

OCD Hobbs

FORM APPROVED  
OMB No. 1004-0137  
Expires July 31, 2010

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

**Amended APPLICATION FOR PERMIT TO DRILL OR REENTER**

1a. Type of work: ☐ DRILL ☒ REENTER

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

2. Name of Operator  
Delaware Water Company, LLC

3a. Address P.O. Box 1244  
Jal, NM 88252

3b. Phone No. (include area code)  
Contact: 575-626-4528

4. Location of Well (Report location clearly and in accordance with any State requirements.)  
At surface 1980' FNL & 660' FEL Unit H  
At proposed prod. zone 1980' FNL & 660' FEL

14. Distance in miles and direction from nearest town or post office\*  
19 miles west of Jal, NM

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

16. No. of acres in lease  
640

17. Spacing Unit dedicated to this well  
NA

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.  
990' to south

19. Proposed Depth  
Clean-out to 7,836'

20. BLM/BIA Bond No. on file

21. Elevations (Show whether DF, KDB, RT, GL, etc.)  
3626 GL 3652 KB

22. Approximate date work will start\*  
06/01/2013

23. Estimated duration  
15days

**24. Attachments**

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No.1, must 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 must be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the BLM.             |

25. Signature *Kay Havenor*

Name (Printed/Typed)  
Kay Havenor

Date  
03/25/2013

Title  
Agent

Approved by (Signature) */s/George MacDonell*

Name (Printed/Typed)

Date **AUG 19 2013**

Title  
FIELD MANAGER

Office  
**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.

(Continued on page 2) *SWD-1364*

\*(Instructions on page 2)

Carlsbad Controlled Water Basin

*Kay*  
*08/23/13*

Approval Subject to General Requirements  
& Special Stipulations Attached

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

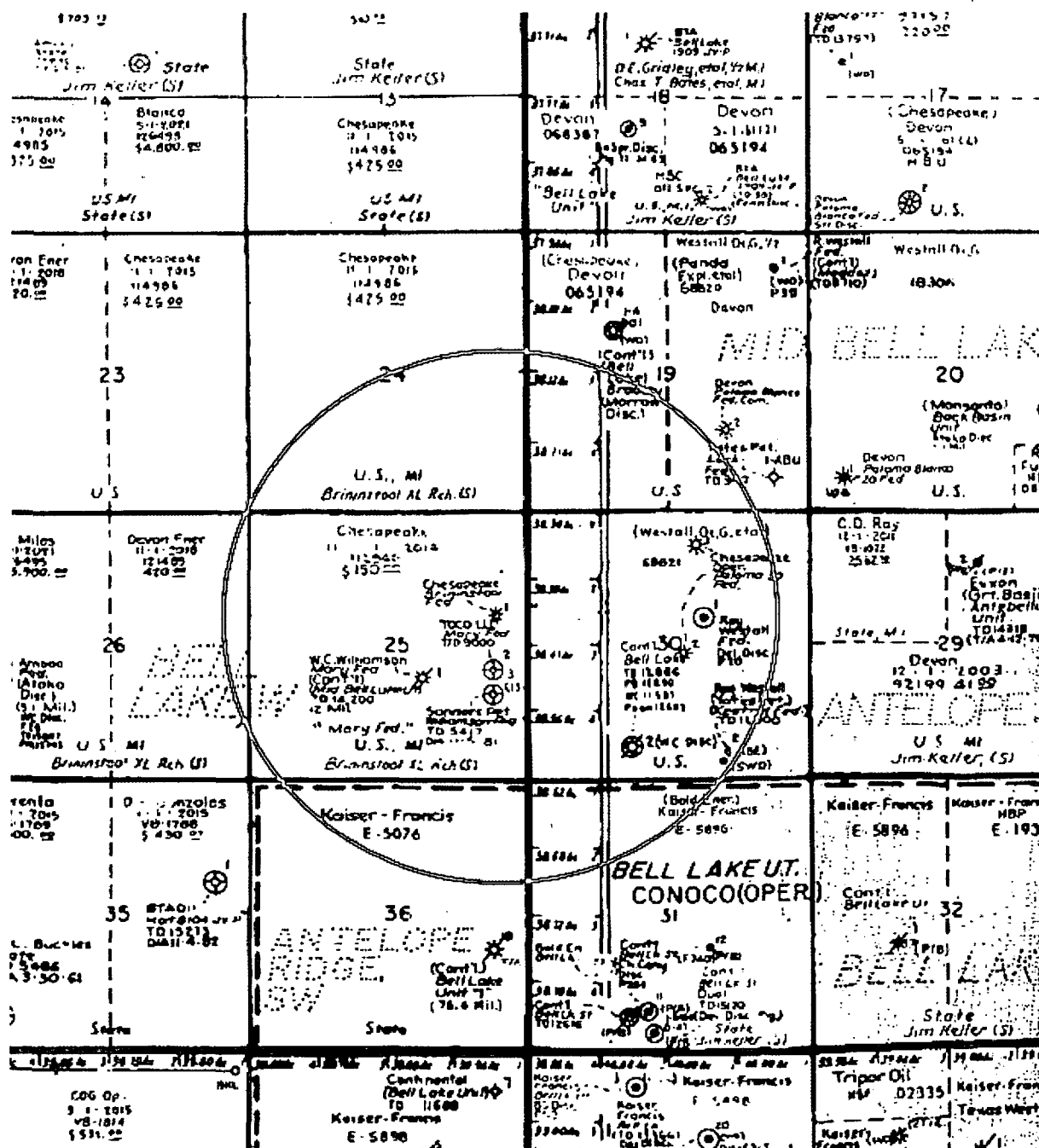
**AUG 26 2013**

*Em*

Delaware Water Co., LLC  
 Brininstool 25 Federal #1  
 1980' FNL & 660' FEL  
 Sec. 25, T23S-R33E Lea Co., NM

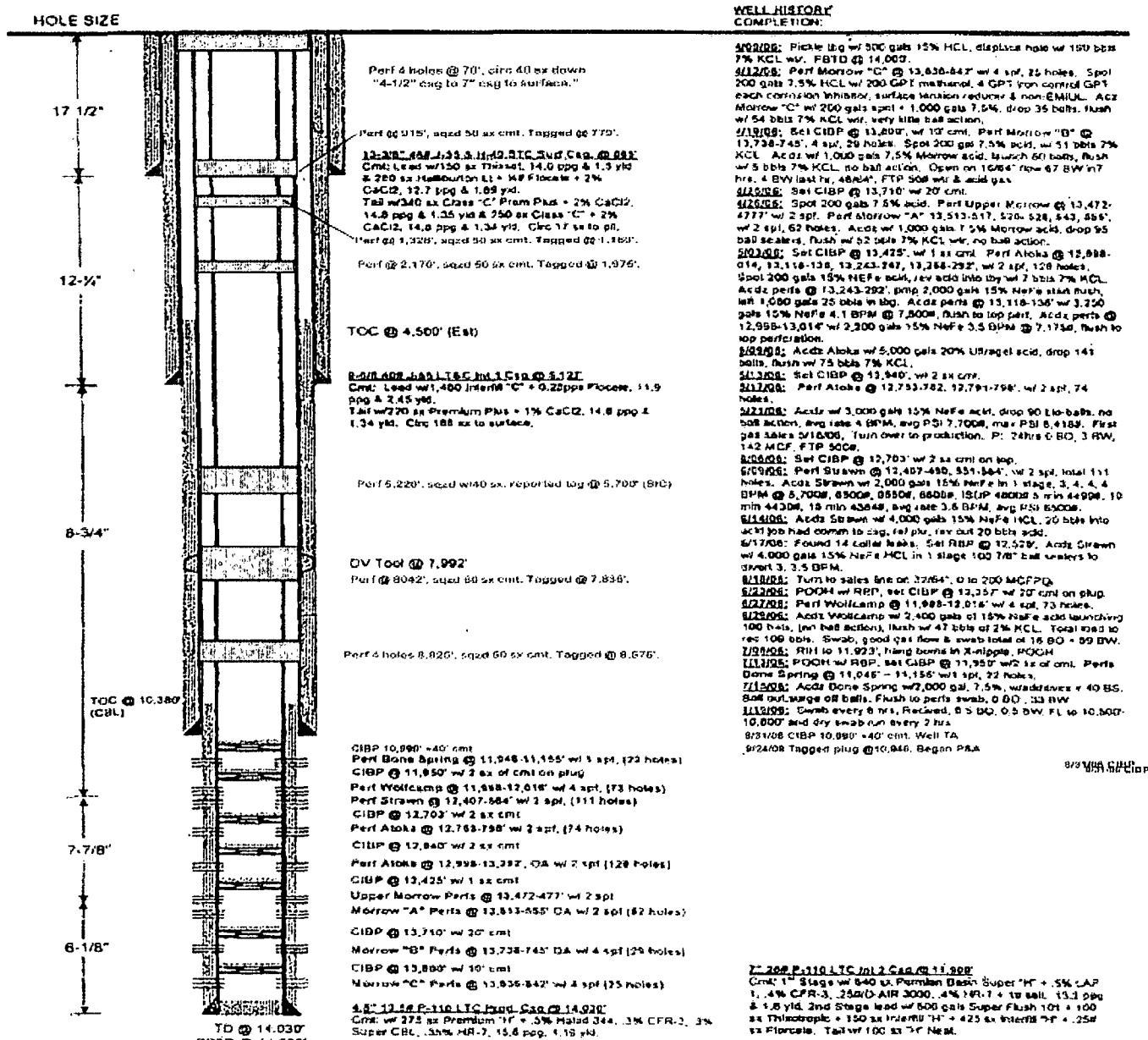
API 30-025-37582

1-mile AOR Brininstool 25 Federal #1



**WELLBORE SCHEMATIC**  
**CHESAPEAKE OPERATING, INC**

API #: 30-025-37582  
SPUD DATE: 1/29/06  
RIG REL. DATE: 3/27/06



stool 25 Federal #1

80' FNL &amp; 660' FEL

Sec. 25, T23S-R33E Lea Co., NM

## Proposed Re-entry and SWD Completion Diagram

API: 3002537582  
 Operator: Delaware Water Company, LLC.  
 Lease: Brininstool 25 Federal  
 Location: Sec 10, T25S-R32E Lea Co., NM  
 Footage: 2080 FNL, 760 FWL

Well No: 1

KB: 3652  
 GL: 3636  
 Spud date: January 29, 2006  
 Plugged : October 10, 2008  
 MSL of TD: -10394

**Surface Csg**

Size: 13-3/8" 48# H-40  
 Set @: 865  
 Sxs cmt: 740  
 Circ: TOC 140'+1" 250 sx  
 TOC: Surf  
 Hole Size: 17-1/2"

**Intermediate Csg**

Size: 9-5/8" 40# J-55  
 Set @: 5,127  
 Sxs cmt: 1700  
 Circ: 188 sx to surface  
 TOC: Surf  
 Hole Size: 12-1/4"

**2nd Intermediate Csg**

Size: 7" 26# P-110 LTC  
 Set @: 11908  
 Sxs cmt: 2005  
 Circ: No  
 Hole Size: 8-3/4"

**Production Csg**

Size: 4-1/2" 13.5# P-110 LTC  
 Set @: 12538-15769'  
 Sxs cmt: 350  
 Circ: NR-Calc 45% excess  
 Hole Size: 6-1/8"

## Tubular requirements (made-up):

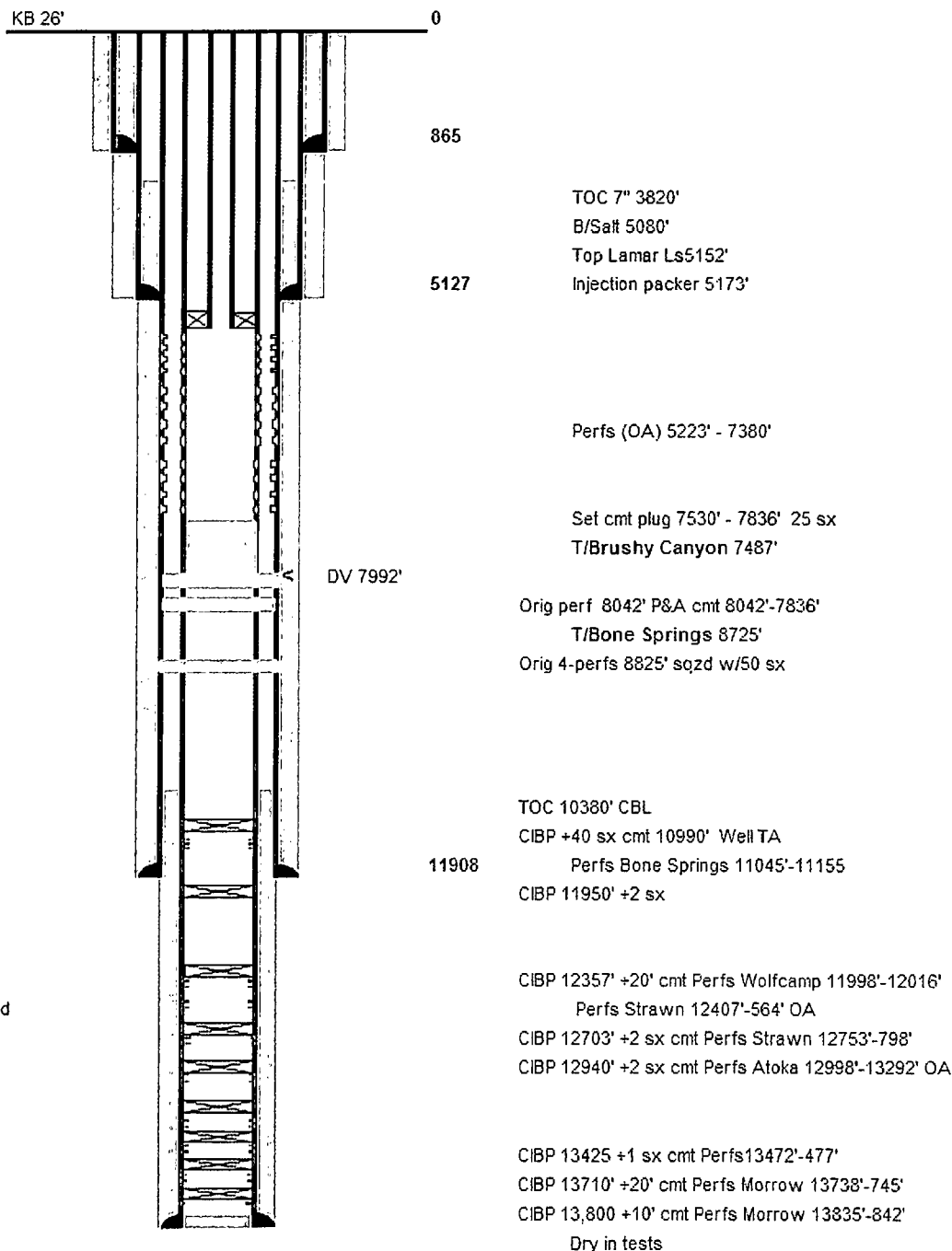
5173' 2-7/8" N-80 6.4# non-upset Fiberglass coated  
 or 5173' 2-3/8" N-80 upset Fiberglass coated  
 Lok-Set packer or equivalent approx 5173'

Perforate selectively 5223'-7380' (OA)

Acidize OA approx 10,000 gal 15% HCl

Load tubing annulus w/corrosion inhibitor

Complete surface head for disposal



Not to Scale

14030

**Delaware Water Co., LLC**  
**RE-ENTRY PROGRAM**

**Brininstool 25 Federal #1 API: 30-025-37582**  
**Sec. 25, T23S-R33E Lea Co., NM**

Supplemental to Form 3160-3, Application for Permit to Re-enter the subject well, Delaware Water Company, LLC submits the following information as per Bureau of Land Management requirements.

**1. Geologic Name of Surface Formation**

Surface is Quaternary eolian and piedmont deposits (Qep) Holocene to middle Pleistocene. (New Mexico Bureau of Geology and Mineral Resources, 2003, Geologic Map of New Mexico, 1:500,000)

Soil map with legend. Source: <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

|    |                               |           |       |    |   |          |      |
|----|-------------------------------|-----------|-------|----|---|----------|------|
| PU | Pyote and maljamar fine sands | 342,876.4 | 12.2% | BE | Berino-Cacique loamy fine sands association | 85,720.0 | 3.0% |
| PY | Pyote soils and dune land     | 87,949.5  | 3.1%  |    |   |          |      |



## 2. Formation Tops and Estimated Fresh Water:

The of geologic markers and estimated depths at which anticipated water, oil or gas formations are expected to be encountered as follows: Sonic log tops in this well.

|                 |        |   |
|-----------------|--------|---|
| B/Alluvium      | 130'   | Est: potable water, if present, approx 80'. |
| Rustler         | 860'   |   |
| Salado          | 1,182' |   |
| Top main salt   | 3,520' |   |
| Base of salt    | 5,080' |   |
| Lamar limestone | 5,152' |   |
| Bell Canyon     | 5,184' |   |
| Cherry Canyon   | 6,008' |   |
| Brushy Canyon   | 7,487' | Note: PB TD will be 7,530' KB               |
| Bone Springs    | 8,725' |   |

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

None of the above formations were found to be commercially productive of oil or gas, or are depleted, in the disposal interval of this well or other wells in the NM OCD area of review above the Brushy Canyon. No fresh water wells are known in the NM OCD 1-1/2-mile area of review, none would be expected beneath the Alluvium, however, potential shallow sands are protected by 13-3/8" casing set at 865' and cement circulated to the surface.

## 4. Casing: NOW in hole. No casing pulled. Casing was new on installation.

| Hole Size | Depths      | Section    | OD Casing | New/Used | Wt    | Collar | Grade | Collapse Design Factor | Burst Design Factor | Tension Design Factor |
|-----------|-------------|------------|-----------|----------|-------|--------|-------|------------------------|---------------------|-----------------------|
| 17½"      | 0' - 865'   | Surface    | 13⅜       | New      | 48#   | STC    | H-40  | 1.125                  | 1.125               | 1.6                   |
| 12¼"      | 0' - 5127'  | Intmd      | 9⅝"       | New      | 40#   | LTC    | J-55  | 1.125                  | 1.125               | 1.6                   |
| 8¾"       | 0' - 11908' | Intmd      | 7"        | New      | 26#   | LTC    | P-110 | 1.125                  | 1.125               | 1.6                   |
| 6⅝"       | 0' - 14030' | Production | 4½"       | New      | 13.5# | LTC    | P-110 | 1.125                  | 1.125               | 1.6                   |

## 5. Cement Program:

New cementing is not needed or required in this re-entry. Original P&A- **no casing pulled**.

The following cementing data derived from Chesapeake Operating Co. 3160-5 reports filled with BLM:

13-3/8" 48# H-40 Cmt'd w/150 sx Thixet, 14 ppg, 1.5 yield, 280 sx Light + additives, 12.7 ppg, 1.89 yield, tail-in w/340 sx Premium Plus Class C + additives, 14.8 ppg, 1.35 yield. Temp survey TOC 340'. Tagged annulus cmt @230', top out w/250 sx Clas Prem Plus Cl, C+add., 14.8 ppg, 1.34 yield. Performed: 1/31/2006. OCD well file p. 32.

9-5/8" Cmt'd w/1480 sx Class C, 11.9 ppg, 2.45 yield, tail in w/220 sx Prem Plus, 14.8 ppg, 1.32 yield. Performed 2/6/2006.. OCD well file p. 33.

7" Cmt'd w/640 sx Permian Basin Super "H" + .5% LAP 1, .4% CFR-3, 25# D-AIR 3000, .4% HR-7 + 1# salt, 13.2 ppg, 1.6 yield. Circ 226 sx cmt to pit. Cmt'd 2<sup>nd</sup> stage w/500 gal SuperFlush 101 + 100 sx Thixotropic + 150 sx Interfill "H" +425 sx Interfill "H" + .25# sx Flocele, tail-in w/100 sx "H" Neat. Performed 3/1/2006. OCD well file p. 37.

4-1/2" Cmt'd w/275 sx Permian "H" + additives, 15.6 ppg, 1.19 yield. Performed 3/27/2006. OCD well file p. 38. No additional information is available as to cement properties.

Note additional perms and squeezed zones on original P&A and recompletion diagrams pages 5 & 6, above.

## 6. Minimum Specifications for Pressure Control Equipment: *See BOP*

Nipple-up for re-entry through 4-1/2" csg with annular preventer tested to 50% of rating working pressure by independent tester and the rest of the 3M system tested to 2000 psi. DO surface plug and tag cmt plug @779'. Test csg to 1000 psi. DO cmt plug and tag cmt plug @1,150'. Test csg to 1,000 psi. DO cmt plug and tag cmt plug @1,976'. Test csg to 1,500 psi. DO cmt plug and tag plug @4,474'. Test csg to 1,500 psi. DO cmt plug and tag cmt plug @ 7,836'. Test csg to 1,500 psi. In the event any of the pressure tests fail the respective original perf interval will be identified and re-sqzd w/minimum of 50 sx Class "C" cmt, WOC minimum 18 hrs then retested.

*See COA*

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted in the daily tour sheets. A 2" kill line and a minimum 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 3000 psi WP rating.

## 7. Estimated BHP:

On original P&A Chesapeake perforated @8,042' through 4 1/2" casing and 7" intermediate (below 7" casing's DV tool @ 7,992') and squeezed w/80 sx cement. That plug was tagged in 4 1/2" at 7,836'. An additional 25 sx of Class "C" neat cement will be spotted at that depth to bring PBTD to 7,530'. Delaware Water's deepest cleaned-out depth will have an estimated BHP 3,313 psi.

**8. Drilling Mud:**

| Depth      | Mud Wt.   | Viscosity | Fluid Loss | Type Mud    |
|------------|-----------|-----------|------------|-------------|
| 0 - 7,836' | 8.4 - 8.5 | 30 - 32   | NC         | Fresh water |

Fresh water will be used for the re-entry mud system, approximately 0.431 lbs/ft or greater. The necessary mud products for weight addition and/or fluid loss control, if required, will be utilized. The mud system will be monitored visually during re-entry operations.

**9. Auxiliary Well Control and Monitoring Equipment:**

- a: Drill stem tests will not be taken.
- b. No open hole logs will be run because the hole is cased and has been logged. Logs are on file with the NM OCD.

**10. Testing, Logging and Coring Program:**

- a. No drill stem tests or open hole logging can be performed because the hole is cased.

**11. Potential Hazards:**

*See  
COR*

- a. No abnormal pressures or temperatures are expected. No H<sub>2</sub>S is known in this area. If H<sub>2</sub>S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. No H<sub>2</sub>S is anticipated to be encountered due to cemented casing.

**12. Anticipated starting date and Duration of Operations:**

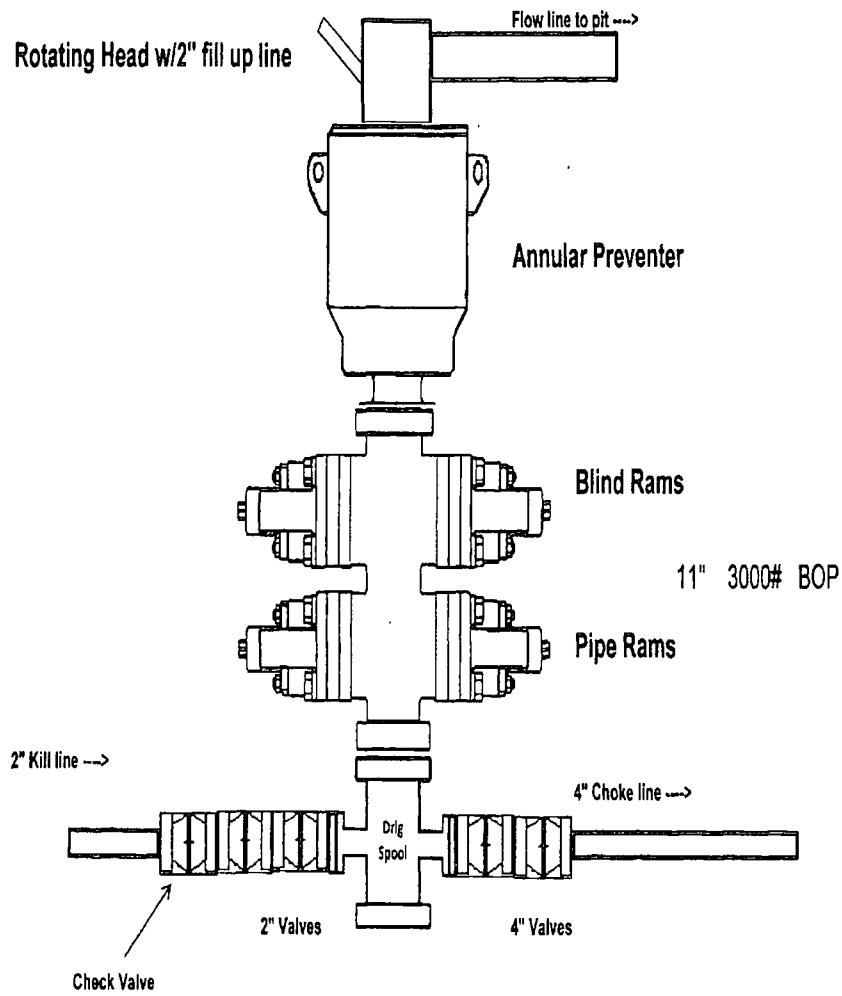
- a. Road and location upgrading, as may be necessary, will begin after the BLM has approved the APD. Anticipated re-entry will be as soon as possible after BLM approval and as soon as qualified WO unit or drilling rig is available. Move-in operations and re-entry is expected to take 20 days.

**Addendum: Non-productive zones**

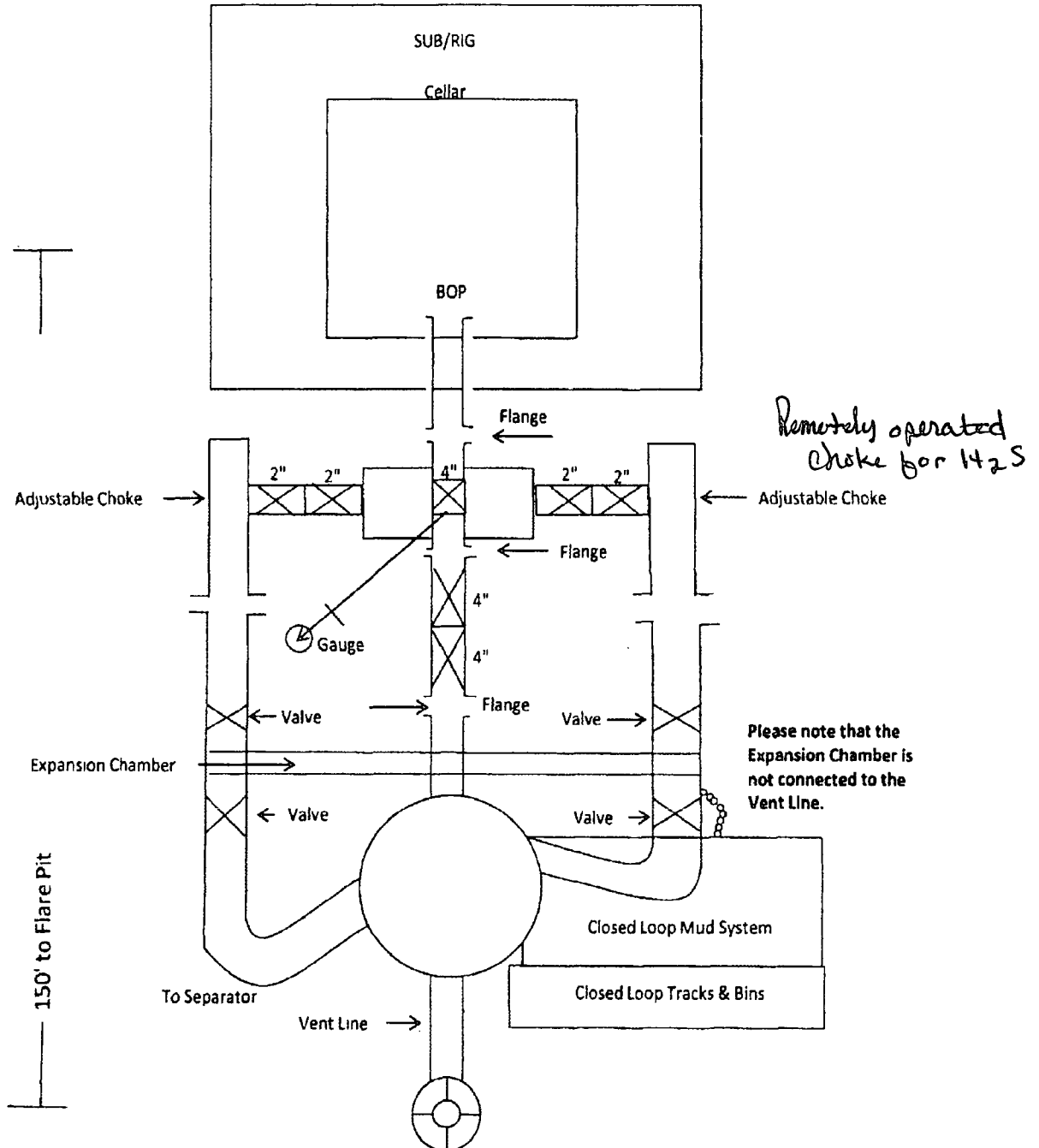
Many wells in the greater surrounding area have tested, completed in and/or depleted the upper Ramsey of the Bell Canyon in the AOR, including the drill site acreage. Numerous deeper wells have drilled, evaluated and/or tested the sub-Ramsey/Olds of the Bell Canyon, and the underlying Cherry Canyon in the greater area, but have been unable to demonstrate production or commercial potential. The subject re-entry was an exploratory test well for the above zones and down into the Morrow. This well did not report shows or commercial potential below the Lamar or above the Wolfcamp. This re-entry for SWD will isolate the underlying Brushy Canyon, although no shows are reported from wells in this area.



### 3,000 psi BOP Schematic



### 3M Choke Manifold Equipment



**Design Plan  
Operating and Maintenance Plan  
Closure Plan**

**Brininstool 25 Federal #1  
SHL & BHL: 1980 FNL & 660 FEL  
Sec. 25, T23S-R33E, Lea Co. NM**

Delaware Water Company, LLC will be using all above ground steel pits for fluid and cuttings while drilling/re-entering. If any tank develops a leak we will have immediate visual discovery, we would then transfer the fluid to another tank then remove any contaminated soil and dispose of it in the cutting bins for transportation. All leaks should be kept to less than 5 barrels. Rig crews will monitor the tanks at all times.

Equipment List:

2 - Roll Off Bins  
2 - 500 Bbl Frac Tanks

During drilling operations all liquids, drilling fluids and cuttings will be hauled-off to CRI (Controlled Recovery Inc.) Permit R-9166 or any other approved facility.

Note: Operator will utilize a WO Unit for re=entry. With a WO Unit it is expected to be shut down at night. The drill pipe will be pulled to surface and the well will be shut-in with BOP/BOPE listed above and locked-down. A pressure gauge on the wellhead will allow observing any pressure buildups overnight.