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JAN 26 2009

March 7, 2008

RECEIVED  
MAR 13 2008

NMOCD District 2  
1301 W. Grand Avenue  
Artesia, New Mexico 88210

Attn: Mr. Tim Gum

RE: Hanover State #2 (Marbob Energy Corporation – operator of record)  
360' FSL & 330' FEL  
Section 28 – T17S – R28E  
Eddy County, New Mexico

API No. 30-015-20355

Dear Tim:

As you are aware, BP America Production Company is the operator of the Washington "33" State Lease Waterflood comprised of 600 acres, more or less, and located in Section 33 – T17S – R28 E of Eddy County, New Mexico. This project was approved by the State under NMOCD Order No. R-12658, which required that the above referenced wellbore (Marbob Energy Company is the operator of record) to be evaluated and remedial cementing operations performed if the waterflood injection zones were found to be inadequately isolated. BP America commenced the evaluation on December 11, 2007 and completed the necessary work to isolate the waterflood zones on February 18, 2008; the C-103 "Subsequent Report - Remedial Work" is enclosed and includes attachments to fully document these remedial operations. The attachments include a "Wellbore Schematic" that depicts the current status of the well and a "Workover Operations Summary" that provides greater detail of the workover operations. (There are two sizes of Wellbore Schematics enclosed – the 11" x 17" is included for ease in reading the work detail and the 8½" x 11" is for your scanning purposes.)

Thank you for your time and assistance in this matter. If you have questions or need additional information regarding this workover, please call me at 432 / 683-8000.

Sincerely,

Dan C. Dodd  
Sierra Engineering, agent for BP America Production Company

ACCEPTED FOR RECORD

JAN 26 2009

Gerry Guye, Deputy Field Inspector  
NMOCD-District II ARTESIA

Enclosures

CC: Marbob Energy Corporation

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

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

JAN 26 2009

Form C-103

May 27, 2004

WELL API NO.

30 - 015 - 20355

13. Indicate Type of Lease

STATE ☒ FEE ☐

13. State Oil & Gas Lease No.

B-4575

7. Lease Name or Unit Agreement Name

Hanover State

8. Well Number

2

9. OGRID Number

14049

10. Pool name or Wildcat

Empire Abo

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

Marbob Energy Corporation

3. Address of Operator

P. O. Box 227 Artesia, New Mexico 88211

13. Well Location

Unit Letter P : 360 feet from the South line and 330' feet from the East line

Section 28 Township 17S Range 28E NMPM County Eddy

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

3671' RKB

Pit or Below-grade Tank Application ☒ or Closure ☐

Pit type Workover Depth to Groundwater >100' Distance from nearest fresh water well >1000' Distance from nearest surface water >200'

Pit Liner Thickness: 20 mil Below-Grade Tank: Volume 200 bbls; Construction Material

13. 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: ☐

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.

Marbob Energy Corporation (Marbob) is the operator of record of this well. BP America Production Company (BP) commenced WO operations on 12/18/07 and completed work on 2/18/08 that was required to bring this wellbore into compliance with NMOCD Order No. R-12658, which approved BP's Washington "33" State Lease Waterflood Project. Workover summary: (1) ran CBL & confirmed TOC w/ excellent bonding at 3390' with no bonding to fair bonding to 3200'; (2) perfed 4 1/2" csg @ 1235' w/ 4 holes, Halliburton pumped total of 275 sx cmt & had good circ out 85/8" x 4 1/2" annulus but no cement to surface. Drilled out, TOC by CBL @ 660' = 46' below 85/8" surface csg shoe - perfs failed press test; (3) Halliburton squeezed perfs @ 1235' w/ 75 sx w/ FL additive & 75 sx "C" - drilled out & failed press test; (4) Halliburton re-squeezed perfs @ 1235' w/ 200 sx "C" w/ additives - drilled out and successfully tested perfs and 4 1/2" csg to 500 psi; (5) wellhead collapsed after remedial cementing operations were completed - found 85/8" csg to be in bad condition to 3' below GL. Cut off 85/8" csg & WH to 3', installed and tested new equipment - OK; (6) ran rod pumping equipment and returned well operations to Marbob on 2/18/08.

See attachments "Wellbore Schematic" depicting the current well status and "Workover Operations Summary" for additional information.

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 D. C. Dodd TITLE Agent for BP America Production Company DATE 3/7/08

Type or print name D. C. Dodd E-mail address: ddodd@sierra-engineering.net Telephone No. 432/683-8000

For State Use Only

APPROVED BY: \_\_\_\_\_ TITLE \_\_\_\_\_

Conditions of Approval (if any):

Gerry Guye, Deputy Field Director  
NMOCD-District II ARTESIA

JAN 26 2009

**Hanover State #2**  
Empire Abo Field

API No. 30-015-20355

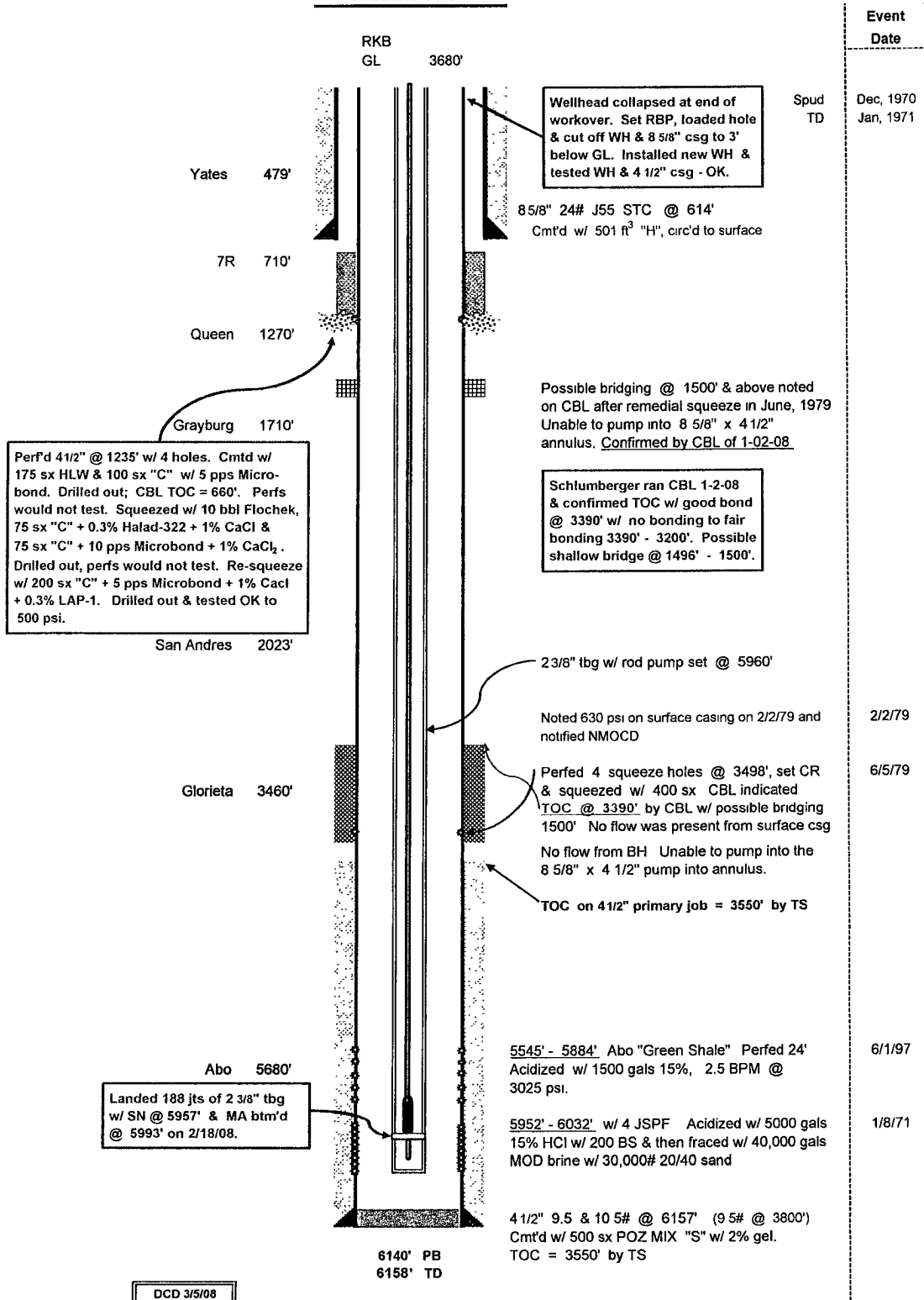
SHL: 360' FSL & 330' FEL  
BHL: 123' FSL & 148' FEL  
Sec 28 - T17S - R28E  
Eddy County, New Mexico

(Drilled by Penroc Oil Corporation  
as the State #2)

**Operated by Marbob Energy Corporation**

NMOCD Order No. R-12658 for approval of the Washington "33" Waterflood Project required that the annulus of this wellbore be remedially cemented to isolate the injection zones. BP America commenced workover on 12/18/07 and completed the required wellbore repairs on 2/18/08.

**Present Status**



DCD 3/5/08



# BP America Production Company

## Hanover State #2

(Operated by Marbob Energy Corporation)

### Workover Operations Summary

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- MIRU PU on 12/18/08. POH w/ production equipment. PU work string and made trip w bit and scraper to 5015', OK.
- Set retrievable bridge plug (RBP) at 4005'. Set packer at 3978'. Loaded tubing with 16 bbl brine. Tested RBP to 1000 psi – OK. Loaded casing with 42 bbl brine. Tested casing 3978' to surface to 1000 psi, OK. Capped RBP w/ sand.
- Schlumberger ran CBL #1, which indicated excellent bonding from first reading depth of 3967' to 3390' and no bond to fair bonding from 3390' to TOC @ 3200'. No apparent cement above 3200' but a bridge was present from 1496' – 1500'.
- Pressured 4½" casing to 500 psi and perforated 4½" casing at 1235' with 4 shots using 31/8" casing gun. Casing pressure dropped to 0 psi - no returns to surface from 85/8" x 4½" annulus upon perforating.
- Ran tubing & packer, set at 855'. Pumped down tubing and broke circulation to surface from 85/8" x 4½" annulus after pumping 7 bbls of brine water - circulated 200 bbls with good returns throughout job. RU Halliburton and pumped 80 bbls freshwater pre-flush via perfs @ 1235' and cemented perfs and 85/8" x 4½" annulus with 175 sx Halliburton Light followed by 100 sx Premium Plus "C" cont'g 5 pps Microbond. Displaced cement with 6½ bbl freshwater - had full returns during job but did not circulate cement to surface. SI & WOC.
- Ran bit (total WOC ~ 5days) and drilled cement from 1055' to 1243'. Attempted to test casing, pumped 4 bbls brine water and pressured casing to 500 psi. Pressure dropped to 250 psi in 2 minutes.
- Schlumberger ran CBL #2 from 3967' to 100', good to excellent bonding from 1230' to TOC @ 660' = 46' below 85/8" surface casing shoe.
- Set packer at 1260'. Tested casing from 1260' to RBP @ 4005' w/ 500 psi – OK. Re-set packer at 1195' and tested casing to surface w/ 500 psi – OK. Pumped into perfs at 1235' @ ¼ BPM. After pumping 2.8 bbls brine, pressured to 750 psi. Dropped to 600 psi in 10 seconds and to 500 psi in 1 hour.

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**Hanover State #2**  
**Workover Operations Summary**  
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- Re-set packer at 1226'. Tested casing to 750 psi – OK. Attempted to set packer below perfs – would not hold.
- Ran new packer, isolated bottom of casing leak at 1243' SLM. Re-set packer at 1170'. Established injection rate using 10# brine @  $\frac{3}{4}$  BPM & 900 psi. Pumped 20 bbls brine water. ISIP = 850 psi, 5 minute = 725 psi, 10 minute = 725 psi, 15 minute = 725 psi, 2:00 PM = 700 psi, 3:00 PM = 700 psi, 4:00 PM = 695 psi. Bled pressure off.
- Set composite cement retainer (CR) at 1168'. Would not function properly and had to wash over and fish from sand cap on RBP @ 3992'.
- Set packer at 1168'. Established injection rate into perfs @ 1235' w/  $1\frac{1}{4}$  BPM at 925 psi using 10 bbl brine. Pulled packer.
- Set composite CR at 1168'. Halliburton pumped 10 bbl fresh water, 10 bbl Flochek, 3 bbl freshwater, 75 sx Class "C" cont'g 0.3% HALAD-322 and 1%  $\text{CaCl}_2$  followed by 75 sx Class "C" cont'g 10 pps Microbond and 1%  $\text{CaCl}_2$ . Tubing pressure 300 psi. Displaced with  $\frac{1}{2}$  bbl, pressured to 650 psi. SI, pressure dropped to 600 psi in 2 minutes. Pumped  $\frac{1}{2}$  bbl, pressured to 720 psi. SI 15 minutes, pressure dropped to 600 psi. Pumped  $\frac{1}{2}$  bbl, pressured to 800 psi. SI 15 minutes, pressure dropped to 700 psi. Pumped  $\frac{1}{2}$  bbl, pressured to 750 psi. SI, holding at 750 psi. Pulled setting tool, SI & WOC.
- Ran bit and drilled cement from 1150' to CR at 1168'. Drilled CR & cement to 1249'. Tested casing to 500 psi for 30 minutes – OK.
- Next day SITP = 680 psi, SICP = 600 psi. Released pressure and start pressure recording chart after re-pressuring to 500 psi. Pressure increased to 650 psi in 20 minutes. Released pressure and pulled bit.
- Next day SICP = 660 psi. Bled down. Casing flowing approximately  $\frac{1}{2}$  BPM (eventually died).
- Set packer at 3661' & tested casing and RBP from 3661' to 3993' (RBP w/ sand) to 750 psi – OK. Re-set packer at 3410' and tested casing from 3410' to surface to 500 psi, pressure dropped to 300 psi in less than 1 minute. Tested casing from 3410' to 3993' to 750 psi – OK. Re-set packer at 1256', tested casing from 1256' to 3993' to 750 psi – OK. Re-set packer at 1225' & tested casing to surface w/ 500 psi – OK. Pumped into perfs at 1235' with  $\frac{1}{2}$  BPM at 900 psi with  $2\frac{1}{4}$  bbls brine. SI and pressure dropped from 1000 psi to 700 psi in 2 hours. Released pressure & SION. SITP = 160 psi, SICP = 0 psi. Released tubing pressure, bled to 0 psi in less than a minute – no flow from wellbore.

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**Hanover State #2**  
**Workover Operations Summary**  
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- TIH w/ composite bridge plug (CBP) on tbg & set @ 1268', ran pkr & tested CBP to 1500 psi, OK. Set composite CR on tbg @ 1225'. Halliburton squeezed perms @ 1235' w/ 200 sx Class "C" cont' 5 pps Microbond, 1% CaCl<sub>2</sub> & 0.5% LAP-1 at ½ BPM w/ max pressure = 1400 psi and final pressure = 982 psi. POH w/ tbg & WOC.
- Drilled out composite CR & cement to 1271'. Tested squeezed perms @ 1235' to 500 psi, held OK. Cut over CBP @ 1268' and fished from top of sand @ 3985'.
- WH dropped approximately 2" while fishing for CBP. LD all equipment from derrick in order to move rig for WH repairs.
- Set RBP #2 @ 1042', test to 500 psi, OK. Capped RBP w/ 2 sx sand, LD tbg, ND BOP & RD PU.
- Dug out WH – found 8 5/8" casing to be in bad condition to 3' below GL. Cut off WH & casing and installed new equipment. NU and tested surface casing head and tubinghead to 2500 psi, OK. Backfilled cellar, RU PU & installed BOP.
- Recovered RBP #2 from 1042' and RBP #1 from 4005'. Ran 2 3/8" production tbg w/ SN and MA, landed tbg w/ SN @ 5957' & MA btm'd @ 5993'. Ran pump & rods, hung well on.
- RD & RPU on 2/18/08 and returned well operations to Marbob Energy Corporation, operator of record.

