



30.025-42619

**Devon Energy Center
333 West Sheridan Avenue
Oklahoma City, Oklahoma 73102-5015**

Hydrogen Sulfide (H₂S) Contingency Plan

For

Cotton Draw Unit 252H

**Sec-7, T-25S R-32E
100' FNL & 1780' FEL
LAT. = 32.1518059'N (NAD83)
LONG = 103.7115312'W**

Lea County NM

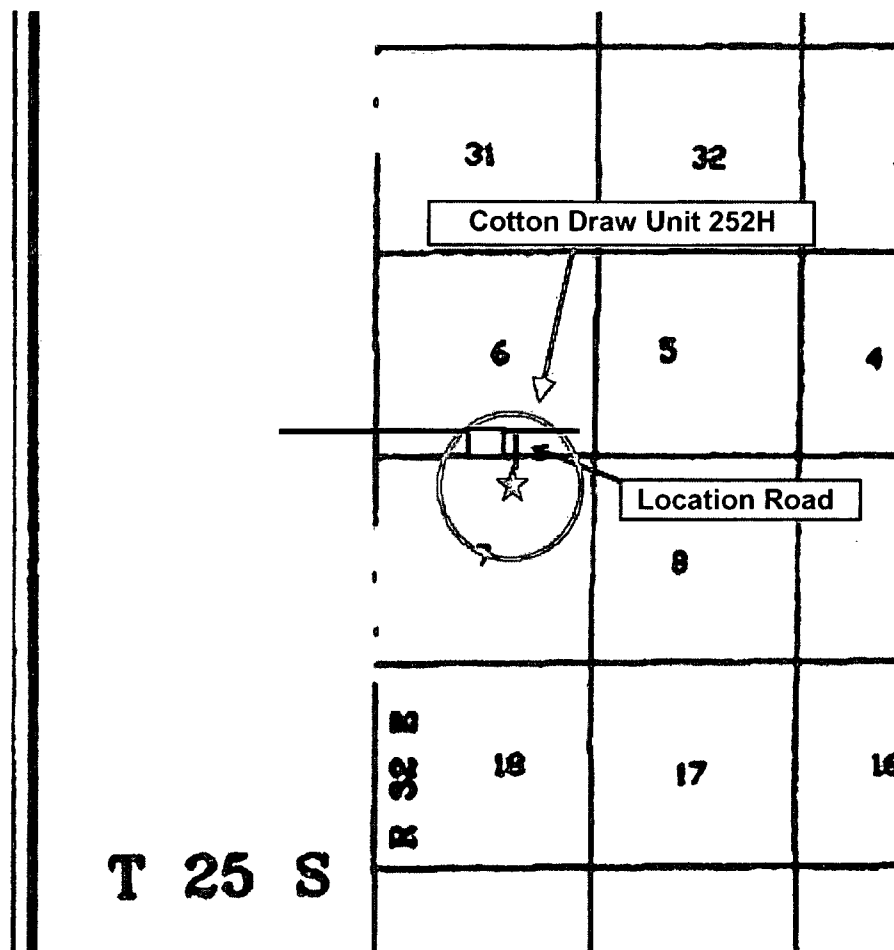
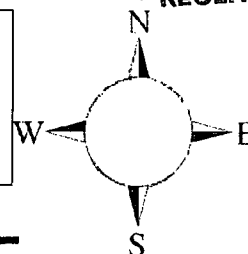
JUN 08 2015

JUN 03 2015

RECEIVED

Cotton Draw Unit 252H

This is an open drilling site. H₂S monitoring equipment and emergency response equipment will be used within 500' of zones known to contain H₂S, including warning signs, wind indicators and H₂S monitor.



Assumed 100 ppm 3000' ()
100 ppm H₂S concentration shall trigger activation of this plan.

Escape

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, West then Northwest on lease road. Crews should then block entrance to the location from the lease road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

Assumed 100 ppm ROE = 3000'

100 ppm H₂S concentration shall trigger activation of this plan.

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	H₂S	1.189 Air = 1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO₂	2.21 Air = 1	2 ppm	N/A	1000 ppm

Contacting Authorities

Devon Energy Corp. personnel must liaison 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. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE (H₂S) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan.

II. HYDROGEN SULFIDE TRAINING

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H₂S.

1. Well Control Equipment

- A. Flare line
- B. Choke manifold – (with Remotely Operated Choke)
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit
- D. Auxiliary equipment may include if applicable: annular preventer and rotating head.
- E. Mud/Gas Separator

2. Protective equipment for essential personnel:

- A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. H₂S detection and monitoring equipment:

- A. Portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 PPM are reached. These units are usually capable of detecting SO₂, which is a byproduct of burning H₂S.

4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram
- B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate.

5. Mud program:

- A. The mud program has been designed to minimize the volume of H₂S circulated to surface. Proper mud weight, safe drilling practices and the use of H₂S scavengers will minimize hazards when penetrating H₂S bearing zones.

6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be H₂S trim.
- B. All elastomers used for packing and seals shall be H₂S trim.

7. Communication:

- A. Radio communications in company vehicles including cellular telephones and 2-way radio
- B. Land line (telephone) communications at Office

8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H₂S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

Devon Energy Corp. Company Call List

<u>Artesia (575)</u>	<u>Cellular</u>	<u>Office</u>	<u>Home</u>
Foreman – Robert Bell.....	748-7448	748-0178	746-2991
Asst. Foreman –Tommy Polly.....	748-5290	748-0165	748-2846
Don Mayberry	748-5235	748-0164	746-4945
Montral Walker	390-5182	748-0193	(936) 414-6246
Engineer – Marcos Ortiz.....	(405) 317-0666.....	(405) 552-8152.....	(405) 381-4350

Agency Call List

<u>Lea County (575)</u>	<u>Hobbs</u>
	Lea County Communication Authority393-3981
	State Police392-5588
	City Police397-9265
	Sheriff's Office393-2515
	Ambulance.....911
	Fire Department.....397-9308
	LEPC (Local Emergency Planning Committee).....393-2870
	NMOCD393-6161
	US Bureau of Land Management.....393-3612

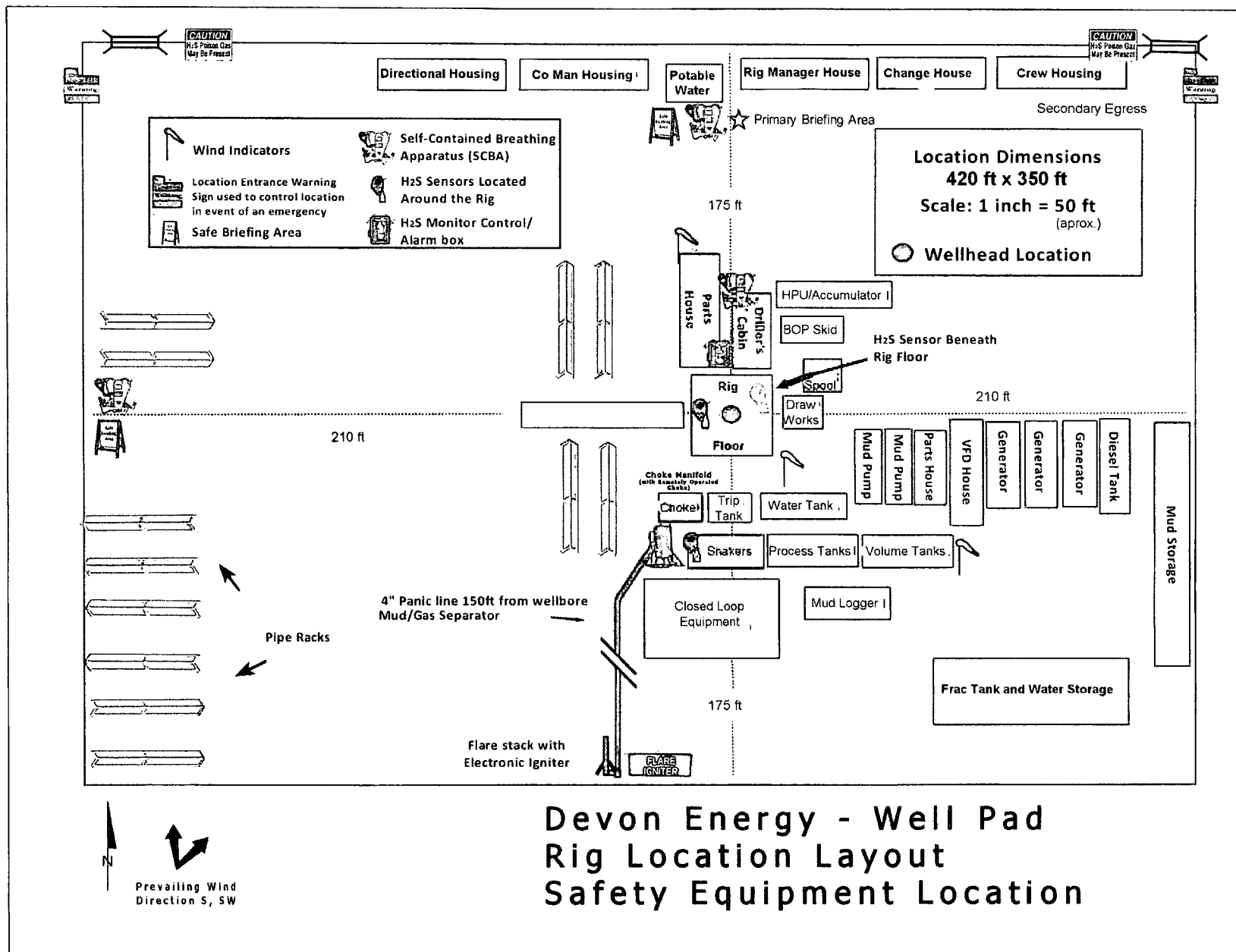
<u>Eddy</u>	<u>Carlsbad</u>
<u>County</u>	State Police885-3137
<u>(575)</u>	City Police885-2111
	Sheriff's Office887-7551
	Ambulance911
	Fire Department.....885-2111
	LEPC (Local Emergency Planning Committee).....887-3798
	US Bureau of Land Management.....887-6544
	NM Emergency Response Commission (Santa Fe) (505) 476-9600
	24 HR(505) 827-9126
	National Emergency Response Center (Washington, DC)(800) 424-8802

Emergency Services

	Boots & Coots IWC	(800)-256-9688 or (281) 931-8884
	Cudd Pressure Control.....	(915) 699-0139 or (915) 563-3356
	Halliburton	(575) 746-2757
	B. J. Services.....	(575) 746-3569
<i>Give</i>	Native Air – Emergency Helicopter – Hobbs.....	(575) 392-6429
<i>GPS</i>	Flight For Life - Lubbock, TX	(806) 743-9911
<i>position:</i>	Aerocare - Lubbock, TX	(806) 747-8923
	Med Flight Air Amb - Albuquerque, NM	(575) 842-4433
	Lifeguard Air Med Svc. Albuquerque, NM	(575) 272-3115

Prepared in conjunction with
Dave Small

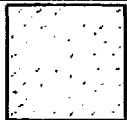






Proposed Interim Site Reclamation

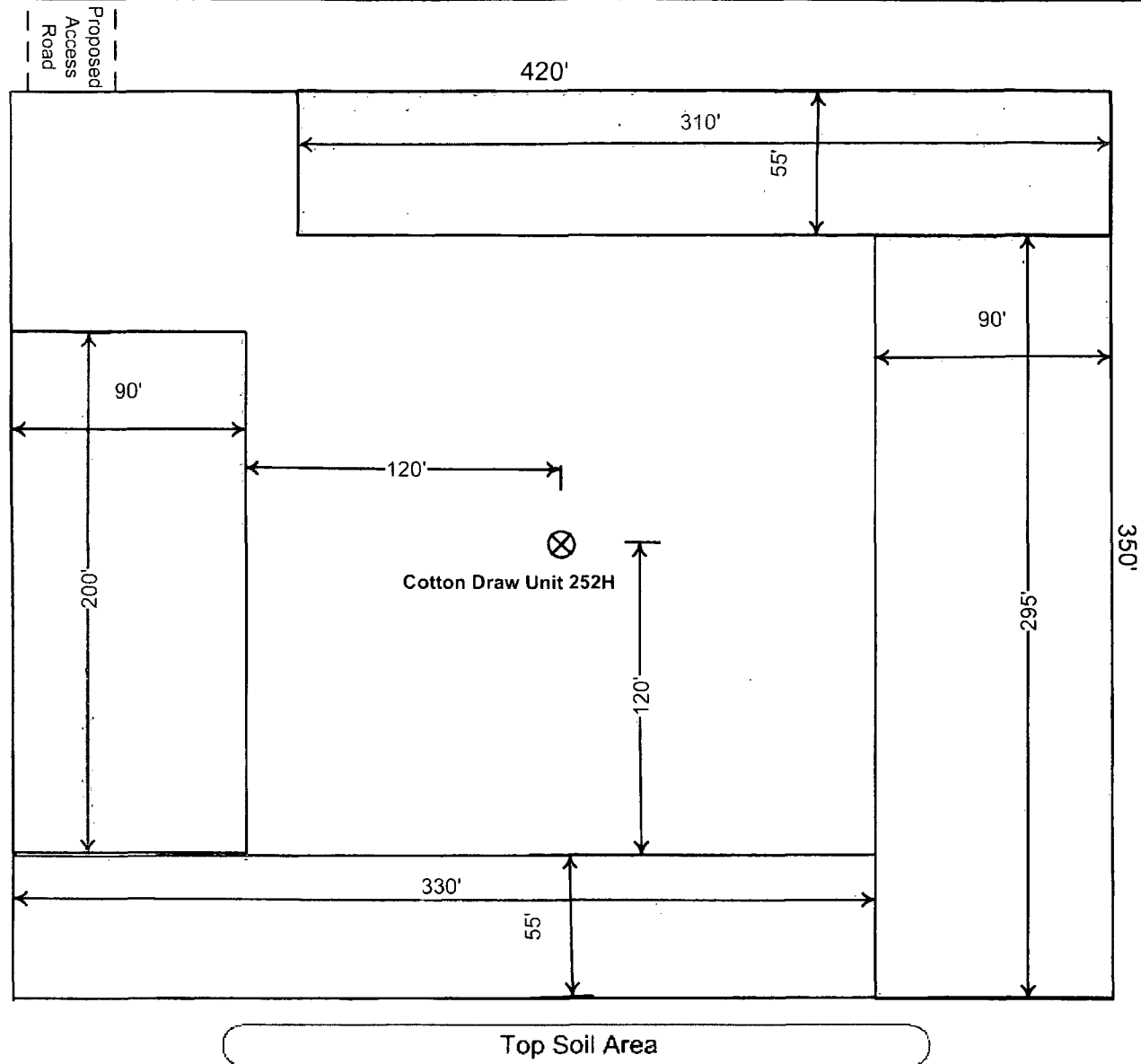
Devon Energy Production Co.
Cotton Draw Unit 252H
Sec. 7-T25S-R32E
Lea County, NM



Proposed
Reclamation
Area

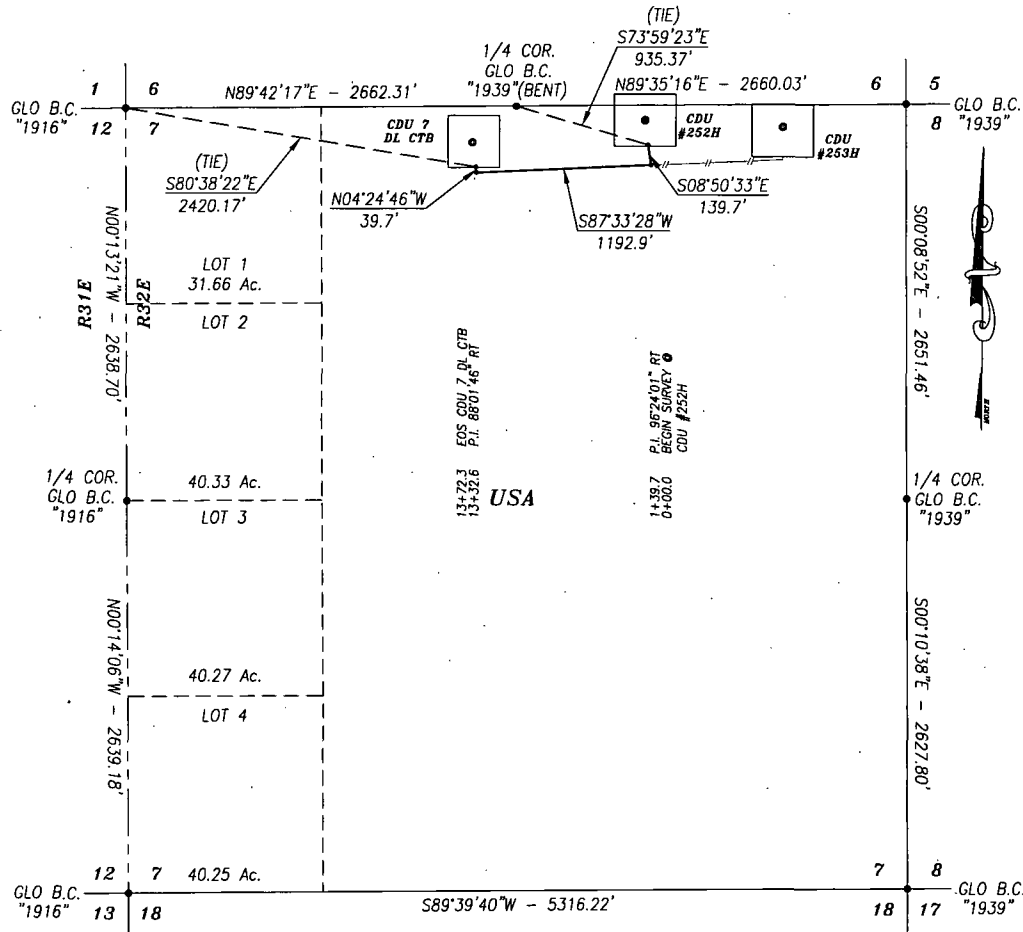


Scale: 1in = 60ft.



**CDU #252H FLOWLINE
DEVON ENERGY PRODUCTION CO. LP.**

A 4" BURIED POLY FLOWLINE FROM THE CDU #252H TO THE CDU 7 DL CTB
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, N.M.P.M.,
LEA COUNTY, NEW MEXICO.



DESCRIPTION

A STRIP OF LAND 30.0 FEET WIDE AND 1372.3 FEET OR 83.17 RODS OR 0.260 MILES IN LENGTH CROSSING USA LAND IN SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST, LEA COUNTY, NEW MEXICO AND BEING 15.0 FEET LEFT AND 15.0 FEET RIGHT OF THE ABOVE PLATTED CENTERLINE SURVEY.

BASIS OF BEARING:
BEARINGS SHOWN HEREON ARE MERCATOR GRID AND CONFORM TO THE NEW MEXICO COORDINATE SYSTEM "NEW MEXICO EAST ZONE" NORTH AMERICAN DATUM 1983. DISTANCES ARE GRID VALUES.

HARCROW SURVEYING, LLC
2314 W. MAIN ST, ARTESIA, N.M. 88210
PH: (575) 746-2158 FAX: (575) 746-2158
c.harcrow@harcrowsurveying.com



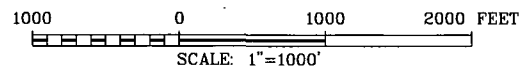
CERTIFICATION

I, CHAD HARCROW, A NEW MEXICO REGISTERED PROFESSIONAL SURVEYOR CERTIFY THAT I DIRECTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND THIS SURVEY AND PLAT MEET THE MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO.



Chad Harcrow
CHAD HARCROW N.M.P.S. NO. 17777

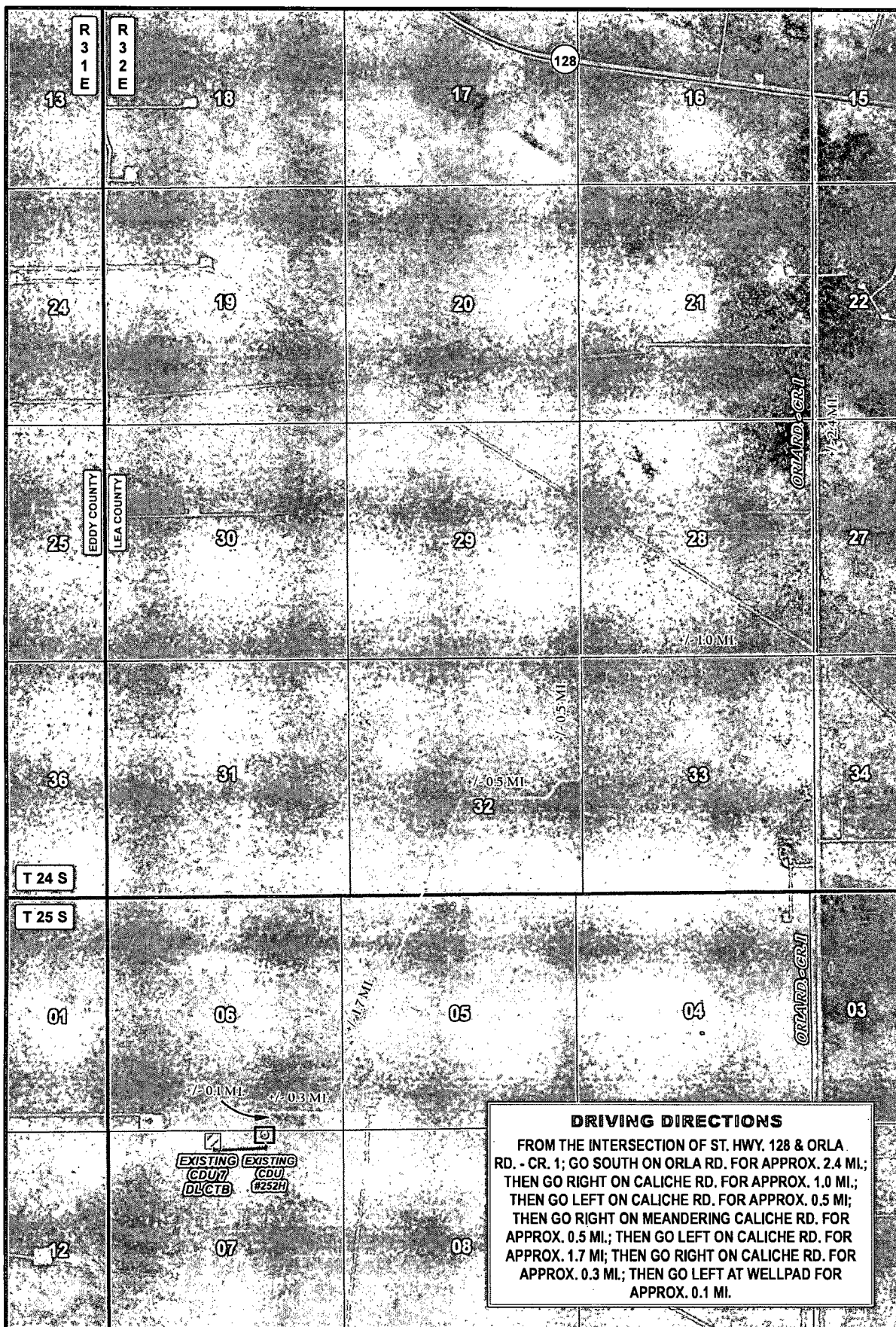
3/17/15
DATE



DEVON ENERGY PRODUCTION CO. LP.

SURVEY OF A PROPOSED FLOWLINE LOCATED IN
SECTION 7, TOWNSHIP 25 SOUTH, RANGE 32 EAST,
LEA COUNTY, NMPM, NEW MEXICO

SURVEY DATE: MARCH 7, 2015	
DRAFTING DATE: MARCH 17, 2015	PAGE 1 OF 4
APPROVED BY: CH	DRAWN BY: SP
	FILE: 15-215

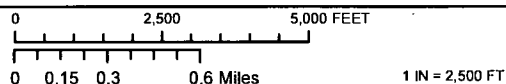


LEGEND

- PIPELINE
- WELL
- WELLPAD
- ▨ TANK BATTERY

CDU #252H FLOWLINE

SECTION: 7 TOWNSHIP: 25 S. RANGE: 32 E.
 STATE: NEW MEXICO COUNTY: LEA SURVEY: N.M.P.M
 W.O. # 15-215 LEASE: COTTON DRAW UNIT



DRIVING DIRECTIONS

IMAGERY

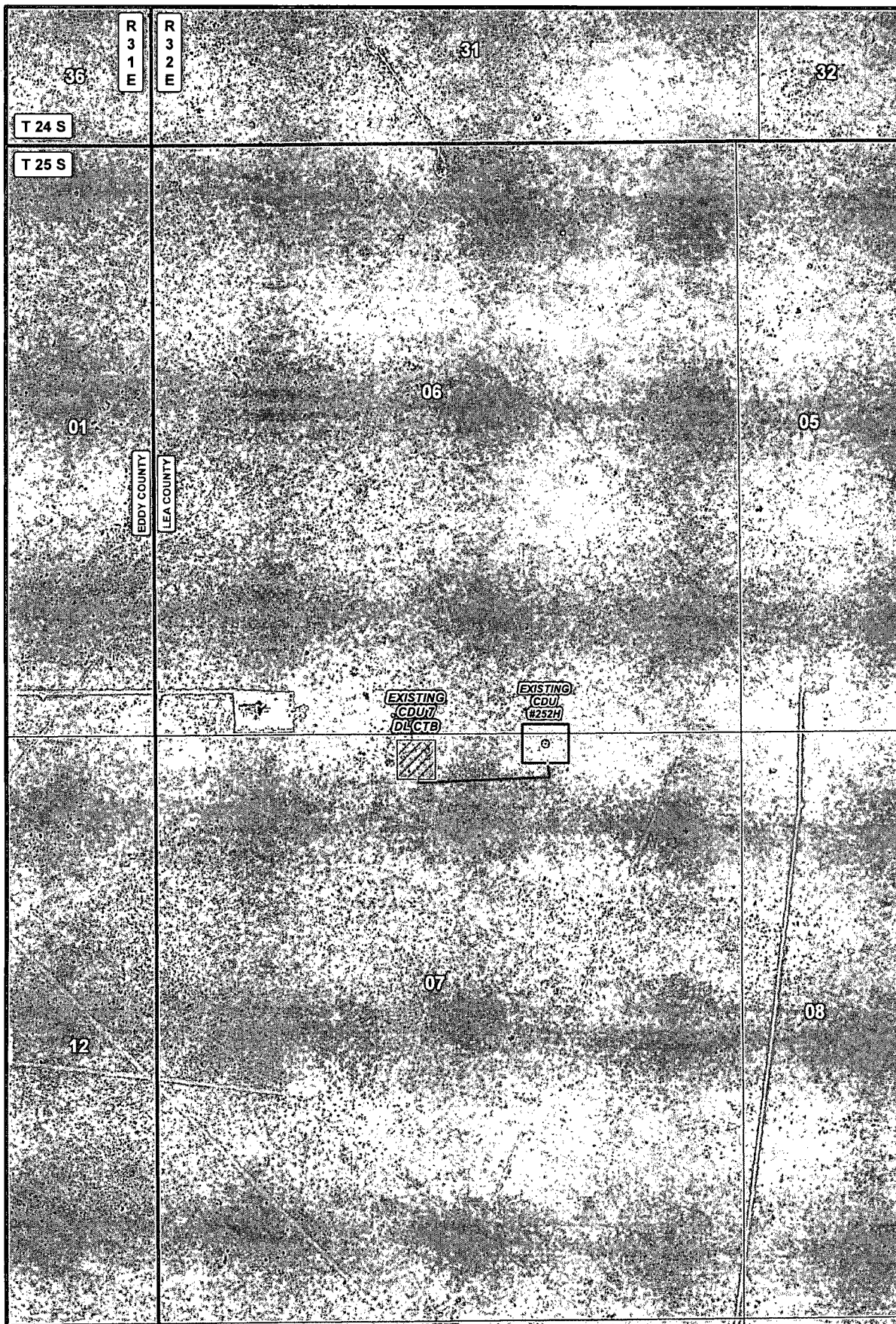
SR

devon
 ENERGY PRODUCTION CO. L.P.





HARCROW SURVEYING, LLC.
 2314 W. MAIN ST, ARTESIA, NM 88210
 PH: (575) 746-2158 FAX: (575) 746-2158
 c.harcrow@harcrowsurveying.com

ORIG: 03/17/2015

PAGE: 2 OF 4

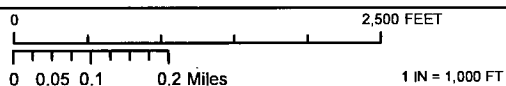


LEGEND

-  PIPELINE
-  WELL
-  WELLPAD
-  TANK BATTERY

CDU #252H FLOWLINE


SECTION: 7 TOWNSHIP: 25 S. RANGE: 32 E.
 STATE: NEW MEXICO COUNTY: LEA SURVEY: N.M.P.M
 W.O. # 15-215 LEASE: COTTON DRAW UNIT




PIPELINE OVERVIEW

IMAGERY

SP.



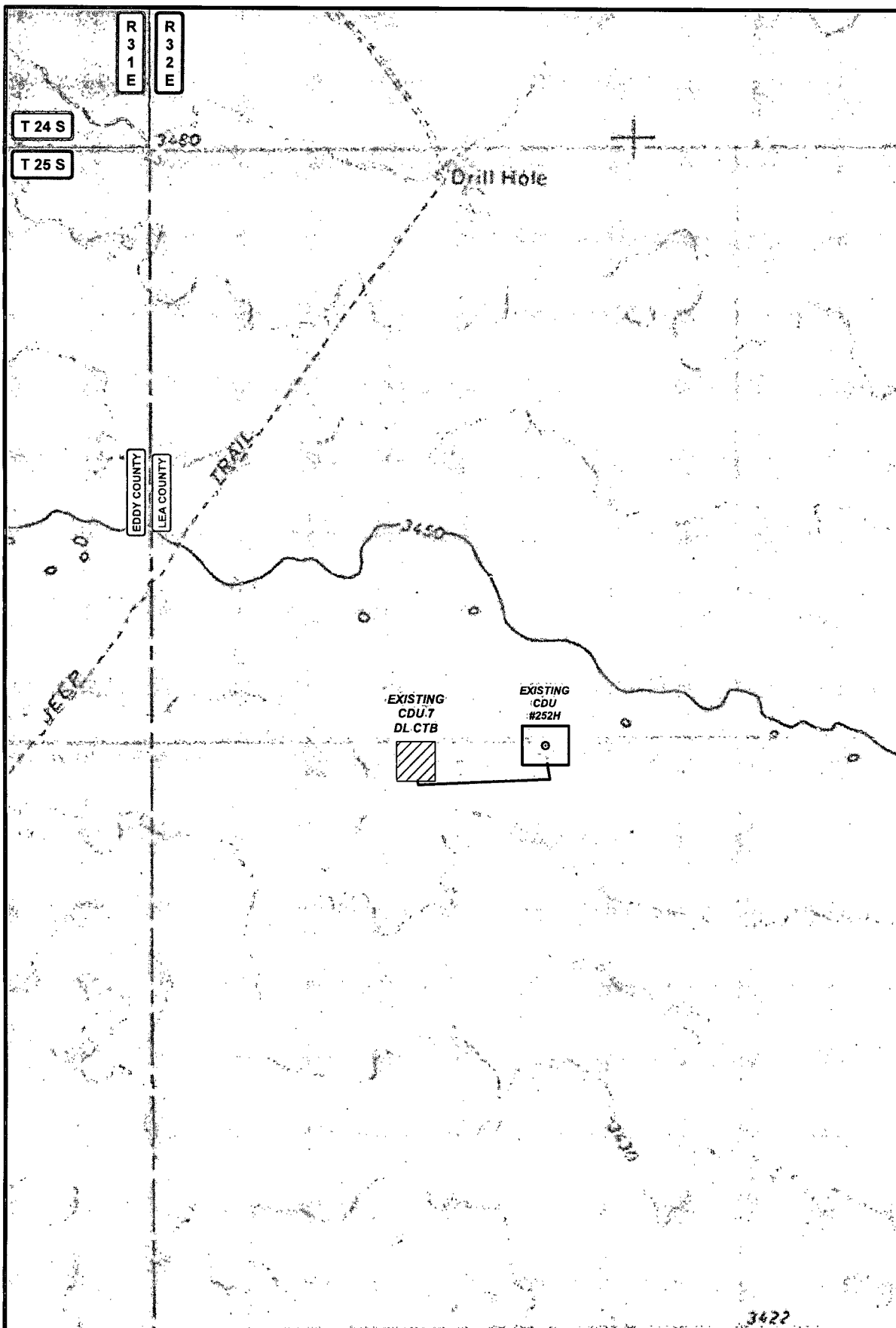
devon
 ENERGY PRODUCTION CO. L.P.



HARCROW SURVEYING, LLC.
 2314 W. MAIN ST, ARTESIA, NM 88210
 PH: (575) 746-2158 FAX: (575) 746-2158
 c.harcrow@harcrowsurveying.com

ORIG: 03/17/2015

PAGE: 3 OF 4



LEGEND PIPELINE WELL WELLPAD TANK BATTERY PRIVATE STATE OF NM US BLM	CDU #252H FLOWLINE		
	SECTION: 7 TOWNSHIP: 25 S. RANGE: 32 E. STATE: NEW MEXICO COUNTY: LEA SURVEY: N.M.P.M. W.O. # 15-215 LEASE: COTTON DRAW UNIT		
	0 2,500 FEET 		
	0 0.05 0.1 0.2 Miles 1 IN = 1,000 FT		
	PIPELINE OVERVIEW LAND STATUS SP:		
 ENERGY PRODUCTION CO. L.P. HARCROW SURVEYING, LLC. 2314 W. MAIN ST, ARTESIA, NM 88210 PH: (575) 746-2158 FAX: (575) 746-2158 c.harcrow@harcrowsurveying.com		ORIG: 03/17/2015 PAGE: 4 OF 4	