If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

D-06-52

Form 3160-3 (April 2004) UNITED STATES	FORM APPROVED OMB No. 1004-0137 Expires March 31, 2007						
DEPARTMENT OF THE IN BUREAU OF LAND MANA	5. Lease Serial No. NM-LC-0585						
APPLICATION FOR PERMIT TO D	6. If Indian, Allotee or Tribe Name			-			
la. Type of work: DRILL REENTER	302004		7 If Unit or CA Agr Ballard Gray	eement, l burg Sa	Name and I	No. N// Unit	NG2914
lb. Type of Well: Voil Well Gas Well Other	Single Zone Multip	le Zone	8. Lease Name and BGSAU #11-3				
2. Name of Operator Tandem Energy Corporation 2.2			9. API Well No.				-
-	b. Phone No. (include area code)		30 - 015 10. Field and Pool, or			ì	_
P.O. Box 1559 Midland, Tx 79707-1559	432-686-7136	520	Loco Hills Qu	•	•		
4. Location of Well (Report location clearly and in accordance with any	State requirements!	XOC	11. Sec., T. R. M. or I	3lk. and S	urvey or A	rea	-
At surface 1770' FNL, 1090' FEL At proposed prod. zone SUBJECT TO LIKE		TE.	Section 6, Tw	np. 18-S	s, Rng. 29)-E	
14. Distance in miles and direction from nearest town or post office*			12. County or Parish	·	13. Sta		•
6 miles SW Loco Hills, NM 15. Distance from proposed* 15.50' from W unit line	16. No. of acres in lease	17 Specie	Eddy Ig Unit dedicated to this	well		NM	-
location to nearest property or lease line, ft.	16. No. of acres in lease	I/. Spacii	R!	ĔĊEI	۸ËÙ	•	
(Also to nearest drig. unit line, if any)	2580	20	W	AR 0 (3 2006		•
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 764' (# 11-2)	19. Proposed Depth 3200'		BIA Bond No. on file M	P.W.	1759	kA.	
	22. Approximate date work will star	t*	23. Estimated duration	on			-
3610'	02/25/2006 24. Attachments		90 days				-
The following, completed in accordance with the requirements of Onshore		tached to th	ie form:		_		-
Well plat certified by a registered surveyor. A Drilling Plan.			ns unless covered by an	ı existing	bond on	file (see	
3. A Surface Use Plan (if the location is on National Forest System L SUPO shall be filed with the appropriate Forest Service Office).		specific inf	ormation and/or plans a	s may be	required t	y the	
25. Signature	Name (Printed/Typed) Toben Scott			Date			-
Title VP-Operations	1 oben Scott			<u> </u>			
Approved by (Signature) /C! James Stovall	Name (Printed/Typed)	nes S	tovall	Date	MAR	0 1	2006
Title TIMEFIELD MANAGER Application approval does not warrant or certify that the applicant holds	Office CADISE	AD	EIEID OF	FICE			
Application approval does not warrant or certify that the applicant holds conduct operations thereon. Conditions of approval, if any, are attached.			ject lease which would			to	_

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

*(Instructions on page 2)

Witness Surface Casing

Central Centralied Water Broke

APTROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED District 1 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District # 1000 Rio Brazos Rd., Aztec, NM 87410 District IV

State of New Mexico Energy, Minerals & Natural Resources Department OIL CONSERVATION DIVISION 1220 South St. Francis Dr. Santa Fe, NM 87505

Form C-102 Revised October 12, 2005 Submit to Appropriate District Office State Lease- 4 Copies Fee Lease-3 Copies

WO# 060106WL-j (CDG)

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Drilling Plan

Attachment to Form 3160-3
Tandem Energy Corporation
Ballard Grayburg San Andres Unit (BGSAU)
Eddy County, New Mexico

Tract	Well #	Legals		Gr. Elev.
6	6-4	SW/SE 6-18S-29E	80' FSL, 2540' FEL	3599'
6	6-5	SE/SE 6-18S-29E	70' FSL1025' FEL	3588'
12	12-3	NW/NW 8-18S-29E	150' FNL 225' FWL	3577'
12	12-4	NW/NW 8-18S-29E	1125' FNL 115' FWL	3556'
12	12-5	NE/NW 8-18S-29E	253' FNL 1068' FWL	3567 '
15	15-10	SW/NW 8-18S-29E	2350' FNL 200' FWL	3550'
11	11-3	SE/NE 6-18S-29E	1770' FNL 1090' FEL	3610'
23	23-5	SE/SW 5-18S-29E	1200' FSL 1475' FWL	3563'

1. Geologic Name of Surface Formation:

Permian

2. Estimated Tops of Important Geologic Formations:

<u>Formation</u>	Top
Top of Salt	+/- 325'
Base of Salt	+/- 725'
Yates	+/- 900'
Seven Rivers	+/- 1250'
Queen	+/- 1875'
Grayburg	+/- 2275'
Loco Hills	+/- 2350'
Top of Unit	+/- 2400'
Metex	+/- 2450'
Premier	+/- 2575'
San Andres	+/- 2650'
TD	+/- 3150'

3. Estimated Depths of Anticipated Fresh Water, Oil, or Gas

Water: None Anticipated Oil: 2475'-3100'

Gas: None Anticipated

No other formations are expected to yield oil, gas, or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 8-5/8" casing at

7. Logging, Testing and Coring Program:

- A. No DST's are planned.
- B. The open hole electrical logging program will be: GR/DLL/CAL/DSN
- C. No coring program is planned.
- D. No additional testing will be initiated subsequent to setting the 5-1/2" production casing.

8. Abnormal Pressures, Temperatures, and Potential Hazards

No abnormal pressures or temperatures are foreseen. The anticipated bottomhole temperature at total depth is 110 degrees and maximum bottom pressure is 1500 psi. No major loss circulation intervals have been encountered in adjacent wells. Small quantities of H2S are associated with the Queen, Grayburg and San Andres formations in this area. An H2S plan is attached.

9. Anticipated Starting Date and Duration of Operations

Barry Hunt of the Carlsbad, New Mexico BLM office has performed the onsite inspection of the proposed pad site of this location. A cultural resources examination will be submitted by Boone Archaeological Services to the BLM Carlsbad, New Mexico office.

Road and location preparation will not be undertaken until approval has been received from the BLM. If approved, this well will be drilled as part of a development project. The anticipated spud date for this project is approximately February 25, 2006. The eight well package is anticipated to take 80 days. If the wells are deemed productive, completion operations could require an additional 30 days.

+/- 400' and circulating cement back to surface. The Grayburg and San Andres intervals will be isolated by setting 5-1/2" csg. to TD of +/- 3200' and circulating 25' into top fm.
Rustler (355) cement to surface.

4. Casing Program:

Hole Size	Interval	Casing Size	Weight	<u>Grade</u>	Type
12-1/4"	0'-400'310		24#	K-55	ST&C
7-7/8"	0'-TD	5-1/2"	15.50#	J-55	ST&C

Cementing Program:

8-5/8" Surface Casing: Cement to surface with 150 sx Lite (35% Poz, 65% Class "C", 6% gel) with 2% CaCl and ¼ lb/sx Cellophane flakes + 100 sx Class "C" with 2% CaCl and ¼ lb/sx Cellophane flakes.

5-1/2" Production Casing: Cement to surface with 650 sx Lite (35% Poz, 65% Class "C", 6% gel) with 5 lb/sx salt and ¼ lb/sx Cellophane flakes + 165 sx Class "C" ¼ lb/sx Cellophane flakes.

The above cement volumes could be revised pending the caliper measurement from the open hole logs. The top of cement is designed to reach surface.

5. Minimum Specifications for Pressure Control:

The blowout prevention equipment (BOP) shown in exhibit #1 will consist of a 3K (3000 psi working pressure) annular preventer. This unit is air operated with a backup hand pump. The BOP will be installed on top of the 8-5/8" surface casing and utilized continuously until total depth is reached. As per BLM Drilling Operations Order #2, prior to drilling out the 8-5/8" casing shoe, the BOP will be function tested and pressured to 1000 psi with the rig pump.

The annular preventer will be operated and checked each 24 hour period and each time that the drill pipe is pulled out of the hole. These function tests will be documented on the daily drillers log. Tandem Energy requests an exception to the minimum BOP equipment due to the shallow depth, low anticipated reservoir pressures, and extensive drilling knowledge of this lease.

6. Types and Characteristics of Proposed Mud Systems:

The surface holes on all subject wells will be drilled with fresh water. The same fresh water will be used to drill out of surface and allowed to gain chlorides through the salt section. Each new hole will start with a small volume of fresh water, and then cut brine from the previous well will be transferred over and re-used on all successive wells after the surface hole has been drilled.

Depth //	Type	Weight	Viscosity	Water Loss
0'-4 90' 310'	Fresh water	8.3-8.8	28-36	No control
400'-TD'	Cut brine	8.8-9.2	28-32	No control
310				



Surface Use and Operation Plan

Attachment to Form 3160-3
Tandem Energy Corporation
Ballard Grayburg San Andres Unit (BGSAU)
Eddy County, New Mexico

Trac	t Well#	Legals		Gr. Elev.
6	6-4	SW/SE 6-18S-29E	80' FSL, 2540' FEL	3599'
6	6-5	SE/SE 6-18S-29E	70' FSL1025' FEL	3588'
12	12-3	NW/NW 8-18S-29E	150' FNL 225' FWL	3577'
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11	11-3	SE/NE 6-18S-29E	1770' FNL 1090' FEL	3610'
23	23-5	SE/SW 5-18S-29E	1200' FSL 1475' FWL	3563'

1. Existing Roads:

- A. The well sites and elevation plats for the above proposed wells are reflected in Exhibit 2. The wells were staked by Terry Asel Surveying of Hobbs, New Mexico.
- B. All roads to location are depicted in Exhibit #3. No more than 600' of new road will have to be constructed for any one location.
- C. Directions to locations: From Artesia, New Mexico, go east on Highway 82 for 14 miles to State Road 360 and go approximately 5.1 miles. Turn left (East) onto caliche road at the BGSAU sign. Go approximately 0.7 miles to water plant. Follow Exhibit #3 map to each location.

2. Proposed Access Roads:

Exhibit #3 shows the new access roads to be constructed from the existing lease roads. They will be constructed as follows.

- A. The maximum width of the road will be fifteen feet.
- B. It will be crowned and made of 6 inches of rolled and compacted caliche. Water will be deflected, as necessary, to avoid accumulation and prevent surface erosion.
- C. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest to the location.

- C. Surface material will be native caliche. This material will be obtained from a BLM approved pit nearest to the location.
- D. Grades will be no more than 8%.
- E. No cattle guards, grates, or fence cuts will be required.
- F. No turnouts are planned.

3. Location of Existing Wells:

Exhibit #4 shows all active wells within the unit offsetting the planned new-drills.

4. Location of Existing and/or Proposed Facilities:

- A. The production facilities will be located at Tandem's central tank battery.
- B. In the event that the wells are found to be productive, they will be added to the facilities shown in Exhibit #5.
- C. The wells will be operated by means of electric motors.
- D. If the wells are productive, rehabilitation plans are as follows:
 - 1. The reserve pit will be back-filled after the contents of the pit are dry (within 120 days of completion, weather permitting)
 - 2. Caliche from unused portions of the drill pad will be removed. The original top soil from the well sites will be returned to the location. The drill site will then be contoured to the original source.

5. Location and Type of Water Supply:

All wells will be drilled with fresh water and cut brine mud systems (outlined in drilling program). The fresh water will be obtained from commercial sources and pumped through poly line to each location. No water wells will be drilled on any location.

6. Source of Construction Materials:

All caliche utilized for the drilling pad and proposed access roads will be obtained from an exiting BOM approved pit. All roads will be constructed of 6" rolled and compacted caliche.

7. Methods of Handling Water Disposal:

- A. Drill cuttings will be disposed into the reserve pit.
- B. Drilling fluids will be contained in the reserve pits. The reserve pit will contain excess drilling fluid, or fluid from the well during drilling, cementing, and completion operations. The reserve pits will be three rectangular 90' x 10' x 5' pits.
- C. The reserve pits will be fenced on four sides throughout drilling operations and will be totally isolated upon removal of the rotary rig. The pit will be lined using a 12 mil plastic to minimize loss of drilling fluids.
- D. Water produced from the well during completion operations will be disposed into a steel tank or reserve pit, if volumes prove excessive. After placing the well on production through the production facilities, all water will be collected in tanks and injected into the water injection system. Produced oil will be separated into steel stock tanks and sold.

- E. Garbage, trash, and waste paper produced during drilling operations will be collected in a contained trailer and disposed at an approved landfill. All waste material will be contained to prevent scattering by the wind. All water, fluids, salt or other chemicals will be disposed into the reserve pit. No toxic or hazardous chemicals will be generated by this operation.
- F. All waste material will be removed within 30 days after the well is either completed or abandoned. The reserve pit will be completely fenced until it has dried. At the point the reserve pit is found sufficiently dry, it will be backfilled and reclaimed. The portion of the drilling pad used by the production equipment (pumping unit) will remain in use. If the well is deemed non-commercial, only a dry hole marker will remain.

8. Ancillary Facilities:

No campsite or other facilities will be constructed as a result of this well.

9. Well Site Layout:

- A. The drill pad is shown on exhibit #6. Approximate dimensions of the pad, pits, and general location of the rig equipment are displayed. Top soil, if any found will be stored adjacent to the pad until reclamation efforts are undertaken. Only modest cuts will be necessary to build the pads which will be covered with 6" of compacted caliche.
- B. No permanent living facilities are planned, but temporary trailers for the tool pusher, and mud loggers may be on location throughout drilling operations.
- C. The reserve pit and earthen pits will be lined using plastic sheeting of 12 mil thickness.

10. Plans for Restoration of Surface:

- A. After concluding the drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original pit or used for other drilling locations or access roads. The road will be reclaimed as directed by the BLM. The reserve pit area will be broken out and leveled after drying to a condition where these efforts are feasible. The original top soil will again be returned to the pad and contoured, as close as possible, to the original topography.
- B. The pit lining will be buried or hauled away in order to return the location and road to their pristine nature. All pits will be filled and location leveled, weather permitting, within 120 days after abandonment.
- C. The location and road will be rehabilitated as recommended by the BLM.
- D. The reserve pit will be fenced on four sides throughout drilling operations and will remain in place when the rotary rig is removed to precluded endangering wildlife. The fencing will be in palace until the pit is reclaimed.
- E. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days after the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. The

unused area of the drill pad will be contoured, as close as possible to match the original topography.

11. Surface Ownership

Tract 6, 11, 12, & 15 well sites are owned by Bogle, Ltd.

The tract 23 well site (and all of S/2 of section 5) is on BLM surface and minerals and has an undetermined surface lessee.

Tract 26 well sites are on private surface and minerals.

12. Other Information

- A. The area surrounding the well site is gypsiferous and supportive of desert scrub and grassland formation. The vegetation is moderately sparse with desert scrub.
- B. There are no known active water wells within a 1 mile radius of any wellsite. The nearest permanent water is a water stock tank located approximately near the southeast edge of the unit.
- C. A cultural resources examination will be submitted by Boone Archaeological Services to the BLM office in Carlsbad, New Mexico.

13. Lessee's and Operators Representative

The Tandem Energy Corporation representative responsible for ensuring compliance of the surface use plan is

Toben Scott VP-Operations

(o) 432-686-7136 ext. 1102

(m) 432-528-3127

e-mail: tscott@tandem-energy.com

Tandem Energy Corp. P.O. Box 1559 Midland, TX 79702-1559

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill sites and access roads, that I am familiar with the conditions that presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; an that the work associated with the operations proposed herein will be performed by Tandem Energy Corporation and its contractors under which it is approved.

Toben Scott—VP Operations

Date: 1/23/06



PATTERSON DRILLING COMPANY, LP

A LIMITED PARTNERSHIP TANDEM ENERGY CORPORATION MIXON DRILLING RIG # 11 Blowart Preventer Haskup 3K Amular BOP 8-5/8" Larkin Bradenhead ChokeLine Kill Line

Attachment to Exhibit #1 Attachment to Form 3160-3 Tandem Energy Corporation Ballard Grayburg San Andres Unit (BGSAU) Eddy County, New Mexico

- 1. The drilling nipple (bradenhead) will be male-type and screwed into the API drifted and tested 8-5/8" csg. collar. It can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.
- 2. Blowout preventer and all associated fittings will be in operable condition to withstand 1000 psi surface shut-in pressure. This pressure assumes a 1500 psi max bottomhole pressure less a partially evacuated hole with a pressure gradient of 0.22 psi/ft. The BOP and surface csg. will be tested hydrostatically to 1000 psi prior to drilling out the surface shoe.
- 3. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.
- 4. Rig air supply and backup hand pump to operate the annular BOP will be properly installed and tested for safe operation.
- 5. All BOP equipment will meet API standards.

ENERGY SITE FACILITY DIAGRAM
P.O. DRAWER 130
ARTESIA.NEW MEXICO 38211-0130
BALLARD GRAYBURG-SAN ANDRES
UNIT NO. 3810123990
SW:/A NW1/A, 35C, 3 7133-R236
EDOY COUNTY.NEW MEXICO
LSE. PLC-061702 -1. On sales by last unit from take military, On lates 37 (ast only from fand #117087, Leak Aventyments)

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Transem energy

Hydrogen Sulfide Drilling Operations Plan

A. Hydrogen Sulfide Training

All rig crews and company personnel will receive training from a qualified instructor in the following areas prior to penetrating any hydrogen sulfide bearing formations during drilling operations.

- 1. The hazards and characteristics of hydrogen sulfide (H2S)
- 2. The proper use and maintenance of the H2S safety equipment and of personal protective equipment to be utilized at the location such as H2S detection monitors, alarms, and warning systems, and breathing equipment. Briefing areas and evacuation procedures will also be discussed and established.
- 3. Proper rescue techniques and procedures will be discussed and established.

In addition to the above, supervisory personnel will be trained in the prevention of oil and gas well blowouts in accordance with Minerals Management Service Standards Subpart -0-250-212.

Prior to penetrating any known H2S bearing formation, H2S training will be required at the rig sight for all rig crews and company personnel that have not previously received such training. This instruction will be provided by a qualified instructor with each individual being required to pass a 20 question test regarding H2S safety procedures. All contract personnel employed on an unscheduled basis will be required to have received appropriate H2S training.

This Hydrogen Sulfide Drilling and Operations Plan shall be available at the well site during drilling operations.

B. H2S Safety Equipment and Systems

All H2S safety equipment and systems will be installed, tested and operational when drilling operations reach a depth of approximately 500' above any known or probable H2S bearing formation. The safety systems to be utilized during drilling operations are as follows:

- 1. Well Control Equipment
 - a. 3K annular BOP with a properly sized closing unit.
- 2. H2S Detection and Monitoring Equipment

- a. Three H2S detection monitors will be placed in service at the location. One monitor will be placed near the bell nipple on the rig floor, one will be placed at the rig substructure, and one will be at the working mud pits or shale shaker. This monitoring system will have warning lights and audible alarms that will alert personnel when H2S levels reach 10 ppm.
- 3. Protective Equipment for Essential Personnel

Protective equipment will consist of the following:

- a. Two five minute escape packs located at strategic points around the rig.
- 4. Visual warning system will consist of the following:
 - a. One wind direction indicator
 - b. One condition/warning sign which will be posted on the road providing direct access to the location. The sign will contain lettering of sufficient size to be legible at a reasonable distance from the immediate location. The sign will inform the public that a hydrogen sulfide gas environment could be encountered at the location.

5. Mud Program

a. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight and safe drilling practices (for example, keeping the hole filled during trips) will minimize the hazards when drilling in H2s bearing formations.

6. Metallurgy

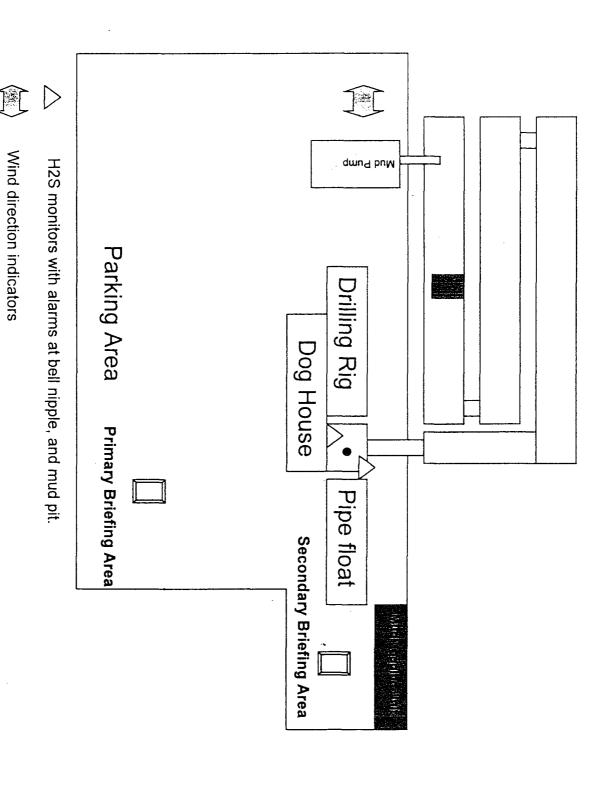
a. All drill strings, casings, tubing, wellhead, blowout preventers, drilling spools, kill lines, and valves shall be suitable for H2S service.

7. Communication

a. Cellular telephone communication will be available by and between rig crews and company supervision.

C. Diagram of Drilling Location

1. Attached is a diagram representing a typical location layout as well as the location of H2S monitors, briefing areas, and wind direction indicators.

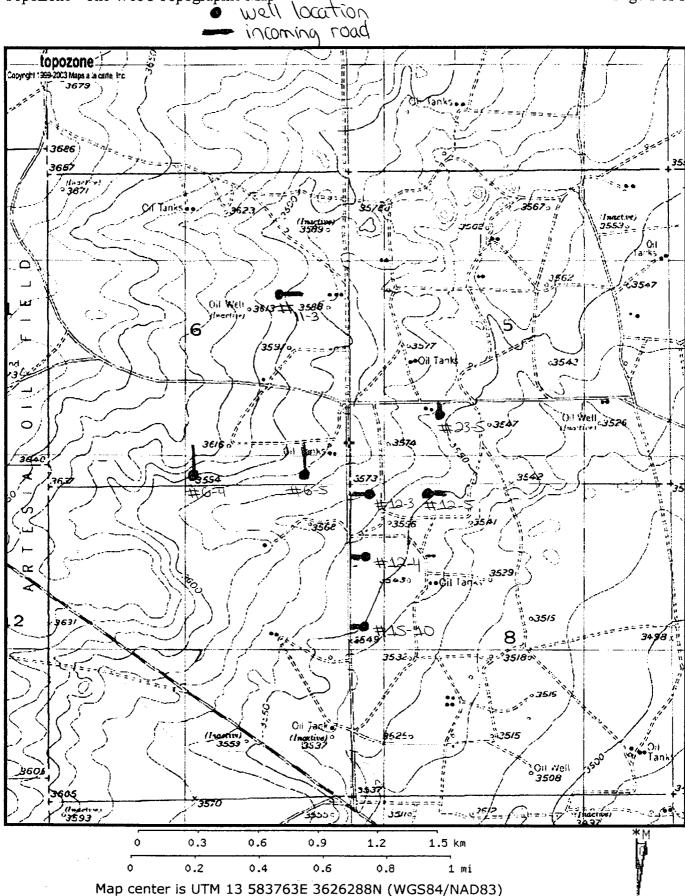


Safe briefing areas with caution signs and protective breathing equipment



PATTERSON DRILLING COMPANY, LP

A LIMITED PARTNERSHIP TANDEM ENERGY Rig # 11 occition & Footprint Dike 20' (Bladed Only) S B B



Red Lake SE quadrangle - Elevation 3,585.7 ft / 1,092.9 m (USGS NED)

Projection is UTM Zone 13 NAD83 Datum

M=8.857

G=0.484

CONDITIONS OF APPROVAL - DRILLING

Operator's Name:

Tandem Energy Corporation

Well Name & No.

BGSAU #11-3

Location:

1770' FNL, 1090' FEL, Section 6, T. 18 S., R. 29 E., Eddy County, New Mexico

Lease:

LC-058582

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County in sufficient time for a representative to witness:

- A. Well spud
- B. Cementing casing: 8-5/8 inch 5-1/2 inch
- C. BOP tests
- 2. A Hydrogen Sulfide (H2S) Drilling Operation Contingency Plan shall be activated prior to drilling into the **Queen** formation. A copy of the plan shall be posted at the drilling site.
- 3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15-day time frame.
- 5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.

II. CASING:

- 1. The <u>8-5/8</u> inch surface casing shall be set at <u>approximately 310 feet or 25 feet into the top of the Rustler Anhydrite</u> and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.
- 2. The minimum required fill of cement behind the <u>5-1/2</u> inch production casing is <u>to reach at least 500 feet above the</u> top of the uppermost hydrocarbon productive interval.

III. PRESSURE CONTROL:

- 1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 8-5/8 inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- 2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 2000 psi.
- 3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.

A waiver to test the BOP 1000 psi with the rig pump is approved.

- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.