325-5479 ext 2

**B**iosphere **E**nvironmental **S**ciences & **T**echnologies, LLC
PO Box 341
Aztec, New Mexico 87410
(505) 334-4375

15 October 2000

Mr. Denny G. Foust
Environmental Geologist/Deputy Oil & Gas Inspector
Oil Conservation Division
1000 Rio Brazos Road
Aztec, New Mexico 87410


**Re: Snake Eyes**

The following is a description of the remediation associated with the "Snake Eyes" oil to surface remediation and reseeding. On September 22, 2000, Mr. Frank McDonald was advised of an "oil to surface" situation associated with the abandoned well pad located in Unit Letter "G" of Section 20 in the Township 21 North and Range 8 West. Mr. McDonald proceeded to the site and observed oil to surface. The oil to surface was not located in an area where past earthen pits had been noted. Mr. Foust and Mr. Glen Papp, Principal/Operations Manager, Synergy Operating, LLC were notified of the findings.

Further investigation began on September 27, 2000. A backhoe with operator, Mr. McDonald, and Mr. Foust began investigation by means of excavation. During the excavation, dark staining was noticeable and small quantities of black sludge were apparent within the first five feet. Excavation continued until a possible source was discovered. The possible source was a four-inch, fiberglass dump line. Excavation along the site continued with trenches approximately 20 to 25 feet in space. This excavation was necessary to determine the origin of the dump line. After determining the line remained associated with the well pad located in Unit "G" of Section 20, T 21 N, and R 8 W, the investigation was halted and excavated areas were fenced off.

Consultation continued with Mr. Papp and Mr. Foust.

Continued excavation began October 4, 2000. The excavation traced the four-inch dump line across the site (see attached diagram) and stopped at a two-inch riser associated with equipment previously removed. The dump line contained 2 three-inch check valves. The check valve located nearest the oil to surface was inspected and found to be intact and operable. Approximately 40-feet downstream of the check valve, the dump line was flanged from steel to fiberglass. With consultation between Mr. Foust and Mr. McDonald, it was determined that the four-inch fiberglass line was to be removed. Once removed the fiberglass line was emptied of contents and the fiberglass line disposed. The remaining steel line was pinched at both open ends and remained within the ditch. Contents of the steel line were left within the line. The site retained a closure limit of 5000 parts per million (ppm). Groundwater has been estimated to be greater than 100 feet. The wellhead protection area and surface waters are estimated to be greater than 1000 feet.

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The "oil to surface" area was excavated to approximately 24' wide x 24' long x 12' in depth. Sampling was performed utilizing the "headspace" method. Headspace sampling provided results within New Mexico Oil Conservation Division (NMOCD) guidelines. A sample from the bottom of the excavation (approximately 12' in depth) was collected and delivered to Inter-Mountain Laboratories (IML) for USEPA Modified 8015 analysis. All sampling utilized USEPA and NMOCD Protocol. Results of the Lab analysis are within NMOCD Guidelines and are enclosed.

Material excavated and removed from the fiberglass line was spread on location from depths ranging from 1" to 2". The material was then disced and mixed with unstained soil. The discing and mixing continued until materials were believed to be within NMOCD Guidelines. Headspace analysis provided results within NMOCD Guidelines. A 5-point composite sample was collected and sent to IML for USEPA Modified 8015 analysis. Results of Lab analysis are within NMOCD Guidelines and are enclosed.

The excavated areas were backfilled with unstained soil. All disturbed areas were disced and hand seeded. The seed mixture allotted for the Papers Wash area by the New Mexico State Land Office was utilized due to the proximity and comparable vegetation of the Papers Wash and Snake Eyes locations.

Client: Synergy Operating, LLC

Date Began: 9/222000 Date End: 10/8/2000

**Location:** Snake Eyes

Unit Letter: "G" Sec. 20 Twn. 21N Rng 8W

API # 30-031-20522

**Pit Reference from Wellhead:**

300 ft North 30 degrees West

**Oil to Surface**

Initial size: 0' x 0' x 0' deep

Final Size: 24' x 24' x 12' deep

| | |
|---|---|
| **Total Cubic Yards:** | 256 |
| **Distanes from (ft):** | |
| Groundwater: | >100 ft |
| Wellhead Protection Area: | >1000 ft |
| Nearest Surface Water: | >1000 ft |
| **Ranking Score (points):** | **0** |

| Sample ID | Sample Depth (ft) | OVM Reading |
|---|---|---|
| 1 | ctr bottm @ 12' | **35 ppm** |
| 2 | N wall @ 10' | **8 ppm** |
| 3 | E wall @ 10' | **9 ppm** |
| 4 | S wall @ 10' | **28 ppm** |
| 5 | W wall @ 10' | **30 ppm** |
| 6 | 10' along ditch | **Non-detect** |
| 7 | 50' along ditch | **Non-detect** |
| 8 | | |
| 9 | | |
| 10 | | |

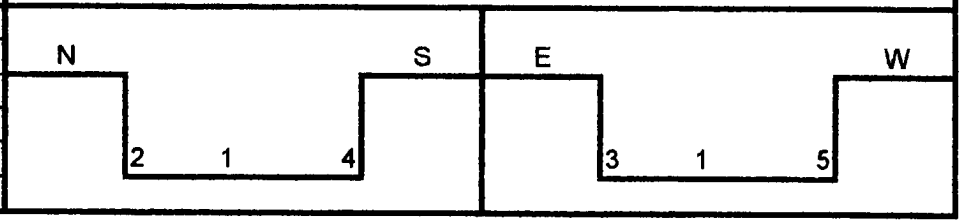
Comments:

Topography is flat. Soil is a brown sand with some clay loam. Black staining occurs throughout first 10 feet. No staining occurs after 5 feet of ditch. Fiberglass line is removed and contents are remediated on site. Sample from center bottom @ 12 ft sent to IML for 8015

Site Diagram:

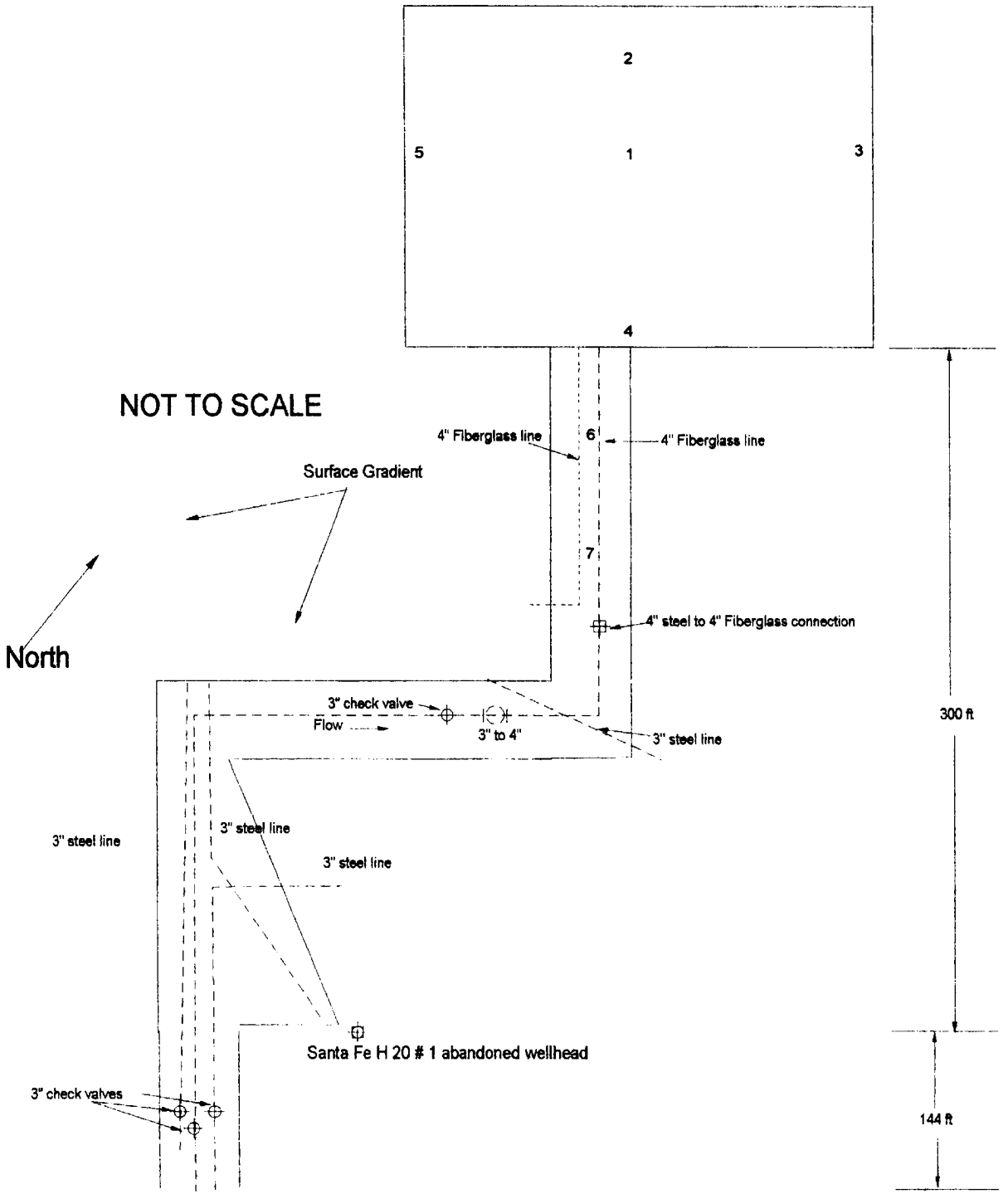
Site Diagram is Attached

Not to Scale




Environmental Specialist: FM

Biosphere Environmental Sciences Technologies


2
5
1
3
4
NOT TO SCALE
4" Fiberglass line
6
4" Fiberglass line
Surface Gradient
7
4" steel to 4" Fiberglass connection
North
3" check valve
Flow
3" to 4"
3" steel line
300 ft
3" steel line
3" steel line
3" steel line
Santa Fe H 20 # 1 abandoned wellhead
3" check valves
144 ft

jml

Inter-Mountain Laboratories, Inc.

Phone (505) 326-4737 Fax (505) 325-4182

2506 West Main Street, Farmington, NM 87401

**Client:** Synergy Operating, LLC
**Project:** Snake Eyes
**Sample ID:** Bottom @ 12'
**Lab ID:** 0300W04357
**Matrix:** Soil
**Condition:** Intact

**Date Reported:** 10/13/00
**Date Sampled:** 10/05/00
**Date Received:** 10/06/00

| Parameter | Analytical Result | PQL | Units |
|---|---|---|---|
| **DRO - Method 8015AZ** | | | |
| Diesel Range Organics (C10 - C22) | 174 | 20 | mg/Kg |
| Diesel Range Organics as Diesel | 174 | 20 | mg/Kg |

| Quality Control - Surrogate Recovery | % | QC Limits |
|---|---|---|
| o-Terphenyl(SUR-8015) | 76 | 70 - 130 |

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By: _____
William Lipps

jml

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**Condition:** Intact

**Date Reported:** 10/13/00
**Date Sampled:** 10/05/00
**Date Received:** 10/06/00

| Parameter | Analytical Result | PQL | Units |
|---|---|---|---|
| **GRO - Method 8015AZ** | | | |
| Gasoline Range Organics | <5 | 5 | mg/Kg |
| Gasoline Range Organics as Gasoline | <5 | 5 | mg/Kg |

| Quality Control - Surrogate Recovery | % | QC Limits |
|---|---|---|
| 4-Bromofluorobenzene(SUR-8015) | 70 | 70 - 130 |

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By: William Lipps

# CHAIN OF CUSTODY RECORD

Inter-Mountain Laboratories, Inc.

| Client/Project Name | Project Location | ANALYSES / PARAMETERS |
|---|---|---|
| Synergy Operating, LLC | Snake Eyes | |
| Sampler: (Signature) | Chain of Custody Tape No. | |

| Sample No./ Identification | Date | Time | Lab Number | Matrix | No. of Containers | Chloride | | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Bottom @ 2' | 10/5/00 | 1310 | 4357 | Soil | 1 | X | | | | | |
| | | | | | | | | | | | |
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| | Date | Time | | Date | Time |
|---|---|---|---|---|---|
| Relinquished by: (Signature) | 10/6/00 | 815 | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by: (Signature) | | |
| Relinquished by: (Signature) | | | Received by laboratory: (Signature) Kristine Williams | 10/6/00 | 0945 |

## Inter-Mountain Laboratories, Inc.

555 Absaraka
Sheridan, Wyoming 82801
Telephone (307) 674-7506

1633 Terra Avenue
Sheridan, Wyoming 82801
Telephone (307) 672-8945

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Telephone (307) 682-8945

2506 West Main Street
Farmington, NM 87401
Telephone (505) 326-4737

11183 State Hwy. 30
College Station, TX 77845
Telephone (979) 776-8945

67786

Client: Synergy Operating, LLC

Date Began: 9/222000 Date End: 10/8/2000

**Location:** Snake Eyes

Unit Letter: "G" Sec. 20 Twn. 21N Rng 8W

**Pit Reference from Wellhead:**

300 ft North 30 degrees West

**Oil to Surface**

**Total Cubic Yards:** **256**

**Number of 5-Point Composite Samples:** **2**

**Distanes from (ft):**

| | |
|---|---|
| Groundwater: | >100 ft |
| Wellhead Protection Area: | >1000 ft |
| Nearest Surface Water: | >1000 ft |

**Ranking Score (points):** **0**

| Sample ID | Sample Depth (ft) | OVM Reading |
|---|---|---|
| 1 | 2-6 inches | **76 ppm** |
| 2 | 2-6 inches | **36 ppm** |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

Comments:

Topography is flat. Soil is a brown sand with some clay loam.

Sample # 1 sent to IML for 8015

Site Diagram:

Site Diagram is Attached

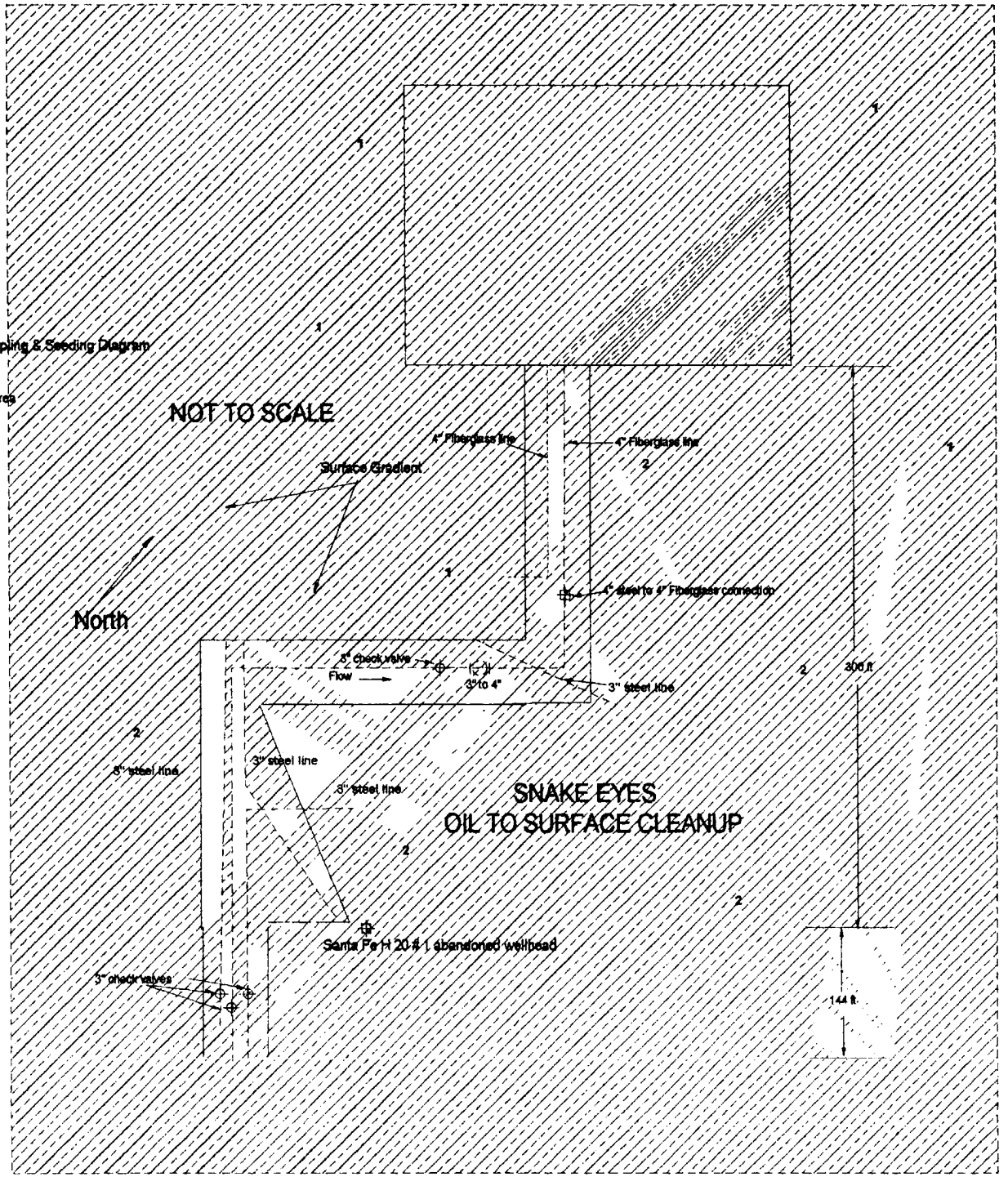
Not to Scale

Environmental Specialist: FM

Biosphere Environmental Sciences Technologies

Remediation Sampling & Seeding Diagram

Impacted Area



jml

Inter-Mountain Laboratories, Inc.

2506 West Main Street, Farmington, NM 87401

Phone (505) 326-4737 Fax (505) 325-4182

**Client:** Synergy Operating, LLC
**Project:** Snake Eyes
**Sample ID:** Remediation
**Lab ID:** 0300W04366
**Matrix:** Soil
**Condition:** Intact

**Date Reported:** 10/13/00
**Date Sampled:** 10/08/00
**Date Received:** 10/09/00

| Parameter | Analytical Result | PQL | Units |
|---|---|---|---|
| **DRO - Method 8015AZ** | | | |
| Diesel Range Organics (C10 - C22) | 623 | 20 | mg/Kg |
| Diesel Range Organics as Diesel | 623 | 20 | mg/Kg |

| Quality Control - Surrogate Recovery | % | QC Limits |
|---|---|---|
| o-Terphenyl(SUR-8015) | 91 | 70 - 130 |

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By: _____
William Lipps

jml

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**Client:** Synergy Operating, LLC
**Project:** Snake Eyes
**Sample ID:** Remediation
**Lab ID:** 0300W04366
**Matrix:** Soil
**Condition:** Intact

**Date Reported:** 10/13/00
**Date Sampled:** 10/08/00
**Date Received:** 10/09/00

| Parameter | Analytical Result | PQL | Units |
|---|---|---|---|
| **GRO - Method 8015AZ** | | | |
| Gasoline Range Organics | <5 | 5 | mg/Kg |
| Gasoline Range Organics as Gasoline | <5 | 5 | mg/Kg |

| Quality Control - Surrogate Recovery | % | QC Limits |
|---|---|---|
| 4-Bromofluorobenzene(SUR-8015) | 109 | 70 - 130 |

Reference: SW-846 - "Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", United States Environmental Protection Agency, November, 1986.

Reviewed By: _____
William Lipps

# CHAIN OF CUSTODY RECORD

Inter-Mountain Laboratories, Inc.

| Client/Project Name | Project Location | ANALYSES / PARAMETERS |
|---|---|---|
| Synergy Operating, LLC | Snake Eyes Remediation | |
| **Sampler: (Signature)** | **Chain of Custody Tape No.** | |

| Sample No./ Identification | Date | Time | Lab Number | Matrix | No. of Containers | GRO/DRO | | | | Remarks |
|---|---|---|---|---|---|---|---|---|---|---|
| Remediation | 10/8/00 | 1450 | 4356 | Soil | X | X | | | | |

Ice & cool/Intact

| Relinquished by: (Signature) | Date | Time | Received by: (Signature) | Date | Time |
|---|---|---|---|---|---|
| | 10/9/00 | 1047 | | | |
| **Relinquished by: (Signature)** | **Date** | **Time** | **Received by: (Signature)** | **Date** | **Time** |
| | | | | | |
| **Relinquished by: (Signature)** | **Date** | **Time** | **Received by laboratory: (Signature)** | **Date** | **Time** |
| | | | Shawn L Williams | 10/9/00 | 1047 |

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Farmington, NM 87401
Telephone (505) 326-4737

☐ 11183 State Hwy. 30
College Station, TX 77845
Telephone (979) 776-8945

70615

Southwest Seed, Inc.
13260 CR 29
Dolores, CO 81323
(970) 565-8722

# Custom Bulk Seed Mixture Analysis

7/27/00

LOT NO: 2000.0335

SPECIES: MIXTURE: BIOSPERE ENVIRONMENTAL VARIETY: NMSLO 4 ACRE MIX

| Lot NO | Species | Variety | CL | OR | PURE | INERT | CROP | WEED | Rstr | Nox | Live | PLS | TEST_DATE | Bulk LBS | PLS LBS | Pure % |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 06385 | GRASS W: GRAMA-BLUE | HACHITA | C | CO | 39.58 | 60.42 | 0.00 | 0.00 | NF | NF | 89 | 35.23 | 2/19/00 | 8.52 | 3.00 | 17.70 |
| 1999.0236 | GRASS W: ALKALI SACATO | VNS | | TX | 95.52 | 1.07 | 3.41 | 0.00 | NF | NF | 80 | 76.42 | 6/1/00 | 1.31 | 1.00 | 6.56 |
| 1999.0440 | GRASS W: GALLETA | VIVA | | CO | 82.13 | 17.27 | 0.10 | 0.50 | NF | NF | 93 | 76.38 | 4/25/00 | 1.31 | 1.00 | 5.65 |
| 1999.0456 | WHEATGR: WESTERN | ARRIBA | C | CO | 94.62 | 5.21 | 0.17 | 0.00 | NF | NF | 93 | 88.00 | 11/1/99 | 6.82 | 6.00 | 33.88 |
| 1999.0535 | GRASS W: DROPSEED-SPI | VNS | | CO | 99.62 | 0.38 | 0.00 | 0.00 | NF | NF | 92 | 91.65 | 2/2/00 | 1.09 | 1.00 | 5.71 |
| | | | | | | | | | | | | | Grand Total | 19.04 | 12.00 | |

Pure: 69.50% Inert 30.17% Crop 0.30% Weed 0.03% Total 100%

REMARK: 1 BAG CONTAINING 19.04 BULK LBS (12 PLS LBS) TO SEED 4 ACRES
TO BE SEEDED AT THE RATE OF 4.76 BULKS LBS/AC OR 3 PLS LBS/AC
PACKET INSIDE TO BE SEEDED SEPARATLY OR MIXED JUST PRIOR TO SEEDING