N.M. Oil Cons. DIV-Dist. 2 1301 W. Grand Avenue

Form 3160-3 (August 1999)

A-N-29

UNITED STATES DEPARTMENT OF THE INTERIOR **BUREAU OF LAND MANAGEMENT**

Artesia, 读

OMB No. 1004-0136 Expires November 30, 2000

5. Lease Serial No.

MN	-921	45

ADDI ICATION	FOR PERMIT TO		ENTED
APPLICA HON	FOR PERMIT IC) DRILL OR RE	ENIEK

APPLICATION FOR PERMIT TO DE	6. If Indian, Allottee or Trib	e Name			
1a. Type of Work: X DRILL REE	7. If Unit or CA Agreement	, Name and No.			
b. Type of Well: Oil Well Gas Other Well				8. Lease Name and Well No. Gumby BAG Federal #2	
2. Name of Operator Yates Petroleum Corporation			9. API Well No.	33681	
Artesia, New Mexico 88210	3b. Phone No. (include are (505) 748	-1471	10. Field and Pool, or Explo Wildcat Mississippia	n (96068)	
14. Distance in miles and direction from nearest town or post office*	d 1100' FWL ame	NOV 2 3 2005	12. Country of Lands	3E 13. State	
Approximately 40 miles northwest of Carlsbad, Ne 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 660'	16. No. of Acres in lease	o. of Acres in lease 17. Spacing Unit dedicated to this well		NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 3000'	19. Proposed Depth 8050'	· · · · · · · · · · · · · · · · · · ·		EAD n-28/1	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 4045' GL	1 **	22. Approximate date work will start* 23. Estimated duration 45 days		<u> </u>	
	24. Attachments				
 The following, completed in accordance with the requirements of Onshor Well plat certified by a registered surveyor. A Drilling Plan. A Surface Use Plan (if the location is on National Forest System Land SUPO shall be filed with the appropriate Forest Service Office. 	4. Bond to Item 2 ls, the 5. Operate 6. Such o	o cover the operation Dabove). Data or certification.	s form: s unless covered by an existing nation and/or plans as may be re		
25. Signiture 8. Calloll Title: Regulatory Technician	Name (Printed/Ty		Date	10/18/2005	
Approved by (Signature) Joe G. Lara		ped) / Joe G. La	Date	NOV 2 2 2005	
Title Application approval does not warrant or certify that the applicant holds			ELD OFFICE	pplicant to conduct	

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 reverse)

Conditions of approval, if any, are attached.

operations thereon.

C-144 Attached

Previously Approved

H2S Contingency Plan Attached

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS

APPROVAL FOR 1 YEAR

Roswell Controlled Water Basin

WITNESS & 13 3/8" CSG CEMENT JOB

DISTRICT I
1005 N. French Br., Bobbs, 100 85340

DISTRICT II
2.811 South First. Artesia, Md 88210

DISTRICT III
1000 Rio Brazos Rd., Axtec. NM 87410

DISTRICT IV 2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico Energy, Minerals and Natural Resources Department

Form C-108

Bevised March 17, 1999
Instruction on back
Submit to Appropriate District Office
State Lease - 4 Copies
Pee Lease - 3 Copies

OIL CONSERVATION DIVISION P.O. Box 2088

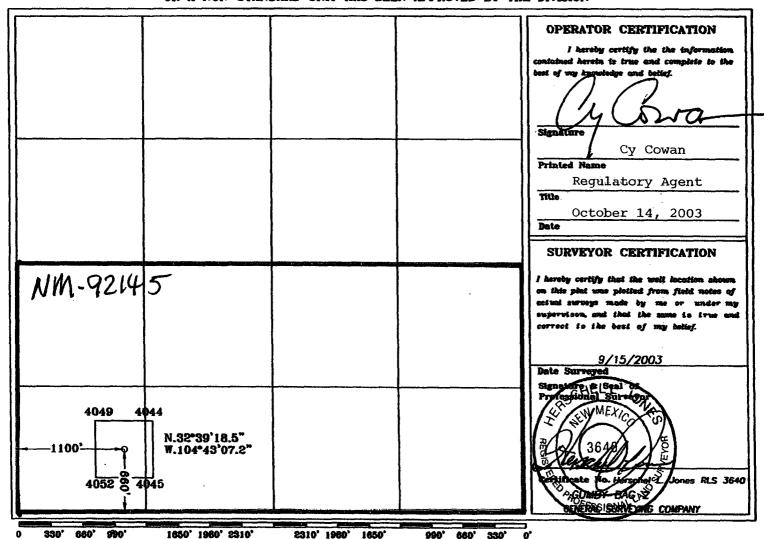
Santa Fe, New Mexico 87504-2088

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

AP1	Number		1	Pool Code			Pool Name		
			96068			Wildcat Mississippian			
Property (ode					roperty Rame Well Number			mber
		<u> </u>	GUMBY BAG FE			ig federal 2			
OGRID No					Operator Nam	perator Name Elevation			ion
025575		l		YATES	PETROLEUM CO	ROLEUM CORPORATION 4045			
					Surface Loc	ation			
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Peet from the	East/West line	County
M	17	195	23E		660	SOUTH	1100	WEST	EDDY
			Bottom	Hole Loc	cation If Diffe	rent From Sur	face		
UL or lot No.	Section	Township	Range	lot idn	Feel from the	North/South line	Feet from the	East/West line	County
T. N		1	<u> </u>	1)	<u> </u>	<u> </u>		<u> </u>
Dedicated Acre	s John C	or Infili	Consolidation	Code On	der No.				
320]	1		1					

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION



oad, Aztec, NM 87410 ... Francis Dr., Santa Fe, NM 87505

State of New Mexico energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Dew

Form C-144 March 12, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.

For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure Is pit or below-grade tank covered by a "general plan"? Yes xx No faction: Registration of a pit or below-grade tank by Closure of a pit or below-grade tank

Type of action. Registration of a pit of	below-grade tank trai Closure of a pit of below-grad	C IGUA C.1				
Operator: Yates Petroleum Corporation To	elephone: (505) 748-4372e-mail address: _d	lebbiec@ypcnm.com				
Address: 105 South 4th Street, Artesia, NM 88210						
Facility or well name: Gumby BAG Federal #2 API #:	U/L or Qtr/Qtr <u>M</u> Sec <u>17</u> T <u>19S</u> R	23E				
County: Eddy Latitude Longitude	NAD: 1927 🔲 1983 🔲 Surface Owner Federal	XX State Private Indian				
Pit Type: Drilling X Production Disposal D	Below-grade tank					
Workover Emergency	Volume:bbl Type of fluid:					
Lined xx Unlined	Construction material:					
Liner type: Synthetic xx Thickness 12 mil Clay Volume	Double-walled, with leak detection? Yes [] If not,	explain why not.				
bbl						
	Less than 50 feet	(20 points)				
Depth to ground water (vertical distance from bottom of pit to seasonal	50 feet or more, but less than 100 feet	(10 points)				
high water elevation of ground water.)	100 feet or more	(O points)				
	Yes	(20 points)				
Wellhead protection area: (Less than 200 feet from a private domestic	No	(20 points) OCT 1 9 2004				
water source, or less than 1000 feet from all other water sources.)	210	OCD-AHTESIA				
	Less than 200 feet	(20 points)				
Distance to surface water: (horizontal distance to all wetlands, playas,	200 feet or more, but less than 1000 feet	(10 points)				
irrigation canals, ditches, and perennial and ephemeral watercourses.)	1000 feet or more	(0 points)				
	Ranking Score (Total Points)	Points O Points				
If this is a pit closure: (1) attach a diagram of the facility showing the p	• • • • • • • • • • • • • • • • • • • •	•				
onsite offsite If offsite, name of facility	. (3) Attach a general description of remedial ac	ction taken including remediation start date and				
end date. (4) Groundwater encountered: No 🗌 Yes 🔲 If yes, show dep	oth below ground surfaceft. and attach	sample results. (5) Attach soil sample results				
and a diagram of sample locations and excavations.						
I hereby certify that the information above is true and complete to the bes has been/will be constructed or closed according to NMOCD guideling						
and been that be experienced of closely according to 1472000 galacing	Co. C., a general permitte gray or an (accuracy accord					
Date: October 18, 2004	n. pan = 1=	_				
Date: October 18, 2004 Printed Name/Title Cy Cowan/Regulatory Agent Signature	book of Cylinder Or Cy	Course.				
Your certification and NMOCD approval of this application/closure does otherwise endanger public health or the environment. Nor does it relieve egulations.	not relieve the operator of hability should the content the operator of its responsibility for compliance with	s of the pit or tank contaminate ground water or any other federal, state, or local laws and/or				
ApprovOCT 2 1 2004 - A DO P	/20					
Printed Name/Title	Signature UCO	1				
		"1				
		i				

YATES PETROLEUM CORPORATION

Gumby "BAG" Federal #2 660' FSL & 1110' FWL Section 17, T19S-R23E **Eddy County, New Mexico**

1. The estimated tops of geologic markers are as follows:

Glorietta	2093'	Strawn	7207'
Upper Yeso	2205'	Atoka	7565'
Tubb	2850'	Middle Morrow	7768'
Lower Yeso	2987'	Lower Morrow	7828'
Abo	3507'	Base of Morrow	7883'
Wolfcamp	4721'	TD	8050'
Cisco	6007'		

2. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

Water:

250' - 350'

Oil or Gas: All potential zones.

3. Pressure Control Equipment: BOPE will be installed on the 13 3/8" casing and rated for 3000 BOP systems will be consistent with API RP 53. Pressure tests will be conducted before drilling out from under all casing strings which are set and cemented in place. Blowout Preventor controls will be installed prior to drilling the surface plug and will remain in use until the well is completed or abandoned. Preventors will be inspected and operated at least daily to ensure good mechanical working order, and this inspection recorded on the daily drilling report. See Exhibit B.

Auxiliary Equipment:

- Auxiliary Equipment: Kelly cock, pit level indicators, flow sensor equipment and a Α. sub with full opening valve to fit the drill pipe and collars will be available on the rig floor in the open position at all times for use when kelly is not in use.
- 4. THE PROPOSED CASING AND CEMENTING PROGRAM:
 - Α. Casing Program: (All New)

Hole Size	Casing Size	Wt./Ft	<u>Grade</u>	Coupling	<u>Interval</u>	<u>Length</u>
17 1/2	13 3/8"	48#	H-40	ST&C	0-350'	350'
12 1/4"	9 5/8"	36#	J-55	ST&C	0-2150'	2150'
8 3/4"	5 1/2"	17#	J-55	LT&C	0-100'	100'
8 3/4"	5 1/2"	15.5#	J-55	LT&C	100-6800'	6700'
8 3/4"	5 1/2"	17#	L-80	LT&C	6800'-8050'	2850'

7" casing may be set at 7300' if lost circulation in encountered.

Yates Petroleum Corporation requests a variance to install a rotating head on the surface casing strings when intermediate casing will be set. If a BOP system is required then we wish to install a 2M system and receive a varience to test the system to 1000# using the rig pumps. The test will be held for 30 minutes on each system component. Components to be tested include pipe rams, blind rams, and annular preventer.

Minimum Casing Design Factors: Collapse 1.125, Burst 1.0, Joint Strength 1.8

Gumby "BAG" Federal #2 Page 2

B. Cementing Program:

Surface Casing: 200 sx Class C (YLD 1.52 WT 14.6). Tail in with 400 sx Class C (YLD 1.34 WT 14.8).

Intermediate Casing: 700 sx Lite (YLD 2.0 WT 12.5) Tail in with 200 sx "C" (YLD 1.33 WT 14.8).

Production Casing: TOC: 1000', 700 sx Lite (YLD 2.0 WT 12.5). Tail in with 1200 sx Class C (YLD 1.60 WT 1.32).

5. MUD PROGRAM AND AUXILIARY EQUIPMENT:

	مر در ا)		
<u>Interval</u>	Type (JSS)	[/] Weight	<u>Viscosity</u>	Fluid Loss
0-350'	FW/Air Mist	8.4	28	N/C
350'-2150'	Cut Brine FW	8.4	28	N/C
2150'-3450'	Cut Brine	8.6-9.2	28	N/C
3450'-7200'	Cut Brine/6%KCL	9.2-9.8	28	N/C
7200'-TD	Salt Gel/Starch	9.6-9.9	32-38	<12cc

Sufficient mud material(s) to maintain mud properties, control lost circulation and contain a blow out will be available at the well site during drilling operations. Mud will be checked hourly by rig personnel.

EVALUATION PROGRAM:

Samples: 10' samples from intermediate casing.

Logging: Platform Express/HALS/Sonic, Possible FMI.

Coring: Rotary sidewall cores

DST's: As warranted.

7. ABNORMAL CONDITIONS, BOTTOM HOLE PRESSURE AND POTENTIAL HAZARDS:

Anticipated BHP:

From: TO: 350' Anticipated Max. BHP: 175 PSI n From: 350' TO: 2150' Anticipated Max. BHP: 950 PSI From: 2150' TO: 8050' Anticipated Max. BHP: 4150 PSI

Abnormal Pressures Anticipated: None

Lost Circulation Zones Anticipated: Possible in surface and intermediate holes.

H2S Zones Anticipated: Possible Canyon

Maximum Bottom Hole Temperature: 153 F

8. ANTICIPATED STARTING DATE:

Plans are to drill this well as soon as possible after receiving approval. It should take approximately 30 days to drill the well with completion taking another 15 days.

MULTI-POINT SURFACE USE AND OPERATIONS PLAN

Yates Petroleum Corporation Gumby "BAG" Federal #2 660' FSL & 1110' FWL Section 17, T19S-R23E

Eddy County, New Mexico

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

1. EXISTING ROADS:

Exhibit A is a portion of the BLM map showing the well and roads in the vicinity of the proposed location. The proposed well site is located approximately 40 miles northwest of Carlsbad, New Mexico and the access route to the location is indicated in red and green on Exhibit A.

DIRECTIONS:

Go south of Artesia on Highway 285 to Rocking R Red Road (CR-21). Turn west on Rocking R Red Road and go approximately 18 miles to Armstrong Road (CR-12). Turn south on Armstrong Road and go approx. 2.5 miles to a cattleguard on Armstrong Road. Turn right on north side of cattleguard on existing two track road. Follow two track west for approx. 1.1 miles. The new road will start here going southwest.

2. PLANNED ACCESS ROAD

The new access will be approximately 200 feet in length from the point of origin to the southeast corner of the well pad.

3. LOCATION OF EXISTING WELL

- A. There is drilling activity within a one-mile radius of the well site.
- B. Exhibit D shows existing wells within a one-mile radius of the proposed well site.

4. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES

- A. There are production facilities on this lease at the present time.
- B. In the event that the well is productive, the necessary production facilities will be installed on the drilling pad. If the well is productive oil, a gas or diesel self-contained unit will be used to provide the necessary power. No power will be required if the well is productive of gas.

5. LOCATION AND TYPE OF WATER SUPPLY:

A. It is planned to drill the proposed well with a fresh water system. The water will be obtained from commercial sources and will be hauled to the location by truck over the existing and proposed roads shown in Exhibit A.

6. SOURCE OF CONSTRUCTION MATERIALS:

The dirt contractor will locate closest pit and will obtain any permits and materials needed for construction.

Gumby "BAG" Federal #2 Page 2

- METHODS OF HANDLING WASTE DISPOSAL:
 - A. Drill cuttings will be disposed of in the reserve pits.
 - B. Drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry.
 - C. Water produced during operations will be collected in tanks until hauled to an approved disposal system, or separate disposal application will be submitted.
 - D. Oil produced during operations will be stored in tanks until sold.
 - E. Current laws and regulations pertaining to the disposal of human waste will be complied with.
- F. All trash, junk, and other waste materials will be contained in trash cages or bins to prevent scattering and will be removed and deposited in an approved sanitary landfill. Burial on site is not approved.
 - 8. ANCILLARY FACILITIES: None.
 - WELLSITE LAYOUT:
 - A. Exhibit C shows the relative location and dimensions of the well pad, the reserve pits, the location of the drilling equipment, rig orientation and access road approach.
 - B. The reserve pits will be plastic lined.
 - C. A 400' x 400' area has been staked and flagged.
 - PLANS FOR RESTORATION
 - A. After finishing drilling and/or completion operations, all equipment and other material not needed for further operations will be removed. The location will be cleaned of all trash and junk to leave the well site in as aesthetically pleasing a condition as possible.
 - B. Unguarded pits, if any, containing fluids will be fenced until they have dried and been leveled.
 - C. If the proposed well is non-productive, all rehabilitation and/or vegetation requirements of the Bureau of Land Management will be complied with and will be accomplished as expeditiously as possible. All pits will be filled level after they have evaporated and dried.
- 11. SURFACE OWNERSHIP: Please be advised that Yates Petroleum Corporation has made a surface damage agreement with the Frank Runyan Trust, which represents the Private Surface Owners on whose private land the captioned well is located.

OTHER INFORMATION:

- A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.
- B. The primary surface use is for grazing.
- 13. OPERATOR'S REPRESENTATIVE
 - A. Through A.P.D. Approval: B. Through Drilling Operations, Completions and Production:

Cy Cowan, Regulatory Agent Yates Petroleum Corporation 105 South Fourth Street Artesia, New Mexico 88210 Phone (505) 748-1471 Pinson McWhorter, Operations Manager Yates Petroleum Corporation 105 South Fourth Street Artesia, New Mexico 88210 Phone (505) 748-1471

Gumby "BAG" Federal #2 Page 2

14. CERTIFICATION:

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and, that the work associated with the operations proposed herein will be performed by Yates Petroleum Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

10/18/2005

Regulatory Agent

Yates Petroleum Corporation

105 S. Fourth Street Artesia, NM 88210

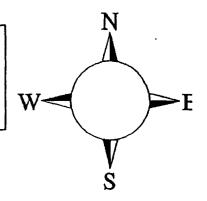
Hydrogen Sulfide (H₂S) Contingency Plan

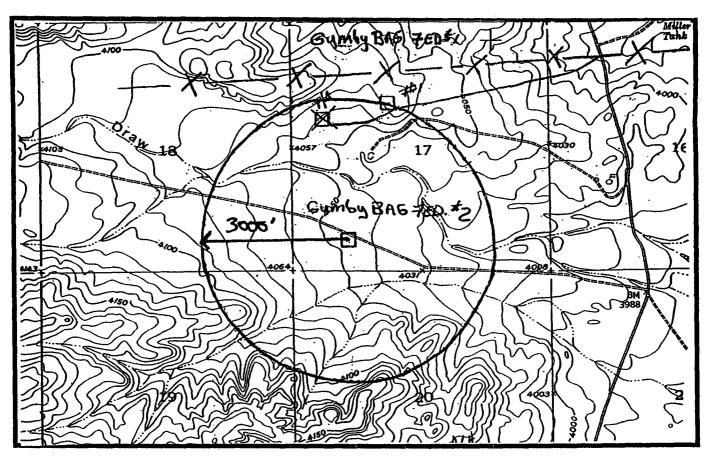
For

Gumby BAG Federal #2
660' FSL, 1100' FWL
Sec-17, T-19S, R-23E
Eddy County NM

Gumwy BAG Federal #2 Location

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.

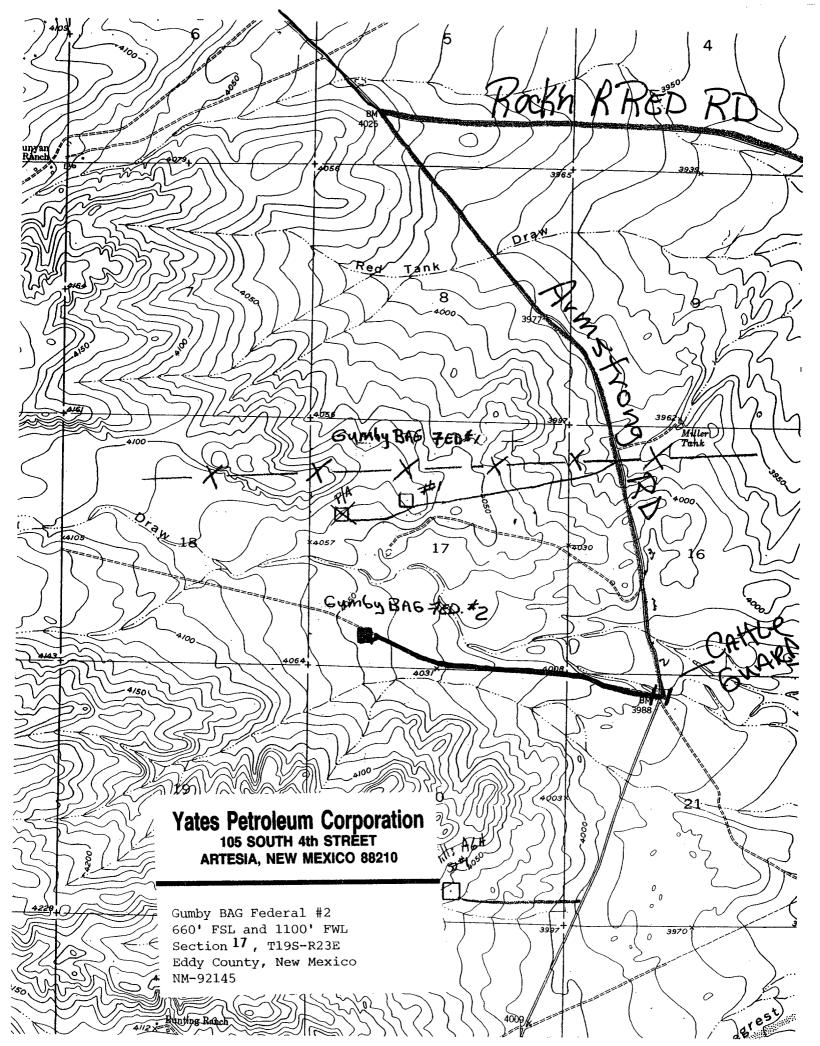


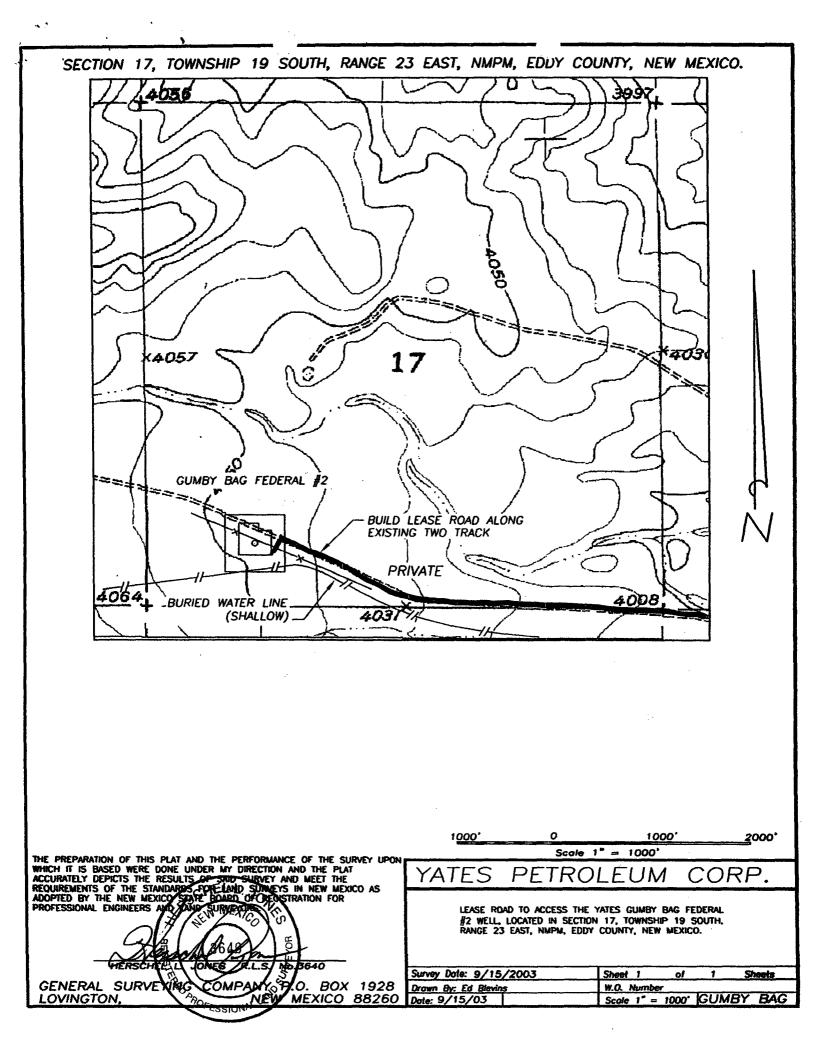


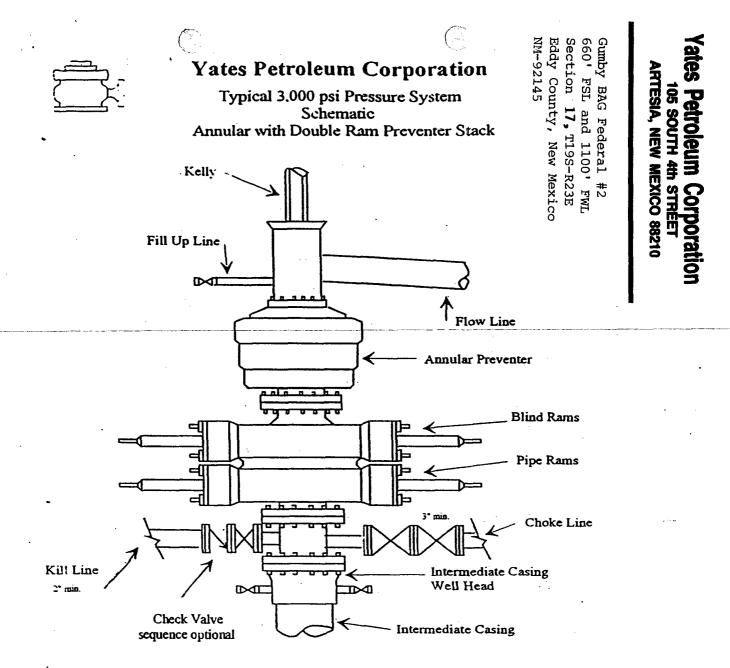
Same a 100 janu 1202 - Sant Pulangan 1325 akasan 3 san santunggar matasan da din pana

Yates Petroleum Corporation Phone Numbers

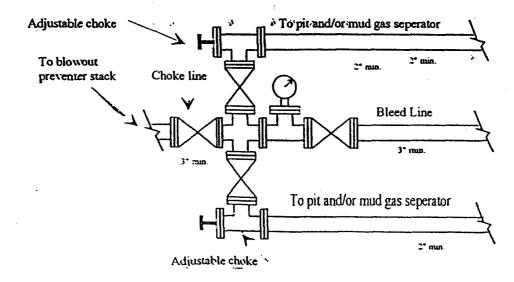
YPC Office	(505) 748-1471
Pinson McWhorter/Operations Manager	
	(505) 748-4204
Ron Beasley/Prod Superintendent	(505) 748-4210
Al Springer/Drilling	
Paul Hanes/Prod. Foreman/Roswell	
Jim Krogman/Drilling Superintendent	
Artesia Answering Service	(303) /48-4302
(During non-office hours)	
Agency Call List	
Eddy County (505)	
Artesia	
State Police	746-2703
City Police	
Sheriff's Office	
Ambulance	
Fire Department	
LEPC (Local Emergency Planning Committee)	
NMOCD	748-1283
C. D. J	
Carlsbad	205 2125
State Police	
City Police	
Sheriff's Office	
Ambulance	
Fire Department	
LEPC (Local Emergency Planning Committee)	887-3798
US Bureau of Land Management	887-6544
•	
New Mexico Emergency Response Commission (Santa Fe)	(505)476-9600
24 HR	(505) 827-9126
	• •
National Emergency Response Center (Washington, DC)	(800) 424-8802
Other	
Doots & Costs INIC 1 000 254 0400 cm (201) 021 0004	
Boots & Coots IWC1-800-256-9688 or (281) 931-8884	
Cudd Pressure Control(915) 699-0139 or (915) 563-3356	
Halliburton(505) 746-2757	
B. J. Services(505) 746-3569	
TH: 1. T. T. G. A000 244 Gt T. 11. 1 7777	007) 742 0011
Flight For Life -4000 24th St, Lubbock, TX	
Aerocare -Rr 3 Box 49f, Lubbock, TX	
Med Flight Air Amb 2301 Yale Blvd SE #D3, Albuq, NM(
S B Air Med Svc 2505 Clark Carr Loop SE, Albuq, NM(505) 842-4949







Typical 3,000 psi choke manifold assembly with at least these minimum features



CONDITIONS OF APPROVAL - DRILLING

Operator's Name:

YATES PETROLEUM CORPORATION

Well Name & No.

2 - GUMBY BAG FEDERAL

Location:

660' FSL & 1100' FWL - SEC 17 - T19S - R23E - EDDY COUNTY

Lease:

NM-92145

I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 234-5909 or (505) 361-2822 (After hours) - for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:

- A. Spudding
- B. Cementing casing: <u>13-3/8</u> inch <u>9-5/8</u> inch <u>5-1/2</u> inch
- C. BOP tests
- 2 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.
- 3. 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.
- 4. 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>13-3/8</u> inch surface casing shall be set at <u>350 feet</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>9-5/8</u> inch intermediate casing is <u>circulate cement to</u> the surface. Note: The 12-1/4" hole drilled to 2150' shall be drilled with fresh water or fresh water mud.
- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is cement shall extend upward a minimum of 500 feet above the uppermost hydrocarbon bearing 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 <u>13-3/8</u> 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) is 3000 psi.
- 3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- A variance to test the **BOP** on the surface casing to **1000** psi using the rig pumps 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.
- BOPE must be tested prior to drilling into the Wolfcamp Formation by an independent service company.

IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- 1. Recording pit level indicator to indicate volume gains and losses.
- 2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.

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3. Flow-sensor on the flow line to warn of abnormal mudireturns from the well.