1R - 375

REPORTS

DATE:

2000

1R2375

PURE RESOURCES, INC.

PROJECT PLAN (PJP) IMPLEMENTATION, & CLOSURE REPORT

FOR THE
INJECTION WATER RELEASE
ASSOCIATED WITH THE

West Lovington Unit Well #47

Unit D Sec 9, T17S, R36E
~7 miles south of Lovington
Lea County, New Mexico

September 6, 2000

Prepared by

Environmental Plus, Inc.
1324 North Main Street
P.O. Box 1558
Eunice, New Mexico 88231
Tele 505•394•3481 FAX 505•394•2601

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 South First, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
2040 South Pacheco
Santa Fe, NM 87505

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company	Contact
TITAN RESOURCES I, INC.	BILL HEARNE
Address	Telephone No.
500 W. TEXAS SUITE 500 MIDLAND, TX. 79701	505·396·7503
Facility Name	Facility Type
WEST LOVINGTON UNIT	WELL 47

Surface Owner	Mineral Owner	Lease No.
DARR ANGELL		

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	9	17S	36E					LEA

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
PRODUCED WATER	65	50
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
2" CMT. LINED INJECTION LINE	4·17·00 12:00 NOON	4·17·00 2:05 PM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? SILVIA DICKEY	
By Whom? BILL HEARNE	Date and Hour 4·17·00 3:05 PM	
Was a Watercourse Reached? ☐ Yes ☐ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
2" CMT. LINED INJECTION LINE FAILURE. ISOLATED LINE LEAK AND SHUT-IN WELLS. PICKED UP ALL STANDING WATER (NO HYDROCARBONS). DUG OUT AND REPLACED BAD SECTION OF INJECTION LINE. RETURN LINE TO SERVICE.

Describe Area Affected and Cleanup Action Taken.*
3' X 220' IN CALICHE ROAD
50' x 90' IN PASTURE
REMEDIATED SPILL AREA WITH FRESH TOP SOIL AND MANURE MIXED. DISK INTO SOIL. DUG DOWN 2' WITH POST HOLE DIGGERS AND FOUND DRY DIRT.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name:	Approved by District Supervisor:	
Title:	Approval Date:	Expiration Date:
Date: Phone:	Conditions of Approval:	Attached ☐

* Attach Additional Sheets If Necessary

FAXED TO HAYLIE 4/28/00 @ 9:20 AM

Table of Contents

1 WEST LOVINGTON UNIT WELL #47 PROJECT PLAN

This plan will determine vertical and horizontal extent of injection water contamination at West Lovington Unit Well #47 spill site. This determination will be based on thresholds and protocols provided by the New Mexico Oil Conservation Division (NMOCD) guidelines. Of main concern will be the concentration of Chloride in soil at different subsurface intervals. This Site Specific Project Plan (PjP) will provide information and identify activities necessary to;

1. Determine vertical and horizontal extent of contamination
2. Document final achievement of acceptable environmental thresholds established by the NMOCD

1.1 Site Description and Initial Response

This site is located ~7 miles south of Lovington, New Mexico and is associated with the West Lovington Unit Well #47. An estimated 65 bbls of produced saline water was released with ~50 bbls recovered. To further attenuate contamination approximately 12" of clean sandy red clay soil and manure was blended with the site topsoil. A site map is included as Attachment I.

1.1.1 Historical Use

This land surface is used for livestock grazing and access to oil and gas production facilities.

1.1.2 Legal Description

The site is located approximately 7 miles south of Lovington, Lea County, New Mexico. The legal description is UL-D Sec9 T17S R36E.

1.1.3 Photographic documentation

Photographs of the site are included as Attachment II.

1.1.4 Ecological Description

The area is typical of the northern most extent of the Upper Chihuahuan Desert Biome consisting primarily of Honey Mesquite (Prosopis glandulosa) and typical desert grasses and weeds. Mammals present, include Orrd's and Merriam's Kangaroo Rat, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, and the Pronghorn Antelope. Reptiles, Amphibians, and Birds are numerous and typical of area. While a biotic survey was not conducted, Listed, Threatened, or Endangered species are not known to exist in this area.

1.1.5 Environmental Media Characterization

Chemical parameters of the soil will be characterized consistent with the New Mexico Oil Conservation Division (NMOCD) guidelines published in the following documents;

- Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)
- Unlined Surface Impoundment Closure Guidelines (February 1993)

Acceptable "Site Specific" thresholds for contaminants of concern, i.e., soil TPH and soil Chloride, will be determined based on the following;

- Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.
- Wellhead Protection Area, i.e., distance from fresh water supply wells.
- Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.

1.1.5.1 Ground Water Level

The ground water level data provided by the New Mexico State Engineer's office shows ground water occurring in section 9 between 58' and 61' feet below the surface.

1.1.5.2 Depth to Ground Water Calculation

Depth to ground water, i.e., "the vertical distance from the lowermost contaminants to the seasonal high water elevation of the ground water." (TPH analyses of site samples to 4' bgs were non-detectable <50.0 mg/Kg.)

58 feet – 0 feet (minus lowermost contaminate) = Depth to Ground Water= **58 feet**

1.1.5.3 Ground Water Gradient

According to the USGS (Nicholson & Clbesch), the gradient is to the southeast.

1.1.5.4 Wellhead Protection Area

There are no public water supply well located within 1 mile of the site.

1.1.5.5 Distance to Nearest Surface Water Body

There are no naturally occurring surface water bodies located within a 1 mile radius of the site.

1.1.5.6 Soil Assessment

Soil will be obtained at two locations within the spill area at one foot intervals down to 4' bgs. These sample points were chosen based on apparent pooling areas with longest resident times and hence, maximum vertical contamination. The sample locations are noted on the map and located by the latitude and longitude. Refer to Attachment I, Site Map.

1.1.5.7 Ground Water Assessment

The ground water level is conservatively estimated to occur at ~58 feet below grade. Ground water will not be investigated.

1.2 Data Quality

To ensure quality and credibility of laboratory data used to support successful site remediation the following quality controls will be documented.

- Laboratory data must have > 85% recovery for TPH and BTEX and >75% recovery for general chemistry parameters.
- Laboratory data must have <15% Relative Percent Difference
- Field headspace analyses must be supported with instrument calibration data and calibration gas certification.

Duplicates or blanks may be submitted to the laboratory to establish reproducibility and possible laboratory contamination, respectively.

1.3 Project Safety

Hazards that will be encountered at this site include the following;

- Moving equipment
- Buried pipelines
- Highway ingress/egress
- Excavation
- Potential Hydrogen Sulfide Gas

Employees and subcontractors will be required to confirm current training in these hazards.

Standard personal protective equipment will include;

- Personal H_2S Monitor
- Hard-hat
- Safety Glasses
- Excavation Safety
- Steel Toed Boots/Shoes

1.4 PjP Process/Procedure

The following sequence will be used to guide project implementation.

1. Site visit: Photograph and map and develop PjP elements
2. Issue "One Call" and notifying utilities
3. Locate, hand spot, and mark buried lines or other structures
4. Overhead powerlines are present just beyond the south perimeter and will not be a hazard.
5. Lockout/Tagout: Pipeline companies notified of activity but LO/TO unnecessary
6. Procedure: Equipment required will be: Backhoe
    - Tail gate safety Briefing and PPE check
    - Excavate 4' trench
    - Sample the sidewall at one foot intervals

- Analyze samples for chloride
- Prepare selected confirmatory samples for BTEX, TPH 8015M and Chloride analyses
- Backfill excavation
- Prepare report

2 WEST LOVINGTON UNIT WELL #47 CLOSURE REPORT

The initial response by Pure Resources on 4-17-00 was to repair the leak and recover liquids. Initially, site hazards and subsurface lines were identified and the sampling trench excavated. Sampling occurred the same day.

2.1 Excavation and Sampling

Personnel excavated the sample trenches at site #1 and site #2, successfully sampling at 1' intervals, analyzing for chloride and VOC Headspace concentration, and preparing confirmatory laboratory samples for ascension under chain-of-custody protocols.

2.2 Site Analytical

Selected samples were submitted to Cardinal Laboratories of Hobbs, New Mexico for soil TPH (8015M) and soil Chloride analyses. VOC headspace and Field Chloride analyses are also provided. The original data reports are provided in Attachment III and are summarized below.

Pure Resources, Inc.
West Lovington Unit #47 Data

Location	Site	Sample ID	Sample Date	Interval (feet below ground surface)	Soil Type	Soil Chloride	GRO	DRO	GRO+DRO	VOC Headspace
						mg/Kg	mg/Kg	mg/Kg	mg/Kg	ppm
WLU#47	1	S831WLU471-1	8/31/00	1	Dark Brown Sandy Clay	1962				0.0
WLU#47	1	S831WLU471-2	8/31/00	2	Tan Caliche Sand	1456				0.0
WLU#47	1	S831WLU471-3	8/31/00	3	Tan Caliche Sand	1234				4.0
WLU#47	1	S831WLU471-4	8/31/00	4	Tan Caliche Sand	901	<50	<50	<50	0.0
WLU#47	2	S831WLU472-1	8/31/00	1	Dark Brown Sandy Clay	2373				0.0
WLU#47	2	S831WLU472-2	8/31/00	2	Tan Caliche Sand	2089				0.0
WLU#47	2	S831WLU472-3	8/31/00	3	Tan Caliche Sand	1424				0.0
WLU#47	2	S831WLU472-4	8/31/00	4	Tan Caliche Sand	1694	<50	<50	<50	0.0
WLU#47	1 & 2 Composite	S831WLU47C-S	8/31/00	Surface	Dark Brown Sandy Clay	2028	<50	<50	<50	0.0

250

Sample bind Vertical

2.3 Compliance Objectives

The ground water depth is conservatively estimated to occur at approximately 58 feet below the surface. TPH was not detected above the 50 mg/Kg detection limit at the surface, therefore, the distance to ground water is calculated to be 58 feet. Ranking Criteria:

Depth to Ground Water	- 10
Wellhead Protection Area	- 0
Distance to Surface Water Body	- 0
Total Ranking	- 10

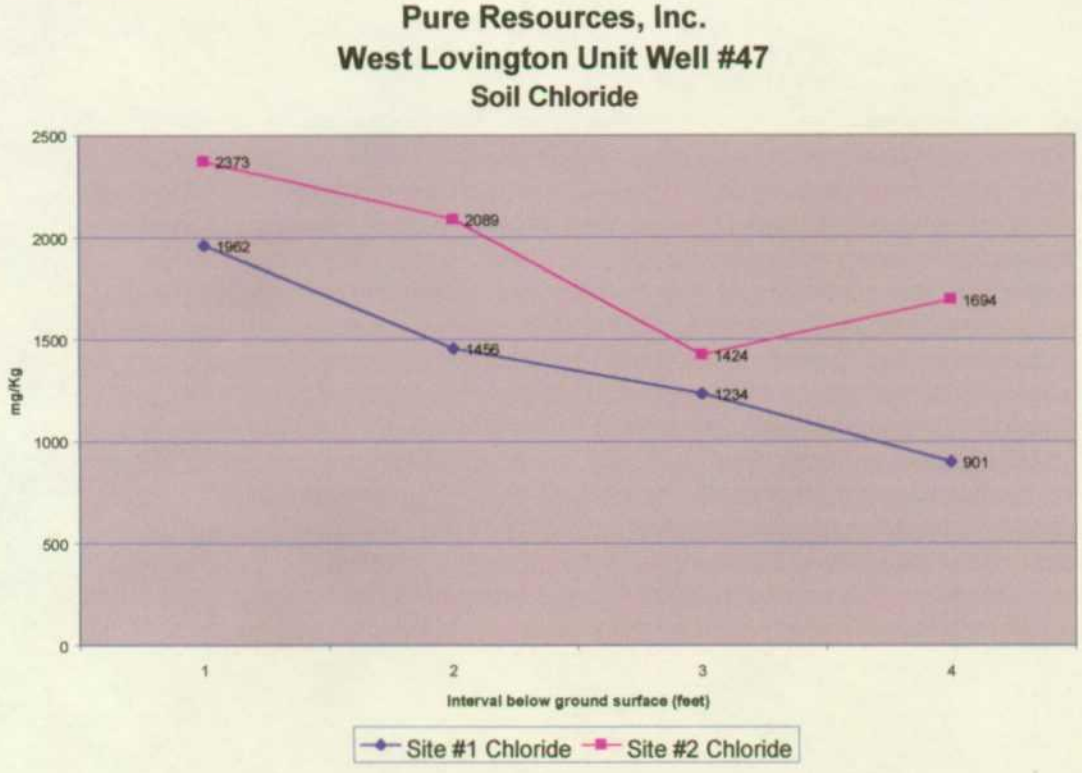
Acceptable NMOCD Remediation Levels are therefore;

- TPH- 1,000 ppm
- Benzene-10 ppm
- BTEX- 50 ppm

2.4 Discussion of Data

In lieu of laboratory Benzene and BTEX analyses, all calibrated VOC headspace measurements were below the 100 ppm concentration threshold and are acceptable. Likewise, TPH levels are below the NMOCD threshold of 1000 ppm for each sample site. TPH levels at each sample location were <50 mg/Kg and therefore acceptable. VOC headspace analyses of all intervals did not indicate hydrocarbon contamination and did not warrant laboratory analyses for BTEX. Decreasing Chloride gradients are also identified at each site. Chloride levels persist above surface background concentrations at

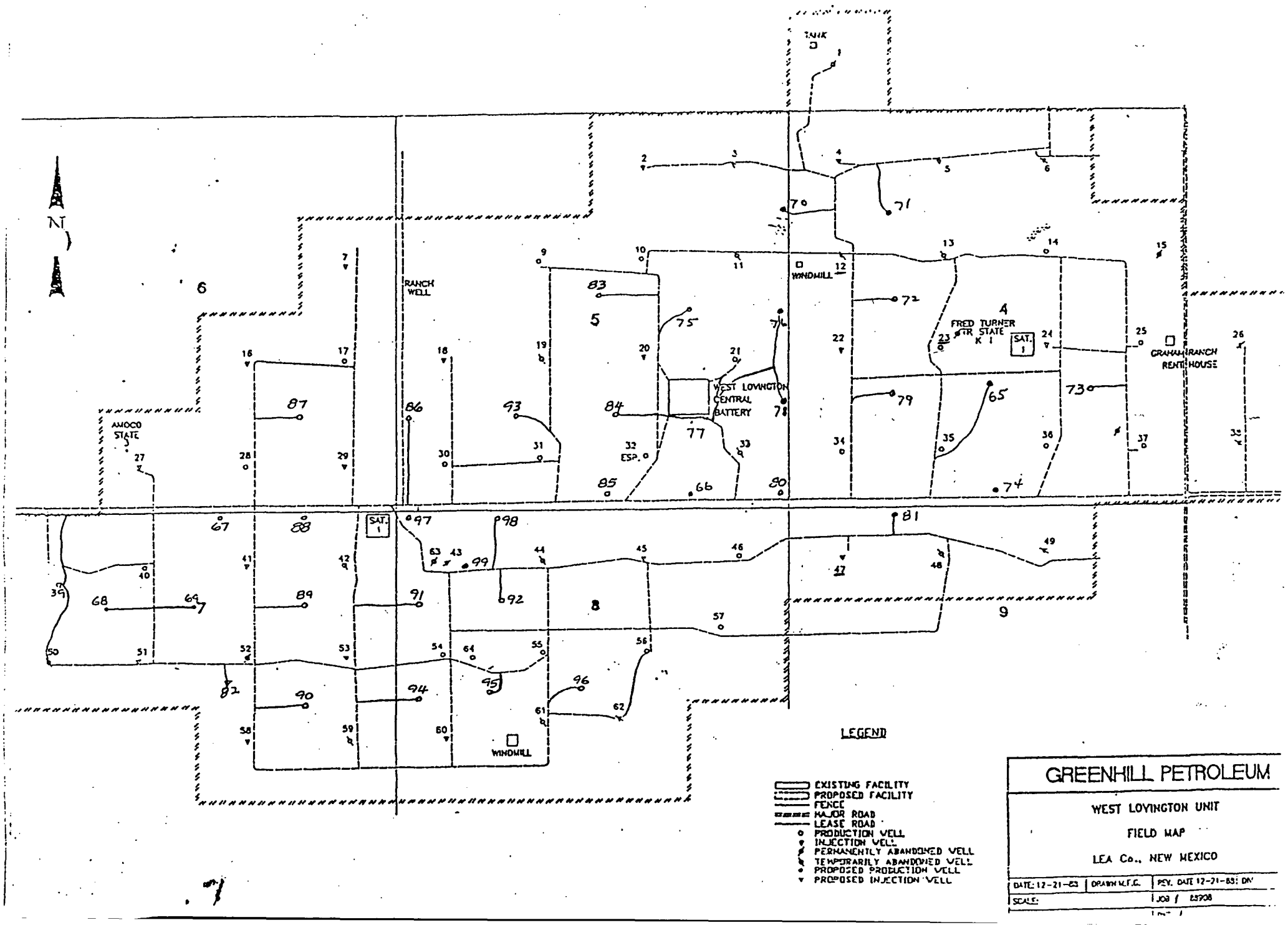
intervals below 2 feet but are not consequential. There being no NMOCD guideline threshold for chloride contamination, an objective conclusion as to acceptability is difficult. The 12" cap of clean soil that was applied to the surface is ~80% red clay and 20% fine sand, and limited annual rainfall of <10" per year will limit vertical transport of the Chloride. The chart below illustrates the chloride data relative to subsurface interval. Previous investigations at the Pure Resources (previously Titan Resources) Lovington Paddock Unit to the east showed that the chloride contamination gradient to decrease linearly at all locations except for a single location at the Lovington Paddock Unit Well #13, i.e., BH#3. The LPU13-BH#3 borelog indicates a lack of clay topsoil, the absence of the underlying caliche cap, and sand of various gradations down to the 19' bgs interval. This lithology was not encountered or observed at this site. It is reasonable, therefore, to assume that similar lithology will exhibit similar linearly decreasing chloride gradients beyond that identified to 4' bgs at these sites.



2.5 Conclusion

Effective initial response activities have remediated the site to acceptable TPH levels, well below the NMOCD guidelines. The vertical extent of TPH contamination is nominal as is the BTEX/VOC headspace concentrations for each sampling interval bgs. The horizontal extent of hydrocarbon and chloride impact was limited to a surface area of ~44,117 ft^2 and decreasing soil chloride gradients were identified at each sample location. Lack of rainfall, i.e., <10.0/year, will limit transport of the residual chloride and minimize the likelihood of a ground water impact. The horizontal extent of the chloride impact is indicated by the site map. Based on the current investigation and previous, more detailed studies of sites with similar lithologies, sufficient information is presented to warrant closure of this remediation site.

Attachment I: Site Map



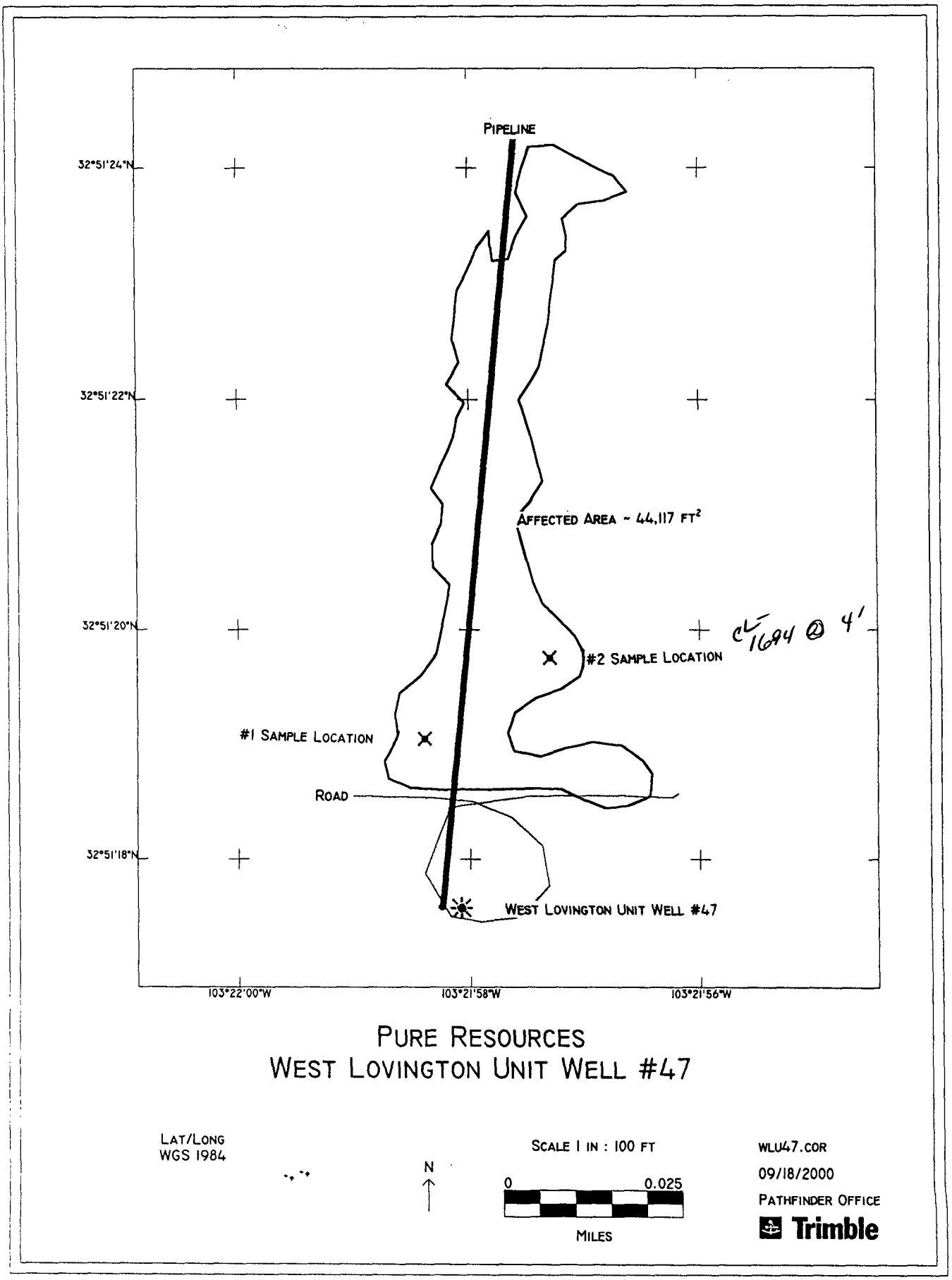
GREENHILL PETROLEUM

WEST LOVINGTON UNIT

FIELD MAP

LEA Co., NEW MEXICO

DATE: 12-21-83	DRAWN M.F.G.	REV. DATE 12-21-83: DN
SCALE:		JOB # 83908



CL 1694 @ 4'

PURE RESOURCES
WEST LOVINGTON UNIT WELL #47

LAT/LONG
WGS 1984

N

SCALE 1 IN : 100 FT

0 0.025

MILES

WLU47.COR
09/18/2000
PATHFINDER OFFICE
Trimble

Attachment II: Photograph


PURE RESOURCES
WEST LOVINGTON UNIT WELL #47
9/17/2000 1:34pm

Attachment III: Analytical Reports

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: PAT McCASLAND
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 09/12/00
Reporting Date: 09/13/00
Project Number: 81100B (PURE RESOURCES)
Project Name: WEST LOVINGTON UNIT #47
Project Location: UNIT D SEC 9 T17S R36E

Sampling Date: 08/31/00
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE		09/12/00	09/12/00	09/13/00
H5166-1	S831WLU471-4	<50	<50	901
H5166-2	S 1WLU472-4	<50	<50	1694
H5166-3	S83 WLU47C-S	<50	<50	2580
Quality Control		865	853	964
True Value QC		1000	1000	1000
% Recovery		86.5	85.3	96.4
Relative Perc... Difference		2.1	5.0	6.3

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

Chemist

9/13/00
Date

H5166.XLS