PJXK1535130710

Final Report 4027

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 – Chalupa SWD #004	Facility Type - Injection

Surface Owner – State of New Mexico	Mineral Owner	API No. 3002529184

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	South Line	Feet from the	East/West Line	County
M	13	14S	33E	330	South Line	330	West Line	Lea

Latitude 33.11704 **Longitude** -103.61131

NATURE OF RELEASE

Type of Release - Produced Water/Saltwater	Volume of Release – estimated 20bbls	Volume Recovered - 0bbls
Source of Release – Flow Line	Date and Hour of Occurrence ? Estimated 6/22/2010	Date and Hour of Discovery 6/23/2010
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour -	
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.* This spill occurred from the flowline proceeding from the "Pyro ABK State #2" API #3002529564. This flowline feeds into the Chalupa SWD facility. Directions to the spill site is: Take Hwy 82 from Lovington, NM to Hwy 457. Head north on 457. In several miles you will pass Anderson Ranch Rd. Turn left/west at the first cattle guard close to Hwy. The spill is immediately west of the cattle guard. The flowline crosses Hwy 457 and heads east several miles where it feeds into the Chalupa tank battery facility. A valve was replaced in the flow line approximately 75yds south of where the leak occurred. The crew closed the valve which should have been left open. Pressure built up resulting in a line failure near the cattle guard road crossing. The line has been repaired with a new section of pipe. The spill at this site is considered to be approximately 20bbls. Environmental remedial action has been conducted and completed. A sampling investigation was conducted at the site. A report with the findings was submitted to OCD Hobbs office on October 1st, 2010. The remediation method was "dig & haul" operations with lab analysis. Contaminated soil was excavated and delivered to Gandy's Disposal. The area was then back filled with clean soil and properly reseeded. Some re-vegetation has began to occur. A closing report with details such as lab analysis and photos is being presented with this Final c141.

Describe Area Affected and Cleanup Action Taken.*
The source of produced water/contamination was from the "Pyro ABK State #2" API #3002529564. The approximate effected area is 150ft X 30ft. The entire area indicating elevated levels of chlorides and TPH was excavated and formal samples taken to EPA approved lab to insure proper OCD guideline levels were obtained. Contaminated soil was removed and delivered to Gandy's disposal site. The site was back filled with clean soil taken from the Forte ranch, and then properly reseeded. A closing report is being submitted to OCD with this Final c141.

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: Elroy Ardoin	OIL CONSERVATION DIVISION	
Printed Name: Elroy Ardoin	Approved by District Supervisor:	
Title: HSE Manager	Approval Date:	Expiration Date:
E-mail Address: eardoin@enervest.net	Conditions of Approval:	Attached ☐
Date: 1/20/2012 Phone: (713) 495 6534		

pJXK1535130710

HOBBS OCD

JUL 13 2011

RECEIVED

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1301 W. Grand Avenue, Artesia, NM 88210
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☒ 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 – Chalupa SWD #004	Facility Type - Injection

Surface Owner – State of New Mexico	Mineral Owner	API No. 3002529184

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	South Line	Feet from the	East/West Line	County
M	13	14S	33E	330	South Line	330	West Line	Lea

Latitude 33.11704 **Longitude** -103.61131

NATURE OF RELEASE

Type of Release - Produced Water/Saltwater	Volume of Release – estimated 20bbls	Volume Recovered - 0bbls
Source of Release – Flow Line	Date and Hour of Occurrence ? Estimated 6/22/2010	Date and Hour of Discovery 6/23/2010
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour -	
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.*
This spill occurred from the flowline proceeding from the "Pyro ABK State #2" API #3002529564. This flowline feeds into the Chalupa SWD facility. Directions to the spill site is: Take Hwy 82 from Lovington, NM to Hwy 457. Head north on 457. In several miles you will pass Anderson Ranch Rd. Turn left/west at the first cattle guard close to Hwy. The spill is immediately west of the cattle guard. The flowline crosses Hwy 457 and heads east several miles where it feeds into the Chalupa tank battery facility.
A valve was replaced in the flow line approximately 75yds south of where the leak occurred. The crew closed the valve which should have been left open. Pressure built up resulting in a line failure near the cattle guard road crossing. The line has been repaired with a new section of pipe.
The spill at this site is considered to be approximately 20bbls. No environmental remedial action has been taken yet. A sampling investigation will be conducted to delineate the extent of contamination. A sampling report will be submitted to OCD with a remediation plan to be implemented upon NMOCD approval.

Describe Area Affected and Cleanup Action Taken.*
The source of produced water/contamination was from the "Pyro ABK State #2" API #3002529564. The approximate effected area is 30ft X 150ft. A minor amount of vegetation shows signs of stress within the contaminated area. The entire area indicating elevated levels of chlorides will be remediated. Recommended remediation is to conduct "dig & haul" operation with lab analysis. Contaminated soil will be removed to a locally approved disposal site, back filled with clean soil and properly reseeded. A closing report will then be submitted to OCD.

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: Elroy L Ardoin	OIL CONSERVATION DIVISION	
Printed Name: Elroy Ardoin	Approved by District Supervisor:	
Title: HS&E Coordinator	Approval Date:	Expiration Date:
E-mail Address: eardoin@enervest.net	Conditions of Approval:	Attached ☐
Date: 7/9/2010 Phone: (713) 495 6534		

* Attach Additional Sheets If Necessary

DEC 2 2 2010

PHASE II ENVIRONMENTAL SAMPLING ASSESSMENT

EnerVest Operating, LLC

Chalupa #4 SWD Flow Line Leak

Approximate date of occurrence 6/22/10

Section 13, T14S – R33E – API #30-025-29184
Lea County, NM
Coordinates: Latitude 33.11704 Longitude -103.61131

October 1st, 2010

A Report For:
New Mexico Oil Conservation Division, Hobbs District
&
EnerVest Operating LLC
Mr. Elroy Ardoin

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

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Baseline Solutions, was retained by EnerVest Operating, LLC of Houston Texas, to conduct a Phase II Environmental Sampling Investigation at a spill site approximately 3.0 miles from the Chalupa #4 SWD storage facility. The release most likely occurred on June 22nd, 2010
A valve was replaced in the flow line 75yds south of where the leak occurred. The crew closed the valve which should have been left open. Pressure built up resulting in a line failure near the cattle guard road crossing. The line has been repaired with a new section of pipe.
The spill at this site is considered to be approximately 20bbls.
The location of the release is described as:

ACTUALLY SECT 9 → Section 13, T14S – R33E, Lea County, NM
Coordinates: Latitude 33.11704 Longitude -103.61131

A summary of the lab analysis data, research and observations gathered during the sampling investigation is as follows:

Chalupa #4 SWD

Lab results for Chloride levels are listed below (please see app. B).

Sample field code	**Chloride PPM**		Sample field code	**TPH PPM**
1S - surface	35400		1S - surface	214
2S - surface	24500		2S - surface	302
3S - surface	28600		3S - surface	3260
4S - surface	14000		4S - surface	1120
5S - surface	22900		5S - surface	<50.0
1 - 1' depth	733		1 - 1' depth	<50.0
2 - 2' depth	666		2 - 2' depth	<50.0
3 - 3' depth	510		3 - 3' depth	<50.0
4 - 1' depth	548		4 - 1' depth	<50.0
5 - 2' depth	595		5 - 2' depth	<50.0

NMOCD acceptable level for Chlorides is 250ppm and less.
NMOCD acceptable level for Total Petroleum Hydrocarbons is 5000ppm and less.

Contaminated Area Delineated: Soil borings with field and laboratory analysis indicate the saltwater spill to be an approximate averaged surface area of 150ft X 30ft.

OCD Site Ranking: No Surface hydrology issues were identified for surface run-off due to topographical gradient and rain fall average. Subsurface hydrology data indicates groundwater for this area to be at an approximate average depth of 80ft. **The OCD site ranking is considered to be 10 or less (please see section 5 in the body of this report).**

Conclusion:
Chloride contamination for spill area is to an average depth of 1' to 3'. TPH levels were found to below 5000ppm.

Recommendation: Conduct "Dig & Haul" remediation for spill area to an average depth of 1ft to 3 ft. Perform field screening with formal lab analysis to insure proper abatement.

1.0 INTRODUCTION

Baseline Solutions, was retained by EnerVest Operating, LLC of Houston Texas, to conduct a Phase II Environmental Sampling Investigation at a spill location described as:
Approximately 3.0 miles west of the Chalupa tank battery facility.
Section 13, T14S – R33E, Lea County, NM.
Coordinates: Latitude 33.11704 Longitude -103.61131
The spill occurred from the flowline proceeding from the "Pyro ABK State #2" API #3002529564. The effected area is approximately 150'X30'. The flowline feeds into the Chalupa SWD facility. A valve was replaced in the flow line approximately 75yds south of where the leak occurred. The crew closed the valve which should have been left open. Pressure built up resulting in a line failure near the cattle guard road crossing. The line has been repaired with a new section of pipe.

1.1 Site Location (see app. C)

A. Spill Location
- Legal Description:
  Chalupa #004
  Flow Line Leak/Spill approximately 3 miles west of the Chalupa #4 storage facility
  Unit "M"
  Section 13, T14S – R33E
  Lea County, NM
  Coordinates: Latitude 33.11704, Longitude -103.61131
  Lease #LG-2414 – API#30-025-29184
- Directions to spill site is: Take Hwy 82 from Lovington, NM to Hwy 457. Head north on 457. In several miles you will pass Anderson Ranch Rd. Turn left/west at the first cattle guard close to Hwy. The spill is immediately west of the cattle guard. The flowline crosses Hwy 457 and heads east. The spill location is approximately 3.0 miles west of the Chalupa tank battery facility.

2.0 Purpose

The purpose of this investigation was to quantify the level of Chlorides and Total Petroleum Hydrocarbons (TPH), and to delineate the area of contamination for spill site.

3.0 PROCEDURES AND METHODS

The procedures and methods for this project were conducted according to EPA protocol and conducted in a professional manner within parameters established by regulatory and industry standards.

A. Sampling Methods and Procedures

- Visual site reconnaissance of entire property with photos
- Grab samples were taken and screened for Chlorides with an Electrical Conductivity Meter (Milwaukee Model SM802). This process is used to identify any elevated levels for chlorides for a specific depth and area.
- Grab samples were taken and screened for Total Petroleum Hydrocarbons (TPH), with a Photoionization Detector (Mini Rae Plus - model # PGM-76IS). This process is used to identify any elevated levels for TPH for a specific depth and area.
- The parameter of the spill area was delineated first by visual reconnaissance and screening surface samples and then with soil borings.
- A site grid was developed from data collected with grab sample screening.
- Grid samples were taken and combined within specific areas which made up the identified composite samples.
- Samples were systematically taken from soil borings at surface and 1ft intervals. Samples were screened with an EC meter and PID detector.
- Sampling Grid: Areas were identified as 1, 2, 3, 4, 5.
  - **Chlorides:** Highest chloride levels were **35400ppm** at surface level in grid area "1". Acceptable levels for chlorides are expected to be reached at 1' to 4' depths depending on each grid area.
  - **TPH:** All levels of TPH were determined to be **less than 5000ppm** with the **highest level 3260ppm**.
- Lab Samples: Composite samples were taken from grid areas 1, 2, 3, 4, 5.
- Decontamination procedures were maintained
- All samples were kept on ice until delivered to lab
- A field log was maintained
- A formal chain of custody was maintained
- Composite samples were delivered to Trace Analysis in Midland, TX - an EPA approved lab.

4.0 INVESTIGATION RESULTS

Lab results are listed below (please see app. B).

NMOCD acceptable level for Chlorides is 250ppm and less.
NMOCD acceptable level for Total Petroleum Hydrocarbons is 5000ppm and less.

Sample field code	**Chloride PPM**		Sample field code	**TPH PPM**
1S - surface	35400		1S - surface	214
2S - surface	24500		2S - surface	302
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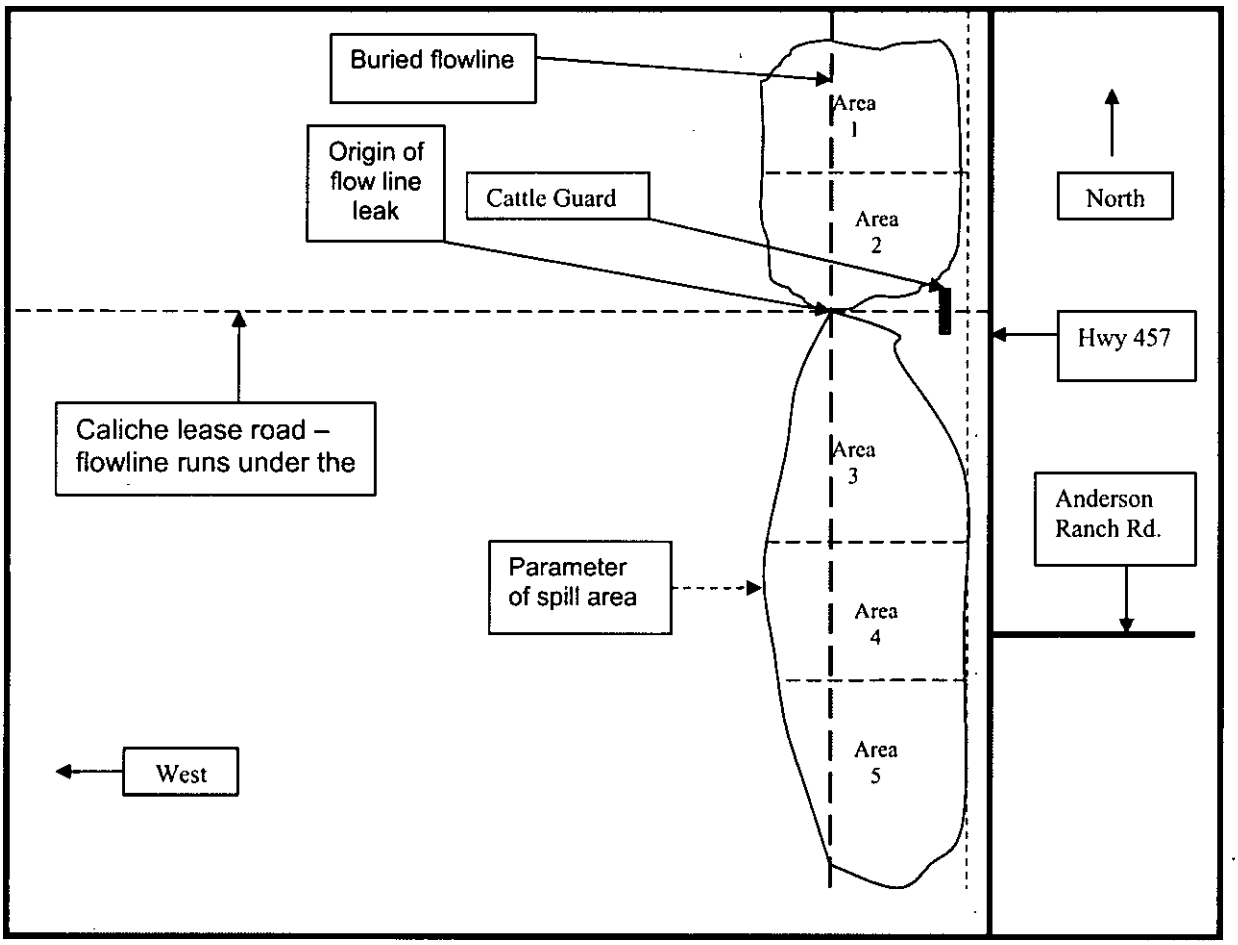


5.0 NMOCD SITE RANKING (see app. D)

SITE RANKING – According to NMOCD "Spill Clean up Guidelines" for "Unsaturated Contaminated Soils"

The general site characteristics obtained during the site assessment were used to determine the appropriate soil remediation action level. A risk based approach was taken for the site evaluation. Site soils were contaminated by saltwater and petroleum constituents. The site was scored according to the ranking criteria below to determine the relative threat (if any), to public health, fresh waters and the environment.

Ranking Criteria

Depth To Ground Water	Ranking Score
<50 feet	20
50 - 99	**10**
>100	0

- **Depth to ground water is an estimated 80'**, according to NM State Engineers Office and USGS information (please app. D). Measurements were taken from the nearest water wells (on record).

- **The NMOCD rating is considered to be 10 or less.**
  Wellhead Protection Area

<1000 feet from a water source, or; <200 feet from private domestic water source	
Yes	20
No	**0**

Distance To Surface Water Body

<200 horizontal feet	20
200 - 1000 horizontal feet	10
>1000 horizontal feet	**0**

From NMOCD "Spill Clean up Guidelines"
Recommended remediation action level. The total ranking score determines the degree of remediation that may be required at any given site. The total ranking score is the sum of all four individual ranking criteria listed in Section IV.A.2.a.

Total Ranking Score for this spill site is considered to be 10.

Recommended remediation action is to conduct **"dig and haul"** operations with soil being disposed of at the nearest OCD approved disposal site.

6.0 REGULATORY REVIEW

A. The NMOCD form C141 was submitted on July 9, 2010. This sampling investigation is intended to be in compliance with New Mexico Oil Conservation Division:

- Rule 116 RELEASE NOTIFICATION AND CORRECTIVE ACTION [1-1-50...2-1-96; A, 3-15-97]
  1. 116.D. CORRECTIVE ACTION: The responsible person must complete Division approved corrective action for releases which endanger public health or the environment. Releases will be addressed in accordance with a remediation plan submitted to and approved by the Division or with an

  abatement plan submitted in accordance with Rule 19 (19 NMAC 15.A. 19). [3-15-97]
- Rule 19 (19 NMAC 15.A. 19). [3-15-97].

7.0 CONCLUSIONS / RECOMMENDATIONS

Conclusion:
Chloride contamination for spill area has an average depth of 1' to 3'. TPH levels were determined to below 5000ppm.

Recommendation:

- **Conduct "Dig & Haul"** remediation for spill area to an estimated average depth of 1ft to 3 ft. Perform field screening with formal lab analysis to insure proper abatement. Deliver excavated soil to the nearest approved OCD disposal site.

- **Complete Closing Report** in compliance with OCD requirements.
  - Lab analysis insuring chloride contamination has been removed to less than 250ppm
  - Lab analysis insuring TPH removed to less than 5000ppm
  - List OCD approved disposal site where contaminated soil disposed of.
  - Grade site to match original topography and reseed with appropriate seed mix.
  - Submit formal closing report to NMOCD office in Hobbs, NM

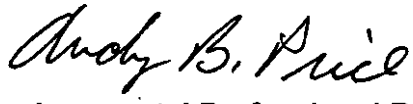
8.0 Limitations

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

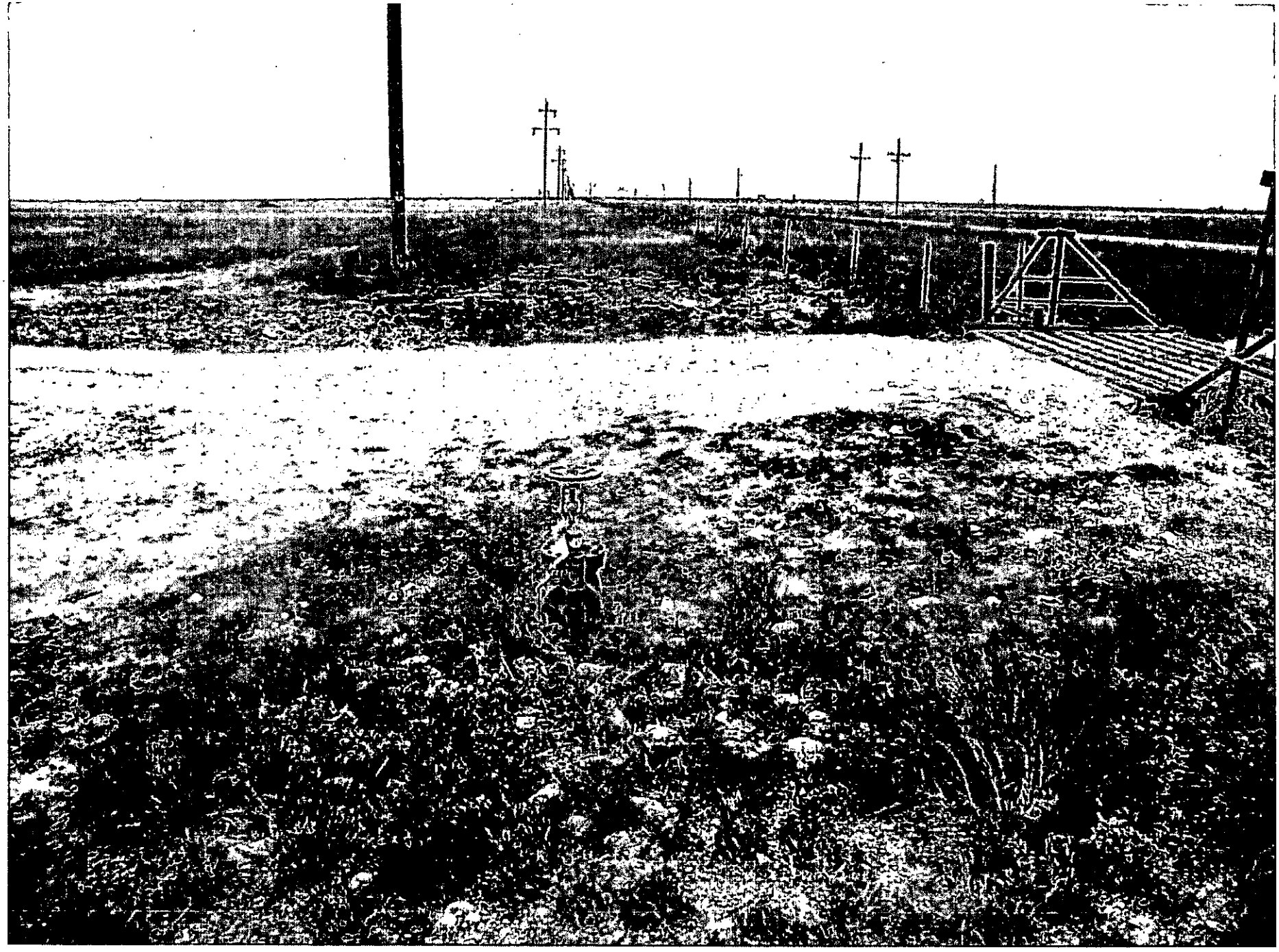
Andy B. Price

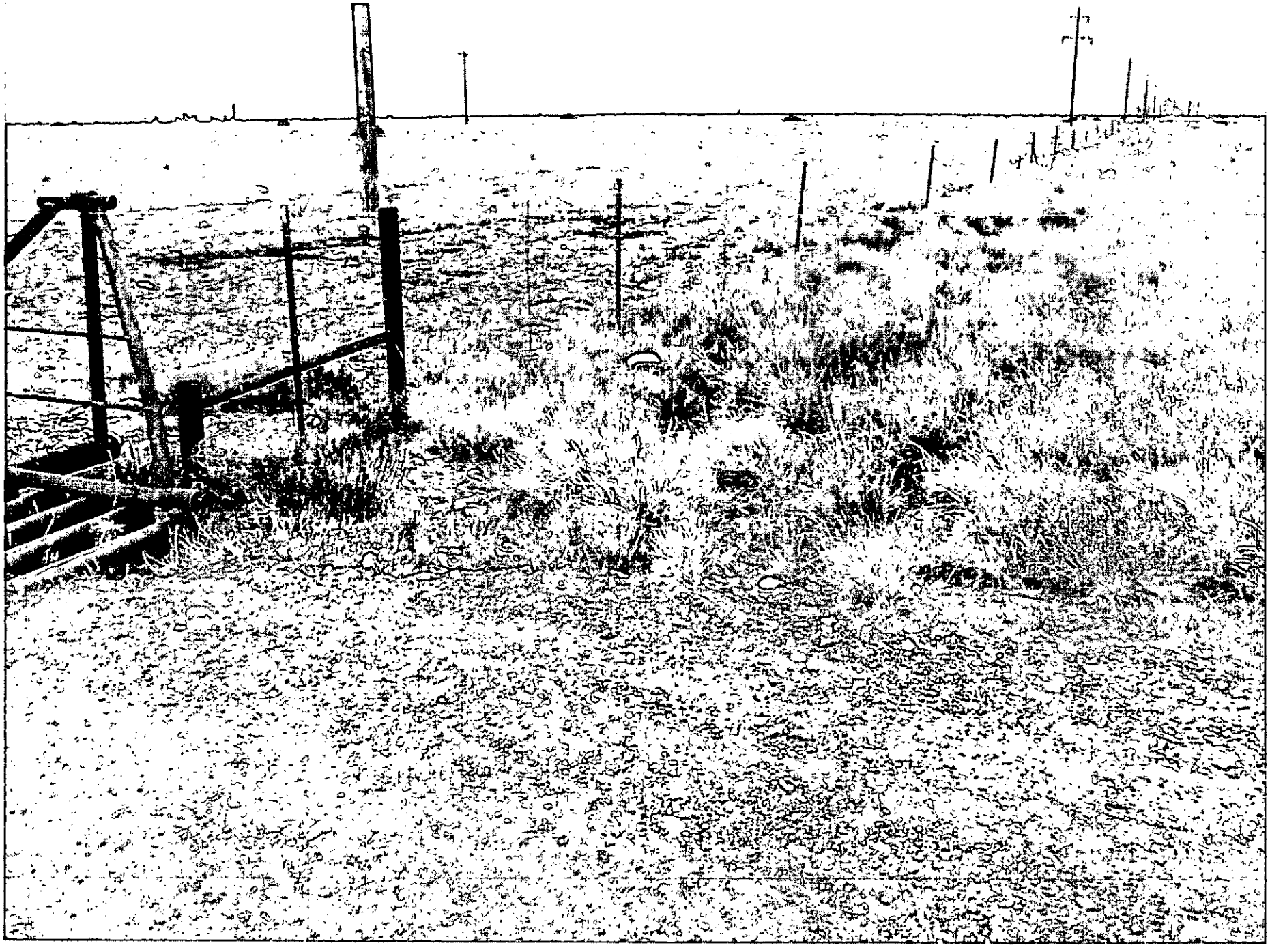


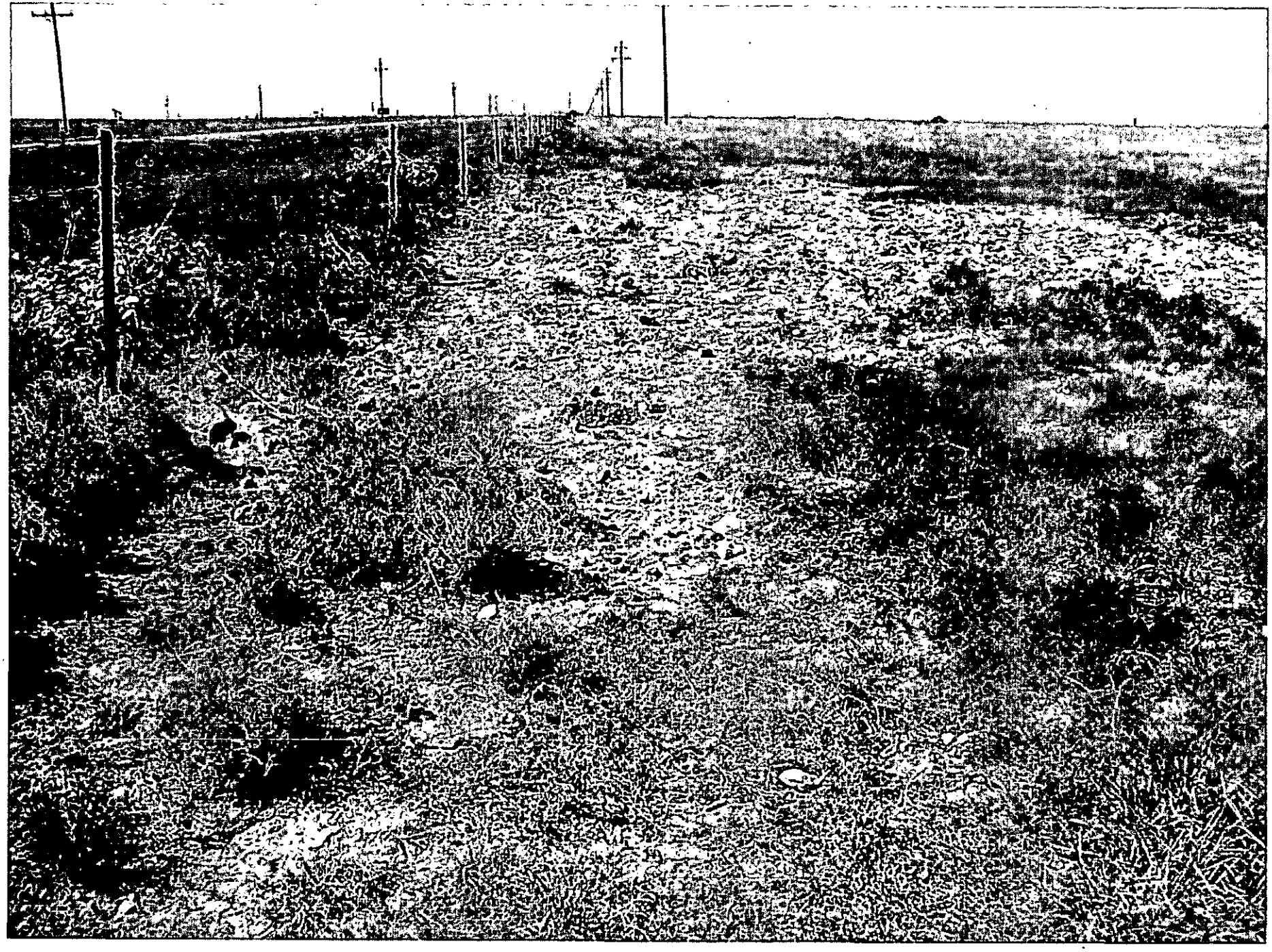
Registered Environmental Professional Registry #9116

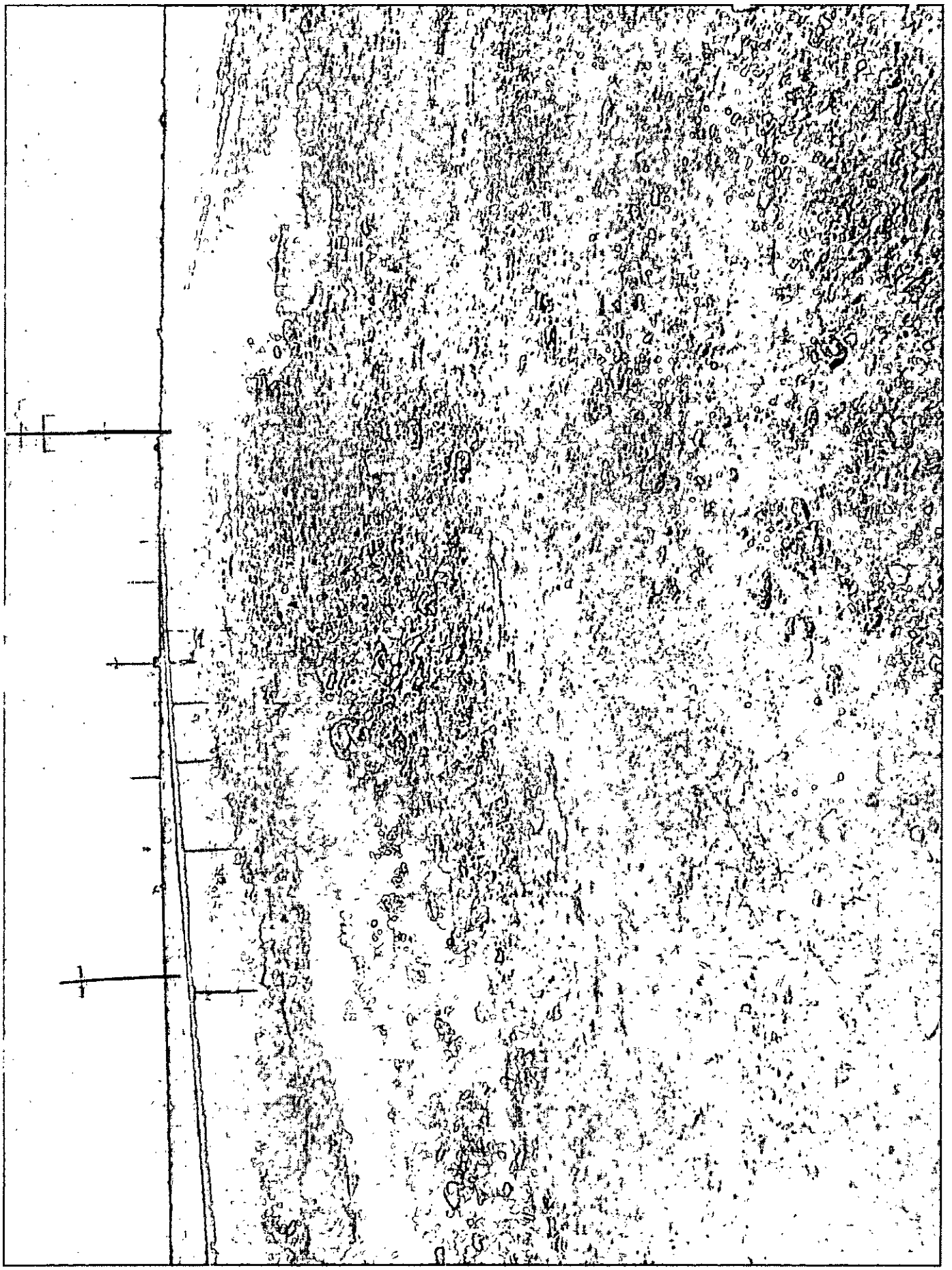
APPENDIXES

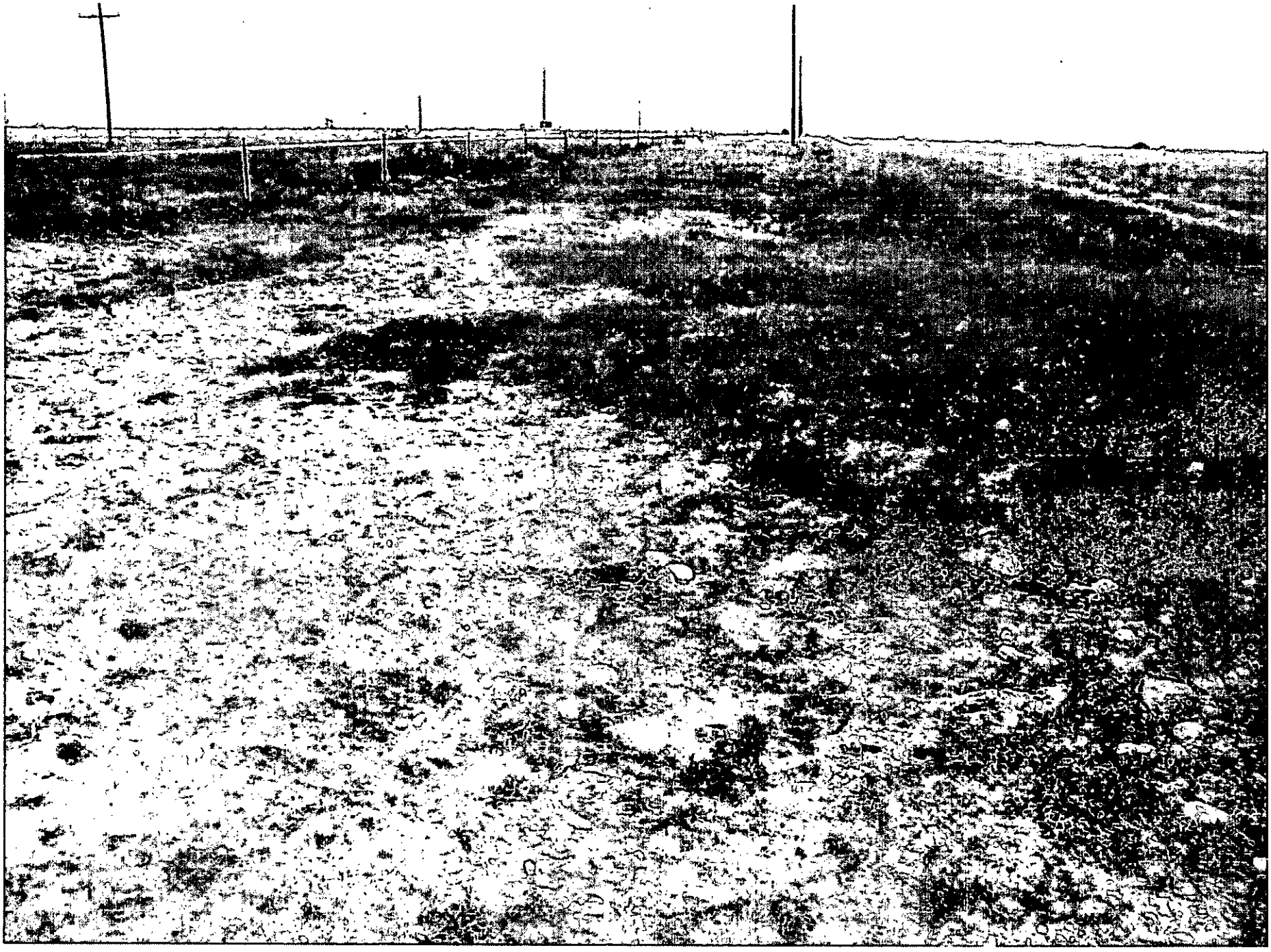
A. Site Photos
B. Lab Report
C. Chain of Custody
D. Hydrology
E. OCD Form C141

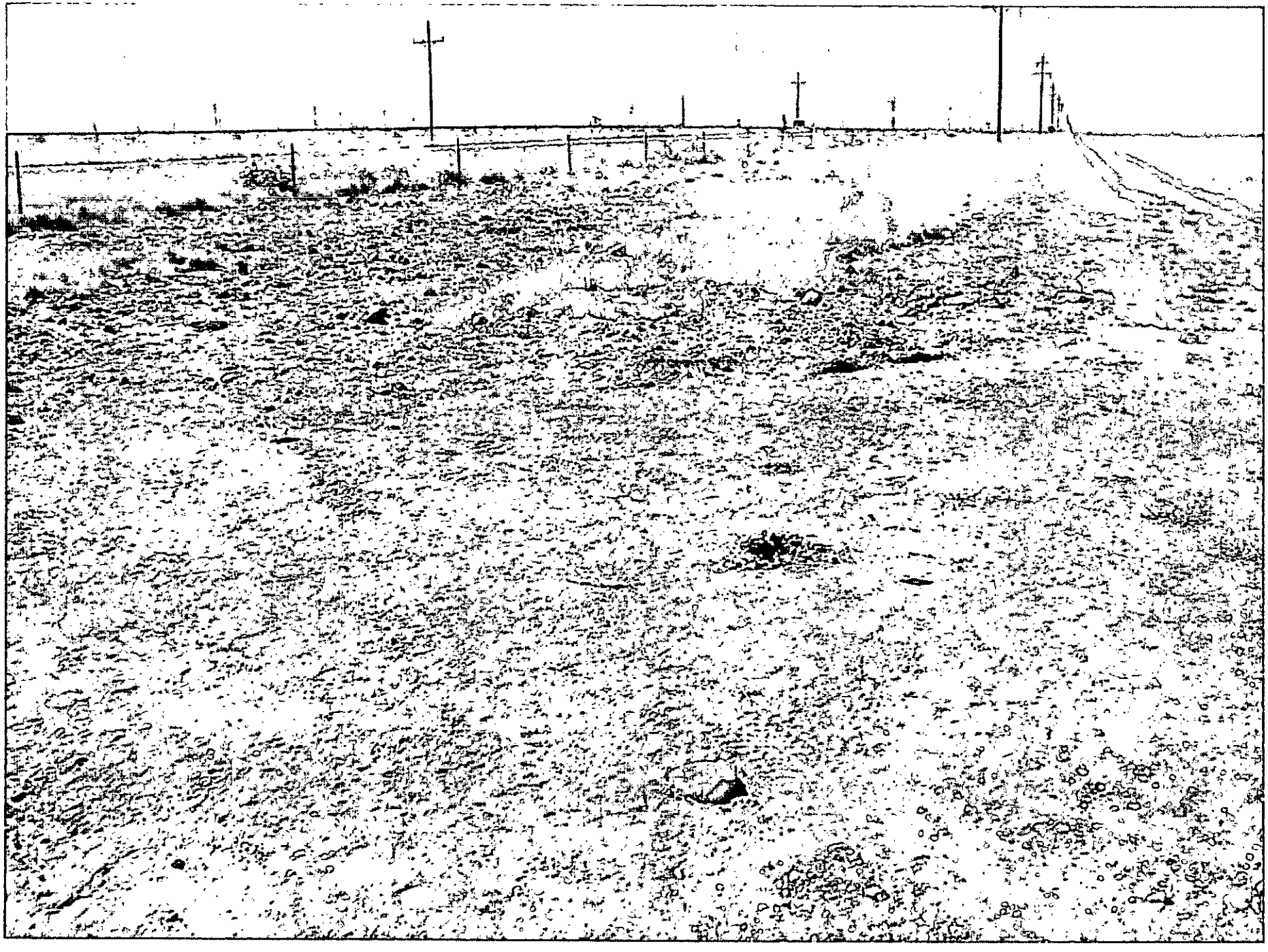


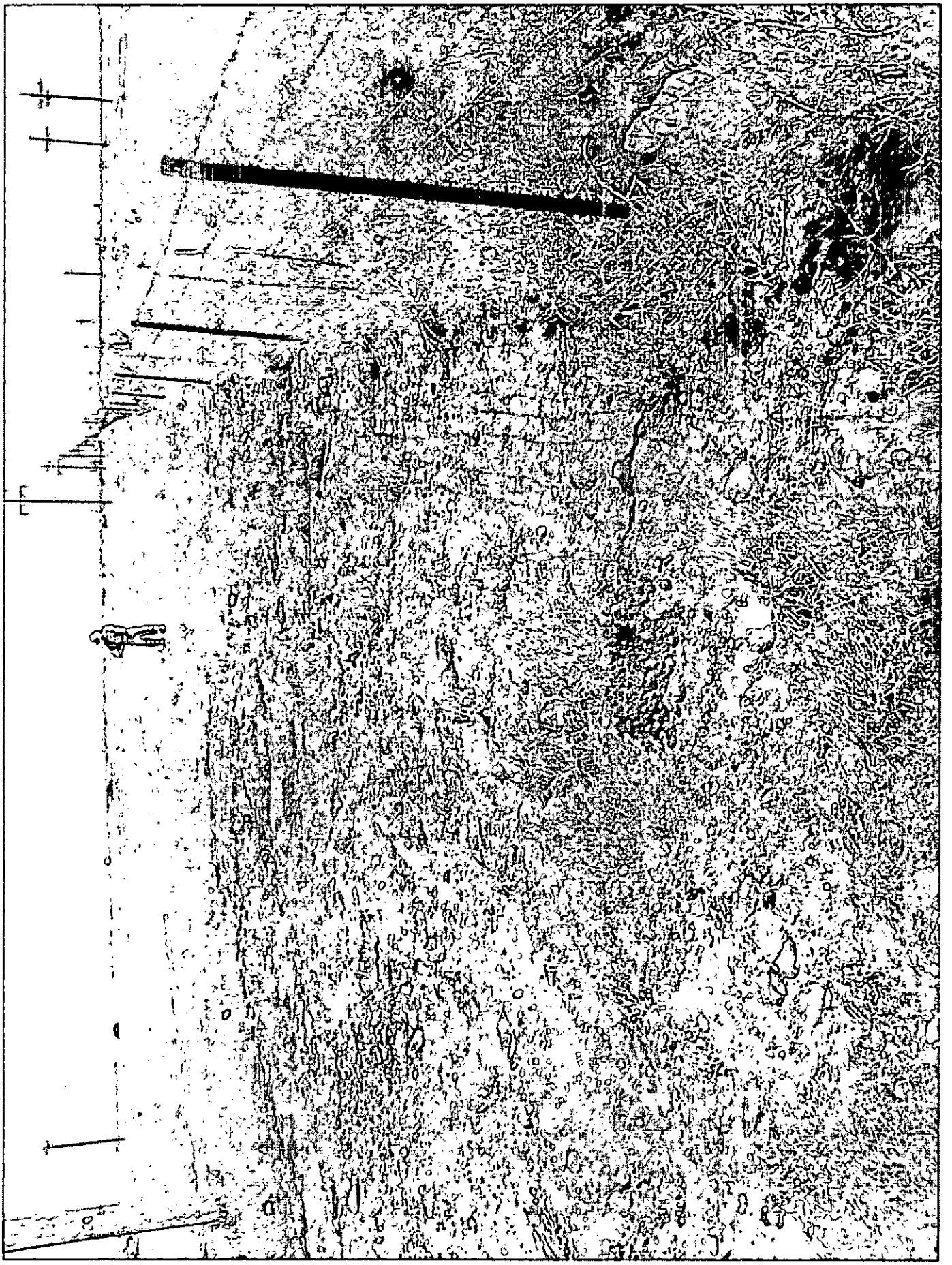


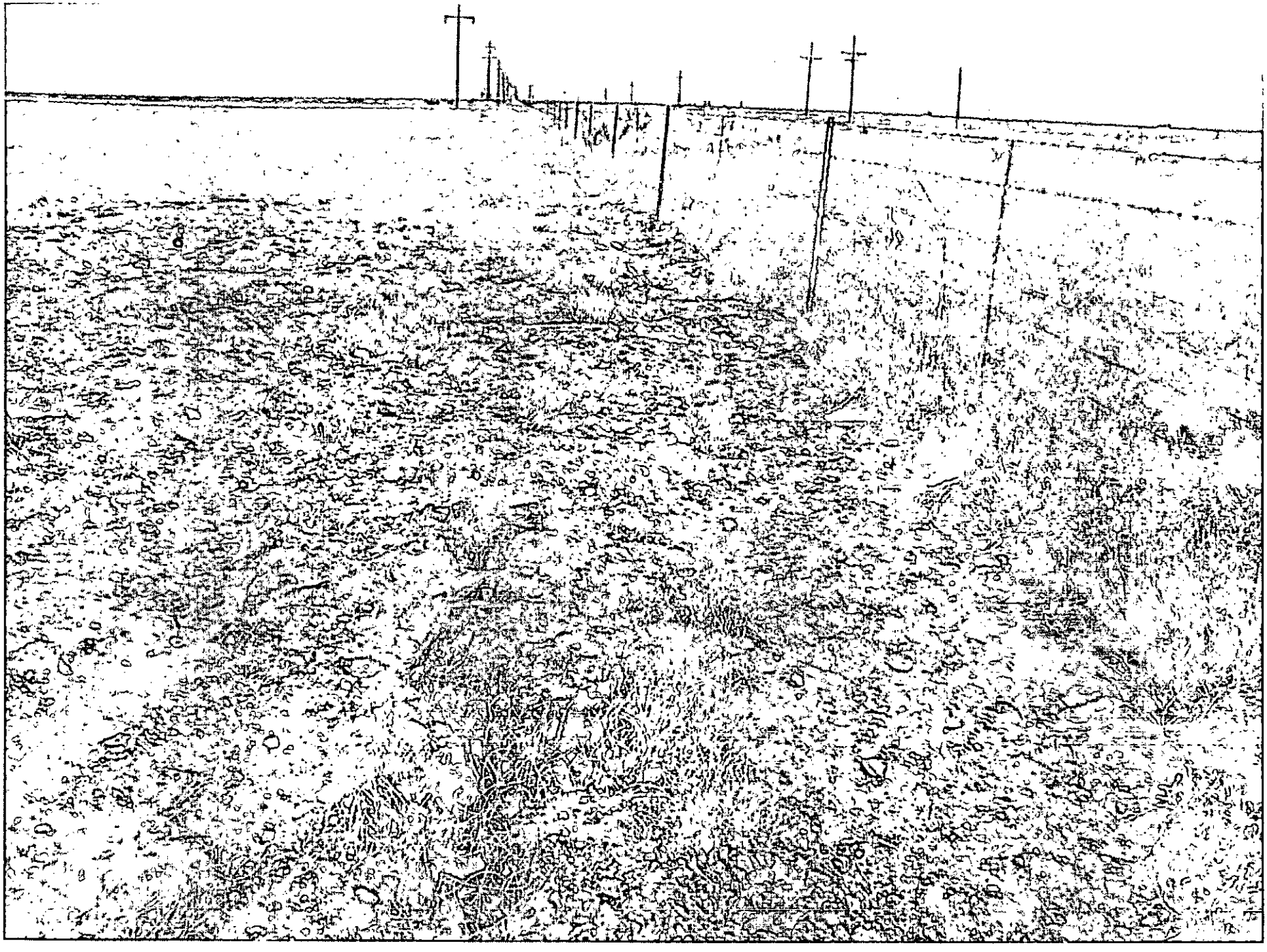












Summary Report

Andy Price
EnerVest Operating LLC
1001 Fannin Street
Suite 800
Houston, TX 77002

Report Date: July 29, 2010

Work Order: 10072335

Project Location: Sec. 13, T14S-R33E, Lea Co., NM
Project Name: Chalupa-Pyro

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
238461	1-S	soil	2010-07-23	07:10	2010-07-23
238462	2-S	soil	2010-07-23	07:20	2010-07-23
238463	3-S	soil	2010-07-23	07:36	2010-07-23
238464	4-S	soil	2010-07-23	07:45	2010-07-23
238465	5-S	soil	2010-07-23	07:59	2010-07-23
238466	1-1	soil	2010-07-23	08:30	2010-07-23
238467	2-2	soil	2010-07-23	09:05	2010-07-23
238468	3-3	soil	2010-07-23	09:30	2010-07-23
238469	4-1	soil	2010-07-23	09:55	2010-07-23
238470	5-2	soil	2010-07-23	10:20	2010-07-23

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
238461 - 1-S	**214**	<10.0
238462 - 2-S	**302**	<10.0
238463 - 3-S	**3260**	**10.1**
238464 - 4-S	**1120**	<2.00
238465 - 5-S	<50.0	<2.00
238466 - 1-1	<50.0	<2.00
238467 - 2-2	<50.0	<2.00
238468 - 3-3	<50.0	<2.00
238469 - 4-1	<50.0	<2.00
238470 - 5-2	<50.0	<2.00

Sample: 238461 - 1-S

continued ...

sample 238461 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		**14500**	mg/Kg	4.00

Sample: 238462 - 2-S

Param	Flag	Result	Units	RL
Chloride		**181000**	mg/Kg	4.00

Sample: 238463 - 3-S

Param	Flag	Result	Units	RL
Chloride		**26500**	mg/Kg	4.00

Sample: 238464 - 4-S

Param	Flag	Result	Units	RL
Chloride		**49400**	mg/Kg	4.00

Sample: 238465 - 5-S

Param	Flag	Result	Units	RL
Chloride		**1000**	mg/Kg	4.00

Sample: 238466 - 1-1

Param	Flag	Result	Units	RL
Chloride		**1440**	mg/Kg	4.00

Sample: 238467 - 2-2

Param	Flag	Result	Units	RL
Chloride		**777**	mg/Kg	4.00

Sample: 238468 - 3-3

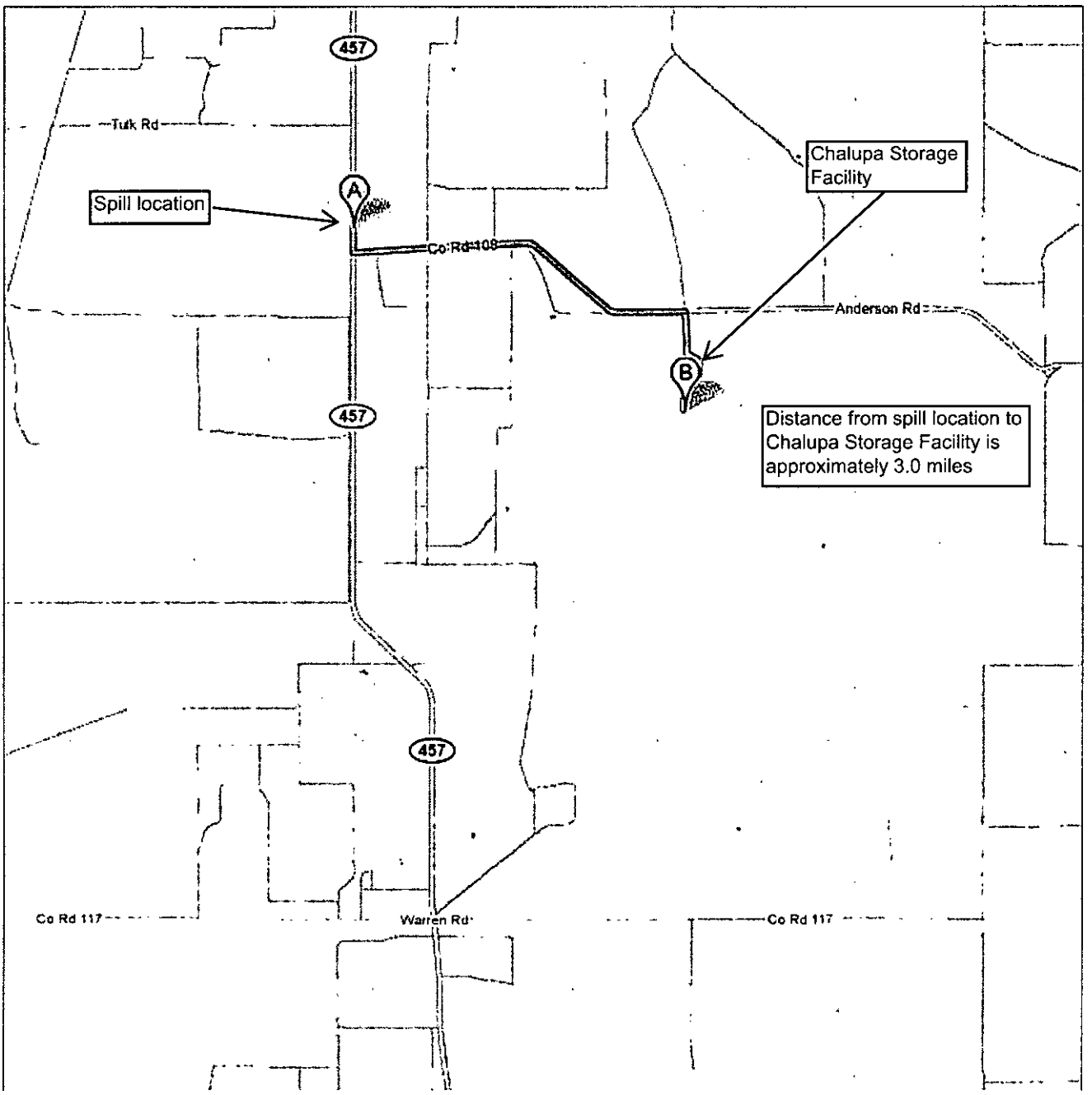
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 238469 - 4-1

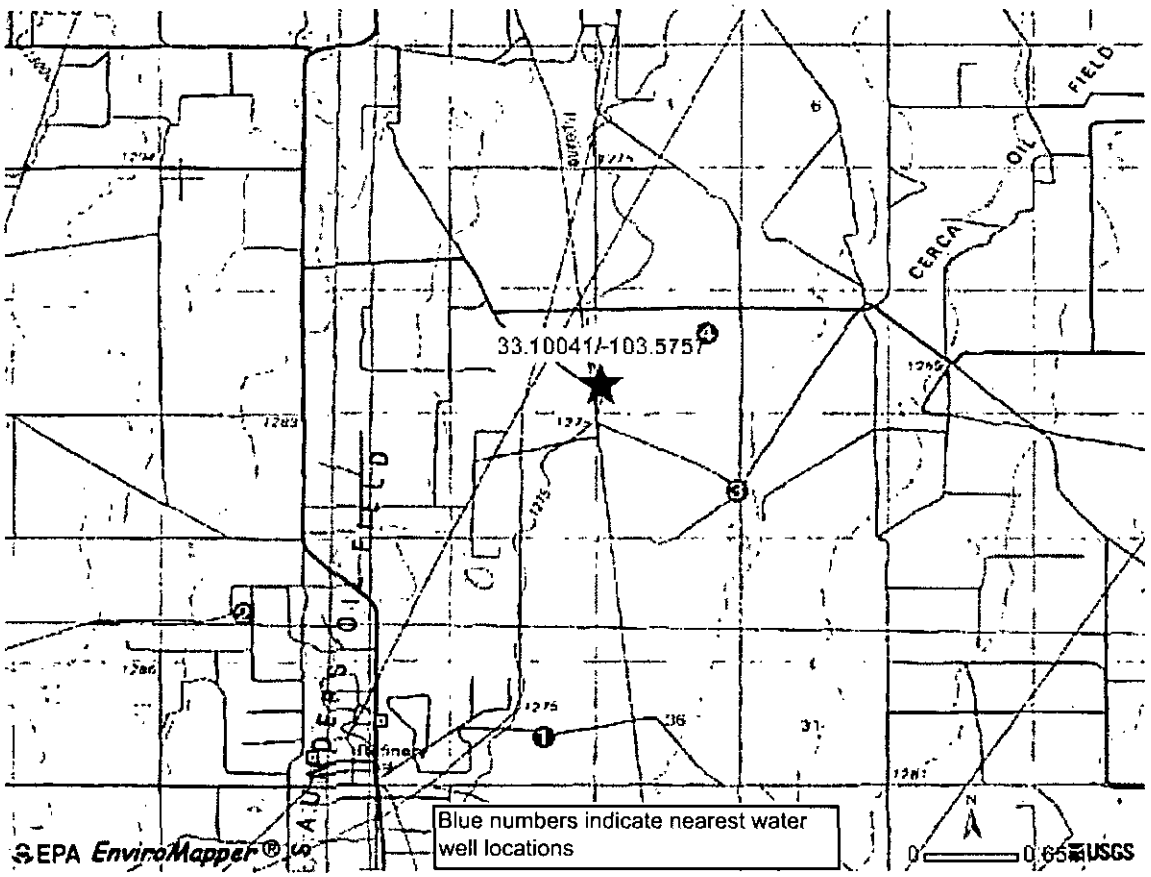
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 238470 - 5-2

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


457
Tuk Rd
Spill location
A
Co Rd 108
Chalupa Storage Facility
Anderson Rd
B
457
Distance from spill location to Chalupa Storage Facility is approximately 3.0 miles
457
Co Rd 117
Warren Rd
Co Rd 117


457
Tull Rd
Co Rd 109A
Spill Location
Anderson Rd
Co Rd 108
Chalupa SWD Facility
approximately 3.0 miles
457


33.10041/-103.5757
CERCA OIL FIELD
SAUNDERS OIL FIELD
Blue numbers indicate nearest water well locations
EPA EnviroMapper®
USGS

New Mexico Office of the State Engineer
Point of Diversion Summary

Back

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are biggest to smallest)

POD Number	Tws	Rng	Sec	q	q	q	Zone	X	Y
L 04866	14S	33E	13	2	4				

Driller Licence: 33 TATUM, CLAUDE E.
Driller Name: TATUM, CLAUDE E. **Source:** Shallow
Drill Start Date: 04/09/1962 **Drill Finish Date:** 04/12/1962
Log File Date: 04/19/1962 **PCW Received Date:**
Pump Type: **Pipe Discharge Size:**
Casing Size: 7 **Estimated Yield:**
Depth Well: 145 **Depth Water:** 80

Water Bearing Stratifications:	Top	Bottom	Description
	80	145	Other/Unknown
Casing Perforations:	**Top**	**Bottom**	
	90	145	

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 14S Range: 33E Sections: 13

NAD27 X: Y: Zone: Search Radius:

County: LE Basin: Number: Suffix:

Owner Name: (First) (Last) ○Non-Domestic ○Domestic
◉All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 09/13/2007

								(Depth Water in Feet)		
Bsn	**Tws**	**Rng**	**Sec**	**Zone**	**X**	**Y**	**Wells**	**Min**	**Max**	**Avg**
L	14S	33E	13				1	80	80	80

Record Count: 1

ENVIRONMENTAL REMEDIATON
DIG & HAUL OPERATIONS

EnerVest Operating, LLC

Chalupa #4 SWD Flow Line Leak

Section 13, T14S – R33E – API #30-025-29184
Lea County, NM
Coordinates: Latitude 33.11704 Longitude -103.61131

October 20TH, 2011

A Report For:
New Mexico Oil Conservation Division, Hobbs District
&
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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EXECUTIVE SUMMARY

Completed Operations Review:

Baseline Solutions, was retained by EnerVest Operating, LLC of Houston Texas, to conduct an environmental remediation at the spill location.

- The site location is described as:
  Approximately 3.0 miles west of the Chalupa tank battery facility
  Section 13, T14S – R33E, Lea County, NM.
  Coordinates: Latitude 33.11704 Longitude -103.61131
- A sampling investigation report was submitted to NMOCD on October 10, 2010. The contaminated area was delineated along with TPH and chlorides levels.
- Dig & Haul Operations were completed on January 25th, 2011.

Dig & Haul Operations:

- Dig and Haul operations was the method used to remove contaminated soils. Samples were screened on site during excavation with field instrumentation. Formal composite samples were taken for lab analysis from five separate areas when screening indicated chloride and TPH levels were below required limits.
- Formal lab samples were taken at the total depth of the excavation and photos were taken as well to document the completed excavation. Please see enclosed photos. Over all excavation depths ranged from 1' to 3' depths. **Please see lab results chart listed at the end of this report with depths of excavation and levels for TPH and chlorides.**
- A total of 164 cubic yards of contaminated soil were removed and disposed of at Gandy's Disposal facility. (Please see appendices A for photos)
- Backfill soil was purchased from Troy Fort Ranch nearby and is staged on site.
- Backfill operations have not been completed. Backfill for excavated area will not be completed until approval from NMOCD.

Conclusion:

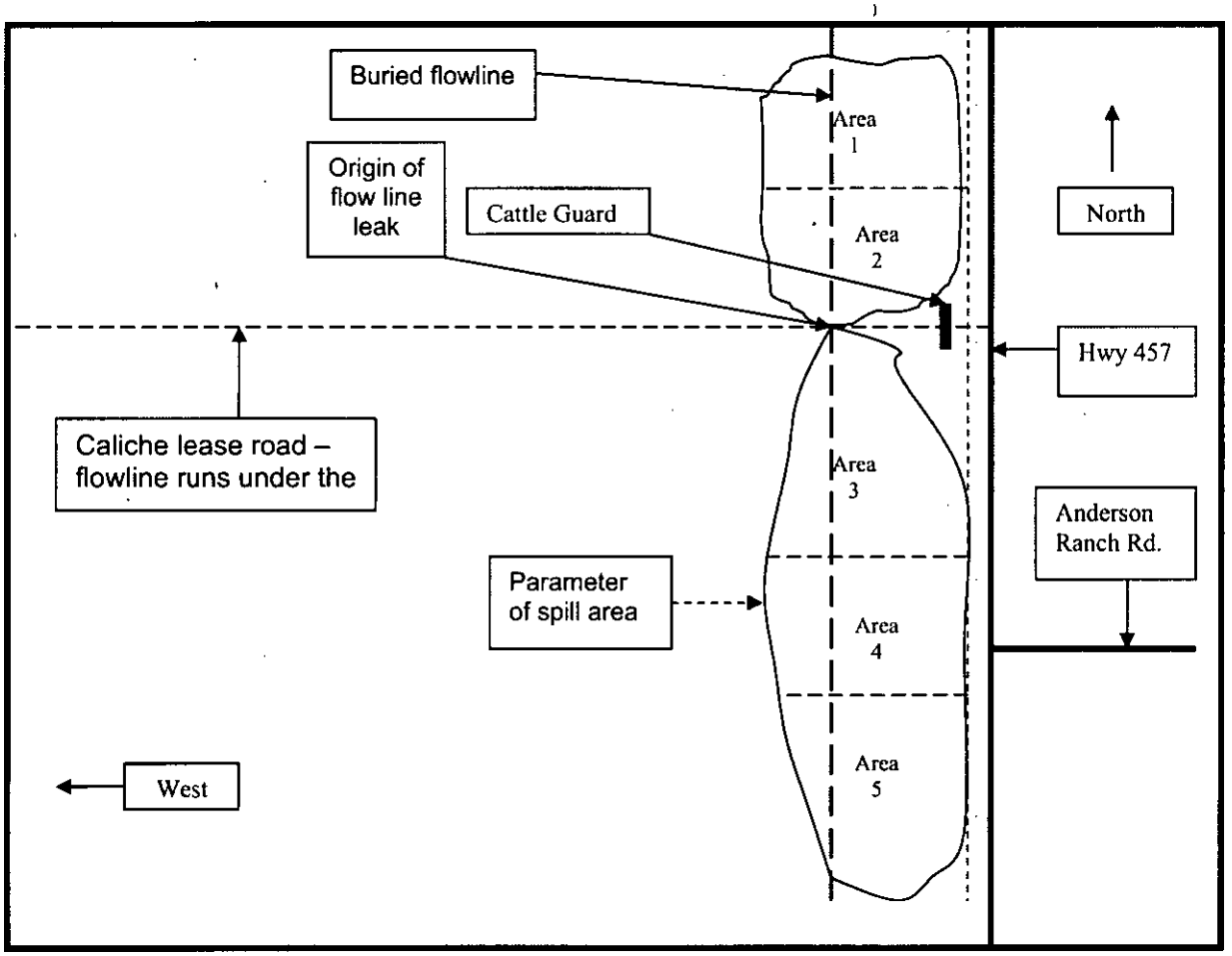
- Total Petroleum Hydrocarbon (TPH) levels were determined to be below the required limit of 1,000ppm.
- Chloride levels for the spill area were determined to be below the required limit of 250ppm in all areas.
- No further backfill will be completed until proper approval from BLM.
- Please see enclosed:
  - Site diagram
  - Project photos
  - Laboratory analysis report/results

RECOMMENDATION:

- Backfill site with soil that is staged on site
- Grade site to match original topography and reseed with appropriate seed mix
- Submit formal closing report along with Final c141 to NMOCD Hobbs office

Lab results for dig & haul operations are listed below (please see app. B).

Sample field code	**Chloride PPM**		Sample field code	**TPH PPM**
1 - 1' depth	<200		1 - 1' depth	<50.0
2 - 2' depth	<200		2 - 2' depth	<50.0
3 - 3' depth	<200		3 - 3' depth	<50.0
4 - 1' depth	<200		4 - 1' depth	<50.0
5 - 2' depth	<200		5 - 2' depth	<50.0



8.0 Limitations

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

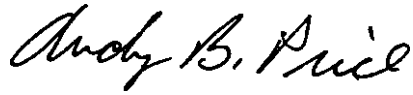
The conclusions presented in this report were based on the services described, and not on specific tasks or procedures beyond the scope of described services or the time and budgetary constraints imposed by EnerVest Operating.

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:

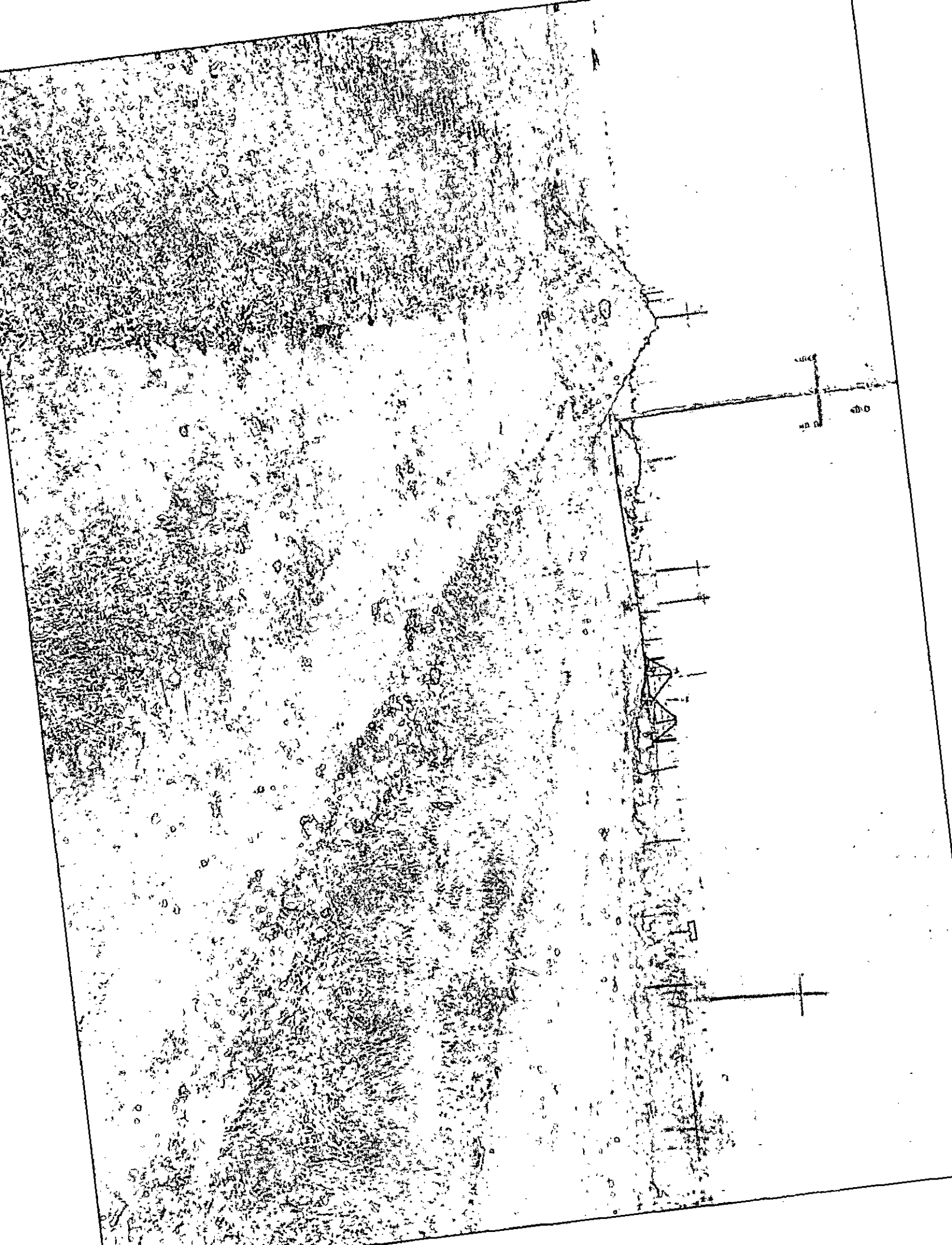
Andy B. Price

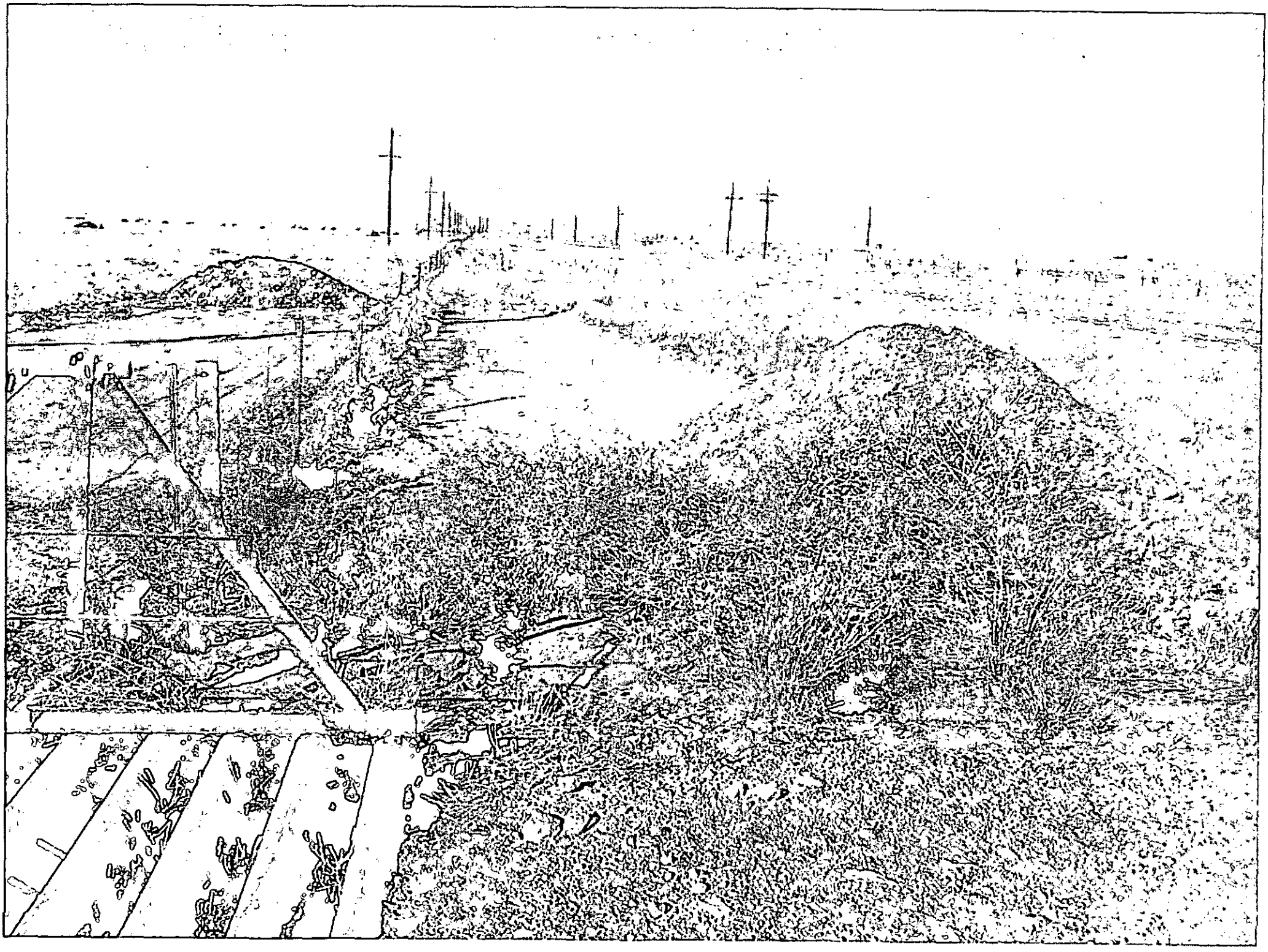


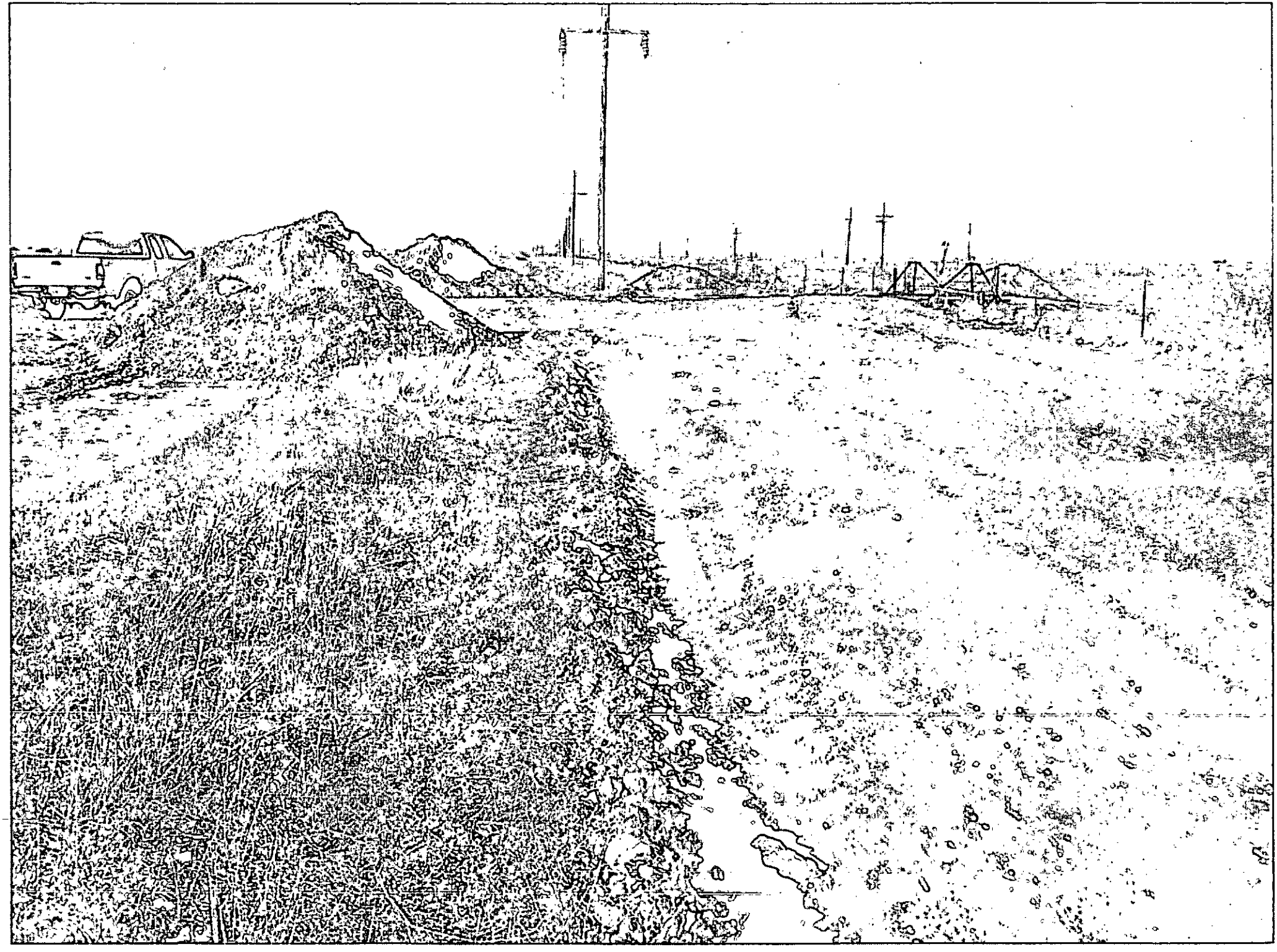
Registered Environmental Professional Registry #9116

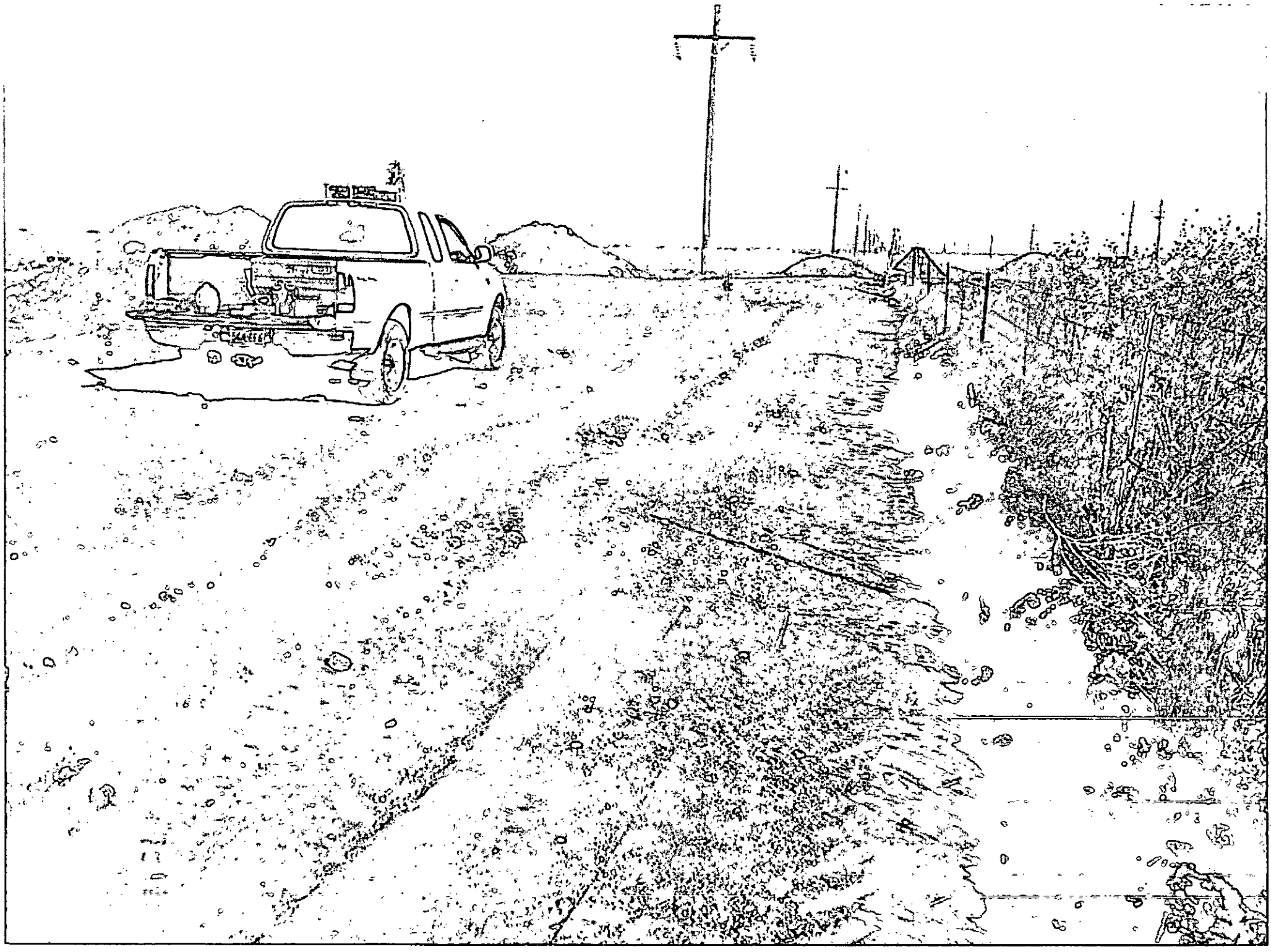
APPENDIXES

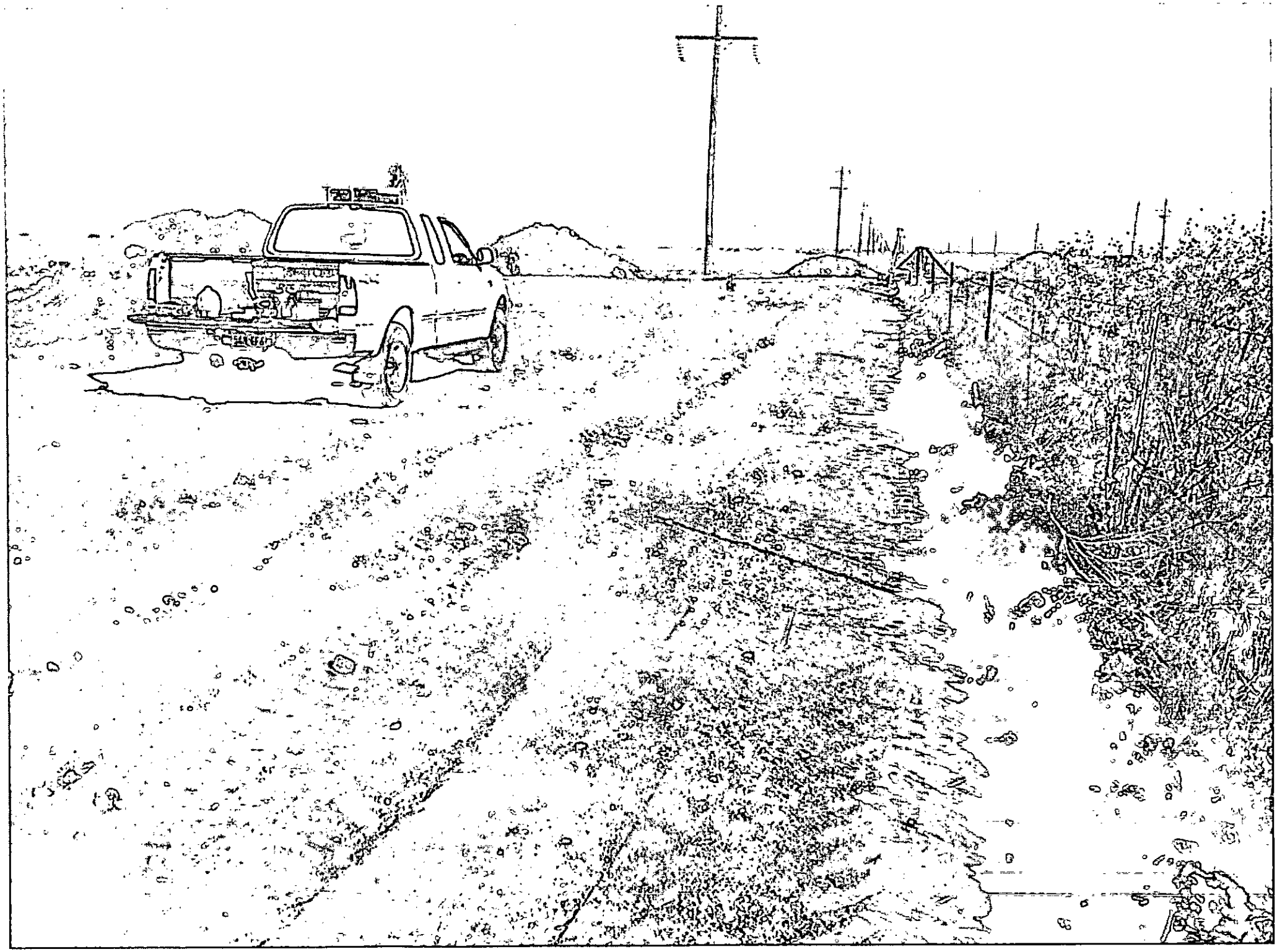
A. Site Photos
B. Lab Report
E. OCD Form C141

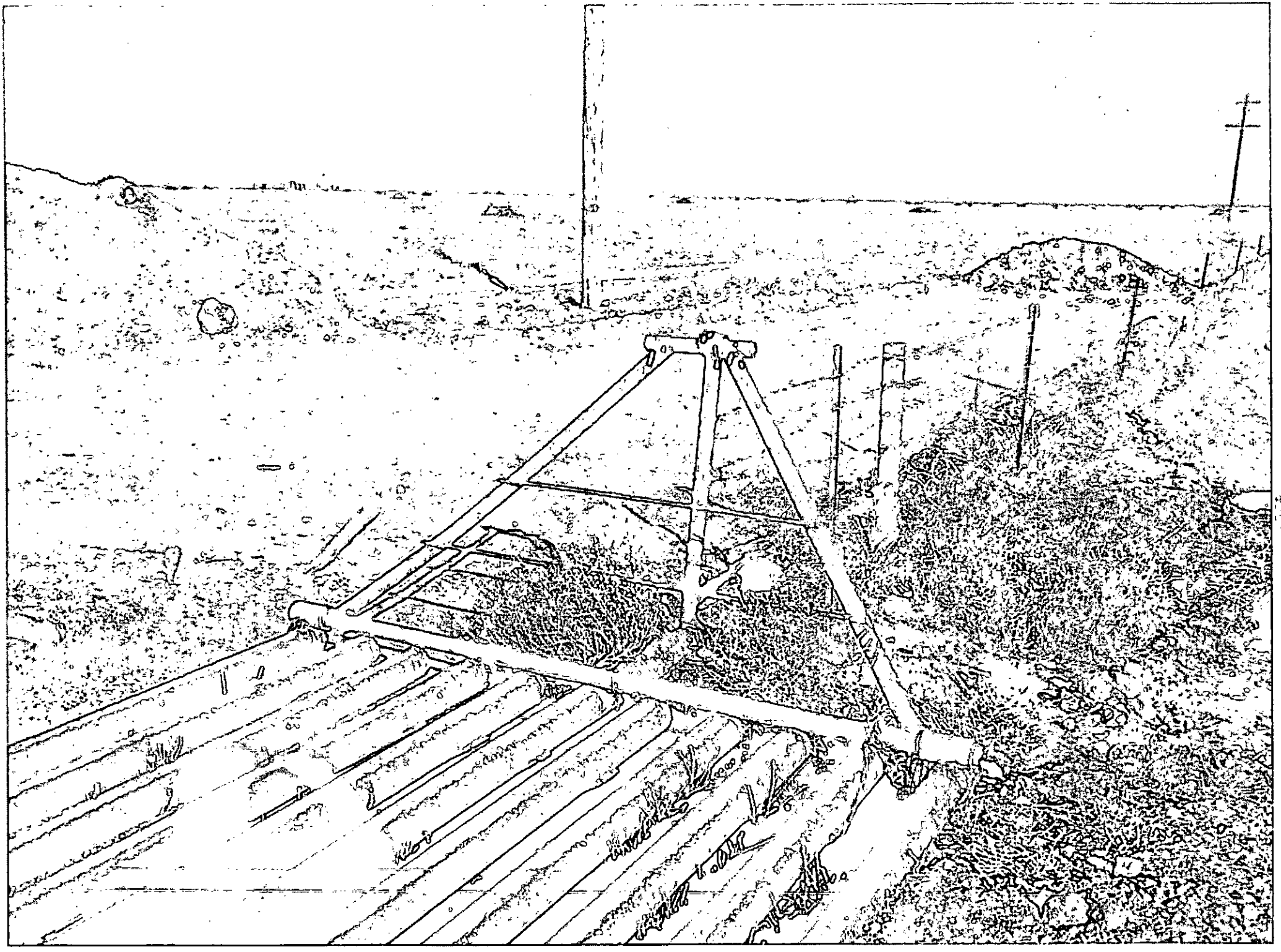


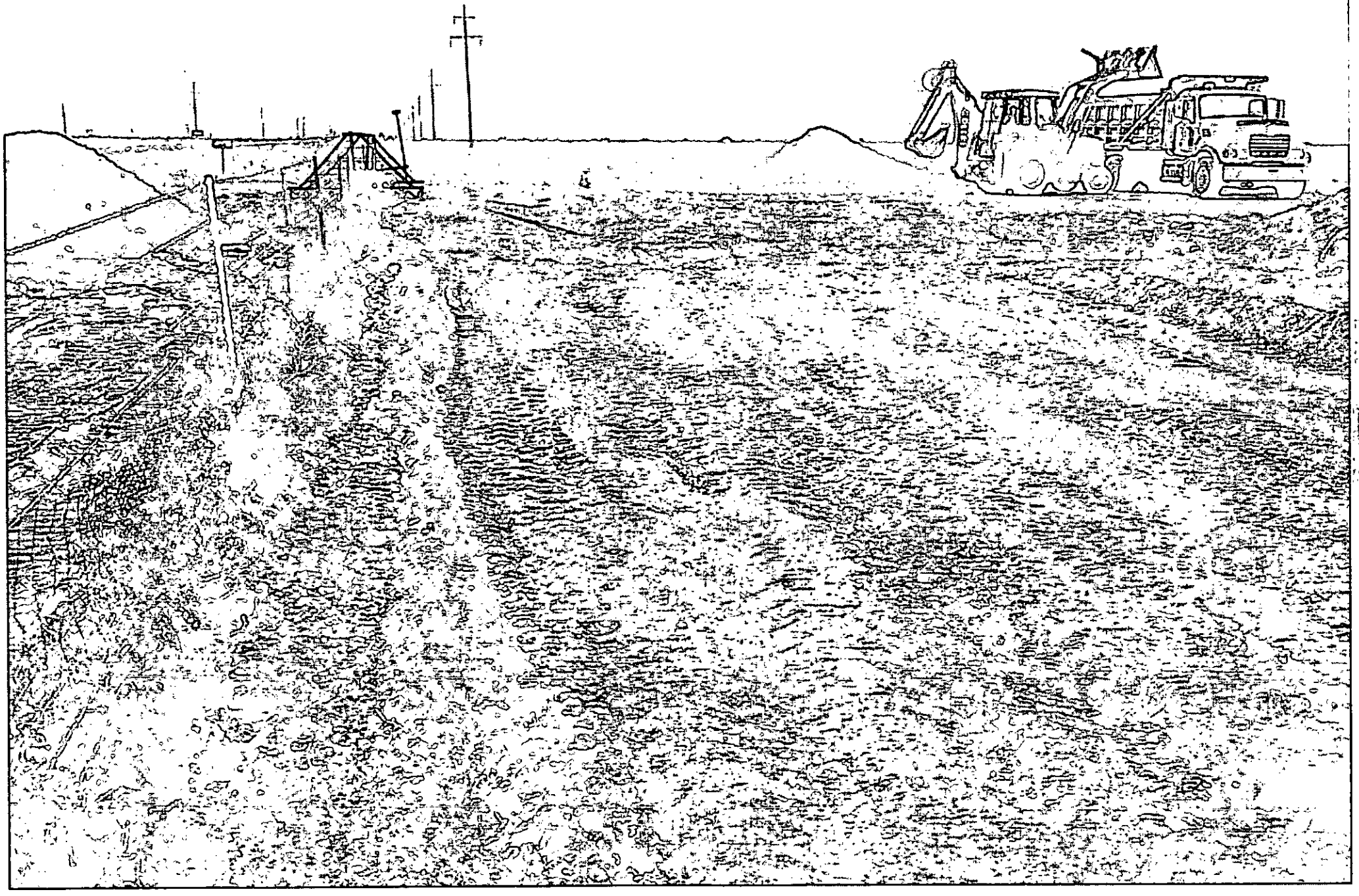












Summary Report

Andy Price
EnerVest Operating LLC
1001 Fannin Street
Suite 800
Houston, TX 77002

Report Date: February 1, 2011

Work Order: 11012518

Project Location: Sec. 13, T14S-R33E, Lea Co., NM
Project Name: Chalupa-Pyro

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
256123	1	soil	2011-01-25	08:00	2011-01-25
256124	2	soil	2011-01-25	08:15	2011-01-25
256125	3	soil	2011-01-25	08:30	2011-01-25
256126	4	soil	2011-01-25	09:00	2011-01-25
256127	5	soil	2011-01-25	09:15	2011-01-25

Sample - Field Code	TPH DRO - NEW DRO (mg/Kg)	TPH GRO GRO (mg/Kg)
256123 - 1	<50.0	<2.00
256124 - 2	<50.0	**6.71**
256125 - 3	<50.0	<2.00
256126 - 4	<50.0	<2.00
256127 - 5	<50.0	<2.00

Sample: 256123 - 1

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

Sample: 256124 - 2

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

Sample: 256125 - 3

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

Sample: 256126 - 4

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

Sample: 256127 - 5

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

CLOSING REPORT

Saltwater Spill Remediation
Chalupa #4 SWD
EnerVest Operating, LLC

Site location: Chalupa #4 SWD
Flow Line Leak/Spill
Section 13, T14S – R33E
API #30-025-29184
Lea County, NM
Coordinates:
Longitude -103.61131
Latitude 33.11704

Prepared for
New Mexico Oil Conservation Division
&
EnerVest Operating, LLC
Mr. Elroy Ardoin

January 23rd, 2012

Prepared by:
Baseline Solutions, LLC
Andy Price
Midland, Texas

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Executive Summary

REMEDIATION COMPLETED

Baseline Solutions, LLC, was retained by EnerVest Operating, LLC of Houston Texas, to conduct a remediation project at a spill site approximately 3 miles from the Chalupa #4 SWD storage facility. The release most likely occurred on June 22nd, 2010.

A valve was replaced in the flow line 75yds south of where the leak occurred. The crew closed the valve which should have been left open. Pressure built up resulting in a line failure near the cattle guard road crossing. The spill at this site was considered to be approximately 20bbls. The line has been repaired with a new section of pipe. Dig and Haul remediation operations have been completed, the area backfilled and the site re-seeded.

The location of the release is described as:

- Section 13, T14S – R33E, Lea County, NM
- Coordinates: Latitude 33.11704 Longitude -103.61131

A. Soil Remediation - Dig & Haul Operations

- Excavation began on 1/20/11 and completed on 1/21/11
- Contaminated soil was excavated to depths of 3 ft. or less.
- Soil was removed from the delineated area until representative soil samples from the walls and bottom of the excavation were below OCD specified standard - listed in Section 3-B of this report.

A. Lab Analysis results for excavated area (see app. D)

- **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 below the OCD action level. These results were included in the Dig & Haul report dated 10/20/11, and submitted to OCD.

C. Contaminated Soil Removal

- 164 cubic yards of contaminated soil was excavated and disposed of at the OCD approved disposal facility **"Gandy Marley Land Farm - Disposal".**

D. Back Fill Soil

- Top Soil was obtained from Rancher Clyde Forte – on his property approximately 4 miles from the Chalupa SWD #4. The excavated area was backfilled with quality top soil, spread and leveled to represent original terrain.

E. Re-Seeding

- The entire area was seeded with BLM #2 Grass Mix
- The entire area was dragged to mix seed.

INTRODUCTION

Purpose:

The purpose of the environmental action taken by EnerVest Operating LLC, was to conduct a proper, remediation of the saltwater spill which occurred near the Chalupa #4 SWD well.

Scope:

The scope of the project was to adhere to New Mexico Oil Conservation Division guidelines as well as well as good and prudent environmental practices. The remediation guidelines/steps taken are listed in the body of this report.

1. NOTIFICATION OF LEAK/SPILL

The following information may be found on form C-141 (see app. B).

A. RESPONSIBLE PARTY AND LOCAL CONTACT

EnerVest Operating LLC
William Pilkington - 575-395-3367
Jal, NM

B. SPILL LOCATION

- Legal Description:
  Chalupa #4
  Approximately 3.0 miles from the Chalupa #4 SWD storage facility. Section 13, T14S – R33E
  Lea County, NM
  Coordinates: Coordinates: Latitude 33.11704 Longitude -103.61131
  Lease #LG-2414 – API#30-025-29184
- Directions to spill site is: Take Hwy 82 from Lovington, NM to Hwy 457. Head north on 457. In several miles you will come to Anderson Ranch Rd. Go past Anderson Ranch Rd. approximately 200yds. Turn left/west at the cattle guard. The site is immediately inside the fence line on either side of the cattle guard.

C. TIME OF INCIDENT

- The time of discovery was on 6/23/10.

D. DISCHARGE EVENT

- A flow line connection/union developed a leak resulting in the saltwater spill. The approximate spill area was 150ft X 30ft.

E. TYPE OF DISCHARGE – Produced Water

- The flow line transports produced water.

F. QUANTITY

- The estimated volume of the discharge is considered to be 20bbs.

2. SAMPLING INVESTIGATION ANALYSIS AND RESULTS

A. TARGET SOIL REMEDIATION ACTION LEVELS

- Sodium Chloride levels reduced to **250 mg/kg chloride or Less**
- Total Petroleum Hydrocarbon levels were **reduced to 1000ppm or Less**

B. Soil Sampling Procedures for Laboratory Analysis

A. Sampling Procedures

Soil sampling for laboratory analysis were conducted according to OCD approved industry standards or other OCD-approved procedures. Soil sampling procedures and laboratory analytical methods were as follows:

- Collect samples in clean, air-tight glass jars supplied by the laboratory which will conduct the analysis.
- Label the samples with a unique code for each sample.
- Cool and store samples with or on ice.
- Promptly deliver samples to the lab for analysis following chain of custody procedures.
- All samples were analyzed within the holding times for the laboratory analytical method specified by EPA.

C. Analytical Methods

- All soil samples were analyzed using EPA methods, or by other OCD approved methods and were analyzed within the holding time specified by the method.

D. Lab results for Chloride & TPH levels are listed below (please see sampling investigation report).

Sample field code	**Chloride PPM**		Sample field code	**TPH PPM**
1S - surface	35400		1S - surface	214
2S - surface	24500		2S - surface	302
3S - surface	28600		3S - surface	3260
4S - surface	14000		4S - surface	1120
5S - surface	22900		5S - surface	<50.0
1 - 1' depth	733		1 - 1' depth	<50.0
2 - 2' depth	666		2 - 2' depth	<50.0
3 - 3' depth	510		3 - 3' depth	<50.0
4 - 1' depth	548		4 - 1' depth	<50.0
5 - 2' depth	595		5 - 2' depth	<50.0

E. Contaminated Area Delineated:

Soil borings with field and laboratory analysis indicated the saltwater spill area to be approximately150ft X 30ft.

3. REMEDIATION – DIG & HAUL OPERATIONS

Environmental site remediation consisted of the following operations.

A. Soil Remediation – Dig & Haul Operations

- Excavation began on 1/20/11 and completed on 1/21/11
- Contaminated soil was excavated to depths of 3 ft. or less.
- Soil was removed from the delineated area until representative soil samples from the walls and bottom of the excavation were below OCD specified standard - listed in Section 3-B of this report.

B. Lab Analysis results for excavated area (see app. D)

Lab results for dig & haul operations are listed below

Sample field code	**Chloride PPM**		Sample field code	**TPH PPM**
1 - 1' depth	<200		1 - 1' depth	<50.0
2 - 2' depth	<200		2 - 2' depth	<50.0
3 - 3' depth	<200		3 - 3' depth	<50.0
4 - 1' depth	<200		4 - 1' depth	<50.0
5 - 2' depth	<200		5 - 2' depth	<50.0

- Field grab samples were screened on site. Five formal composite samples were taken at strategic points which included the walls and bottom of excavated area. The samples were delivered to "Trace Analysis" Laboratory in Midland.
- **Chlorides:** All samples taken were below the OCD Standard of 250ppm.
- **TPH Levels:** The sampling results determined that Total Petroleum Hydrocarbon levels were less than 50ppm which is below OCD standard action level of 1000ppm.

C. Contaminated Soil Removal

- A total of 162 Cubic yards of contaminated soil was excavated and disposed of at OCD approved disposal facility **"Gandy Marley Disposal".**

D. Back Fill Soil

- Top Soil was obtained from Rancher Clyde Forte – on his property approximately 4 miles from the Chalupa #4. The excavated area was backfilled with quality top soil and leveled to represent original terrain.

E. Re-Seeding

- The entire area was seeded with BLM mix #2
- The entire area was dragged to mix seed into soil.

4. TERMINATION OF REMEDIAL ACTION

The remedial action was terminated when OCD standards were met and confirmed by Laboratory analysis, back fill soil spread and leveled, area seeded.

5. FINAL REPORT

A final c141 is being submitted with this closure report to NMOCD.
This report summarizes all actions taken to mitigate environmental damage related to the subject saltwater spill.

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.

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QUALIFICATIONS AND SIGNATURE OF ENVIRONMENTAL PROFESSIONAL

Prepared By:

Andy B. Price

Andy B. Price

Registered Environmental Professional Registry #9116

Appendices

Appendices A – OCD Form C-141 – Initial Spill Report

Appendices B – OCD Form C-141 – Final Report

Appendices C – Photos

Appendices D – Lab Report for excavated area


CASE
CASE