

## OGX RESOURCES, LLC.

HYDROGEN SULFIDE CONTINGENCY PLAN  
FOR DRILLING/WORKOVER/FACILITY

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no Private residences in the area but a contingency plan has been orchestrated. OGX RESOURCES, LLC. Will have a company representative available to rig personnel throughout drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.

# OGX RESOURCES, LLC.

## HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

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## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

#### General H2S Emergency Actions:

1. All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
2. If for any reason a person must enter the hazardous area, they must wear a SCBA (Self Contained Breathing Apparatus).
3. Always use the "buddy system"
4. Isolate the well/problem if possible
5. Account for all personnel
6. Display the proper colors warning all unsuspecting personnel of the danger at hand.
7. Contact the Company personnel as soon as possible if not at the location (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of the emergency response agencies and nearby residents.

#### EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1. All personnel will don the self contained breathing apparatus
2. Remove all personnel to the "safe area" (always use the buddy system)
3. Contact company personnel if not on location]
4. Set in motion the steps to protect and or remove the general public to and upwind "safe area" Maintain strict security & safety procedures while dealing with the source.
5. No entry to any unauthorized personnel
6. Notify the appropriate agencies:   City Police – City Street(s)  
  State Police – State Rd.  
  County Sheriff – County Rd.
7. Call the NMOCD

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If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take the necessary steps to protect the workers and the public.

EMERGENCY CALL LIST: (Start and continue until ONE of these people has been contacted)

	OFFICE	MOBILE	HOME
Jeff Birkelbach	432-685-1287	432-694-7880	432-553-0391
Donny Leek		432-634-4862	432-399-4489
Silver Oak Drilling Co,	575-748-1288	575-748-8622 MARK ELDRIDGE	Cell 575-748-8605 EDDIE LaRUE
Rig Phone	575-513-1745		
State Police	Eddy County		575 -743-9718
State Police	Lea County		575-392-5588
Sheriff	Eddy County		575-746-2701
Sheriff	Lea County		
Emergency Medical Service (Ambulance)	Eddy County Lea County	Eunice	911 or 575-746-2701 911 or 575-394-3258
Emergency Response	Eddy County SERC Lea County		575-476-9620
Artesia Police Dept			575-746-5001
Artesia Fire Dept			575-746-5001
Carlsbad Police Dept			575-385-2111
Carlsbad Fire Dept			575-385-3125

OGX RESOURCES, LLC.

HYDROGEN SULFIDE CONTINGENCY PLAN  
FOR DRILLING/WORKOVER/FACILITY

EMERGENCY CALL LIST (CONT.)

Loco Hills Police Dept		575- 677-2349
Jal Police Dept		575- 395-2501
Jal Fire Dept		575- 395-2221
Jal Ambulance		575- 395-2221
Eunice Police Dept		575- 394-0112
Eunice Fire Dept		575- 394-3258
Eunice Ambulance		575- 394-3258
Hobbs Police Dept		575- 397-3365
Hobbs Fire Dept		575- 397-9308
NMOCD	District 1 (Lea, Roosevelt, Curry)	575- 393-6161
	District 2 (Eddy, Chavez)	575- 748-1283
Lea County Information		575- 393-8203
Callaway Safety	Eddy/Lea Counties	575- 392-2973
BJ Services	Artesia	575- 746-3140
	Hobbs	575- 392-5556
Halliburton	Artesia	1-800-523-2482
	Hobbs	1-800-523-2482
Wild Well Control	Midland	432-550-6202
	Mobile	432-553-1166

## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

#### PROTECTION OF THE GENERAL PUBLIC (ROE)

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road with the general public may travel)
- 100 ppm radius of ¼ mile in New Mexico will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture

#### CALCULATIONS FOR THE 100 PPM (ROE) "PASQUILL-GIFFORD EQUATION"

$X = [(1.589) (\text{mole fraction}) (Q\text{-volume in std cu ft})] \text{ to the power of } (0.6258)$

#### CALCULATION FOR THE 500 PPM ROE:

$X = [(.4546) (\text{mole fraction}) (Q - \text{volume in std cu ft})] \text{ to the power of } (0.6258)$

#### Example:

If a well/facility has been determined to have 150 / 500 ppm H<sub>2</sub>S in the gas mixture and the well/facility is producing at a gas rate of 100 MCFPD then:

150 ppm  $X = [(1.589) (.00015) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$   
 $X = 7 \text{ ft.}$

500 ppm  $X = [(.4546) (.0005) (100,000 \text{ cfd})] \text{ to the power of } (.6258)$   
 $X = 3.3 \text{ ft.}$

(These calculations will be forwarded to the appropriate District NMOCD office when Applicable)

#### PUBLIC EVACUATION PLAN:

- Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- A trained person in H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area exposure (ROE). This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. (All monitoring equipment shall be UL approved, for use in class 1 groups A, B, C & D, Division 1, hazardous locations. All monitor will have a minimum capability of measuring H<sub>2</sub>S, oxygen and flammable values.)

## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

- Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- The company supervising personnel shall stay in communication with all agencies through out the duration of the situation and inform such agencies when the situation has been contained and the effected area(s) is safe to enter.

#### PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION:

1. Human life and/or property are in danger.
2. There is no hope of bringing the situation under control with the prevailing conditions at the site.

#### INSTRUCTION FOR IGNITION:

1. Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D" ring style full body, OSHA approved safety harness. Non flammable rope will be attached.
2. One of the people will be qualified safety person who will test the atmosphere for H<sub>2</sub>S, oxygen and LFL. The other person will be the company supervisor; he is responsible for igniting the well.
3. Ignite up wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a  $\pm$  500 ft. range to ignite the gas.
4. Prior to ignition, make a final check with combustible gases.
5. Following ignition, continue with the emergency actions & procedures as before.

## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

#### REQUIRED EMERGENCY EQUIPMENT:

1. **Breathing apparatus:**
  - Rescue packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  - Work/Escapes packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity
  - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
2. **Signage & Flagging:**
  - One color code condition sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - A colored conditioned flag will be on display, reflecting the condition at the site at the time.
3. **Briefing Area:**
  - Two perpendicular areas will be designated by signs and readily accessible.
4. **Wind Socks:**
  - Two windsocks will be placed in strategic locations, visible from all angles.
5. **H2S Detectors & Alarms:**
  - The stationary detector with three sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible at 14 ppm. Calibrate a minimum of every 30 days or as needed. The sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
    - Rig Floor
    - Bell Nipple
    - End of flow line or where well bore fluid are being discharged.
6. **Auxiliary Rescue Equipment:**
  - Stretcher
  - Two OSHA full body harness
  - 100 ft. 5/8 inch OSHA approved rope.
  - 1 – 20# class ABC fire extinguisher
  - Communication via cell phones on location and vehicles on location.



## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

#### USING SELF CONTAINED BREATHING AIR EQUIPMENT (SCBA):

- (SCBA) SHOULD BE WORN WHEN ANY OF THE FOLLOWING ARE PERFORMED:
  - Working near the top or on the top of a tank
  - Disconnecting any line where H<sub>2</sub>S can reasonably be expected
  - Sampling air in the area to determine if toxic concentration of H<sub>2</sub>S can exist
  - Working in areas where over 10 ppm on H<sub>2</sub>S has been detected.
  - At any time there is a doubt as the level of H<sub>2</sub>S in the area.
- All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- Facial hair and standard eyeglasses are not allowed with SCBA.
- Contact lenses are never allowed with SCBA.
- Air quality shall be continuously checked during the entire operation.
- After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
- All SCBA shall be inspected monthly.

#### RESCUE AND FIRST AID FOR VICTIMS OF HYDROGEN SULFIDE (H<sub>2</sub>S) POISONING:

- Do not panic
- Remain calm and think
- Get on the breathing apparatus

## OGX RESOURCES, LLC.

### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

- Remove the victim to the safe breathing area as quickly as possible. Up wind and uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and or CPR, as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two personnel on location shall be trained in CPR and First Aid.

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### HYDROGEN SULFIDE CONTINGENCY PLAN FOR DRILLING/WORKOVER/FACILITY

H<sub>2</sub>S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H<sub>2</sub>S is approximately 20% heavier than air (Sp. Gr = 1.19) (Air = 1) and colorless. It forms an explosive mixture with air between 4.3% and 46%. By volume hydrogen sulfide is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

COMMON NAME	CHEMICAL ABBREV.	SPECIFIC GRVTY.	THRESHOLD LIMITS	HAZARDOUS LIMITS	LETHAL CONCENTRATIONS
Hydrogen Sulfide	H <sub>2</sub> S	1.19	10 ppm 15 ppm	100 ppm/hr	600ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 ppm	N/A	1000 ppm
Chlorine	Cl <sub>2</sub>	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	5%	10%
Methane	CH <sub>4</sub>	0.55	90,000	Combustible @ 5%	N/A

**Threshold Limit:** Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.

**Hazardous Limit:** Concentrations that may cause death.

**Concentrations:** Concentrations that will cause death with short term exposure.

**Threshold Limit:** NIOSH guide to chemical hazards  
(10 ppm)

#### PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATION	PHYSICAL EFFECTS
.001% 10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005% 50 ppm	Can cause some flu like symptoms and can cause pneumonia.
.01% 100 ppm	Kills the sense of smell in 3-15 minutes. May irritate the eyes and throat.
.02% 200 ppm	Kills the sense of smell rapidly. Severely irritates the eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and or death.
.06% 600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.

SURFACE USE PLAN

OGX RESOURCES, LLC.  
COTTONMOUTH "24" FEDERAL COM. # 1H  
UNIT "M" SECTION 24  
T26S-R28E EDDY CO. NM

1. EXISTING AND PROPOSED ROADS:

- A. Exhibit "B" is a reproduction of a County General Hi-way map showing existing roads. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed to BLM specifications.
- B. Exhibit "A" shows the proposed well site as staked.
- C. Directions to location: From Malaga New Mexico take U. S. Hi-way 285 South 14.6 Miles to new lease road on the East side of road, follow road .24 miles East and North to location. Lease road is approximately 2 miles south of Co. Road 726.
- D. Exhibit "C" is a topograph map showing well location with proposed road and existing roads.

2. PLANNED ACCESS ROADS: Approximately 1250' of new road will be constructed.

- A. The access roads will be crowned and ditched to a 14' wide travel surface, within a 30' R-O-W.
- B. Gradient of all roads will be less than 5%.
- C. Turn-outs will be constructed where necessary.
- D. If require new access roads will be surface with a minimum of 4-6" of caliche. this material will be obtained from a local source.
- E. Center line for new roads will be flagged, road construction will be done as field conditions require.
- F. Culverts will be placed in the access road as drainage conditions require. Roads will be constructed to use low water crossings for drainage as required by the topographic conditions.

3. LOCATION OF EXISTING WELLS WITHIN A ONE MILE RADIUS: EXHIBIT "A-1"

- A. Water wells - None known in area
- B. Disposal wells - None known
- C. Drilling wells - None known
- D. Producing wells - As shown on Exhibit "A-1"
- E. Abandoned wells - As shown on Exhibit "A-1"

## SURFACE USE PLAN

OGX RESOURCES, LLC.  
COTTONMOUTH "24" FEDERAL COM. # 1H  
UNIT "M" SECTION 24  
T26S-R28E EDDY CO. NM

4. If on completion this well is a success the operator will complete it as a producer. The operator will construct production facilities and tank battery on location. If power lines will be required to produce this well they may be constructed along existing R-O-W's as shown on Exhibit "C".

### 5. LOCATION AND TYPE OF WATER SUPPLY:

Water will be purchased locally from a commercial source and transported by transport or piped to location by flexible flowlines laid on top of the ground.

### 6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from leveling of the drill site. If additional material will be required it will be obtained from a local source and transported the access roads shown on Exhibit "C". Put topsoil stockpile on the Northeast side of location. V-door Northeast.

### 7. METHODS OF HANDLING WASTE MATERIAL:

- A. In case this well is drilled using a closed mud system the cuttings will be collected in containers and disposed of in a state approved disposal site. Drilling fluids likewise will be contained in tanks and disposed of in state approved disposal sites.
- B. All trash, junk and other waste material will be contained in trash cages or trash bins to prevent scattering. When job is complete all contents will be taken from location and disposed of in a state approved disposal site.
- C. Salts and other mud material remaining after completion of the well will be collected by the supplier and be removed from the location.
- D. Waste water from living quarters will be directed into an onsite sewage treatment unit and when well is completed residue will be removed and disposed of in a state approved disposal site. Porto-johns will be on location for rig crews, completion crews and other contract personnel, this equipment will be properly maintained during drilling and completion. When all operations are complete the residue will be removed and disposed of in a state approved disposal site and the equipment removed by supplier.
- E. Any fluids produced during the completion phase will be separated and the oil sold and water will be disposed of in an approved disposal site.

### 8. ANCILLARY FACILITIES:

- A. No camps, airstrips, or staging areas will be constructed on location.

SURFACE USE PLAN

OGX RESOURCES, LLC.  
COTTONMOUTH "24" FEDERAL COM. # 1H  
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T26S-R28E EDDY CO. NM

9. WELL SITE LAYOUT:

- A. Exhibit "D" shows a generic well site for a well drilled using a closed mud system.

10. PLANS FOR RESTORATION OF SURFACE:

Rehabilitation of the surface will start after the well has been completed, if the well is completed as a producer production facilities may be constructed on the location. What area is not required for the operation of this project will be reclaimed and restored as near as possible to the original grade and vegetation.

If in case this well is unsuccessful and is a dry hole the drilling pad and the access roads will be reclaimed according to specifications provided by The Bureau of Land Management. Caliche or other road material will be removed for the possible use in another location or deposited in an approved reclamation site.

Drill cuttings and mud used to drill this well will be removed and disposed of at an approved disposal site. All trash and any other debris will be collected disposed of as the above.

11. ADDITIONAL INFORMATION:

- A. Topography consists of desert rangelands with a slight dip to the North-East, with drainage in to the Delaware River. Soils consist of tan silty sandy loam, intermixed with gravel.
- B. Vegetation consists of prickly pear, acacia, cholla, sagebrush and various native grasses.
- C. A cattleguard will be placed at the entrance from U. S. Hi-way 285 and the location will be fenced on Three sides of the location.
- D. The surface and the minerals are owned by The U. S. Department of Interior and is administered by The Bureau of Landmanagement. Surface is used for livestock grazing.
- E. An archaeological survey has been conducted and is on file in the Carlsbad Field office of the BLM. There are no dwellings within one mile of location.

## Operator 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 the 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.

### OPERATOR'S REPRESENTATIVES:

#### BEFORE CONSTRUCTION

TIERRA EXPLORATION, INC  
P. O. BOX 2188  
HOBBS, NEW MEXICO 88241  
JOE JANICA 575-391-8503  
CELL 575-390-1598

#### DURING & AFTER CONSTRUCTION

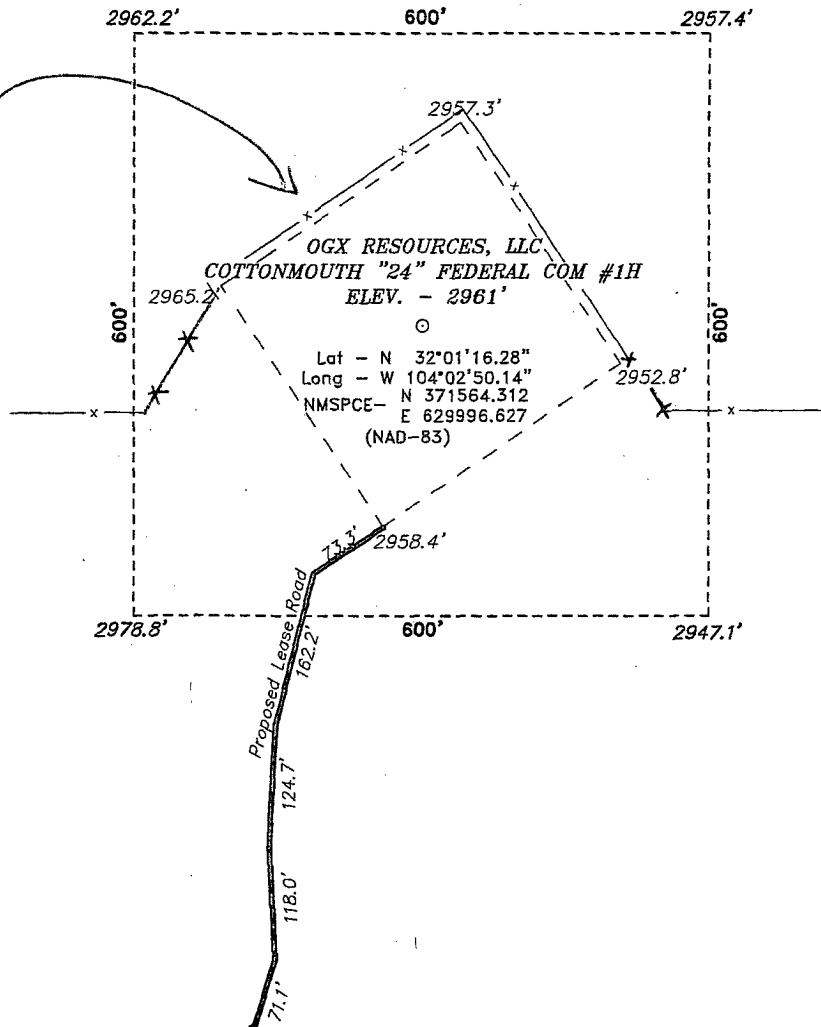
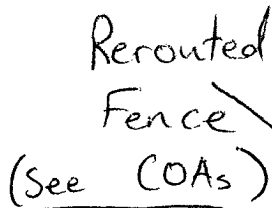
OGX RESOURCES, LLC.  
P. O. BOX 2064  
MIDLAND, TEXAS 79701  
JEFF BIRKELBACH 432-685-1287  
CELL 432-553-0391

NAME Joe T. Janica

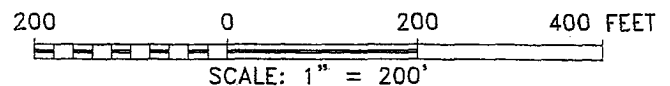
TITLE Permit Eng.

DATE 11/29/10

SECTION 24, TOWNSHIP 26 SOUTH, RANGE 28 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



TEN  
12/9/10



Directions to Location:

FROM THE JUNCTION OF US HWY 285 AND CO. RD.  
726, GO SOUTHEAST ON US HWY 285 FOR APPROX.  
2.0 MILES TO PROPOSED LEASE ROAD.

**BASIN SURVEYS** P.O. BOX 1786—HOBBS, NEW MEXICO

W.O. Number: 23683

Drawn By: JMSMALL

Date: 11-11-2010

Disk: JMS - 23683WELL

**OGX RESOURCES, LLC**

REF: COTTONMOUTH "24" FEDERAL COM #1H / WELL PAD TOPO

THE COTTONMOUTH "24" FEDERAL COM #1H LOCATED  
105' FROM THE SOUTH LINE AND 745' FROM THE WEST LINE

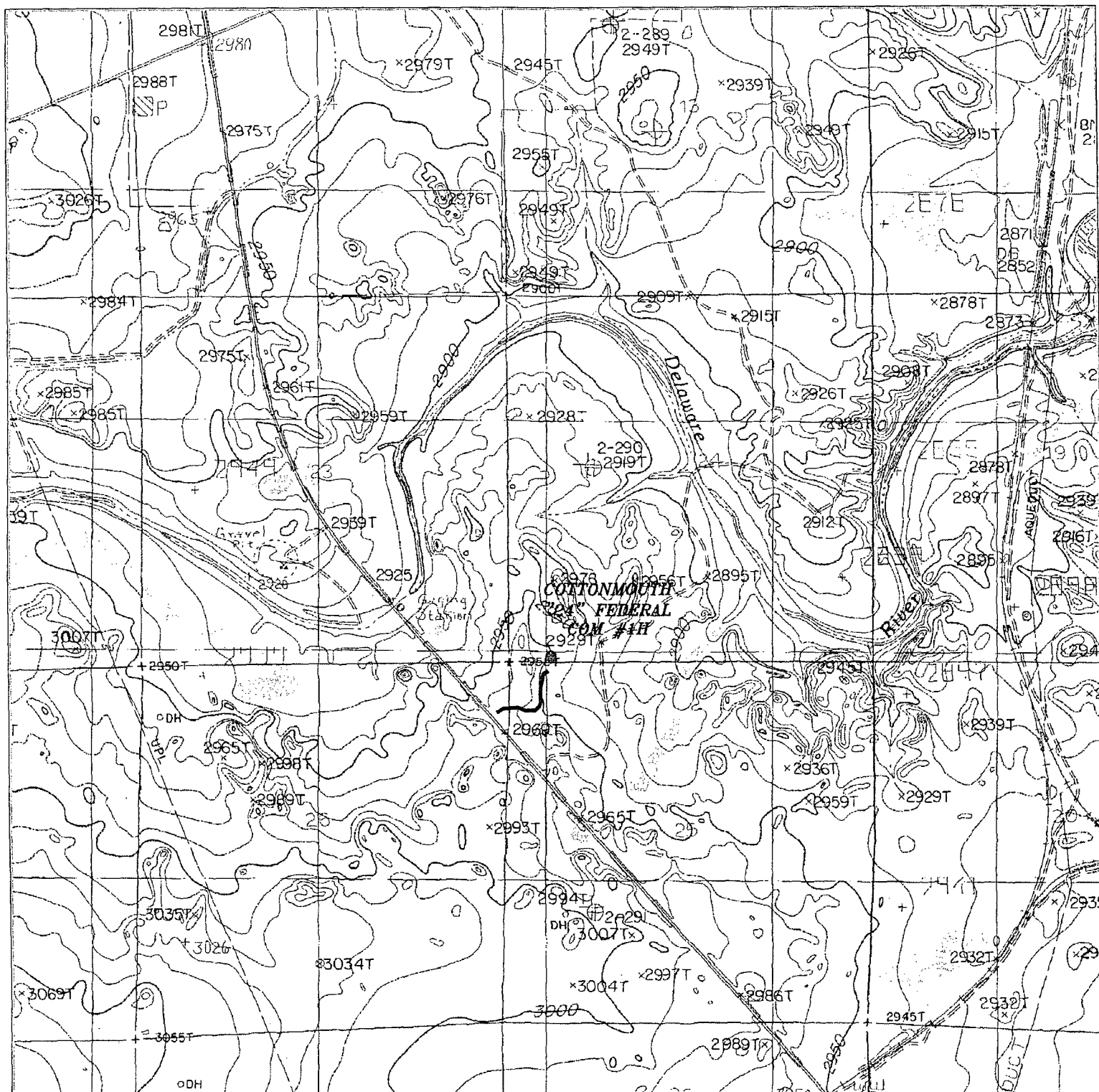
OF SECTION 24, TOWNSHIP 26 SOUTH, RANGE 28 EAST,

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

Survey Date: 11-10-2010

Sheet 1 of 1 Sheets





# COTTONMOUTH "24" FEDERAL COM #1H

Located 105' FSL and 745' FWL

Section 24, Township 26 South, Range 28 East,  
N.M.P.M., Eddy County, New Mexico.

**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  
basinsurveys.com

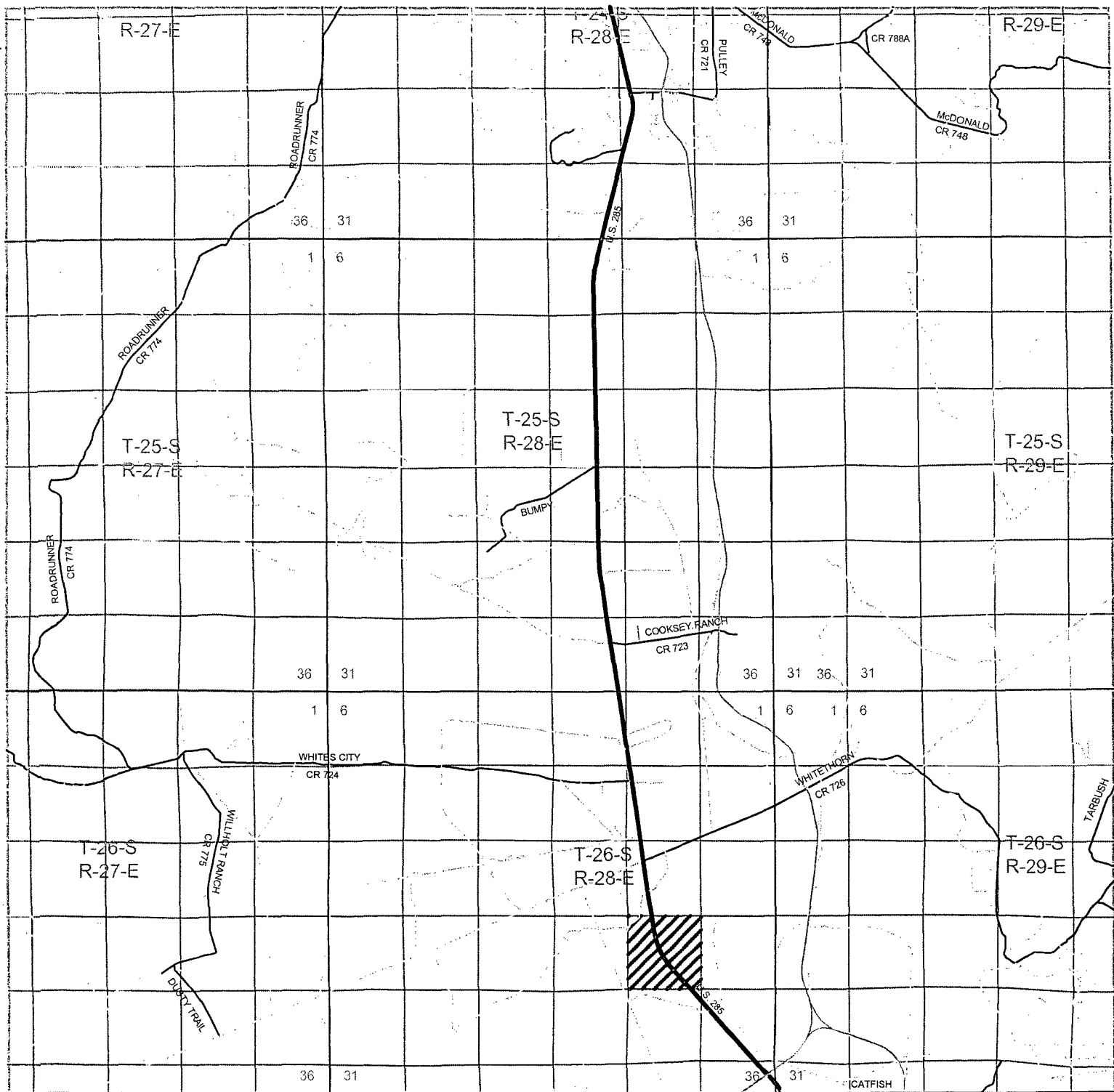
W.O. Number: JMS 23683

Survey Date: 11-10-2010

Scale: 1" = 2000'

Date: 11-11-2010

**OGX**  
**RESOURCES,**  
**LLC**



# COTTONMOUTH "24" FEDERAL COM #1H

Located 105' FSL and 745' FWL

Section 24, Township 26 South, Range 28 East,  
N.M.P.M., Eddy County, New Mexico.



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

W.O. Number: JMS 23683

Survey Date: 11-10-2010

Scale: 1" = 2 Miles

Date: 11-11-2010

OGX  
RESOURCES,  
LLC



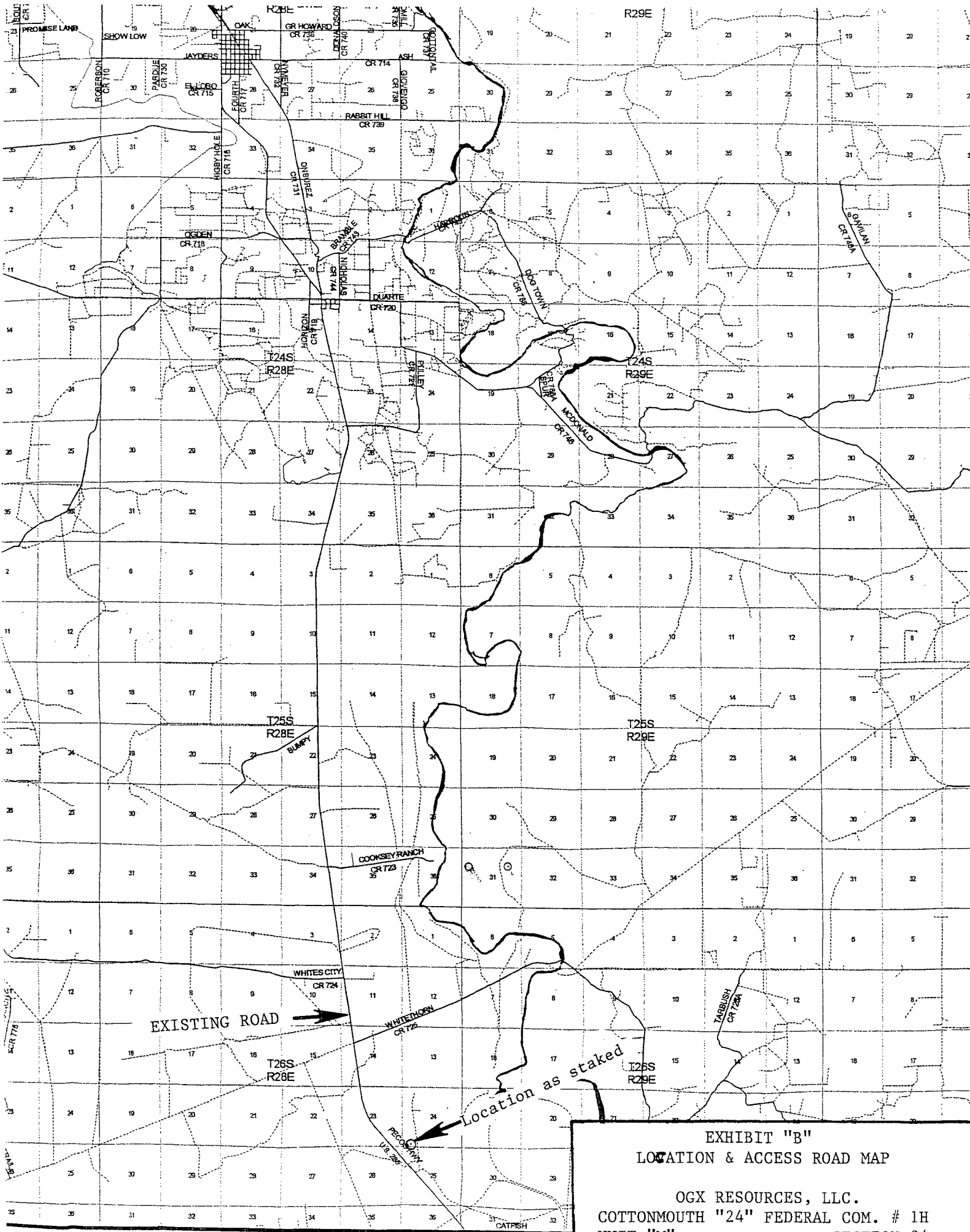


EXHIBIT "B"  
LOCATION & ACCESS ROAD MAP

OGX RESOURCES, LLC.  
COTTONMOUTH "24" FEDERAL COM. # 1H  
UNIT "M" SECTION 24  
T26S-R28E EDDY CO. NM

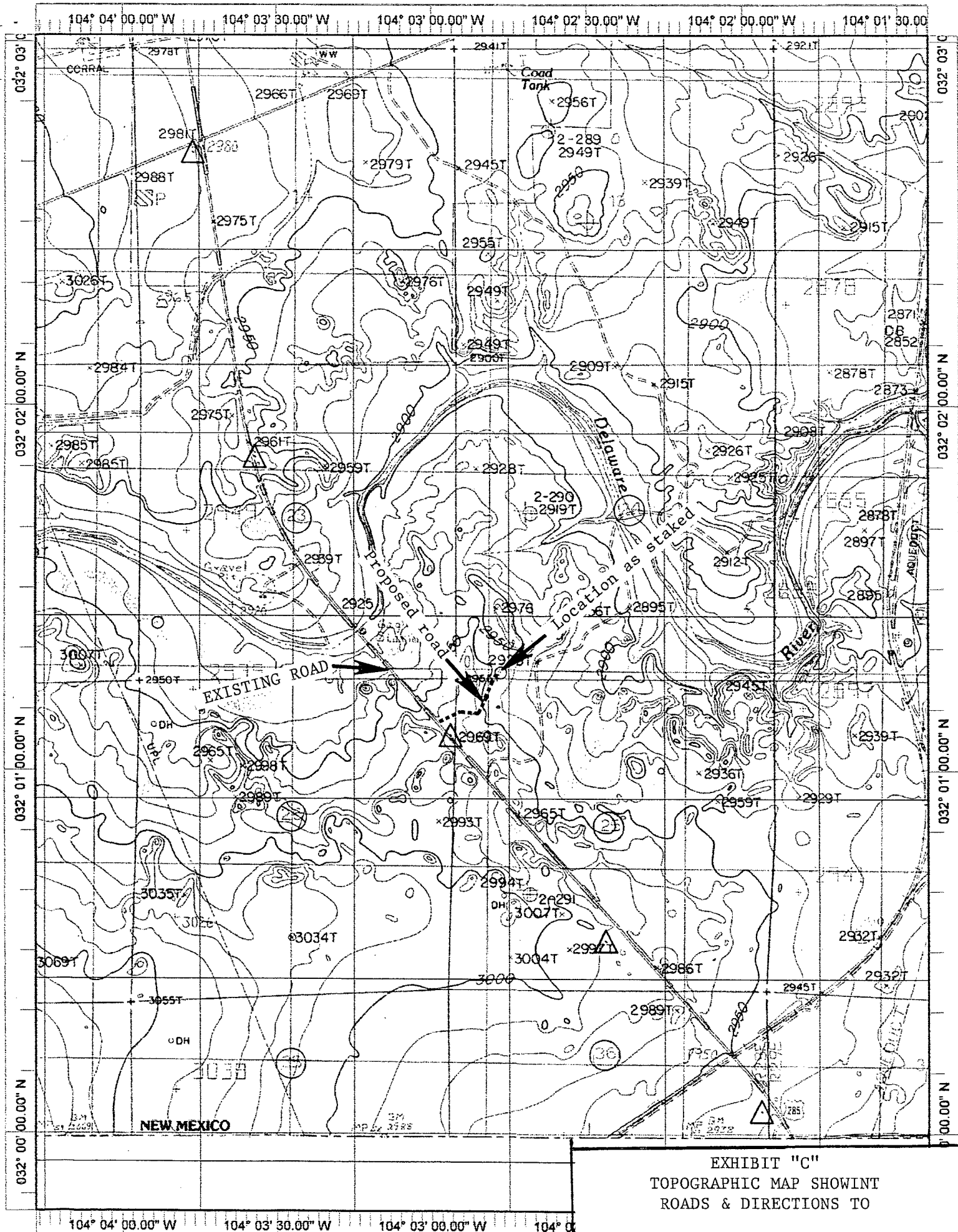


EXHIBIT "C"  
TOPOGRAPHIC MAP SHOWING  
ROADS & DIRECTIONS TO

OGX RESOURCES, LLC.  
COTTONMOUTH "24" FEDERAL COM. # 1H  
UNIT "M" SECTION 24  
T26S-R28E EDDY CO. NM