

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No.  
NO-G-0402-1710  
6. If Indian, Allottee or Tribe Name  
NAVAJO NATION

7. If Unit or CA Agreement, Name and No.  
N/A

8. Lease Name and Well No.  
EAGLE 6-K #1

9. API Well No.  
30-045-33868

10. Field and Pool, or Exploratory  
WC 6-31N-19W-6; Paradise oil

11. Sec., T. R. M. or Blk. and Survey or Area  
K 6-31N-19W NMPM

12. County or Parish  
SAN JUAN

13. State  
NM

1a. Type of work: ☒ DRILL ☐ REENTER

1b. Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☒ Multiple Zone

2. Name of Operator  
NAVAJO NATION OIL & GAS CO., INC.

3a. Address P. O. BOX 4439  
WINDOW ROCK, AZ 86515

3b. Phone No. (include area code)  
(928) 871-4880

4. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 1937' FSL & 2277' FWL  
At proposed prod. zone SAME

14. Distance in miles and direction from nearest town or post office\*  
15 AIR MILES NW OF SHIPROCK, NM

15. Distance from proposed\*  
location to nearest  
property or lease line, ft.  
(Also to nearest drig. unit line, if any) 7,217'

16. No. of acres in lease  
12,160

17. Spacing Unit dedicated to this well  
NESW

18. Distance from proposed location\*  
to nearest well, drilling, completed,  
applied for, on this lease, ft. 2,822' (FALCON)

19. Proposed Depth  
6,750'

20. BLM/BIA Bond No. on file  
BIA RLB0006712

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
5,058' GL

22. Approximate date work will start\*  
10/10/2006

23. Estimated duration  
5 WEEKS

24. Attachments

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

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

25. Signature

*Brian Wood*

Name (Printed/Typed)

BRIAN WOOD

Date

07/23/2006

Title

CONSULTANT

PHONE: (505) 466-8120

FAX: (505) 466-9682

Approved by (Signature)

*D. Mankie*

Name (Printed/Typed)

Date

5/24/07

Title

AFM

Office

FFC

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.

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)

NOTIFY AZTEC OGD 24 HRS.  
PRIOR TO CASING & CEMENT

This action is subject to technical and procedural review pursuant to 43 CFR 3165.3 and appeal pursuant to 43 CFR 3165.4

DRILLING OPERATIONS AUTHORIZED ARE SUBJECT TO COMPLIANCE WITH ATTACHED "GENERAL REQUIREMENTS"

NMOCD

00-07-07  
RAH



State of New Mexico  
Energy, Minerals & Mining Resources Department  
OIL CONSERVATION DIVISION  
2040 South Pacheco  
Santa Fe, NM 87505

Form C - 102

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

APA Number <b>30-045- 33868</b>	Pool Code <b>97616</b>	Pool Name <b>WE31119W6; Pavadon Creek</b>
Property Code <b>36519</b>	Property Name <b>EAGLE 6-K</b>	Well Number <b>1</b>
GRID No. <b>242841</b>	Operator Name <b>NAVAJO NATION OIL &amp; GAS CO., INC.</b>	Elevation <b>5058'</b>

Surface Location									
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from	North/South	Feet from	East/West	County
K	6	31 N.	19 W.	400	1937'	SOUTH	2277'	WEST	SAN JUAN

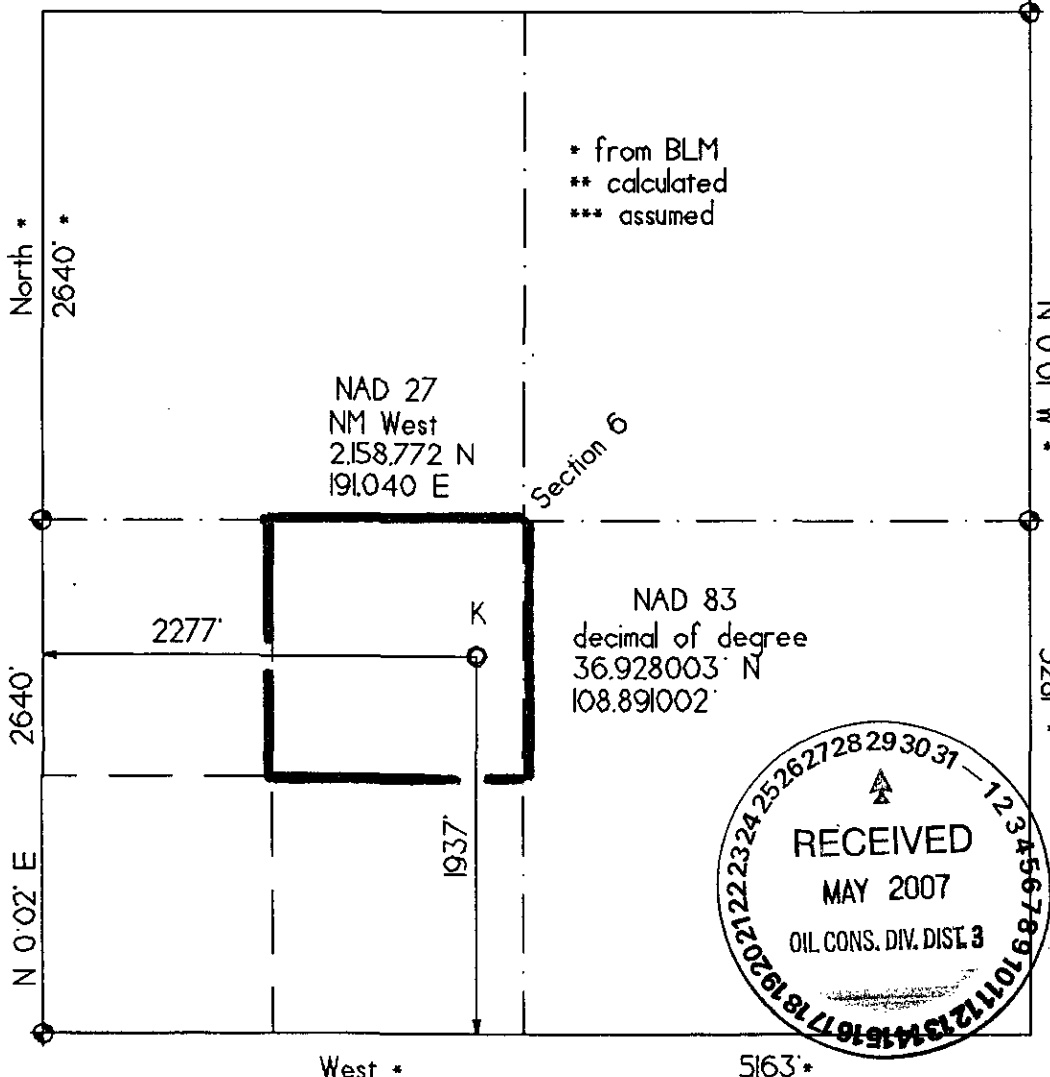
Bottom Hole Location If Different From Surface									
UL or Lot	Sec.	Twp.	Rge.	Lot Idn.	Feet from	North/South	Feet from	East/West	County

Dedication <b>40</b>	Joint ? .	Consolidation .	Order No. .
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NO ALLOWABLE WILL ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

West \*

5161 \*



<b>OPERATOR CERTIFICATION</b> I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief. Signature <i>Brian Wood</i>	
Printed Name	<b>BRIAN WOOD</b>
Title	<b>CONSULTANT</b>
Date	<b>JULY 23, 2006</b>
<b>SURVEYOR CERTIFICATION</b> I hereby certify that the well location 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. Date of Survey <b>03/25/06</b>	
Signature and Seal of Professional Surveyor 	

Submit 3 Copies To Appropriate District Office  
District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Ave., 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

Form C-103  
May 27, 2004

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

WELL API NO.  
30-045- **33868**  
5. Indicate Type of Lease  
STATE ☐ FEE ☐  
6. ~~State~~ Oil & Gas Lease No.  
NO-G-0402-1710

SUNDRY NOTICES AND REPORTS ON WELLS  
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

1. Type of Well: Oil Well ☒ Gas Well ☐ Other ☐

2. Name of Operator  
NAVAJO NATION OIL & GAS CO., INC.

3. Address of Operator  
P. O. BOX 4439, WINDOW ROCK, AZ 86515

4. Well Location

Unit Letter: K

1937' FSL & 2277' FWL

Section 6

Township 31 N Range 19 W NMPM SAN JUAN County

11. Elevation (Show whether DR, RKB, RT, GR, etc.)

5,058' GL

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type: DRILLING Depth to Groundwater: >100' Distance from nearest fresh water well: >5,000' Distance from nearest surface water: >100'

Pit Liner Thickness: 12 mil Below-Grade Tank: Volume bbls; Construction Material

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

PERFORM REMEDIAL WORK ☐ PLUG AND ABANDON ☐  
TEMPORARILY ABANDON ☐ CHANGE PLANS ☐  
PULL OR ALTER CASING ☐ MULTIPLE COMPL ☐

OTHER: DRILLING PIT ☒

SUBSEQUENT REPORT OF:

REMEDIAL WORK ☐ ALTERING CASING ☐  
COMMENCE DRILLING OPNS. ☐ P AND A ☐  
CASING/CEMENT JOB ☐

OTHER: ☐

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 1103. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that any pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒ a general permit ☐ or an (attached) alternative OCD-approved plan ☐.

SIGNATURE Brian Wood TITLE: CONSULTANT

DATE: JULY 23, 2006

Type or print name: BRIAN WOOD

E-mail address: brian@permitswest.com

Telephone No.: (505) 466-8120

For State Use Only

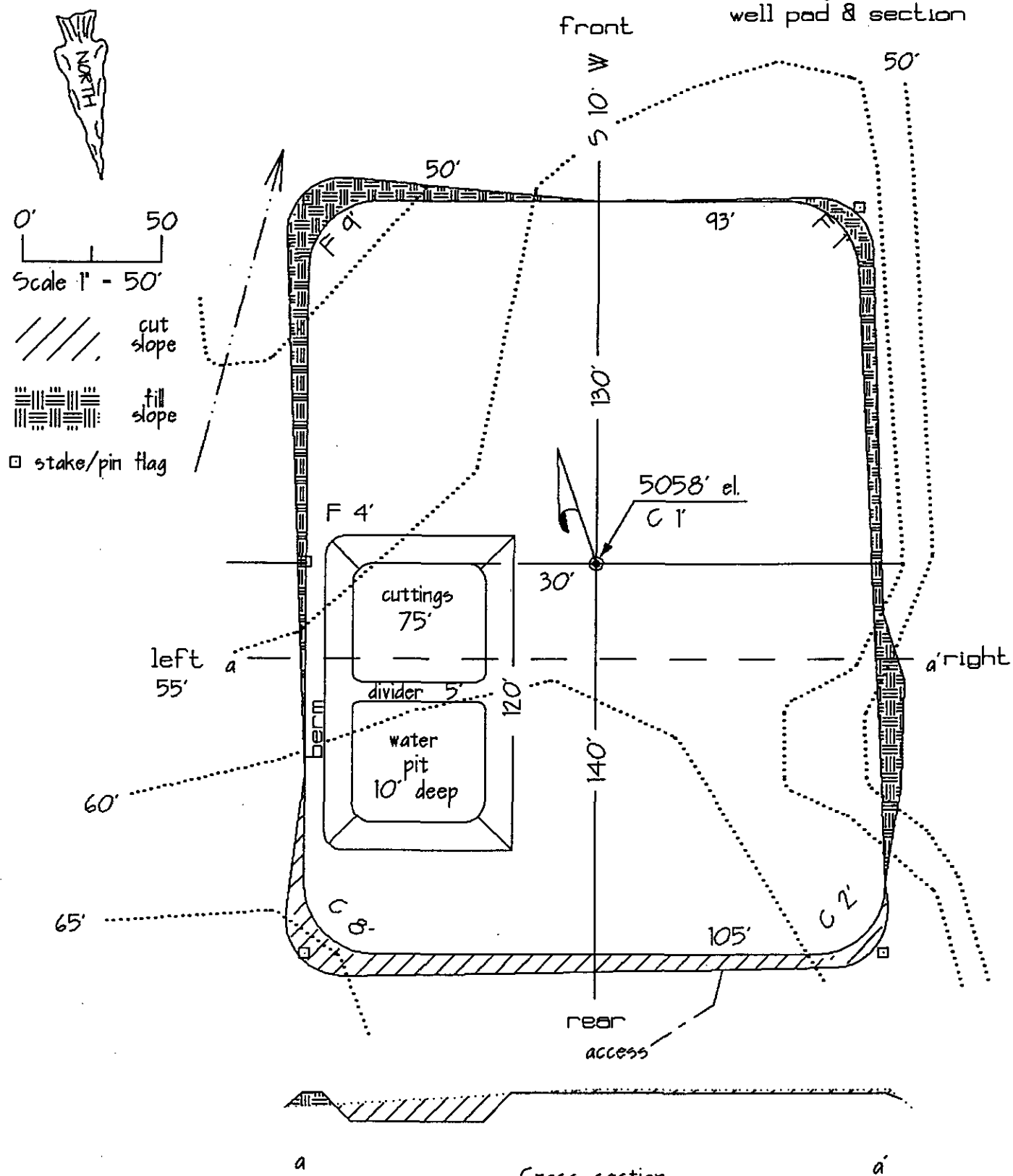
APPROVED BY: [Signature]

TITLE: DEPUTY OIL & GAS INSPECTOR, DIST. 4

DATE: JUN 07 2006

Conditions of Approval (if any)

Eagle # 2  
well pad & section



Navajo Nation Oil & Gas Co., Inc.  
Eagle 6-K #1  
1937' FSL & 2277' FWL  
Sec. 6, T. 31 N., R. 19 W.  
San Juan County, New Mexico

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## Drilling Program

### 1. FORMATION TOPS

The estimated tops of important geologic markers are:

<u>Formation Name</u>	<u>GL Depth</u>	<u>KB Depth</u>	<u>Elevation</u>
Mancos Shale	0'	15'	+5,058'
Dakota Sandstone	508'	523'	+4,550'
Morrison Burro Canyon	575'	590'	+4,483'
Chinle Shale	2,670'	2,685'	+2,388'
DeChelly	3,535'	3,550'	+1,523'
Organ Rock	3,800'	3,815'	+1,258'
Cutler Formation	4,310'	4,325'	+748'
Honaker Trail	5,147'	5,162'	-89'
Paradox	5,588'	5,603'	-530'
Ismay	6,010'	6,025'	-952'
Desert Creek	6,150'	6,165'	-1,092'
Akah	6,342'	6,357'	-1,284'
Barker Creek	6,492'	6,507'	-1,434'
Total Depth (TD)	6,750'	6,765'	-1,662'

### 2. NOTABLE ZONES

Desert Creek and Ismay oil production is the primary goal. Akah and Barker Creek oil production is the secondary goal. Oil and gas shows which appear to the well site geologist to be commercial will be tested. All fresh water and prospectively valuable minerals will be recorded by depth and protected with casing and cement.

Navajo Nation Oil & Gas Co., Inc.  
Eagle 6-K #1  
1937' FSL & 2277' FWL  
Sec. 6, T. 31 N., R. 19 W.  
San Juan County, New Mexico

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### 3. PRESSURE CONTROL

The drilling contract has not yet been awarded, thus the exact BOP model to be used is not yet known. A typical 3,000 psi model is on PAGE 3. An 8-5/8" x 11" 3,000 psi double ram BOP system with a choke manifold and mud cross will be tested to 300 psi and then to 3,000 psi. Upper and lower Kelly cocks with valve handle and subs to fit all drill string connections which are in use will be available on the rig floor.

Tests will be run when:

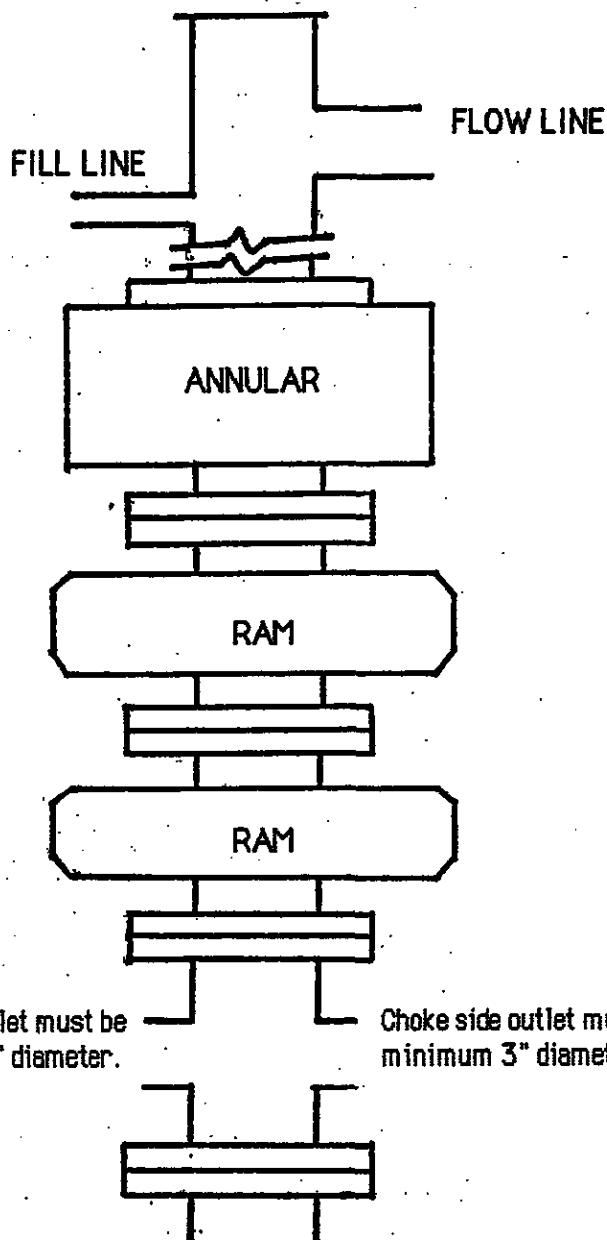
- 1) installed
- 2) anytime a pressure seal is broken (test only affected equipment)
- 3) at least once every 20 days
- 4) blind & pipe rams will be activated each trip, but no more than daily

BOP systems will be consistent with API RP 53. Blowout preventers will be installed and tested before drilling surface casing plug and will remain in use until the well is completed or abandoned. Preventers will be inspected and operated daily to ensure good mechanical working order and this inspection recorded on the daily drilling report. Preventers and casing will be pressure tested before drilling casing cement plugs. Maximum expected bottom hole pressure will be  $\approx 2,900$  psi.

### 4. CASING & CEMENT

<u>Hole Size</u>	<u>O. D.</u>	<u>Pounds/Foot</u>	<u>Grade</u>	<u>Age</u>	<u>Connections</u>	<u>Depth Set</u>
12-1/4"	8-5/8"	24	K-55	New	ST & C	500'
7-7/8"	5-1/2"	15.5	K-55	New	ST & C	6,750'

Surface casing will be cemented to the surface with  $\approx 371$  sacks ( $\approx 427$  cubic feet) Class G with 2%  $\text{CaCl}_2$  + 1/4 pound per sack cello flake. Weight = 15.8 pounds per gallon. Yield = 1.15 cubic feet per sack. Volume calculated at 10% excess over annular volume.



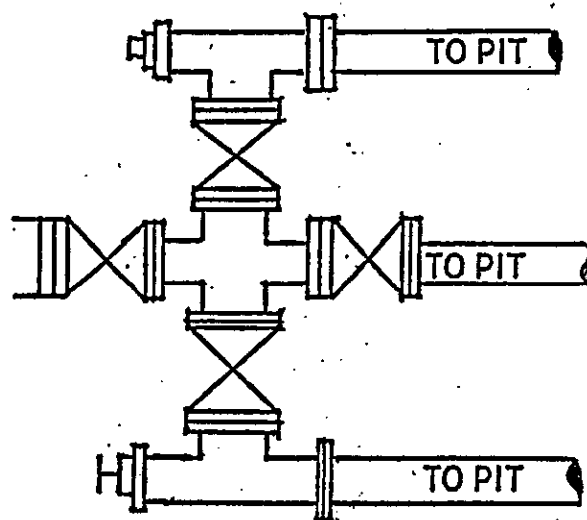
Kill side outlet must be minimum 2" diameter.

Choke side outlet must be minimum 3" diameter.

Kill line will be minimum 2" diameter and have 2 valves, one of which shall be a minimum 2" check valve.

### TYPICAL BOP STACK & CHOKE MANIFOLD

There will be at least 2 chokes and 2 choke line valves (3" minimum). The choke line will be 3" in diameter. There will be a pressure gauge on the choke manifold.



Upper kelly cock will have handle available.

Safety valve and subs will fit all drill string connections in use.

All BOPE connections subjected to well pressure will be flanged, welded, or clamped.

Navajo Nation Oil & Gas Co., Inc.  
Eagle 6-K #1  
1937' FSL & 2277' FWL  
Sec. 6, T. 31 N., R. 19 W.  
San Juan County, New Mexico

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A stage collar will be set at  $\approx 3,500'$ . Weight on cement at least four hours between stages.

First stage of the production casing will be cemented from TD to  $\approx 3,500'$ . Lead with  $\approx 250$  sacks ( $\approx 462$  cubic feet) Class G 65:35 poz with 6% gel + 1/4 pound per sack cello flake. Weight = 12.7 pounds per gallon. Yield = 1.85 cubic feet per sack. Tail with  $\approx 220$  sacks ( $\approx 253$  cubic feet) Class G cement with 2%  $\text{CaCl}_2$ . Weight = 15.8 pounds per gallon. Yield = 1.15 cubic feet per sack. Total first stage cement = 715 cubic feet ( $\geq 25\%$  excess in open hole).

Second stage will be cemented from  $\approx 3,500'$  to the surface. Lead with  $\approx 355$  sacks ( $\approx 657$  cubic feet) Class G 65:35 poz with 6% gel + 1/4 pound per sack cello flake. Weight = 12.7 pounds per gallon. yield = 1.85 cubic feet per sack. Tail with  $\approx 100$  sacks ( $\approx 115$  cubic feet) Class G with 2%  $\text{CaCl}_2$ . Weight = 15.8 pounds per gallon. Yield = 1.15 cubic feet per sack. Total second stage cement = 772 cubic feet ( $\geq 25\%$  excess in open hole).

## 5. MUD PROGRAM

Fresh water, gel, lime, and native solids with a weight of 8.3 pounds per gallon will be used from the surface to  $\approx 3,000'$ . Gel/lime sweeps will be used as necessary for hole cleaning.

A low solids, non-dispersed polymer system will be used from  $\approx 3,000'$  to TD. Weight = 8.6 to 9.5 pounds per gallon. Gel/lime sweeps will be used as needed to clean the hole. Fluid loss will be maintained at 15 – 20 cc. Fluid loss will be reduced to  $\leq 15$  cc before coring, logging or drill stem tests.

A two person mud logging unit will be on site from  $\approx 4,000'$  to TD. Cuttings will be collected every  $\approx 30'$  to the top of the Paradox or  $\approx 5,500'$ . After that point, cuttings will be collected every  $\approx 10'$  to TD.



Navajo Nation Oil & Gas Co., Inc.  
Eagle 6-K #1  
1937' FSL & 2277' FWL  
Sec. 6, T. 31 N., R. 19 W.  
San Juan County, New Mexico

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#### 6. CORES, LOGS, & TESTS

A conventional core may be cut in the Desert Creek or at strong shows. Side wall cores may also be cut. GR - Sonic and DLL-Micro-SFL log suites will be run from TD to the surface. FDC-CNL logs will be run from TD to  $\approx 4,000'$ . No drill stem tests are currently planned.

#### 7. DOWN HOLE CONDITIONS

No abnormal temperatures or abnormal pressures are expected. No hydrogen sulfide has been found within a  $\approx 7$  mile radius.

#### 8. OTHER INFORMATION

The anticipated spud date is October 10, 2006. It is expected it will take 3 weeks to drill and 2 weeks to complete the well.

# HYDROGEN SULFIDE CONTINGENCY PLAN

NAVAJO NATION OIL & GAS CO., INC.

LEASE NO-G-0402-1710

EAGLE ~~1-31N-20W~~ K 6 R #1

1-31N-20W

SAN JUAN COUNTY, NM



Hydrogen Sulfide Contingency Plan  
Page 1

Valid Only at Time of Printing.  
Dated 10/10/2006

**Company Operation Manager**

1. The Company Operation Manager will be responsible for notifying and maintaining contact with company managers and supervisory personnel.
2. Maintain communication with the location supervisor to proceed with any other assistance that might be required.
3. Travel to well location is appropriate.
4. Assist location supervisor with all other notifications-both company and regulatory.

**Well Specialist (Location Supervisor)**

1. The location supervisor will confirm that all personnel on location at any time are trained in Hydrogen Sulfide Safety Awareness, are clean shaven and are familiar with safety equipment on-site and have personal Hydrogen Sulfide monitor for their protection.
2. Ensure that all safety and emergency procedures are observed by all personnel.
3. Make an effort to keep the number of personnel on location to a minimum and to ensure that only essential personnel are on location during critical operations.
4. Conduct weekly hydrogen sulfide emergency mock drill.
5. Should extreme danger condition exist, the location supervisor will:
  - a. Assess the situation and advise all personnel by appropriate means of communication.
  - b. Be responsible for determining that the extreme danger condition is warranted and the red flag shall be posted at location entrance.
  - c. Go to safe briefing area and give clear instructions relative to hazard on location, and actions for personnel to follow.
  - d. Notify company and regulatory groups of current situation as outlined in company protocol. Follow appropriate emergency procedures for emergency services notification.
  - e. Proceed to rig floor and supervise operations with rig supervisor. Take action to control and reduce the hydrogen sulfide hazard.
  - f. Ensure that essential personnel are properly protected with supplied air breathing equipment and that non-essential personnel are in a muster station free hydrogen sulfide.
  - g. Be responsible for authorizing evacuation of persons/residents in area surrounding the drilling location.

### **Rig Supervisor-Tool Pusher**

1. If the Location Supervisor is unable to perform his/her duties, and the alternate representative is also unable or unavailable to perform his/her duties, the rig supervisor-tool pusher will assume command of well site operations and all responsibilities listed above for rig personnel.
2. Ensure that all rig personnel are properly trained to work in Hydrogen Sulfide environment and fully understand the purpose of hydrogen sulfide monitors and alarms, and the action to take when alarms visual/audible initiate. Ensure that all crew members that all crew personnel understand the buddy system, safe briefing areas, muster stations, emergency evacuation procedures and individual duties.
3. Should an extreme danger operational condition arise, the rig supervisor-tool pusher shall assist the Location Supervisor by:
  - a. Proceeding to the rig floor and assist in supervising rig operations.
  - b. Ensure that only essential personnel remain in the hazardous areas.
  - c. Ensure that all personnel that remain in hazardous area, wear supplied air breathing equipment until notified all is "CLEAR" of any toxic gases.
  - d. Assign rig crew member or other service representative to block entrance to location. No unauthorized personnel will be allowed entry to location.
  - e. Help to determine hazardous "danger zones" on location using portable detection equipment.
  - f. Position electric fans to move gas in any high concentration areas with Continuous monitoring of the area.

### **SAFETY CONSULTANT**

1. During NORMAL operations (no hydrogen sulfide present), the safety consultant will be responsible for the following:
  - a. Ensure that all well site safety equipment is in place and operational.
  - b. Ensure that all well site personnel are familiar with location safety layout and operation of all safety equipment.
  - c. Ensure that all well site personnel are adequately trained in Hydrogen Sulfide Safety Awareness and are cleaned shaven.
  - c. Assist location supervisor with weekly hydrogen sulfide emergency mock drill.
2. When an operational condition is classified as extreme danger, the safety consultant will be responsible for the following:
  - a. Account for all well site personnel.
  - b. Assess any injuries and direct first aid measure.

- c. Ensure that all safety and monitoring equipment is functioning properly and available.
- d. Monitor the safety of well site personnel.
- e. Maintain a close communication with the location supervisor.
- f. Be prepared to assist location supervisor with support of rig crew or other personnel using supplied air breathing equipment.
- g. Be prepared to assist location supervisor with emergency procedures.
- h. Be prepared to assist with evacuation of any area residents or other personnel working in the immediate area.

#### **All Personnel**

- 1. Always be alert for possible Hydrogen Sulfide visual/audible alarms.
- 2. Be familiar with location of Safe Briefing Areas and Muster Stations.
- 3. Be familiar with location of and operation of all air supplied breathing equipment.
- 4. Familiarize yourself with nearest escape routes for safe evacuation
- 5. Be aware of prevailing wind direction, any changes in wind direction, or absence of wind by checking the wind socks placed around location, and be aware of uphill direction.
- 6. If hydrogen sulfide lights and/or siren initiates "STAY CALM" don escape breathing systems and follow directions of person in charge and proceed to briefing area/muster station. Do not initiate rescue until directed by person in charge.
- 7. Essential personnel shall don Self-Contained Breathing Apparatus (SCBA) and work using the "BUDDY SYSTEM" will rescue any victims and work to control Hydrogen Sulfide Release.
- 8. Non-essential personnel shall evacuate to the appropriate safe briefing area using escape breathing systems. Wait there for further instructions from person in charge.

## **RIG LAYOUT**

### **Location**

1. All supplied air breathing equipment and hydrogen sulfide monitors will be rigged up prior to starting any operation suspected to encounter hydrogen sulfide. The rig crews and other service personnel will be trained at this time. This will allow sufficient time for all rig crews to be trained and all safety equipment in place and functioning when the first sour zone is actually encountered.
2. The rig will be situated on location to allow for the prevailing winds to blow across the rig toward the circulation tanks or at right angles to the lines from the B.O.P. s to the circulation tanks.
3. The entrance to the location is designed so that it can be barricaded if a hydrogen sulfide emergency condition arises. An auxiliary exit route will be available so that in case of an emergency, a shift in wind direction would not prevent escape from the location.
4. A minimum of 2 safe briefing areas/muster stations shall be designated for assembly of personnel during emergency conditions. These will be located at least 150 feet or as practical, from the well bore and in such a location that at least one area will be upwind of the well at all times. Upon recognition of an emergency situation, all personnel will be trained to assemble at the designated briefing area for instructions.
5. Smoking areas will be established and "NO SMOKING" signs will be posted around the location.
6. Reliable 24 hour radio or telephone communications will be available.
7. A hydrogen sulfide sensor will be rigged up at the manifold to the choke system.
8. All equipment that might come into contact with hydrogen sulfide – drill pipe/work strings, test tools, blowout preventer, casing, choke system will meet metallurgy requirements for hydrogen sulfide service.
9. The rig will have a continuous electronic hydrogen sulfide detection system that automatically will activate visible and audible alarms if hydrogen sulfide is detected. The visible light will activate at 10 ppm H<sub>2</sub>S, and audible siren will activate if 15 ppm or higher concentration is present. There will be at least 4 H<sub>2</sub>S sensors in place on the rig. They will be located to detect the presence of hydrogen sulfide in areas where it is most likely to come to the surface. The sensor head locations will be: 1) rig floor by driller's

console, 2) substructure area near the bell nipple, 3) two additional sensors will be positioned at the discretion of the location supervisor. At least one light and one siren will be placed on the rig so that the presence of hydrogen sulfide. The light and siren will be strategically placed to be visible to all personnel on the location site. Additional alarm lights & sirens may be added to ensure that all personnel on the drill site are able to visibly see the lights from anywhere on location.

10. The H<sub>2</sub>S detection equipment will be calibrated as recommended by the manufacturer.

11. At least 2 windsocks will be placed around the location site to ensure that everyone on the location can readily determine wind direction. One windsock will be mounted on or near the rig floor to be readily visible to rig crews when tripping pipe.

12. All respiratory protective equipment will be NIOSH/MSHA approved positive pressure type and maintained according to manufacturer's guidelines. All breathing air used for this equipment must be tested every 6 months and approved GRADE D compressed breathing air.

13. Both 30 minute self-contained breathing apparatus (SCBA) and work units with escape cylinders will be available on location. There will be sufficient numbers of this supplied air breathing equipment on location to ensure that all personnel on location have 1 piece of equipment available to them. All respiratory protective equipment will use nose cups to prevent fogging in temperatures below 32 degrees F. Spectacle kits will be available for personnel that require corrective lenses when working under mask.

14. Hydrogen Sulfide mock drills will be conducted at least weekly to ensure that all well site personnel are competent in emergency donning procedures. These drills will be recorded in the daily log.

## **SAFETY PROCEDURES**

### **Training**

All personnel who come on the location must be properly trained in hydrogen sulfide safety awareness. Must be clean shaven and have a Hydrogen Sulfide Safety Awareness card that has not expired.

Training topics shall include at a minimum:

- a. hazards and characteristics of hydrogen sulfide, nitrogen, and oxygen deficient atmospheres and symptoms of exposure to these gases.
- b. proper use, care and limitation of respiratory protective equipment with hands on practice.

- c. use of both fixed and portable detection monitors.
- d. work practices to reduce opportunities for hydrogen sulfide exposure as well as confined space procedures.
- e. first aid for toxic gas exposure and resuscitation equipment.
- f. the buddy system
- g. emergency evacuation procedures
- h. a review of the contingency plan for the well

In addition to hydrogen sulfide safety awareness personnel need to be currently trained in adult CPR/First Aid/Bloodborne Pathogens.

## **OPERATING CONDITIONS**

### **Operating Conditions**

A sign with three color flag warning system will be used to notify personnel approaching the location under what condition the location is operating at. This system will be in compliance with BLM standards 00#6 and industry standards both state and federal.

**Green Flag** – potential danger

**Yellow Flag** – moderate danger

**Red flag** – extreme danger –do not approach if red flag is flying.

### **Evacuation Plan**

If there is residents/business/work going on within a 2 mile radius of the location site, they will be notified and asked to evacuate.

Evacuations will be initiated by the company managers/supervisors and coordinated with appropriate emergency services.

All regulatory agencies will be notified as soon as possible.

### **Emergency Rescue Procedures**

Well site personnel should not attempt emergency rescues unless they have been properly trained. a trained person who discovers another person overcome by hydrogen sulfide should not attempt RESCUE without donning a self-contained breathing apparatus (SCBA). When making an emergency rescue always use the following procedures:

1. Don self-contained breathing apparatus (SCBA) before attempting a rescue.
2. Remove the victim using the buddy system, from the contaminated area to an area free of toxic gas by going upwind or cross wind and personal monitors have stopped alarming before removing your SCBA.



3. Check victims Airway, Breathing, and Circulation (ABC's) and provide appropriate care using barrier devices such as micro-shield, resuscitation pocket mask, or a Bag-valve-mask w/oxygen if available and appropriately trained.
4. As soon as emergency personnel arrive patient care will be given to them.
5. Any personnel who experienced hydrogen sulfide exposure will be transported via appropriate transportation to the closest hospital/clinic/doctors office for further testing and observation. And release of patient will be under written advisement of physician in charge.
6. All contract companies will be advised and will cooperate and work with the accident investigation and be notified of any accident investigation results.

**HYDROGEN SULFIDE SAFETY EQUIPMENT**

<b>QUANTITY</b>	<b>DESCRIPTION</b>
1	Safety trailer with cascade system consisting of (8) 347 cu.ft. compressed air tanks with high-pressure regulators. certificate available.
1	1000 ft. low pressure airline hose with Hanson locking fittings, rigged-up with manifolds to supply breathing air to the personnel on the rig floor, substructure, derrick, shale shaker area, and mud mixing areas.
6	Self-contained breathing apparatus (SCBA)
6	Emergency Escape Breathing Apparatus (EEBA)
1	4-channel continuous electronic hydrogen sulfide monitor with visual/audible alarm. Span and set at 10-15 ppm by a certified technician and calibration sheet available as well as sticker on unit.
1	Gastec and/or detcon detection pump unit with tubes to test for hydrogen sulfide and sulfur dioxide.
1	First aid kit
1	Backboard with straps and headblocks, C-collar and tape
2	Windsocks with poles
1	Well condition sign with 3 flag system
2	Safe briefing area/muster station signs
1	Fire blanket
2	20# fire extinguishers
1	LEL/O2 handheld monitor calibration sheet available as well as sticker on unit.
1	Eyewash station
1	Microshield/resuscitation pocket mask/bag-valve mask with O2 inlet
2	Tanks oxygen with tubing and adult nasal cannulas, adult non-rebreathers.
1	Local emergency phone numbers for police/fire/ems with township and range, longitude and latitude posted inside the trailer on the wall in plain view.
1	Bloodborne pathogen kit