

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

C/K  
806  
OCD-ARTESIAES  
E INTERIOR  
ANAGEMENTFORM APPROVED  
OMB No. 1004-0137  
Expires March 31, 2007Month - Year  
MAY 22 2007

OCD - ARTESIA, NM

Lease Serial No.  
NM-05608

NM 81677

6. If Indian, Allottee or Tribe Name

7. If Unit or CA Agreement, Name and No.

8. Lease Name and Well No. 36515  
ENCORE "12" INDIAN COM. # 1

9. API Well No.

10. Field and Pool, or Exploratory

INDIAN BASIN-MORROW

11. Sec., T. R. M. or Blk. and Survey or Area  
SECTION 12 T21S-R23E12. County or Parish  
EDDY CO.13. State  
NM1a. Type of work: ☒ DRILL ☐ REENTER1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone2. Name of Operator (JOHN RODGERS 817-339-0844)  
ENCORE OPERATING, L.P. (SHERRY REID CARROLL 817-339-0768)3a. Address 777 MAIN STREET SUITE 1400  
FORT WORTH, TEXAS 761023b. Phone No. (include area code)  
817-877-99554. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 1650' FNL & 990' FEL SECTION 12 T21S-R23E  
At proposed prod. zone SAME14. Distance in miles and direction from nearest town or post office\*  
Approximately 25 miles Northwest of Carlsbad New Mexico15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any)

330'

16. No. of acres in lease  
32017. Spacing Unit dedicated to this well  
32018. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft.

2600'

19. Proposed Depth  
10,500'20. BLM/BIA Bond No. on file  
MTB-000020 (NATIONWIDE)21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3799' GL22. Approximate date work will start\*  
WHEN APPROVED23. Estimated duration  
40-45 days

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, shall be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature *Joe T. Janica* Name (Printed Typed) Joe T. Janica Date 04/26/07  
Title AgentApproved by (Signature) */s/ Don Peterson* Name (Printed Typed) Date MAY 18 2007  
Title FIELD MANAGER Office BLM-CARLSBAD FIELD OFFICE

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

APPROVAL FOR TWO YEARS

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.

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL STIPULATIONS  
ATTACHED

Roswell Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

DISTRICT I  
4625 N. French Dr., Hobbs, NM 88240  
DISTRICT II  
1301 W. Grand Avenue, Artesia, NM 88210  
DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96561	Pool Name INDIAN BASIN EAST-MORROW, East
Property Code	Property Name ENCORE "12" INDIAN COM	Well Number 1
OGRID No. 189951	Operator Name ENCORE OPERATING, L.P.	Elevation 3799'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	12	21 S	23 E		1650	NORTH	990	EAST	EDDY

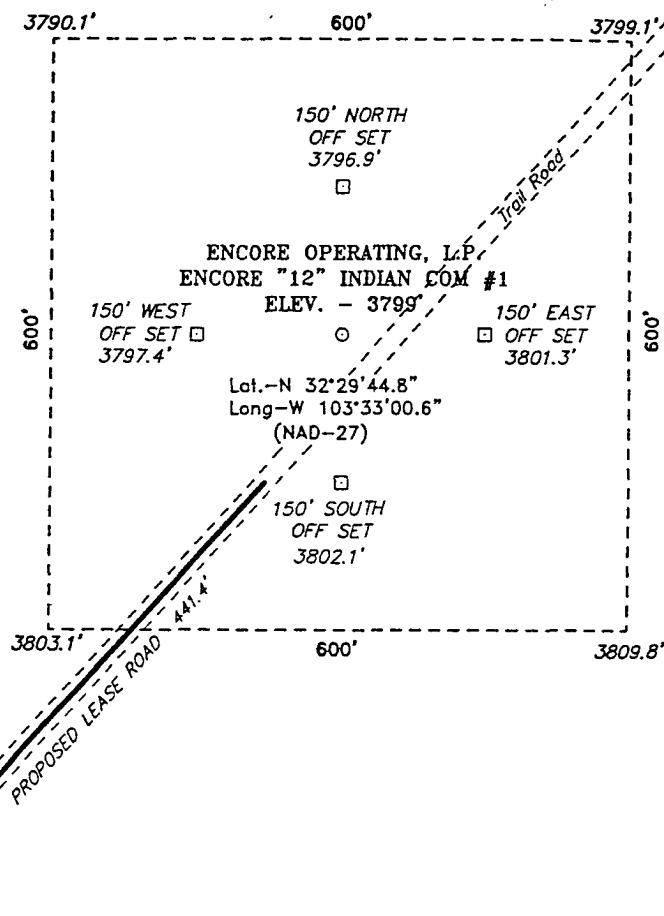
Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

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

	<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or released mineral interest in the land including the proposed bottom hole location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Signature: <i>Joe T. Janica</i> Date: 04/30/07</p> <p>Joe T. Janica Printed Name Agent</p>	
	<p>SURVEYOR CERTIFICATION</p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>APRIL 16, 2007</p> <p>Date Surveyed</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p>W.D. No. 18063</p> <p>Certificate No. Gary L. Jones 7977</p>	
	<p>EXHIBIT "A"</p>	

SECTION 12, TOWNSHIP 21 SOUTH, RANGE 23 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



BONE FLATS FED.  
COM "12" #5

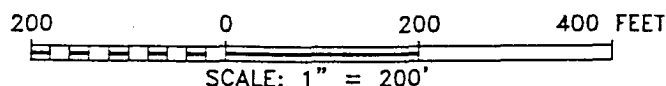
209.8'

1194.0'

407.2'

PROPOSED LEASE ROAD

441.4'



Directions to Location:

FROM THE JUNCTION OF CO. RD. 401 (MARATHON)  
AND CO. RD. 403 (GREY OAK), GO NORTHWEST ON  
CO. RD. 403 FOR 1.3 MILES TO LEASE ROAD, ON  
LEASE ROAD GO NORTHEAST 1.3 MILES TO LEASE  
ROAD, PROCEED SOUTH ON LEASE ROAD 0.3 MILES  
THENCE EAST 0.2 MILES TO PROPOSED LEASE ROAD.

**ENCORE OPERATING, L.P.**

REF: ENCORE "12" INDIAN COM #1 / WELL PAD TOPO

THE ENCORE "12" INDIAN COM #1 LOCATED 1650' FROM  
THE NORTH LINE AND 990' FROM THE EAST LINE OF  
SECTION 12, TOWNSHIP 21 SOUTH, RANGE 23 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

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

W.O. Number: 18003 Drawn By: K. GOAD

Date: 04-17-2007 Disk: KJG - 18003W

Survey Date: 04-16-2007

Sheet 1 of 1 Sheets

## APPLICATION TO DRILL

ENCORE OPERATING L.P.  
 ENCORE "12" INDIAN COM. #1  
 UNIT "H" SECTION 12  
 T21S-R23E EDDY CO. NM

In response to questions asked under Section II of Bulletin NTL-6, the following information on the above well is provided for your information.

1. LOCATION: 1650' FNL & 990' FEL SECTION 12 T21S-R23E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 3799' GL
3. GEOLOGIC NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits.
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for solids removal from hole.
5. PROPOSED DRILLING DEPTH: 10,500'

6. ESTIMATED TOPS OF GEOLOGICAL MARKERS:

San Andres	585'	Atoka	8865'
Bone Spring	3934'	Morrow Lime	9076'
Wolfcamp	6220'	Morrow B 2 D Sd.	9376'
Cisco	7040'	Morrow A 2 Sand	9551'
Strawn	8420'	Barnett Shale	9601'

7. POSSIBLE MINERAL BEARING FORMATION:

BONE Spring	Oil	Strawn	Gas
Wolfcamp	Gas	Morrow	Gas

8. CASING PROGRAM:

Hole Size	Interval	OD of Casing	Weight	Thread	Collar	Grade
26"	0-40	20"	NA	NA	NA	Conductor
12 1/4"	0-1250'	9 5/8"	40#	8-R	ST&C	N-80
8 3/4"	0-10,500'	5 1/2"	17#	8-R	LT&C	P-110

# APPLICATION TO DRILL

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

## 9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
9 5/8"	Surface	Set <sup>1250'</sup> of 9 5/8" 40# N-80 ST&C casing. cement in two stages with DV-Tool at 600'±. Cement 1st stage with 85 Sx. of Halco Light + additives, tail in with 200 Sx. of Class "C" + 1/2# Flocele/Sx. + 2% CaCl. Cement 2nd stage with 130 Sx. of Halco Light + additives, tail in with 100 Sx. of Class "C" Premium Plus cement + additives. Circulate cement to surface.
5 1/2"	Production	Set 10,500' of 5 1/2" 17# P-110 LT&C casing. Cement in two stages W/DV-Tool at 5500'±. Cement 1st stage with 390 Sx. Class "H" interfill cement + additives, tail in with 425 Sx. Sx. of super Class "H" cement + additives. Cement 2nd stage with 605 Sx. of interfill Class "C" cement + additives, tail in with 100 Sx. of Premium Plus cement, circulate cement.

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 1500 Series 5000 PSI working pressure B.O.P. consisting of an annular bag type preventor, middle blind rams, and bottom pipe rams. The B.O.P. will be nipped up on the 9 5/8" casing and tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period and the blind rams will be operated when the drill pipe is out of the hole on trips. Full opening stabbing valve and upper kelly cock will be utilized. Exhibit "E-1" shows a hydraulically operated closing unit and a 3" 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressure or temperatures are expected while drilling this well.

## 11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-1250'	8.4-8.8	29-34	NC	Fresh water/native (Spud) add paper to control seepage lime to control pH (9-10) use high viscosity sweeps to clean hole.
1250-10500'	8.4-10	29-38	NC	Fresh water/native mud. Mud up with an XCD Polymer mud system. Adjust weight as necessary with soda ash and KCL.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

APPLICATION TO DRILL

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

- A. Open hole logs: Dual Laterolog, Density, Neutron, Fullwave Sonic, and RFTs.
- B. Rig up mud logger on the hole at 6000'± and keep on the hole to TD.
- C. No cores or DST's are planned at this time, however they may be deemed necessary as unexpected shows or drilling breaks occur.

13. POTENTIAL HAZARDS:

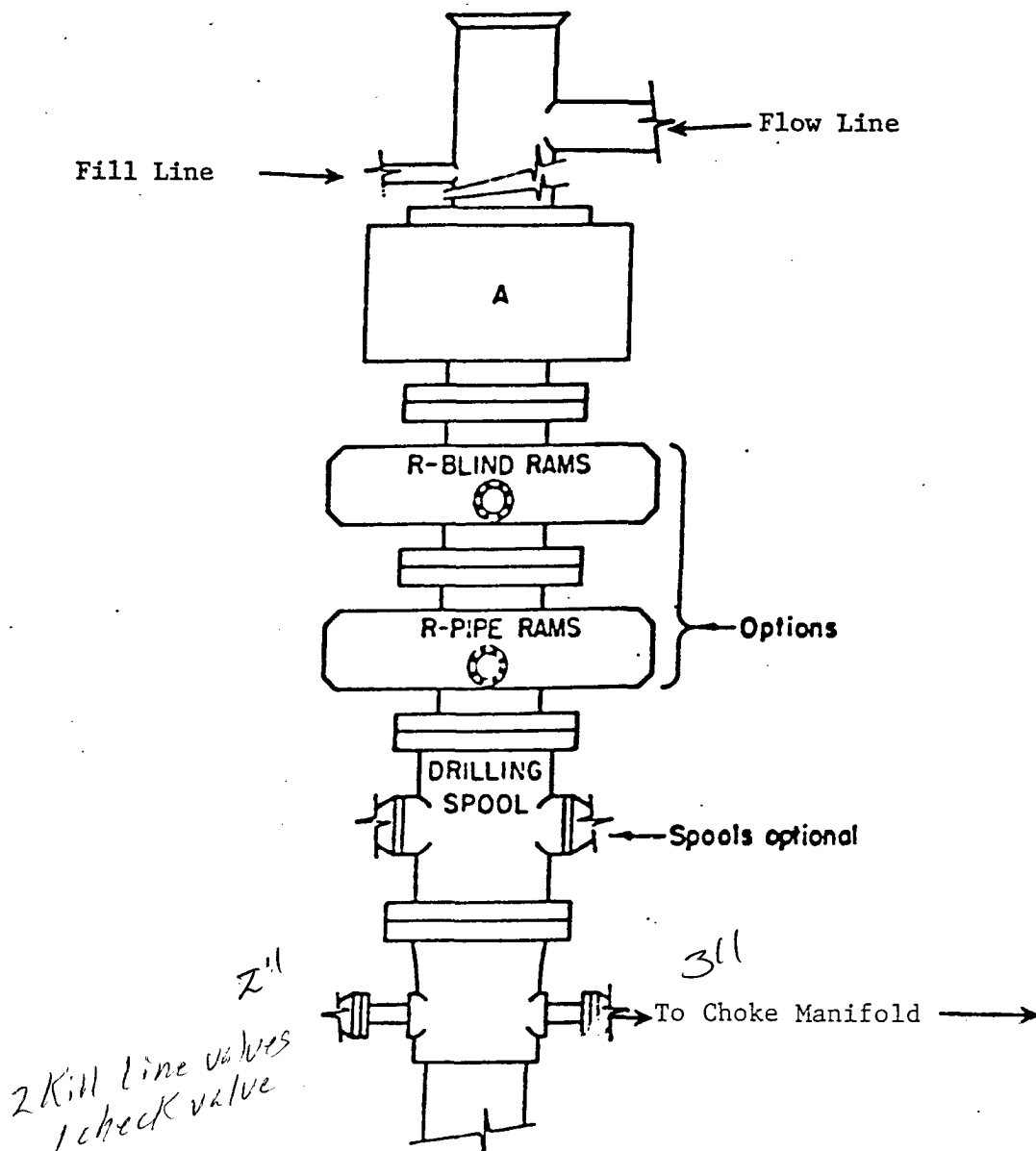
No abnormal pressures or temperatures are expected. There is no known presence of H<sup>2</sup>S in this area. If H<sup>2</sup>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 6500 PSI, and Estimated BHT 220°.

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 30-35 days. If production casing is run then an additional 30-45 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The MORROW formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as a gas well.



### ARRANGEMENT SRRA

1500 Series  
5000# Working Pressure

EXHIBIT "E"  
SKETCH OF B.O.P. TO BE USED ON

ENCORE OPERATING, L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

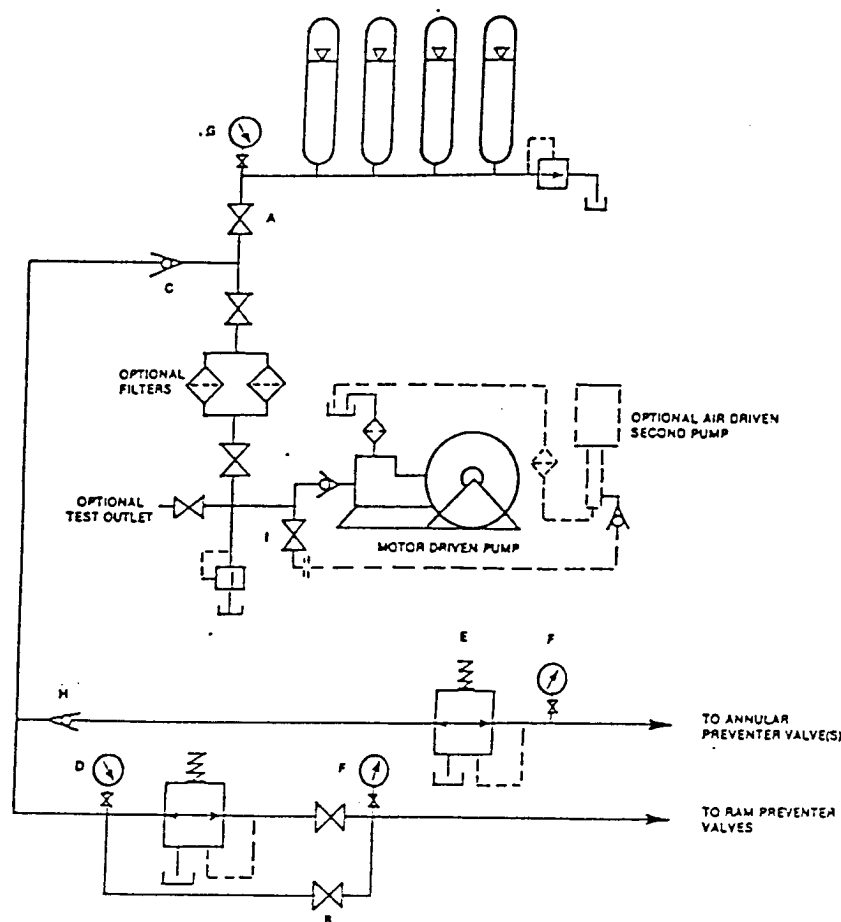


FIGURE K6-1. The schematic sketch of an accumulator system shows required and optional components.

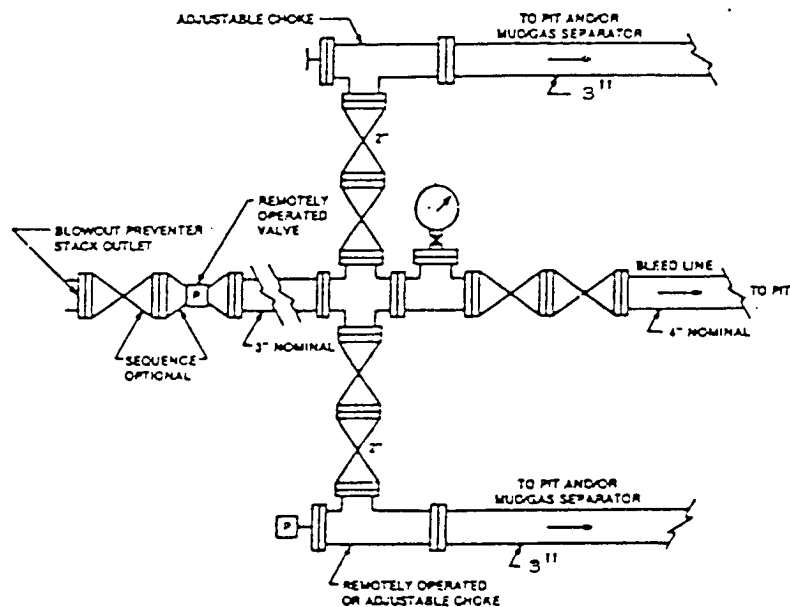


FIGURE K4-2. Typical choke manifold assembly for 5M rated pressure service — surface installation.

EXHIBIT "E-1"  
CHOKE MANIFOLD & CLOSING UNIT

ENCORE OPERATING, L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM



1. All Company and Contract personnel admitted on location must be trained by a qualified H<sub>2</sub>S safety instructor to the following:
  - A. Characteristics of H<sub>2</sub>S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H<sub>2</sub>S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
2. H<sub>2</sub>S Detection and Alarm Systems
  - A. H<sub>2</sub>S detectors and audio alarm system to be located at bell nipple, end of blooie 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.
  - C. There should be a windsock at entrance to location.
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, normal safe condition. Yellow flag indicates potential pressure and danger. Red flag, danger, H<sub>2</sub>S present in dangerous concentration. Only emergency personnel admitted to location.
5. Well control equipment
  - A. See exhibit "E" & "E-1"
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 telephoned will be available at most drilling foreman's trailer or living quarters.
7. Drillstem Testing
  - A. Exhausts will be watered.
  - B. Flare line will be equipped with an electric ignitor or a propane pilot light in case gas reaches the surface.
  - C. If the location is near to a dwelling a closed DST will be performed.

8. Drilling contractor supervisor will be required to be familiar with the effects  $H_2S$  has on tubular goods and other mechanical equipment.
9. If  $H_2S$  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  $H_2S$  scavengers if necessary.

# SURFACE USE PLAN

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

1. EXISTING ROADS: Area maps, Exhibit "B" is a reproduction of a County General Hi-way Map. Exhibit "C" is a reproduction of a USGS topographic map showing existing roads and proposed new roads. All existing roads will be maintained in a condition equal to or better than current conditions. All new roads will be constructed according to Bureau of Land Management specifications.
  - A. Exhibit "A" shows the location as staked.
  - B. From Carlsbad New Mexico take U.S. Hi-way 285 North 11.5± miles to the junction with State Road 137 turn Left on to State Road 137 and go West to the junction with Co Road #401, bear Right and go 3.5± miles to Co Road # 403 (Gray Oak) bear Right and go Northwest 1.3 miles to lease road bear Right on lease road and go 1.3 mile turn South go .3 miles then East .2 miles to the beginning of new road, follow new road to location, or follow Center line stakes of road.
  - C. Exhibit "C" Topographic map shows roads to location.
2. PLANNED ACCESS ROADS: Approximately .5 miles of new road will be constructed.
  - A. Access roads will be crowned and ditched to a 12' wide travel surface within a 40' Right-of-Way.
  - B. Gradient of all roads will be less than 5.00%
  - C. Turnouts will be constructed where necessary.
  - D. If necessary the new roads will be surfaced with a minimum of 4" of caliche. This material will be obtained from the nearest local source.
  - E. The centerline of the new road will be flagged. The earthwork will be done as required by the field conditions.
  - F. Culverts will not be used unless they are necessary, the roads will be constructed to utilize low water crossings as dictated by the topography.
3. EXHIBIT "A-1" SHOWS EXISTING WELLS IN THE AREA AND THOSE WITHIN A 1 MILE RADIUS.
  - A. Water wells - NONE KNOWN
  - B. Disposal wells - NONE KNOWN
  - C. Drilling wells - NONE KNOWN
  - D. Abandoned wells - AS SHOWN ON EXHIBIT "A-1"
  - E. Producing wells - AS SHOWN ON EXHIBIT "A-1"

## SURFACE USE PLAN

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

4. If on completion this well is a producer the operator will lay pipelines and construct powerlines along existing road R-O-W's or other existing R-O-W's. Exhibit "C" shows proposed roads , flowlines and powerlines.

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

Water will be purchased locally from a commercial source and trucked over the location access roads or piped to location in flexible lines laid on top of the ground.

### 6. SOURCE OF CONSTRUCTION MATERIAL:

If possible construction material will be obtained from the excavation of the drill site, if additional material is required it will be obtained from a local source and transported over the location access roads as shown on Exhibit "C".

### 7. METHODS OF HANDLING WASTE:

- A. All trash, junk and other waste material will be contained in trash cages or trash bins in order to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- B. Sewage from living quarters will be drained into holding tanks and will be cleaned out periodically. 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 well.
- C. Remaining drilling fluids will be allowed to evaporate in the reserve pits until the pits are dry enough to be broken out for further drying. If the drilling fluids do not evaporate in a reasonable time they will be hauled off by transports to a State approved disposal site. Later the pits will be broken out to speed drying. Water produced during completion will be stored in tanks and disposed of in State approved disposal site. Oil and condensate produced during completion will be put in storage tanks and sold.
- D. Drill cuttings will be disposed of in reserve pits or if necessary will be taken to a State approved landfarm and disposed of properly.
- E. Any remaining salts or mud additives will be collected by the supplier and to stock, this includes all broken bags.

### 8. ANCILLARY FACILITIES:

- A. No camps or air strips will be constructed on location.

## SURFACE USE PLAN

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

### 9. WELL SITE LAYOUT:

- A. Exhibit "D" shows the proposed well site layout.
- B. This Exhibit shows the location of reserve pit, sump pits, and living facilities.
- C. Mud pits in the active circulating system will be steel pits and the reserve pits will be unlined unless subsurface conditions encountered during pit construction indicate that a plastic liner is required to contain lateral migration.
- D. If needed the reserve pits will be lined with polyethelene. The pit liner will be no less than 12 mils thick and the liner will be extended at least 3 feet over the top of the dikes and secured in place to keep edge of liner in place.
- E. The reserve pit will be fenced on three sides and fenced with four strands of barbed wire during drilling and completion phases. The 4th side will be fenced after drilling operations are complete and the drilling rig has moved out. If the well is a producer the mud pits will remain fenced in until the mud has dried up enough to break out the pits and reclaimed according to BLM requirements.

### 10. PLANS FOR RESTORATION OF SURFACE:

Rehabilitation of the location and reserve pits will be allowed to dry properly, fluids may be moved and disposed of in accordance with article 7-3 as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any will be reshaped to the original configuration with provisions made to alleviate future erosion. In case of the well completed as a producer the drilling pad will be necessary to construct production facilities. After the area has been shaped and contoured top soil from the spoil pile will be placed over the disturbed area to the extent possible so that revegetation procedures can be accomplished to comply with the BLM specifications.

If the well is a dry hole the pad and road area will be contoured to match the existing terrain. Top soil will be spread to the extent possible and revegetation will be carried out according to the BLM specifications.

Should the well be a producer the previously noted procedures will apply to those areas which are not required for production facilities.

SURFACE USE PLAN

ENCORE OPERATING L.P.  
ENCORE "12" INDIAN COM. #1  
UNIT "H" SECTION 12  
T21S-R23E EDDY CO. NM

11. OTHER INFORMATION:

- A. Topography consists of low lying hills covered with a shallow soil gray to tan in color. Dip is to the West vegetation consists of yucca, mesquite, and native grasses.
- B. The surface and minerals are owned by The U.S. Department of Interior and is administered by The Bureau of Land Management. The surface is used to graze livestock and for the production of oil and gas.
- C. An archaeological survey will be conducted on the roads and the location and the results will be filed in The Roswell Field Office.
- D. There are no dwellings within one mile of location.

12. OPERATOR'S REPRESENTATIVES:

BEFORE CONSTRUCTION:

TIERRA EXPLORATION, INC  
P.O. BOX 2188  
HOBBS, NEW MEXICO 88241  
OFFICE PHONE 505-391-8503  
CELL PHONE 505-390-1598

DURING AND AFTER CONSTRUCTION:

ENCORE OPERATING, L.P.  
777 MAIN STREET SUITE 1400  
FORT WORTH, TEXAS 76102  
SHERRY REID CARROLL 817-339-0768  
JOHN RODGERS 817-339-0844

13. CERTIFICATION: I hereby certify that I or persons under my supervision have inspected the proposed drill site and access route, that I am familiar with the conditions which currently exist, that the statements made in this plan are to the best of my knowledge, are true and correct, and that the work associated with the operations proposed herein will be performed by ENCORE OPERATING, L.P. it's contractors/subcontractors is in the conformity with this plan and the terms and the conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

NAME : Joe T. Janica

DATE : 04/26/07

TITLE : Agent

## **Conditions of Approval Cave and Karst**

EA#: NM-080-07-0742

Lease #: NM-81677

**Encore Operating, L.P.**

**Encore 12 Indian Fed. Com. #1**

### **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

#### **Berming:**

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

### **Cave/Karst Subsurface Mitigation**

The following stipulations will be applied to protect cave/karst and ground water concerns:

#### **Rotary Drilling with Fresh Water:**

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. Use depth to the deepest expected fresh water as listed in the geologist report.

#### **Casing:**

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

#### **Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a void (bit drops) of four feet or more and circulation losses greater than 75 percent occur simultaneously while drilling in any cave-bearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

**Abandonment Cementing:**

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

**Record Keeping:**

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence or absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.



## CONDITIONS OF APPROVAL - DRILLING

**Operator's Name:** Encore Operating, L.P.  
**Well Name & No.** 1-Encore "12" Indian Com  
**Location:** 1650 FNL, 0990 FEL, Sec. 12, T-21-S, R-23-E  
**Lease:** NM-81677

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### I. DRILLING OPERATIONS REQUIREMENTS:

- A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance for a representative to witness:
1. Spudding well
  2. Setting and/or Cementing of all casing strings
  3. BOPE tests
- Eddy County call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822
- B. **Hydrogen Sulfide has been reported in SE $\frac{1}{4}$ NW $\frac{1}{4}$  of Section 12 measuring 9614 ppm in the gas stream and also in T-21-S, R-24-E. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the Bone Spring formation.**
- C. 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.
- D. If floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

### II. CASING:

- A. The 9-5/8 inch surface casing shall be set at approximately 1400 feet and cemented to the surface. **Both stages to circulate.**
1. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.
  2. Wait on cement (WOC) time for a primary cement job will be a minimum of 12 hours for a non-water basin, 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compression strength, whichever is greater. (This is to include the lead cement)
  3. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compression strength, whichever is greater.
  4. If cement falls back, remedial action will be done prior to drilling out that string.

**Possible lost circulation in the San Andres and Wolfcamp formations.**

**High potential for cave/karst features.**

**High pressure gas in the Wolfcamp, Strawn, Atoka, and Morrow formations**

- B. The minimum required fill of cement behind the 5-1/2 inch production casing is cement shall circulate to surface. Both stages to circulate. If cement does not circulate see A.1 thru 4.**
- C. If hardband drill pipe is rotated inside casing; returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool I joints of the drill pipe will be installed prior to continuing drilling operations.**

### **III. PRESSURE CONTROL:**

- A. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53.**
- B. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M)** PSI.**
- C. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.**
  - 1. The tests shall be done by an independent service company.**
  - 2. The results of the test shall be reported to the appropriate BLM office.**
  - 3. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - 4. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi in accordance with API RP 53. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.**
  - 5. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.**

### **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.

- 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.**
- 3. Flow-sensor on the flow line to warn of abnormal mud returns from the well**

**Engineer on call phone: 505-706-2779  
WWI 051707**