

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised October 10, 2003

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	EnerVest Operating LLC	Contact	Elroy Ardoin
Address	1001 Fannin Street, Suite 800, Houston, TX 77002	Telephone No.	(713) 495 6534
Facility Name	Union SI Federal #2 - Tank Battery	Facility Type	Pump Jack & Tank Battery
Surface Owner - Mayes Jenkins Sr.	Mineral Owner - BLM	Lease No.	30-005-20866

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	1	08S	31E	660		1980		Chaves

Latitude N 33.65445 Longitude W-103.72925

NATURE OF RELEASE

Type of Release - Historic oil spill/leak before current Owner	Volume of Release estimated 50bbls	Volume Recovered - 0 bbls - Historic oil spill/leak before current Owner
Source of Release - flow line spill/leak	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Historic oil spill/leak before current Owner	
By Whom?	Date and Hour	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

EnerVest Operating purchased this lease in 2008 from Texas ReExploration. Texas ReExploration filed the original c141 and a sundry notice with BLM. This began the process for voluntary remediation. Texas ReExploration did not go beyond the point of reporting the historic spill/leaks. EnerVest Operating conducted the remediation process in cooperation with BLM Roswell office and NMOCD Hobbs office. A sampling investigation and was submitted to OCD and BLM. The area immediately behind the storage tanks has been backfilled. The area behind and to the west of the storage tanks was remediated by means of land farming.

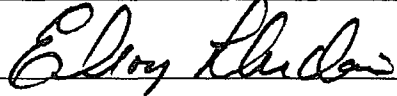
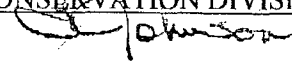

Describe Area Affected and Cleanup Action Taken.\*

The affected area was primarily impacted by hydrocarbons and minor chlorides as indicated in the sampling investigation. The spill site was historic with no free standing hydrocarbons present. Water run off has typically drained into this area due to topography. A caliche berm was constructed to better control water runoff coming through the remediation area and to provide secondary containment for storage tanks. A sampling investigation was conducted with results submitted to OCD and BLM.

The remediation area/s consisted of three sections which include:

1. Drainage area inside fence, immediately behind storage tanks - 30ft X 140ft - saturated soils with hydrocarbons - dig and haul operation - contaminated soil has been removed to Gandy's disposal. Report submitted to OCD & BLM. The drainage area has been backfilled.
2. Area immediately outside of fence - south of storage tanks - 40ft X 100ft - dry hydrocarbons - remediation by land farm - completed
3. Area immediately south and southwest of storage tanks - 210ft X 110ft - dry hydrocarbons - remediation by land farm - completed
4. The entire remediation area has been re-seeded with BLM CP-2 mix. Vegetation has begun to return to the area.

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: Elroy Ardoin	Approved by District  ENVIRONMENTAL ENGINEER	
Title: EH&S Coordinator	Approval Date: 12.20.10	Expiration Date: -
E-mail Address: eardoin@enervest.net	Conditions of Approval: -	Attached <input type="checkbox"/>
Date: September 2 <sup>nd</sup> , 2010 Phone: (713) 495 6534		IRP# 12.10.2674

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## EXECUTIVE SUMMARY

EnerVest Operating contracted "Dig and Haul" operations for the Union SI Federal Tank #2 Battery. This project is remediation of a historic spill/leak. The remediation project location is described as:

- Union SI #2 Federal Tank Battery
- API #30-005-20866
- Sec1 -T8S-R31E Chaves County, NM
- Coordinates: N 33.65445 W-103.72925

Lab results for Chlorides and TPH levels are listed below

### EnerVest Operating – Union SI Fed. #2 Tank Battery

Sample field code	Chloride PPM		Sample field code	TPH PPM
1	<200		1	211
2	<200		2	383
3	<208		3	69.1
4	<200		4	60.1
5	<200		5	84.8

**Contaminated Area Excavated:** Dig and Haul operations were conducted on Jun 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 15<sup>th</sup>, and 16<sup>th</sup>. Samples were screened on site during excavation with field instrumentation. Formal composite samples were taken for lab analysis from six separate areas when screening indicated chloride and TPH levels were below required limits. This remediation is for historic oil and saltwater spills/leaks. BLM and OCD gave approval for a two phase remediation which includes:

- **"Dig & Haul" operations** for the area adjacent to the south side/behind storage tanks. This phase of the operation has been completed. The area immediately behind the tanks and adjacent to the caliche berm was excavated to a depth of 4' to 6'. This posed a danger for soil supporting the storage tanks to slide into the open trench and more likely during this rainy season. The danger of person/s falling into the open trench was also apparent. Therefore the deepest part of the open trench was backfilled as a safety factor.
  - Formal lab samples were taken at the total depth of the excavation and numerous photos were taken as well to document the completed excavation. Please see enclosed photos.
  - Over-all excavation-depths ranged from 1'-to 6'-depths.
  - A total of 404cu yds were removed and disposed of at the Gandy Disposal facility. Backfill top soil was backhauled from Gandy's disposal facility and is staged on site. Overall backfill will not be completed until proper approval from BLM and NMOCD.
  - A berm was put in place at the east side of excavated area. The berm is to prevent area rain runoff from running into the open trench.
  - A fence was constructed surrounding the excavated area to prevent unauthorized personnel or livestock from entering.
- **Insitu Landfarm:** The second phase of the remediation is landfarming of a shallow historic oil spill. The landfarm has not been conducted and is scheduled to be put in place immediately after backfilling the current excavation. Please see enclosed diagram delineating the land farm area. The landfarm plan is described in the sampling investigation report addressed to BLM on February 4<sup>th</sup>, 2009.

### Conclusion:

- **Chloride levels** for the spill area were determined to be below the required limit of 250ppm at 2ft to 6ft depths.
- **Total Petroleum Hydrocarbon (TPH) levels** were determined to be below the required limit of 5,000ppm.
- **No further backfill will be completed until proper approval from BLM and NMOCD.**
- **Please see enclosed:**
  - Site diagram
  - Project photos
  - Laboratory analysis report - results

# **CLOSING REPORT (SUMMARY) ENVIRONMENTAL REMEDIATION**

## **EnerVest Operating, LLC**

**Union SI Federal Tank Battery  
API #30-005-20866  
Sec1 -T8S-R31E  
Coordinates: N 33.65445 W-103.72925  
Chaves County, NM**

**September 3<sup>rd</sup>, 2010**

**A Report For:  
Bureau of Land Management, Roswell, NM  
New Mexico Oil Conservation Division, Hobbs, NM  
EnerVest Operating LLC  
Mr. Elroy Ardoin**

**Prepared by:  
Baseline Solutions LLC  
Andy Price  
511 West Ohio, Suite 400  
Midland, Texas 79701**

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- H. Re-Seeding**
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- J. Completed Remediation Action**



## Executive Summary

### REMEDATION COMPLETED

Baseline Solutions Environmental was retained by EnerVest Operating, LLC, of Houston TX, to conduct a remediation project at the Union SI Federal #2 Tank Battery facility. This project was to remediate an historic oil and saltwater spill/leak and was conducted with good and prudent professional standard practices. The site location is described as the:

- Union SI Federal Tank Battery
- API #30-005-20866
- Sec1 -T8S-R31E. Chaves County, NM.
- Coordinates: N 33.65445 W-103.72925

E. **Change in Lease Operator:** This lease is no longer operated by EnerVest Operating. The new and current operator is "Norstrand Engineering Inc." This project completed the day before this property was sold. EnerVest Operating in complying with "best practices" is submitting this closing report and the Sundry Notice 3160-5.

F. **Archeological Survey:** An archeological survey was conducted by "Archeological Survey Consultants". An additional area south and southwest of existing Pad Survey was surveyed. The reason for the survey was to include the historic spill area and additional area for land farming. No archeological issues were identified in this survey. The survey was presented to BLM and OCD in the 2/4/09 Sampling Investigation Report.

G. **NMOCD Site Ranking:** No hydrology issues were identified. Subsurface hydrology data indicates groundwater for this area to be at an approximate average depth of 9.1 ft. The NMOCD site ranking is considered to be 10 or less.

### H. **Sampling Investigation**

A sampling investigation was conducted. The findings were presented to BLM and NMOCD in a report on February 4<sup>th</sup>, 2009. A combination remediation plan consisting of dig & haul and landfarm operations was recommended and accepted by BLM and NMOCD.

### E. **Soil Remediation - Dig & Haul Operations**

- Dig and Haul operations were conducted on Jun 8<sup>th</sup>, 9<sup>th</sup>, 10<sup>th</sup>, 11<sup>th</sup>, 12<sup>th</sup>, 15<sup>th</sup>, and 16<sup>th</sup>, 2009. Samples were screened on site during excavation with field instrumentation. Formal composite samples were taken for lab analysis from six separate areas when screening indicated chloride and TPH levels were below required limits.
- The area immediately behind the tanks and adjacent to the caliche berm was excavated to a depth of 4' to 6'.
- Formal lab samples were taken at the total depth of the excavation and numerous photos were taken as well to document the completed excavation. Please see enclosed photos. Over all excavation depths ranged from 1' to 6' depths.

- A total of 404cuyds was removed and disposed of at the Gandy Disposal facility. Backfill top soil was backhauled from Gandy's disposal facility.
- A berm was put in place at the east side of excavated area. The berm is to prevent area rain runoff from running into the open trench.

#### **F. Lab Analysis results for excavated area**

- **Chlorides:** All samples taken upon excavation were below 250ppm. Grab samples were taken using a representative sampling grid. Five composite samples were taken from the walls and bottom of excavated area. Samples were delivered to "Trace Analysis" Laboratory in Midland. Analytical results determined all samples were below 250ppm.
- **TPH Levels:** The sampling investigation determined that Total Petroleum Hydrocarbon (TPH), levels were less than 50ppm which is well below OCD action level.

#### **G. Land Farming Operations:**

- "In-situ" land farming was conducted on the historic spill area southwest of the tank battery which had hydrocarbons to an average depth of 1ft to 2ft. The land farm area was well within the current archeological survey. Vegetation has began to return to the land farm area.

#### **H. Re-Seeding**

- The remediation area was seeded with the BLM CP-2 seed mix.
- The entire area was dragged to mix seed into soil at a proper depth.

#### **I. Sundry Notice 3160-5**

- A final BLM form "Sundry Notice" 3160-5 is being submitted with this summary report.
- A final NMOCD form c141 is being submitted with this summary report.

#### **J. Completed Remediation Action**

- This report summarizes actions taken to abate environmental damage related to the historic spill/leaks associated with subject site. This document, the BLM final "Sundry Notice" and the NMOCD final c141 form is considered to be the closure for this remediation project **upon** BLM and NMOCD approval.

**Limitations**

This report was prepared exclusively for use by EnerVest Operating, LLC. The contents of the report shall not be disseminated to, or used by any other party without EnerVest Operating, LLC written consent.

Baseline Solutions hereby gives notice that any statement or opinion in this report shall not be construed to create any warranty or representation that the real property on which the investigation was conducted is free of pollution or complies with any or all applicable regulatory or statutory requirements, or that the property is fit for any particular purpose.

Unless otherwise indicated in this report, no attempt was made to check on the compliance of present or past owners of the site with federal, state or local laws and regulations.

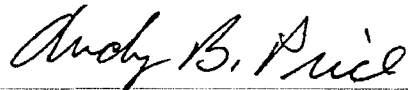
The conclusions presented in this report were based on the services described, and not on specific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by EnerVest Operating, LLC.

Person or entity considering use, acquisition, or other involvement or activity concerning the property shall be solely responsible for determining the adequacy of the property for any and all uses for which that person or entity shall use the property. Any person or entity considering the use, acquisition, or other involvement or activity concerning the property which is the subject of this report should enter into any use, occupation, acquisition, or the like on sole reliance of its own judgment and on its own personal investigation of such property, and not in reliance on any representation made by Baseline Solutions regarding such property, the character quality, or its value. Baseline Solutions performed environmental services in a professional manner using that degree of skill and care exercised for similar projects under similar conditions by reputable and competent environmental consultants. Baseline Solutions shall not be responsible for conditions or consequences arising from relevant facts that were concealed, withheld, or not fully disclosed at the time the environmental services were conducted.

**QUALIFICATIONS AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL**

**Prepared By:**

**Andy B. Price**

A handwritten signature in cursive script that reads "Andy B. Price".

**Registered Environmental Professional Registry #9116**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

FORM APPROVED  
OMB No. 1004-0137  
Expires: July 31, 2010

**SUNDRY NOTICES AND REPORTS ON WELLS**  
***Do not use this form for proposals to drill or to re-enter an  
abandoned well. Use Form 3160-3 (APD) for such proposals.***

5. Lease Serial No.

0558018

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE – Other instructions on page 2.**

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator

EnerVest Operating, LLC

3a. Address

1001 Fannin Street, Suite 800  
Houston, Texas 77002

3b. Phone No. (include area code)

(713) 495 6534

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

C - Sec 1 - T8S-R31E Coordinates: N 33.65445 W-103.72925

7. If Unit of CA/Agreement, Name and/or No.

8. Well Name and No.

Union SI Federal #2-A Tank Battery

9. API Well No.

30-005-20866

10. Field and Pool or Exploratory Area

Union SI Federal - Tomahawk SA

11. Country or Parish, State

Chaves Co. NM

**12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA**

**TYPE OF SUBMISSION**

**TYPE OF ACTION**

☒ Notice of Intent

☐ Subsequent Report

☐ Final Abandonment Notice

☐ Acidize

☐ Alter Casing

☐ Casing Repair

☐ Change Plans

☐ Convert to Injection

☐ Deepen

☐ Fracture Treat

☐ New Construction

☐ Plug and Abandon

☐ Plug Back

☐ Production (Start/Resume)

☐ Reclamation

☐ Recomplete

☐ Temporarily Abandon

☐ Water Disposal

☐ Water Shut-Off

☐ Well Integrity

☒ Other Remediation Project  
Closure

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

This Sundry Notice is to submit for closure the remediation project conducted by EnerVest Operating, LLC for the Union SI Fed. #2 tank battery. This environmental project was a voluntary operation by EnerVest Operating to remediate historic spills/leaks which occurred before EnerVest acquired this lease. This lease was sold the day after the remediation was completed (seeding of remediation area), by EnerVest Operating. The current operator is "Norstrand Engineering, Inc., Houston, TX, 77019. The following list is an outline of actions taken to remediate this site in cooperation with the BLM Roswell office and NMOCD Hobbs office. Documentation for these actions was submitted at each phase to BLM and NMOCD. A closing summary report for remediation action taken is included with this sundry notice.

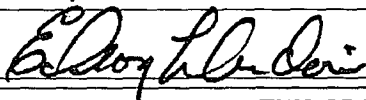
- Archeological Survey
- NMOCD Site Ranking
- Sampling Investigation
- Soil Remediation - Dig & Haul Operations
- Lab Analysis results for excavated area
- Land Farming Operations
- Re-Seeding
- BLM Sundry Notice 3160-5 & NMOCD c141

14. I hereby certify that the foregoing is true and correct. Name (Printed/Typed)

Elroy Ardoin

Title EH&S Coordinator

Signature



Date 09/02/2010

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**BASELINE SOLUTIONS, LLC**

**P. O. BOX 8061  
Midland, TX 79708**

**Phone 432-352-6400**

**Fax 432-682-7722**

July 20th, 2009

Mr. Glenn Garnand & Mr. Al Collar  
Bureau of Land Management  
2909 West 2<sup>nd</sup> Street  
Roswell, NM 88201

RE: EnerVest Operating, LLC.  
Environmental Remediation Projects  
Union SI Fed. #2 Tank Battery  
API #30-005-20866  
Sec1 -T8S-R31E Chaves County, NM

Dear, Mr. Glenn Garnand & Mr. Al Collar

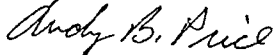
The purpose for this letter is to:

- Report lab results for the Union SI Fed. #2 Tank Battery remediation – dig and haul operations.
- Request approval to backfill, return site to original topography, reseed the area and present closing report for remediation project.

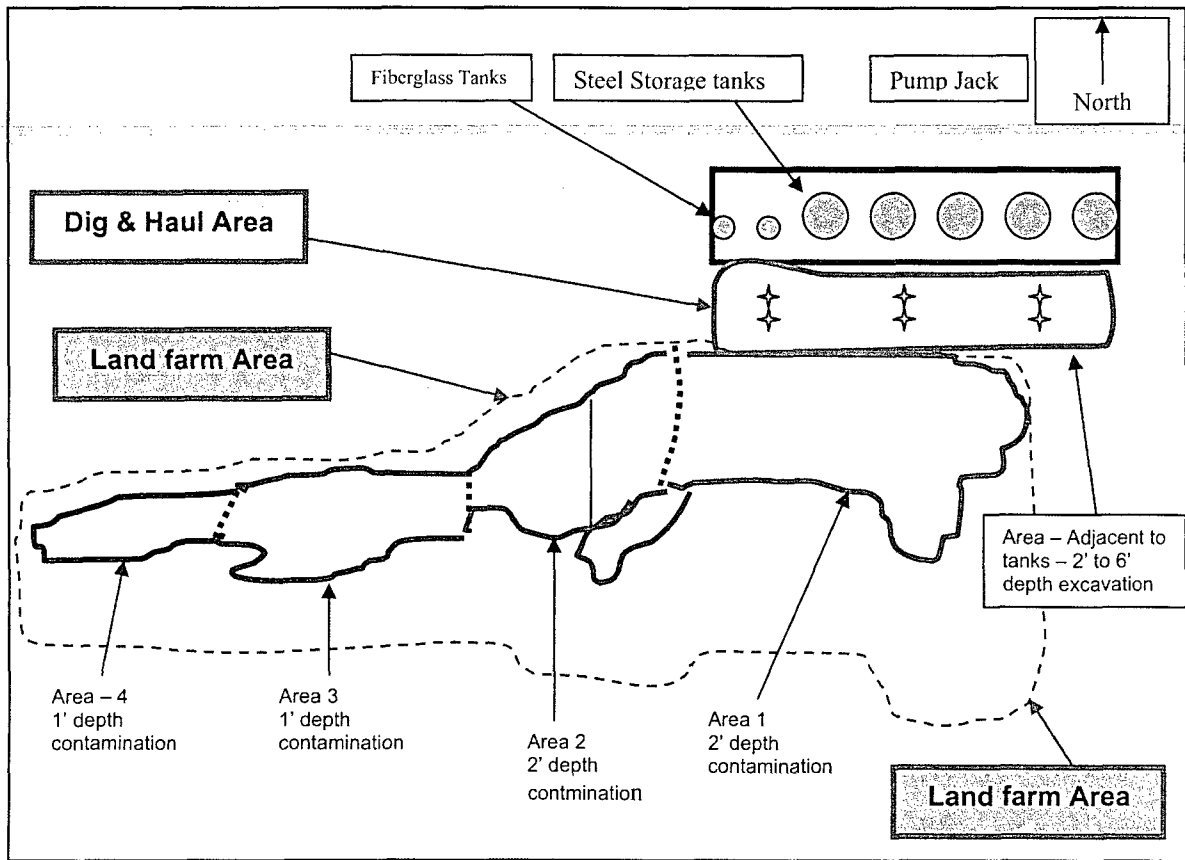
Please find attached executive summary, photos and lab results for composite samples taken upon completion of excavation.

Thank you for your help in this matter.

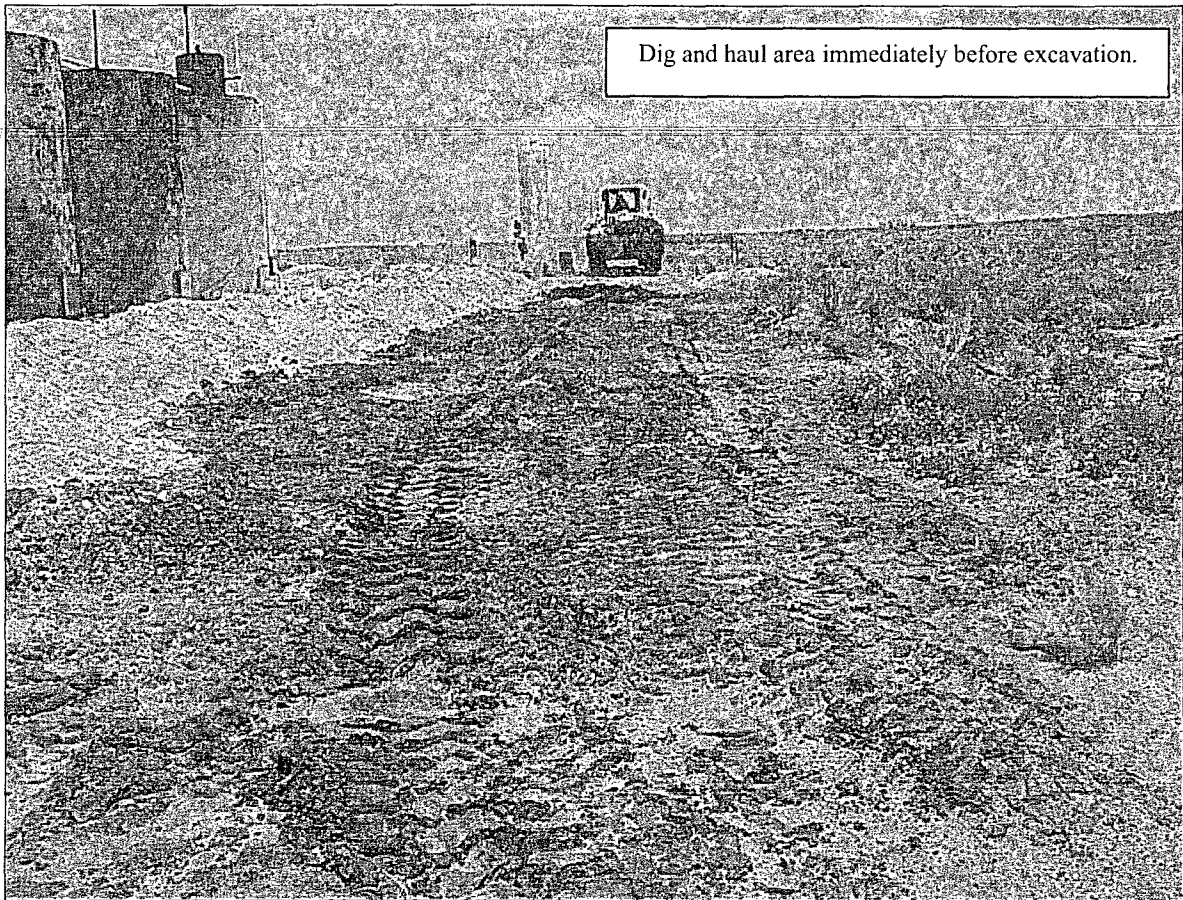
Andy B. Price



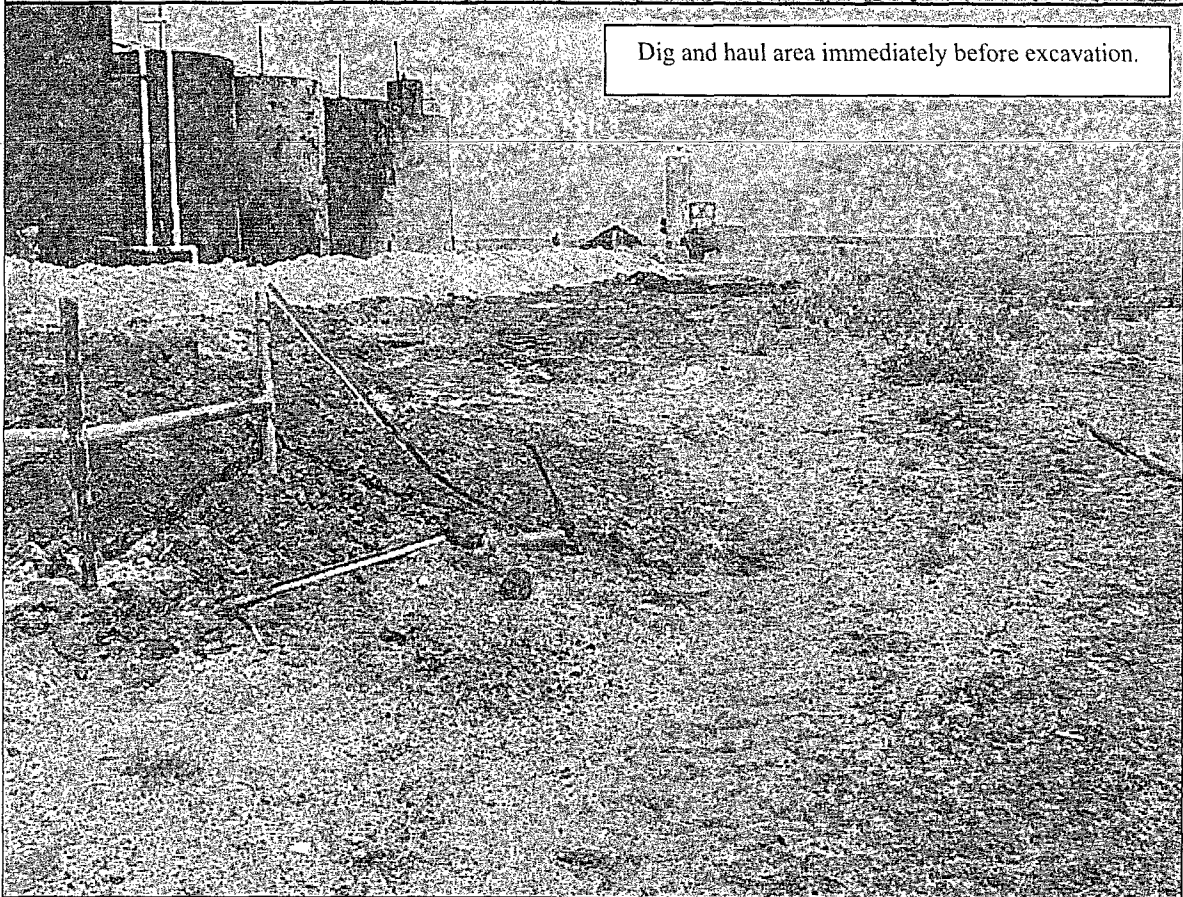
Registered Environmental Manager



Please see photos on following pages



Dig and haul area immediately before excavation.



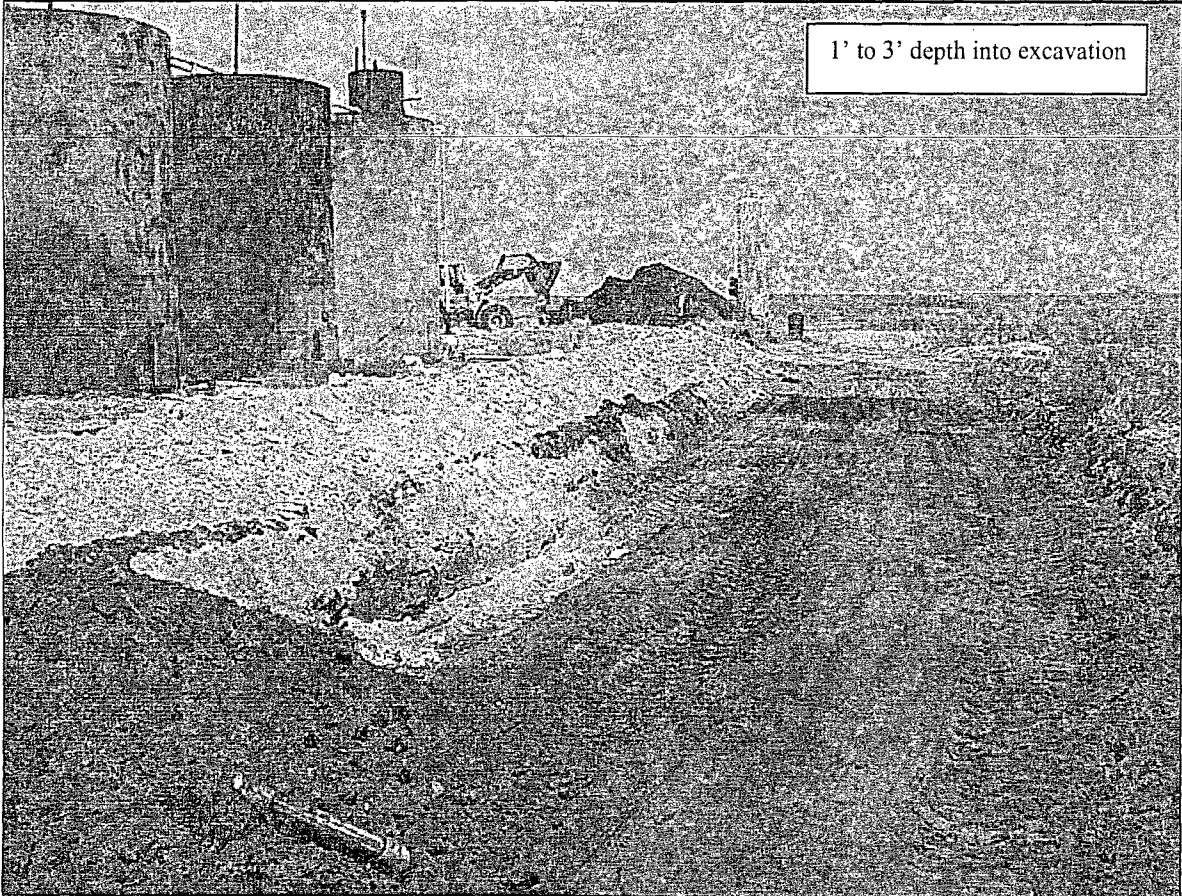
Dig and haul area immediately before excavation.



1' to 2' depth into excavation

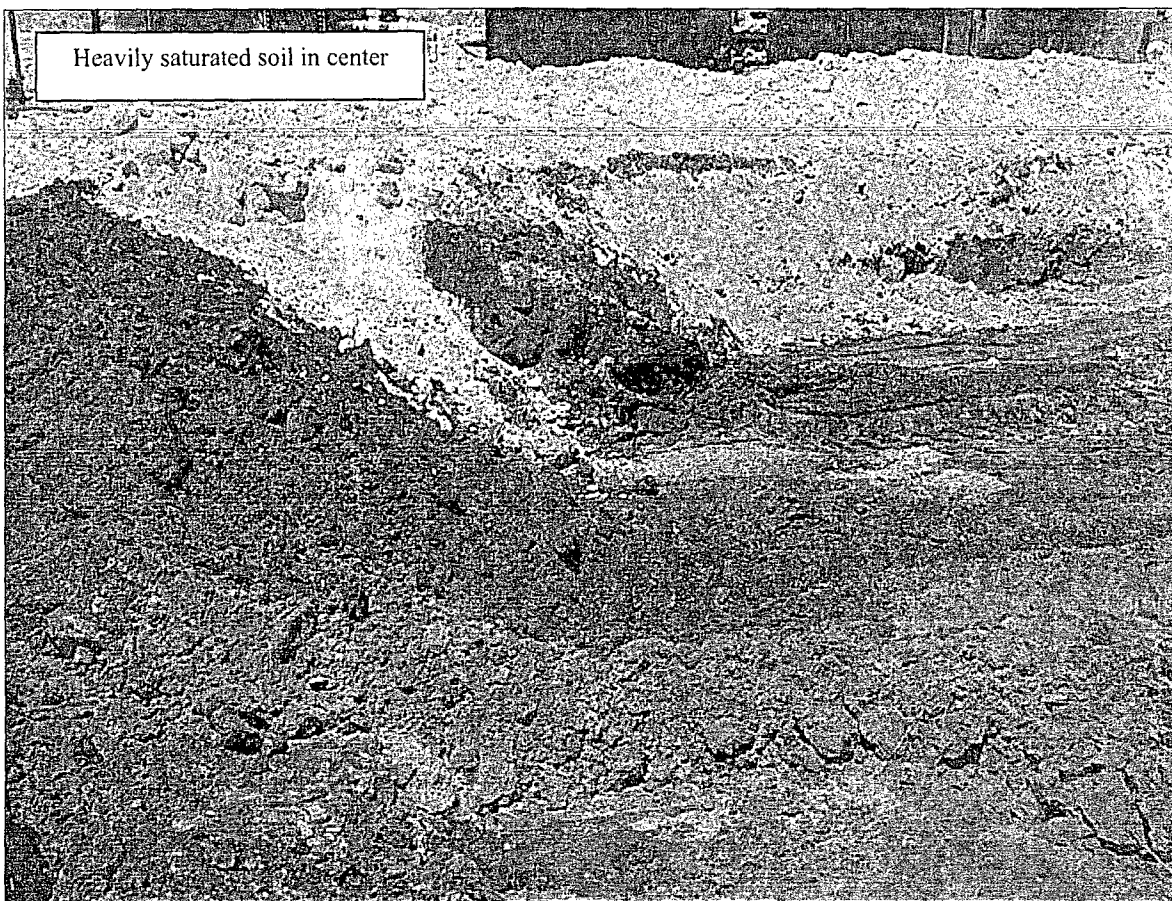


1' to 3' depth into excavation

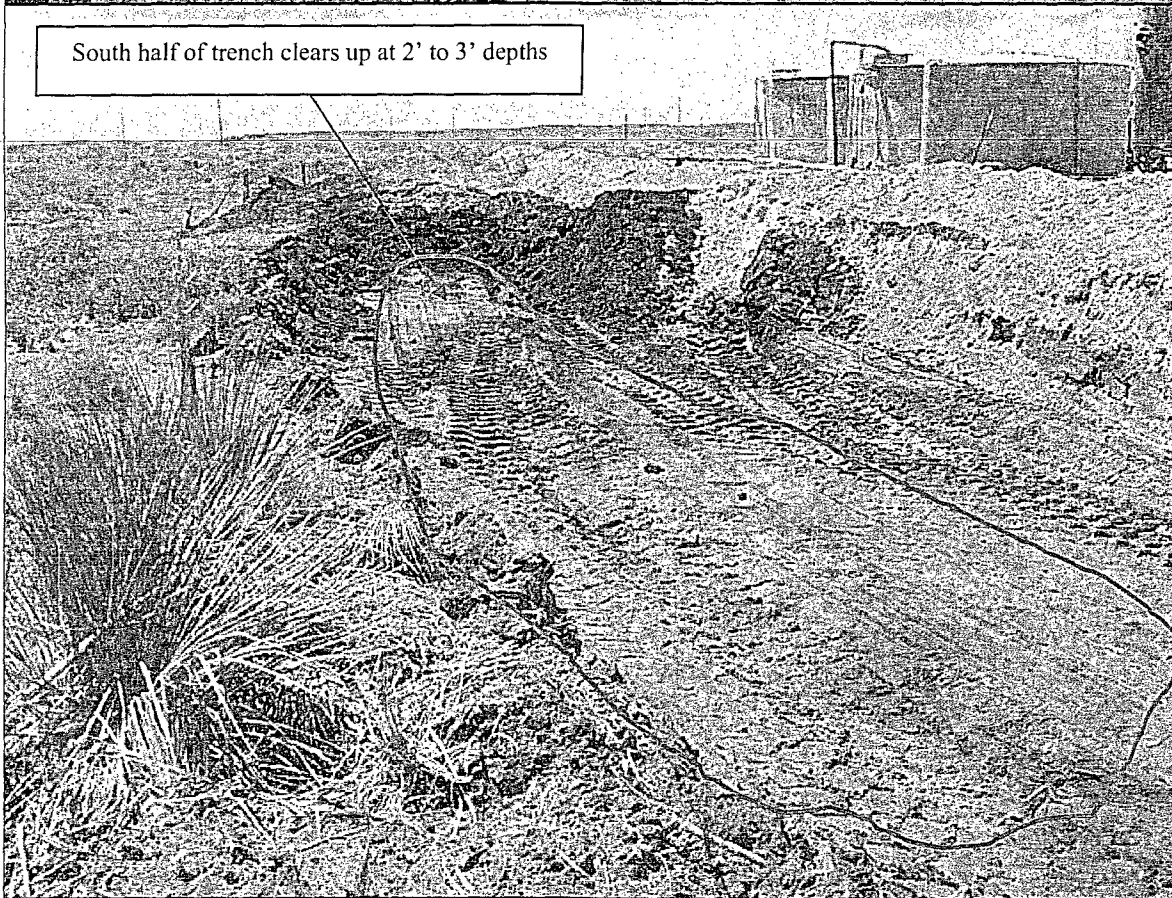




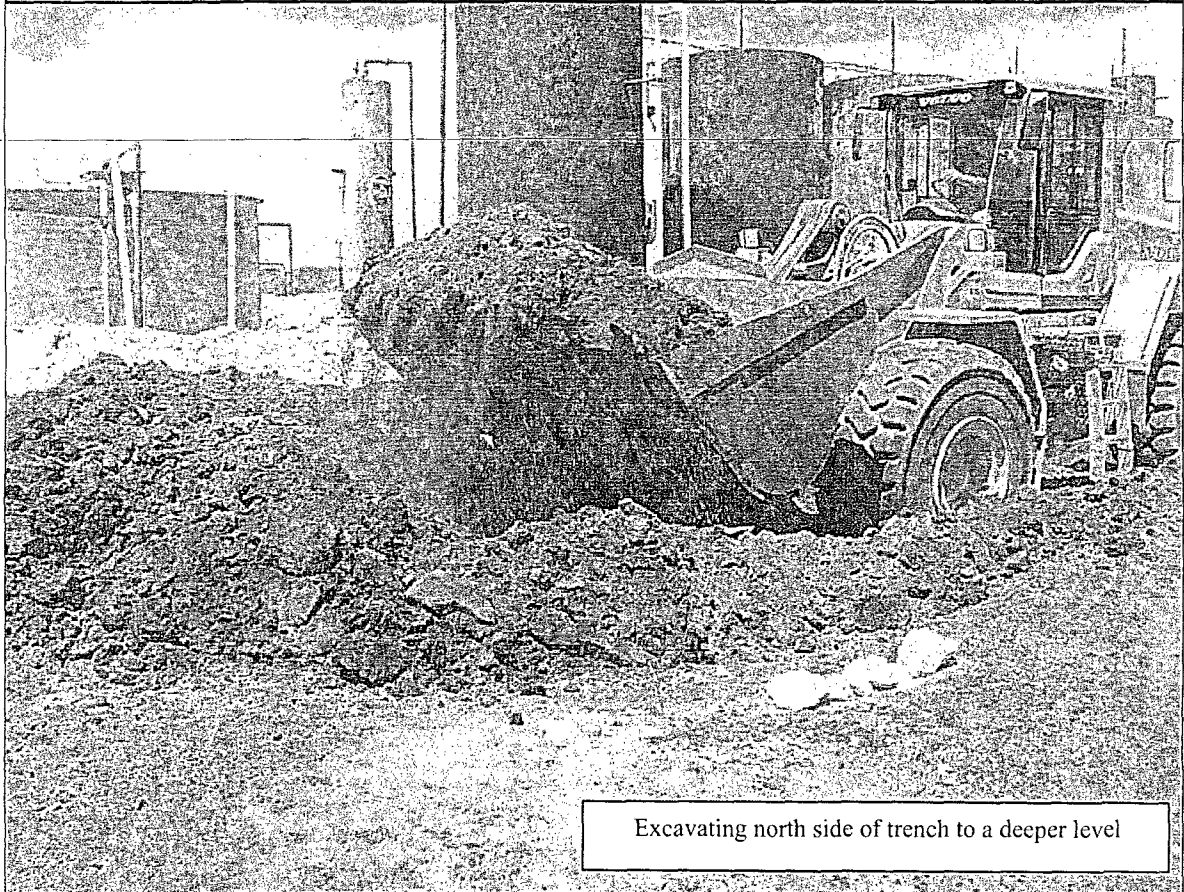
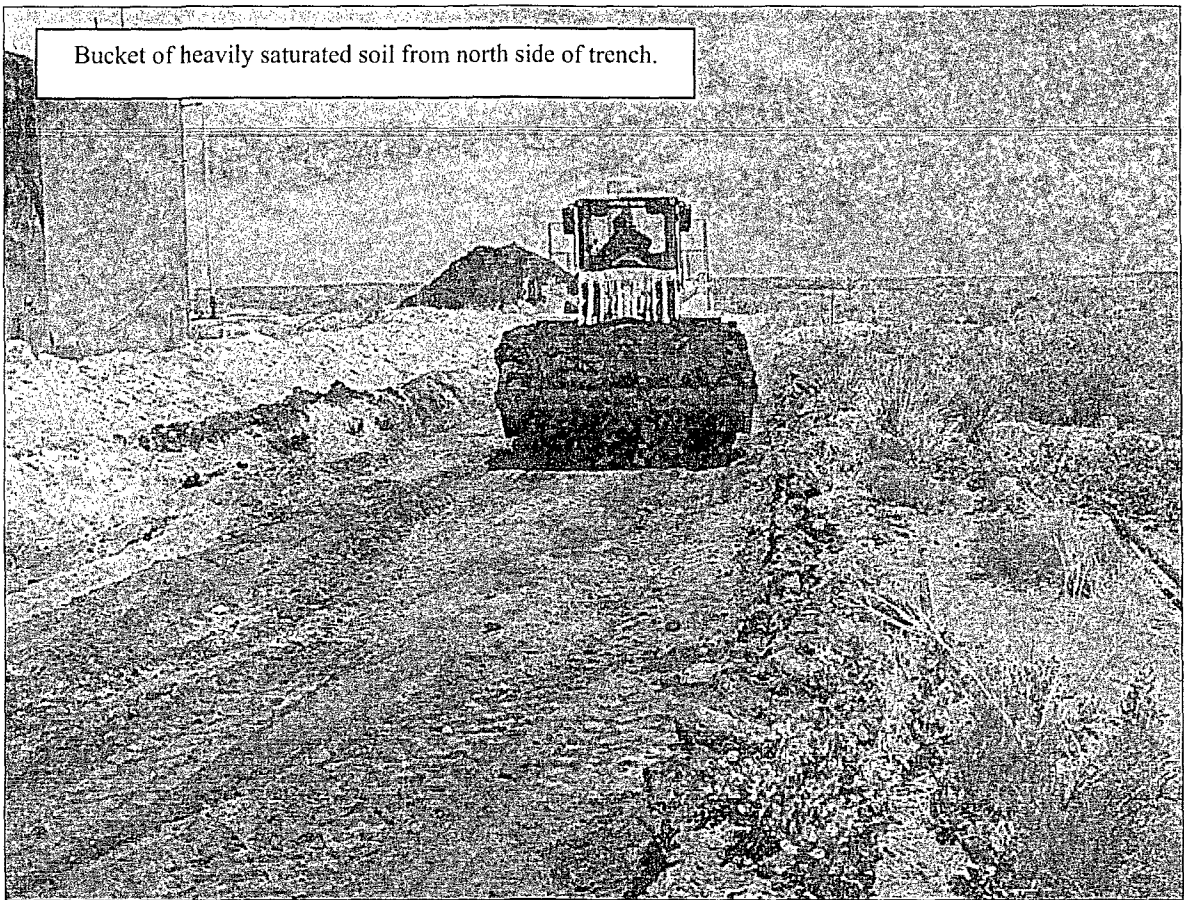
Heavily saturated soil in center



South half of trench clears up at 2' to 3' depths



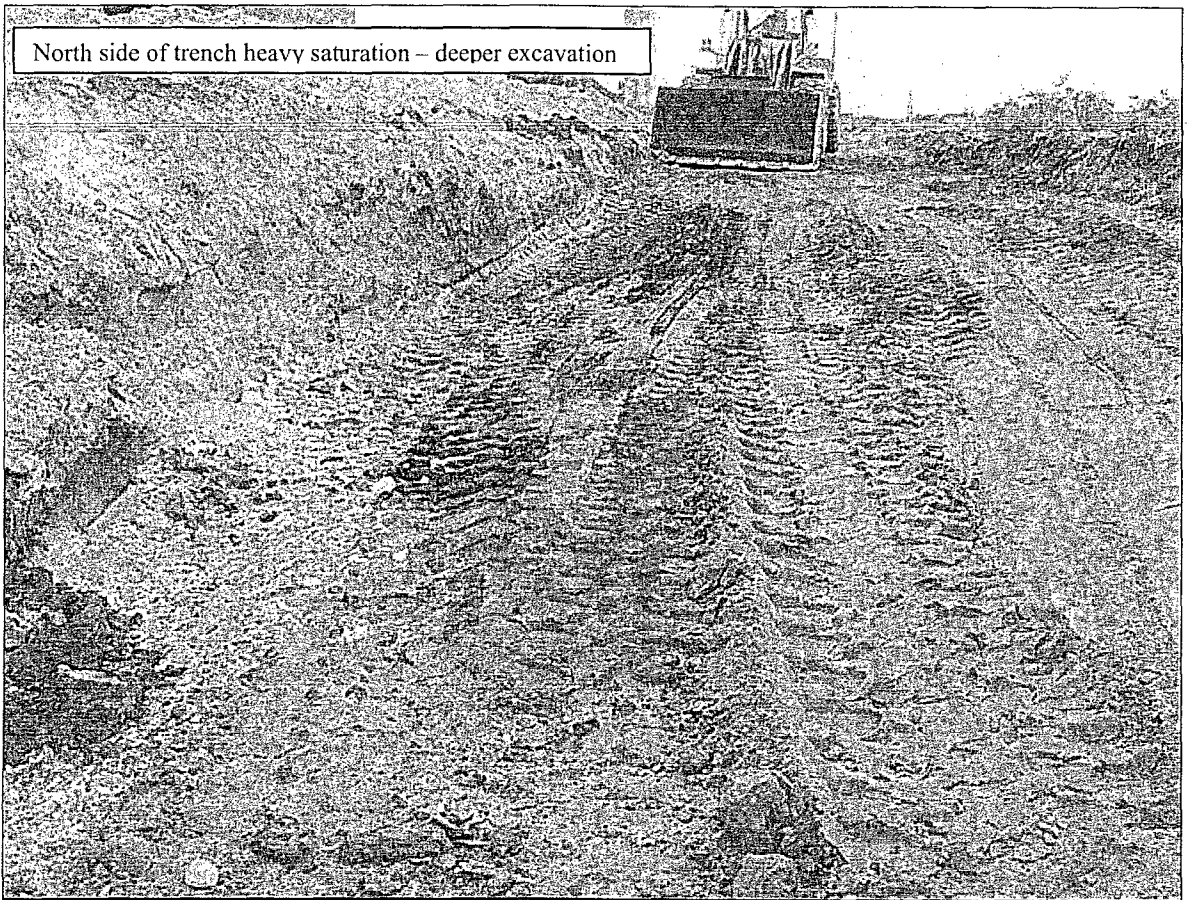
Bucket of heavily saturated soil from north side of trench.



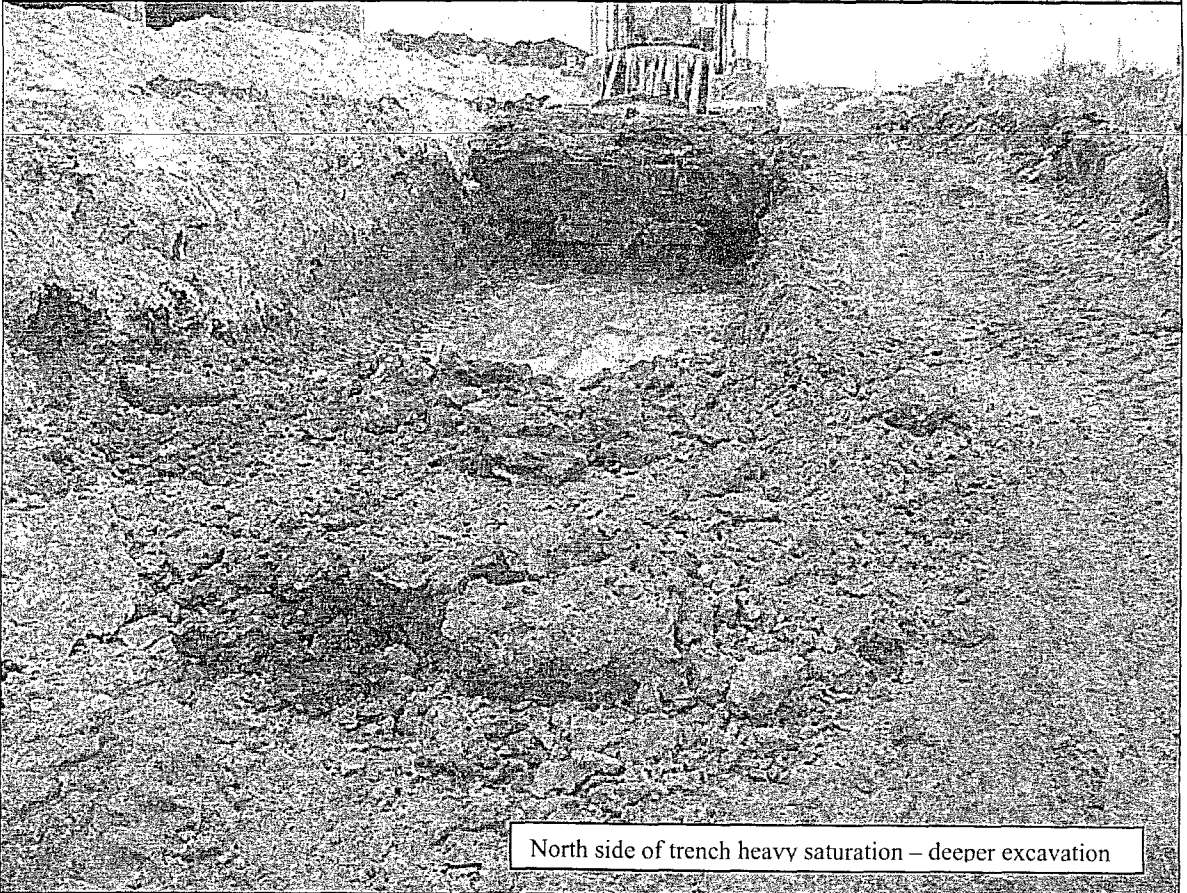
Excavating north side of trench to a deeper level

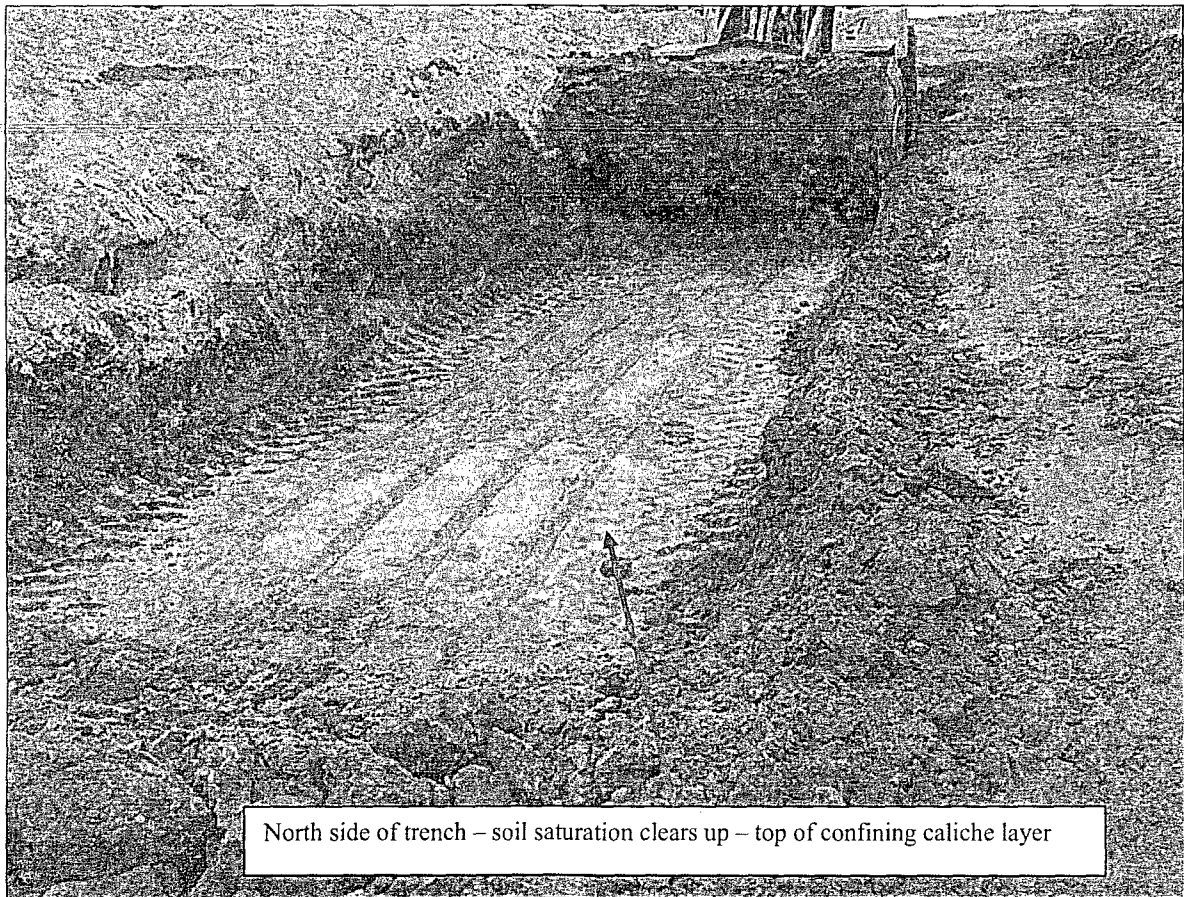


North side of trench heavy saturation – deeper excavation

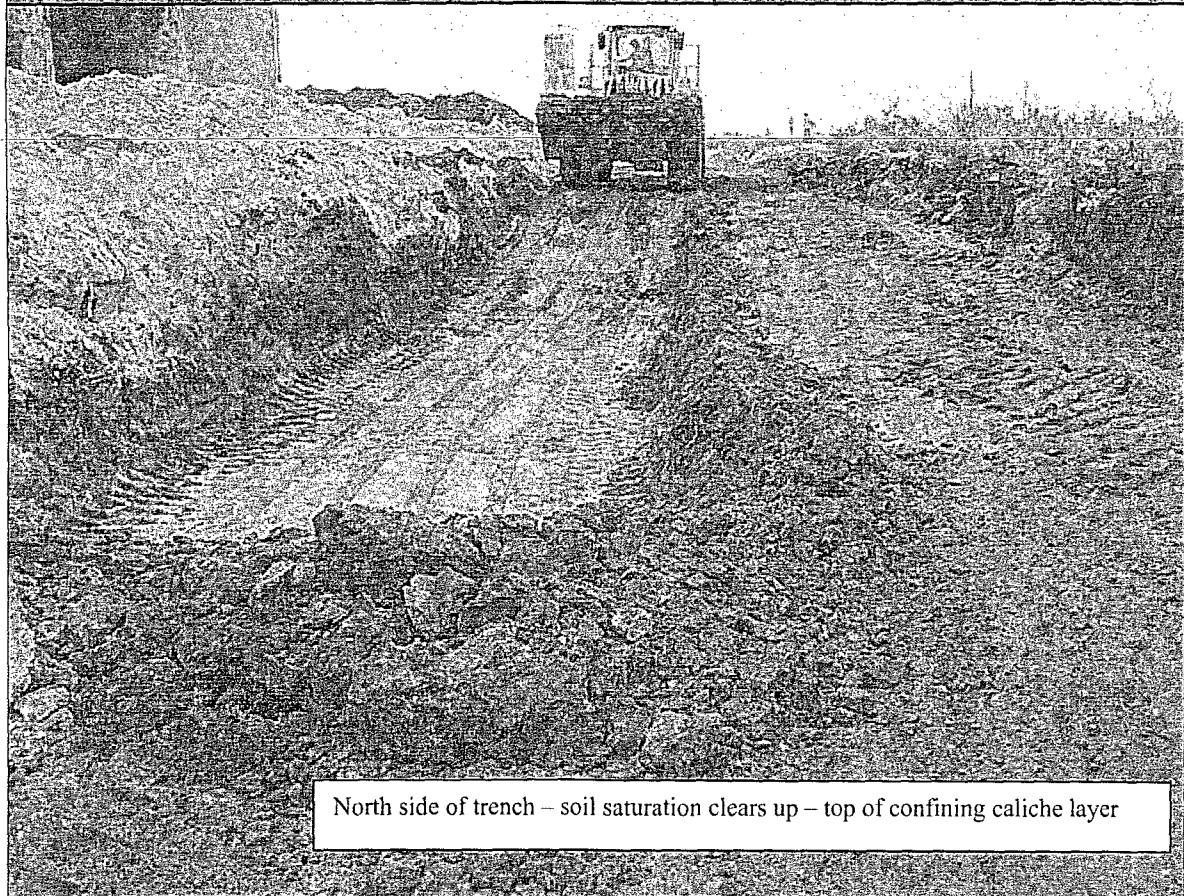


North side of trench heavy saturation – deeper excavation



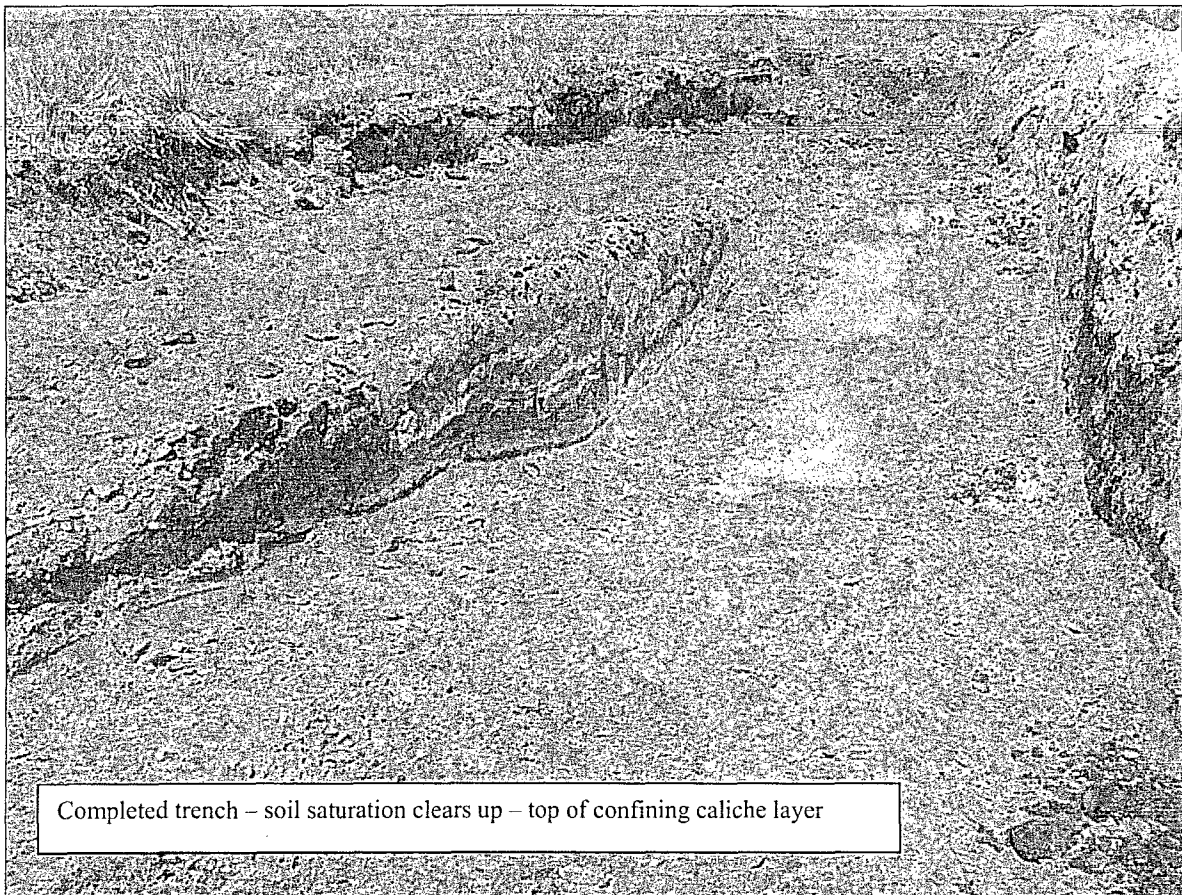


North side of trench – soil saturation clears up – top of confining caliche layer

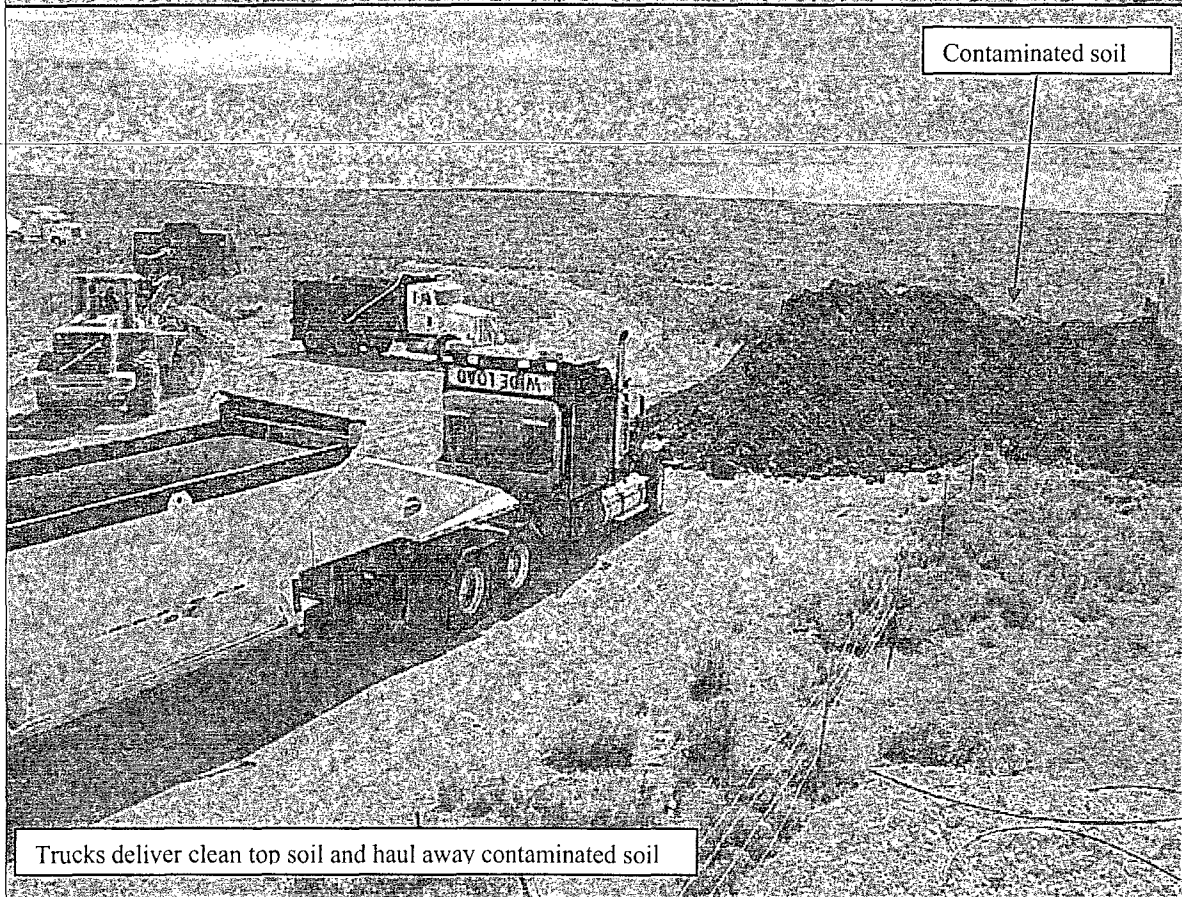


North side of trench – soil saturation clears up – top of confining caliche layer



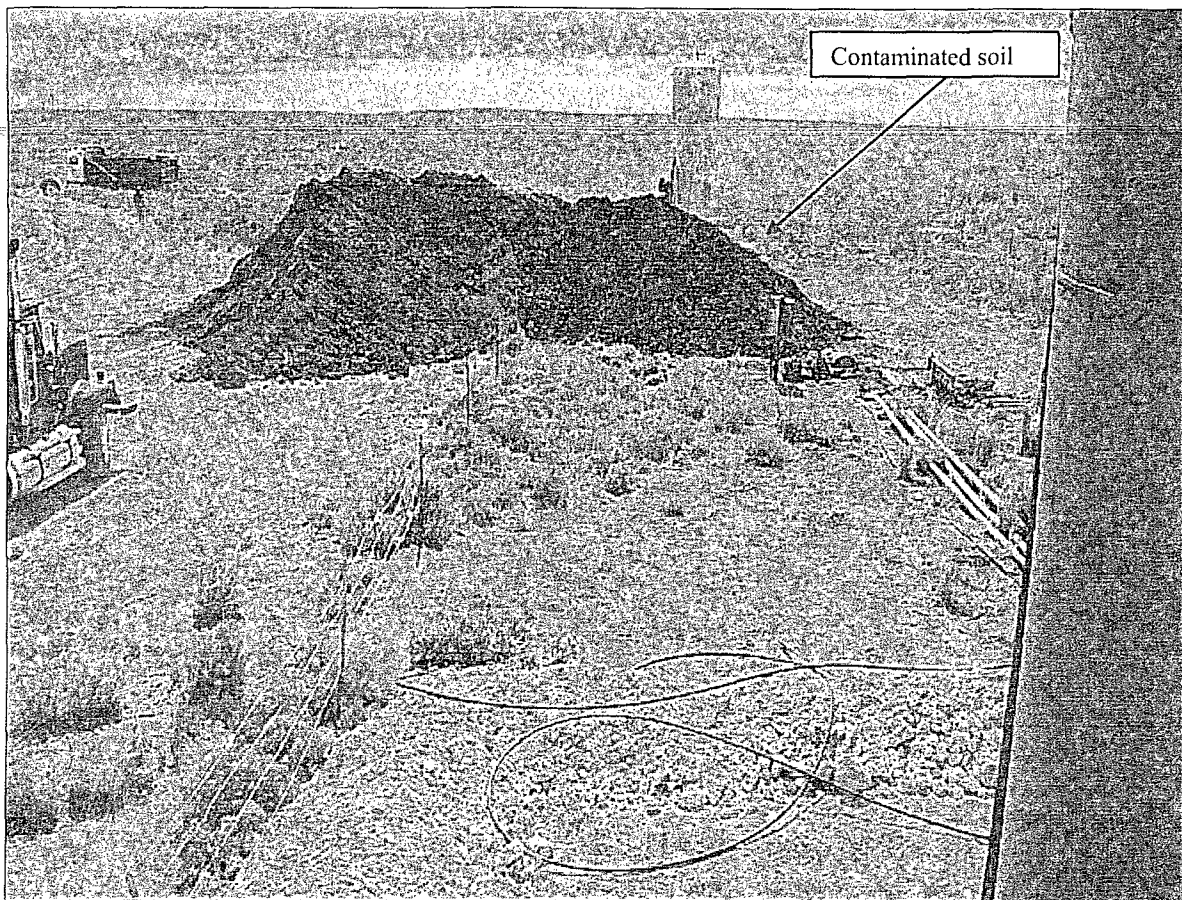


Completed trench – soil saturation clears up – top of confining caliche layer

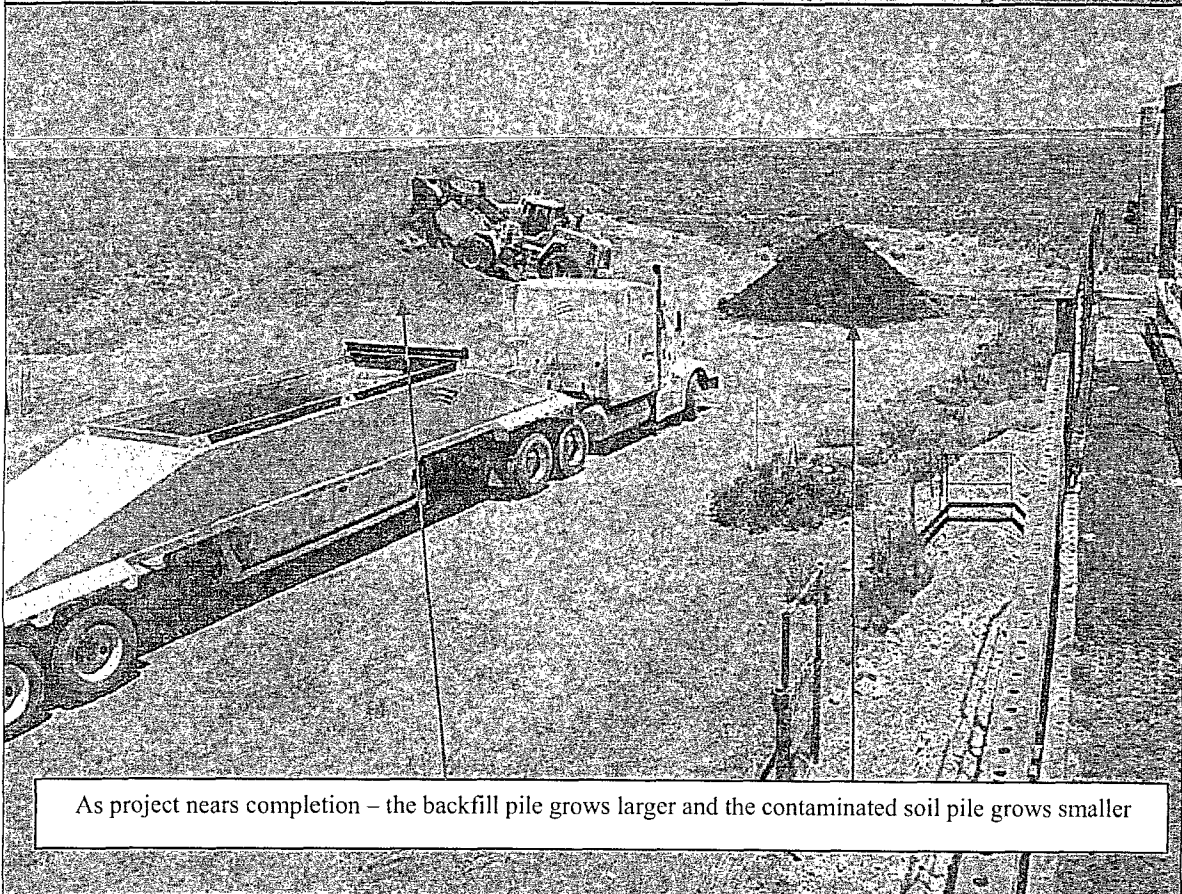


Contaminated soil

Trucks deliver clean top soil and haul away contaminated soil

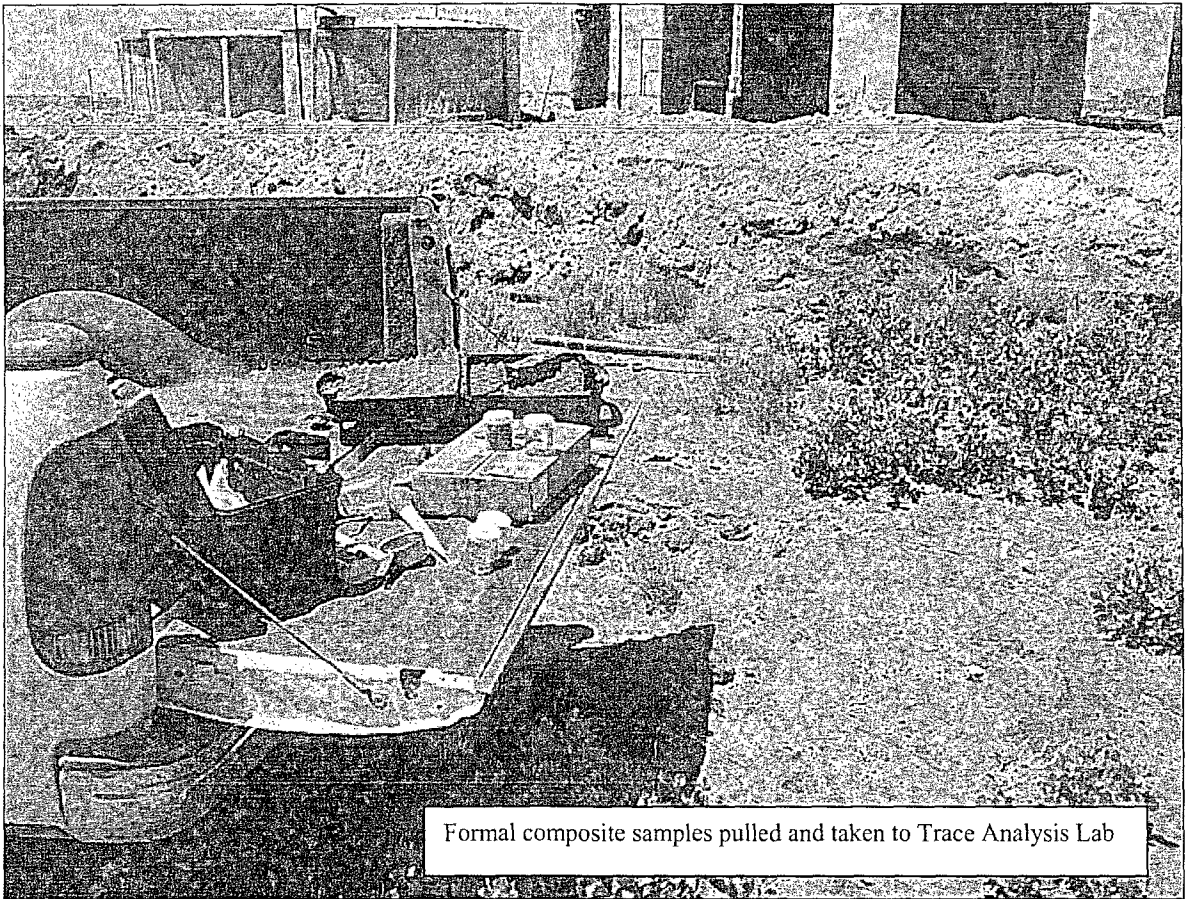


Contaminated soil



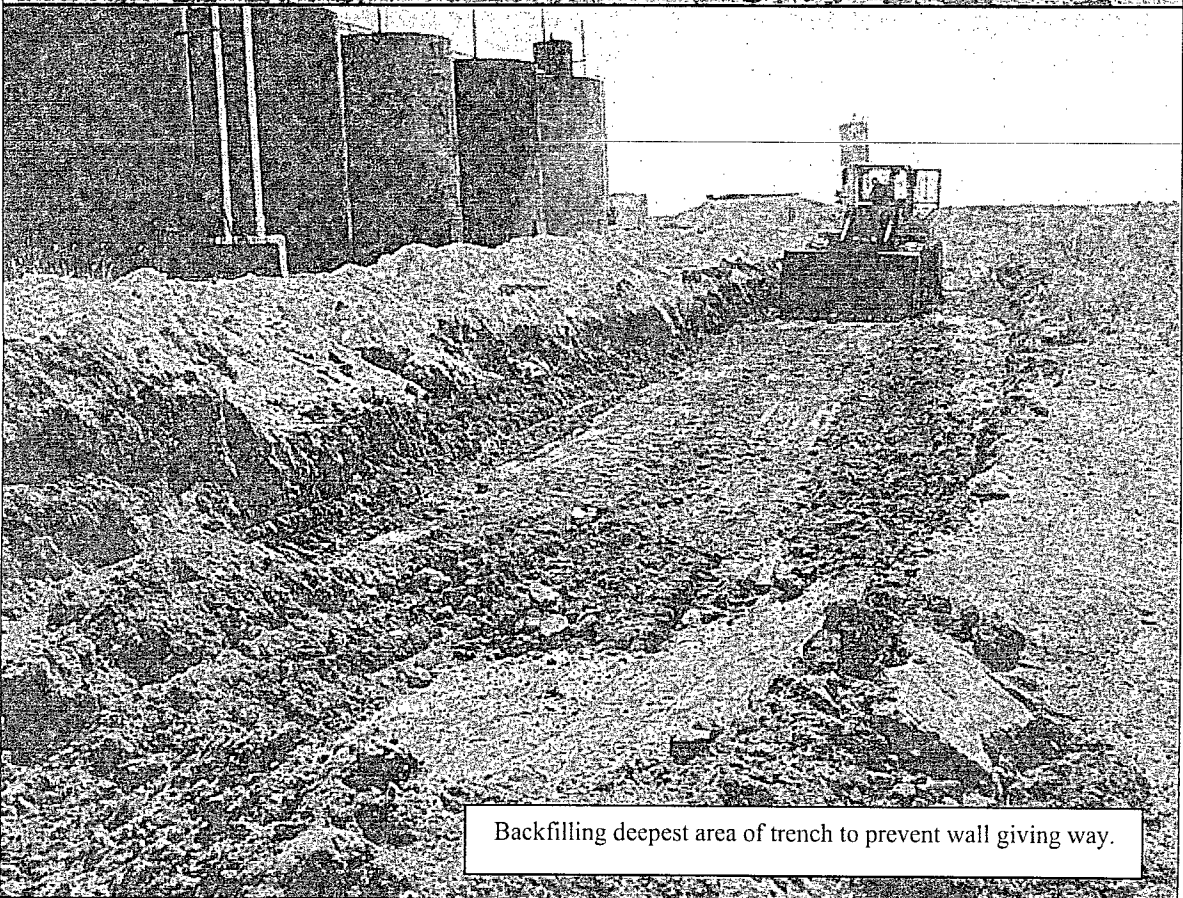
As project nears completion – the backfill pile grows larger and the contaminated soil pile grows smaller







Backfilling deepest area of trench to prevent wall giving way.

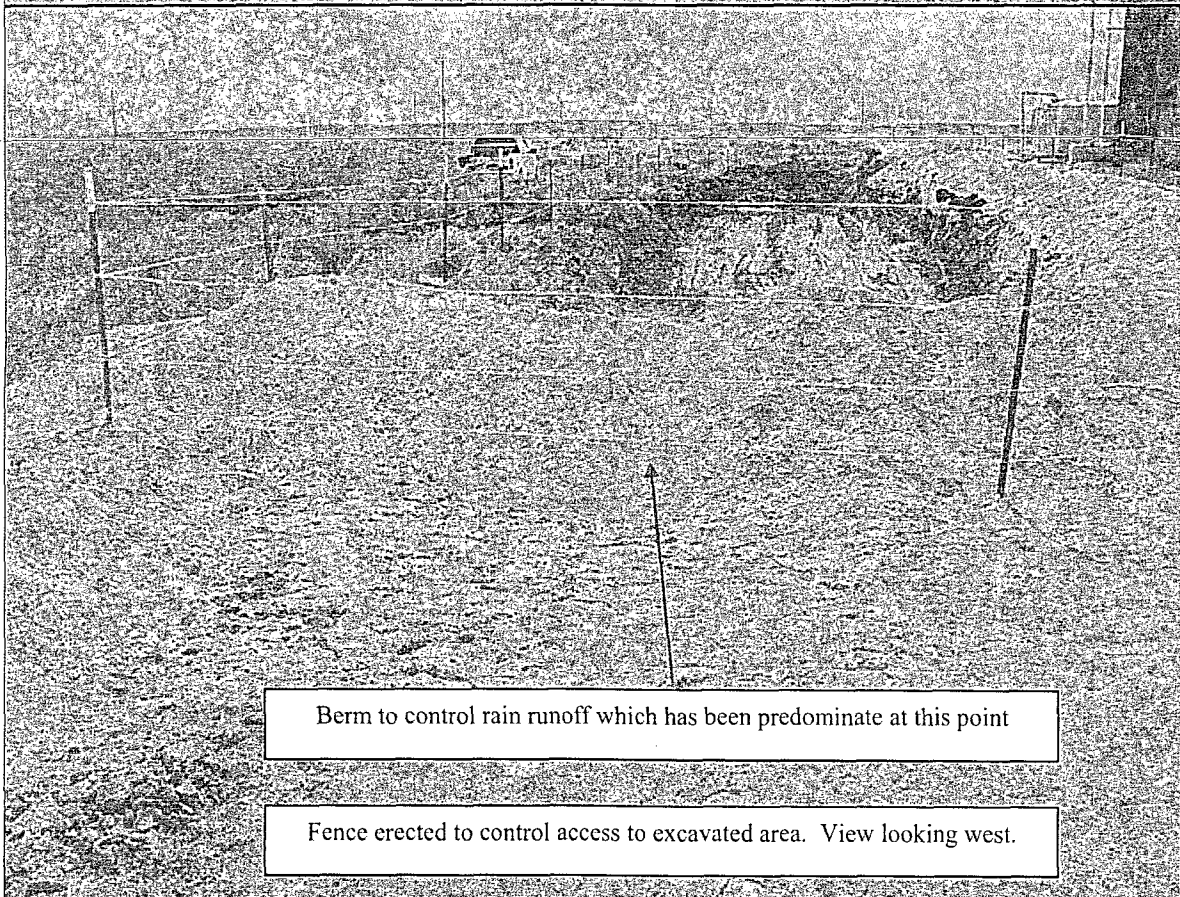


Backfilling deepest area of trench to prevent wall giving way.





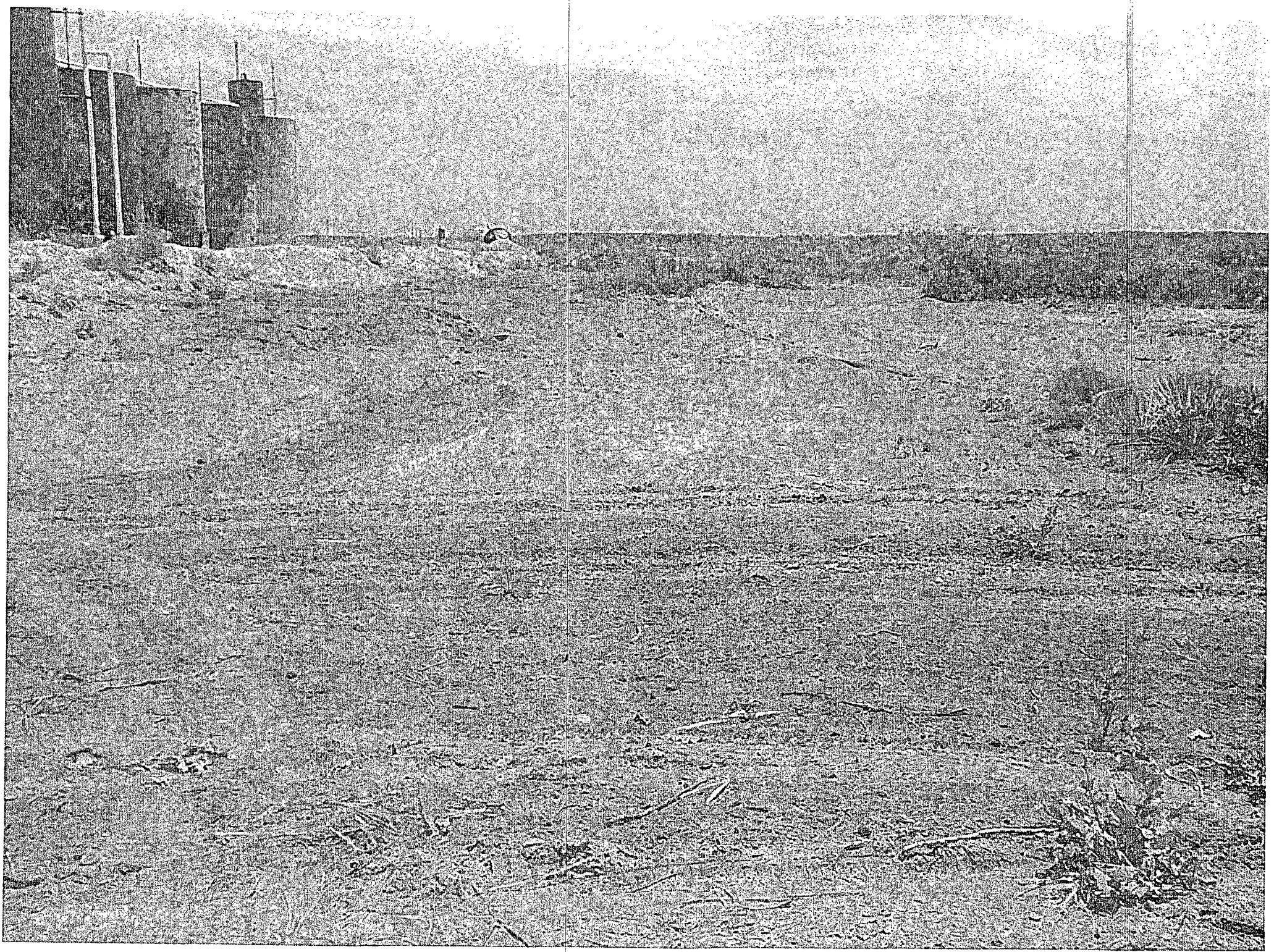
Fence erected to control access to excavated area. View looking east.



Berm to control rain runoff which has been predominate at this point

Fence erected to control access to excavated area. View looking west.







Kind: BLM CP-2 M x  
Lot: 2155943

Mixture Variety	Pure	Germs	Origin
Plains Bristlegrass	21.28	84	TX
Side Oats Grass	20.87	86	WA
Buckwheat	16.20	85	SD
Desert Globemallow	8.08	88	AZ
Little Bluestem	6.07	88	KS
Sand Dropseed	5.56	90	WA
Sand Bluestem	5.51	97	KS

Crop: 0.37% Inert: 18.03% Weeds: 0.03% Net Wgt: 48#

TEST DATE: 5/16/00 TOXICUS WEEDS: NONE FOUND

Remarks: Mixture for Baseline Solutions. 4 acre bag

Winfield Solutions Box 84589 St. Paul, MN 55164

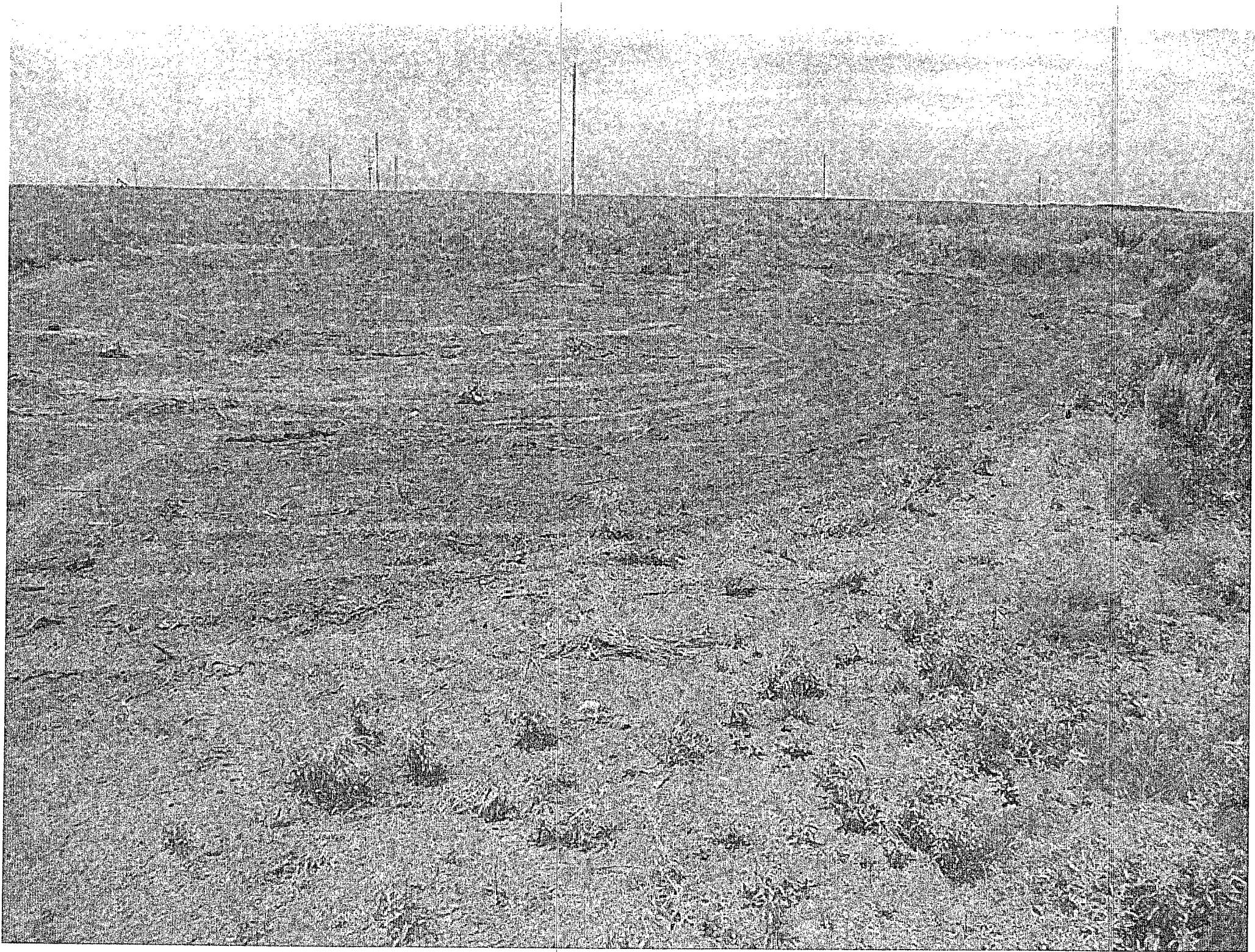




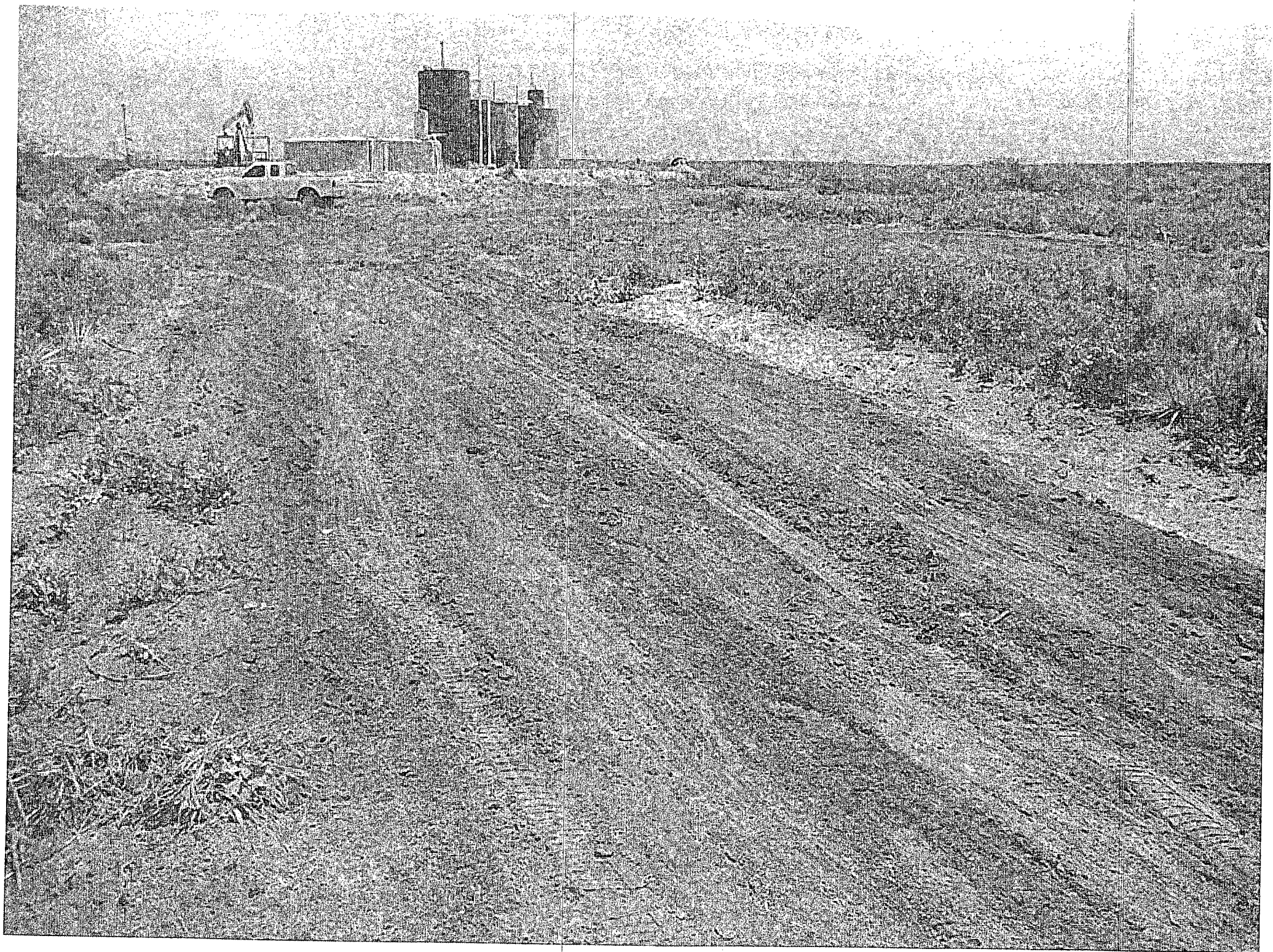












## Summary Report

Andy Price  
Baseline Solutions LLC  
511 W. Ohio  
P.O. Box 8061  
Midland, TX 79708

Report Date: June 30, 2009

Work Order: 9062229



Project Location: T8SR31E, Chaves County, NM  
Project Name: Union SI Fed. #2 Tank Battery

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
199960	1	soil	2009-06-22	07:45	2009-06-22
199961	2	soil	2009-06-22	08:05	2009-06-22
199962	3	soil	2009-06-22	08:20	2009-06-22
199963	4	soil	2009-06-22	08:56	2009-06-22
199964	5	soil	2009-06-22	09:15	2009-06-22
199965	6	soil	2009-06-22	09:32	2009-06-22

Sample - Field Code	TPH DRO	TPH GRO
	DRO (mg/Kg)	GRO (mg/Kg)
199960 - 1	211	7.88
199961 - 2	383	<1.00
199962 - 3	69.1	7.90
199963 - 4	69.8	4.36
199964 - 5	60.1	5.73
199965 - 6	84.8	4.99

**Sample: 199960 - 1**

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

**Sample: 199961 - 2**

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00



**Sample: 199962 - 3**

Param	Flag	Result	Units	RL
Chloride		208	mg/Kg	4.00

**Sample: 199963 - 4**

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

**Sample: 199964 - 5**

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

**Sample: 199965 - 6**

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00