RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
2900 N. Big Spring, Midland, Texas 79705
Bus: (915) 682-7404 • (915) 570-REGS • Metro: (915) 570-6007 • Fax: (915) 682-7440

January 9, 2001

CERTIFIED RETURN RECEIPT
7099 3220 0005 7552 8820

Ms. Donna Williams
NMOCD - District 1
1625 North French Drive
Hobbs, New Mexico 88241-1980

Re: Duke Energy Field Services - G Loop Pipeline Spill
Section 6, T-22-S, R-33-E, Lea County, New Mexico

Dear Ms. Williams,

Duke Energy Field Services has engaged the services of Ritter Environmental to perform the site assessment work and to develop an acceptable Remediation Action Plan (RAP) for the above-referenced spill. Preliminary site assessment work has been conducted, which included the placement of eleven (11) soil borings along the length of the spill and four (4) excavations with soil sampling from the area of pooling of the liquids. Both vertical and horizontal definitions of the limits of the impacted soils were pursued by the placement of the borings and excavations. Soil samples were shipped to Trace Laboratories in Lubbock, Texas, for analysis of GRO and DRO by EPA Method Modified 8015 and BTEX by Method 8020.

Site assessment work was conducted on December 19, 2000. The samples were shipped to the lab on December 20, 2000. We are currently awaiting the laboratory results from the soil samples in order to develop the Site Assessment report and the RAP. The remediation method chosen for the impacted soils will depend on the soil analyses as well as other factors, including proximity to landfarms and a cost evaluation of alternative acceptable methods of remediation.

A Remediation Action Plan (RAP) will be submitted to your attention at the NMOCD as soon as possible after we have evaluated the sample results and the potential remediation alternatives.

Sincerely,

Mitchell Ritter

MR/bp

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June 1, 2001

RETURN RECEIPT REQUESTED
7099 3220 0005 7552 9445

Mr. Chris Williams
NMOCD
1625 N. French Drive
Hobbs, New Mexico 88241-1980

Re: Duke Energy Field Services – G Loop Eunice Spill
Unit Letter M, Section 6, T-22-S, R-33-E
Amendment to Remedial Action Plan submitted December 2000

Dear Mr. Williams,

On behalf of Duke Energy Field Services, we are sending this letter to amend the Remedial Action Plan for the above-referenced site. The original Remedial Action Plan (RAP) was filed with the NMOCD in December 2000. In that plan, the soils that were stockpiled at the surface were to be included with those soils that were beneath or near the surface soils and landfarmed on the site. The landowner approved of landfarming the undisturbed surface soils at the location of the spill; however, he did request that we transfer the stockpiled soils off-site to a permitted landfarm. Therefore, we have contracted with the Clay Cooper landfarm to accept the stockpiled soils.

We will proceed with the Remedial Action Plan as written in the original report for the remainder of the impacted soils.

If you have any further questions or comments, please contact me at your earliest convenience.

Sincerely,

Mitchell Ritter

cc: Mr. Bill Olsen, NMOCD, Santa Fe, New Mexico
Mr. Stan Shaver, DEFS, Hobbs, New Mexico
Mr. Andy Price, DEFS, Midland, Texas
Mr. Paul Mulkey, DEFS, Hobbs, New Mexico

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FINAL CLOSURE REPORT

Performed on

G Loop Eunice Spill
Lea County, New Mexico
Center of the Southeast Quarter of the Southwest Quarter
Unit Letter M of Section 6, T-22-S, R-36-E

Performed for

Duke Energy Field Services
3300 North "A" Street, Building 7
Midland, Texas 79705

Submitted to

New Mexico Oil Conservation Division
Hobbs District, Hobbs, New Mexico

July 2002

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
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FINAL CLOSURE REPORT

1RP-70

Performed on

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Duke Energy Field Services
Final Closure Report

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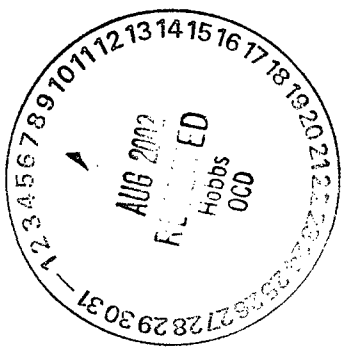


1.0 Introduction and Summary

This report will document the completion of the Remedial Action Plan for the spill of approximately 12,600 gallons of pipeline liquids from the pipeline gathering system identified as the G Loop located in Section 6, Township 22 South, Range 36 East, Lea County New Mexico.

Mr. Stan Shaver with Duke Energy Field Services (DEFS) properly reported the spill to the NMOCD via telephone on November 24, 2000. The spill occurred at the bottom of the 16-inch pipeline, which was buried approximately three feet below the ground surface. This is a low-pressure gathering line. Of the 12,600 gallons spilled, approximately 6,510 gallons were recovered by vacuum truck. The spill originated at the south end of the spill site (See Site Maps in the appendix of this report) and ran along a lease road for a distance of approximately 750 feet prior to termination on the north end. A localized area of pooling was evident approximately 150 feet north of the leak. The majority of the surface area of the spill was less than three feet in width.

Mr. Mitchell Ritter with Ritter Environmental and Geotechnical Services conducted a site assessment on December 19, 2000. This inspection verified the horizontal and vertical extent of the spill. Soil samples were taken and analyzed for GRO, DRO and BTEX. The results of this site assessment were reported to the NMOCD in the report titled "Site Assessment Report and Remedial Action Plan" dated December 2000.

According to the records of the State of New Mexico Engineering office in Santa Fe, it was determined that the groundwater depth in the vicinity of the spill was approximately 170 feet. There is no surface water within one mile of the site. The nearest windmill is located over one-half mile to the northwest; therefore, the total ranking score according to the recommended guidelines is zero (0). Thus, according to the NMOCD guidelines, the acceptable Benzene level is 10 ppm, the Total BTEX level is 50 ppm and the TPH level is 5,000 ppm for this site. No samples from the site assessment were analyzed that approached the recommended levels established in the guidelines. The highest levels

documented at the site were those in SB-9 with DRO at 1,550 mg/Kg and SB-1 with Total BTEX at 0.109 mg/Kg.

A Remedial Action Plan (RAP) was formulated and submitted to the NMOCD on February 2, 2002 that called for quarterly land farming of the soils on-site. Later, on June 1, 2001, this was amended, allowing for the transfer of the stockpiled soils off-site to a permitted land farm. The remaining impacted soils were to be land farmed on-site.

On May 22, 2001, approximately 96 cubic yards of stockpiled contaminated soils were removed from the site and transported to the Cooper land farm by Walton Construction. The NMOCD was notified of this event by letter on July 24, 2001.

The quarterly land farming commenced on June 20, 2001 with the tilling of the soils. A soil sampling event was conducted on October 30, 2001. Analysis of the samples indicated that the southern part of the site was in compliance with the August 1993 NMOCD document "Guidelines for Remediation of Leaks, Spills and Releases" and required no further activity. The northern part of the site continued to be land farmed on a quarterly basis. A soil sampling event was conducted on June 18, 2002. Analysis of the samples revealed the northern part of the spill to now be in compliance with the guidelines.

A detailed site map depicting the surficial extent of the spill as well as the selected sample locations is included in the appendix of this report. Photographic documentation of the spill site and the excavated areas is also included in the appendix.

It is requested that this site be allowed formal closure based on the successful results of the Remediation Action performed during the previous twelve months.

2.0 Remedial Action

Event 1 (5/22/01)

On May 22, 2001, approximately 96 cubic yards of stockpiled contaminated soils were removed from the site and transported to the Cooper land farm. This was reported to the NMOCD in a letter on July 24, 2001. This was in accordance with the landowner's request to remove these soils from the site and in accordance with the Amended Remedial Action Plan that was submitted by letter to the NMOCD on June 1, 2001.

Event 2 (6/20/01)

Also, in accordance with the original Remedial Action Plan, and after bringing the impacted soils to the surface, the site was tilled to a depth sufficient to turn and till the impacted soils for aeration and biodegradation on June 20, 2001. This was reported to the NMOCD on July 24, 2001 in a letter titled, "Remediation Report Case # 1R 0314".

Event 3 (6/27/01)

A field inspection was made June 27, 2001. The soil was loose from the tilling and relatively level. Staining was obvious and mostly continuous through the spill area, with some areas more laterally extensive than others. There was a strong petroleum odor at the site. Photographs were taken to document the site conditions.

Event 4 (8/8/01)

A field inspection was conducted August 8, 2001 to witness soil remediation by plowing. Photographs were taken prior, during and post plowing. There was a mild petroleum odor prior to plowing. However, after plowing, the odor was fairly strong. The plow brought up stained soil that was mixed with the lighter stained soil. Photographs were taken to document the site conditions.

Event 5 (9/11/01)

A field inspection was conducted on September 11, 2001 to witness soil remediation by plowing. Prior to plowing, there was a very slight odor, some visible staining and the soil was slightly loose. Photographs were taken as the plowing commenced. After the first complete pass on the plowing, slight staining and odor were noted. It was determined that a second complete pass on the plowing would be beneficial. A second pass was completed with the deep plow. This thoroughly worked the soils in place. The odor levels were significantly lower than the levels of the August 8, 2001 event. This indicated the remediation of the soils was progressing.

Event 6 (10/30/01)

A soil sampling event was conducted on October 30, 2001. The purpose of the event was to document the effectiveness of the soil treatment program as described in the Remedial Action Plan filed with the NMOCD in December 2000. The NMOCD was properly notified of the sample event on October 25, 2001 in order to witness the event. The samples were properly collected, identified and transported to an approved laboratory for analysis of Total Petroleum Hydrocarbons (TPH) by EPA Method Modified 8015B and Benzene, Toluene Ethyl Benzene, Xylene (BTEX) by EPA Method 8021B. Proper chain of custody documentation and preservation techniques were maintained for all samples. Proper QA/QC documentation accompanied each analytical report. The sampling procedure involved the collection of multiple soil samples within a limited radius around each sample site in order to collect a true and representative sample of the soils. The samples were composites of several samples combined to make one sample. The following sites were sampled:

1. Sample Site E-1 (79 feet North of Pipeline Marker). This site is located near SB-1 on the south end of the spill. This was the origination point of the spill and was the second highest DRO/GRO concentration when sampled December 19, 2000.

2. Sample Site E-2 (130 feet North of Pipeline Marker). This site was located near SB-4. This was the location of the third highest DRO/GRO concentration when sampled on December 19, 2000.

3. Sample Site E-3 (218 feet North of Pipeline Marker). This site was located between BH-4 and BH-3.

4. Sample Site E-4 (353 feet North of Pipeline Marker). This site was located near SB-9. This was the location of the highest DRO/GRO concentration when sampled December 19, 2000.

5. Sample Site E-5 (519 feet North of Pipeline Marker). This site was located on the north end of the spill, near SB-10.

6. Sample Site E-6 (750 feet North of Pipeline Marker). This site was located at the north end of the spill near SB-11.

The levels of TPH and BTEX in the NMOCD guidelines that are applicable to this site are TPH (GRO and DRO) = 5,000 ppm, BTEX = 50 ppm and Benzene = 10 ppm.

The following table summarized the results of the October 30, 2001 sampling event:

October 30, 2001 Sampling Event

Sample #	DRO mg/Kg	GRO mg/Kg	Total TPH mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Xylene mg/Kg	Total BTEX mg/Kg
E1	2,740	3.33	2,743.33	<0.010	<0.010	<0.010	<0.010	<0.010
E2	2,650	3.27	2,653.27	<0.010	<0.010	<0.010	<0.010	<0.010
E3	2,620	4.55	2,624.55	<0.010	<0.010	<0.010	<0.010	<0.010
E4	9,920	8.94	9,928.94	<0.010	<0.010	<0.010	0.017	0.017
E5	6,850	10.1	6,860.1	<0.020	<0.020	<0.020	0.095	0.095
E6	5,680	5.28	5,685.28	<0.020	<0.020	<0.020	0.042	0.042

As can be determined from the above results and the accompanying site map of TPH concentrations (in the appendix of this report), it is apparent that the southern portion of the spill site achieved the desired results. TPH is well below the 5,000 ppm level, while BTEX is non-detect. Therefore, no further action will be required to bring this portion of the site into compliance.

The northern portion of the spill site above Sample #E-4 remains above the NMOCD guidelines for TPH only. The levels of BTEX are well below the recommended guidelines. The highest TPH level is located in the vicinity of the location of pooling of the spill near Sample #E-4. This is also the location that was identified as being most impacted at depth in the original investigation conducted in December 2000. TPH levels range from a low of 5,685 mg/Kg at the extreme northern end of the spill to 9,928 mg/Kg at the pooling area (Sample Site #E-4) near the center of the original spill area (See DRO + GRO Concentration Map November 2001).

Event 7 (1/15/02)

A field inspection was conducted on January 15, 2002 to witness soil remediation by plowing. Prior to plowing, there was no obvious odor and the soils on the surface were light colored. This was a deep plow event to address the deeper soils. The deep plow brought up a gray-black soil with strong odor around SB-9. This was mixed with surrounding soils and thoroughly worked. The plowing was continuous for several hours and thoroughly worked the soils.

Event 8 (4/4/02)

A field inspection was conducted on April 4, 2002 to witness a disking event. Prior to disking, there was no obvious odor and the soils on the surface were light colored. The disking was continuous for several hours and thoroughly worked the soils. There had been a recent rainfall (March 29 and 30, 2002) and isolated pools of water were located at the site. There was no visible sheen on these pools. After disking, the soils were dark

colored; however, this is probably a result of moisture from the recent rain. There was a very slight odor around sample location E-4 and E-5 (November 2001). There was a very faint odor around sample location E-6. No odor was detected between E-5 and E-6.

Event 9 (6/18/02)

A soil-sampling event was conducted on June 18, 2002. The NMOCD was properly notified of the sample event on June 14, 2002 in order to witness the event. There had been a recent rain event and there were standing pools of water with no visible sheen. The purpose of the event was to document the effectiveness of the soil treatment program as described in the Remedial Action Plan filed with the NMOCD in December 2000. The samples were properly collected, identified and transported to an approved laboratory for analysis of Total Petroleum Hydrocarbons (TPH) by EPA Method Modified 8015B and Benzene, Toluene Ethyl Benzene, Xylene (BTEX) by EPA Method 8021B. Proper chain of custody documentation and preservation techniques were maintained for all samples. Proper QA/QC documentation accompanied each analytical report. The sampling procedure involved the collection of multiple soil samples within a limited radius around each sample site in order to collect a true and representative sample of the soils. The samples were composites of several samples combined to make one sample. The following sites were sampled:

1. Sample Site C-1 (353 feet North of Pipeline Marker). This site was located near SB-9. This was the location of the highest DRO/GRO concentration when sampled December 19, 2000 and October 30, 2001.

2. Sample Site C-2 (519 feet North of Pipeline Marker). This site was located at the mid-point on the north end near SB-10. This was the location of the second highest DRO/GRO concentration when sampled October 30, 2001.

3. Sample Site C-3 (750 feet North of Pipeline Marker). This was located at the north end of the spill near SB-11. This was the location of the third highest DRO/GRO concentration when sampled October 30, 2001.

The following table summarizes the results of the June 18, 2002 sampling event:

June 18, 2002

Sample #	DRO mg/Kg	GRO mg/Kg	Total TPH mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethylbenzene mg/Kg	Xylene mg/Kg	Total BTEX mg/Kg
C1	4,320	15.1	4,335.1	<0.050	0.059	<0.05	<0.050	0.0972
C2	2,820	<5	2,820	0.0538	0.105	<0.050	0.127	0.286
C3	1,800	<2	1,800	<0.020	<0.020	<0.020	<0.020	<0.020

As can be determined from the above results and the accompanying site maps of TPH concentrations, it is apparent the spill site has achieved the desired results. TPH is below the 5,000 ppm level, while BTEX is below the recommended guidelines.

3.0 Conclusions

A spill of 12,600 gallons of pipeline liquids from the pipeline gathering system identified as the G Loop located in Section 6, Township 22 South, Range 36 East, Lea County, New Mexico occurred and was properly reported to the NMOCD via telephone on November 24, 2000.

Mr. Mitchell Ritter with Ritter Environmental & Geotechnical Services, Inc. conducted a site assessment on December 19, 2000. This was reported to the NMOCD on February 2, 2001 in a report titled Site Assessment and Remedial Action Plan and dated December, 2000.

A Remedial Action Plan was developed to address the impacted site and was included in the report to the NMOCD.

Remedial action consisted of the removal of approximately 96 cubic yards of contaminated soils and transported to the Cooper land farm on May 22, 2001. This was reported to the NMOCD in a letter dated July 24, 2002. Land farming of the remaining on-site soils commenced on June 20, 2001. The land farming was conducted on-site on at least a quarterly basis by turning the soils to allow for aeration and bioremediation. The land farming activity was conducted for approximately one year.

A soil sample event was conducted on October 30, 2001. Analysis of the samples provided clearance for the southern part of the site (south of Sample Site #E-4) but not the northern part. Quarterly land farming continued on the northern part of the site. A second sample event was conducted on June 18, 2002. Analysis of the samples provided clearance for the northern part of the site.

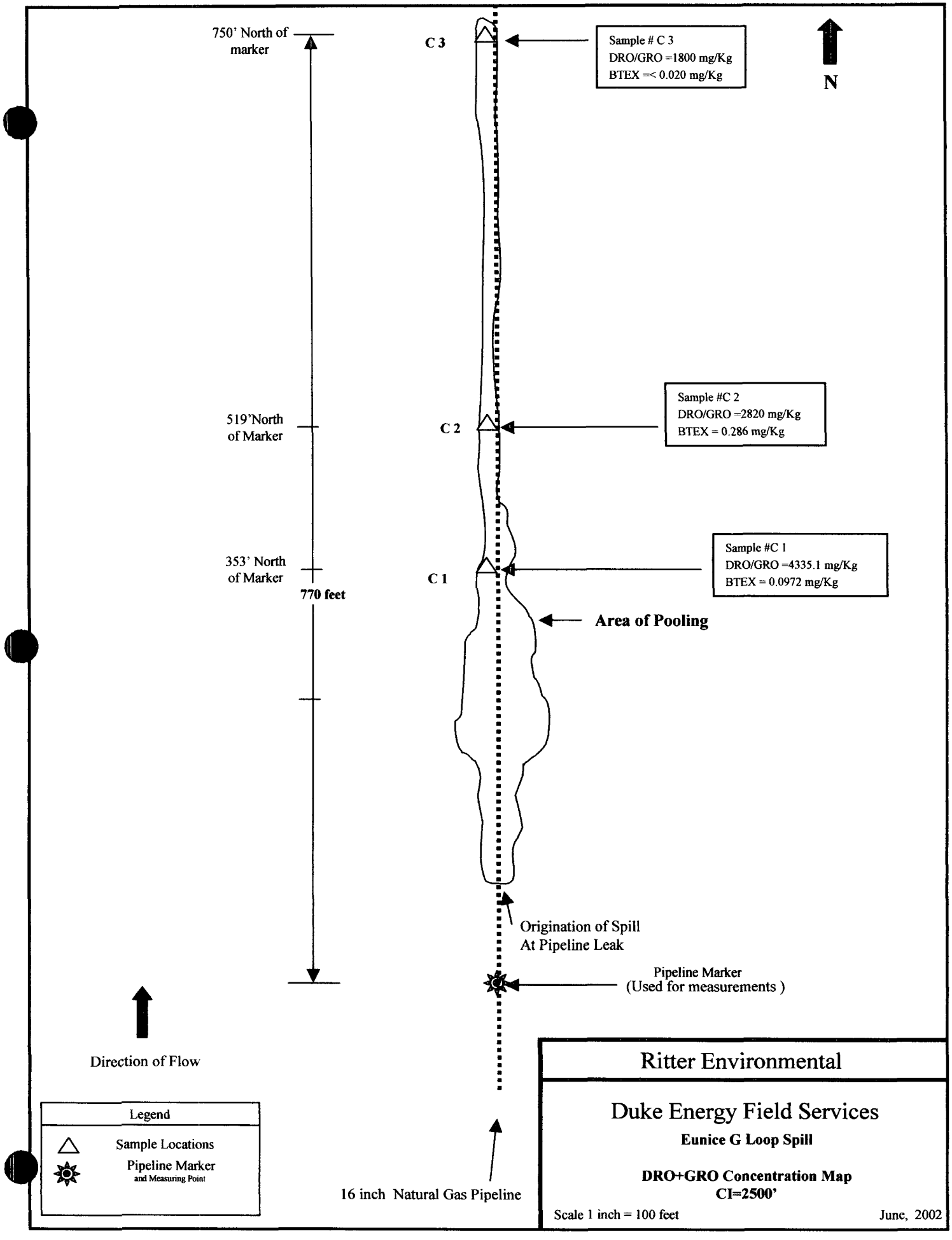
The site now meets the requirements for remediation of spills in New Mexico. The Benzene level is below 10 ppm, the Total BTEX level is below 50 ppm and the TPH level is below 5,000 ppm for this site.

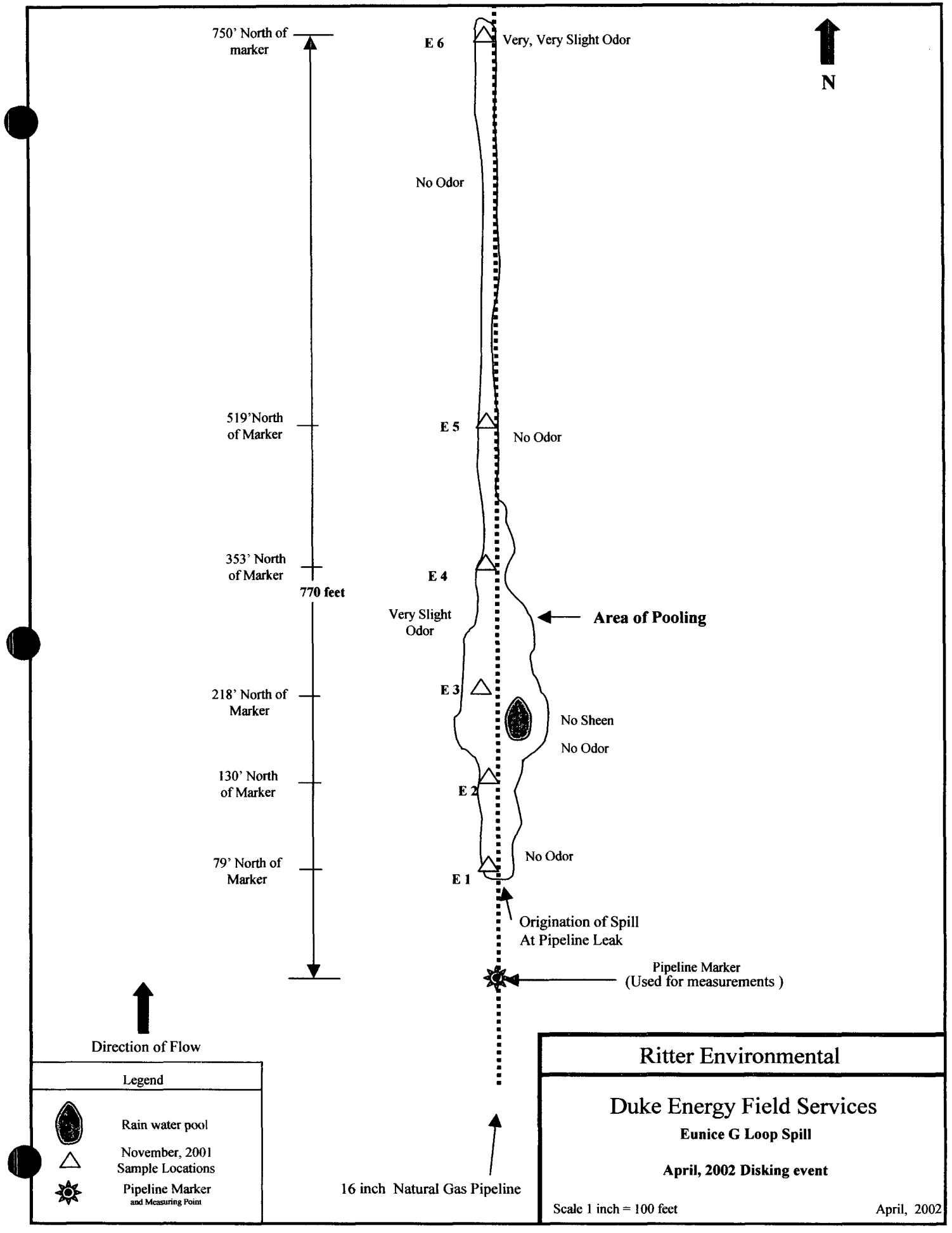
Remediation activities and sampling events have been reported to the NMOCD. The NMOCD was properly notified of the sample events in a timely fashion in order to witness the event.

Based on meeting the requirements under "Guidelines for Remediation of Leaks, Spills and Releases" (NMOCD, August, 1993), we request that the G Loop Spill Site be granted final closure status.

Mitchell Ritter
Ritter Environmental

8-6-02
Date


750' North of marker
519'North of Marker
353' North of Marker
770 feet
C 3
C 2
C 1
Sample # C 3
DRO/GRO =1800 mg/Kg
BTEX =< 0.020 mg/Kg
Sample #C 2
DRO/GRO =2820 mg/Kg
BTEX = 0.286 mg/Kg
Sample #C 1
DRO/GRO =4335.1 mg/Kg
BTEX = 0.0972 mg/Kg
N
Area of Pooling
Origination of Spill
At Pipeline Leak
Pipeline Marker
(Used for measurements)
Direction of Flow
Legend
Sample Locations
Pipeline Marker
and Measuring Point
16 inch Natural Gas Pipeline
Ritter Environmental
Duke Energy Field Services
Eunice G Loop Spill
DRO+GRO Concentration Map
CI=2500'
Scale 1 inch = 100 feet
June, 2002


750' North of marker
E 6
Very, Very Slight Odor
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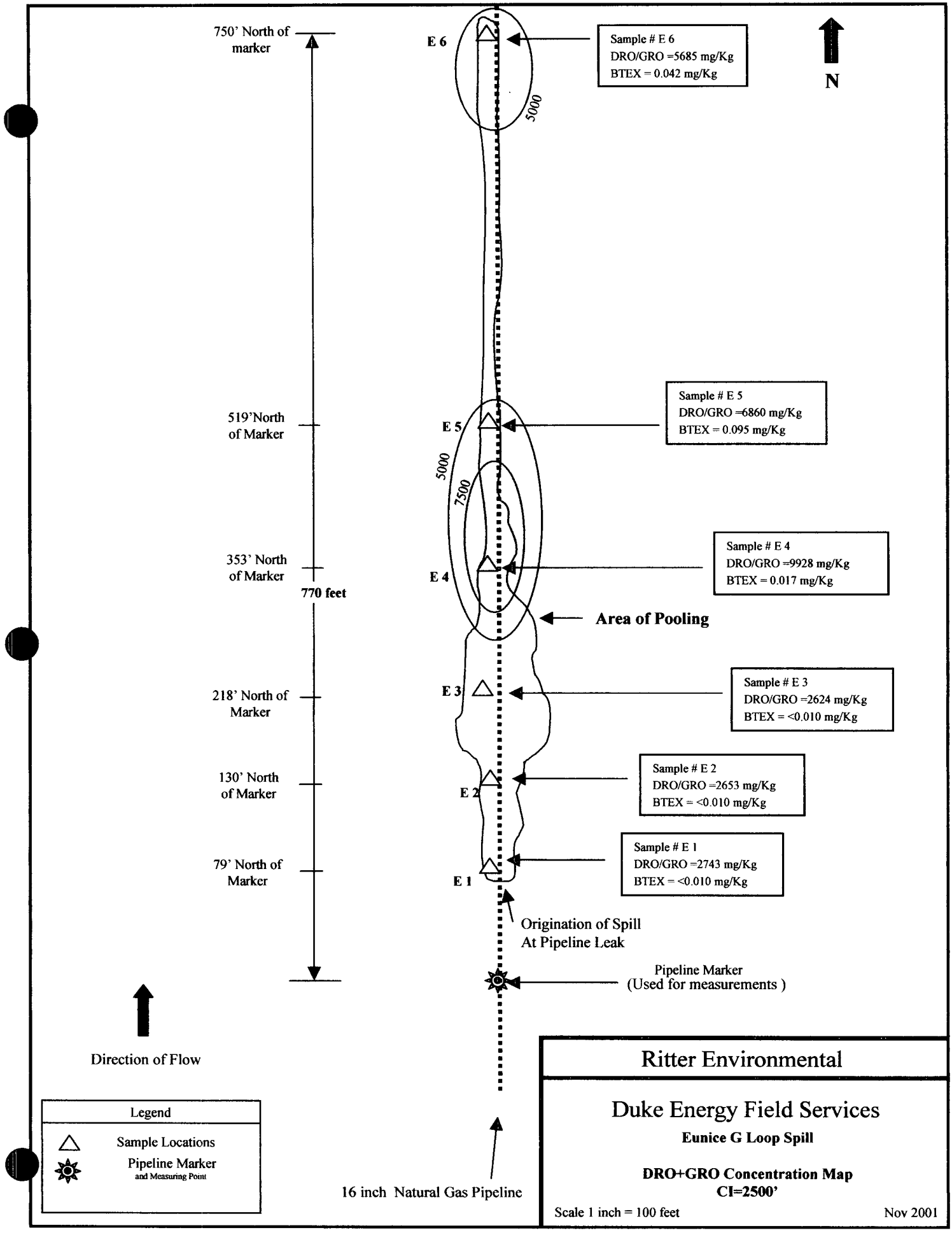
No Odor
519'North of Marker
E 5
No Odor
353' North of Marker
770 feet
E 4
Very Slight Odor
Area of Pooling
218' North of Marker
E 3
No Sheen
No Odor
130' North of Marker
E 2
79' North of Marker
No Odor
E 1
Origination of Spill At Pipeline Leak
Pipeline Marker (Used for measurements)
Direction of Flow
Legend
Rain water pool
November, 2001 Sample Locations
Pipeline Marker and Measuring Point
16 inch Natural Gas Pipeline
Ritter Environmental
Duke Energy Field Services
Eunice G Loop Spill
April, 2002 Disking event
Scale 1 inch = 100 feet
April, 2002


750' North of marker
519'North of Marker
353' North of Marker
770 feet
218' North of Marker
130' North of Marker
79' North of Marker
E 6
E 5
E 4
E 3
E 2
E 1
5000
5000
7500
Sample # E 6
DRO/GRO =5685 mg/Kg
BTEX = 0.042 mg/Kg
Sample # E 5
DRO/GRO =6860 mg/Kg
BTEX = 0.095 mg/Kg
Sample # E 4
DRO/GRO =9928 mg/Kg
BTEX = 0.017 mg/Kg
Area of Pooling
Sample # E 3
DRO/GRO =2624 mg/Kg
BTEX = <0.010 mg/Kg
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BTEX = <0.010 mg/Kg
Sample # E 1
DRO/GRO =2743 mg/Kg
BTEX = <0.010 mg/Kg
Origination of Spill
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Pipeline Marker
(Used for measurements)
N
Direction of Flow
Legend
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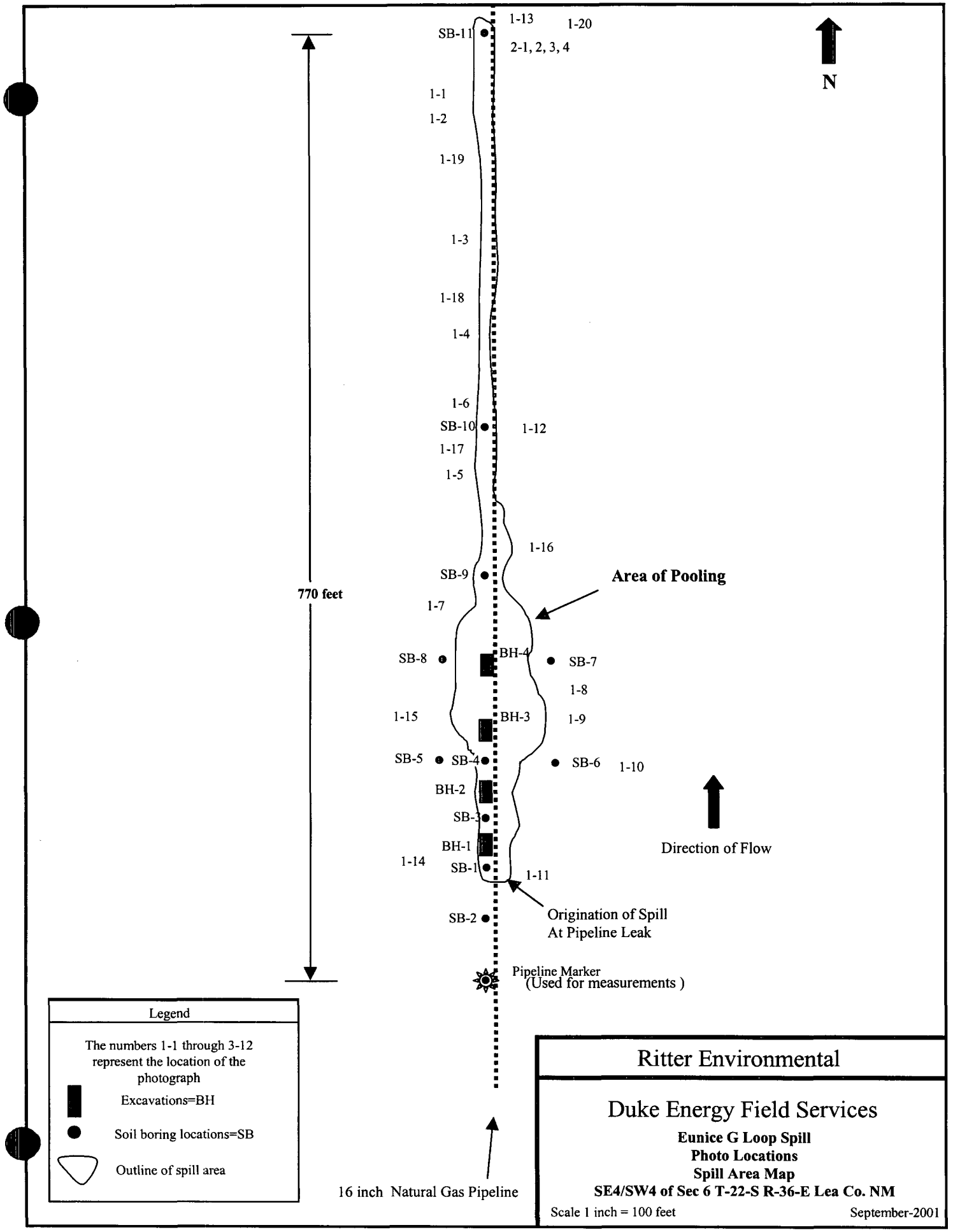
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1-3
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1-6
SB-10
1-12
1-17
1-5
1-16
SB-9
Area of Pooling
770 feet
1-7
SB-8
BH-4
SB-7
1-8
1-15
BH-3
1-9
SB-5
SB-4
SB-6
1-10
BH-2
SB-3
BH-1
1-14
SB-1
1-11
Direction of Flow
SB-2
Origination of Spill
At Pipeline Leak
Pipeline Marker
(Used for measurements)
Legend
The numbers 1-1 through 3-12 represent the location of the photograph
Excavations=BH
Soil boring locations=SB
Outline of spill area
16 inch Natural Gas Pipeline
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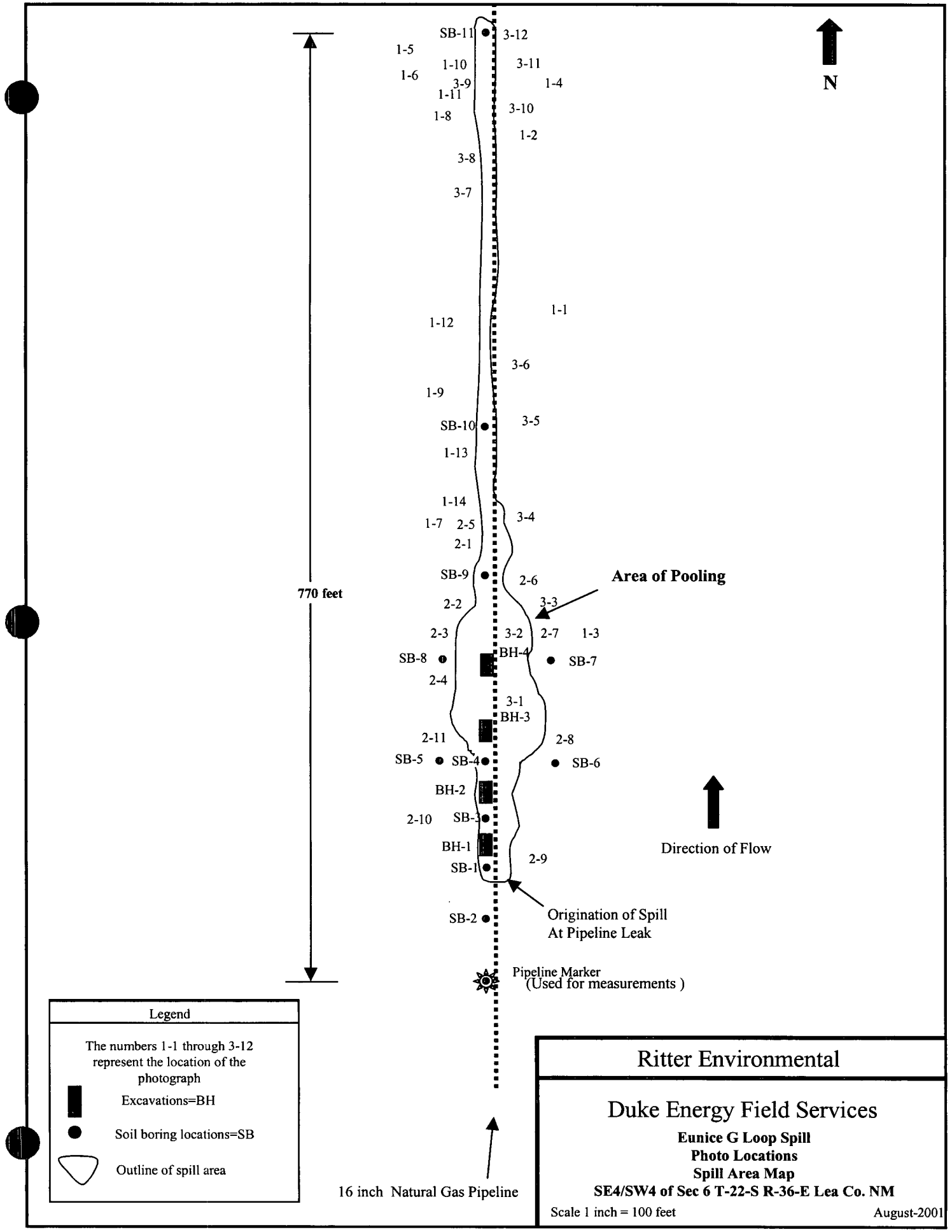
Photo Locations
Spill Area Map
SE4/SW4 of Sec 6 T-22-S R-36-E Lea Co. NM
Scale 1 inch = 100 feet
September-2001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2-11
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SB-5
SB-4
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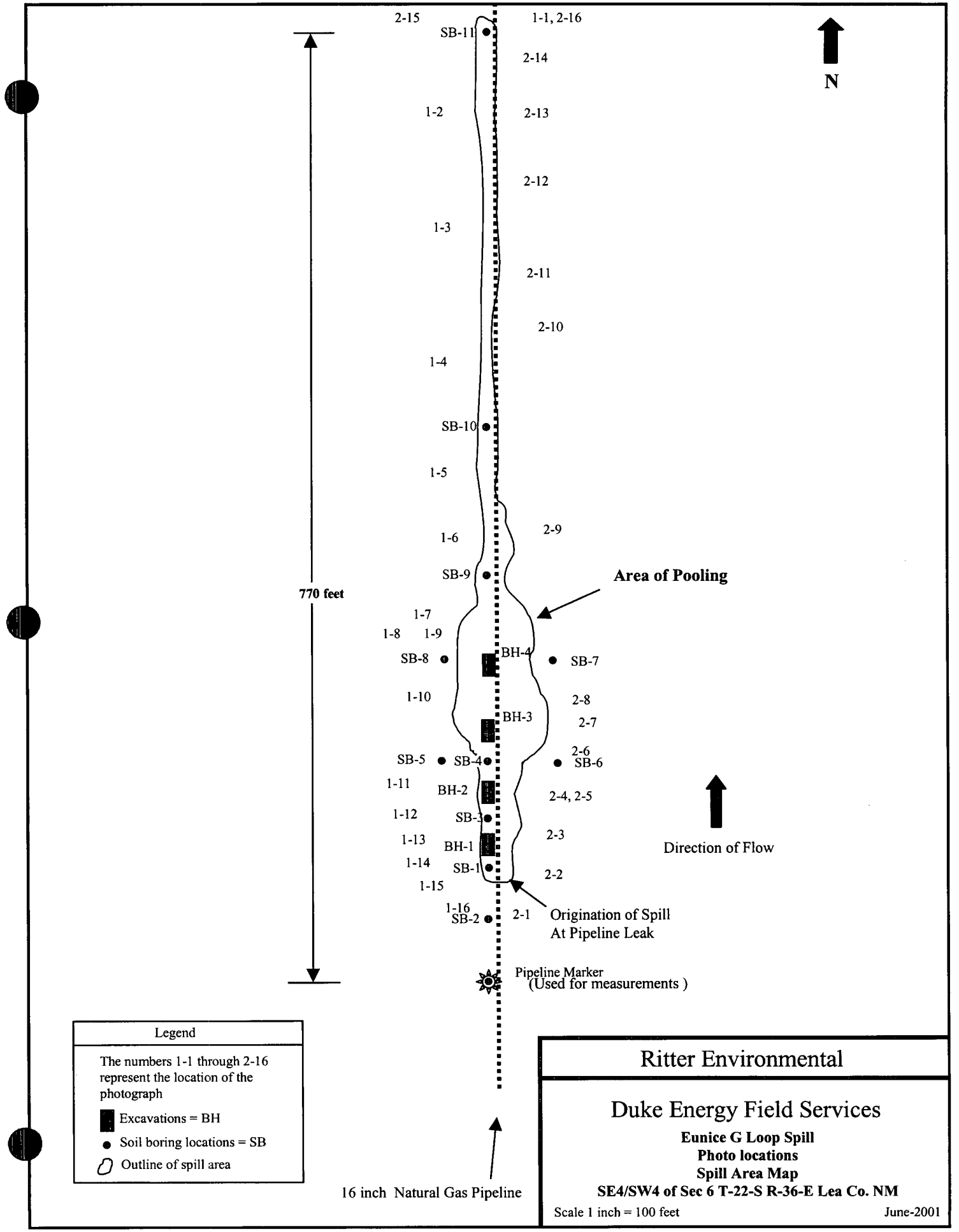
Scale 1 inch = 100 feet
August-2001



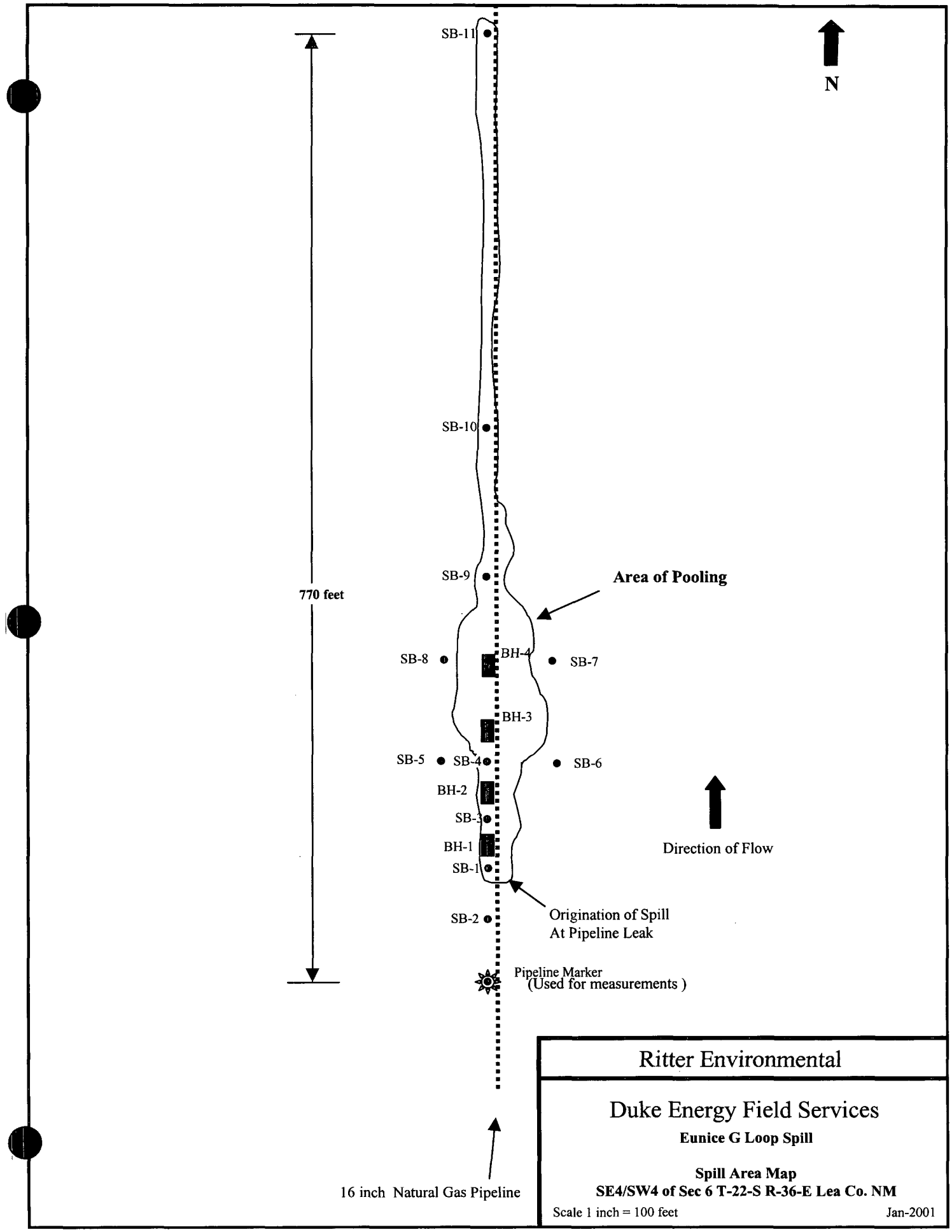
Ritter Environmental

Duke Energy Field Services

Eunice G Loop Spill
Photo locations
Spill Area Map
SE4/SW4 of Sec 6 T-22-S R-36-E Lea Co. NM

Scale 1 inch = 100 feet

June-2001



Ritter Environmental

Duke Energy Field Services

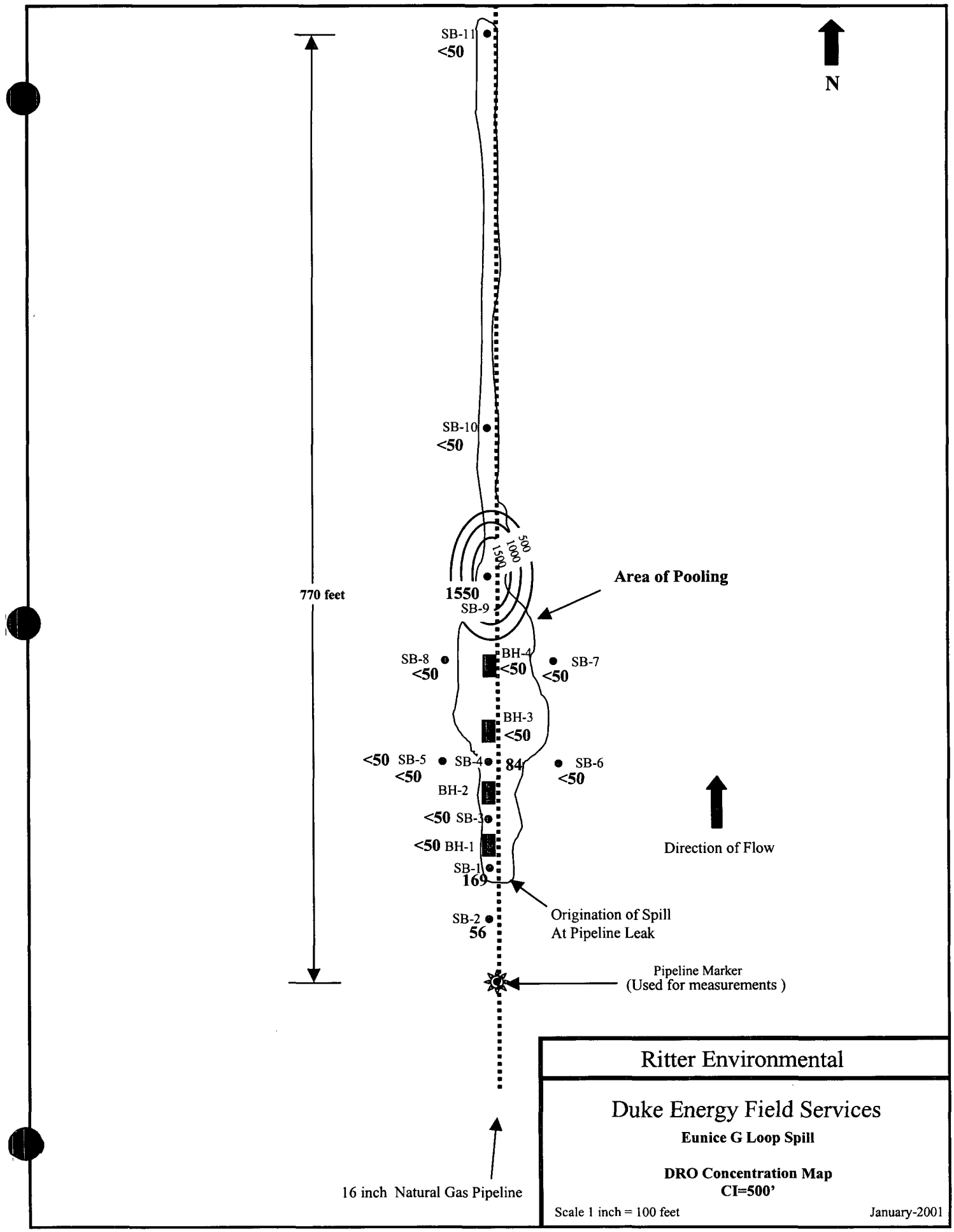
Eunice G Loop Spill

Spill Area Map

SE4/SW4 of Sec 6 T-22-S R-36-E Lea Co. NM

Scale 1 inch = 100 feet

Jan-2001


N
SB-11
<50
SB-10
<50
500
1000
1500
1550
SB-9
Area of Pooling
770 feet
SB-8
<50
BH-4
<50
SB-7
<50
BH-3
<50
<50 SB-5
<50
SB-4
84
SB-6
<50
BH-2
<50 SB-3
<50 BH-1
SB-1
169
SB-2
56
Direction of Flow
Origination of Spill
At Pipeline Leak
Pipeline Marker
(Used for measurements)
16 inch Natural Gas Pipeline
Ritter Environmental
Duke Energy Field Services
Eunice G Loop Spill
DRO Concentration Map
CI=500'
Scale 1 inch = 100 feet
January-2001

June 18, 2002
Analytical Results

TraceAnalysis, Inc. 6701 Aberdeen Ave., Suite 9 Lubbock, TX 79424-1515 (806) 794-1296

Report Date: June 24, 2002 Order Number: A02061915 Page Number: 1 of 1
N/A Duke Energy/Eunice N/A

Summary Report

Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, TX 79705

Report Date: June 24, 2002

Order ID Number: A02061915

Project Number: N/A
Project Name: Duke Energy/Eunice
Project Location: N/A

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
199718	Soil 353' N of Pipeline	Soil	6/18/02	9:40	6/19/02
199719	Soil 519' N of Pipeline	Soil	6/18/02	9:54	6/19/02
199720	Soil 750' N of Pipeline	Soil	6/18/02	10:10	6/19/02

0 This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

	BTEX						TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	M,P,O-Xylene	Total BTEX	Test Comments	DRO	GRO
Sample - Field Code	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)	(ppm)
199718 - Soil 353' N of Pipeline	<0.050	0.059	< 0.05	< 0.05	0.0972	* [1]	4320	15.1
199719 - Soil 519' N of Pipeline	0.0538	0.105	<0.050	0.127	0.286	-	2820	<5
199720 - Soil 750' N of Pipeline	<0.020	<0.020	<0.020	<0.020	<0.020	* [2]	1800	<2

[1]Sample diluted due to hydrocarbons beyond xylene. Sample has a Benzene concentration of less than 0.01183 which is the MDL.
[2]Sample diluted due to hydrocarbons beyond xylene. Sample has a Benzene concentration of less than 0.00473 which is the MDL.

This is only a summary. Please, refer to the complete report package for quality control data.

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, TX 79705

Report Date: June 24, 2002

Order ID Number: A02061915

Project Number: N/A
Project Name: Duke Energy/Eunice
Project Location: N/A

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
199718	Soil 353' N of Pipeline	Soil	6/18/02	9:40	6/19/02
199719	Soil 519' N of Pipeline	Soil	6/18/02	9:54	6/19/02
199720	Soil 750' N of Pipeline	Soil	6/18/02	10:10	6/19/02

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed. Note: the RDL is equal to MQL for all organic analytes including TPH.
The test results contained within this report meet all requirements of LAC 33:I unless otherwise noted.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 199718 - Soil 353' N of Pipeline

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC21290	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.050	mg/Kg	50	0.001
Toluene		0.059	mg/Kg	50	0.001
Ethylbenzene		< 0.05	mg/Kg	50	0.001
M,P,O-Xylene		< 0.05	mg/Kg	50	0.001
Total BTEX		0.0972	mg/Kg	50	0.001
Test Comments	[1]	*	mg/Kg	1	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.08	mg/Kg	50	1	108	70 - 130
4-BFB		0.958	mg/Kg	50	1	96	70 - 130

Sample: 199718 - Soil 353' N of Pipeline

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC21216	Date Analyzed:	6/19/02
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB20185	Date Prepared:	6/19/02

Param	Flag	Result	Units	Dilution	RDL
DRO		4320	mg/Kg	20	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[2]	675	mg/Kg	20	150	450	70 - 130

Sample: 199718 - Soil 353' N of Pipeline

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC21289	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

Param	Flag	Result	Units	Dilution	RDL
GRO		15.1	mg/Kg	50	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.21	mg/Kg	50	0.10	121	70 - 130
4-BFB		0.794	mg/Kg	50	0.10	79	70 - 130

[1]Sample diluted due to hydrocarbons beyond xylene. Sample has a Benzene concentration of less than 0.01183 which is the MDL.
[2]Surrogate out of recovery limits due to peak interference. LCS, ICV, and CCV shwo the process is in control.

Sample: 199719 - Soil 519' N of Pipeline

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC21290	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

Param	Flag	Result	Units	Dilution	RDL
Benzene		0.0538	mg/Kg	50	0.001
Toluene		0.105	mg/Kg	50	0.001
Ethylbenzene		<0.050	mg/Kg	50	0.001
M,P,O-Xylene		0.127	mg/Kg	50	0.001
Total BTEX		0.286	mg/Kg	50	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.977	mg/Kg	50	1	98	70 - 130
4-BFB		0.897	mg/Kg	50	1	90	70 - 130

Sample: 199719 - Soil 519' N of Pipeline

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC21216	Date Analyzed:	6/19/02
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB20185	Date Prepared:	6/19/02

Param	Flag	Result	Units	Dilution	RDL
DRO		2820	mg/Kg	20	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[3]	432	mg/Kg	20	150	288	70 - 130

Sample: 199719 - Soil 519' N of Pipeline

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC21289	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

Param	Flag	Result	Units	Dilution	RDL
GRO		<5	mg/Kg	50	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.18	mg/Kg	50	0.10	118	70 - 130
4-BFB	[4]	0.592	mg/Kg	50	0.10	59	70 - 130

Sample: 199720 - Soil 750' N of Pipeline

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC21290	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

[3]Surrogate out of recovery limits due to peak interference. LCS, ICV, and CCV shwo the process is in control.
[4]Low surrogate recovery due to matrix interference. ICV, CCV, LCS show the method to be in control.

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.020	mg/Kg	20	0.001
Toluene		<0.020	mg/Kg	20	0.001
Ethylbenzene		<0.020	mg/Kg	20	0.001
M,P,O-Xylene		<0.020	mg/Kg	20	0.001
Total BTEX		<0.020	mg/Kg	20	0.001
Test Comments	[5]	*	mg/Kg	1	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.01	mg/Kg	20	1	101	70 - 130
4-BFB		0.926	mg/Kg	20	1	93	70 - 130

Sample: 199720 - Soil 750' N of Pipeline

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC21216	Date Analyzed:	6/19/02
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB20185	Date Prepared:	6/19/02

Param	Flag	Result	Units	Dilution	RDL
DRO		1800	mg/Kg	20	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	[6]	365	mg/Kg	20	150	243	70 - 130

Sample: 199720 - Soil 750' N of Pipeline

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC21289	Date Analyzed:	6/22/02
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB20239	Date Prepared:	6/22/02

Param	Flag	Result	Units	Dilution	RDL
GRO		<2	mg/Kg	20	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.793	mg/Kg	20	0.10	79	70 - 130
4-BFB		0.766	mg/Kg	20	0.10	77	70 - 130

[5]Sample diluted due to hydrocarbons beyond xylene. Sample has a Benzene concentration of less than 0.00473 which is the MDL.
[6]Surrogate out of recovery limits due to peak interference. LCS, ICV, and CCV shwo the process is in control.

Quality Control Report
Method Blank

Method Blank

QCBatch: QC21216

Param	Flag	Results	Units	Reporting Limit
DRO		<50.0	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		135	mg/Kg	1	150	90	70 - 130

Method Blank

QCBatch: QC21289

Param	Flag	Results	Units	Reporting Limit
GRO		<1	mg/Kg	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.02	mg/Kg	10	0.10	102	70 - 130
4-BFB		0.898	mg/Kg	10	0.10	90	70 - 130

Method Blank

QCBatch: QC21290

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.07	mg/Kg	10	1	107	70 - 130
4-BFB		0.972	mg/Kg	10	1	97	70 - 130

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes

QCBatch: QC21216

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	224	222	mg/Kg	1	250	<50.0	90	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
n-Triacontane	137	137	mg/Kg	1	150	91	91	70 - 130

Laboratory Control Spikes

QCBatch: QC21289

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	10.5	10.5	mg/Kg	10	1	<1	105	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.109	1.07	mg/Kg	10	0.10	109	107	70 - 130
4-BFB	0.953	0.949	mg/Kg	10	0.10	95	95	70 - 130

Laboratory Control Spikes

QCBatch: QC21290

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	1.05	1.06	mg/Kg	10	1	<0.010	105	0	70 - 130	20
Benzene	1.05	1.06	mg/Kg	10	1	<0.010	105	0	70 - 130	20
Toluene	1.03	1.04	mg/Kg	10	1	<0.010	103	0	70 - 130	20
Ethylbenzene	1	1.03	mg/Kg	10	1	<0.010	100	2	70 - 130	20
M,P,O-Xylene	2.92	2.96	mg/Kg	10	3	<0.010	97	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	1.08	1.08	mg/Kg	10	1	108	108	70 - 130
4-BFB	1.01	1.01	mg/Kg	10	1	101	101	70 - 130

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC21216

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	233	248	mg/Kg	1	250	52.7	72	8	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
n-Triacontane	136	132	mg/Kg	1	150	91	88	70 - 130

Matrix Spikes

QCBatch: QC21289

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	[7] 21.2	[8] 15.1	mg/Kg	10	1	19.3	19	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.796	0.864	mg/Kg	10	0.10	80	86	70 - 130
4-BFB	0.780	[9] 0.665	mg/Kg	10	0.10	78	66	70 - 130

Matrix Spikes

QCBatch: QC21290

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.992	0.995	mg/Kg	10	1	<0.010	99	0	70 - 130	20
Toluene	1.07	1.23	mg/Kg	10	1	0.0128	105	14	70 - 130	20
Ethylbenzene	0.921	0.943	mg/Kg	10	1	<0.010	92	2	70 - 130	20
M,P,O-Xylene	2.66	2.73	mg/Kg	10	3	0.113	84	2	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	1.01	0.923	mg/Kg	10	1	101	92	70 - 130
4-BFB	0.854	0.857	mg/Kg	10	1	85	85	70 - 130

Quality Control Report
Continuing Calibration Verification Standards

[7]Poor MS/MSD recovery due to significant hydrocarbons present in compound. LCS/LCSD show the method to be in control.
[8]Poor MS/MSD recovery due to significant hydrocarbons present in compound. LCS/LCSD show the method to be in control.
[9]Low MSD surrogate recovery due to matrix interference. ICV, CCV, LCS show the method to be in control.

CCV (1) QCBatch: QC21216

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	226	90	75 - 125	6/19/02

CCV (2) QCBatch: QC21216

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	227	90	75 - 125	6/19/02

ICV (1) QCBatch: QC21216

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	212	85	75 - 125	6/19/02

CCV (1) QCBatch: QC21289

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	1.14	114	85 - 115	6/22/02

ICV (1) QCBatch: QC21289

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	1.02	102	85 - 115	6/22/02

CCV (1) QCBatch: QC21290

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.115	115	85 - 115	6/22/02
Benzene		mg/L	0.10	0.105	105	85 - 115	6/22/02
Toluene		mg/L	0.10	0.105	105	85 - 115	6/22/02
Ethylbenzene		mg/L	0.10	0.0992	99	85 - 115	6/22/02

Continued ...

... Continued

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
M,P,O-Xylene		mg/L	0.30	0.291	97	85 - 115	6/22/02

ICV (1) QCBatch: QC21290

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.105	105	85 - 115	6/22/02
Benzene		mg/L	0.10	0.106	106	85 - 115	6/22/02
Toluene		mg/L	0.10	0.104	104	85 - 115	6/22/02
Ethylbenzene		mg/L	0.10	0.100	100	85 - 115	6/22/02
M,P,O-Xylene		mg/L	0.30	0.292	97	85 - 115	6/22/02

A02061915

CHAIN OF CUSTODY

PAGE 1 OF 1

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
2900 N. Big Spring, Midland, Texas 79705
Bus: (915) 682-7404 • (915) 570-RECS • Metro: (915) 570-6007 • Fax: (915) 682-7440

REPORT TO	INVOICE TO
COMPANY: RITTER ENVIRONMENTAL	COMPANY: SAME
ADDRESS: 2900 N. BIG SPRING	ADDRESS:
CITY/STATE/ZIP: MIDLAND, TX 79705	CITY/STATE/ZIP
ATTENTION: MITCH RITTER PHONE: 570-6007	ATTENTION: PHONE:

PROJECT/SITE NAME:	REMARKS:	TURN AROUND TIME
DUKE ENERGY/EUNICE	ANALYZED BY: TRACE	● NORMAL ☐ RUSH ☐ OTHER

								REQUESTED ANALYSIS						
DATE	TIME	COMP	GRAB	SAMPLE #	SAMPLE DESCRIPTION	MATRIX	# CONT	8015 GRO	8015 DRO	BTEX				REMARKS
6/18/02	9:40	✓		CS-1-61802	Soil 353' N of Pipeline	Soil	1	✓	✓	✓				199718
6/18/02	9:54	✓		CS-2-61802	Soil 519' N of Pipeline	Soil	1	✓	✓	✓				199719
6/18/02	10:10	✓		CS-3-61802	Soil 750' N of Pipeline	Soil	1	✓	✓	✓				199720

REVIEWED BY: ☐ MRR ☐ BNR

RELINQUISHED BY / DATE/TIME	RECEIVED BY: / DATE / TIME	SAMPLE CONDITION / DATE / TIME
6-19-02 4:03	Helen Shelton 6/18/02 4:03 PM	Good / Cool 4° 6/18/02 4:30 PM
Helen Shelton 6/18/02 1830		IceBo 5666764
	Nell Green 6-19-02 10:00am	

October 30, 2001
Analytical Results

ORIGINAL

TraceAnalysis, Inc. 6701 Aberdeen Ave., Suite 9 Lubbock, TX 79424-1515 (806) 794-1296

Report Date: November 14, 2001 Order Number: A01110112 Page Number: 1 of 1
N/A DEFS/Eunice N/A

Summary Report

NOV 19 2

Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, TX 79705

Report Date: November 14, 2001

Order ID Number: A01110112

Project Number: N/A
Project Name: DEFS/Eunice
Project Location: N/A

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
183585	103001 DEFS E1	Soil	10/30/01	10:50	11/1/01
183586	103001 DEFS E2	Soil	10/30/01	11:00	11/1/01
183587	103001 DEFS E3	Soil	10/30/01	11:05	11/1/01
183588	103001 DEFS E4	Soil	10/30/01	11:10	11/1/01
183589	103001 DEFS E5	Soil	10/30/01	11:20	11/1/01
183590	103001 DEFS E6	Soil	10/30/01	11:25	11/1/01

This report consists of a total of 1 page(s) and is intended only as a summary of results for the sample(s) listed above.

	BTEX					TPH DRO	TPH GRO
Sample - Field Code	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	M,P,O-Xylene (ppm)	Total BTEX (ppm)	DRO (ppm)	GRO (ppm)
183585 - 103001 DEFS E1	<0.010	<0.010	<0.010	<0.010	<0.010	2740	3.33
183586 - 103001 DEFS E2	<0.010	<0.010	<0.010	<0.010	<0.010	2650	3.27
183587 - 103001 DEFS E3	<0.010	<0.010	<0.010	<0.010	<0.010	2620	4.55
183588 - 103001 DEFS E4	<0.010	<0.010	<0.010	0.017	0.017	9920	8.94
183589 - 103001 DEFS E5	<0.020	<0.020	<0.020	0.095	0.095	6850	10.1
183590 - 103001 DEFS E6	<0.020	<0.020	<0.020	0.042	0.042	5680	5.28

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
155 McCutcheon, Suite H El Paso, Texas 79932 888•588•3443 915•585•3443 FAX 915•585•4944
E-Mail: lab@traceanalysis.com

Analytical and Quality Control Report

Mitch Ritter
Ritter Environmental
2900 N. Big Spring
Midland, TX 79705

Report Date: November 14, 2001

Order ID Number: A01110112

Project Number: N/A
Project Name: DEFS/Eunice
Project Location: N/A

Enclosed are the Analytical Results and Quality Control Data Reports for the following samples submitted to Trace-Analysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
183585	103001 DEFS E1	Soil	10/30/01	10:50	11/1/01
183586	103001 DEFS E2	Soil	10/30/01	11:00	11/1/01
183587	103001 DEFS E3	Soil	10/30/01	11:05	11/1/01
183588	103001 DEFS E4	Soil	10/30/01	11:10	11/1/01
183589	103001 DEFS E5	Soil	10/30/01	11:20	11/1/01
183590	103001 DEFS E6	Soil	10/30/01	11:25	11/1/01

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director

Analytical Report

Sample: 183585 - 103001 DEFS E1

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC15655	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.892	mg/Kg	10	0.10	89	72 - 128
4-BFB		0.892	mg/Kg	10	0.10	89	72 - 128

Sample: 183585 - 103001 DEFS E1

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC15532	Date Analyzed:	11/4/01
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB13177	Date Prepared:	11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		2740	mg/Kg	5	50

Sample: 183585 - 103001 DEFS E1

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC15656	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		3.33	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.933	mg/Kg	10	0.10	93	70 - 130
4-BFB		0.962	mg/Kg	10	0.10	96	70 - 130

Sample: 183586 - 103001 DEFS E2

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC15655	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.908	mg/Kg	10	0.10	91	72 - 128
4-BFB		0.923	mg/Kg	10	0.10	92	72 - 128

Sample: 183586 - 103001 DEFS E2

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC15532	Date Analyzed:	11/4/01
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB13177	Date Prepared:	11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		2650	mg/Kg	5	50

Sample: 183586 - 103001 DEFS E2

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC15656	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		3.27	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.870	mg/Kg	10	0.10	87	70 - 130
4-BFB		0.945	mg/Kg	10	0.10	95	70 - 130

Sample: 183587 - 103001 DEFS E3

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC15655	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		<0.010	mg/Kg	10	0.001
Total BTEX		<0.010	mg/Kg	10	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.968	mg/Kg	10	0.10	97	72 - 128
4-BFB		0.880	mg/Kg	10	0.10	88	72 - 128

Sample: 183587 - 103001 DEFS E3

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC15532	Date Analyzed:	11/4/01
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB13177	Date Prepared:	11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		2620	mg/Kg	5	50

Sample: 183587 - 103001 DEFS E3

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC15656	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		4.55	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.977	mg/Kg	10	0.10	98	70 - 130
4-BFB		0.991	mg/Kg	10	0.10	99	70 - 130

Sample: 183588 - 103001 DEFS E4

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC15655	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.010	mg/Kg	10	0.001
Toluene		<0.010	mg/Kg	10	0.001
Ethylbenzene		<0.010	mg/Kg	10	0.001
M,P,O-Xylene		0.017	mg/Kg	10	0.001
Total BTEX		0.017	mg/Kg	10	0.001
Test Comments	[1]	*	mg/Kg	1	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.13	mg/Kg	10	0.10	113	72 - 128
4-BFB		0.852	mg/Kg	10	0.10	85	72 - 128

Sample: 183588 - 103001 DEFS E4

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC15532	Date Analyzed:	11/4/01
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB13177	Date Prepared:	11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		9920	mg/Kg	10	50

Sample: 183588 - 103001 DEFS E4

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC15656	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		8.94	mg/Kg	10	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.926	mg/Kg	10	0.10	93	70 - 130

Continued ...

[1]Sample ran at a dilution due to hydrocarbon content of sample beyond xylene.

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
4-BFB		1.01	mg/Kg	10	0.10	101	70 - 130

Sample: 183589 - 103001 DEFS E5

Analysis: BTEX Analytical Method: S 8021B QC Batch: QC15655 Date Analyzed: 11/9/01
Analyst: CG Preparation Method: S 5035 Prep Batch: PB13272 Date Prepared: 11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.020	mg/Kg	20	0.001
Toluene		<0.020	mg/Kg	20	0.001
Ethylbenzene		<0.020	mg/Kg	20	0.001
M,P,O-Xylene		0.095	mg/Kg	20	0.001
Total BTEX		0.095	mg/Kg	20	0.001
Test Comments	[2]	*	mg/Kg	1	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[3]	1.08	mg/Kg	20	0.10	54	72 - 128
4-BFB	[4]	0.970	mg/Kg	20	0.10	48	72 - 128

Sample: 183589 - 103001 DEFS E5

Analysis: TPH DRO Analytical Method: Mod. 8015B QC Batch: QC15533 Date Analyzed: 11/4/01
Analyst: MM Preparation Method: 3550 B Prep Batch: PB13178 Date Prepared: 11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		6850	mg/Kg	5	50

Sample: 183589 - 103001 DEFS E5

Analysis: TPH GRO Analytical Method: 8015B QC Batch: QC15656 Date Analyzed: 11/9/01
Analyst: CG Preparation Method: 5035 Prep Batch: PB13272 Date Prepared: 11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		10.1	mg/Kg	20	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[5]	0.899	mg/Kg	20	0.10	45	70 - 130
4-BFB	[6]	0.968	mg/Kg	20	0.10	48	70 - 130

[2]Sample ran at a dilution due to hydrocarbon content of sample beyond xylene.
[3]Low surrogate recovery due to matrix difficulites.
[4]Low surrogate recovery due to matrix difficulites.
[5]Surrogate out of control range due to dilution.
[6]Surrogate out of control range due to dilution.

Sample: 183590 - 103001 DEFS E6

Analysis:	BTEX	Analytical Method:	S 8021B	QC Batch:	QC15655	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	S 5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
Benzene		<0.020	mg/Kg	20	0.001
Toluene		<0.020	mg/Kg	20	0.001
Ethylbenzene		<0.020	mg/Kg	20	0.001
M,P,O-Xylene		0.042	mg/Kg	20	0.001
Total BTEX		0.042	mg/Kg	20	0.001
Test Comments	[7]	*	mg/Kg	1	

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[8]	1.17	mg/Kg	20	0.10	59	72 - 128
4-BFB	[9]	0.959	mg/Kg	20	0.10	48	72 - 128

Sample: 183590 - 103001 DEFS E6

Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	QC Batch:	QC15533	Date Analyzed:	11/4/01
Analyst:	MM	Preparation Method:	3550 B	Prep Batch:	PB13178	Date Prepared:	11/2/01

Param	Flag	Result	Units	Dilution	RDL
DRO		5680	mg/Kg	5	50

Sample: 183590 - 103001 DEFS E6

Analysis:	TPH GRO	Analytical Method:	8015B	QC Batch:	QC15656	Date Analyzed:	11/9/01
Analyst:	CG	Preparation Method:	5035	Prep Batch:	PB13272	Date Prepared:	11/9/01

Param	Flag	Result	Units	Dilution	RDL
GRO		5.28	mg/Kg	20	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT	[10]	0.931	mg/Kg	20	0.10	47	70 - 130
4-BFB	[11]	0.988	mg/Kg	20	0.10	50	70 - 130

[7] Sample ran at a dilution due to hydrocarbon content of sample beyond xylene.
[8] Low surrogate recovery due to matrix difficulties.
[9] Low surrogate recovery due to matrix difficulties.
[10] Surrogate out of control range due to dilution.
[11] Surrogate out of control range due to dilution.

Quality Control Report
Method Blank

Method Blank QCBatch: QC15532

Param	Flag	Results	Units	Reporting Limit
DRO		<50.0	mg/Kg	50

Method Blank QCBatch: QC15533

Param	Flag	Results	Units	Reporting Limit
DRO		<50.0	mg/Kg	50

Method Blank QCBatch: QC15655

Param	Flag	Results	Units	Reporting Limit
Benzene		<0.010	mg/Kg	0.001
Toluene		<0.010	mg/Kg	0.001
Ethylbenzene		<0.010	mg/Kg	0.001
M,P,O-Xylene		<0.010	mg/Kg	0.001
Total BTEX		<0.010	mg/Kg	0.001

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		0.945	mg/Kg	10	0.10	94	72 - 128
4-BFB		0.834	mg/Kg	10	0.10	83	72 - 128

Method Blank QCBatch: QC15656

Param	Flag	Results	Units	Reporting Limit
GRO		<1.00	mg/Kg	0.10

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
TFT		1.14	mg/Kg	10	0.10	114	70 - 130
4-BFB		0.883	mg/Kg	10	0.10	88	70 - 130

Quality Control Report
Lab Control Spikes and Duplicate Spikes

Laboratory Control Spikes QCBatch: QC15532

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	235	232	mg/Kg	1	250	<50.0	94	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC15533

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	294	243	mg/Kg	1	250	<50.0	118	19	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spikes

QCBatch: QC15655

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
MTBE	0.878	0.879	mg/Kg	10	0.10	<0.010	88	0	80 - 120	20
Benzene	0.936	0.937	mg/Kg	10	0.10	<0.010	94	0	80 - 120	20
Toluene	0.931	0.933	mg/Kg	10	0.10	<0.010	93	0	80 - 120	20
Ethylbenzene	0.929	0.928	mg/Kg	10	0.10	<0.010	93	0	80 - 120	20
M,P,O-Xylene	2.78	2.78	mg/Kg	10	0.30	<0.010	93	0	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	0.931	0.957	mg/Kg	10	0.10	93	96	72 - 128
4-BFB	0.981	0.976	mg/Kg	10	0.10	98	98	72 - 128

Laboratory Control Spikes

QCBatch: QC15656

Param	LCS Result	LCSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	9.59	9.50	mg/Kg	10	1	<1.00	96	0	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dilution	Spike Amount	LCS % Rec	LCSD % Rec	Recovery Limits
TFT	1.14	1.04	mg/Kg	10	0.10	114	104	70 - 130
4-BFB	1.05	1.06	mg/Kg	10	0.10	105	106	70 - 130

Quality Control Report
Matrix Spikes and Duplicate Spikes

Matrix Spikes

QCBatch: QC15532

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	205	214	mg/Kg	1	250	<50.0	82	4	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC15533

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
DRO	233	235	mg/Kg	1	250	<50.0	93	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

QCBatch: QC15655

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
Benzene	0.8046	0.8334	mg/Kg	10	0.10	<0.010	80	15	80 - 120	20
Toluene	0.8128	0.8494	mg/Kg	10	0.10	<0.010	81	8	80 - 120	20
Ethylbenzene	0.8047	0.8374	mg/Kg	10	0.10	<0.010	80	19	80 - 120	20
M,P,O-Xylene	2.4153	2.4988	mg/Kg	10	0.30	<0.010	81	6	80 - 120	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.879	0.951	mg/Kg	10	0.10	88	95	72 - 128
4-BFB	0.779	0.775	mg/Kg	10	0.10	78	78	72 - 128

Matrix Spikes

QCBatch: QC15656

Param	MS Result	MSD Result	Units	Dil.	Spike Amount Added	Matrix Result	% Rec	RPD	% Rec Limit	RPD Limit
GRO	8.24	8.37	mg/Kg	10	1	<1.00	82	1	70 - 130	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dilution	Spike Amount	MS % Rec	MSD % Rec	Recovery Limits
TFT	0.838	0.835	mg/Kg	10	0.10	84	84	70 - 130
4-BFB	0.877	0.879	mg/Kg	10	0.10	88	88	70 - 130

Quality Control Report
Continuing Calibration Verification Standards

CCV (1) QCBatch: QC15532

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	256	102	75 - 125	11/4/01
n-Octane		mg/Kg	250	121	48	75 - 125	11/4/01

CCV (2) QCBatch: QC15532

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	241	96	75 - 125	11/4/01
n-Octane		mg/Kg	250	123	49	75 - 125	11/4/01

CCV (3) QCBatch: QC15532

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	275	110	75 - 125	11/4/01
n-Octane		mg/Kg	250	137	54	75 - 125	11/4/01

ICV (1) QCBatch: QC15532

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	238	95	75 - 125	11/4/01
n-Octane		mg/Kg	250	116	46	75 - 125	11/4/01

CCV (1) QCBatch: QC15533

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	258	103	75 - 125	11/4/01
n-Octane		mg/Kg	250	141	56	75 - 125	11/4/01

ICV (1) QCBatch: QC15533

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	267	107	75 - 125	11/4/01

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Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
n-Octane		mg/Kg	250	139	55	75 - 125	11/4/01

CCV (1)

QCBatch: QC15655

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0913	91	85 - 115	11/9/01
Benzene		mg/L	0.10	0.0943	94	85 - 115	11/9/01
Toluene		mg/L	0.10	0.0947	95	85 - 115	11/9/01
Ethylbenzene		mg/L	0.10	0.0947	95	85 - 115	11/9/01
M,P,O-Xylene		mg/L	0.30	0.283	94	85 - 115	11/9/01

CCV (2)

QCBatch: QC15655

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.085	85	85 - 115	11/9/01
Benzene		mg/L	0.10	0.095	95	85 - 115	11/9/01
Toluene		mg/L	0.10	0.096	96	85 - 115	11/9/01
Ethylbenzene		mg/L	0.10	0.095	95	85 - 115	11/9/01
M,P,O-Xylene		mg/L	0.30	0.285	95	85 - 115	11/9/01

ICV (1)

QCBatch: QC15655

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
MTBE		mg/L	0.10	0.0906	91	85 - 115	11/9/01
Benzene		mg/L	0.10	0.0943	94	85 - 115	11/9/01
Toluene		mg/L	0.10	0.0939	94	85 - 115	11/9/01
Ethylbenzene		mg/L	0.10	0.0932	93	85 - 115	11/9/01
M,P,O-Xylene		mg/L	0.30	0.279	93	85 - 115	11/9/01

CCV (1)

QCBatch: QC15656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.905	90	75 - 125	11/9/01

CCV (2)

QCBatch: QC15656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.876	87	75 - 125	11/9/01

ICV (1)

QCBatch: QC15656

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1	0.993	99	75 - 125	11/9/01

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CHAIN OF CUSTODY

RITTER ENVIRONMENTAL & GEOTECHNICAL SERVICES, INC.
2900 N. Big Spring, Midland, Texas 79705
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REPORT TO	INVOICE TO
COMPANY: RITTER ENVIRONMENTAL	COMPANY: SAME
ADDRESS: 2900 N. BIG SPRING	ADDRESS:
CITY/STATE/ZIP: MIDLAND, TX 79705	CITY/STATE/ZIP
ATTENTION: MITCH RITTER PHONE: 570-6007	ATTENTION: PHONE:

PROJECT/SITE NAME:	REMARKS:	TURN AROUND TIME
DEFS/EUNICE	ANALYZED BY:TRACE	■ NORMAL ☐ RUSH ☐ OTHER

DATE	TIME	COMP	GRAB	SAMPLE #	SAMPLE DESCRIPTION	MATRIX	# CONT	8015 DRO	8015 GRO	BTEX				REMARKS
10/30/01	10:50	✔		103001 DEFS E1	79' North of pipeline marker		1	✔	✔	✔				183585
10/30/01	11:00	✔		103001 DEFS E2	130' North of pipeline marker		1	✔	✔	✔				86
10/30/01	11:05	✔		103001 DEFS E3	218' North of pipeline marker		1	✔	✔	✔				87
10/30/01	11:10	✔		103001 DEFS E4	353' North of pipeline marker		1	✔	✔	✔				88
10/30/01	11:20	✔		103001 DEFS E5	519' North of pipeline marker		1	✔	✔	✔				89
10/30/01	11:25	✔		103001 DEFS E6	750' North of pipeline marker		1	✔	✔	✔				90

REVIEWED BY: ☑ MRR ☐ BNR

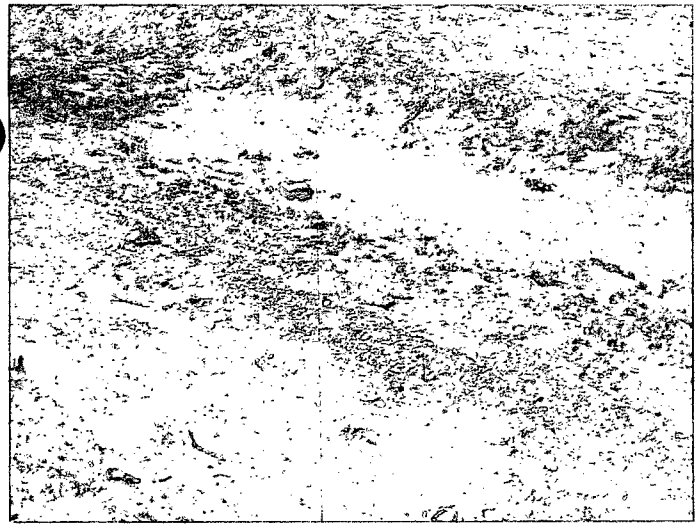
RELINQUISHED BY	DATE/TIME	RECEIVED BY:	DATE / TIME	SAMPLE CONDITION	DATE / TIME
[signature]	10/31/01 16:10	Helen Shelton	10/31/01 16:10	Good / Cool 4°	10/31/01 16:10 AM
Helen Shelton	10/31/01 1800				

Shipped Greyhound 1635 uu 479 1 / 4° / 6 samples - HS

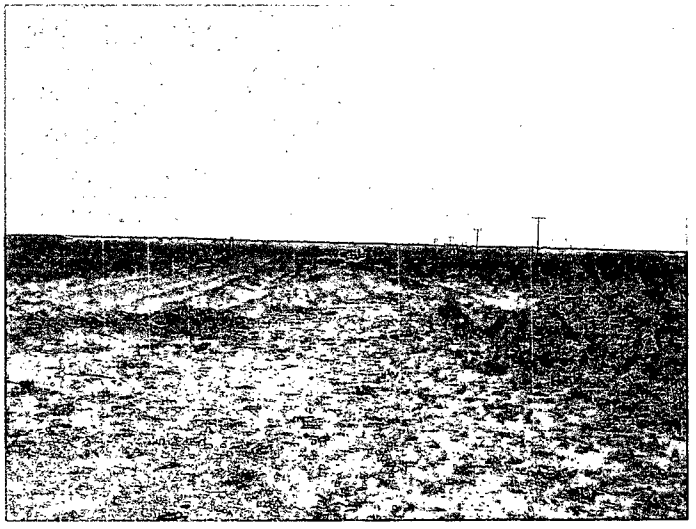
11/14

S:\Current Projects\Duke\Eunice Spill\word\Chain of Custody 103001.doc

June 18, 2002
Site Visit



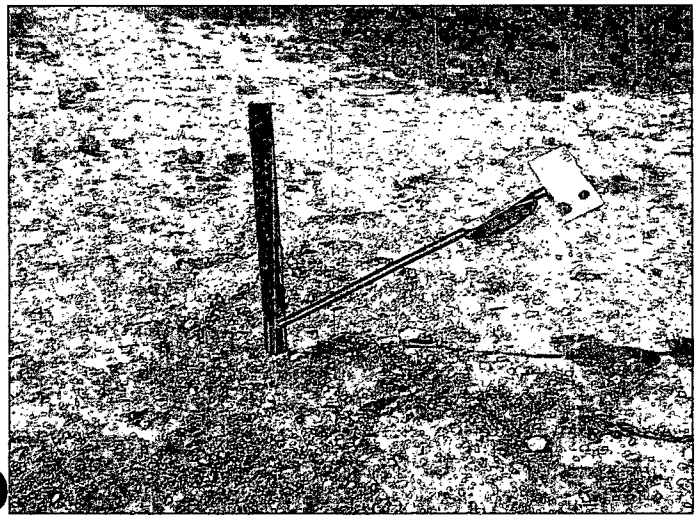
1-1 Duke/Eunice G Loop Spill 6/18/02 Site Visit



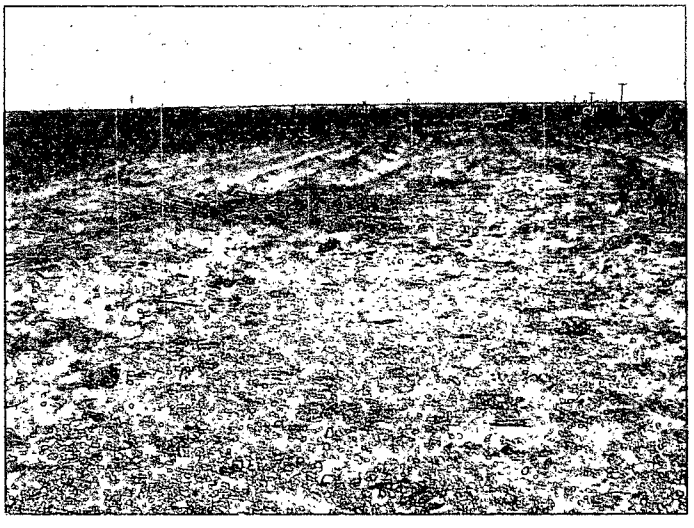
1-2 Duke/Eunice G Loop Spill 6/18/02 Site Visit

1-3 Duke/Eunice G Loop Spill 6/18/02 Site Visit

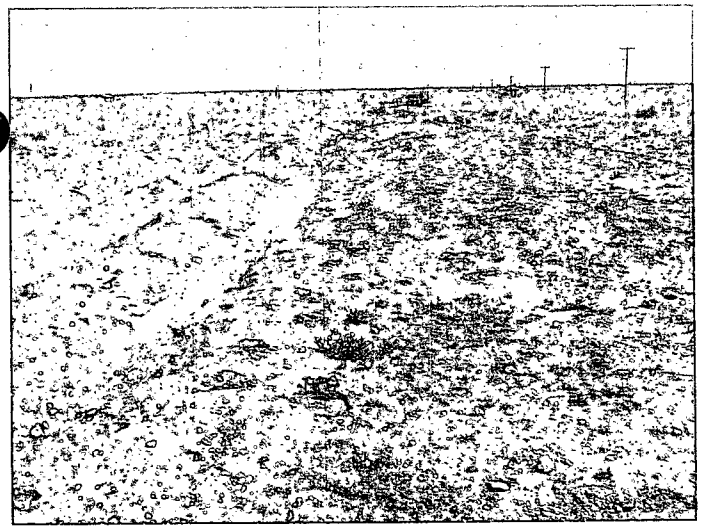
1-4 Duke/Eunice G Loop Spill 6/18/02 Site Visit



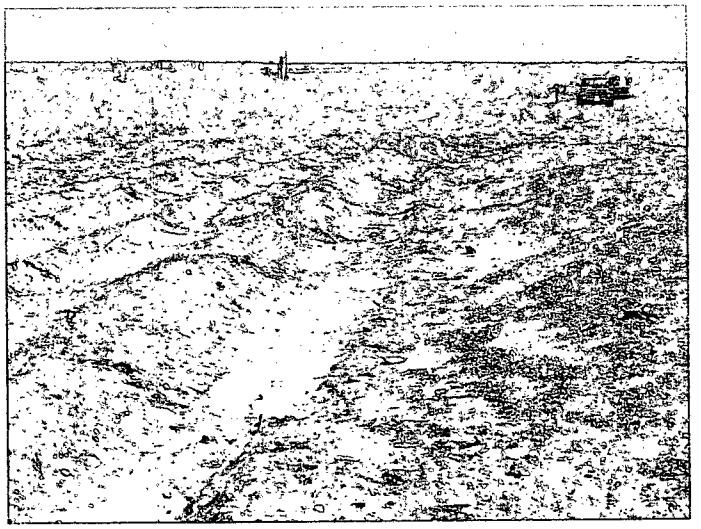
1-6 Duke/Eunice G Loop Spill 6/18/02 Site Visit
(Picture #5 was missing.)



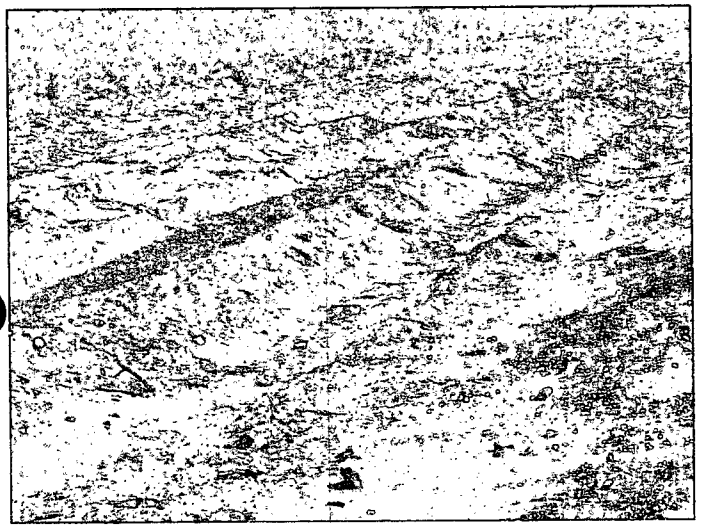
1-7 Duke/Eunice G Loop Spill 6/18/02 Site Visit



1-8 Duke/Eunice G Loop Spill 6/18/02 Site Visit

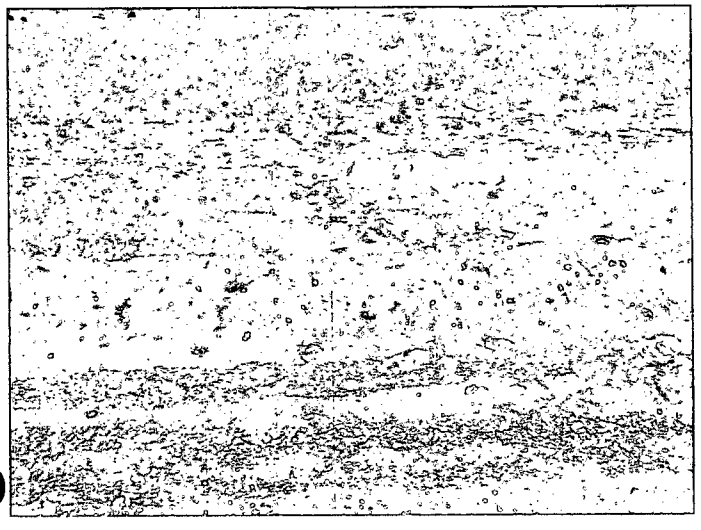


1-9 Duke/Eunice G Loop Spill 6/18/02 Site Visit



1-10 Duke/Eunice G Loop Spill 6/18/02 Site Visit

1-11 Duke/Eunice G Loop Spill 6/18/02 Site Visit



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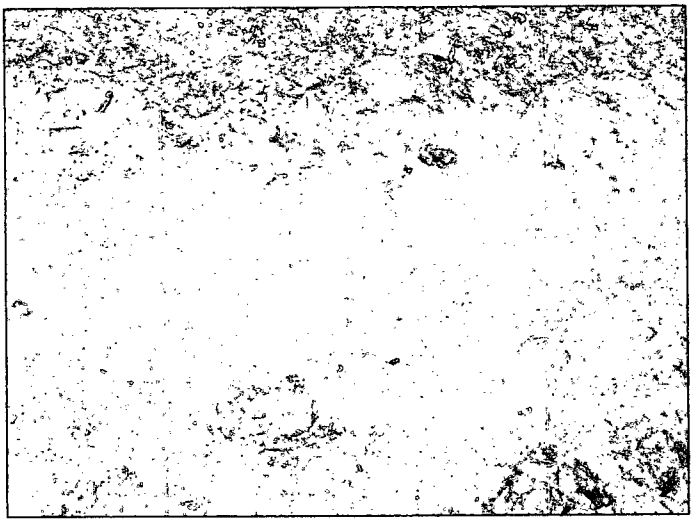
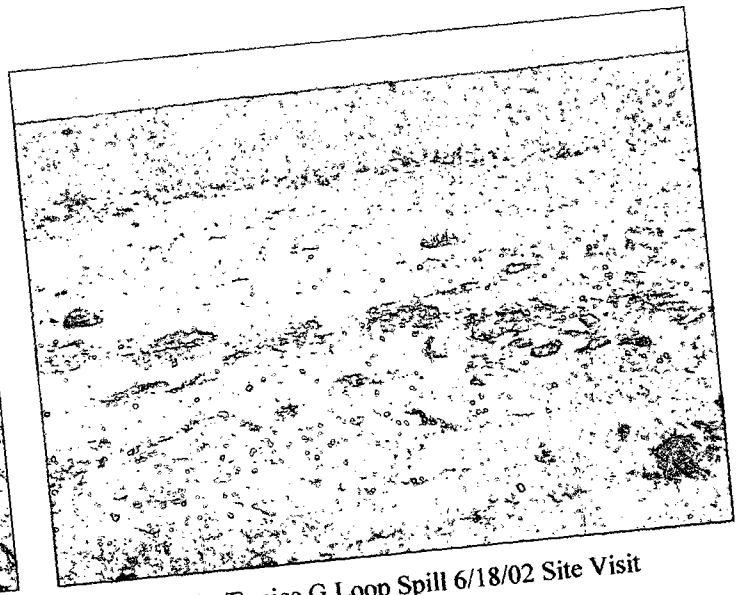


1-13 Duke/Eunice G Loop Spill 6/18/02 Site Visit

1-14 Duke/Eunice G Loop Spill 6/18/02 Site Visit



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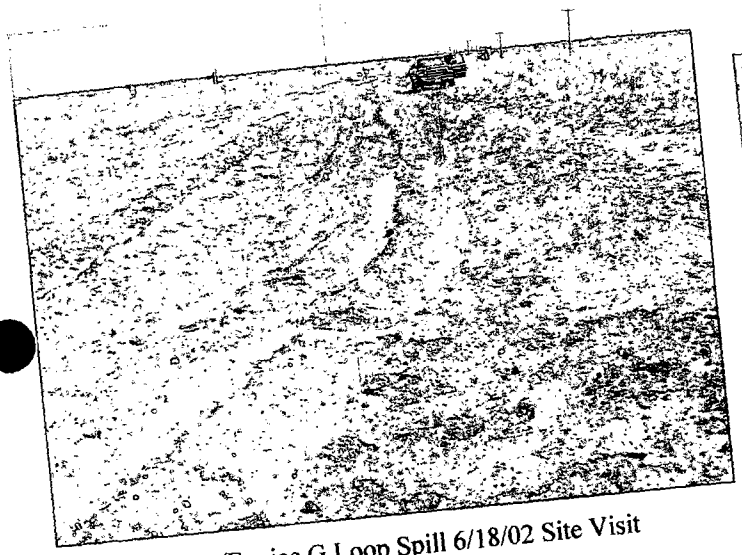

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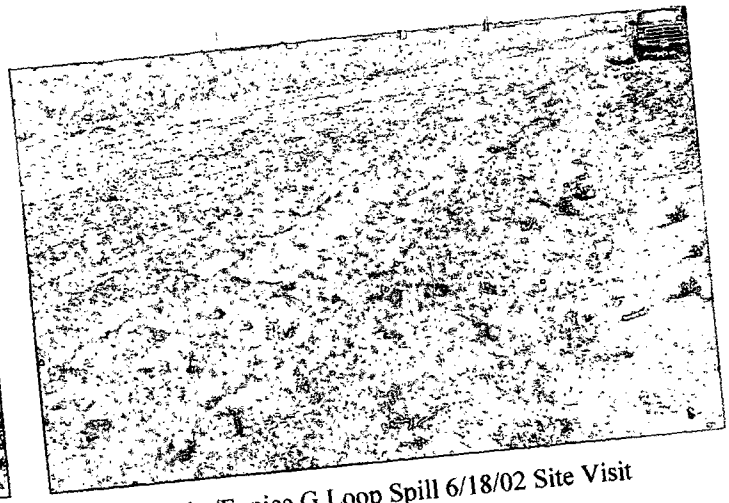

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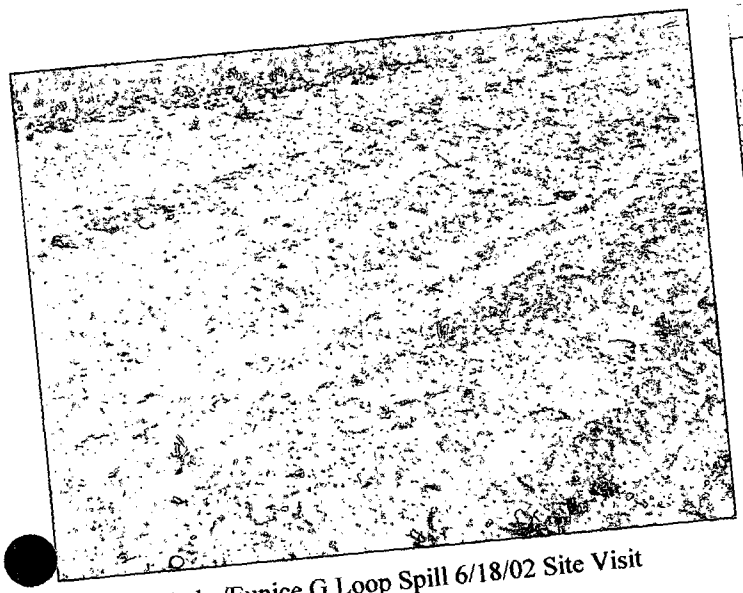

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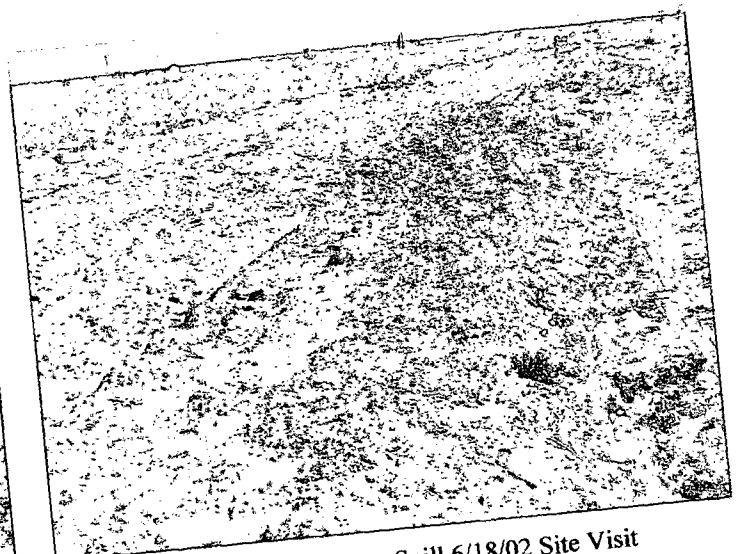

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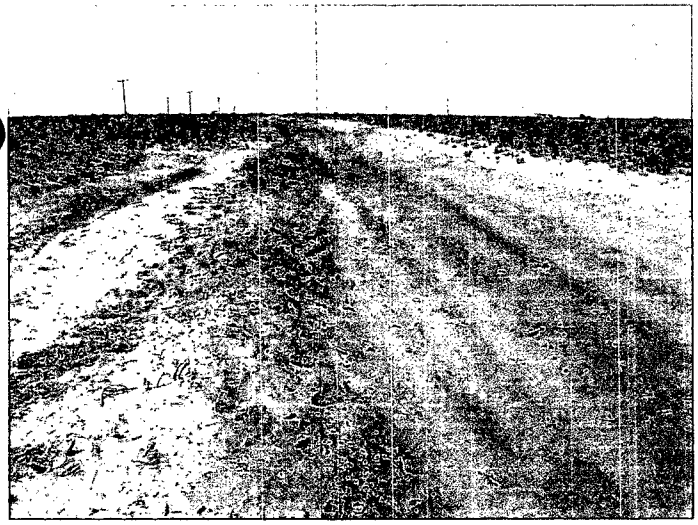

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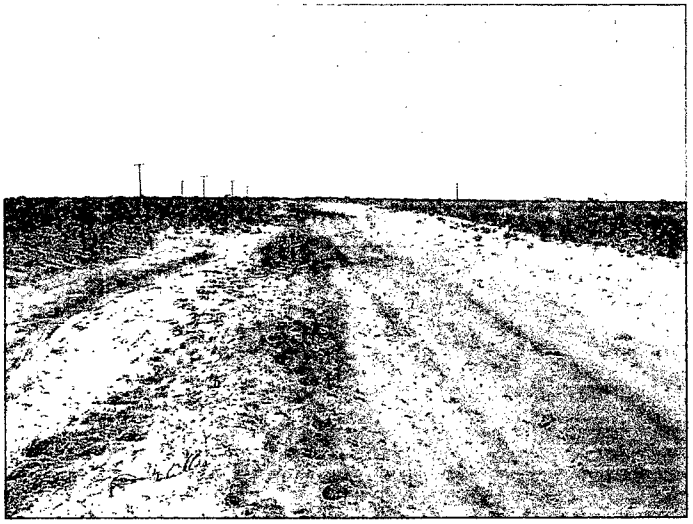

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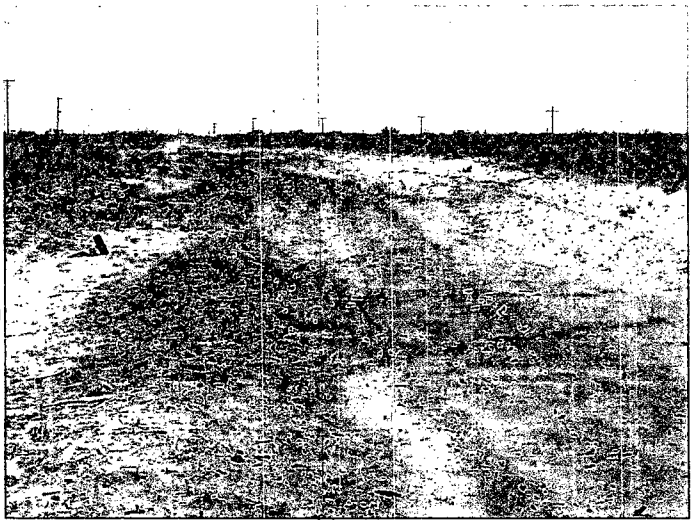

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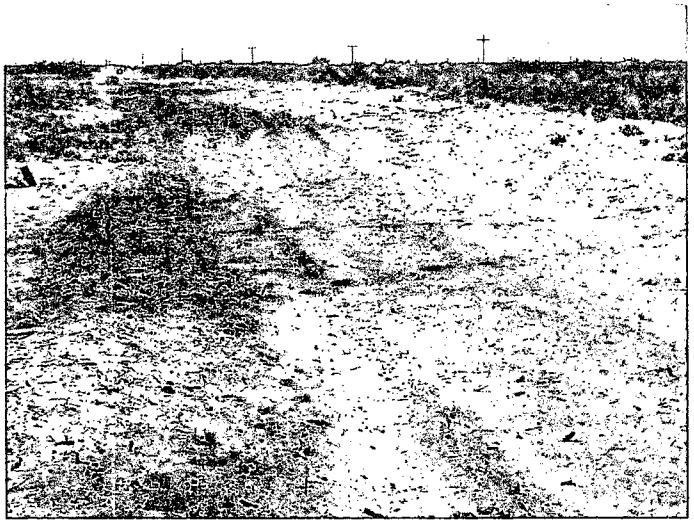

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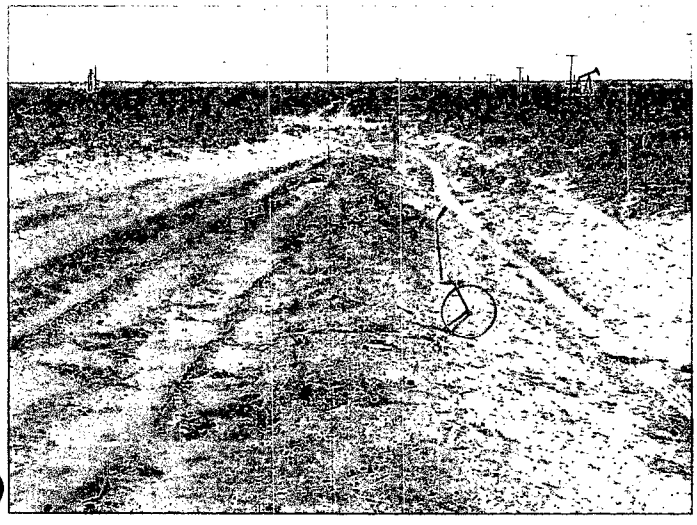
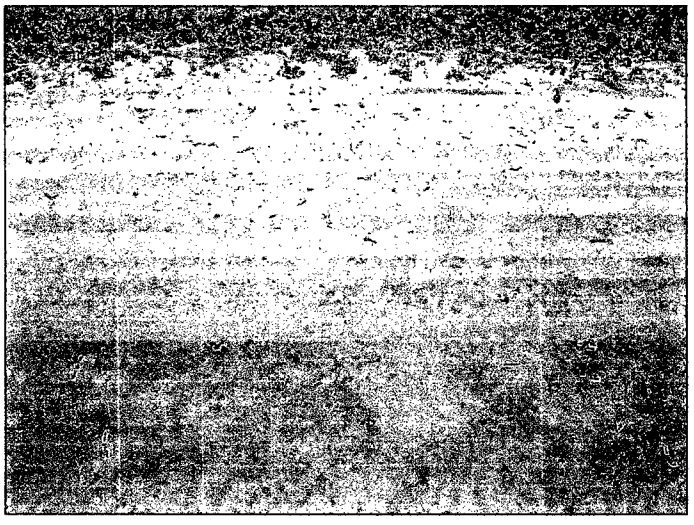


1-24 Duke/Eunice G Loop Spill 6/18/02 Site Visit



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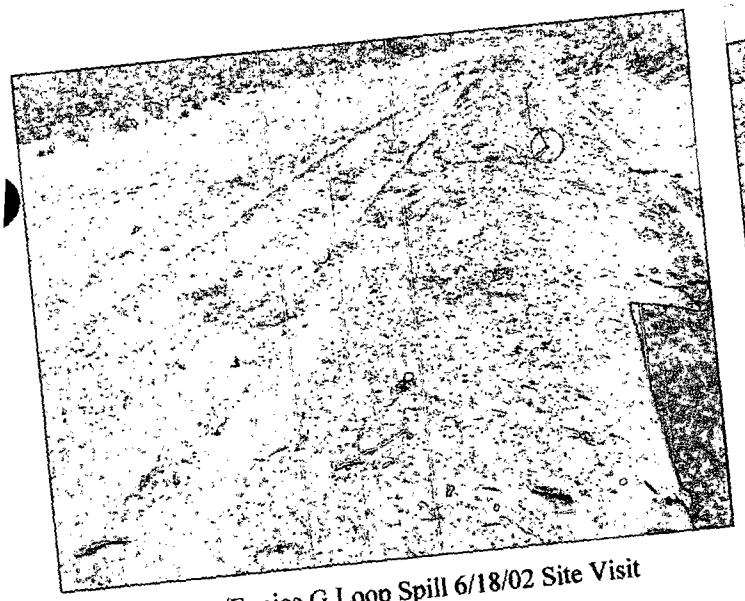

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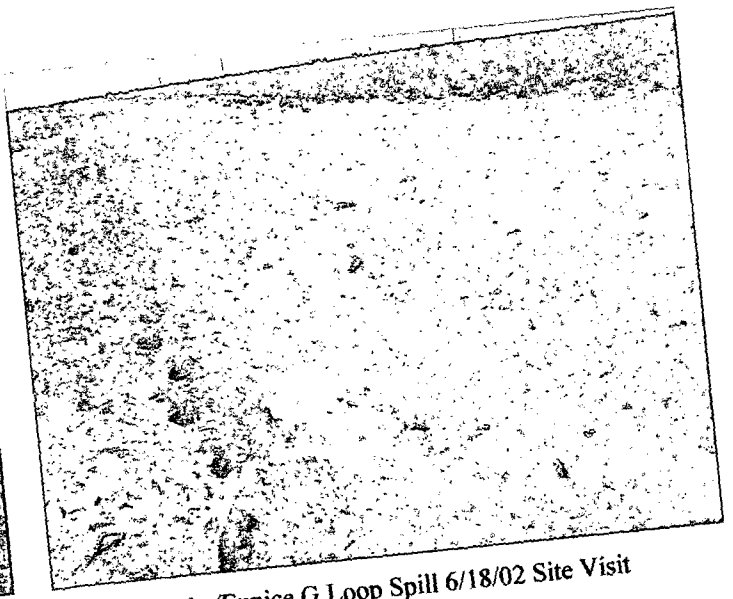

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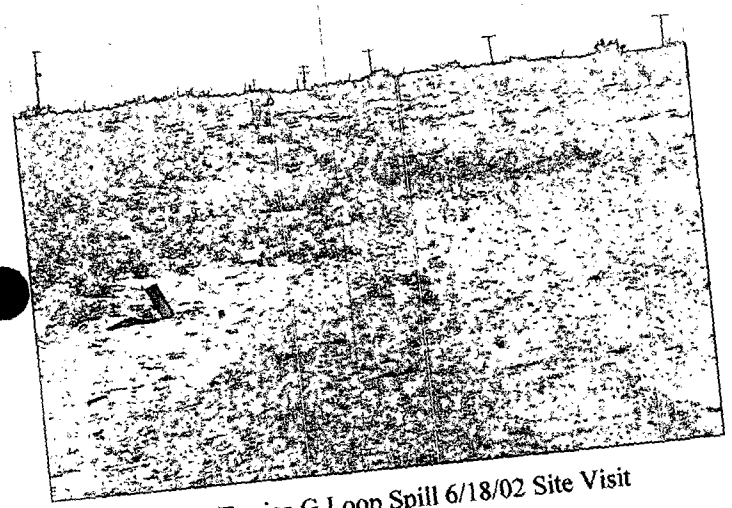
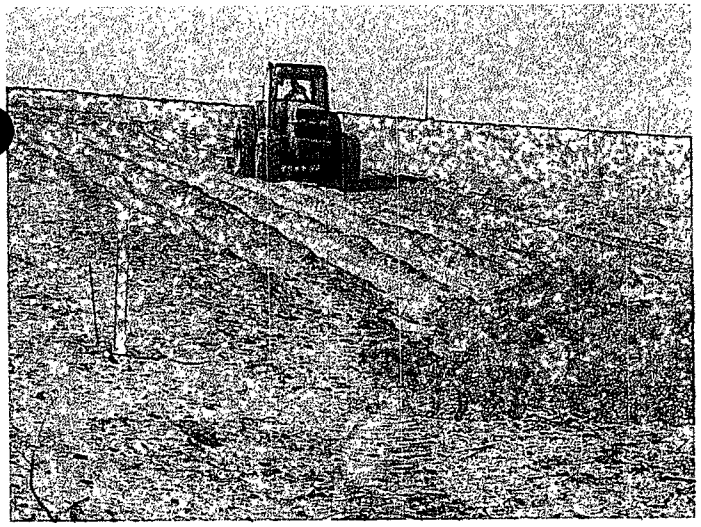
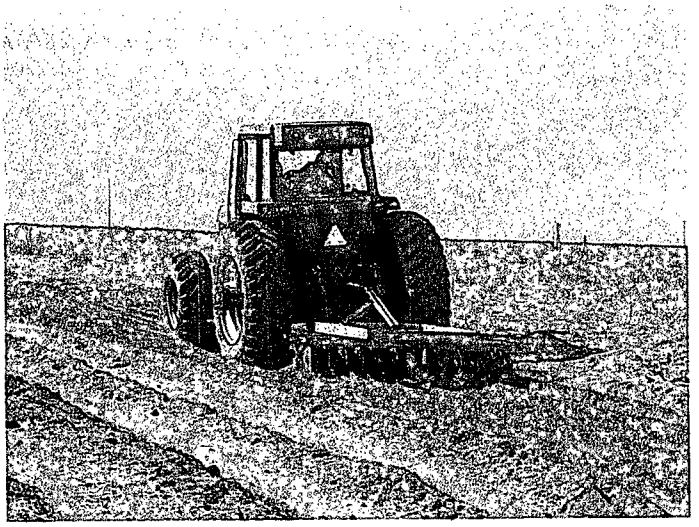


1-28 Duke/Eunice G Loop Spill 6/18/02 Site Visit

April 4, 2002
Site Visit



1-1 Duke/Eunice G Loop Spill 4/4/02 Site Visit



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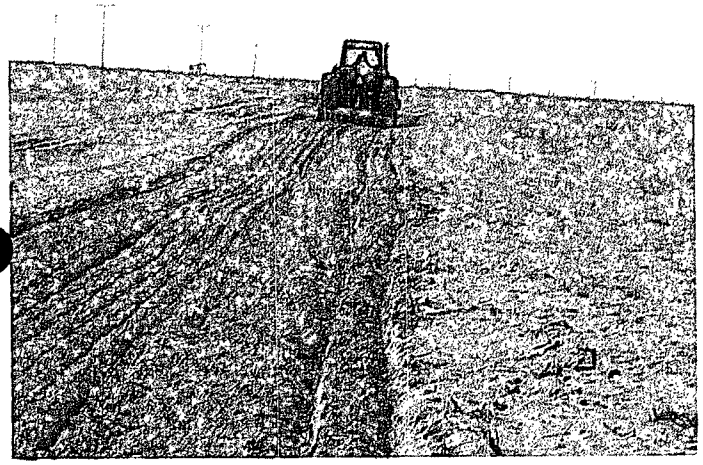
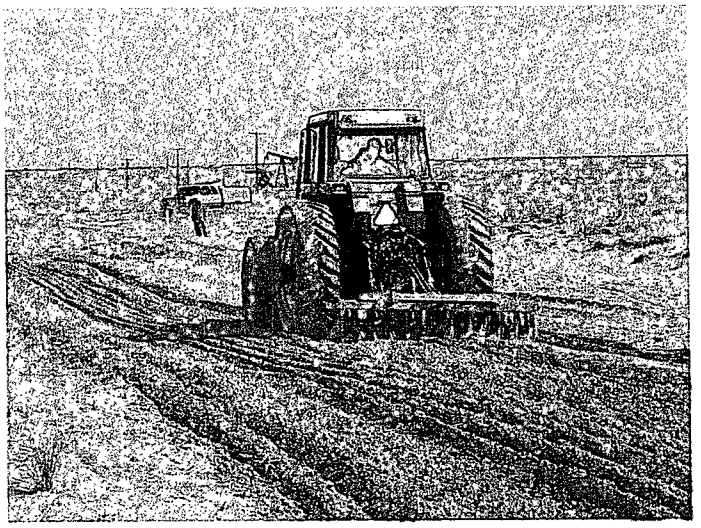
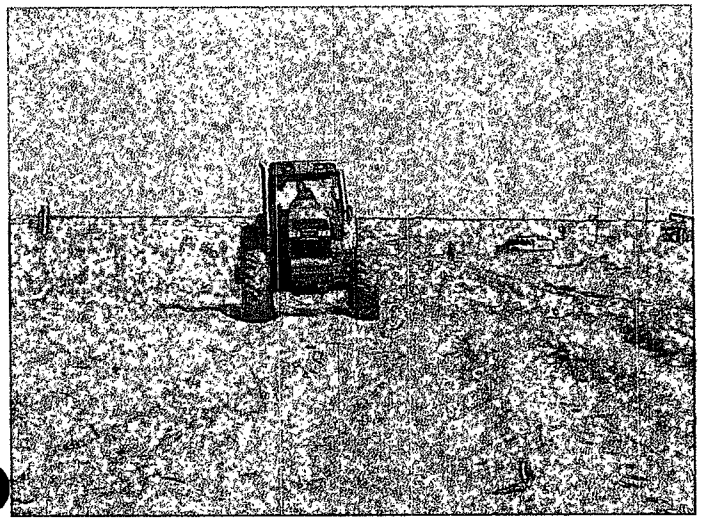


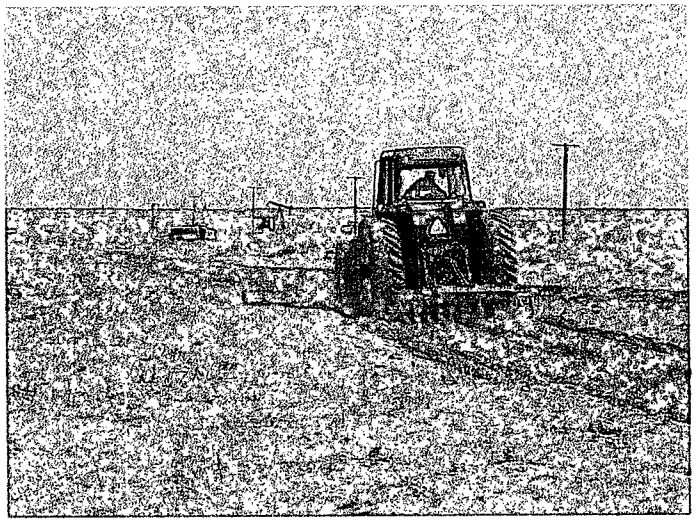
1-3 Duke/Eunice G Loop Spill 4/4/02 Site Visit



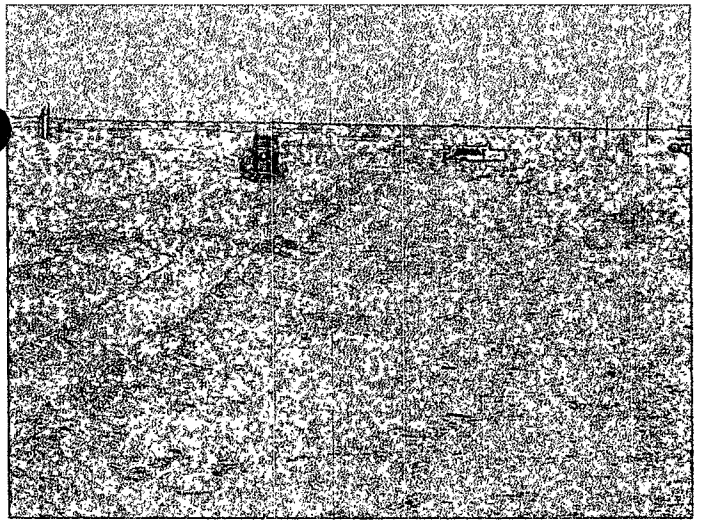
1-4 Duke/Eunice G Loop Spill 4/4/02 Site Visit



1-5 Duke/Eunice G Loop Spill 4/4/02 Site Visit



1-6 Duke/Eunice G Loop Spill 4/4/02 Site Visit



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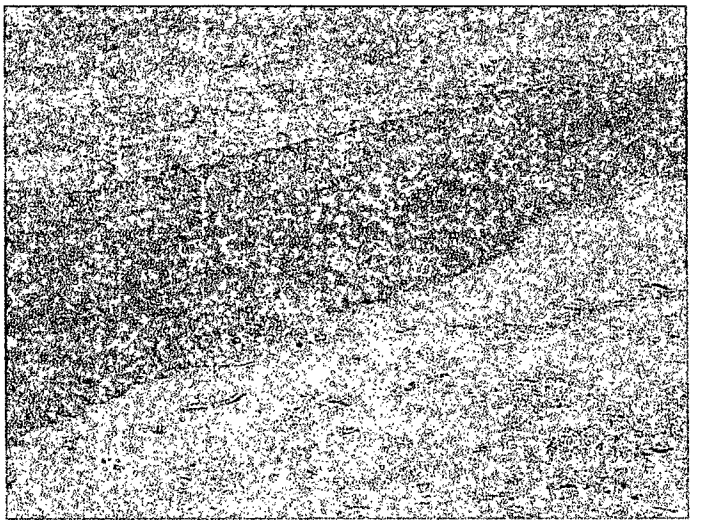

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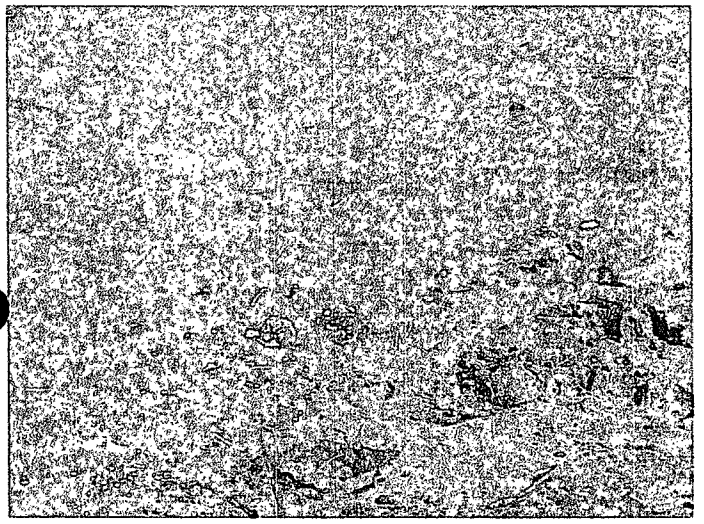

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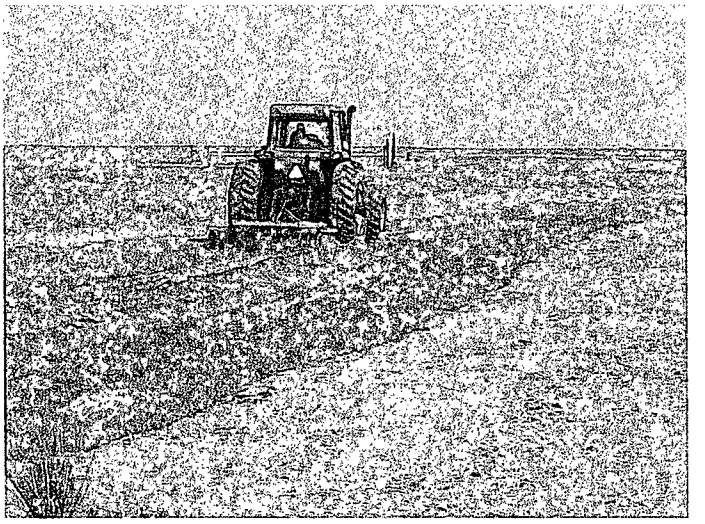
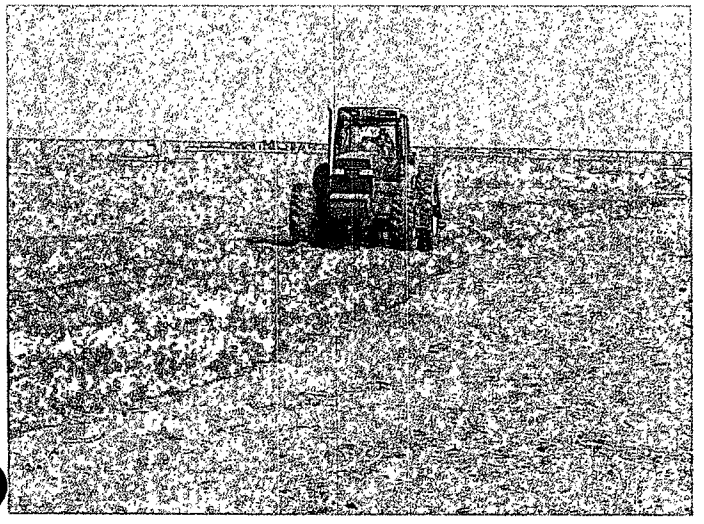
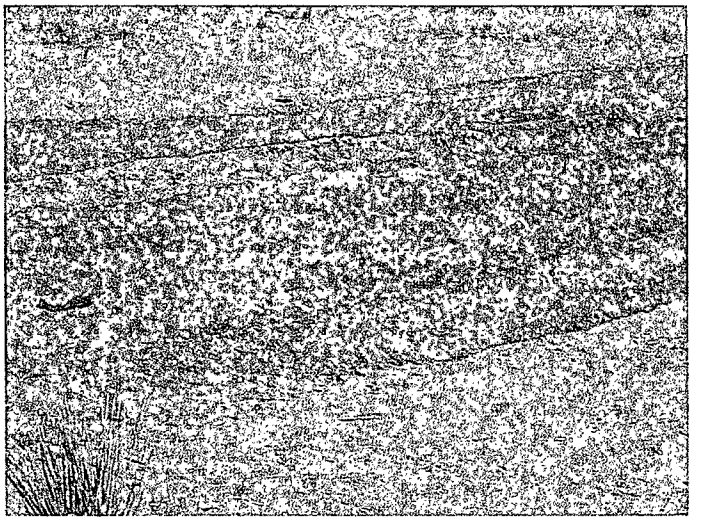


1-10 Duke/Eunice G Loop Spill 4/4/02 Site Visit



2-1 Duke/Eunice G Loop Spill 4/4/02 Site Visit



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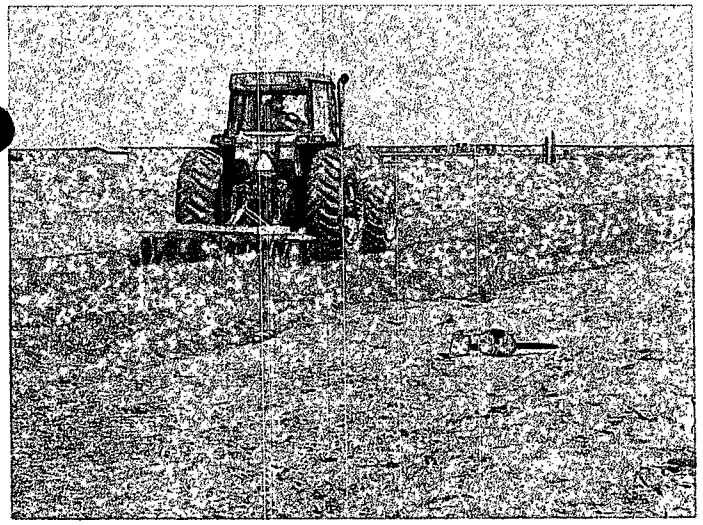

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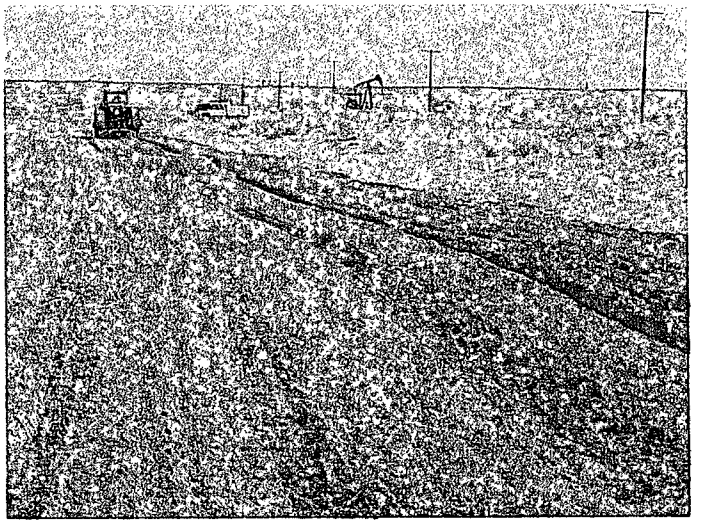
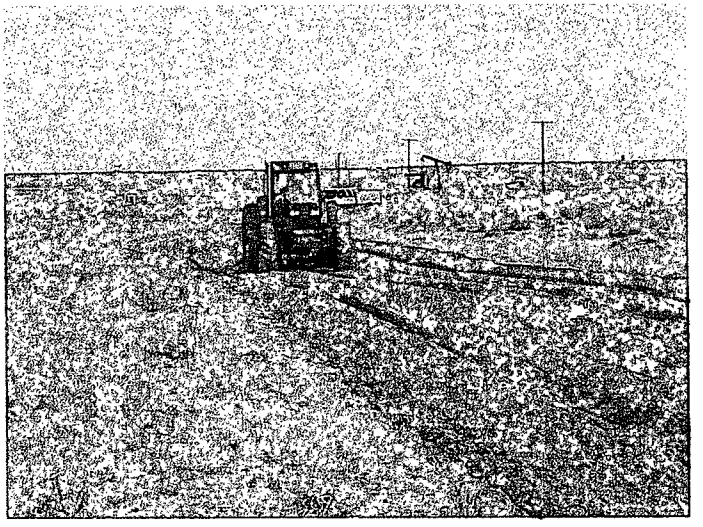
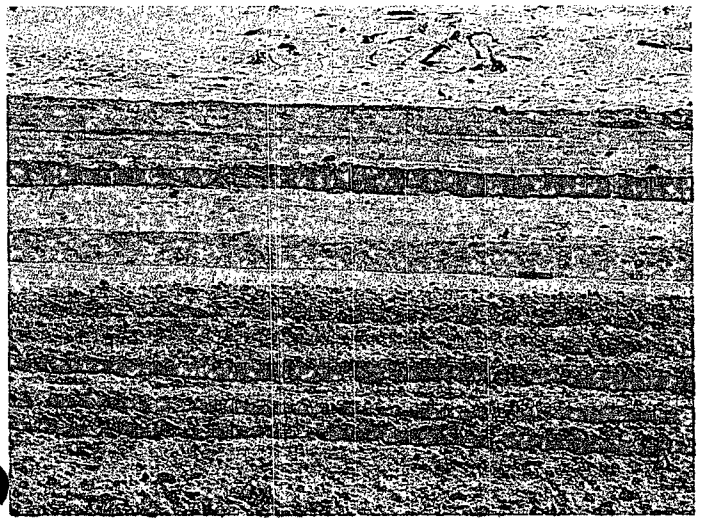


2-4 Duke/Eunice G Loop Spill 4/4/02 Site Visit

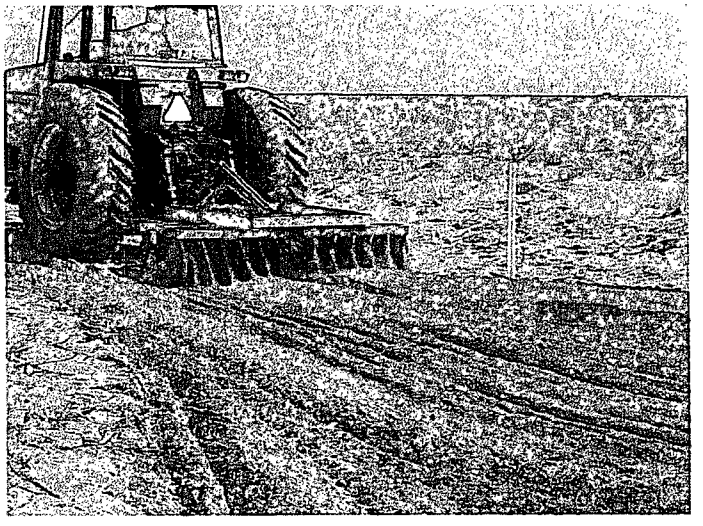
2-5 Duke/Eunice G Loop Spill 4/4/02 Site Visit



2-6 Duke/Eunice G Loop Spill 4/4/02 Site Visit



2-7 Duke/Eunice G Loop Spill 4/4/02 Site Visit



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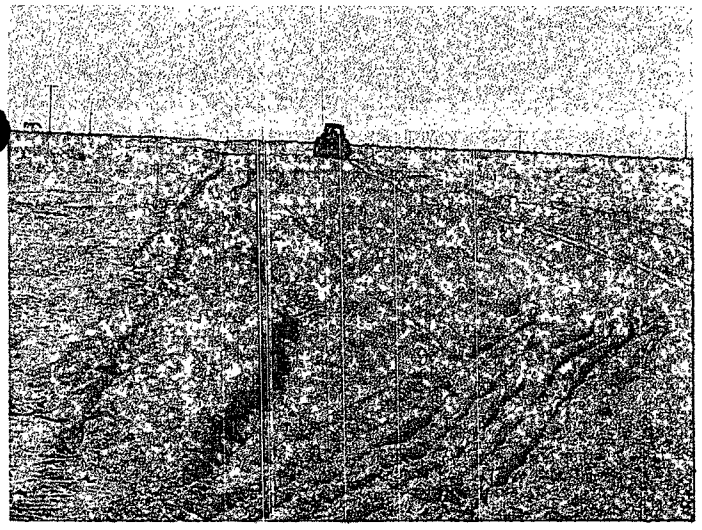

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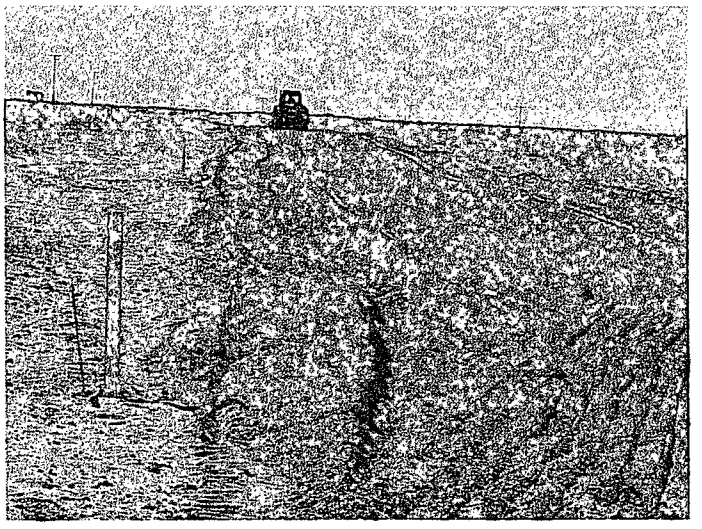
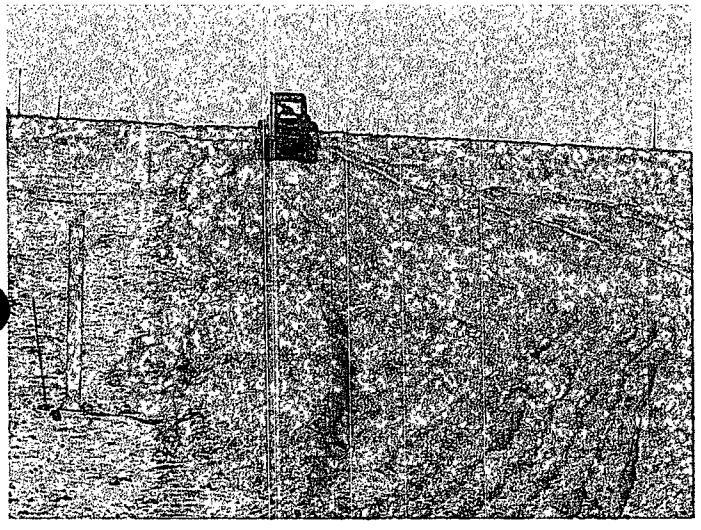
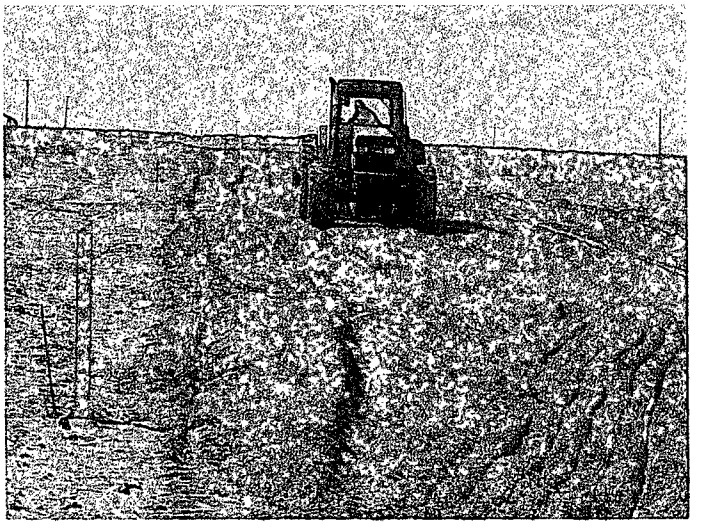


3-2 Duke/Eunice G Loop Spill 4/4/02 Site Visit



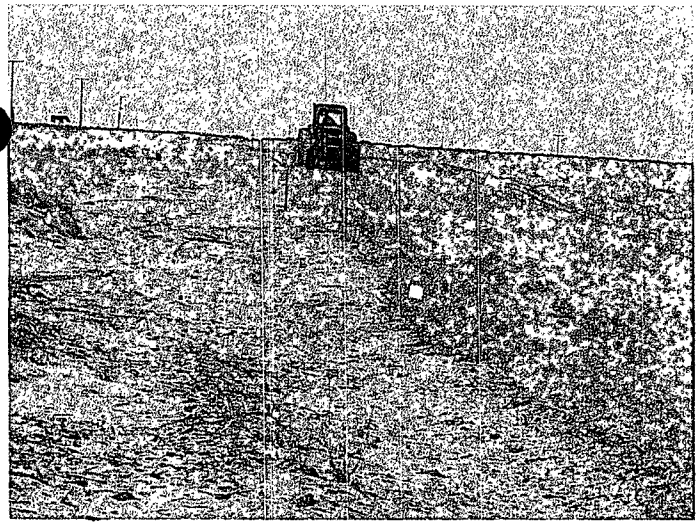
3-3 Duke/Eunice G Loop Spill 4/4/02 Site Visit



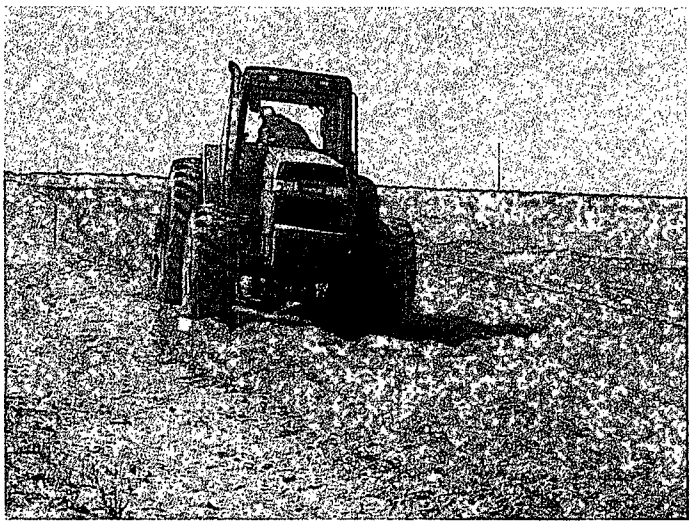
3-4 Duke/Eunice G Loop Spill 4/4/02 Site Visit

3-5 Duke/Eunice G Loop Spill 4/4/02 Site Visit

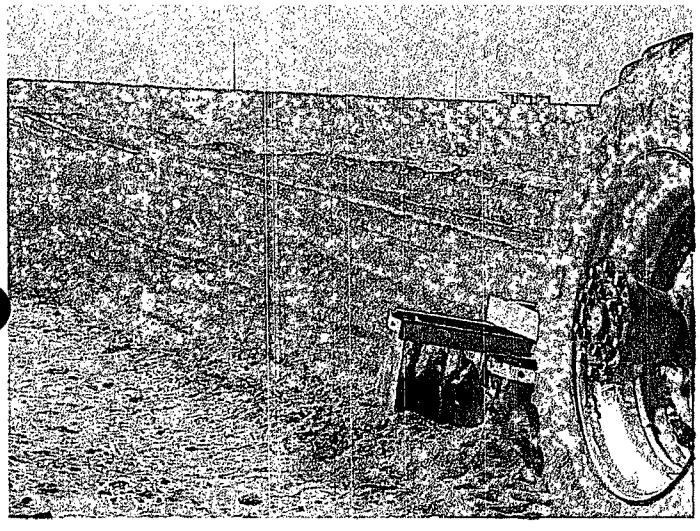
3-6 Duke/Eunice G Loop Spill 4/4/02 Site Visit



3-7 Duke/Eunice G Loop Spill 4/4/02 Site Visit

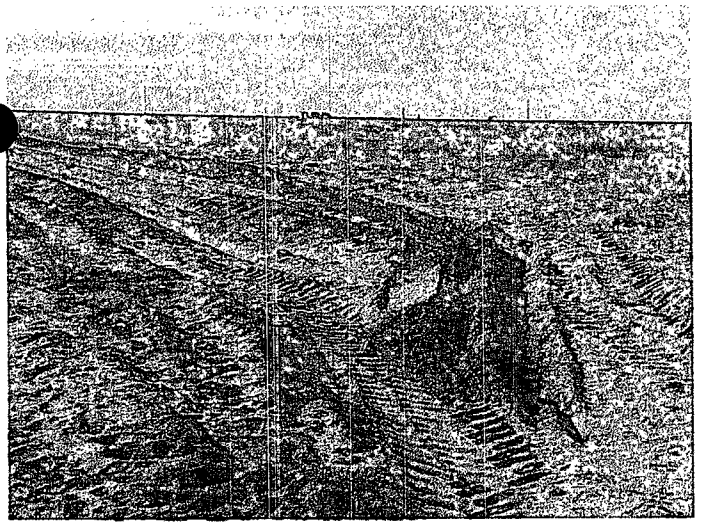


3-8 Duke/Eunice G Loop Spill 4/4/02 Site Visit

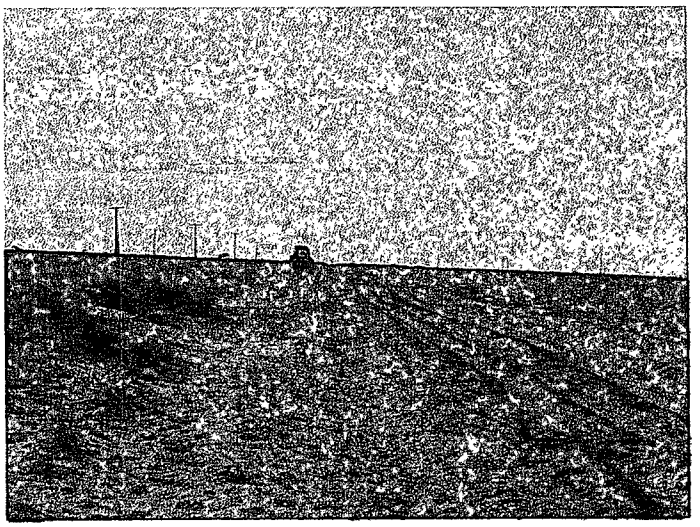


3-9 Duke/Eunice G Loop Spill 4/4/02 Site Visit

January 15, 2002
Site Visit



1-1 Duke/Eunice G Loop Spill 1/15/02 Site Visit



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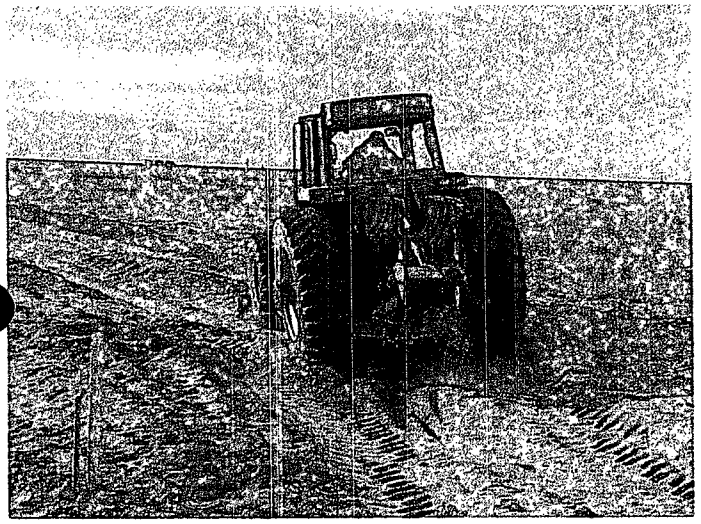
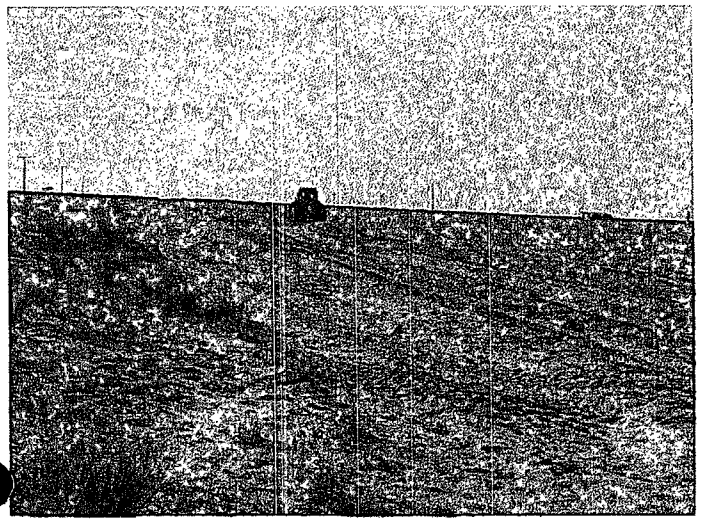
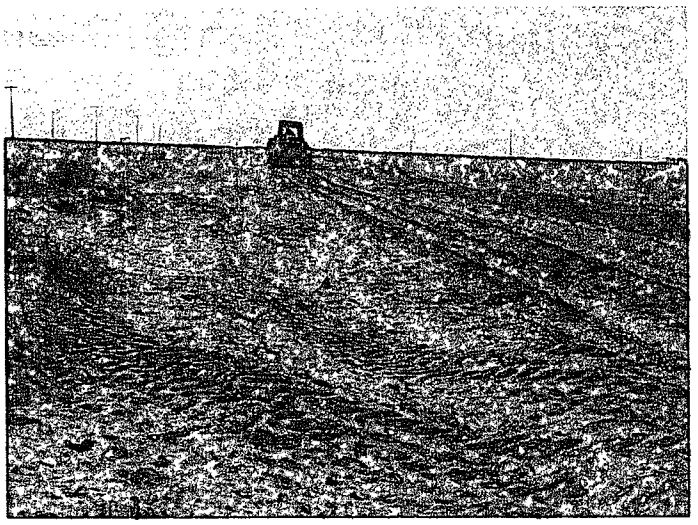


1-3 Duke/Eunice G Loop Spill 1/15/02 Site Visit

1-4 Duke/Eunice G Loop Spill 1/15/02 Site Visit

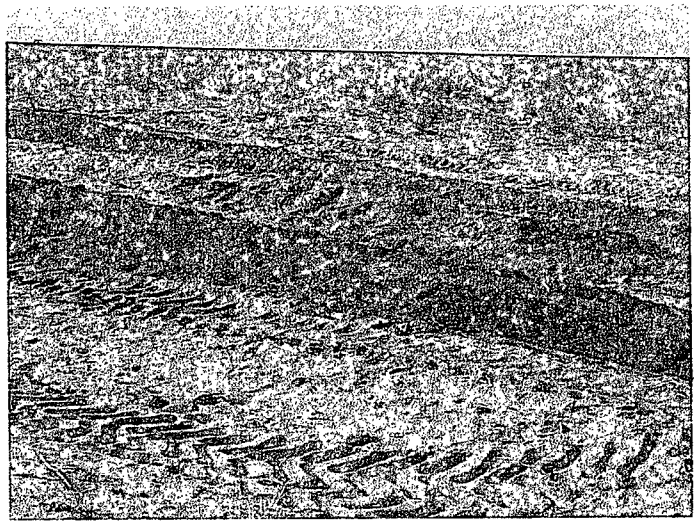


1-5 Duke/Eunice G Loop Spill 1/15/02 Site Visit

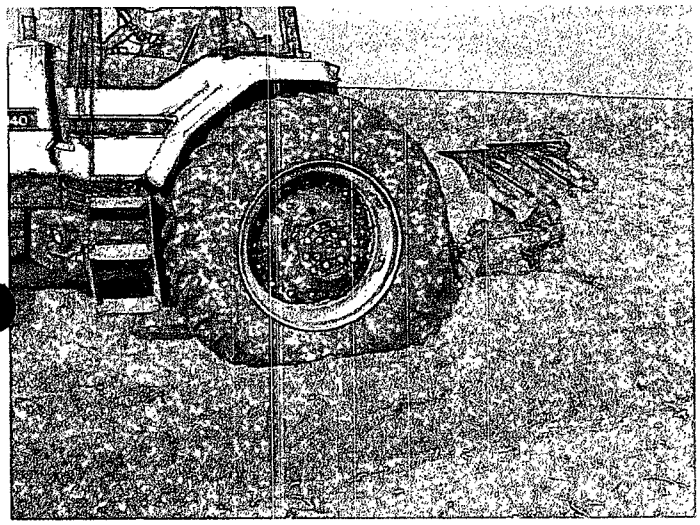


1-6 Duke/Eunice G Loop Spill 1/15/02 Site Visit

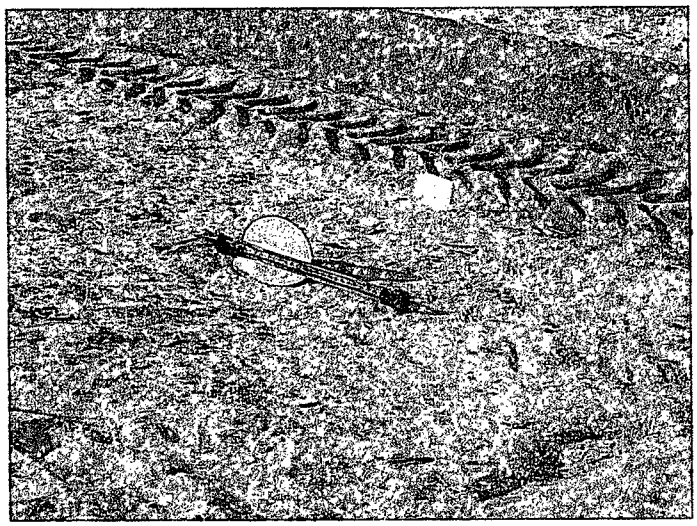
1-7 Duke/Eunice G Loop Spill 1/15/02 Site Visit



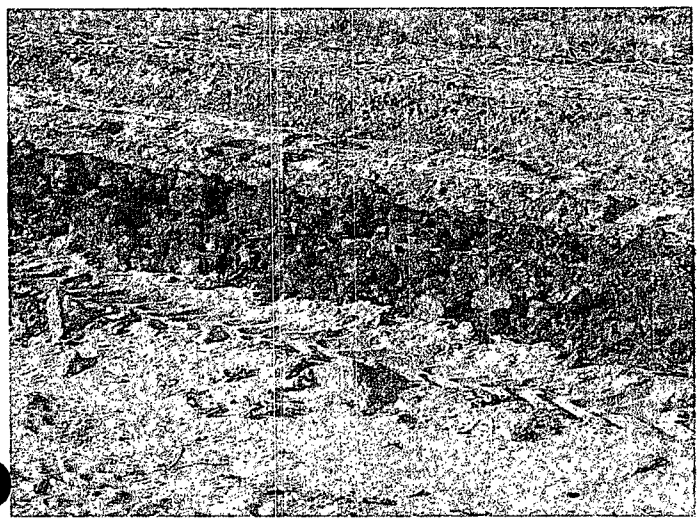
1-8 Duke/Eunice G Loop Spill 1/15/02 Site Visit



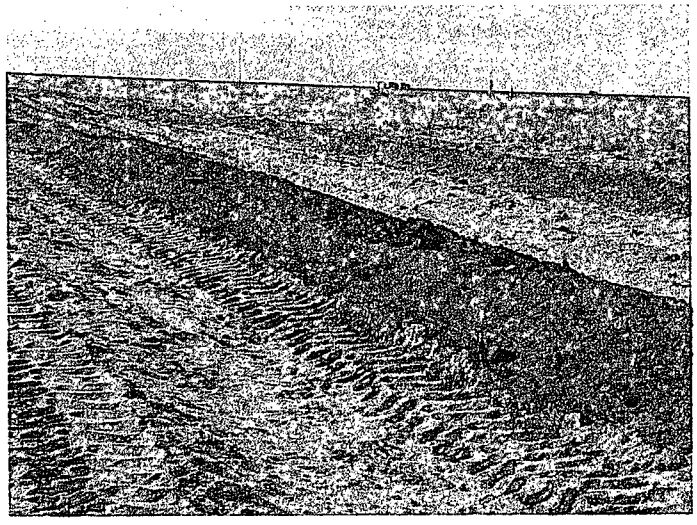
1-9 Duke/Eunice G Loop Spill 1/15/02 Site Visit



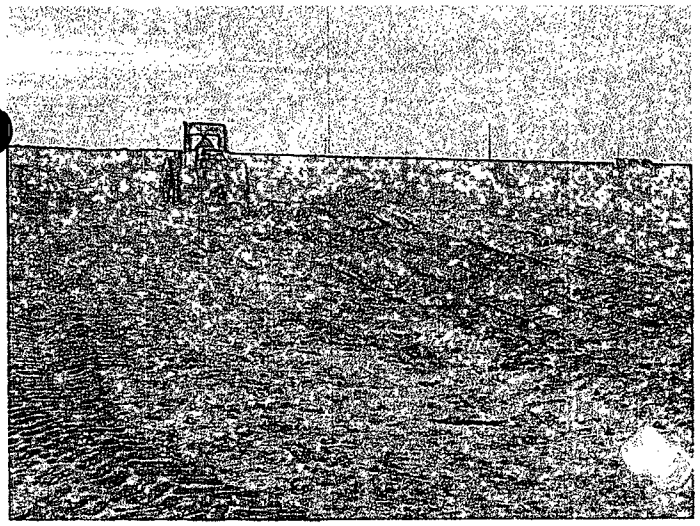
2-1 Duke/Eunice G Loop Spill 1/15/02 Site Visit



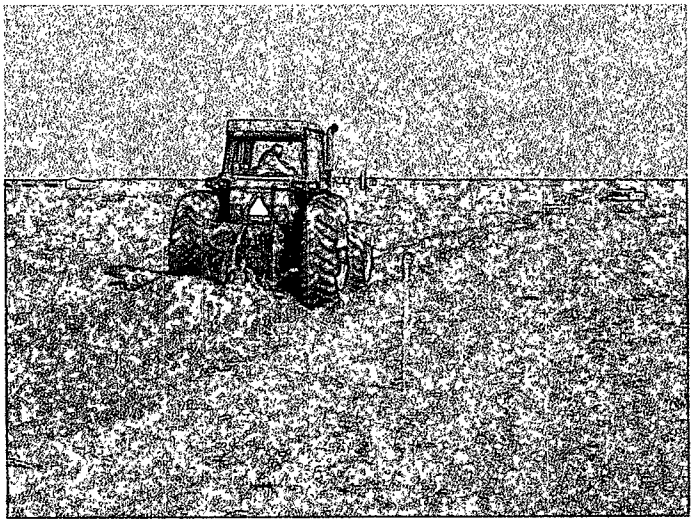
2-2 Duke/Eunice G Loop Spill 1/15/02 Site Visit



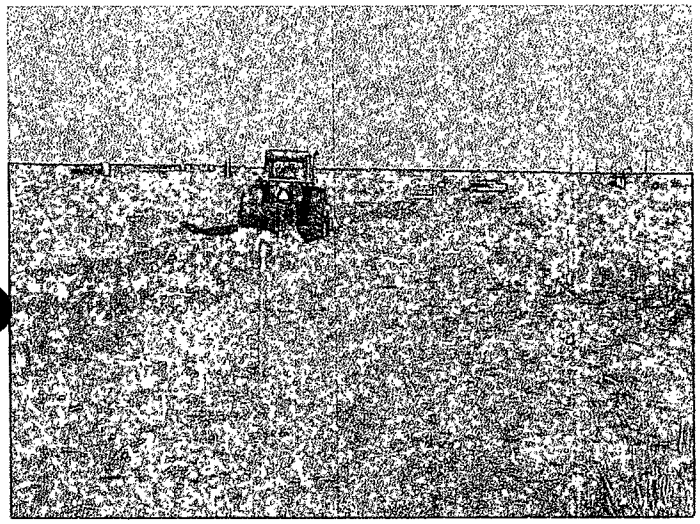
2-3 Duke/Eunice G Loop Spill 1/15/02 Site Visit



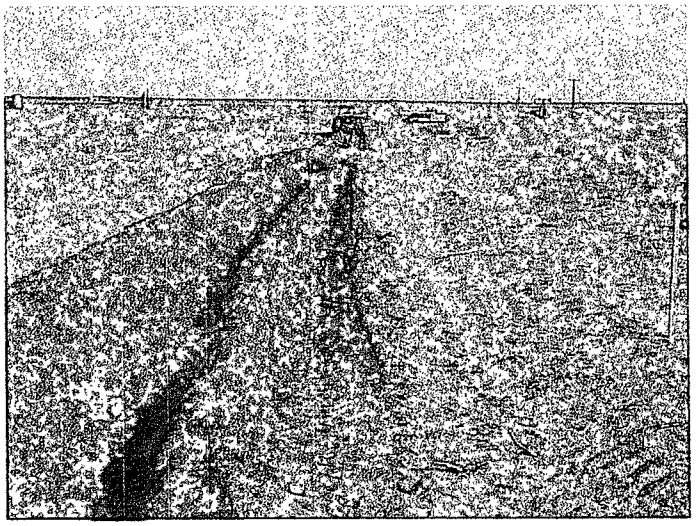
2-4 Duke/Eunice G Loop Spill 1/15/02 Site Visit



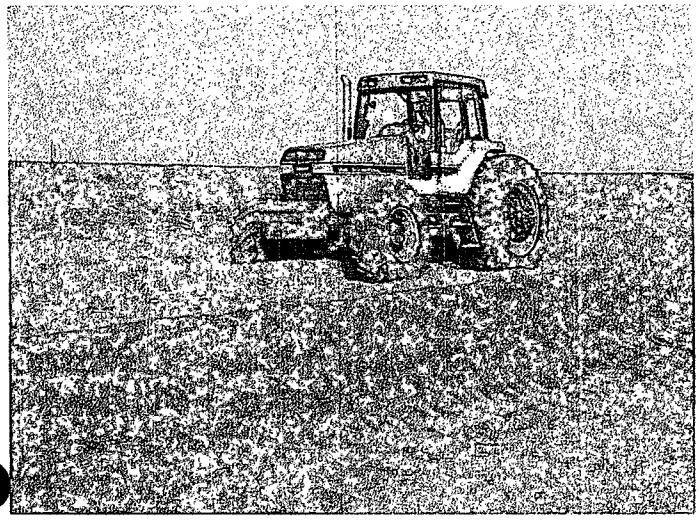
2-5 Duke/Eunice G Loop Spill 1/15/02 Site Visit



2-6 Duke/Eunice G Loop Spill 1/15/02 Site Visit



2-7 Duke/Eunice G Loop Spill 1/15/02 Site Visit



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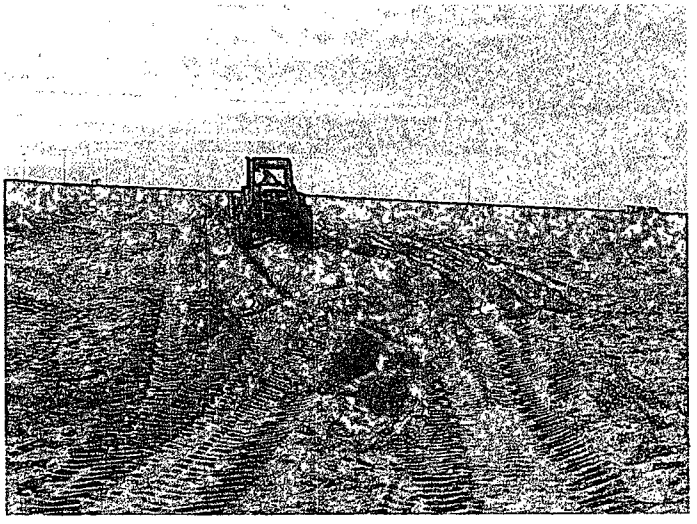
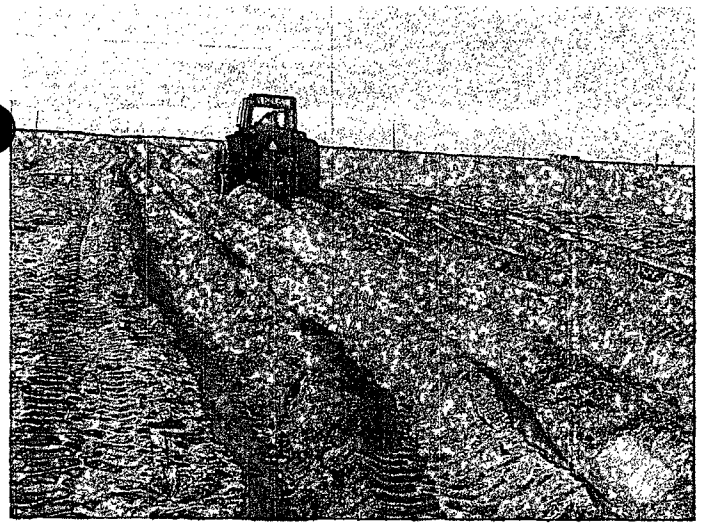
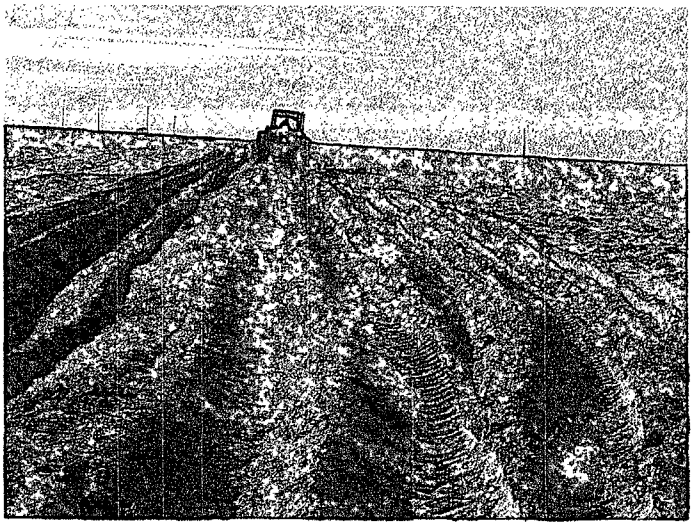


2-9 Duke/Eunice G Loop Spill 1/15/02 Site Visit



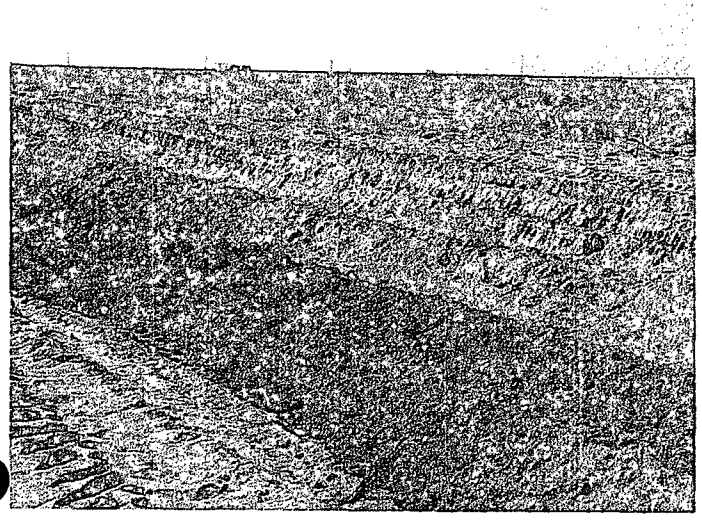
4-1 Duke/Eunice G Loop Spill 1/15/02 Site Visit



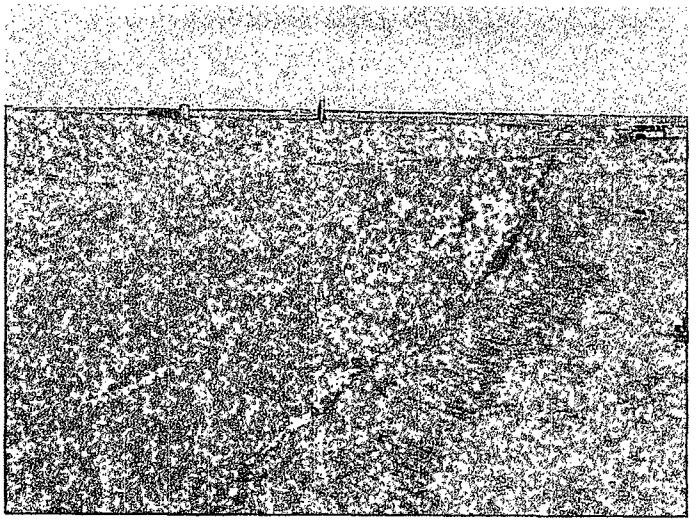
4-2 Duke/Eunice G Loop Spill 1/15/02 Site Visit

4-3 Duke/Eunice G Loop Spill 1/15/02 Site Visit

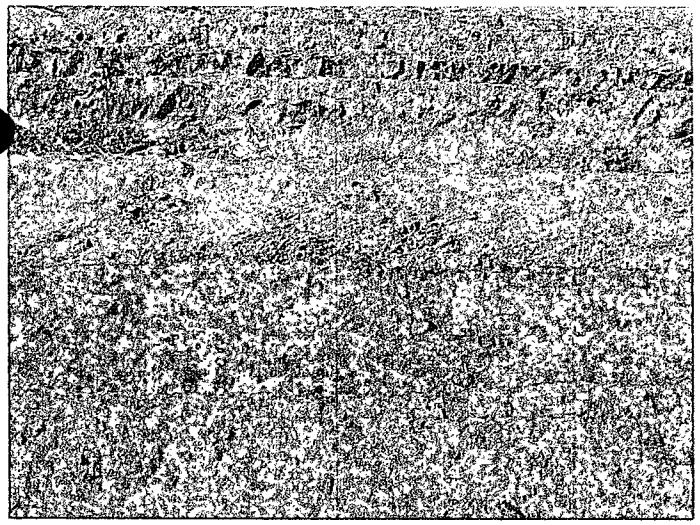
4-4 Duke/Eunice G Loop Spill 1/15/02 Site Visit



4-5 Duke/Eunice G Loop Spill 1/15/02 Site Visit

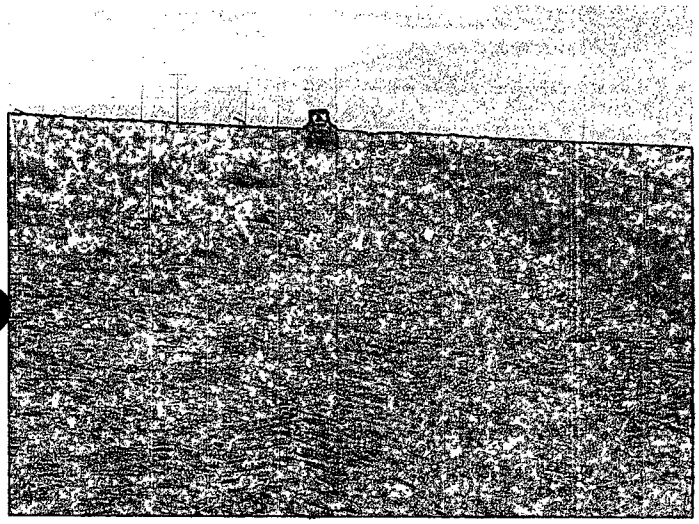


4-6 Duke/Eunice G Loop Spill 1/15/02 Site Visit

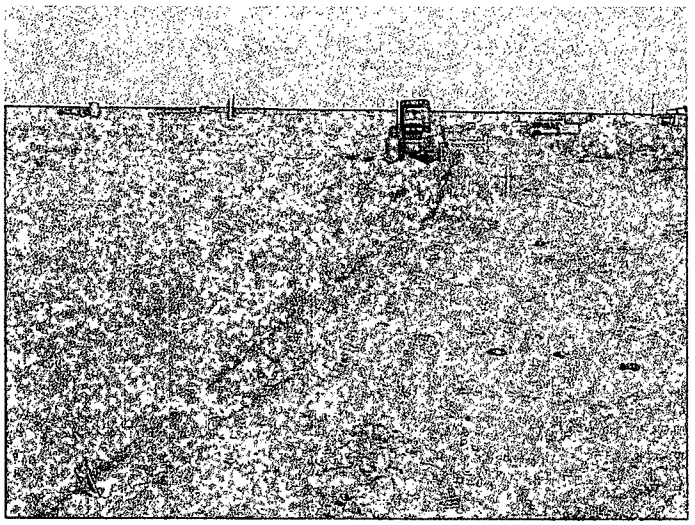


4-7 Duke/Eunice G Loop Spill 1/15/02 Site Visit

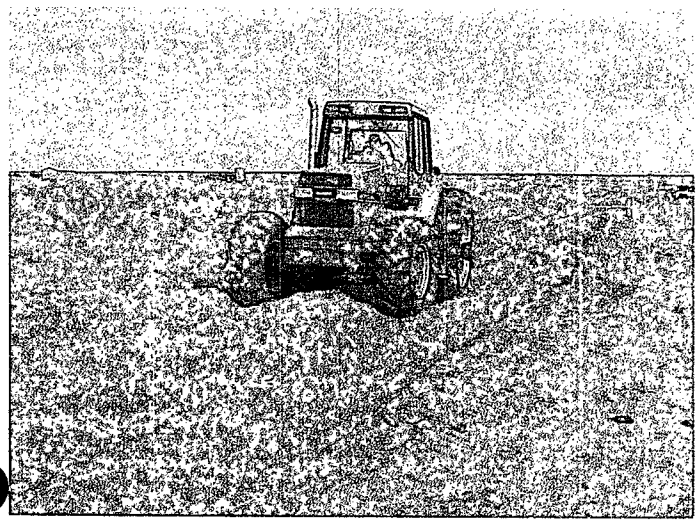
4-8 Duke/Eunice G Loop Spill 1/15/02 Site Visit



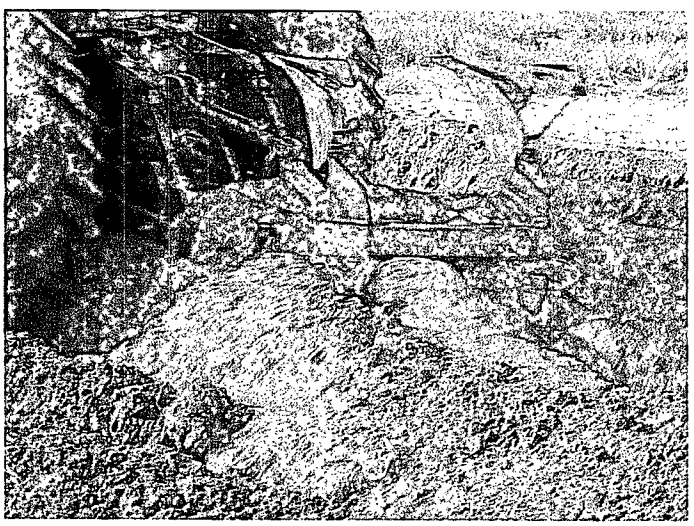
5-1 Duke/Eunice G Loop Spill 1/15/02 Site Visit



5-2 Duke/Eunice G Loop Spill 1/15/02 Site Visit

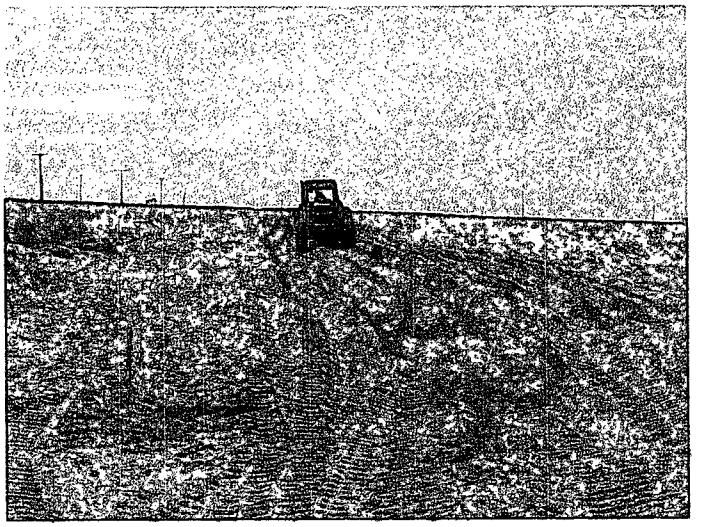


5-3 Duke/Eunice G Loop Spill 1/15/02 Site Visit

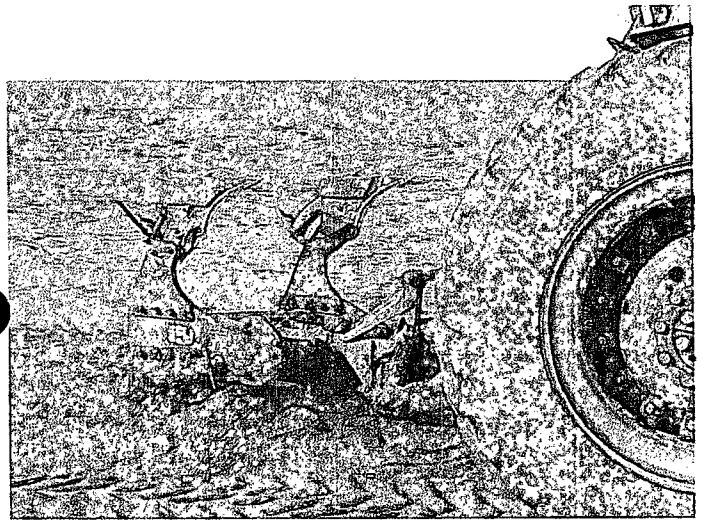


5-4 Duke/Eunice G Loop Spill 1/15/02 Site Visit

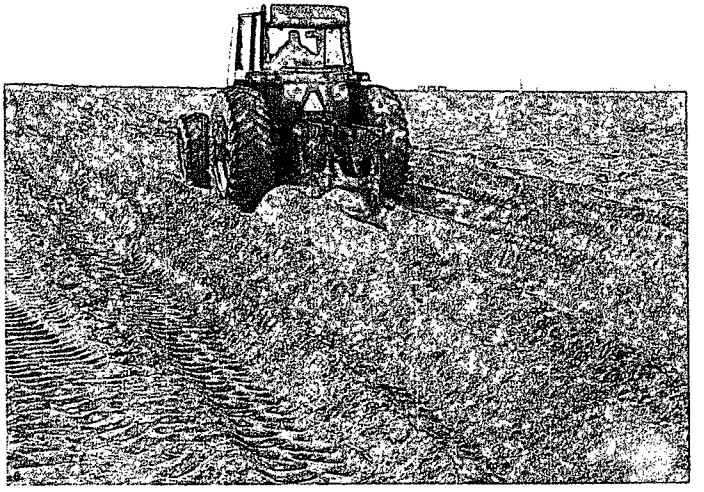
5-5 Duke/Eunice G Loop Spill 1/15/02 Site Visit



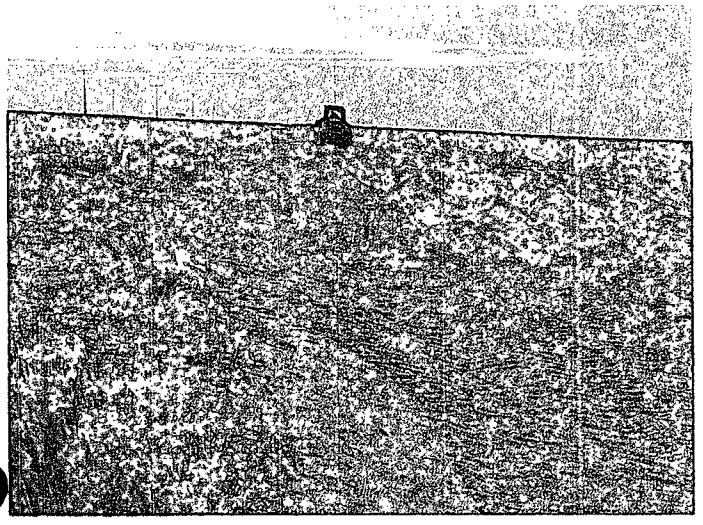
5-6 Duke/Eunice G Loop Spill 1/15/02 Site Visit



5-7 Duke/Eunice G Loop Spill 1/15/02 Site Visit



5-8 Duke/Eunice G Loop Spill 1/15/02 Site Visit



5-9 Duke/Eunice G Loop Spill 1/15/02 Site Visit

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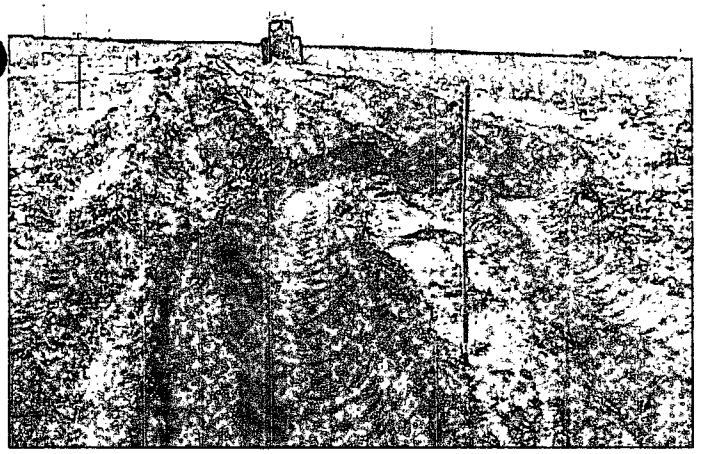
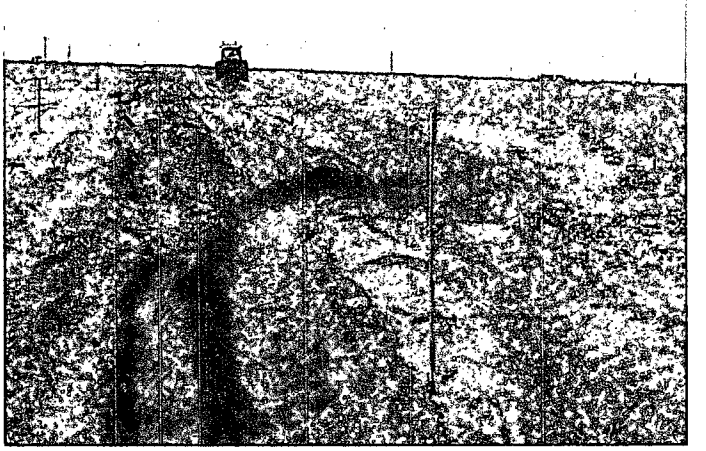
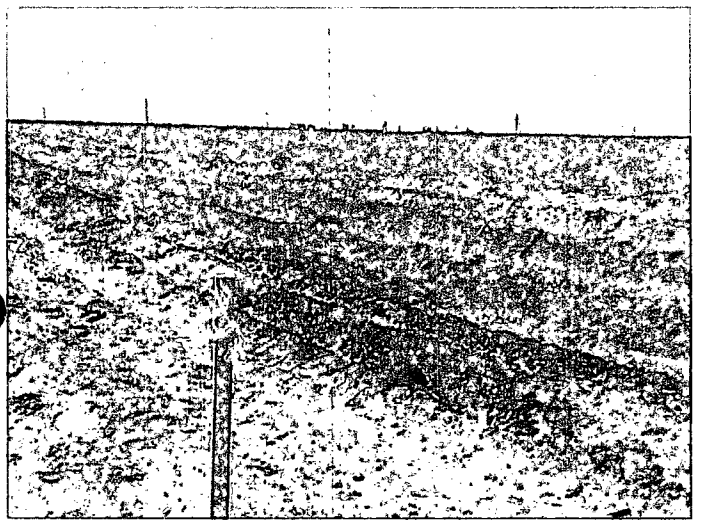


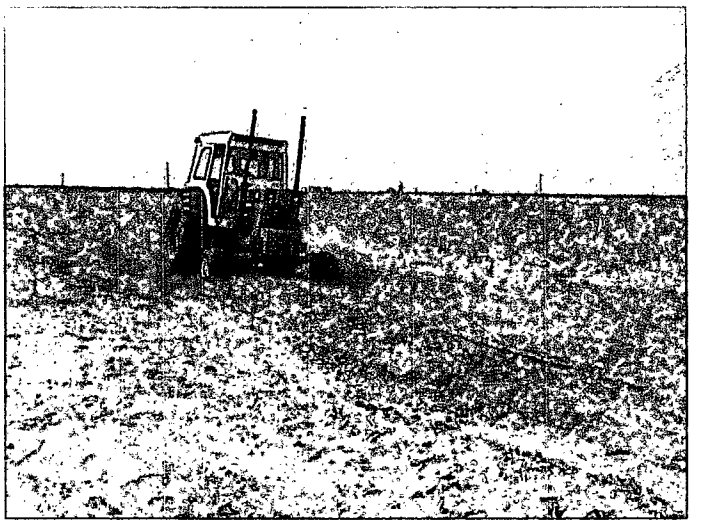
1-1 Duke/Eunice G Loop Spill 9/11/01
North end of pipeline looking south.



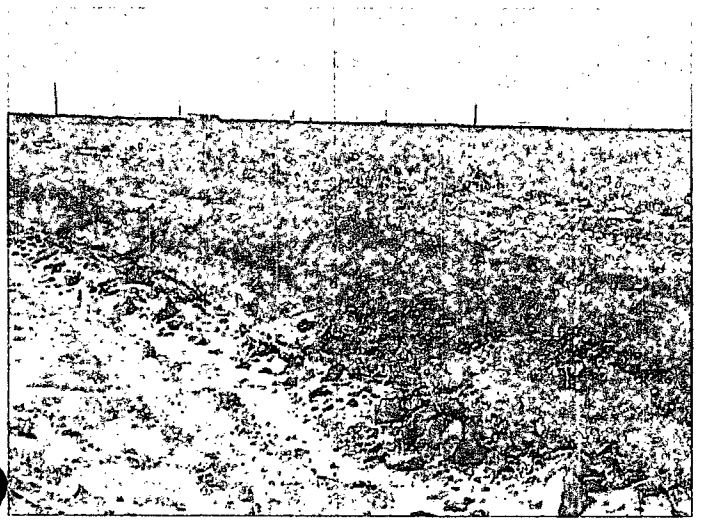
1-2 Duke/Eunice G Loop Spill 9/11/01
North end of pipeline looking south.



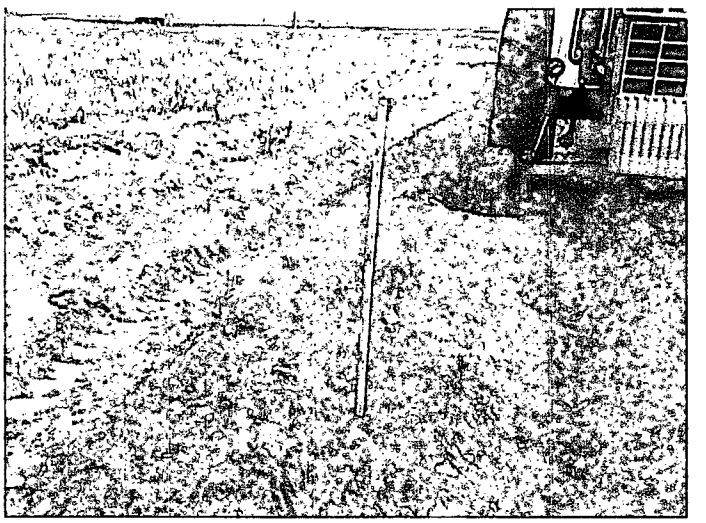
1-3 Duke/Eunice G Loop Spill 9/11/01
Looking southwest.



1-4 Duke/Eunice G Loop Spill 9/11/01
Looking southwest.

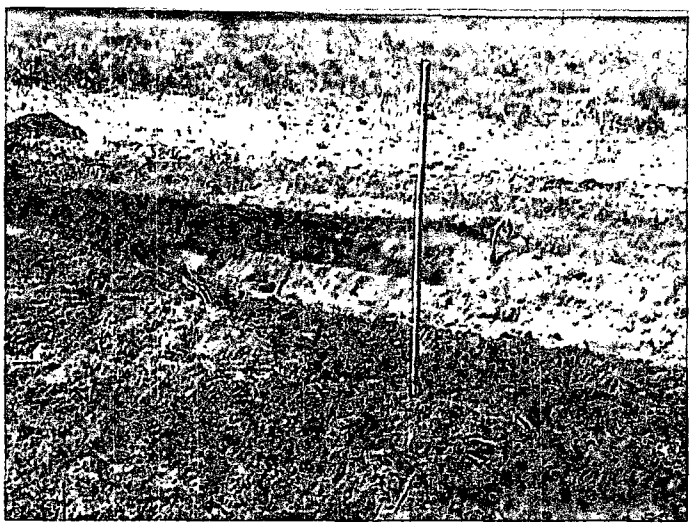


1-5 Duke/Eunice G Loop Spill 9/11/01
Looking southwest.

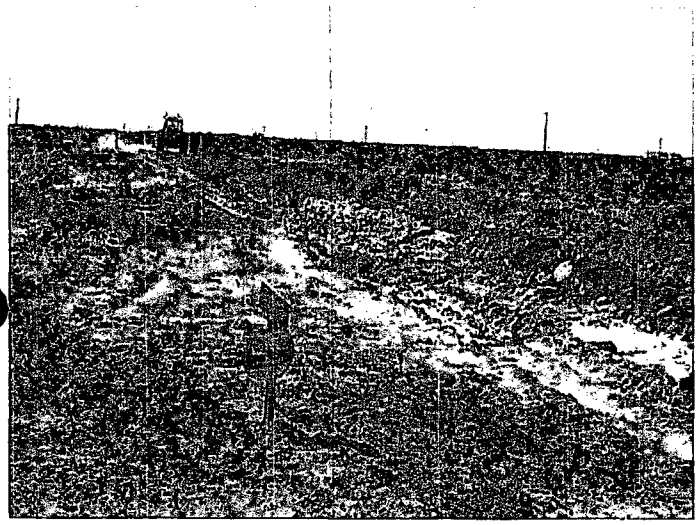


1-6 Duke/Eunice G Loop Spill 9/11/01
Looking north.

1-7 Duke/Eunice G Loop Spill 9/11/01
Looking southwest.

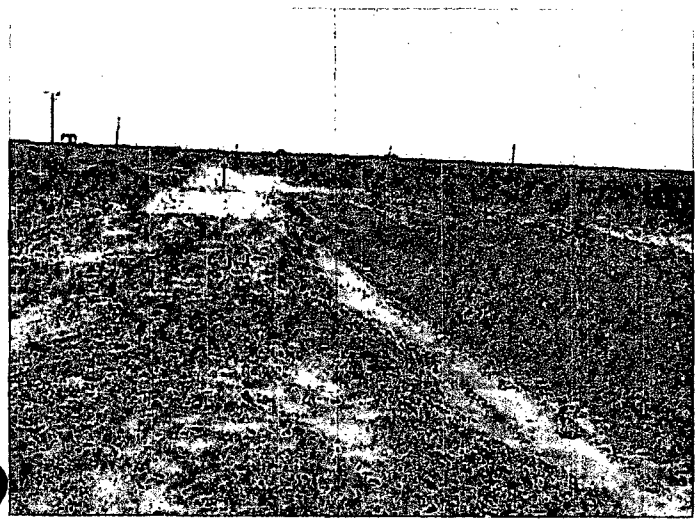


1-8 Duke/Eunice G Loop Spill 9/11/01
Looking west, top of label 9" from bottom of staff.

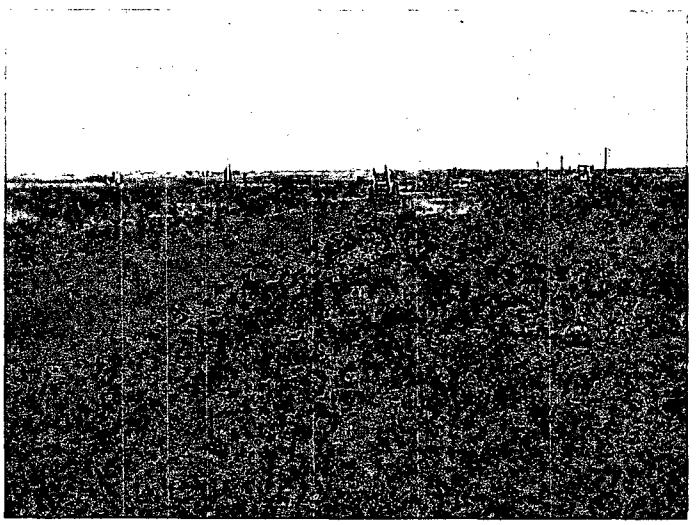


1-9 Duke/Eunice G Loop Spill 9/11/01
Looking south.

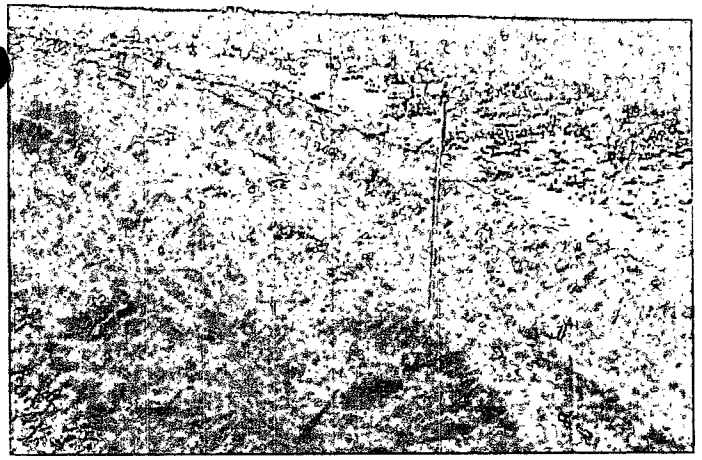
1-10 Duke/Eunice G Loop Spill 9/11/01
Looking southwest.



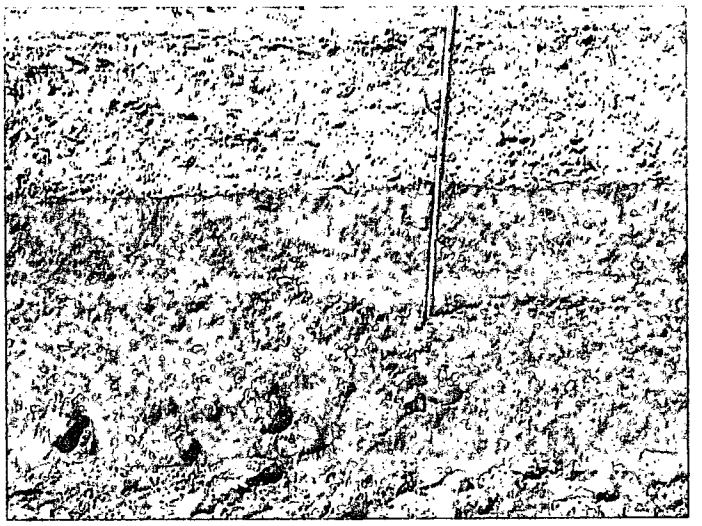
1-11 Duke/Eunice G Loop Spill 9/11/01
Looking south.



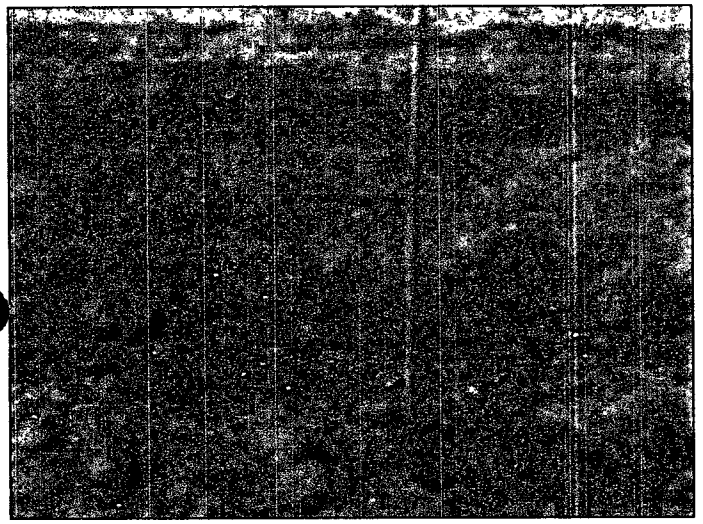
1-12 Duke/Eunice G Loop Spill 9/11/01
Looking north.



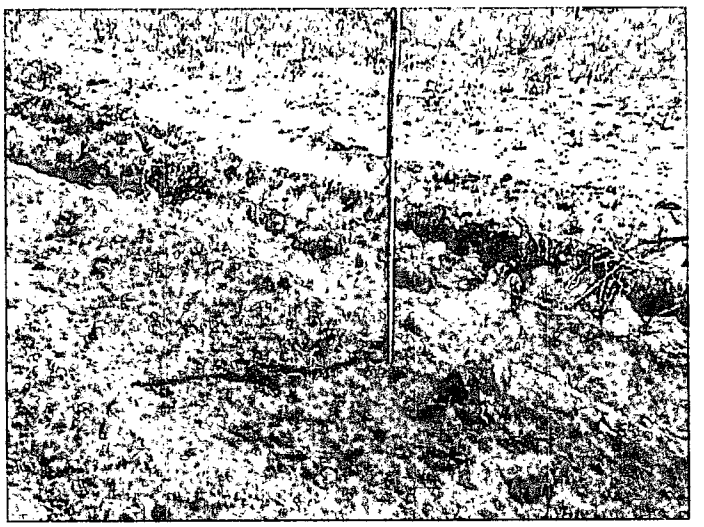
1-13 Duke/Eunice G Loop Spill 9/11/01
North end of spill, Sample 091101 DEFSEU1



1-14 Duke/Eunice G Loop Spill 9/11/01
South end of spill, Sample 091101 DEFSEU2



1-15 Duke/Eunice G Loop Spill 9/11/01
Sample 091101 DEFSEU3

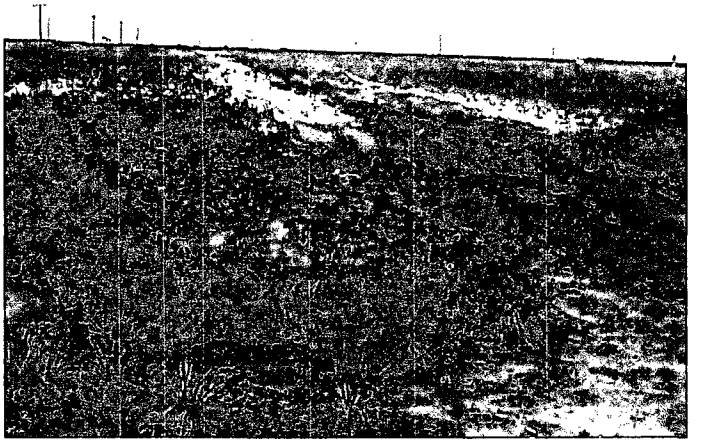


1-16 Duke/Eunice G Loop Spill 9/11/01
Sample 091101 DEFSEU4

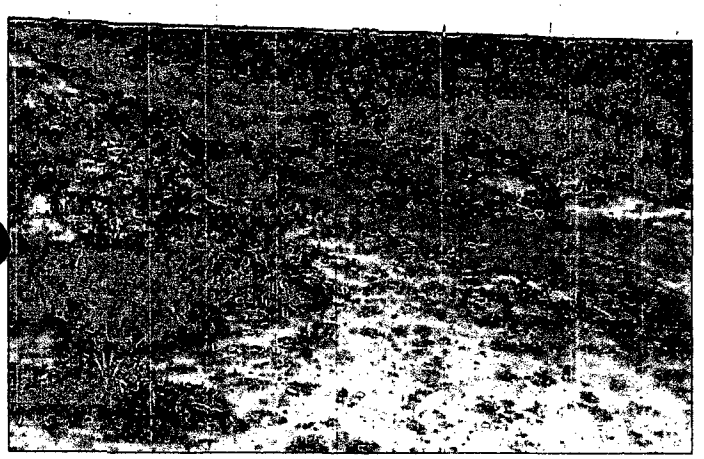
1-17 Duke/Eunice G Loop Spill 9/11/01
Sample 091101 DEFSEU5

1-18 Duke/Eunice G Loop Spill 9/11/01
Sample 091101 DEFSEU6

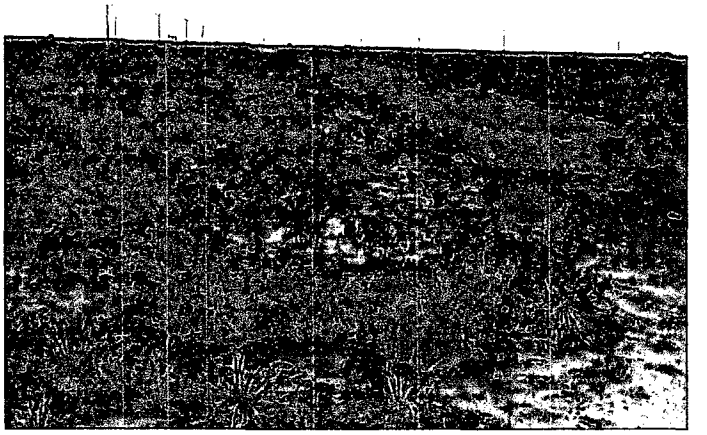
1-19 Duke/Eunice G Loop Spill 9/11/01
Sample 091101 DEFSEU7



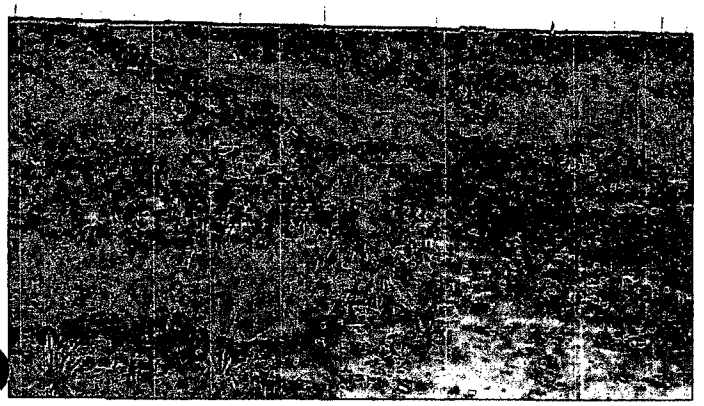
1-20 Duke/Eunice G Loop Spill 9/11/01
North end, looking south.



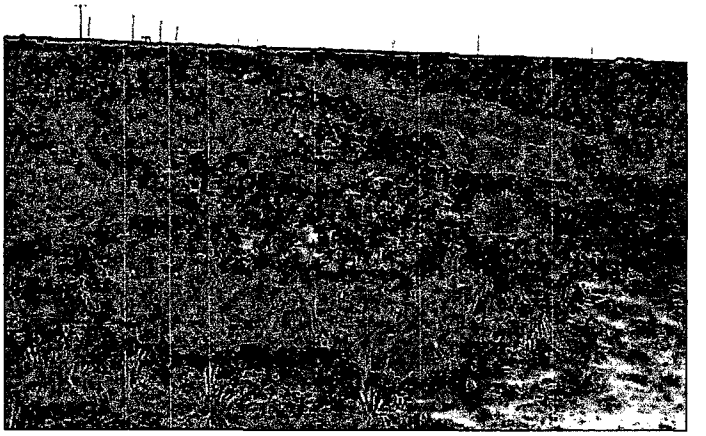
2-1 Duke/Eunice G Loop Spill 9/11/01
North end, looking south.



2-2 Duke/Eunice G Loop Spill 9/11/01
North end, looking south.



2-3 Duke/Eunice G Loop Spill 9/11/01
North end, looking south.



2-4 Duke/Eunice G Loop Spill 9/11/01
North end, looking south.

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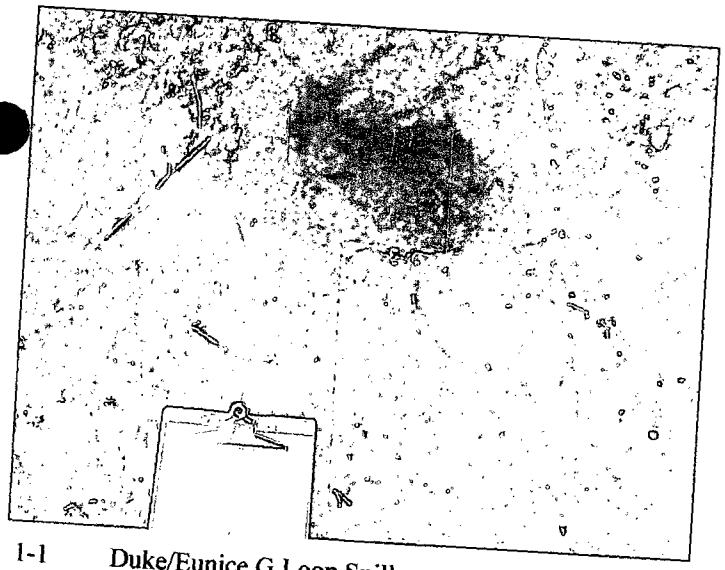
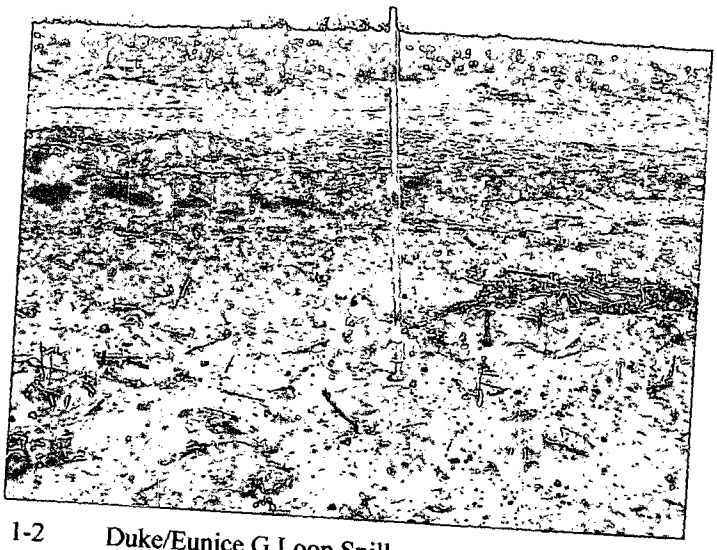
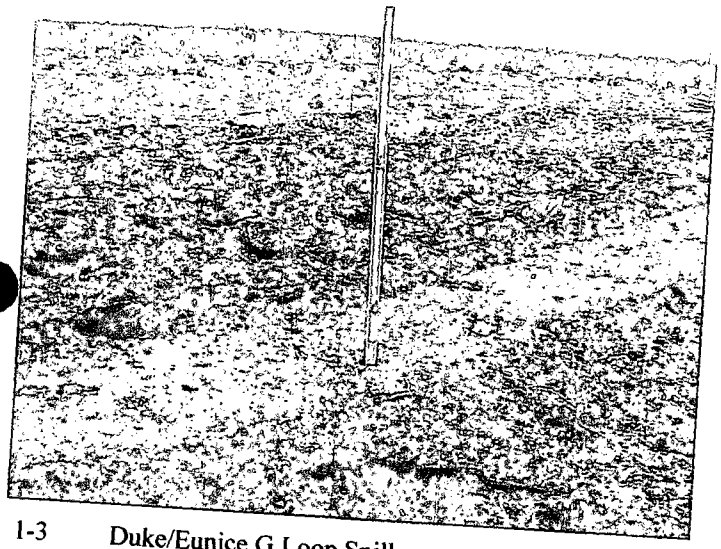


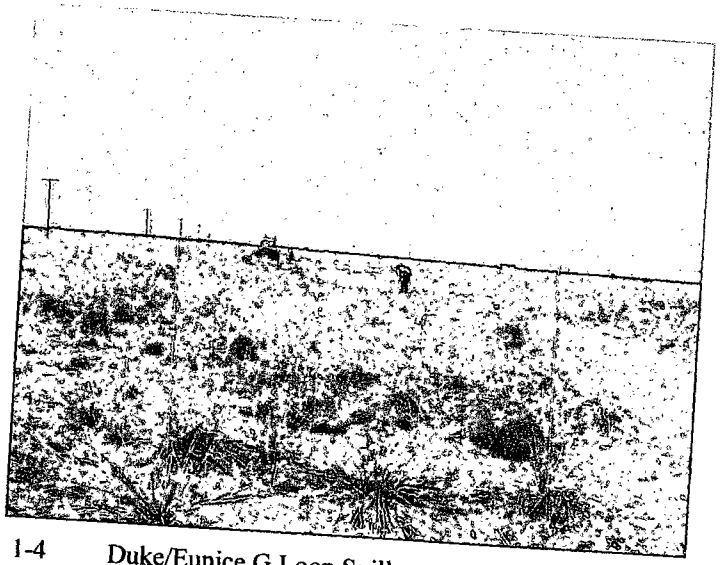
1-1 Duke/Eunice G Loop Spill 8/8/01
Pre-plow.



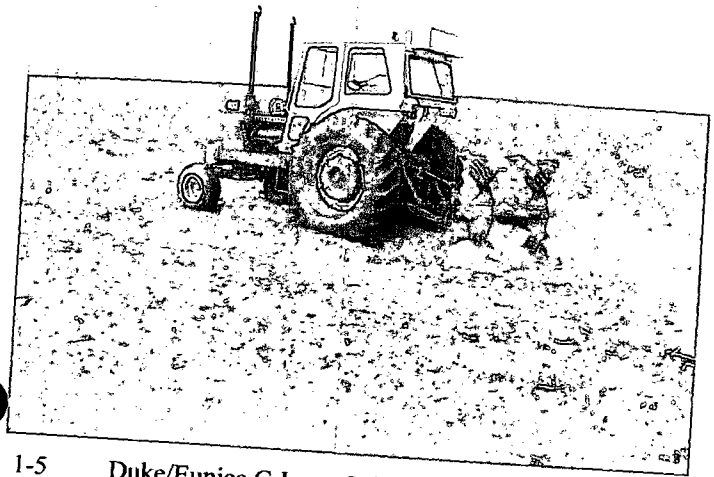
1-2 Duke/Eunice G Loop Spill 8/8/01
Pre-plow. Bottom of label is 7" from bottom of staff.



1-3 Duke/Eunice G Loop Spill 8/8/01
Pre-plow. Top of label is 9" from bottom of staff.

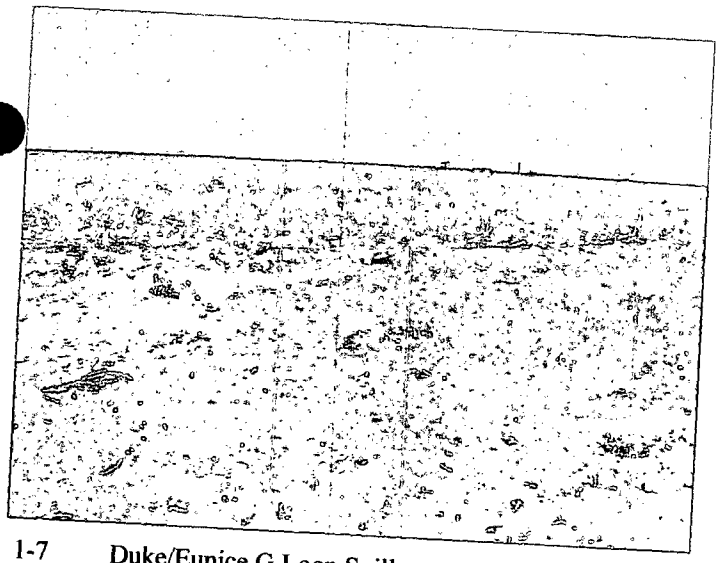


1-4 Duke/Eunice G Loop Spill 8/8/01
Pre-plow. Marking pipeline.

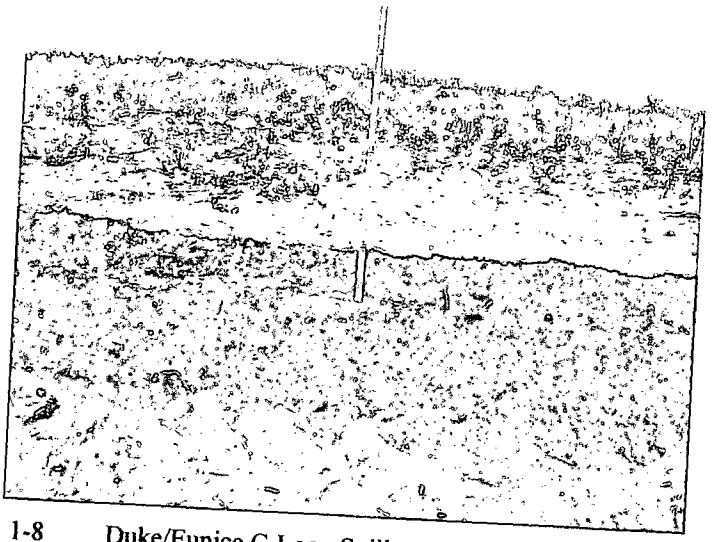


1-5 Duke/Eunice G Loop Spill 8/8/01
Start of plowing.

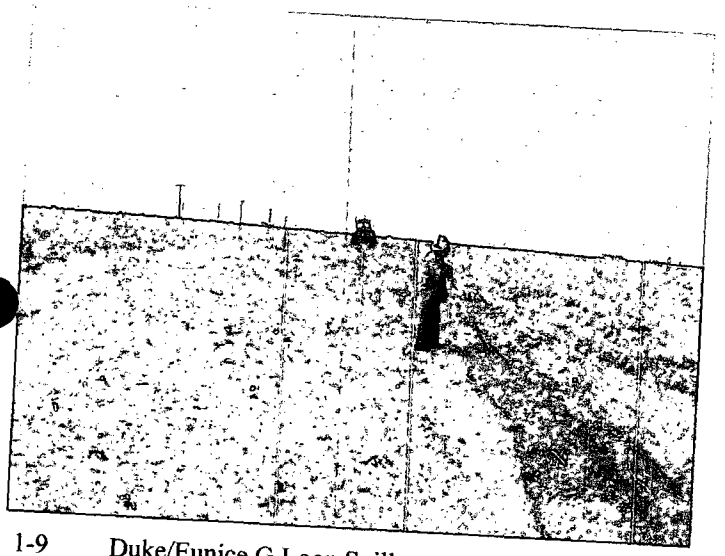
1-6 Duke/Eunice G Loop Spill 8/8/01
First pass.



1-7 Duke/Eunice G Loop Spill 8/8/01
First plow.

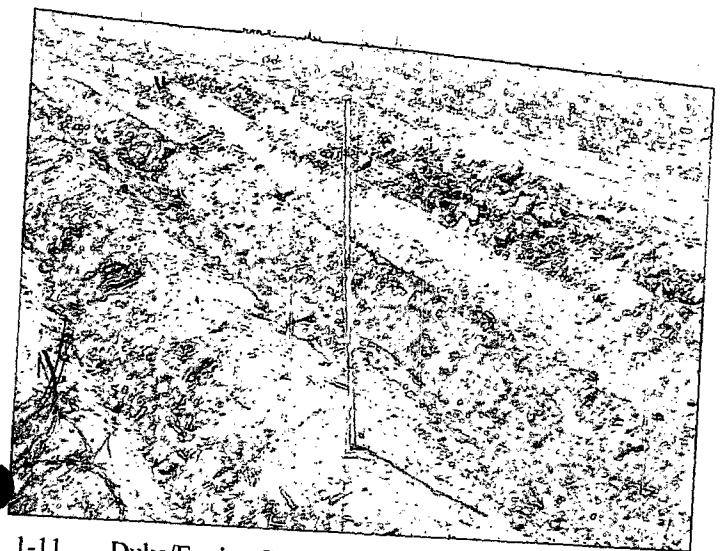


1-8 Duke/Eunice G Loop Spill 8/8/01
First plow.

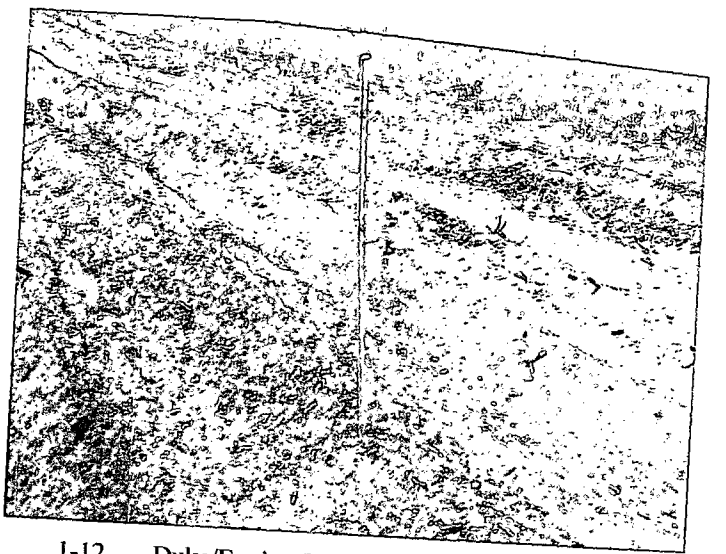


1-9 Duke/Eunice G Loop Spill 8/8/01
First plow.

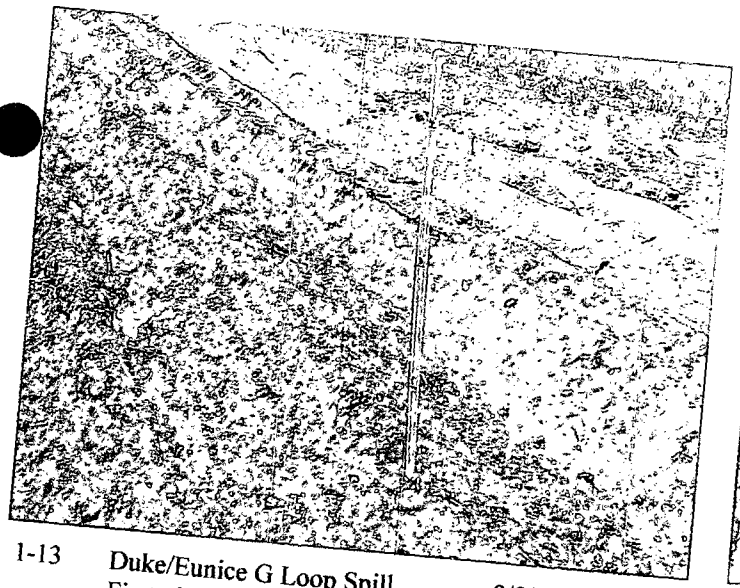
1-10 Duke/Eunice G Loop Spill 8/8/01
First plow.



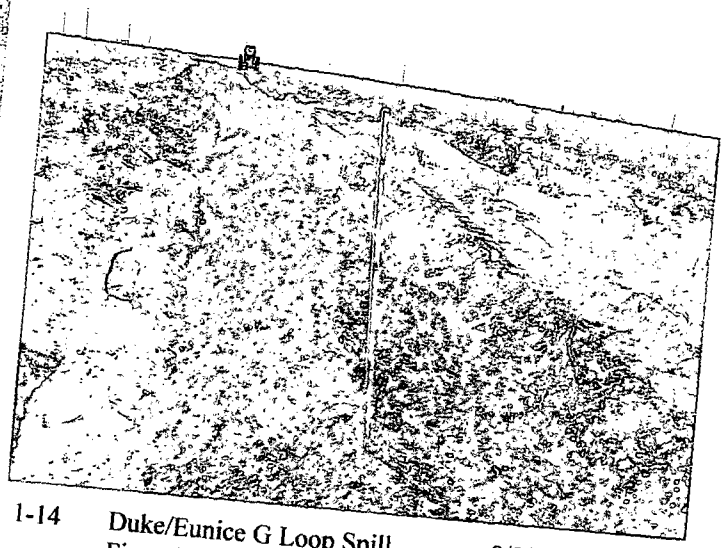
1-11 Duke/Eunice G Loop Spill 8/8/01
First plow.



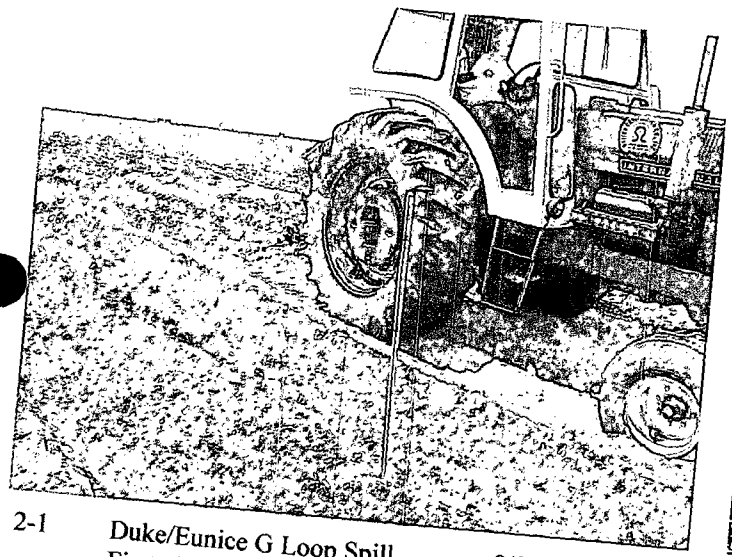
1-12 Duke/Eunice G Loop Spill 8/8/01
First plow.



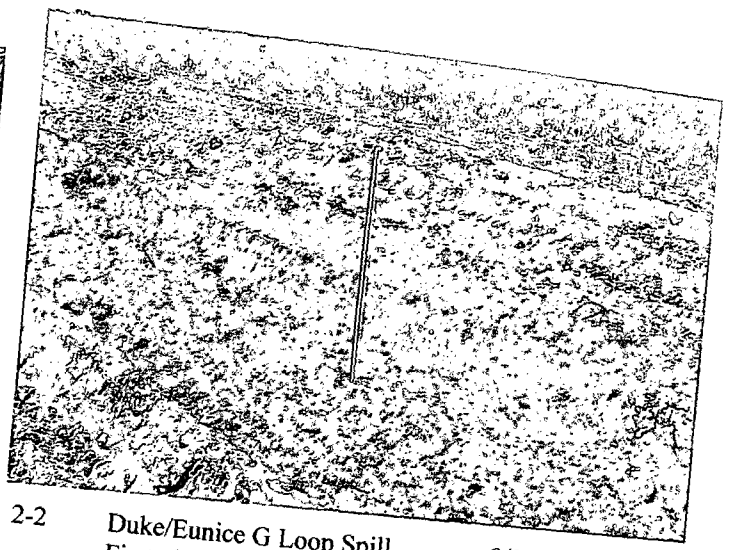
1-13 Duke/Eunice G Loop Spill 8/8/01
First plow.



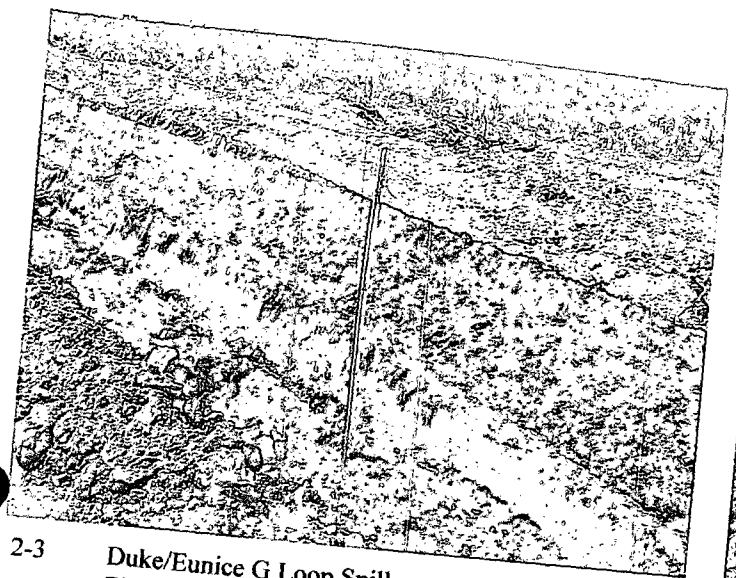
1-14 Duke/Eunice G Loop Spill 8/8/01
First plow.



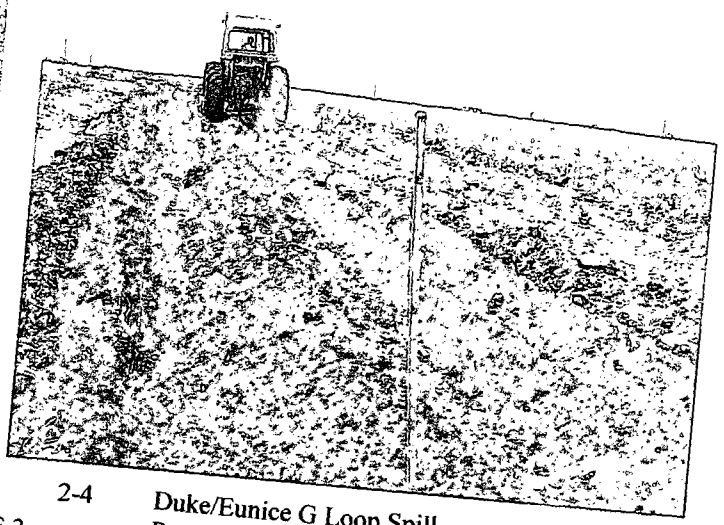
2-1 Duke/Eunice G Loop Spill 8/8/01
First plow.



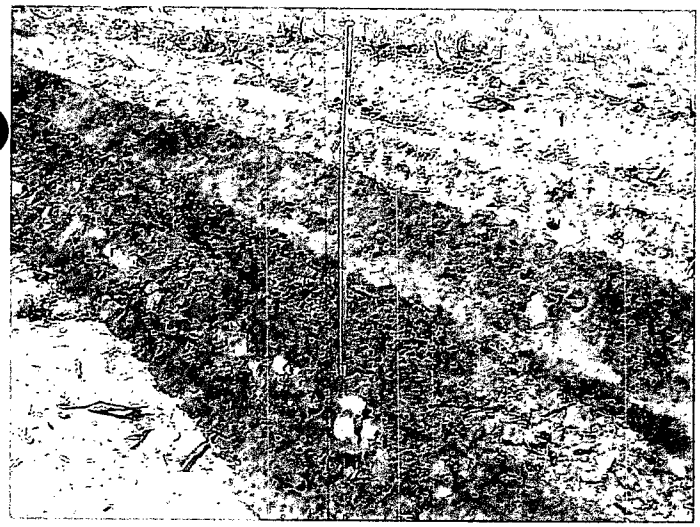
2-2 Duke/Eunice G Loop Spill 8/8/01
First plow.



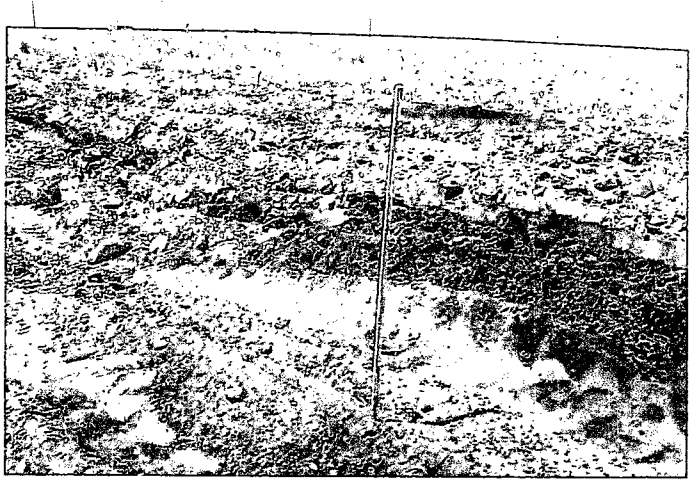
2-3 Duke/Eunice G Loop Spill 8/8/01
First plow.



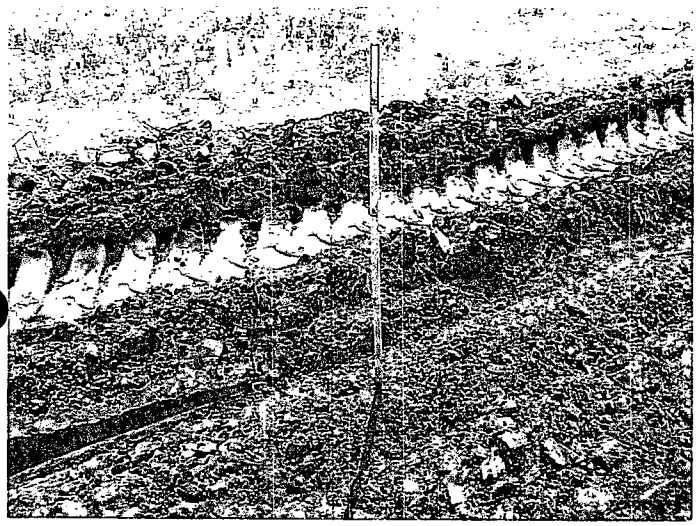
2-4 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



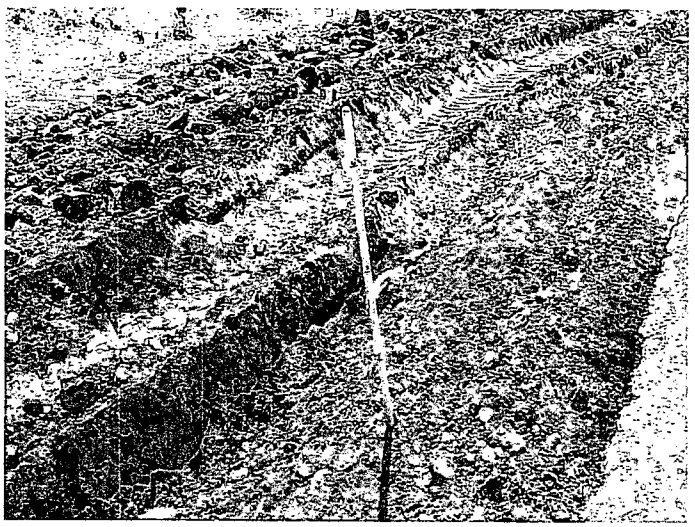
2-5 Duke/Eunice G Loop Spill 8/8/01
Top of label 9" from bottom of staff.



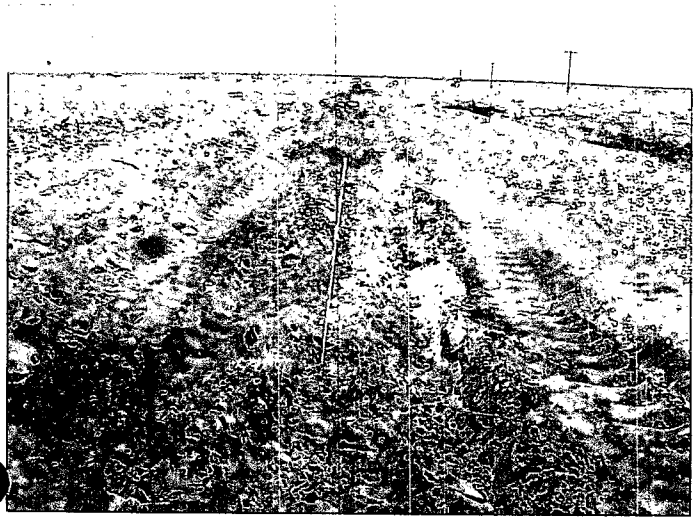
2-6 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



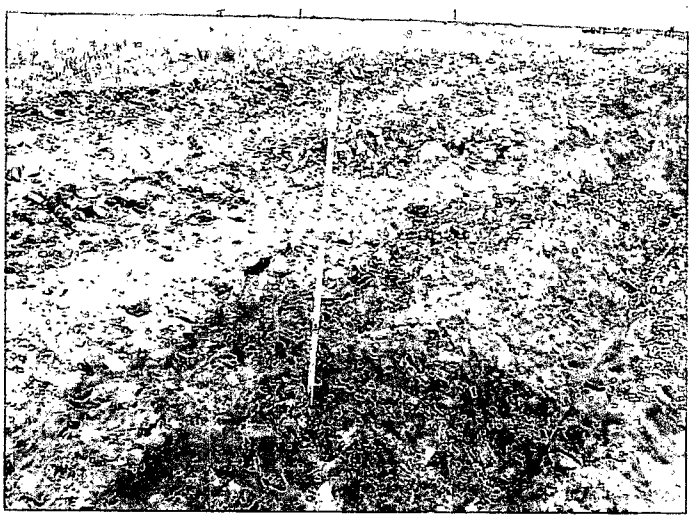
2-7 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



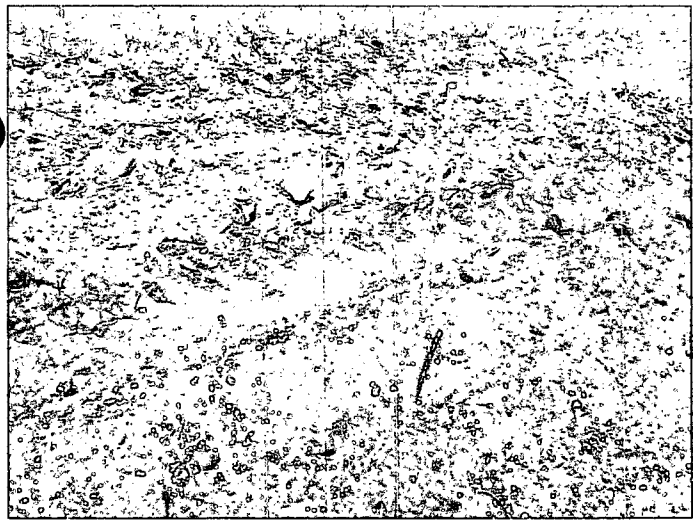
2-8 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



2-9 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

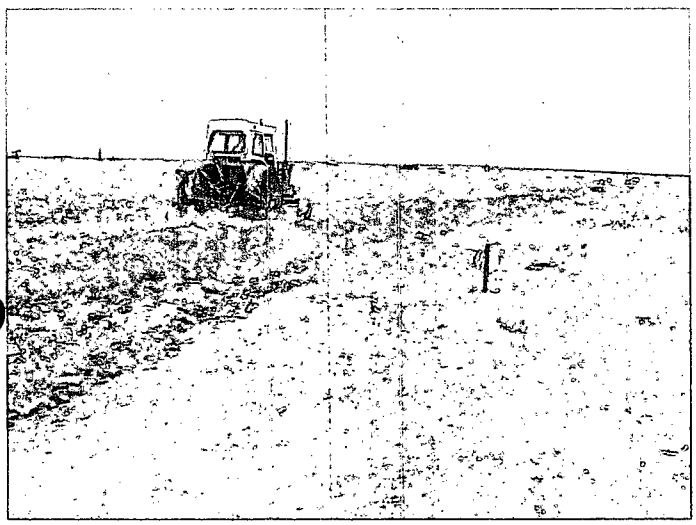


2-10 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

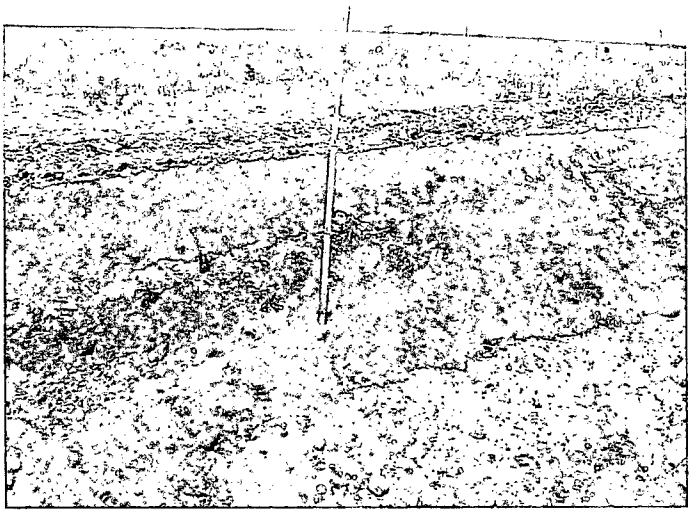


2-11 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

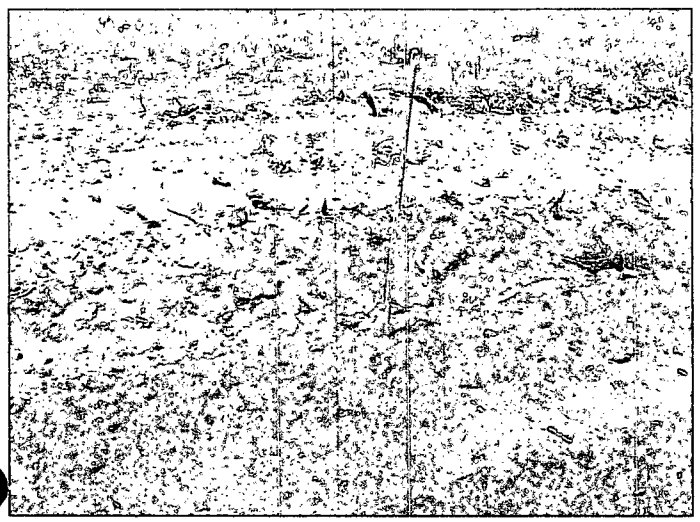
3-1 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



3-2 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

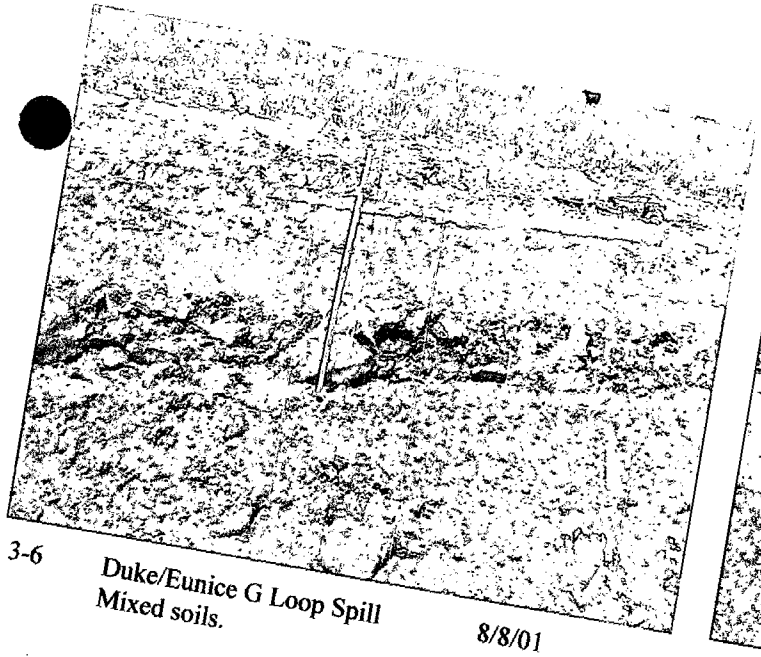


3-3 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

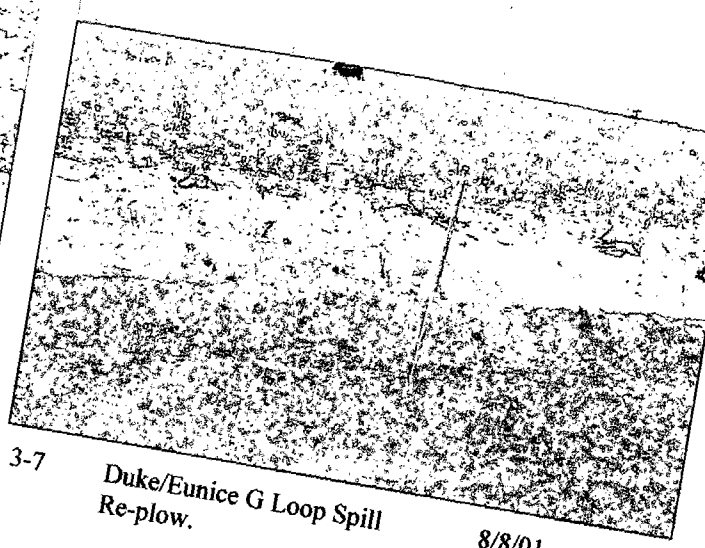


3-4 Duke/Eunice G Loop Spill 8/8/01
Mixed soils.

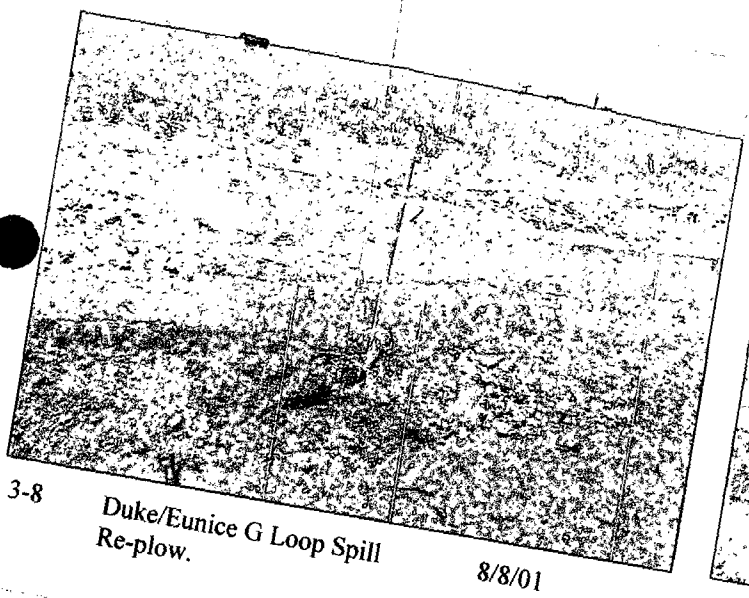
3-5 Duke/Eunice G Loop Spill 8/8/01
Mixed soils.



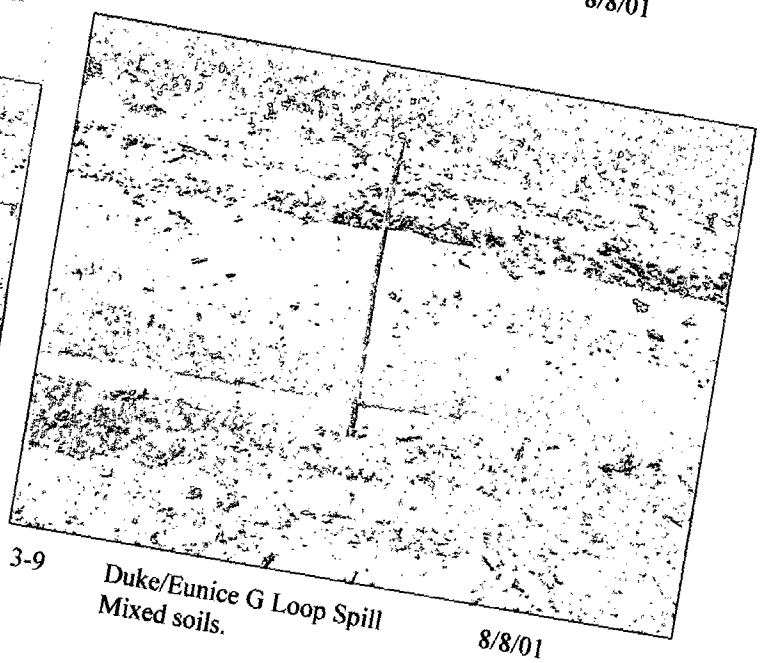
3-6 Duke/Eunice G Loop Spill 8/8/01
Mixed soils.



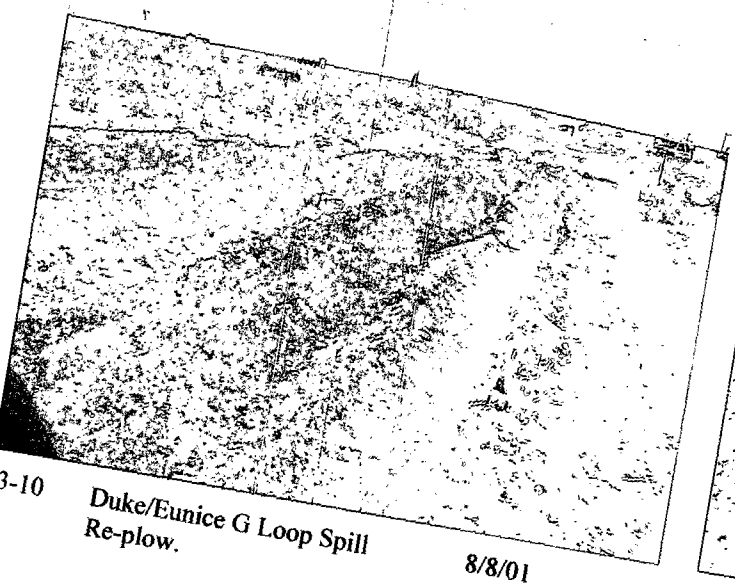
3-7 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



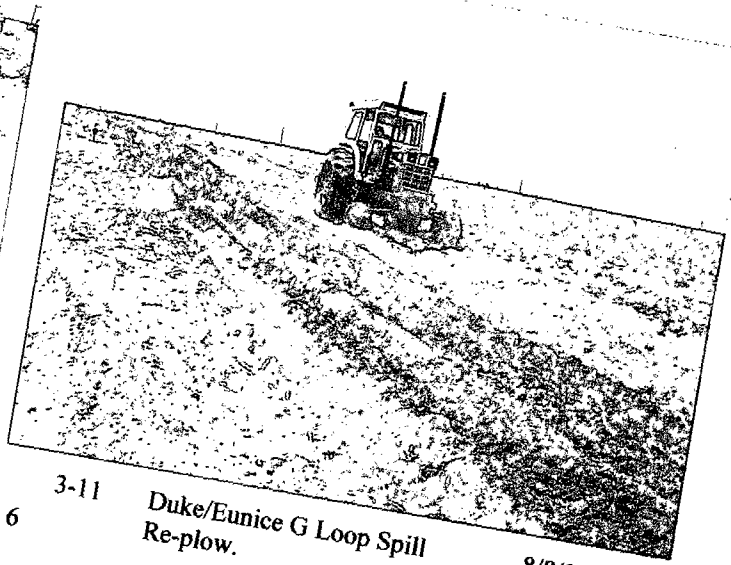
3-8 Duke/Eunice G Loop Spill 8/8/01
Re-plow.



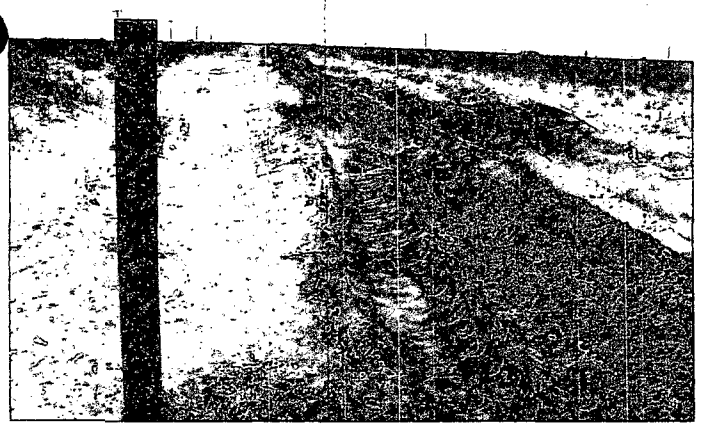
3-9 Duke/Eunice G Loop Spill 8/8/01
Mixed soils.



3-10 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

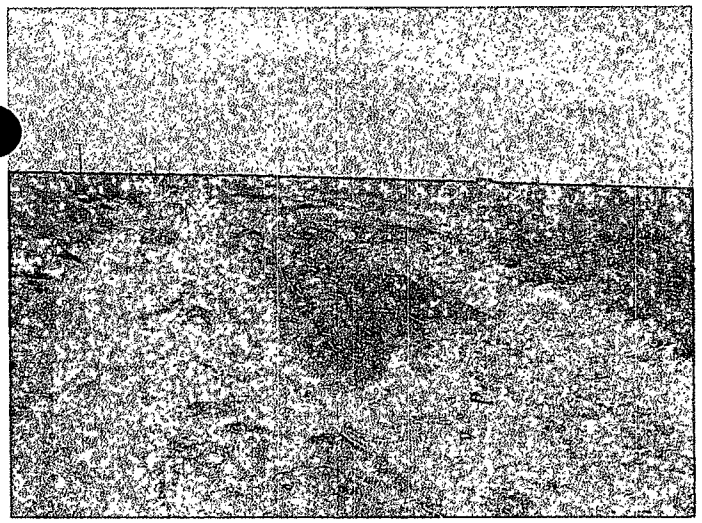


3-11 Duke/Eunice G Loop Spill 8/8/01
Re-plow.

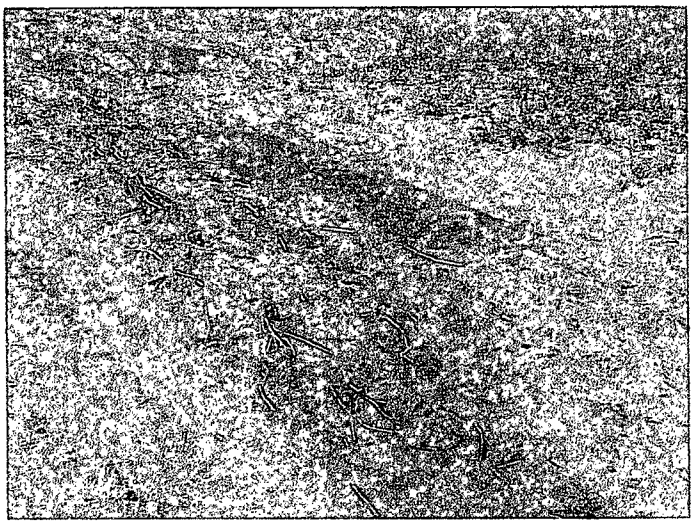


3-12 Duke/Eunice G Loop Spill 8/8/01

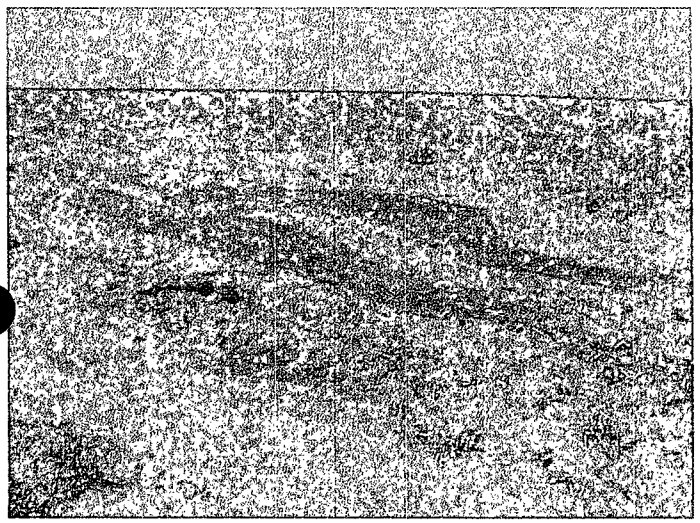
June 27, 2001
Site Visit



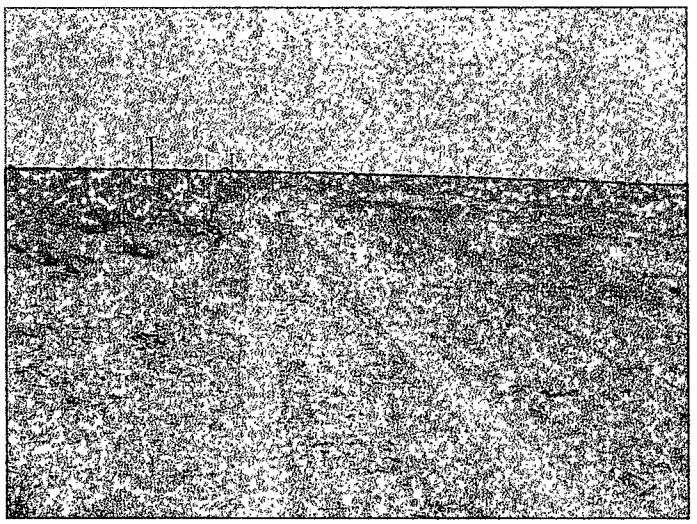
1-1 Eunice G Loop Spill Site 6/27/01
Looking South



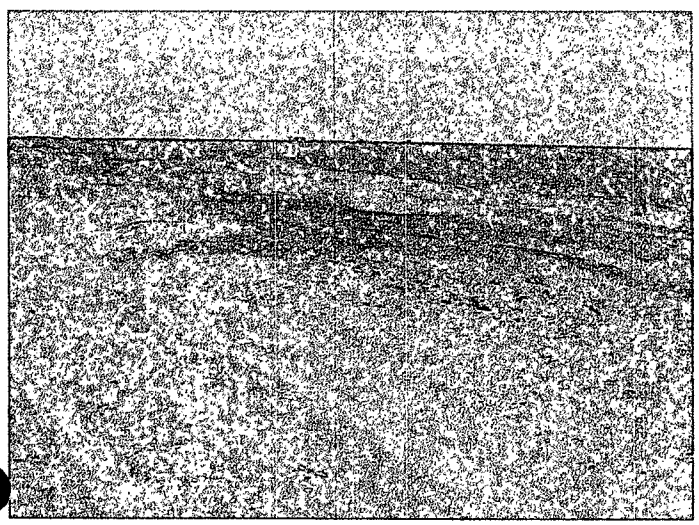
1-2 Eunice G Loop Spill Site 6/27/01
Looking South



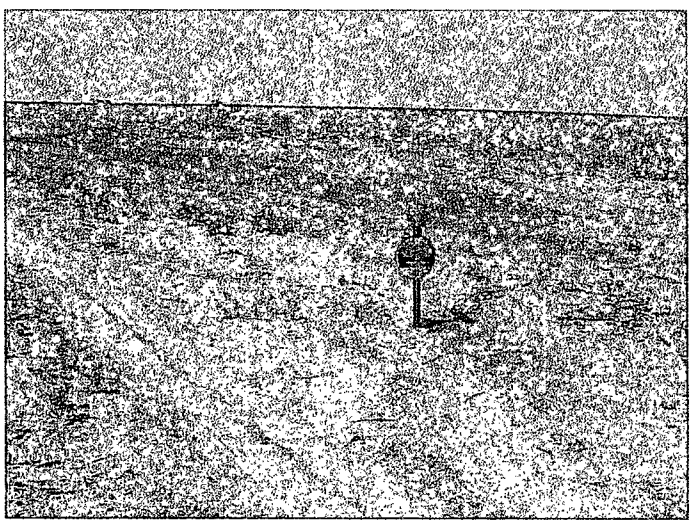
1-3 Eunice G Loop Spill Site 6/27/01
Looking West



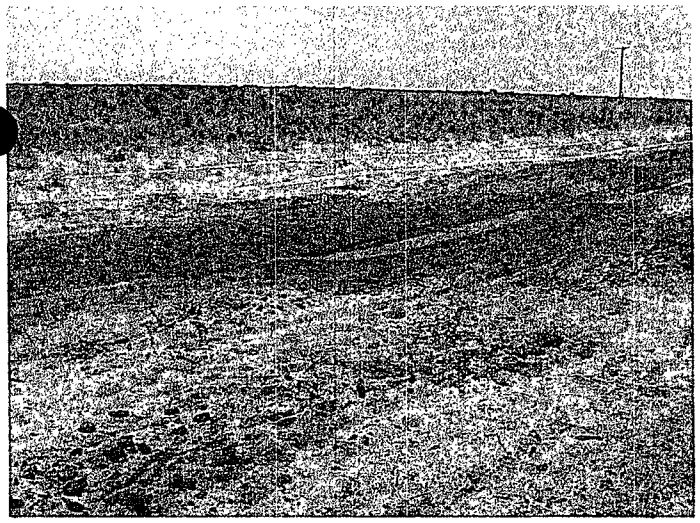
1-4 Eunice G Loop Spill Site 6/27/01
Looking South



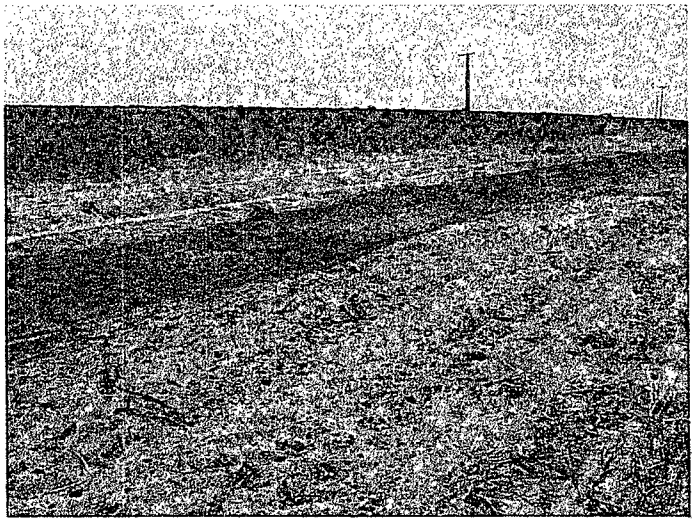
1-5 Eunice G Loop Spill Site 6/27/01
Looking Southwest



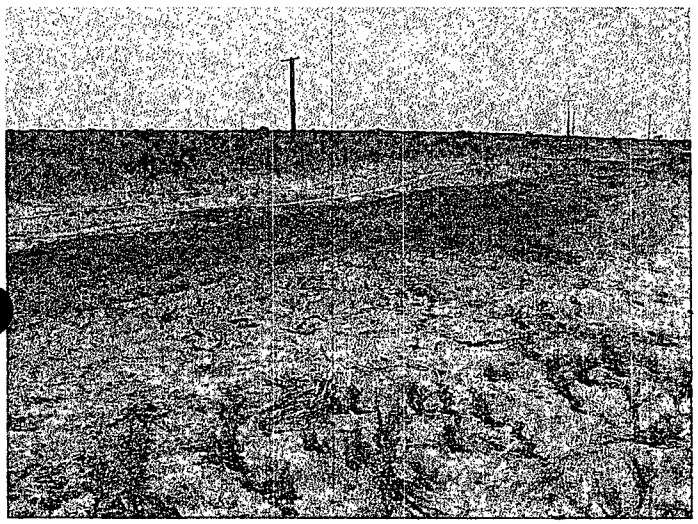
1-6 Eunice G Loop Spill Site 6/27/01
Looking Southwest



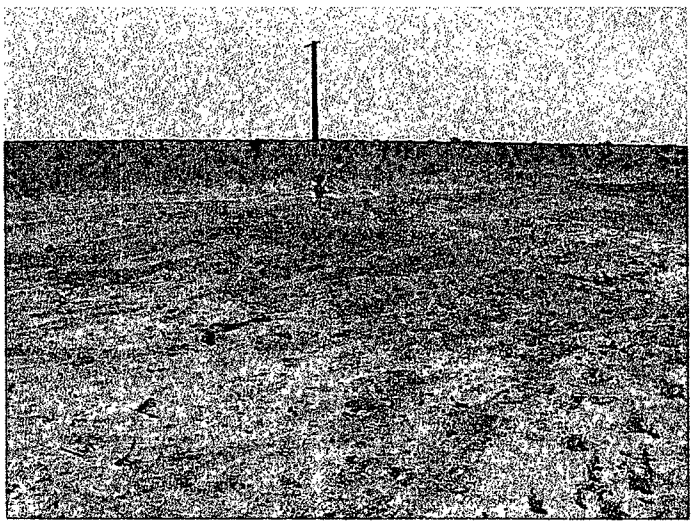
1-7 Eunice G Loop Spill Site 6/27/01
Looking Southeast



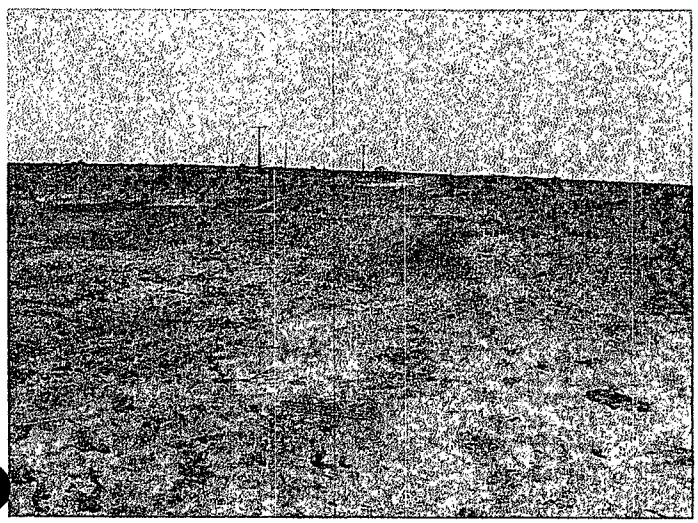
1-8 Eunice G Loop Spill Site 6/27/01
Looking Southeast



1-9 Eunice G Loop Spill Site 6/27/01
Looking Southeast

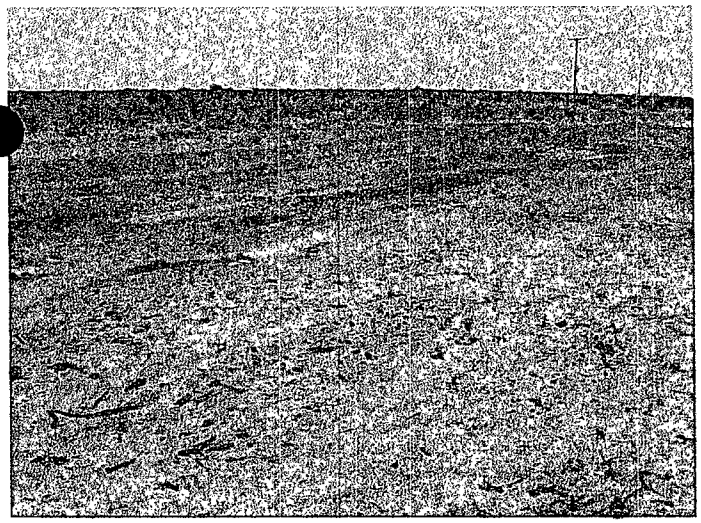


1-10 Eunice G Loop Spill Site 6/27/01
Looking Southeast

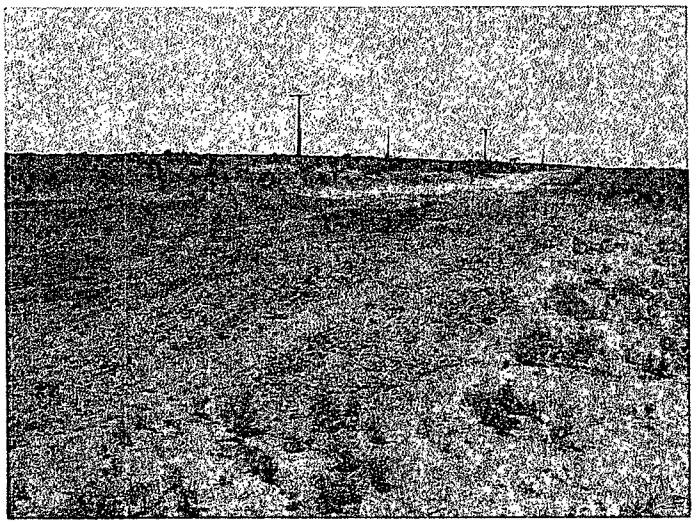


1-11 Eunice G Loop Spill Site 6/27/01
Looking South

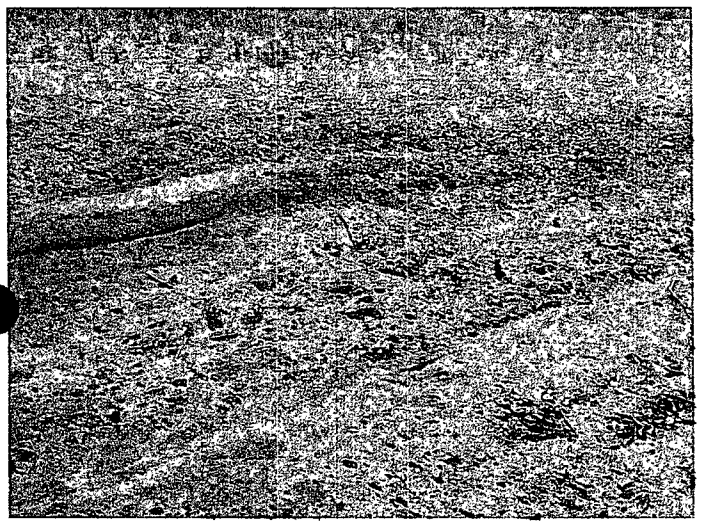
1-12 Eunice G Loop Spill Site 6/27/01
Looking Southeast



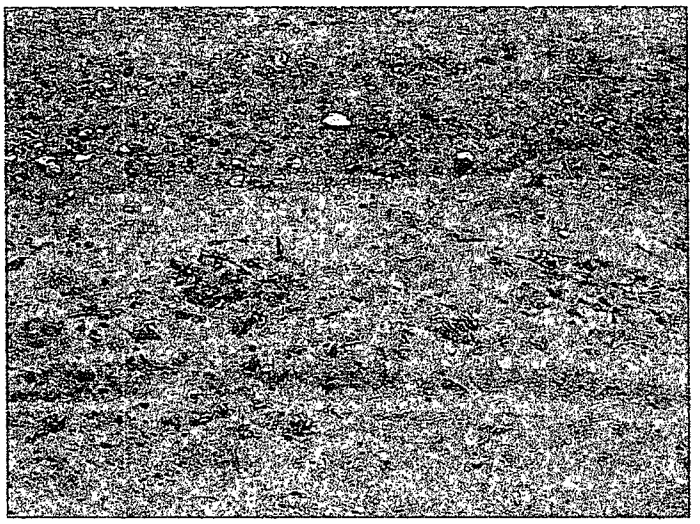
1-13 Eunice G Loop Spill Site 6/27/01
Looking Southeast



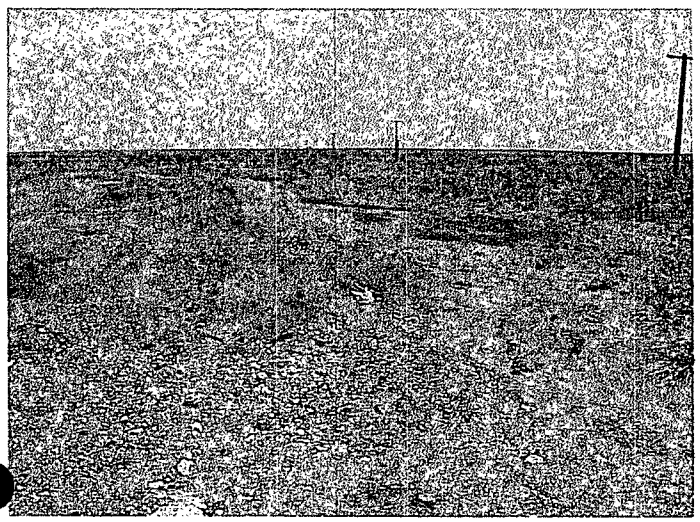
1-14 Eunice G Loop Spill Site 6/27/01
South End of Spill Looking South, Southeast



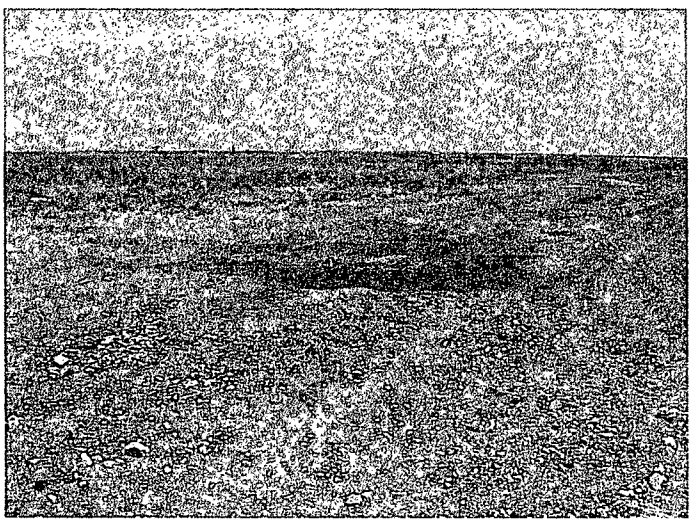
1-15 Eunice G Loop Spill Site 6/27/01
South End Looking East



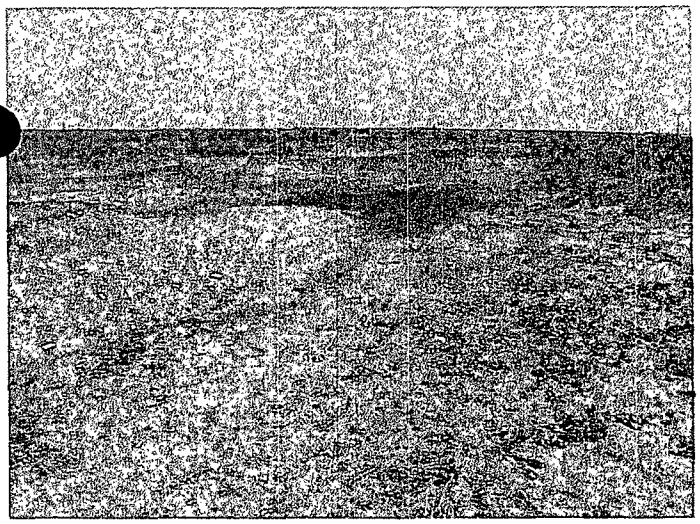
1-16 Eunice G Loop Spill Site 6/27/01
South End Looking East



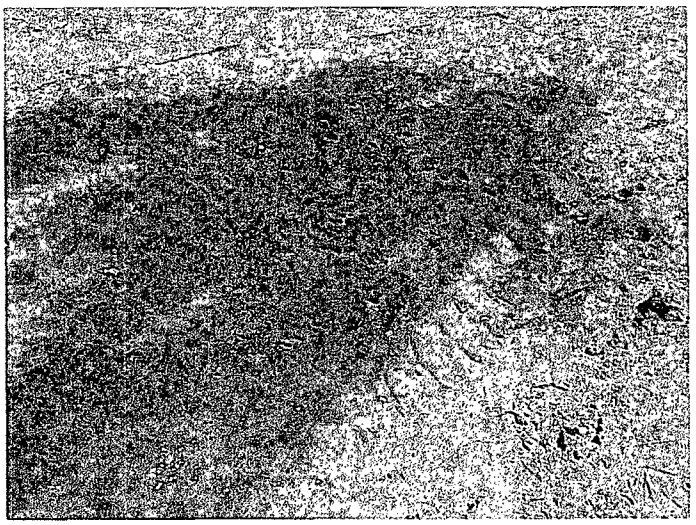
2-1 Eunice G Loop Spill Site 6/27/01
South End Looking Northeast



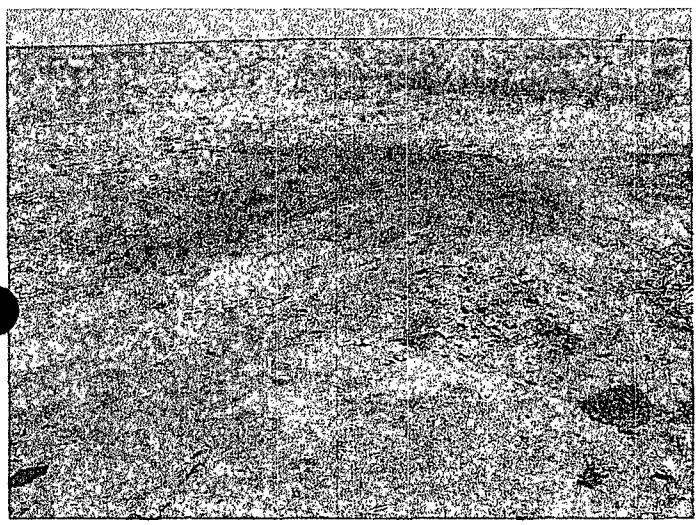
2-2 Eunice G Loop Spill Site 6/27/01
South End Looking Northwest



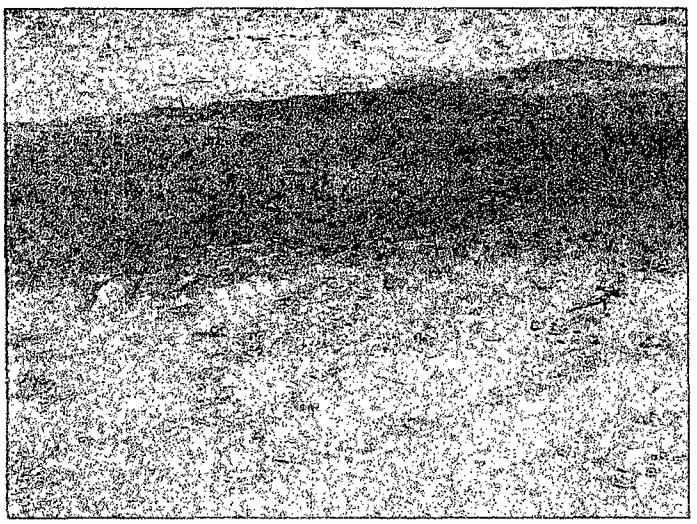
2-3 Eunice G Loop Spill Site 6/27/01
Looking North



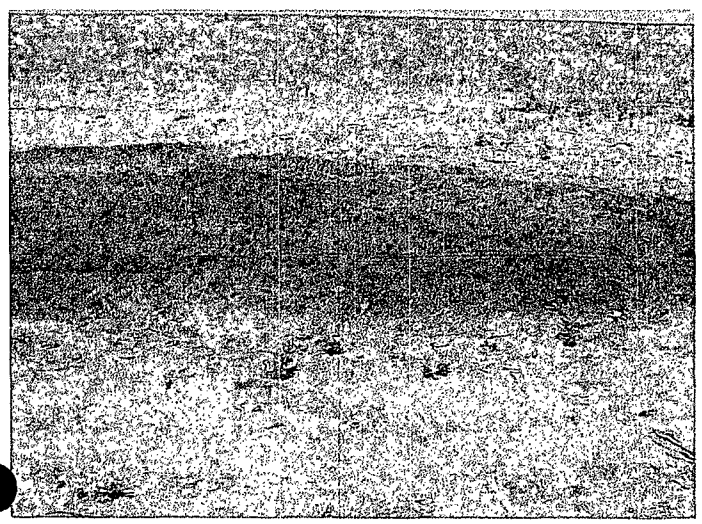
2-4 Eunice G Loop Spill Site 6/27/01
Looking North



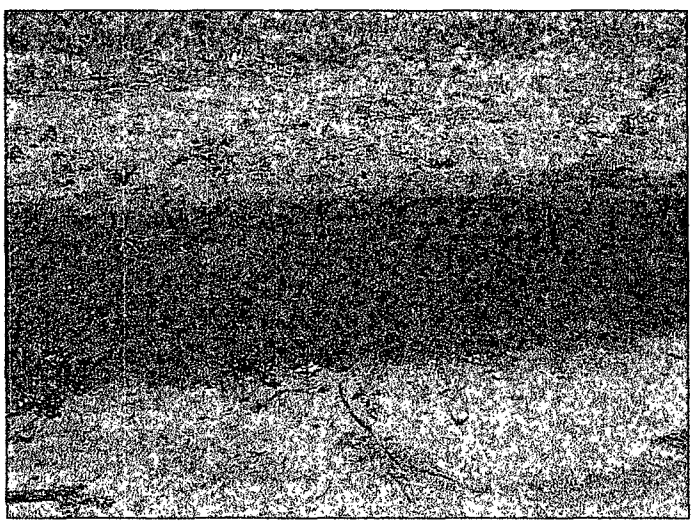
2-5 Eunice G Loop Spill Site 6/27/01
Looking West



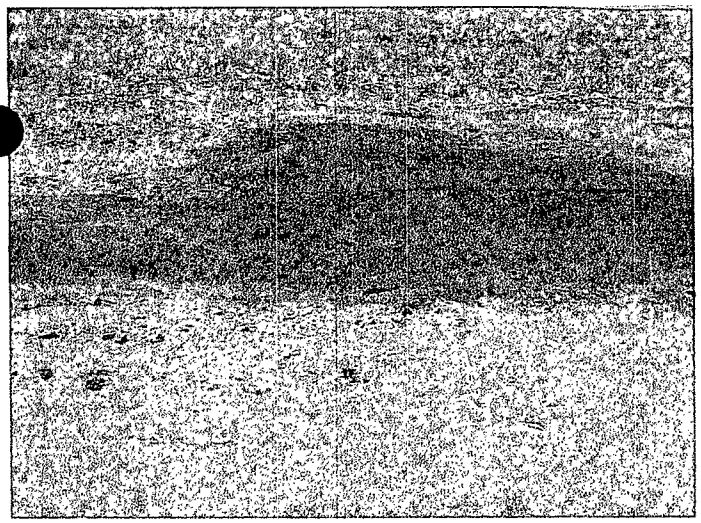
2-6 Eunice G Loop Spill Site 6/27/01
Looking Northwest



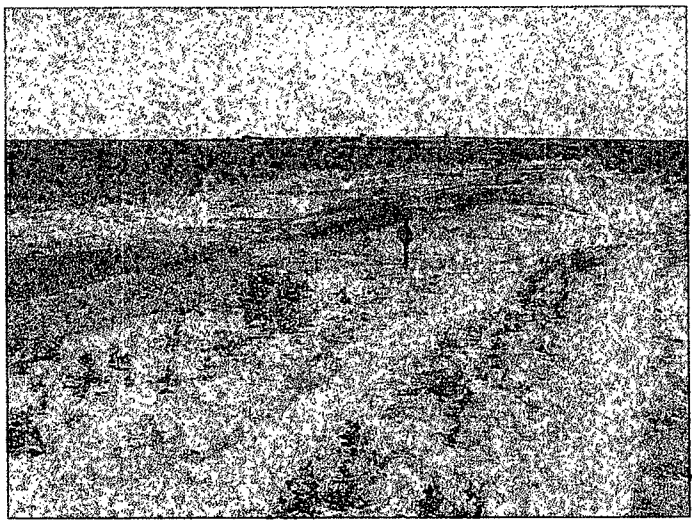
2-7 Eunice G Loop Spill Site 6/27/01
Looking West



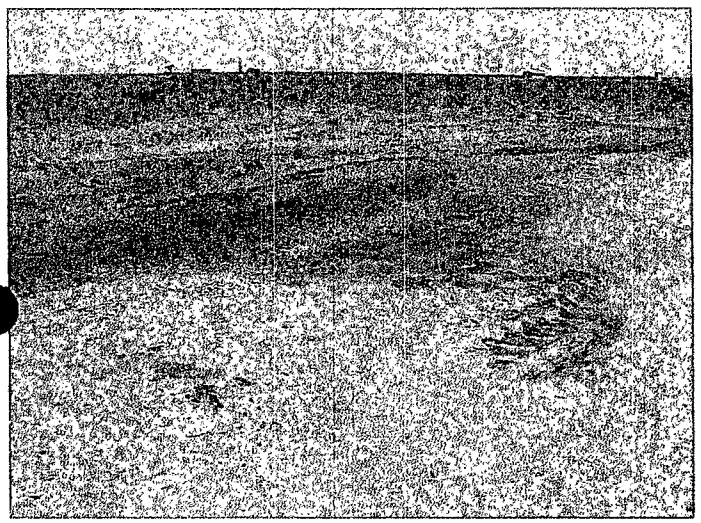
2-8 Eunice G Loop Spill Site 6/27/01
Looking West



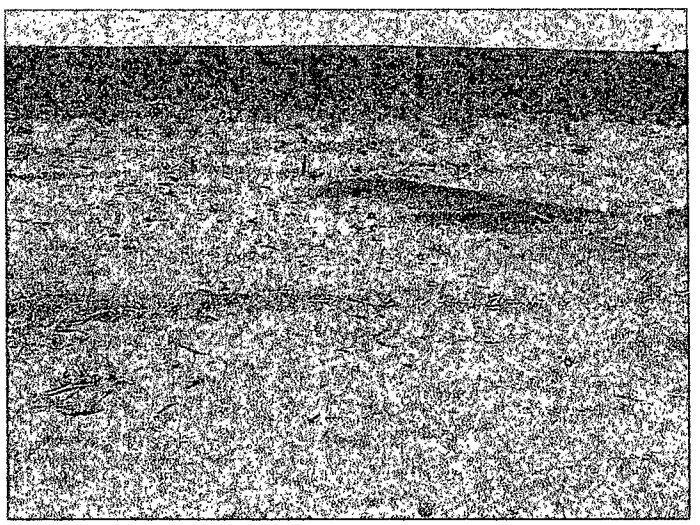
2-9 Eunice G Loop Spill Site 6/27/01
Looking West



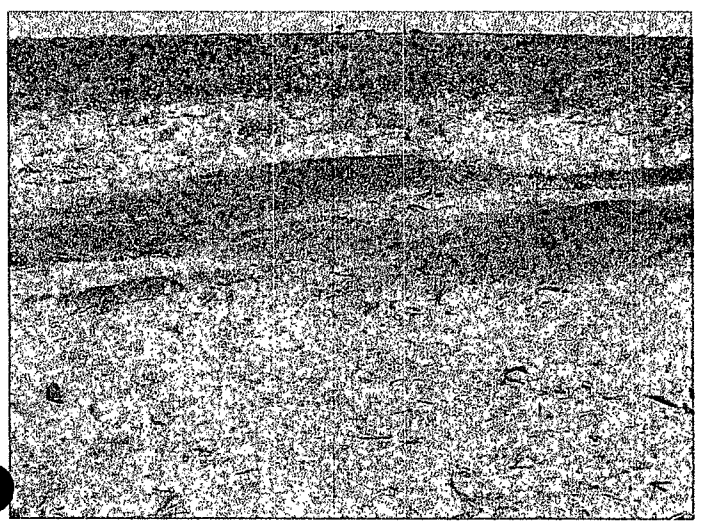
2-10 Eunice G Loop Spill Site 6/27/01
Looking Northwest



2-11 Eunice G Loop Spill Site 6/27/01
Looking Northwest

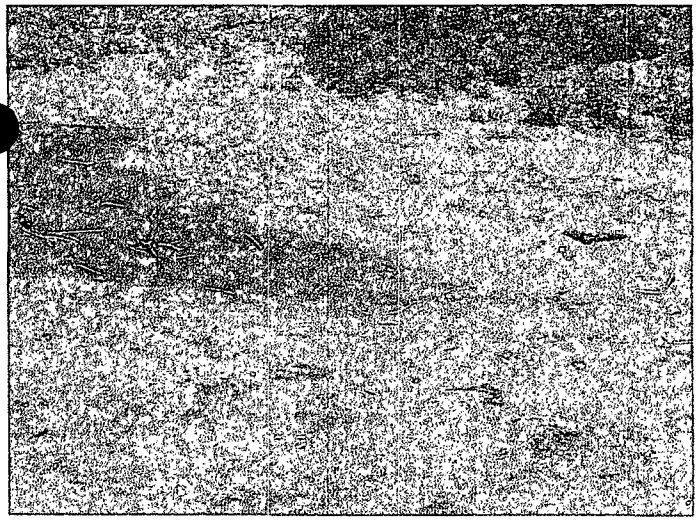


2-12 Eunice G Loop Spill Site 6/27/01
Looking West

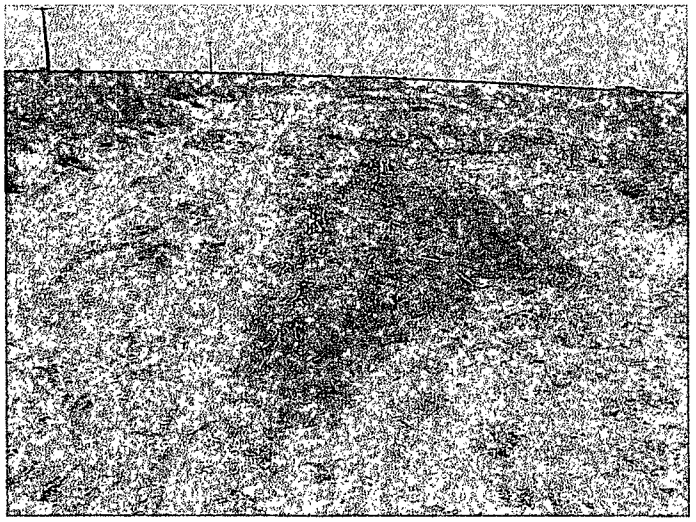


2-13 Eunice G Loop Spill Site 6/27/01
Looking Northwest

2-14 Eunice G Loop Spill Site 6/27/01
Looking Northwest



2-15 Eunice G Loop Spill Site 6/27/01
Looking West End of Spill



2-16 Eunice G Loop Spill Site 6/27/01
End of Spill, North End Looking South