows the format of previous work plans submitted to you for the original Natural Pit RFI. Additionally, this work plan references those previous plans and their subsequent reports of findings.

If you have any questions, or need additional information, please contact me at (505) 848-2998.

Sincerely,



Ron D. Johnson
Sr. Environmental Scientist

RDJ:vrn

enclosure: RFI Remediation Work Plan
Person Generating Station
Natural Pit Area, NMT360010342

*Enclosure
NOT Found*

cc: Ed Horst, New Mexico Environment Department

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RCRA Facility Investigation (RFI)
Remediation Work Plan

For Person Generating Station Hazardous
Waste Disposal Facility - Natural Pit Area
(NMT360010342)

July 1991 → ~~1991~~

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1.0 Introduction and Background

In 1988 the Environmental Protection Agency (EPA) issued a hazardous waste permit (NMT360010342-1) pursuant to its authority under the Hazardous and Solid Waste Amendments of 1984 for the Person Generating Station. That permit identified the Natural Pit at Person Station as a Solid Waste Management Unit (SWMU) requiring investigation for release of hazardous constituents to the environment.

In March 1989, Public Service Company of New Mexico (PNM), submitted to EPA a RCRA Facility Investigation (RFI) Work Plan for the Natural Pit area at Person Generating Station. That work plan detailed methods and procedures used by PNM in the investigation of potential releases of contaminants into the environment from the Natural Pit.

Final work plan approval from EPA was issued in July 1989. Field sampling under the work plan was conducted in August 1989. Results from the Phase I sampling confirmed the presence of visual fuel oil contamination in two areas of the Natural Pit. The Phase I sampling also revealed the presence of chromium, lead, and arsenic contamination in the upper two feet of the soil at one location within the Natural Pit.

After review of the results contained in the document "RFI Report of Findings", January 18, 1990, EPA requested additional soil bore sampling for heavy metal contamination in proximity to the location where the heavy metals were discovered in the Phase I sampling. This Phase II sampling was conducted in June 1990.

The Phase II sampling results confirmed the presence of chromium, lead, and arsenic contaminants above background levels. The contamination again was only seen in the upper two feet of the soil.

The heavy metal contamination appeared to be confined to a central area within the Natural Pit and was not migrating out of the pit (no contamination was found down slope from the contaminated areas). This information was supplied to EPA in the document "RFI Report of Findings, Phase II", August 28, 1990. After reviewing the report results EPA notified PNM that no remedial action was necessary. PNM was required to file a survey plat with the local deed authority specifying the location and contents of the Natural Pit, and was required to post warning signs around the Natural Pit.

2.0 Person Station Demolition Project

In 1991, PNM management decided that Person Generating Station would not be restarted and that opportunities for sale or salvage of plant equipment should be investigated. Additionally, certain environmental issues associated with the property were to be addressed and remediated, if needed.

The contamination in the Natural Pit was identified as an area which would be remediated under this project. Because the Natural Pit is a SWMU associated with the Person Station Hazardous Waste Disposal Permit it was recognized by PNM that remediation of the Natural Pit would require prior approval from EPA.

This document is the remediation work plan for the Natural Pit submitted to EPA for their consideration and approval.

3.0 Work Scope Overview

Phase I and Phase II sampling indicated that the heavy metal contamination is localized within the Natural Pit to a central area and down to a depth of two feet. This remediation work plan proposes a grid sampling scheme to specifically identify the exact location and the horizontal extent of the heavy metal contamination. Once identified, the contaminated soil will be removed to an industrial cell at an appropriately permitted landfill for disposal. Post removal soil sampling will be conducted to verify that the contaminated soil has been removed.

The Phase I sampling also verified visual evidence of fuel oil contaminated soil within the Natural Pit. Since the fuel oil contamination and the heavy metal contamination are unrelated to each other, remediation of the fuel oil contamination will be performed differently.

Fuel oil contaminated soil will be removed based on visual observation of contaminated areas. Removed soil will be placed into an industrial cell of an appropriately permitted landfill. Post removal soil sampling will be conducted to verify that the contaminated soil has been removed.

4.0 Work Scope

4.1 Heavy Metal Contamination

An approximate 2600 square feet area of the Natural Pit will be grided at 5 foot intervals. The grided area will encompass all sample locations found to contain heavy metal contamination during Phase I and Phase II sampling. At each grid line intersection a stake will be placed to mark the location for subsequent soil sampling. Grid intersections will be identified using an alphanumeric numbering scheme. North-south grid lines will be alphabetic, east-west grid lines will be numerical. A grid intersection will be identified by its intersecting grid lines, e.g., "C-4". Map 1 in the Appendix shows the general contour of the Natural Pit and illustrates how the Natural Pit will be grided for sampling.

Soil samples will be collected from the 0-1 foot depth interval using a hand augering soil sampler. Samples will be analyzed for total chromium only as an indicator of heavy metal contamination. The presence of chromium contamination at concentrations above threshold limits established in the Phase I RFI sampling will be used to determine if an adjacent 5 foot by 5 foot soil section will need to be excavated.

If a grided soil section has four surrounding samples which do not show elevated levels of chromium, that section will be considered clean and will not be excavated. Figure 4.1 is an example showing several grided sections. An "X" at the intersection indicates a soil sample with chromium levels above background thresholds, a "0" at the intersection indicates a soil sample with chromium levels at background. The figure also shows which grid section will be excavated down to two feet based on the sample results shown.

Figure 4.1
Excavation Scheme for Heavy Metal Contamination

	C	D	E	F	G	H
3	0	0	0	0	0	0
	!	!	!	!	!	!
	!	!	!	!	!	!
	!	!	!	!	!	!
4	0	0	0	0	0	0
	!	!	!	!	!	!
	! Excavate	! Excavate	! Excavate	! Excavate	!	!
	!	!	!	!	!	!
5	0	X	X	X	0	0
	!	!	!	!	!	!
	! Excavate	! Excavate	! Excavate	! Excavate	!	!
	!	!	!	!	!	!
6	0	0	0	X	0	0
	!	!	!	!	!	!
	!	!	! Excavate	! Excavate	!	!
	!	!	!	!	!	!
7	0	0	0	0	0	0

"X" = Chromium above background threshold levels
 "0" = Chromium at background levels

Excavated soil sections will be removed down to a depth of two feet. It is anticipated that the contaminated sections will all lie adjacent to one another. Once excavation is complete an additional round of soil sampling will be conducted to confirm that no additional excavation is needed.

For confirmation, one soil sample from the center of each excavated grid section will be collected from the new soil surface. Samples will be analyzed for total chromium. The presence of chromium contamination at concentrations above threshold limits established in the Phase I RFI sampling will be used to determine if additional excavation is needed.

The contaminated soil will be bulk loaded and transported to an industrial cell in an appropriately permitted landfill.

4.2 Fuel Oil Contamination

Fuel oil contamination areas are easily identified by their dark discoloration relative to the surrounding natural soil color. Thus, no additional sampling is needed to define their extent. PNM proposes to remove the fuel oil contaminated soil down to the depth of visible contamination plus one additional foot. A one foot buffer of soil around the contaminated area will also be removed.

The New Mexico Environmental Improvement Division, Special Waste Bureau, has established a guideline standard of 100 ppm Total Petroleum Hydrocarbons (TPH) for remediation of petroleum contaminated soils. The excavation bottom and sides will be sampled for TPH to confirm that remaining soil TPH levels are below 100 ppm. Additional excavation will be performed if needed.

Excavated fuel oil contaminated soil will be bulk loaded and transported to an industrial cell at an appropriately permitted landfill.

5.0 Quality Assurance / Quality Control (QA/QC) Procedures

The QA/QC procedures described here apply primarily to the proposed grid sampling for chromium, though good QA/QC practices will also be employed for collection and analysis of TPH samples for verification of the fuel oil contamination remediation.

5.1 Sample Custody

Sample custody will be documented using chain-of-custody forms shown in Exhibit 1 of this work plan. The chain-of-custody forms will be used to document custody of the sample containers during field sampling up to delivery to the analytical laboratory.

The form will provide documentation of sample identification number, date and time of sample collection, dates and times of all relinquishments and receipts, and signatures of all persons either relinquishing the samples or receiving them.

Sample containers will be pre-marked using a numbering scheme which identifies the facility name, the sample location, and the replicate (if applicable). For example, duplicate samples from the grid intersection of the C line and the 4 line will be identified as PNM-C-4-A, and PNM-C-4-B.

5.2 Sampling Procedures

Sampling will be done by a team of three persons. One person will be responsible for collecting the sample and placing it into the proper container. A second person will be responsible for all associated documentation. The third person will assist the person doing the sampling, primarily being responsible for cleaning the sampling device after each sample is collected.

The soil samples will be collected using a three inch diameter hand auger capable of removing an approximate six inch length of core per insertion. The soil will be removed from the auger bucket and a representative sample will be immediately transferred into a glass sampling jar. The sampling jars will be supplied by the analytical laboratory.

Each filled jar will be sealed with a self adhesive custody seal and placed into the shipping container.

To prevent cross-contamination between samples, the hand auger will be cleaned between samples using soapy water and then rinsed with deionized (or distilled) water.

5.3 Replicates

For every 10 samples collected, one duplicate sample will be collected for precision assessment. To do this, the auger sample will be divided into two samples. One of the samples will be used for the original sample, while the other sample will be used for the replicate. To

distinguish replicate sample identification numbers, the suffix "A" will be attached to the original sample identification, and "B" will be attached to the replicate sample identification.

5.4 Analytical Procedures

Sample analysis will be performed by the analytical laboratory using EPA approved methodology described in SW-846, "Test Methods for Evaluating Solid Waste", or other EPA approved method. The analyte, sample preservation, and maximum holding times for the soil samples proposed in this work plan are listed below in Table 5.4.

A brief discussion of the various aspects of QA/QC performed by the laboratory are described in the following subsections.

Table 5.4
Summary of Sample Methodology

Analyte	Sample Preparation Method	Analytical Method	Detection Limit (mg/kg)	Preservation	Maximum Holding Time
Chromium	3050	6010	0.5	None	6 mos
TPH	NA	418.1	20	4 oC	28 d

TPH = Total Petroleum Hydrocarbon

5.4.1 Sample Storage Holding Time / Preservation

The laboratory will ensure that each analyte will be analyzed prior to the expiration of its maximum holding time as shown in Table 5.4. These holding times are in accordance with EPA guidelines as specified in Table 2-16 of the SW-846.

TPH samples will be held at 4 degrees Centigrade while awaiting analysis.

5.4.2 Sample Preparation

Sample preparation involves the extraction of the analyte of concern from the sampling medium (soil) to a medium which can be directly analyzed (liquid). The SW-846 manual details exact procedures, approved by EPA, for preparation of the sample prior to analysis. These procedures will be used by the laboratory. The methods to be used for this study are shown in Table 5.4 and described briefly below:

Sample Preparation Method	Description
3050	Acid digestion of sediments, sludges, and soils, used to prepare samples for analysis by flame or furnace atomic absorption spectroscopy or by inductively coupled argon plasma spectroscopy. This procedure will be used for Chromium.

5.4.3 Analytical Methods

The laboratory will use EPA approved methods for analysis in this work plan. The method numbers correspond to specific procedures detailed in the SW-846 methods or "Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020). The methods to be used in this project are listed in Table 5.4 and described briefly below:

Analytical Method	Description
6010	Inductively coupled plasma atomic emission (ICP) method for determining trace elements (including chromium) in solution.
418.1	Modified method from "Methods for Chemical Analysis of Water and Wastes" (EPA 600/4-79-020) for the determination of Total Petroleum Hydrocarbons (TPH) in soils.

5.4.4 Calibration Procedures, QA/QC

A complete description of all laboratory calibration procedures, and QA/QC activities is beyond the scope of this work plan. The laboratory adheres to established calibration and QA/QC procedures set forth in the EPA approved methods detailed in the SW-846 manual. Those procedures are incorporated into this work plan by reference to the SW-846 manual.

5.4.5 Data Reduction, Validation, and Reporting

Laboratory data reduction and validation procedures will be as specified in SW-846. Reports will be provided to PNM which contain sample analysis date, EPA method(s) used, detection limits, and result. QA/QC data (spike recoveries, laboratory duplicates) will also be reported to PNM.

6.0 Data Management Procedures

6.1 Data Collection

Data will be collected by a team of three field personnel. One person will be responsible for the sampling, and one for the documentation involved with the samples, such as completion of the sample log form. The third person will be responsible for cleaning the sampling device between samples and providing assistance as needed to the other two persons.

Each sample and sample location will be characterized on a sampling log form (Exhibit 2) stating the following:

- Name of sampler
- Purpose of sampling
- Date and time of sampling
- Sample type (e.g., soil)
- Sampling location, description, and grid coordinates
- Sampling method, sample containers, and preservation (if any)
- Sample weight or volume
- Number of samples taken
- Sample identification number(s)
- Field observations
- Field measurements made (e.g., pH, temperature)
- Weather conditions
- Name and signature of person responsible for observation

A chain of custody form (Exhibit 1) will be completed for the tracking of all samples from their collection through their delivery to the analytical laboratory.

6.2 Data Management

Data generated under this work plan will be managed in the following way. A complete paper trail of all chain of custody forms, sampling log forms, sampling maps, and laboratory analysis sheets will be kept in an organized fashion within the PNM corporate file system. Duplicate copies of this information will be maintained by the analyst as the working data at a location which allows easy reference for completion of the remediation project.

6.3 Data Presentation

Data will be reported primarily in tabular format. The scope of this remediation project does not require extensive and complicated data presentation to enable a reviewer to understand the results. Map and/or graphical displays showing location and constituent concentrations will also be used if needed to clarify the data.

6.4 Statistical Treatment of Data

Samples collected for chromium analysis will be compared to background values and threshold limits found in the sampling performed as Phase I

of the RFI release investigation. A sample will be considered contaminated above background if the laboratory result exceeds the threshold limit for the 0-1 foot depth interval for chromium reported in the Phase I Report of Findings. Background sample data was analyzed using Tolerance Interval Analysis as described in the EPA document Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, February 1989. The tolerance limit (threshold limit) established for the 0-1 foot level for background chromium was 10.68 mg/kg. Thus, samples collected having total chromium greater than 10.68 mg/kg will be considered contaminated and will mark a soil grid to be removed.

7.0 Health and Safety Procedures

PNM used HASP Version 2.01, a computer aide program developed by the EPA to produce a Health and Safety Plan for the sampling and remediation work to be performed under this work plan. A copy of the plan is contained in this document as Exhibit 3.

Map 1

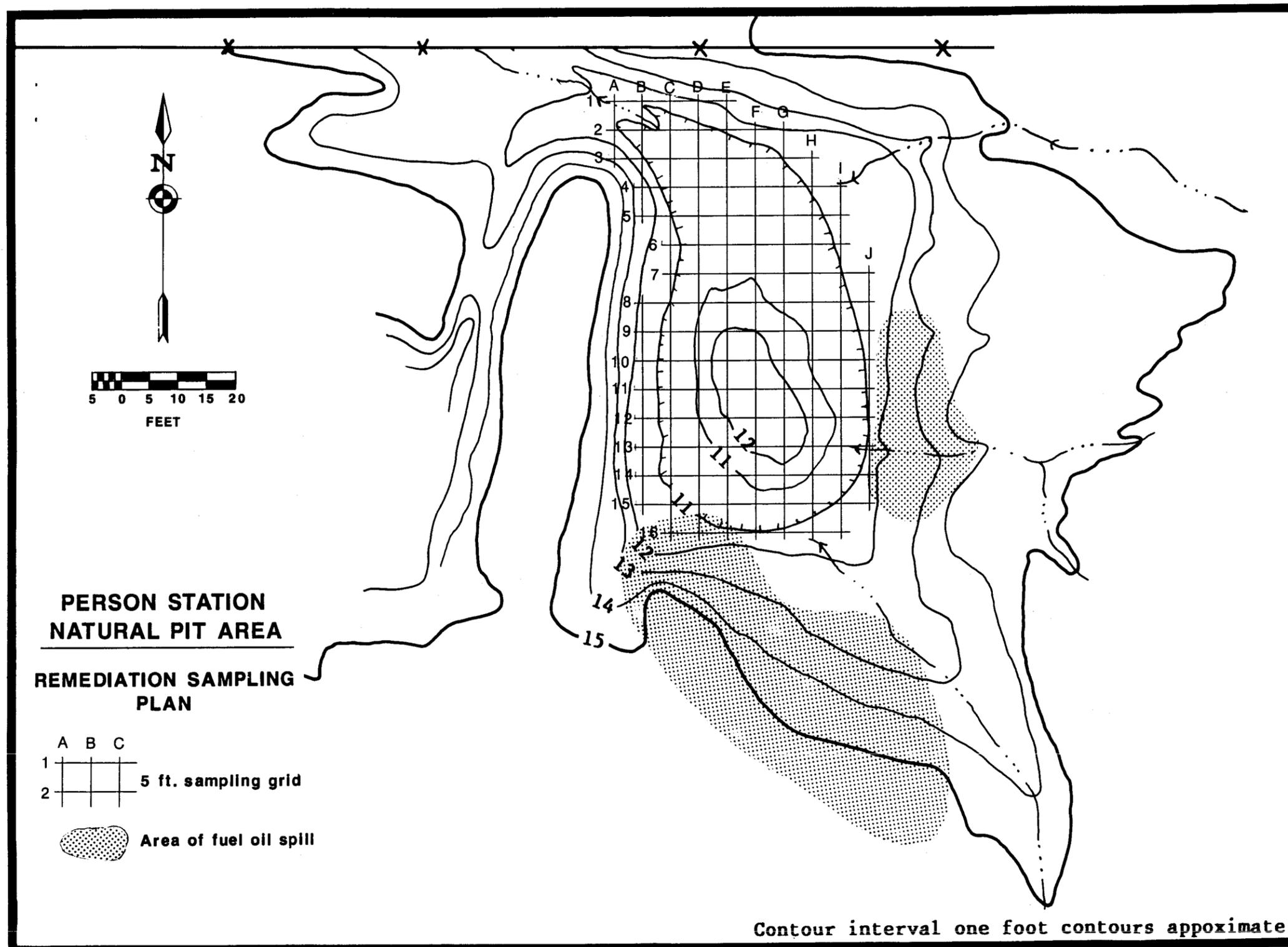


Exhibit 1



Chain of Custody

PROJECT MANAGER: _____					ANALYSIS REQUEST																			
COMPANY: _____ ADDRESS: _____ _____					Petroleum Hydrocarbons (418.1)	(MOD 8015) Gas/Diesel	Diesel/Gasoline/BTXE (MOD 8015/8020)	BTXE (8020)	Chlorinated Hydrocarbons (601/8010)	Aromatic Hydrocarbons (602/8020)	MTBE	Pesticides/PCB (608/8080)	Herbicides (615/8150)	Base/Neutral/Acid Compounds GC/MS (625/8270)	Volatile Organics GC/MS (624/8240)	SDWA Primary Standards	SDWA Secondary Standards	SDWA Volatiles (502.1/503.1)	The 13 Priority Pollutant Metals	The 8 EP Tox Metals by EP Tox Prep. (1310)	The 8 EP Tox Metals by Total Digestion	The 8 EP Tox Metals by TCLP	NUMBER OF CONTAINERS	
BILL TO: COMPANY: _____ ADDRESS: _____																								
SAMPLERS: (Signature) _____ () _____ PHONE NUMBER _____																								
SAMPLE ID	DATE	TIME	MATRIX	LAB ID																				

PROJECT INFORMATION	SAMPLE RECEIPT	RELINQUISHED BY: 1.	RELINQUISHED BY: 2.	RELINQUISHED BY: 3.
PROJECT NO.:	TOTAL NO. OF CONTAINERS	Signature: _____	Signature: _____	Signature: _____
PROJECT NAME:	CHAIN OF CUSTODY SEALS	Time: _____	Time: _____	Time: _____
P.O. NO.:	INTACT?	Printed Name: _____	Printed Name: _____	Printed Name: _____
VIA:	RECEIVED GOOD COND./COLD	Date: _____	Date: _____	Date: _____
TAT: <input type="checkbox"/> 24HR <input type="checkbox"/> 48 HRS <input type="checkbox"/> 1 WK <input type="checkbox"/> 2 WKS	LAB NUMBER	Company: _____	Company: _____	Company: _____
SAMPLE DISPOSAL INSTRUCTIONS		RECEIVED BY: 1.	RECEIVED BY: 2.	RECEIVED BY: (LAB) 3.
<input type="checkbox"/> ATI Disposal <input type="checkbox"/> Return <input type="checkbox"/> Pickup (will call)		Signature: _____	Signature: _____	Signature: _____
Comments:		Time: _____	Time: _____	Time: _____
		Printed Name: _____	Printed Name: _____	Printed Name: _____
		Date: _____	Date: _____	Date: _____
		Company: _____	Company: _____	Analytical Technologies, Inc.

Exhibit 2

PUBLIC SERVICE COMPANY OF NEW MEXICO
SAMPLE LOG

Sample No.

Project Name/Location:

Sampling Date	Sampling Time	Purpose:
---------------	---------------	----------

Sample Location Description/Coordinates:

Sample Type							
Air []	Water Surface [] Ground [] Tap []			Soil Core [] Surface []		Wipe []	Sludge []
Amount Purged:							

Sample Amount:	Units:
----------------	--------

Sample Container Description:
Preservation: [] YES [] NO - If Yes, Type and Amount:

Field Measurements					
Temperature	pH	Conductivity			

Weather Conditions:

Remarks:

Name of Sampler(s)	Signature(s)
_____	_____
_____	_____
_____	_____

Exhibit 3

SITE HEALTH AND SAFETY PLAN

Site Name : Person Station Natural Pit
Date : 04/26/91
Prepared By : Ron Johnson
Public Service Co of NM

With the assistance of HASP

1.0 INTRODUCTION

This section of the Site Health and Safety Plan (HASP) document defines general applicability and general responsibilities with respect to compliance with Health and Safety programs.

1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan is to define the requirements and designate protocols to be followed at the Site during investigation and remediation activities. Applicability extends to all PNM employees, contractors, subcontractors, and visitors.

All personnel on site, contractors and subcontractors included, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards in table 3.1 and defines protective measures planned for the site.

This plan must be reviewed and an agreement to comply with the requirements must be signed by all personnel prior to entering the exclusion zone or contamination reduction zone.

During development of this plan consideration was given to current safety standards as defined by EPA/OSHA/NIOSH, health effects and standards for known contaminants, and procedures designed to account for the potential for exposure to unknown substances. Specifically, the following reference sources have been consulted:

- o OSHA 29 CFR 1910.120 and EPA 40 CFR 311
- o NIOSH Pocket Guide to Chemical Hazards
- o (ACGIH) Threshold Limit Values

1.2 Visitors

All visitors entering the contamination reduction zone and exclusion zone at the the Site will be required to read and verify compliance with the provisions of this HASP. In addition, visitors will be expected to comply with relevant OSHA requirements such as medical monitoring (Sec. 6.0), training (Sec. 4.0), and respiratory protection (if applicable). Visitors will also be expected to provide their own protective equipment.

In the event that a visitor does not adhere to the provisions of the HASP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the site log.

2.0 KEY PERSONNEL/IDENTIFICATION OF HEALTH AND SAFETY PERSONNEL

2.1 Key Personnel

The following personnel and organizations are critical to the planned activities at the Site. The organizational structure will be reviewed and updated periodically by the site supervisor.

Public Service Company of New Mexico

Site Supervisor: Steve Anderson, Engineering Dept.
Health and Safety: Dan Pacheco, Occupational Health and
Safety Dept.
Environmental Officer: Ron Johnson, Environmental
Services Dept.

Others

Subcontractor for earth moving operation

2.2 Site Specific Health and Safety Personnel

The Site Health and Safety Officer (HSO) has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, it is vital that personnel assigned as HSO be experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120 (see Section 4.0 of this HASP). The HSO is also responsible for conducting site inspections on a regular basis in order to ensure the effectiveness of this plan.

The HSO at the site is Dan Pacheco.

Designated alternates include:

- o Ron Johnson
- o Elaine Beckett

2.3 Organizational Responsibility

Site Supervisor: The site supervisor is responsible for overall site management and coordination of work performed under this health and safety plan.

The Site Supervisor is Steve Anderson.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site

This HASP defines the hazards and methods to protect personnel from those hazards as identified in previous site work or background information. For a thorough overview of historical information concerning the Site see the following documents:

- o RCRA Facility Investigation (RFI)
Work Plan - Revision 1.0
For Person Generating Station
Hazardous Waste Storage Facility
Natural Pit Area (NMT360010342)
March 1989
- o RCRA Facility Investigation (RFI)
Report of Findings - Revised
For Person Generating Station
Hazardous Waste Storage Facility
Natural Pit Area (NMT360010342)
August 20, 1990
- o RCRA Facility Investigation (RFI)
Report of Findings - Phase II
For Person Generating Station
Hazardous Waste Storage Facility
Natural Pit Area - (NMT360010342)
August 28, 1990

3.2 Task by Task Risk Analysis

The evaluation of hazards is based upon the knowledge of site background presented in Section 3.1, and anticipated risks posed by the specific operation.

The following subsections describe each task/operation in terms of the specific hazards associated with it. In addition, the protective measures to be implemented during completion of those operations are also identified.

The Person Station Natural Pit area is a topographic feature leading to the surface drainage arroyo running along the northern edge of the Person Station property. It consists of a natural depression falling off from the surrounding land to the north, south, west, and east. The surface is mostly exposed soil and rock with scattered indigenous vegetation. Several areas of discolored soil can also be seen in this area. The discoloration is dark brown to black in color and is due to disposal of fuel oil contaminated soil in the natural pit.

PNM completed an RFI consisting of two Phases of soil sampling in 1989 and 1990. Upon completion of reporting and approval of work by EPA, the EPA determined that the soil could be left in place pending the commencement of administrative controls including the placement of warning signs around the pit, and a notification to the local deed authority. PNM has complied with those administrative controls but also wishes a more permanent solution and thus as part of this project intends to remove the contaminated soil from the Natural Pit area.

Table 3.1 provides a summary of hazards and protective measures planned for each task at the Site.

TABLE 3.1
TASK ANALYSIS
CHEMICAL HAZARDS OF CONCERN

CONTAMINANT	TLV	SOURCE/ CONCENTRATION	ROUTES OF EXPOSURE	MONITORING METHOD

*** Grid layout *** Surface Soil Sampling *** Soil Excavation ***				
ARSENIC	0.20 mg/m ³	Surface Soil- 1 to 220 mg/kg Subsurface Soil- 1 to 220 mg/kg	Inhalation Ingestion Contact	NIOSH : Not Available PIP : Not Available FIP : Not Available
CHROMIUM	0.50 mg/m ³	Surface Soil-1 to 6500 mg/kg Subsurface Soil- 1 to 6500 mg/kg	Inhalation Ingestion Contact	NIOSH : Not Available PIP : Not Available FIP : Not Available
LEAD	0.15 mg/m ³	Surface Soil- 1 to 200 mg/kg Subsurface Soil- 1 to 200 mg/kg	Inhalation Ingestion Contact	NIOSH : Not Available PIP : Not Available FIP : Not Available

TLV = Threshold Limit Value for 8 hour Time Weighted Average.
IDLH: Not Available for these contaminants.

3.3 Task Hazard Descriptions

3.3.1 Grid layout and Surface Soil Sampling

General Hazards

General hazards associated with site walk-throughs, site surveys, and sampling grid layout include the following:

- o SWMU soil accumulation on clothing and shoes.
- o Exposure to irritant and toxic plants and sticker bushes may cause allergic reactions to personnel.
- o Surfaces covered with heavy vegetation and under growth create a tripping hazard.
- o Back strain due to carrying instruments.
- o Native wildlife such as rodents, ticks, and snakes present the possibility of insect bites and associated diseases such as Lyme disease.
- o Electrical hazard due to fallen lines.
- o Heat stress/cold stress exposure.
- o On-site chemical hazards depending on contaminant location and contact or disturbances of contaminated areas.
- o Nails in wood and other sharps which may cause puncture wounds.

Hazard Prevention

- o The use of breathable disposable coveralls and disposable (washable) boot covers.
- o The use of half-face respirators (disposable).
- o Employ work practices which do not generate dust.
- o Wear long sleeved clothing and slacks to minimize contact with irritant and toxic plants and to protect against insect bites. Appropriate first aid for personnels' known allergic reactions.
- o Be alert and observe terrain while waling to minimize slips and falls. Steel toed boots provide additional protection.
- o Use proper lifting techniques to prevent back strain.
- o in. Avoid wildlife when possible. In case of an animal bite, perform first aid and capture the animal, if possible, for rabies testing. Perform a tick check after leaving a wooded or vegetated area. The use of appropriate insect repellent is advised.
- o Ensure all maintenance is performed on vehicles before going to the field. A site surveillance on foot might be required to choose clear driving paths.
- o Ensure fallen power lines are not energized.
- o Avoid buildings which are not structurally sound.
- o Implement heat stress management techniques such as cooler work hours, fluid intake, and work/rest regimines.

3.3.2 Soil excavations

Hazards encountered during soil and test pit excavation include both chemical and physical agents, and are as follows:

- o Exposure to airborne contaminants released during intrusive activities.
- o Falling during access/egress or while monitoring or dismounting equipment, or stumbling into excavation.
- o An overhead hazard can result from material, tools, rock, and/or soil falling into the excavation.
- o Congested work area due to too many workers in a small area.
- o Employee and heavy equipment mishaps (run-overs, roll overs, etc.).

Hazard Prevention

- o Adequate wetting of soil to be removed prior to and during removal, if necessary, to prevent dust generation.
- o Monitor for airborne contaminants. Allow test pits to purge and/or use personal protective equipment.
- o Keep employees upwind of operations.
- o Equipment operators will be required to wear protective equipment/clothing as appropriate.
- o Provide ramps or ladders to trenches to allow safe access and egress.
- o To prevent overexertion, limit manual lifting and emphasize mechanical means where practical.
- o Maintain ample work room between workers.
- o Limit employees (on foot) to a minimum during heavy equipment operations.

4.0 PERSONNEL TRAINING REQUIREMENTS

Consistent with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response, all site personnel are required to be trained in accordance with the standard. At a minimum, all personnel are required to be trained to recognize the hazards on-site, the provisions of this HASP, and the responsible personnel.

4.1 Preassignment and Annual Refresher Training

Prior to arrival on-site, each employer will be responsible for certifying that his/her employees meet the requirements of preassignment training. Consistent with OSHA 29 CFR 1910.120 paragraph (e)(3), each employee should be able to provide a document certifying dates of 24 hours training of training for workers occasionally on-site for a specific task, or 40 hours of training for general site workers. An employee may also grandfather experienced personnel. Personnel must receive 8 hours of annual refresher training.

4.2 Site Supervisors Training

Consistent with OSHA 29 CFR 1910.120 paragraph (e)(8), individuals designated as site supervisors require an additional 8 hours of training.

The following individuals are identified as site supervisors:

Name	Title/Responsibility
Steve Anderson	Project Manager, Site Supervisor
Ron Johnson	Sr. Environmental Scientist, Env. Officer
Dan Pacheco	Certified Industrial Hygienist, HSO

4.3 Training and Briefing Topics

The following items will be discussed by a qualified individual at the site pre-entry briefing(s), as well as daily or periodic site briefings.

Training	Frequency
Site characterization and analysis, Sec 3.0	Site Specific
Physical hazards, Table 3.3.	Site Specific
Chemical hazards, Table 3.1.	Site Specific
Animal bites and stings	Site Specific
Site control, Sec. 8.0; [29 CFR 1910.120(d)	Site Specific
Backhoe	Site Specific
Personnel protective equipment, Sec. 5.0	Site Specific
Respiratory protection, Sec. 5.8	Site Specific

5.0 PERSONAL PROTECTIVE EQUIPMENT TO BE USED

This section describes the general requirements of the EPA designated Levels of Protection (A-D), and the specific levels of protection required for each task at the Site.

5.1 Levels of Protection

Personnel wear protective equipment when response 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 facepiece 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 for each have been divided 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 in any area with respiratory or skin hazards. It provides minimal protection against chemical hazards.

Modifications of these levels are permitted, and routinely employed during site work activities to maximize efficiency. For example, Level C respiratory protection and Level D skin protection may be required for a given task. Likewise the type of chemical protective ensemble (i.e., material, format) will depend upon contaminants and degrees of contact.

The Level of Protection selected is based upon the following:

- o Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.

- o Potential for exposure to substances in air, splashes of

- liquids, or other direct contact with material due to work being done
- o Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

In situations where the type of chemical, concentration, and possibilities of contact are not known, the appropriate Level of Protection must be selected based on professional experience and judgment until the hazards can be better identified.

5.2 Level A Personnel Protective Equipment:

Not Applicable to this HSAP.

5.3 Level B Personnel Protective Equipment:

Not Applicable to this HASP.

5.4 Level C Personnel Protective Equipment:

- o Air-purifying respirator, half-face, cartridge-equipped (MSHA/NIOSH approved) for soil removal work.
- o Disposable half-face mask or half-face cartridge respirator for sampling and grid layout work.
- o Disposable coveralls (breathable)
- o Gloves (outer), chemical-resistant
- o Gloves (inner), chemical-resistant
- o Boots (outer), steel toe
- o Boot covers (outer), chemical-resistant (disposable)
- o Hard hat (for soil removal only)

5.5 Level D Personnel Protective Equipment:

- o Coveralls
- o Gloves
- o Boots/shoes, leather or chemical-resistant, steel toe and shank
- o Safety glasses
- o Hard hat

5.6 Reassessment of Protection Program

The Level of Protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of investigations.

When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- o Commencement of a new work phase, such as the start of drum sampling or work that begins on a different portion of the site.
- o Change in job tasks during a work phase.
- o Change of season/weather.
- o When temperature extremes or individual medical considerations limit the effectiveness of PPE.
- o Contaminants other than those previously identified are encountered.
- o Change in ambient levels of contaminants.
- o Change in work scope which effects the degree of contact with contaminants.

5.7 Work Mission Duration

Before the workers actually begin work in their PPE ensembles, the anticipated duration of the work mission should be established. Several factors limit mission length, including:

- o Suit/Ensemble permeation and penetration rates for chemicals (section 5.8).
- o Ambient temperature and weather conditions (heat stress, cold stress).
- o Capacity of personnel to work in PPE.

5.8 Chemical Resistance and Integrity of Protective Material

The following specific clothing materials are recommended for the site:

Grid layout - (Level D)

Gloves - NITRILE
Boots - Steel Toe
Outer Garment/Coveralls - Disposable

Surface soil sampling - (Level D)

Gloves - NITRILE
Boots - Steel Toe
Outer Garment/Coveralls - Disposable

Soil excavations - (Level C modified)

Inner Gloves - N/A
Boots/Boot Covers - Steel Toe
Outer Gloves - Work Gloves
Outer Garment/Coveralls - Disposable

5.9 Standard Operating Procedures for Respiratory Protection Devices

The following subsections define standard operating procedures for air purifying respirators.

5.9.1 Cleaning and Disinfecting Air Purifying Respirators (APR)

APRs in routine use should be cleaned and disinfected at least daily. Where respirators are used only occasionally, or when they are in storage, the cleaning interval is weekly or monthly, as appropriate.

5.9.1.1 Daily Cleaning Procedure

The steps to be followed for cleaning and disinfecting daily are as follows:

- o Respirator Disassembly. Respirators are taken to a clean location where the filters, cartridges or canisters are removed, damaged to prevent accidental reuse, and discarded.
- o Cleaning. In most instances, the cleaning and disinfecting solution provided by the manufacturer is used, and is dissolved in warm water in an appropriate tub. Using gloves, the respirator is placed in the tub

- and swirled for a few moments. A soft brush may be used to facilitate cleaning.
- o Rinsing. The cleaned and disinfected respirators are rinsed thoroughly in water to remove all traces of detergent and disinfectant. This is very important for preventing dermatitis.
 - o Drying. The respirators may be allowed to dry in room air on a clean surface. They may also be hung upside down like drying clothes, but care must be taken not to damage or distort the facepieces.
 - o Reassembly and Inspection. The clean, dry respirator facepieces should be resembled and inspected in an area separate from the disassembly area to avoid contamination. Special emphasis should be given to inspecting the respirators for detergent or soap residue left by inadequate rinsing. This appears most often under the seat of the exhalation valve, and can cause valve leakage or sticking.

5.9.1.2 After Routine Use in Exclusion Zone

The steps to be followed for cleaning and disinfecting in the field are as follows:

- o The mask may be washed/rinsed with soap and water, then
- o At a minimum, the mask should be wiped with disinfectant wipes (benzoalkaloid or isopropyl alcohol), and allowed to air dry in a clean area.

5.9.2 APR Inspection and Checkout

1. Visually inspect the entire unit for any obvious damages, defects, or deteriorated rubber.
2. Make sure that the facepiece harness is not damaged. The serrated portion of the harness can fragment which will prevent proper face seal adjustment.
3. Exhalation Valve - pull off plastic cover and check valve for debris or for tears in the neoprene valve (which could cause leakage).
4. Inhalation Valves (two) - screw off cartridges/canisters and visually inspect neoprene valves for tears. Make sure that the inhalation valves and cartridge receptacle gaskets are in place.
5. Make sure that you have the correct cartridge.
6. Don and perform negative pressure test.

5.9.3 Storage of Air Purifying Respirators

OSHA requires that respirators be stored to protect against:

- Dust
- Sunlight
- Heat
- Extreme cold
- Excessive moisture
- Damaging chemicals
- Mechanical damage

Storage of respirators should be in a clean, secure area which minimizes the chance for contamination or unsanitary conditions.

5.10 Standard Operating Procedures for Personal Protective Clothing

5.10.1 Inspection

Proper inspection of PPE features several sequences of inspection depending upon specific articles of PPE and it's frequency of use. The different levels of inspection are as follows:

Inspection of equipment as it is issued to workers.

Inspection after use or training and prior to maintenance.

Periodic inspection of stored equipment.

Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the Site will occur prior to immediate use and will be conducted by the user. This ensures that the specific device or article has been checked-out by the user, and that the user is familiar with its use.

Table 5.1 Sample PPE Inspection Checklists

CLOTHING

Before use:

- o Determine that the clothing material is correct for the specified task at hand.
- o Visually inspect for:
 - imperfect seams
 - non-uniform coatings
 - tears
 - malfunctioning closures
- o Flex product:
 - observe for cracks
 - observe for other signs of shelf deterioration
- o If the product has been used previously, inspect inside and out for signs of chemical attack:
 - discoloration
 - swelling
 - stiffness

During the work task, periodically inspect for:

- o Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.
- o Closure failure.
- o Tears.
- o Punctures.
- o Seam Discontinuities.

GLOVES

Before use:

- o Visually inspect for:
 - imperfect seams
 - tears, abrasions
 - non-uniform coating
 - pressurize glove with air; listen for pin-hole leaks.

5.11 , Specific Levels of Protection Planned for the Site

The following levels of protection will be utilized during activities at the Site:

- o Level C modified
- o Level D

Table 5.2 presents the level of protection planned for the completion of individual task assignments and the specific components of each protective ensemble.

Table 5.2
SPECIFIC LEVELS OF PROTECTION PLANNED FOR THE
TASK ASSIGNMENTS AT THE SITE

Level A Tasks

- o No Activities

Level B Tasks

- o No Activities

Level C Tasks

- o Grid layout
- o Surface Soil Sampling
- o Soil excavations

Level D Tasks

- o General Work Observation
- o Sealed sample labeling and processing

6.0 MEDICAL SURVEILLANCE REQUIREMENTS

Medical monitoring programs are designed to track the physical condition of employees on a regular basis as well as survey preemployment or baseline conditions prior to potential exposures. The medical surveillance program is a part of each employers Health and Safety program.

6.1 Baseline or Preassignment Monitoring

Prior to being assigned to a hazardous or a potentially hazardous activity involving exposure to toxic materials, each employee must receive a preassignment or baseline physical. The contents of the physical is to be determined by the employers medical consultant. As suggested by NIOSH/OSHA/USCG/EPA's Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities, the minimum medical monitoring requirements for work at the Site is as follows:

- Complete medical and work histories.
- Physical examination.
- Pulmonary function tests (FVC and FEV1).
- Chest X-ray (every 2 years).
- EKG.
- Eye examination and visual acuity.
- Audiometry.
- Urinalysis.
- Blood chemistry, including hematology, serum analyses, and heavy metals toxicology.

The preassignment physical should categorize employees a fit-for-duty and able to wear respiratory protection.

6.2 Periodic Monitoring

In addition to a baseline physical, all employees require a periodic physical within the last 12 months unless the advising physician believes a shorter interval is appropriate. The employers medical consultant should prescribe an adequate medical which fulfills OSHA 29 CFR 1910.120 requirements. The preassignment medical outlined above may be applicable.

All personnel working in contaminated or potentially contaminated area's at the Site will verify currency (within 12 months) with respect to medical monitoring. This is done by indicating date of last physical on the safety plan agreement form.

6.3 Site Specific Medical Monitoring

For activities at the Site, the following specific tests will be required prior to individuals entering the Exclusion Zone or Contamination Reduction Zone.

None

6.4 Exposure/Injury/Medical Support

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending upon the type of exposure, it is critical to perform follow-up testing within 24-48 hours. It will be up to the employers medical consultant to advise the type of test required to accurately monitor for exposure effects.

6.5 Exit Physical

Not Required.

7.0 FREQUENCY AND TYPES OF PERSONAL AIR MONITORING/SAMPLING

The scope of this work plan will require the use of personal air monitoring instrument, initially at the outset of each task assignment.

7.1 General

Air sampling during soil removal will be conducted as appropriate. Typically, samples will be taken downwind of the soil removal process. No area samples will be required during the grid layout and sample acquisition tasks.

8.0 SITE CONTROL MEASURES

The following section defines measures and procedures for maintaining site control. Site control is an essential component in the implementation of the site health and safety program.

8.1 Buddy System

During all Level B activities or when some conditions present a risk to personnel, the implementation of a buddy system is mandatory. A buddy system requires at least two people who work as a team; each looking out for each other. For example, Level B operations generally require three people. Table 8.1 lists those tasks which require a buddy system and any additional site control requirements.

8.2 Site Communications Plan

Successful communications between field teams and contact with personnel in the support zone is essential. The following communications systems will be available during activities at the Site.

o 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 backup support
Grip partners wrist	Exit area immediately

8.3 Work Zone Definition

The three general work zones established at the Site are the Exclusion Zone, Contamination Reduction Zone, and Support Zone. Figure 8.1 provides a site map with the work zones designated on it.

The Exclusion Zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the Exclusion Zone requires the use of personnel protective equipment.

The Contamination Reduction Zone is the area where personnel conduct personal and equipment decontamination. It is essentially a buffer zone between contaminated areas and clean areas. Activities to be conducted in this zone will require personal

protection as defined in the decontamination plan.

The Support Zone is situated in clean areas where the chance to encounter hazardous materials or conditions is minimal. Personal protective equipment is therefore not required.

8.4 Nearest Medical Assistance

Figure 8.2 provides a map of the route to the nearest medical facility which can provide emergency care for individuals who may experience an injury or exposure on-site. The route to the hospital should be verified by the HSO, and should be familiar to all site personnel.

The following individuals on-site have current certification in CPR and/or first aid:

- o Jean Arya

8.5 Safe Work Practices

Table 8.2 provides a list of standing orders for the Exclusion Zone.

Table 8.3 provides a list of standing orders for the Contamination Reduction Zone.

8.5 Emergency Alarm Procedures

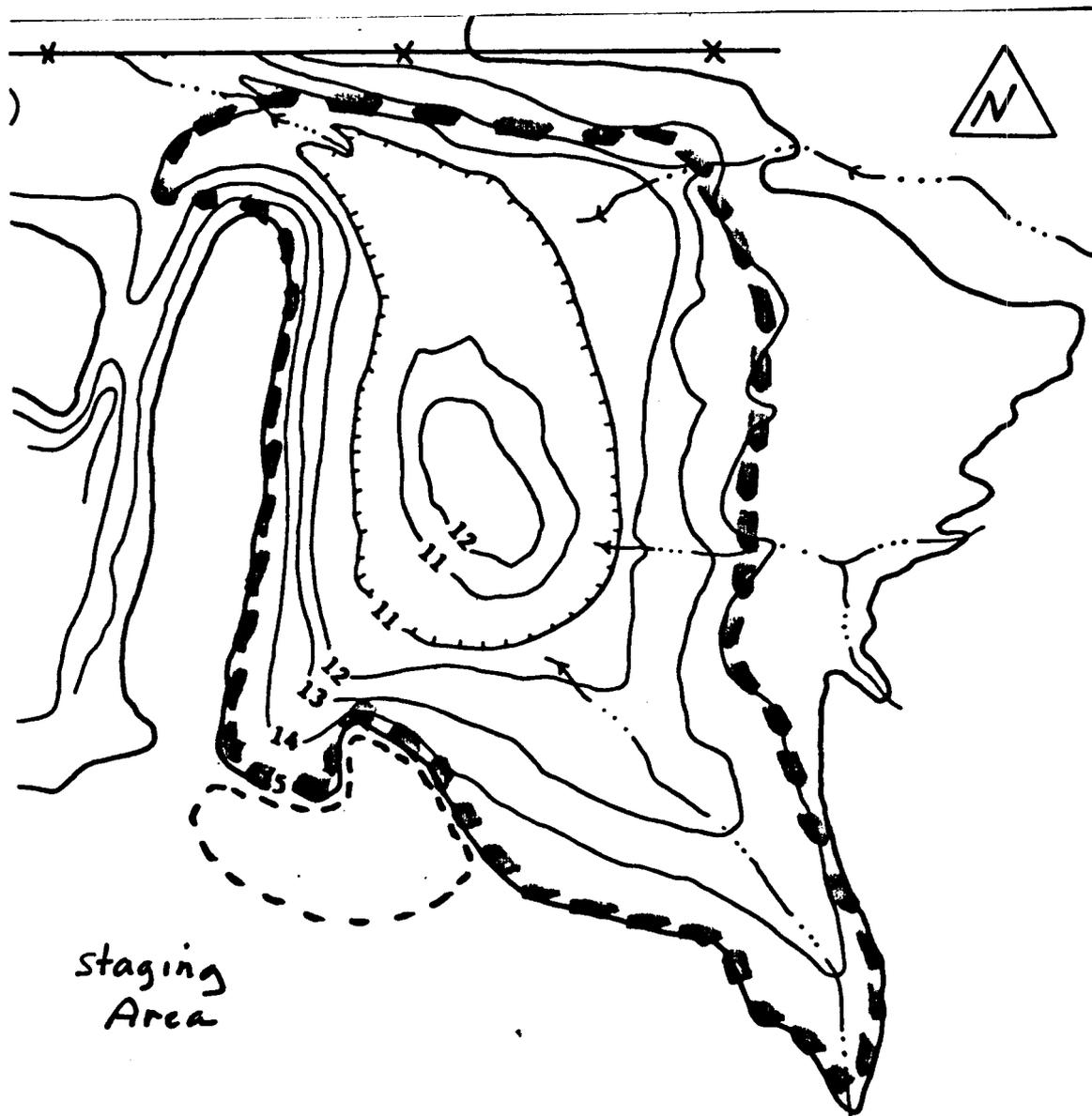
The warning signals described in section 10.4 "Evacuation Routes and Procedures," will be deployed in the event of an emergency. Communication signals will also be used according to section 8.2.

TABLE 8.1. PERSONNEL REQUIREMENTS

Task	Buddy System	Line of Sight	Comments
**Grid layout	YES	NO	
**Surface soil sampling	YES	NO	
**Soil excavations	YES	NO	

FIGURE 8.1
SITE MAP DEPICTING WORK ZONES

Natural Pit



-  Exclusion Zone
-  Contamination Reduction Zone

FIGURE 8.2
MAP DEPICTING ROUTE TO NEAREST MEDICAL FACILITIES

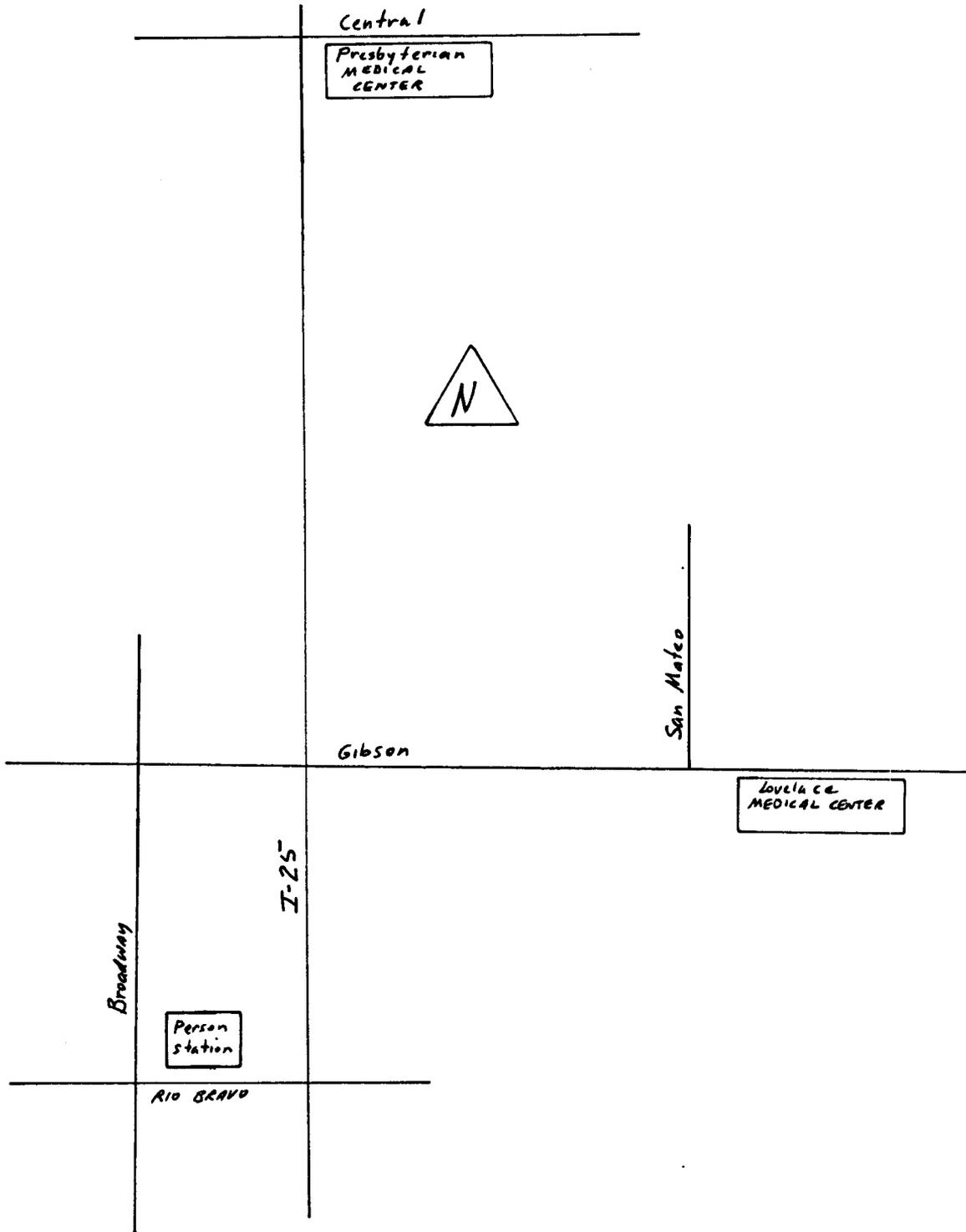


TABLE 8.2
STANDING ORDERS FOR EXCLUSION ZONE

- No smoking, eating, or drinking in this zone.
- No horse play.
- No matches or lighters in this zone.
- Check-in on entrance to this zone.
- Check-out on exit from this zone.
- Implement the communications system.
- Wear the appropriate level of protection as defined in the Safety Plan.
- Exit decontamination or outer protective clothing removal occurs before entering into the contamination reduction zone.

TABLE 8.3
STANDING ORDERS FOR CONTAMINATION REDUCTION ZONE

- No smoking, eating, or drinking in this zone.
- No horse play.
- No matches or lighters in this zone.
- Wear the appropriate level of protection.
- Assure equipment and employees are properly decontaminated before entry into this zone from the exclusion zone.

9.0 DECONTAMINATION PLAN

Table 5.2 lists the tasks and specific levels of protection required for each task. Consistent with the levels of protection required, Figures 9.1 through 9.3 provide a step by step representation of the personnel decontamination process for Levels A through C. These procedures should be modified to suit site conditions and protective ensembles in use.

9.1 Standard Operating Procedures

Decontamination involves the orderly controlled removal of contaminants. Standard decontamination sequences are presented in Figures 9.1, 9.2, and 9.3. All site personnel should minimize contact with contaminants in order to minimize the need for extensive decon.

9.2 Levels of Decontamination Protection Required for Personnel

The levels of protection required for personnel assisting with decontamination will be Level D .

The Site Safety Officer is responsible for monitoring decontamination procedures and determining their effectiveness.

9.3 Equipment Decontamination

Sampling equipment will be decontaminated in accordance with procedures as defined in the work plan, Decontamination Procedures. Pressurized water rinse will be sufficient for decontamination of non-sampling equipment and heavy machinery.

9.4 Disposition of Decontamination Wastes

All equipment and solvents used for decontamination shall be decontaminated or disposed of properly. Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposures.

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This section describes contingencies and emergency planning procedures to be implemented at the Site. This plan is compatible with local, state and federal disaster and emergency management plans as appropriate.

10.1 Pre-Emergency Planning

During the site briefings held periodically/daily, all employees will be trained in and reminded of provisions of the emergency response plan, communication systems, and evacuation routes. Table 10.1 identifies the hazardous conditions associated with specific site activities. The plan will be reviewed and revised if necessary, on a regular basis by the HSO. This will ensure that the plan is adequate and consistent with prevailing site conditions.

10.2 Personnel Roles and Lines of Authority

The Site Supervisor has primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measure to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area, and evacuation of adjacent residents. He/she is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The HSO may be called upon to act on the behalf of the site supervisor, and will direct responses to any medical emergency. The individual contractor organizations are responsible for assisting the project manager in his/her mission within the parameters of their scope of work.

The Site Supervisor is Steve Anderson.

The HSO is Dan Pacheco.

Alternates are:

- o Ron Johnson
- o Elaine Beckett

10.3 Emergency Recognition/Prevention

Table 3.1 provided a listing of chemical hazards onsite. Additional hazards as a direct result of site activities are listed in Table 10.1 as are prevention and control techniques/mechanisms. Personnel will be familiar with techniques of hazard recognition from preassignment training and site specific briefings. The HSO is responsible for ensuring that prevention devices or equipment is available to personnel.

10.4 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site, the following alarm procedures will be implemented:

Evacuate the premises immediately when the vehicle horn is sounded continuously for 10 seconds or greater.

Personnel will be expected to proceed to the closest exit with your buddy, and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that area until the Re-entry alarm is sounded or an authorized individual provides further instructions.

TABLE 10.1
EMERGENCY RECOGNITION/CONTROL MEASURES

Hazard	Specific Condition/ Location	Prevention\Control
Fire/Explosion	Vehicles Oil contaminated Soil	Park vehicle away from weeds Fire Extinguisher Don't leave vehicle runningunattended
Spill		Berms/Dikes Sorbent Materials Foams
Air Release		Water Spray Evacuation Routes Proper soil handling techniques

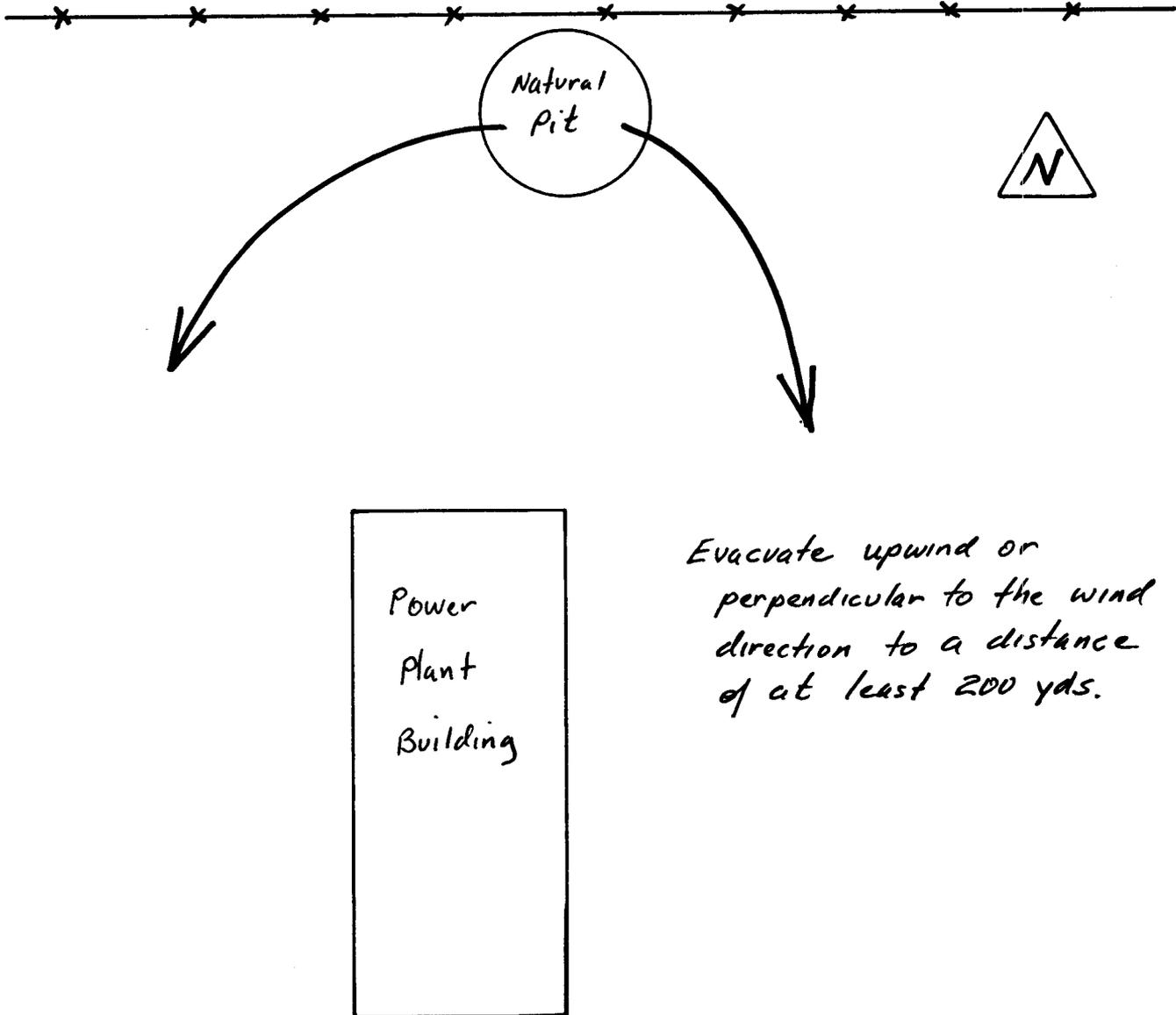
Figure 10.1 provides a map depicting evacuation routes for the site and immediate area. Also indicated are muster areas and safe distances in the event of a major incident.

10.7 Emergency Contact/Notification System

The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the HSO and notify the appropriate emergency organization. In the event of a fire or spill, the site supervisor will notify the appropriate local, state, and federal agencies.

Organization	Contact	Telephone
Ambulance:		911
Police:		911
Fire:		911
State Police:	District Office	841-9256
Hospital 1:	Lovelace Medical Center	262-7222
Hospital 2:	Presbyterian Hospital	841-1111
Poison Control Center		843-2551
Regional EPA:	Richard Mayer	214-655-6775
State Authority:	Bruce Swanton	1-827-2923
National Response Center		800-424-8802
Center for Disease Control		404-488-4100
Chemtrec		800-424-9555

FIGURE 10.1
EVACUATION ROUTES AND SAFE DISTANCES



10.8 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to the project manager.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they have been exposed to at the site. This information is included in Table 3.1.

Any vehicle used to transport contaminated personnel will be treated and cleaned as necessary.

10.9 Fire or Explosion

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the project manager or designated alternate will advise the fire commander of the location, nature, and identification of the hazardous materials onsite.

If it is safe to do so, site personnel may:

- o Use fire fighting equipment available onsite to control or extinguish the fire; and,
- o Remove or isolate flammable or other hazardous materials which may contribute to the fire.

10.10 Spill or Leaks

In the event of a spill or a leak, site personnel will:

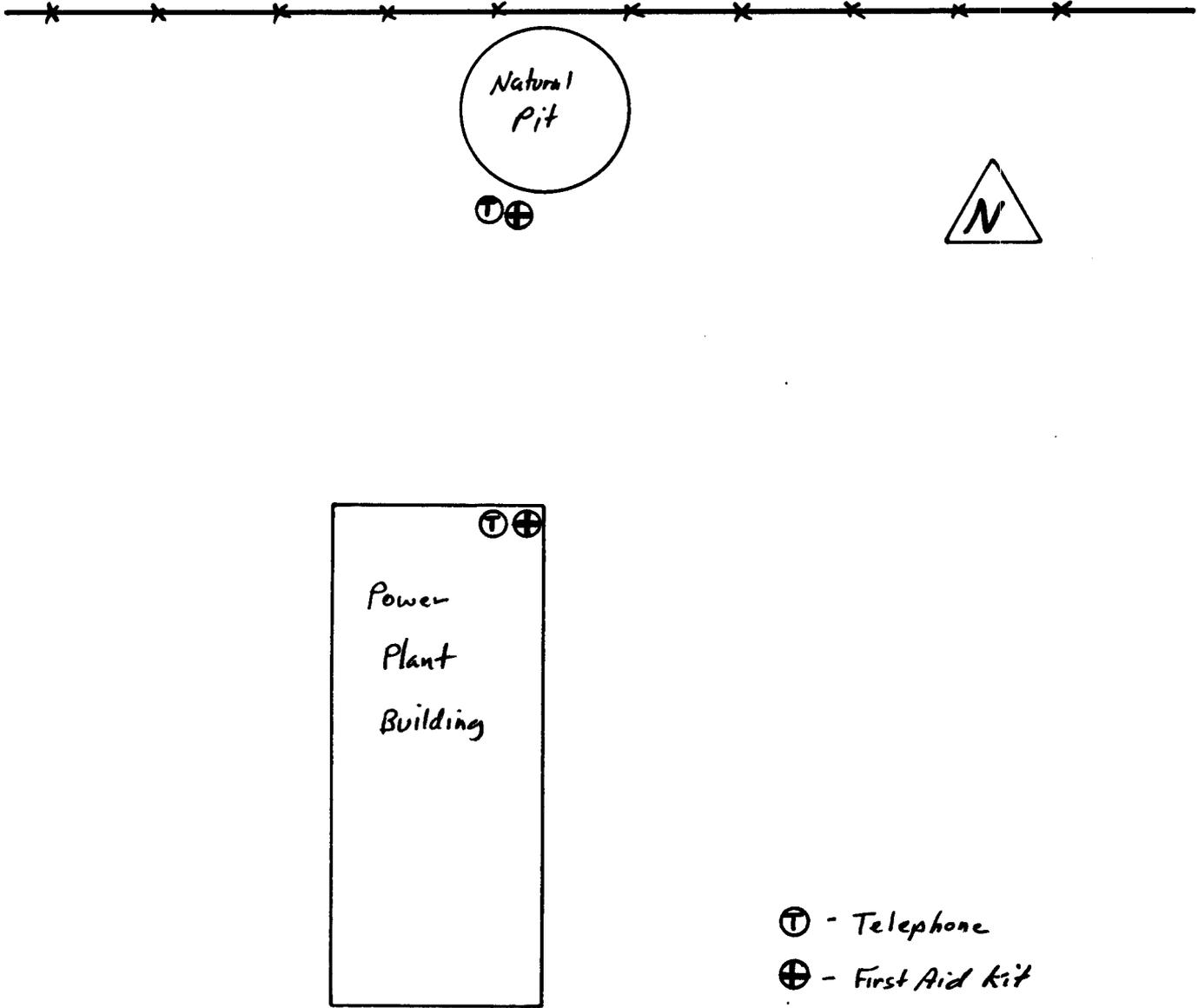
- o Inform their supervisor immediately;
- o Locate the source of the spillage and stop the flow if it can be done safely; and,
- o Begin containment and recovery of the spilled materials

10.11 Emergency Equipment/Facilities

Figure 10.2 provides a map of the site and identifies the location of the following emergency equipment:

- o Site Telephone
- o First Aid Kit

FIGURE 10.2
SITE MAP WITH EMERGENCY EQUIPMENT LOCATED



11.0 CONFINED SPACE ENTRY PROCEDURES

No confined space entry will be required during the implementation of this work plan.

12.0 SPILL CONTAINMENT PROGRAM

The procedures defined in this section comprise the spill containment program in place for activities at the Site.

- o All drums and containers used during the clean-up shall meet the appropriate DOT, OSHA, and EPA regulators for the waste that they will contain.
- o Drums and containers shall be inspected and their integrity assured prior to being moved. Drums or containers that cannot be inspected before being moved because of storage conditions, shall be positioned in an accessible location and inspected prior to further handling.
- o Operations on site will be organized so as to minimize the amount of drum or container movement.
- o Employees involved in the drum or container operations shall be warned of the hazards associated with the containers.
- o Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (absorbent, pillows, etc.) will be stationed in the immediate area. The spill containment program must be sufficient to contain and isolate the entire volume of hazardous substances being transferred.
- o Drums or containers that cannot be moved without failure, shall be emptied into a sound container.
- o Fire extinguishing equipment meeting 29 CFR part 1910. subpart 1 shall be on hand and ready for use to control fires.

NOTE: The following Level of Protection modifications were made by the plan preparer:

Level B changed to Level C - Modified for Grid layout

Reasons:

Risk of inhalation is very small during grid layout.

Level B changed to Level C - Modified for Surface soil sampling

Reasons:

Risk of inhalation is very small for surface soil sampling.

Level B changed to Level C - Modified for Soil excavations

Reasons:

Risk of inhalation is moderate for equipment operator, dust generation will be minimized by use of sprayed water.