

Hydrogen Sulfide Drilling Operations Plan
North Maduro Unit No. 6
Cimarex Energy Co. of Colorado
Unit E, Section 20
T19S-R33E, Lea County, NM

30-025-40038

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H₂S safety instructor to the following:
 - A. Characteristics of H₂S
 - B. Physical effects and hazards
 - C. Proper use of safety equipment and life support systems.
 - D. Principle and operation of H₂S detectors, warning system and briefing areas.
 - E. Evacuation procedure, routes and first aid.
 - F. Proper use of 30 minute pressure demand air pack.
- 2 H₂S Detection and Alarm Systems:
 - A. H₂S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
 - A. Windsock at mudpit area should be high enough to be visible.
 - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs:
 - A. Warning sign on access road to location.
 - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H₂S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
 - A. See exhibit "E"
- 6 Communication:
 - A. While working under masks chalkboards will be used for communication.
 - B. Hand signals will be used where chalk board is inappropriate.
 - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H₂S has on tubular goods and other mechanical equipment.
- 9 If H₂S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H₂S scavengers if necessary.

H₂S Contingency Plan
North Maduro Unit No. 6
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Unit E, Section 20
T19S-R33E, Lea County, NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H₂S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
 - ◆ Detection of H₂S, and
 - ◆ Measures for protection against the gas,
 - ◆ Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts

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Cimarex Energy Co. of Colorado

Unit E, Section 20

T19S-R33E, Lea County, NM

Company Office

Cimarex Energy Co. of Colorado	800-969-4789
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Co. Office and After-Hours Menu	
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Key Personnel

Name	Title	Office	Mobile
Doug Park	Drilling Manager	432-620-1934	972-333-1407
Dee Smith	Drilling Super	432-620-1933	972-882-1010
Jim Evans	Drilling Super	432-620-1929	972-465-0564
Roy Shirley	Field Super		432-634-2136

Artesia

Ambulance	911
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State Police	575-746-2703
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City Police	575-746-2703
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Sheriff's Office	575-746-9888
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Fire Department	575-746-2701
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Local Emergency Planning Committee	575-746-2122
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New Mexico Oil Conservation Division	575-748-1283
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Carlsbad

Ambulance	911
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State Police	575-885-3137
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City Police	575-885-2111
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Sheriff's Office	575-887-7551
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Fire Department	575-887-3798
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Local Emergency Planning Committee	575-887-6544
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US Bureau of Land Management	575-887-6544
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Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
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New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
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New Mexico State Emergency Operations Center	505-476-9635
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National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
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Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
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Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
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SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949
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Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
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Cudd Pressure Control	432-699-0139	or	432-563-3356
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Halliburton	575-746-2757
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B.J. Services	575-746-3569
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Surface Use Plan
North Maduro Unit No. 6
Cimarex Energy Co. of Colorado
Unit E, Section 20
T19S-R33E, Lea County, NM

1. Existing Roads: Area maps, Exhibit "A" shows the proposed well site as staked. Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C-1" is a reproduction of a USGS Topographic Map, and Exhibit "C-2" is a well site layout map, showing existing road to previous constructed well pad of newly drilled N. Maduro Unit No. 3 well. Location is 50' East of existing N. Maduro Unit No. 3 well.

A. The maximum width of the driving surface will be 14.' The road will be crowned and ditched with a 2% slope from the tip of the crown to the edge of the driving surface. The ditches will be 1' deep with 3:1 slopes. The driving surface will be made of 6" rolled and compacted caliche.

B. From the junction of 62-180, turn North on existing access road for 3.8 miles winding Westerly. Turn South for 1 mile winding Westerly, then Northwesterly for 0.7 miles to proposed location.

2. Planned Access Roads: No new access roads are proposed.

3. Planned Flowlines: A tank battery will be constructed on the well pad to contain the products, so no new flowlines will be built.

4. Planned Powerlines: Power will be obtained from existing power at the N Maduro Unit Fed #3 well pad.

5. Location of Existing Wells in a One-Mile Radius - Exhibit A

- | | |
|----------------------|------------------------------------|
| A. Water wells - | None known |
| B. Disposal wells - | None known |
| C. Drilling wells - | None known |
| D. Producing wells - | As shown on Exhibits "A" and "A-1" |
| E. Abandoned wells - | As shown on Exhibits "A" and "A-1" |

6. Location and Type of Water Supply:

Water will be purchased locally from a commercial source and trucked over the access roads.

7. Source of Construction Material:

Existing well pad will be utilized with maximum 50' eastward extension of existing pad for tank battery. If possible, native caliche will be obtained from the excavation of drill site. Topsoil will be pushed back from the drill site and existing caliche will be ripped and compacted. Then topsoil will be added to existing stockpile on location as depicted on Exhibit "D" (rig layout). If additional material is needed, it will be purchased from a BLM-approved pit as near as possible to the well

8. Methods of Handling Waste Material:

- A. Drill cuttings will be separated by a series of solids removal equipment and stored in steel containment pits and then hauled to a state-approved disposal facility.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically and hauled to a waste disposal facility. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Drilling fluids will be contained in steel pits in a closed circulating system. Fluids will be cleaned and reused. Water produced during testing will be contained in the steel pits and disposed of at a state approved disposal facility. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

Surface Use Plan
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Cimarex Energy Co. of Colorado
Unit E, Section 20
T19S-R33E, Lea County, NM

9. Ancillary Facilities:

- A. No camps or airstrips to be constructed.

10. Well Site Layout:

- A. Exhibit "D" shows location and rig layout.
- B. Mud pits in the closed circulating system will be steel pits and the cuttings will be stored in steel containment pits.
- C. Cuttings will be stored in steel pits until they are hauled to a state-approved disposal facility.
- D. If the well is a producer, those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

11. Plans for Restoration of Surface:

Rehabilitation of the location will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, those areas of the location not essential to production facilities and operations will be reclaimed and seeded per BLM requirements. Please see Production Facilities Layout Diagram, exhibit D-1.

12. Other Information

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. In lieu of an archaeological survey report, Cimarex will be submitting an MOA application for this well pad and access road since they are within the MOA boundary.
- D. There are no known dwellings within 1½ miles of this location.


Operator Certification Statement
North Maduro Unit No. 6
Cimarex Energy Co. of Colorado
Unit E, Section 20
T19S-R33E, Lea County, NM

Operator's Representative

Cimarex Energy Co. of Colorado
600 N. Marienfeld St., Ste. 600
Midland, TX 79701
Office Phone: (432) 571-7800
Zeno Farris

CERTIFICATION: I hereby certify that I, or someone under my direct supervision, have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or the company I represent, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

Executed this 22nd day of December, 2010

NAME: 
Natalie Krueger

TITLE: Regulatory Analyst

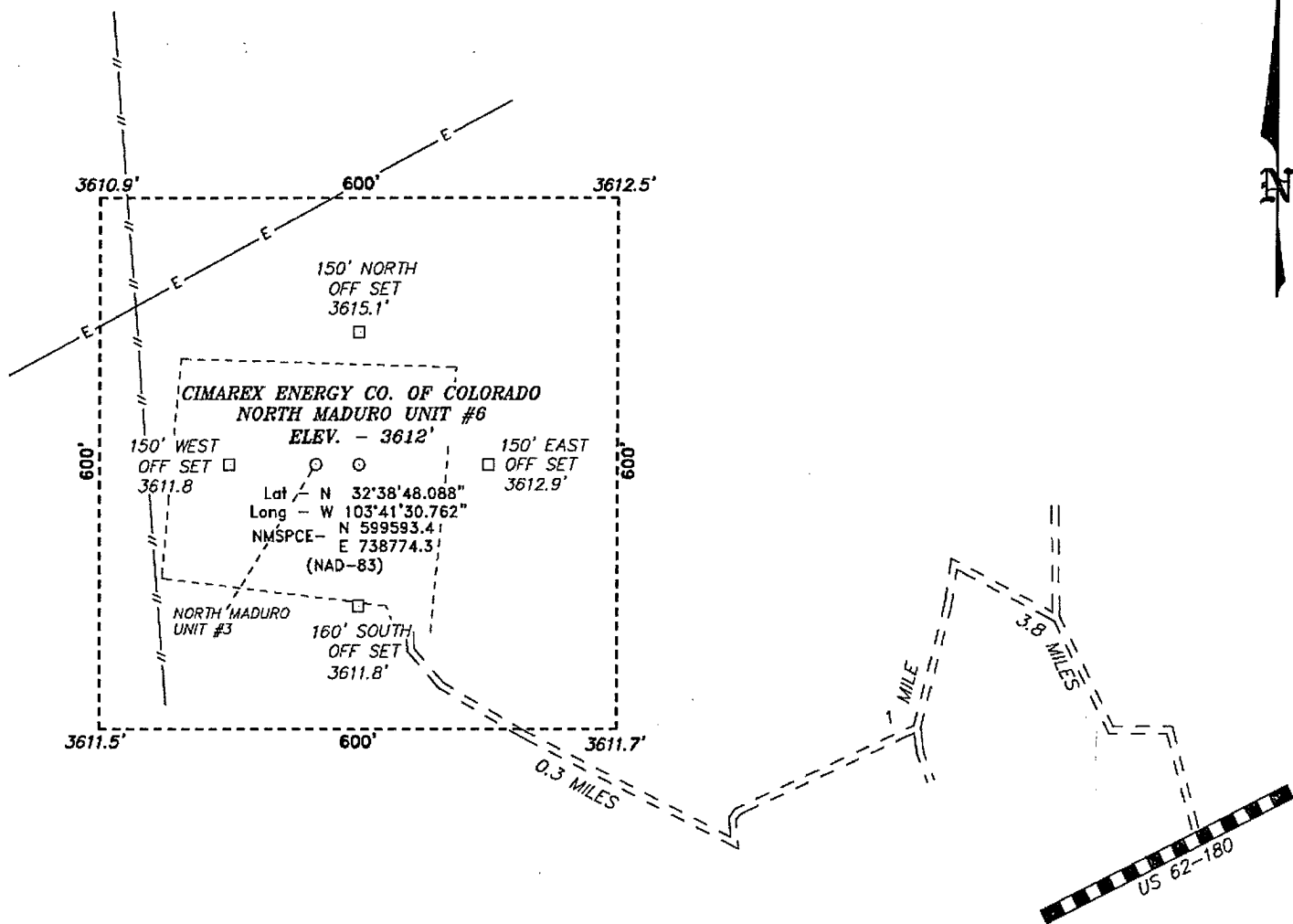
ADDRESS: 600 N. Marienfeld St., Ste. 600
Midland, TX 79701

TELEPHONE: (432) 620-1936

EMAIL: zfarris@cimarex.com

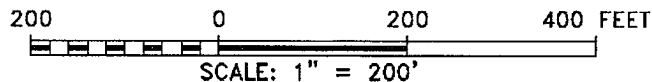
Field Representative: Same as above

SECTION 20, TOWNSHIP 19 SOUTH, RANGE 33 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF US 62-180, TURN NORTH
ON EXISTING ACCESS ROAD FOR 3.8 MILES WINDING
WESTERLY, TURN SOUTH FOR 1 MILE WINING
WESTERLY, THEN NORTHWESTERLY FOR 0.7 MILES TO
PROPOSED LOCATION.



CIMAREX ENERGY CO. OF COLORADO

REF: NORTH MADURO UNIT #6 / WELL PAD TOPO

THE NORTH MADURO UNIT #6 LOCATED 2310'

FROM THE NORTH LINE AND 610' FROM THE WEST LINE OF

SECTION 20, TOWNSHIP 19 SOUTH, RANGE 33 EAST,

N.M.P.M., LEA COUNTY, NEW MEXICO.

BASIN SURVEYS P.O. BOX 1786-HOBBS, NEW MEXICO

W.O. Number: 23895

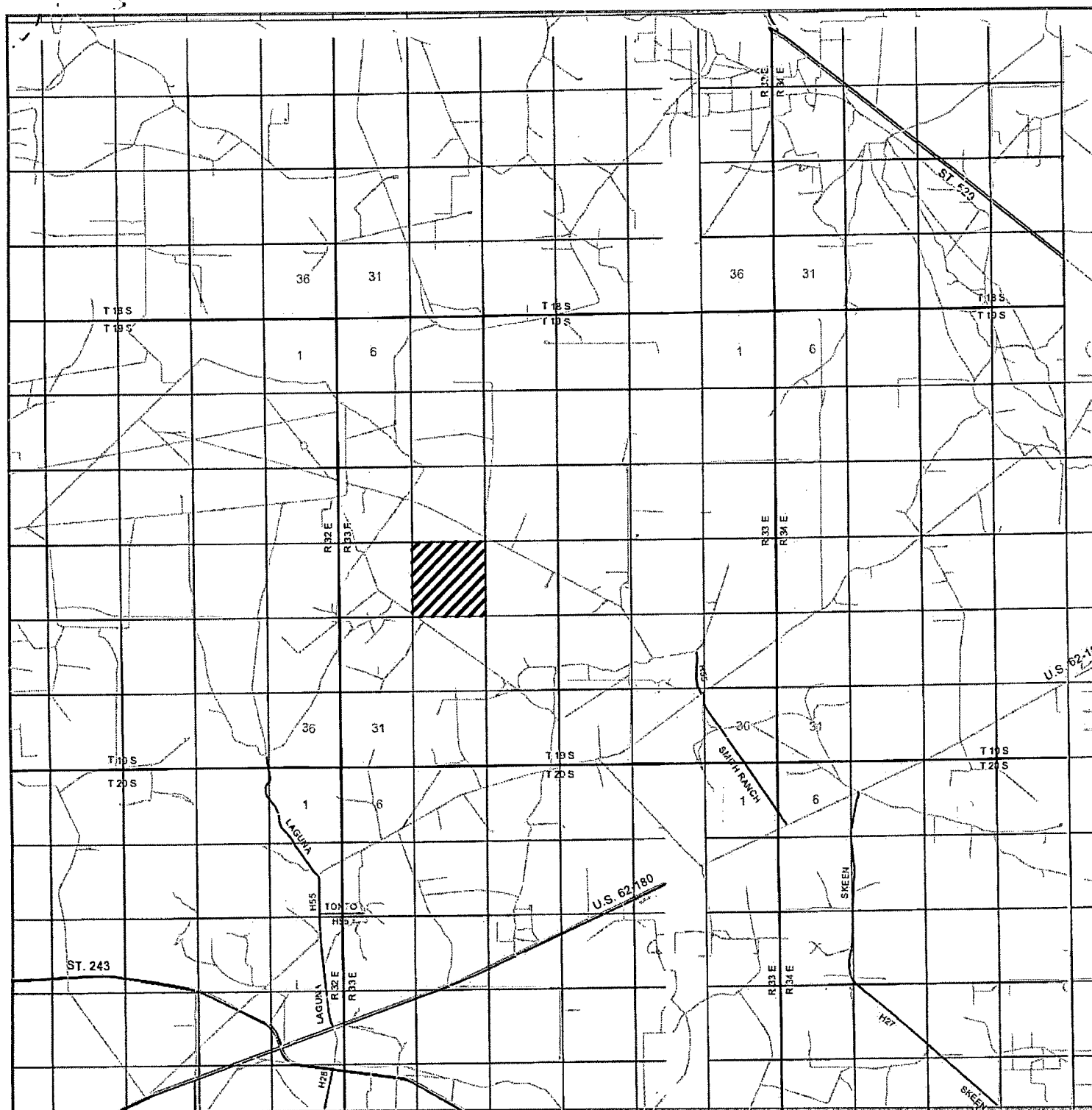
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Date: 12-10-2010

Disk: BJN 23895

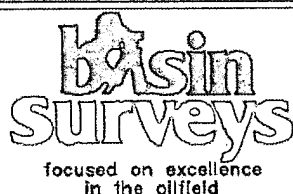
Survey Date: 12-09-2010

Sheet 1 of 1 Sheets



NORTH MADURO UNIT #6

Located 2310' FNL and 610' FWL
 Section 20, Township 19 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

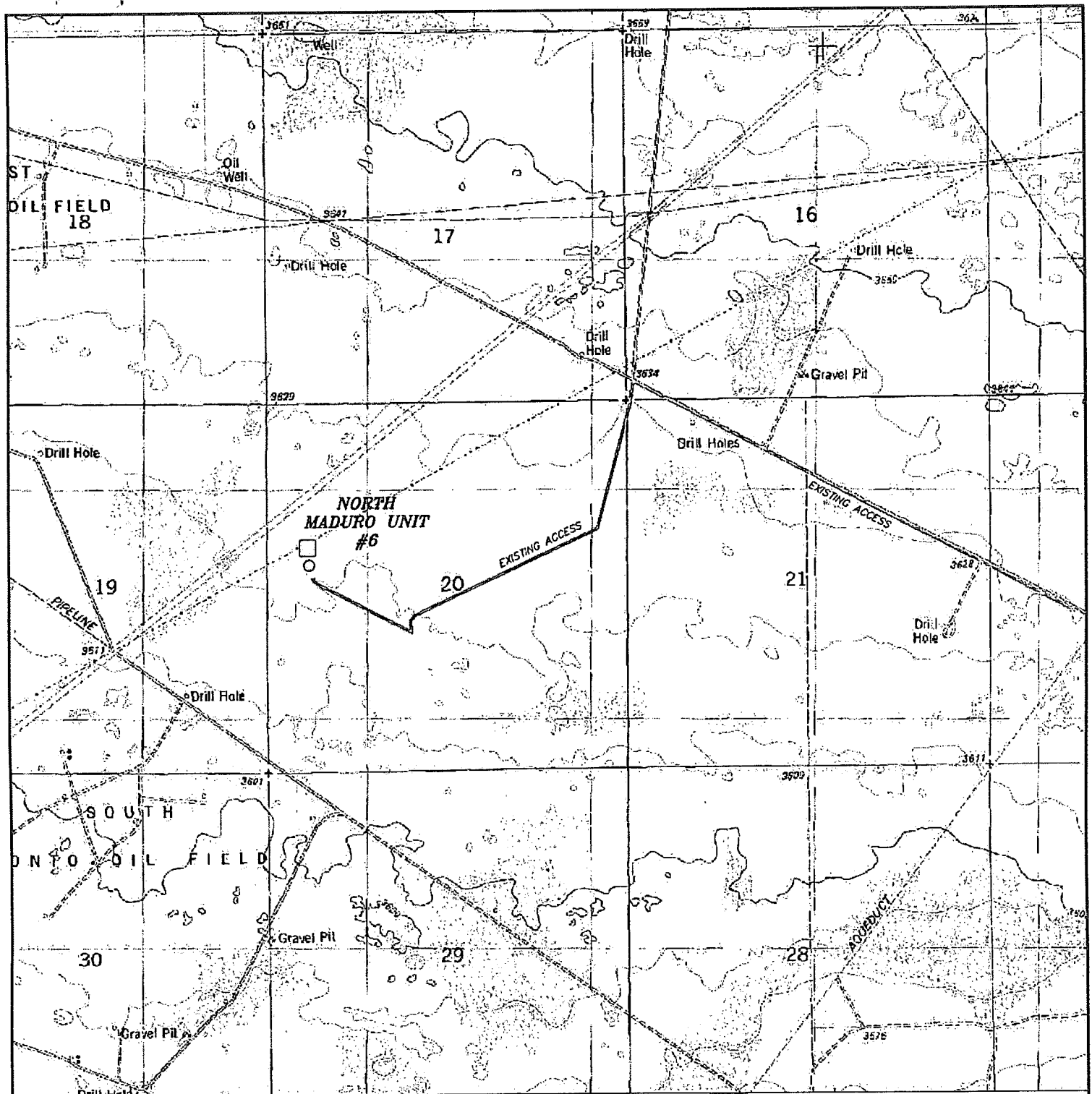
W.O. Number: BJN 23895

Survey Date: 12-09-2010

Scale: 1" = 2 Miles

Date: 12-10-2010

**CIMAREX
 ENERGY CO.
 OF COLORADO**



NORTH MADURO UNIT #6

Located 2310' FNL and 610' FWL
 Section 20, Township 19 South, Range 33 East,
 N.M.P.M., Lea County, New Mexico.

Battery

basin
surveys
 focused on excellence
 in the oilfield

P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
 basin-surveys.com

W.O. Number: BJN 23895

Survey Date: 12-09-2010

Scale: 1" = 2000'

Date: 12-10-2010

CIMAREX
ENERGY CO.
OF COLORADO

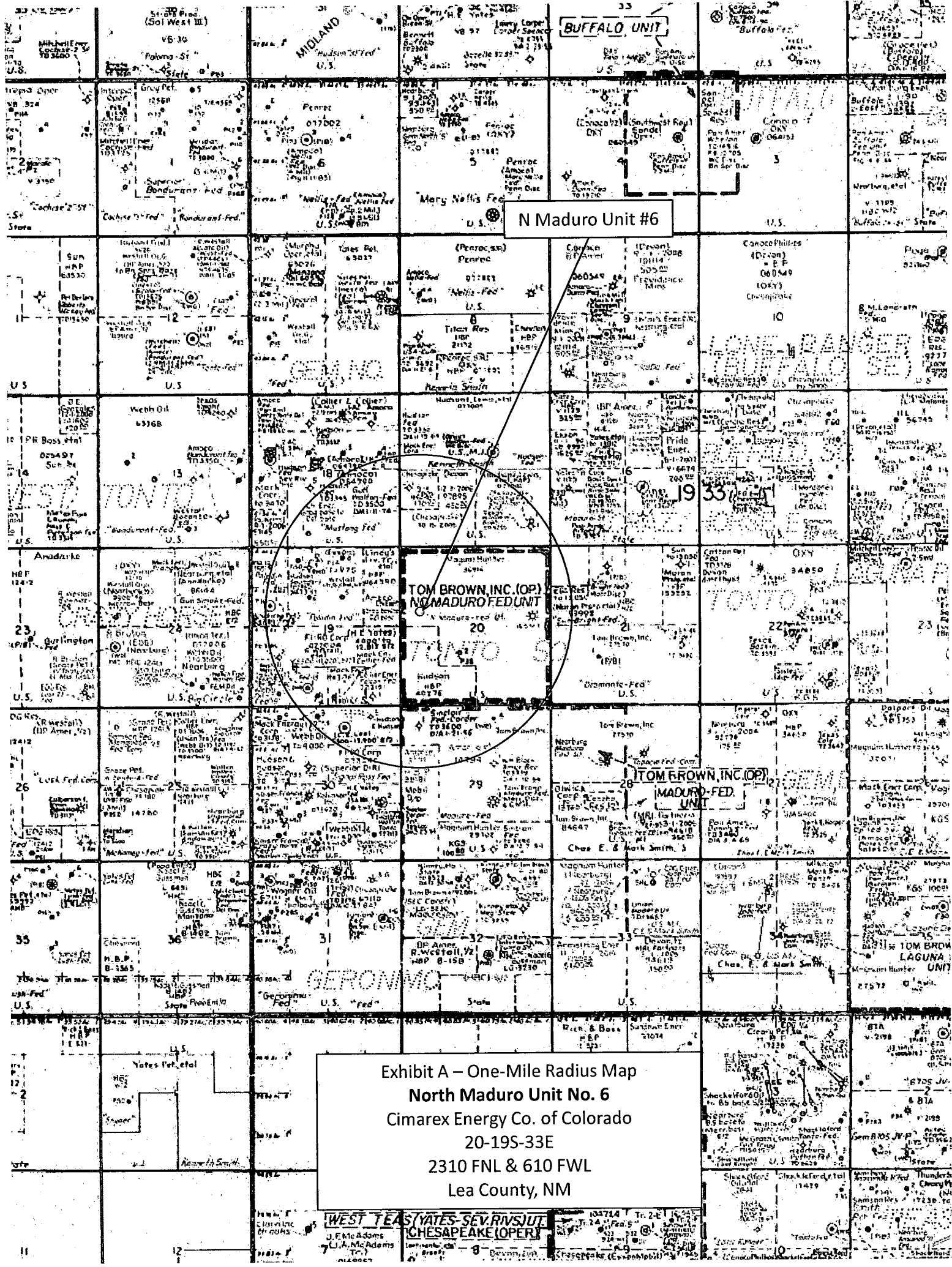


Exhibit A - One-Mile Radius Map
North Maduro Unit No. 6
Cimarex Energy Co. of Colorado
20-19S-33E
2310 FNL & 610 FWL
Lea County, NM