

595

OCD-ARTESIA

HIGH CAVE KARST

Form 3160-3
(April 2004)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		Month - Year 1 - 2007 OCD - ARTESIA, NM	
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. NMNM-048344	
2. Name of Operator SDX Resources, Inc.		6. If Indian, Allottee or Tribe Name	
3a. Address PO Box 5061 Midland, TX 79704		7. If Unit or CA Agreement, Name and No.	
3b. Phone No. (include area code) 432-685-1761		8. Lease Name and Well No. Pure Federal #3	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 910' FNL 1190' FEL At proposed prod. zone Same Roswell Controlled Water Basin		9. API Well No. 30-015-35606	
14. Distance in miles and direction from nearest town or post office* 12 miles East of Artesia, NM		10. Field and Pool, or Exploratory Artesia, Glendon - yes	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 910' (330')		11. Sec., T. R. M. or Blk. and Survey or Area 21, T17S, R28E, Unit A	
16. No. of acres in lease 160		12. County or Parish Eddy	
17. Spacing Unit dedicated to this well 40		13. State NM	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. 455'		20. BLM/BIA Bond No. on file NM2307	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3601' GR		22. Approximate date work will start* 05/01/2007	
23. Estimated duration 10 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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature Bonnie Atwater	Name (Printed/Typed) Bonnie Atwater	Date 3/20/07
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Title
Regulatory Tech

Approved by (Signature) J/s/ James Stovall	Name (Printed/Typed)	Date
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Acting FIELD MANAGER	Office CARLSBAD FIELD OFFICE
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APR 30 2007

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 1 YEAR

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)

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

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

1156 - 5608

DISTRICT I

1625 N. FRENCH DR., HOBBES, 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

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 51120	Pool Name Red Lake, GL-YE
Property Code 35988	Property Name PURE FEDERAL	Well Number 3
OGRID No. 020451	Operator Name SDX RESOURCES, INC.	Elevation 3601'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	21	17-S	28-E		910	NORTH	1190	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	Joint or Infill	Consolidation Code	Order No.
40			

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>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=663686.0 N X=548477.0 E</p> <p>LAT.=32.824575° N LONG.=104.176037° W</p>		<p>OPERATOR CERTIFICATION</p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>3/20/07 Date</p> <p>Signature Bonnie Atwater Printed Name</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>MARCH 5, 2007</p> <p>Date Surveyed Signature & Seal of Professional Surveyor LA</p> <p>3/16/07 0711.0191</p>
		<p>Certificate No. GARY EIDSON 12641 RONALD J. EIDSON 3239</p>

Exhibit #1

DRILLING PROGRAM
SDX Resources Inc.
Pure Federal # 3
910' FNL, 1190' FEL
Unit A Sec. 21, T17S, R28E
Eddy Co., NM

1. Geologic Name of Surface Formation:

Permian

2. Estimated Tops of Important Geologic Markers:

Yates	600
7- Rivers	900'
Queen	1200'
Grayburg	1600'
San Andres	1950'

3. Estimated Depth of Anticipated Fresh Water, Oil or Gas:

Water Sand	150' - 200'	Fresh Water
Yates	650	Oil & Gas
7-Rivers	950	Oil & Gas
Queen	1400'	Oil & Gas
Grayburg	1880'	Oil & Gas
San Andres	2800'	Oil & Gas

Fresh water sands will be protected by running 8-5/8" casing to a minimum depth of 400' and circulating cement. All other zones will be isolated by running 4-1/2" or 5-1/2" production casing and circulating cement.

4. Casing Program:

<u>Hole Size</u>	<u>Interval</u>	<u>OC Csg</u>	<u>Weight Grade Jt Cond Type</u>
12-1/4"	0 - 400	8-5/8"	24#, J55, Used
7-7/8"	0 - TD	4-1/2" - 5-1/2"	9.5# - 17#, J55, Used

Cement Program:

8-5/8" Surface Casing: Cemented to surface with 325 sx of Class C with 2% CaCl and 1/4#/sx Flocele.

5-1/2" Production Casing: Cemented with 300 sx of Class C and 400 sx of Lite C with 6# salt/sx and 1/4#/sx Flocele. This should circulate cement to the surface.

5. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) shown in Exhibit #1 will consist of an annular bag type preventer (2000 psi WP). Unit will be hydraulically operated. BOP will be nipped up on the 8-5/8" surface csg and used continuously until TD is reached. BOP and accessory equipment will be tested to 1000 psi before drilling out of surface casing. A 2" kill line and a 2" choke line will be included in the drilling spool. Other accessories to the BOP equipment will include a kelly cock.

6. Types and Characteristics of the Proposed Mud System:

The well will be drilled to TD with a combination of fresh water and brine water mud system. The applicable depth and properties of this system are as follows:

<u>Depth</u>	<u>Type</u>	<u>Weight (ppg)</u>	<u>Viscosity (sec)</u>	<u>Waterloss (cc)</u>
0 - 400	Fresh Water (spud)	8.5	40 - 45	N/C
400 - TD	Brine water, SWG, Starch	10.0	30	24

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the wellsite at all times.

7. Auxiliary Well Control and Monitoring Equipment:

- A. A kelly cock will be kept in the drill string at all times.
- B. A mud logging unit complete with H2S detector will be continuously monitoring drilling penetration rate and hydrocarbon shows from 500' to TD.

8. Logging, Testing and Coring Program:

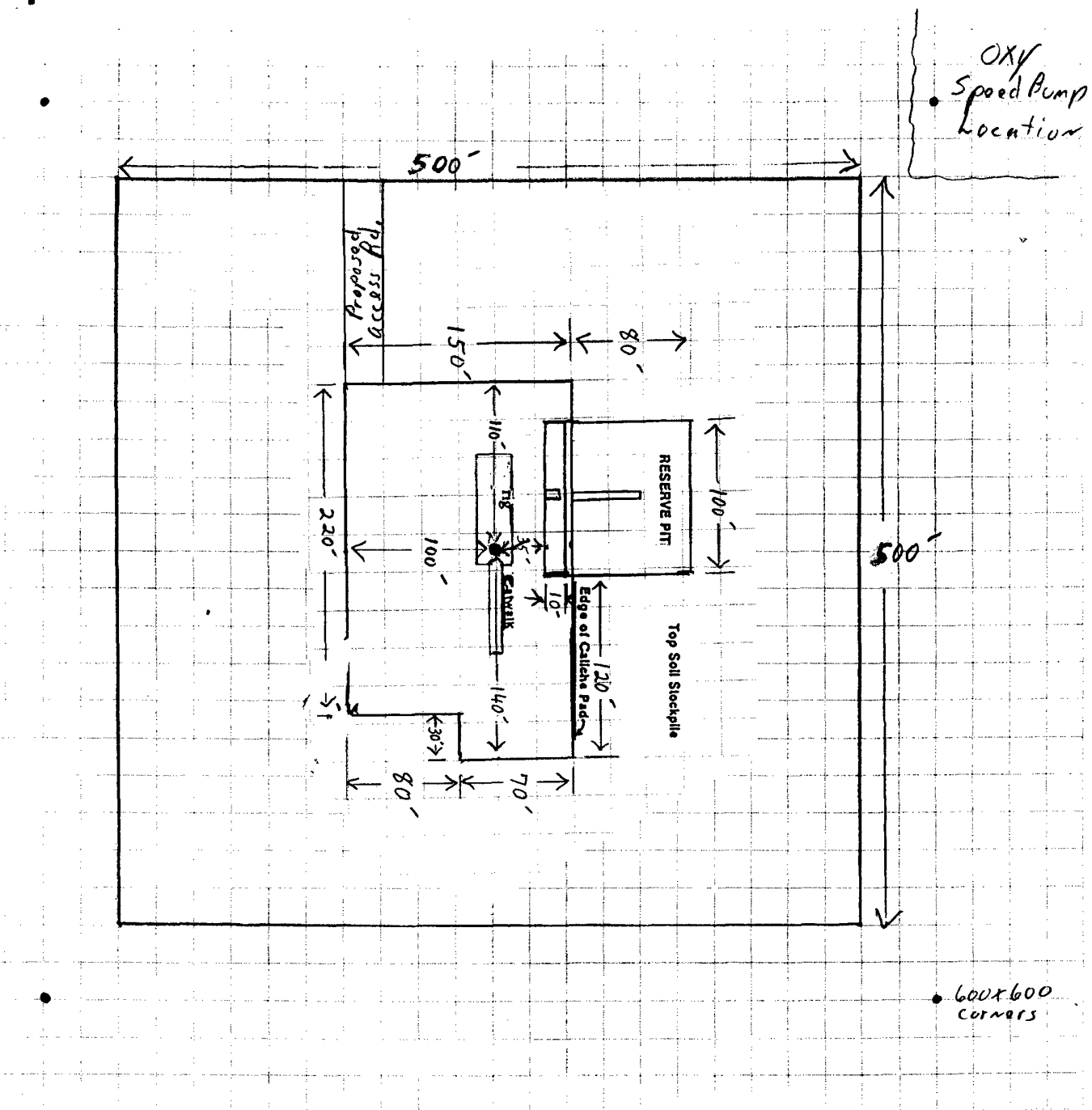
- A. Drillstem tests will be run on the basis of drilling shows.
- B. The electric logging program will consist of GR-Dual Laterolog and GR-Compensated Neutron-Density from TD to surface casing.
- C. Conventional coring may be performed in select intervals if deemed necessary.
- D. Further testing procedures will be determined after the production casing has been cemented at TD based on drill shows and log evaluation.

9. Abnormal Conditions, Pressures, Temperatures, & Potential Hazards:

No abnormal pressure or temperatures are anticipated. The estimated bottom hole temperature (BHT) at TD is 94° and estimated maximum bottom-hole pressure (BHP) is 800 psig. No abnormal concentrations of hydrogen sulfide or other hazardous gases or fluids have been encountered, reported or are known to exist at this depth in this area. All H2S operation precautions will be followed (see attached H2S drilling operations plans). No major loss circulation zones have been reported in offsetting wells.

10. Anticipated Starting Date and Duration of Operations:

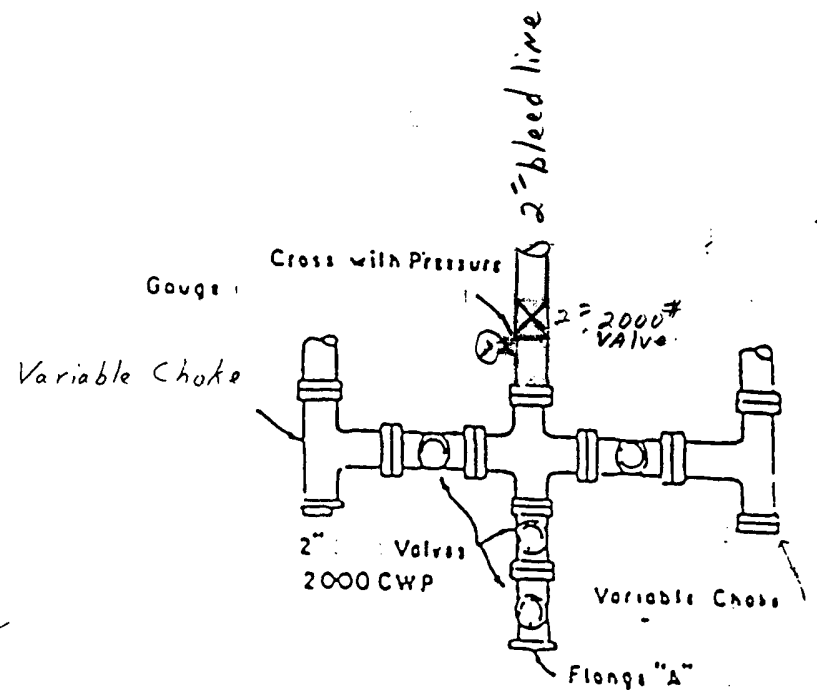
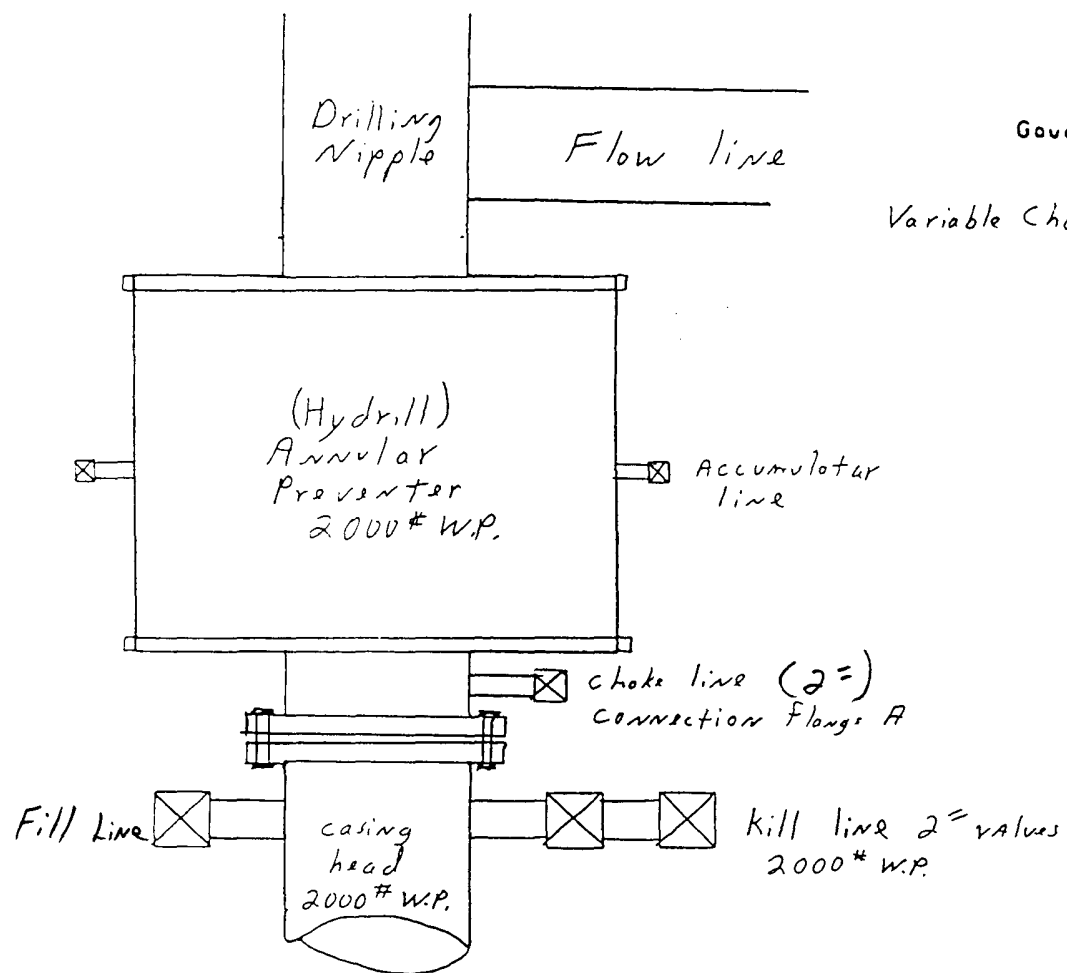
Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is May 1st, 2007. Once commenced, the drilling operation should be finished in approximately 10 days. If the well is productive, an additional 30 days will be required for completion and testing before a decision is made to install permanent facilities.



SDX Resources, Inc.

Drilling rig layout

Pure Fed. #3



PLAN VIEW-CHOKE MANIFOLD

Exhibit #

HYDROGEN SULFIDE DRILLING OPERATIONS PLAN

SDX Resources Inc.

Pure Federal # 3

910' FNL, 1190' FEL

Sec. 21, T17S, R28E, Unit A

Eddy Co., NM

I. Hydrogen Sulfide Training

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

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

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

1. The effects of H₂S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan.
4. Anticipated H₂S concentrations are below levels that would require a H₂S Contingency Plan as required by the NMOCD.

There will be an initial safety session just prior to commencing operations on the well. The initial session shall include a review of the site's specific H₂S Drilling Operations Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

II. H₂S SAFETY EQUIPEMNT AND SYSTEMS

Note: All H₂S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500'.

1. Well Control Equipment:
 - A. Annular Preventer to accommodate all pipe sizes with properly sized closing unit.
2. Protective Equipment for Essential Personnel:
 - A. Mark II Surviveair 30-minute units located in the dog house.

3. H2S Detection and Monitoring Equipment:

- A. 1 – portable H2S monitor positioned on location for best coverage and response.
- B. Mud logging trailer shall have H2S monitoring equipment.

4. Visual Warning Systems:

- A. Guy lines will be flagged and a wind sock will be positioned on location.
- B. Caution/Danger signs shall be posted on roads providing direct access to location.

5. Mud Program:

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

6. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service as necessary.

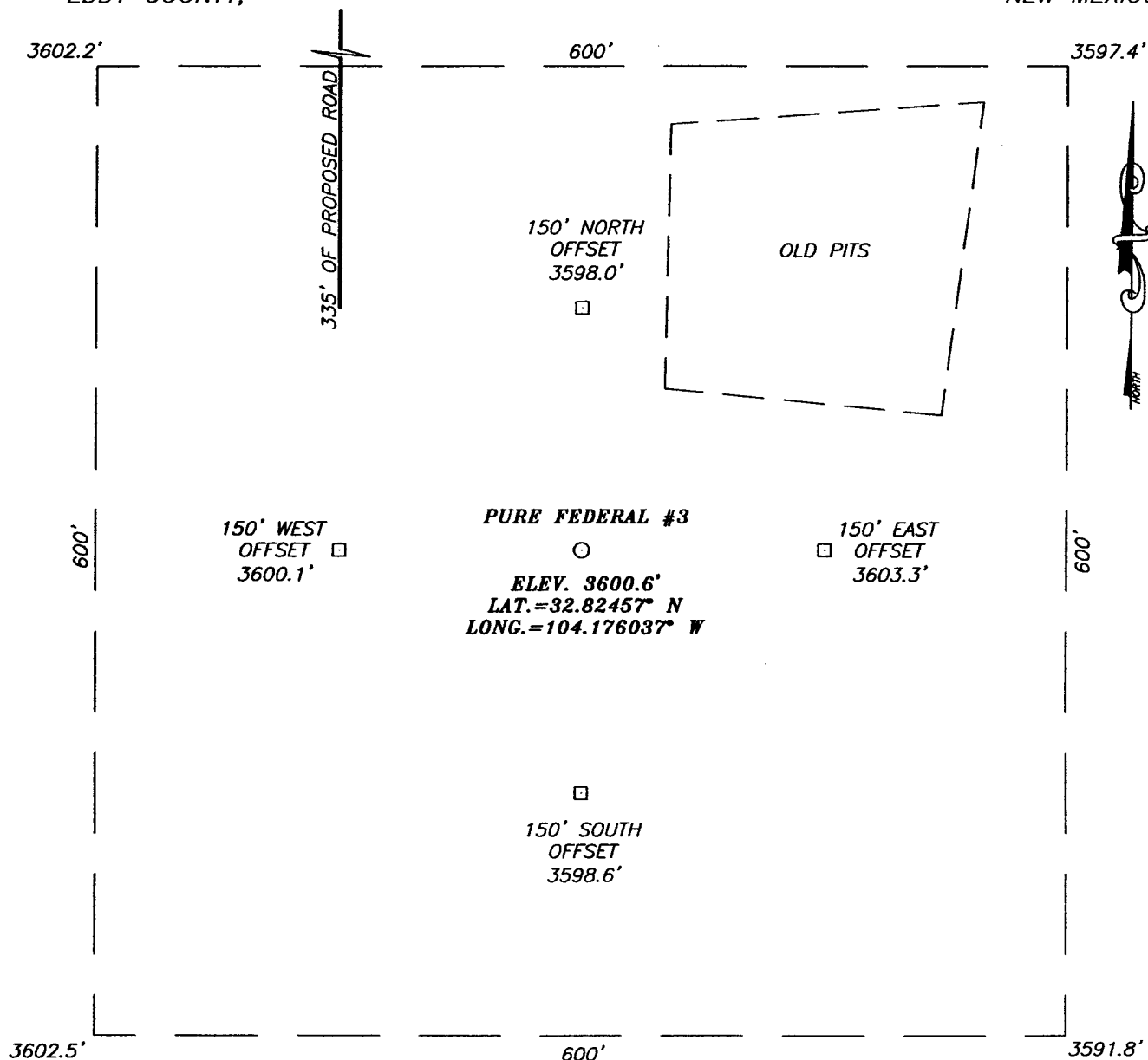
7. Communication:

Radio communications in company vehicles including cellular telephone and 2-way radio.

8. Well Testing:

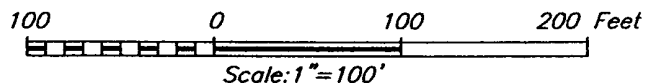
No DST's are planned.

SECTION 21, TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO



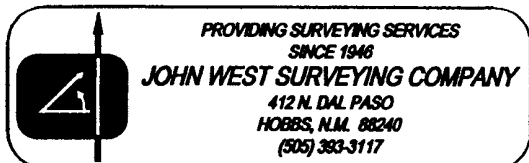
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82
 (LOVINGTON-ARTESIA HWY.) AND CO. RD. #208
 (RED LAKE RD.), GO WEST ON U.S. HWY. #82
 APPROX. 0.8 MILES. TURN RIGHT AND GO NORTH
 APPROX. 1.2 MILES. TURN RIGHT AND GO
 NORTHEAST APPROX. 0.5 MILES. TURN RIGHT AND
 GO EAST-NORTHEAST APPROX. 0.5 MILES TO A
 PROPOSED ROAD SURVEY. FOLLOW ROAD SURVEY
 SOUTH APPROX. 450 FEET SOUTH TO THIS
 LOCATION.



SDX RESOURCES, INC.

PURE FEDERAL #3 WELL
 LOCATED 910 FEET FROM THE NORTH LINE
 AND 1190 FEET FROM THE EAST LINE OF SECTION 21,
 TOWNSHIP 17 SOUTH, RANGE 28 EAST, N.M.P.M.,
 EDDY COUNTY, NEW MEXICO.



Survey Date: 3/5/07	Sheet 1 of 1 Sheets
W.O. Number: 07.11.0191	Dr By: LA
Date: 3/8/07	Rev 1:N/A
Disk:CD#6	07110191_2
	Scale:1"=100'

Conditions of Approval Cave and Karst

EA#: NM-080-07-0595

Lease #: NM-048344

SDX Resources, Inc.

Pure Fed. #2 & #3

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 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.

Differential Shut-off Systems:

A leak detection system and differential shut off systems will be installed for pipelines and tanks used in production or drilling.

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 of 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: SDX Resources , Inc
Well Name & No. Pure Federal # 3
Location: 910'FNL, 1190'FEL, SEC21, T17S, R28E, Eddy County, NM
Lease: NM-048344

I. DRILLING OPERATIONS REQUIREMENTS:

A. The Bureau of Land Management (BLM) is to be notified a minimum of 4 hours in advance, 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:

1. Spudding
2. Cementing casing: 8.625 inch 5.5 inch OR 4.5 inch
3. BOP tests

B. A Hydrogen Sulfide (H₂S) Drilling Plan is N/A.

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. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

E. 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 8.625 inch surface casing shall be set at APPROXIMATELY 400 feet and cement circulated to the surface.

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, which ever is greater. (This is to include the lead cement)
3. WOC time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds of compression strength, which ever is greater.
4. If cement falls back, Remedial cementing shall be completed prior to drilling out that string.

B. The minimum required fill of cement behind the 5.5 or 4.5 inch production casing is cement shall circulate to the surface.

D. If hard band 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 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.
- B. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the 8.625 inch casing shall be 2000 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 the 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 the test is done with a test plug and 30 minutes without a test plug.
 5. A variance to test the BOP and BOPE to the reduced pressure of 1000 psi with the rig pumps is approved the BOP/BOPE must be tested by an independent service company.

IV. Hazards:

1. Our geologist has indicated that there is High Cave / Karst potential.
2. Our geologist has indicated that there is potential for lost circulation in the San Andres and Grayburg formations

Engineering may be contacted at 505-706-2779 for variances if necessary.

FWright 3/26/07