

State of New Mexico
Energy, Minerals and Natural Resources Dept.
OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

Form C-103
Revised 1-1-89

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 SMD _____

2. Name of Operator: Blackwood & Nichols Co, A Limited Partnership

3. Address of Operator: P.O. Box 1237, Durango, CO 81302-1237

4. Well Location

Unit Letter N: 990 Feet From The South Line and 1600 Feet From the West Line
Section 36, Township 31N, Range 8W, NMPM San Juan County

10. Elevation (Show wheter DF, RKB, RT, GR, etc)
6430 GR

11. CHECK APPROPRIATE BOX TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

NOTICE OF INTENTION TO:

SUBSEQUENT REPORT OF:

___ Perform Remedial Work

___ Remedial Work

___ Altering Casing

___ Temporarily Abandon

___ Commence Drilling Opns.

___ Plug and Abandonment

___ Pull of Alter Casing

___ Casing Test and Cement Job

___ Plug of Abandon

X Other: COMPLETION

___ Change Plans

___ Other:

12. 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.

RECEIVED
DEC 13 1990
OIL CON. DIV.
DIST. 3

See Addendum for a full description of the limited entry sand water frac treatment.

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

Signed: R.W. Williams

Title: ADMINISTRATIVE MANAGER

Date: 12/11/90

Roy W. Williams Phone: (303) 247-0728

(This space for State Use)

APPROVED BY _____

TITLE _____

DATE _____

CONDITIONS OF APPROVAL, IF ANY:

Completion Report

Northeast Blanco Unit Pump Mesa SWD #1 - Water Disposal Well

LOCATION: 990' FSL, 1600' FWL
Section 36, T31N, R8W
San Juan County, New Mexico

11-21-90 Tallying and rabbitting 3-1/2" tubing work string.

Move in and rig up Big A Rig No. 25.

11-22-90 Picking up 3-1/2" tubing.

Pickup new Smith 6-1/8" DTJ SN# PA2956 and 7" casing scraper. Tally, rabbit and run 3-1/2" tubing.

Rig up swivel, change rams, circulate mud out of hole with water.

Tally, rabbit and run 3-1/2" tubing. Tag cement at 7607'.

Pick up swivel and break circulation, 600 psi.

Drill 10' cement. Found DV tool at 7617', and drill same. Lay down swivel. Pick up 3-1/2" tubing.

11-23-90 Cutting off rope socket, thread through extra heavy 3-1/2 x 2" swage. Pour new rope socket.

Pick up 3-1/2" tubing. Pick up swivel.

Change swab on pump. Drill out cement and float collar at 6' of shoe joint to 9,083'. Circulate hole clean.

TOH, strap pipe. Nipple down stripper head and nipple up packoff (wireline).

Log with Basin Perforators. Run CCL, GR and CBL logs under 1000 psi. Wireline TD 9,083'. Rig loggers down.

Pressure test 7" casing to 5000 psi. Lost 100 psi in 10 min. Build pressure to 5000 psi. Shut valve between wellhead and truck. Lost 100 psi in 11 min. Shut down, bleed pressure off. Rig down Smith.

(Cont'd)

11-23-90 Nipple down packoff flange and nipple up stripper head. TIH with 66 stands to 4,100'. Rig up to swab. Rope socket would not go through extra heavy 3-1/2" swage, cut off and rehead line.

11-24-90 Swabbing the Entrada Formation for water sample.

Rig up to swab. Swab fluid level to 3,900'. Rig down swabbing equipment.

POOH with 3-1/2 tubing.

Nipple down stripper head. Nipple up packoff and rig up wireline truck. Run 20 shot select fire 4" gun. Shoot 16 holes at 8970', 8966', 8962', 8956', 8952', 8949', 8940', 8935', 8930', 8898', 8894', 8890', 8885', 8882', 8878', and 8874'. Pull out of hole. Rig down perforators and nipple up stripper head.

Pickup Baker 7" lockset packer, 1 jt and seating nipple. Trip in hole.

Set packer at 8840' with 25,000# set down on packer.

Rig up swabbing equipment and flow tee.

Make 1 run to seating nipple without swab cup. Start swabbing the Entrada formation to obtain water sample.

11-25-90 Swabbing run, retrieved no fluid.

Swab to obtain water sample in the Entrada. Fouled swab line.

Kinked sand line, pull off 250', clamp line, splice sandline. 11-1/2 hrs. down time. Resume swabbing operations. Fluid level dropping. Did not retrieve any water on last run.

Wait 2 hrs. on fluid entry. Swab run retrieved no water.

Wait on fluid entry. Swab run retrieved no fluid.

Wait on fluid entry.

11-26-90 Swabbing prior to perforating Bluff.

Swab Entrada for water sample, tubing swabbed dry.

(Cont'd)

11-26-90 Test surface lines to 5000 psi. Acidize Entrada with 1500 gal. 7-1/2% HCl, drop 32 7/8" RCN balls, max pressure 4100 psi. Average pressure 2500 @ 7 BPM. Saw good ball action, did not achieve ball off. ISIP 800 psi, 5 min. 600 psi. Rig down Smith Energy. Prepare to POOH. Release packer. Pickup 6 jts tubing, knock balls off perfs.

POOH with 3-1/2" tubing and packer. Nipple down stripper head. Nipple up Smith tree saver test lines to 4000 psi - frac. Entrada. Pumped 119,275 gal. 40# cross-link gel water and 155,000# 20/40 sand. Max treating pressure 2650 psi, average pressure 1600 psi @ 33 BPM. ISIP 1420 psi, 15 min. - 1320 psi, 10 min. - 1250 psi, 30 min. - 1100 psi.

Rig up wireline. Set Baker top drillable bridge plug @ 8820'. Test BP to 4000 psi, held OK. Perf. 3 holes @ 8783', 8780', and 8740', (shale fractures). Pressure up on perfs to 3500 psi. Could not break down. Surge pressure, pressure back up to 3500, would not break. RIH with wireline, set Baker BP @ 8710'. Pressure test BP to 4000 psi. Held OK. Rig down Smith. Nipple up stripper head, run 1 jt 3-1/2", seating nipple, 65 stands tubing to 4050'. Swab fluid level down to 3000'.

11-27-90 Preparing to frac Bluff formation.

Swab fluid level down to 3900'. Rig down swab equipment. POOH.

Rig up Basin Perforators, perforate 1 hole each at 8690', 8684', 8680', 8676', 8670', 8666', 8663', 8648', 8643', 8638', 8626', 8622', 8616', 8612', 8602', 8585', and 8548' for a total of 17 holes.

Pick up 7" Baker Lok-set packer, TIH, set packer at 8528'.

Rig up Smith Energy, test surface lines to 4000 psi. Load hole with water, pump 1500 gal. 7-1/2% HCl acid and balls. Some ball action, achieved complete ball off. Release packer. Pickup 6 jts tubing to knock balls off perfs. POOH.

Nipple down stripping head, install tree saver, gel frac tanks, prepare to frac.

11-28-90 Swab Morrison formation for water sample.

Pressure test surface casing to 4000 psi. Frac Bluff formation with 101,250 gal. 40# cross-link gel water and 134,000# 20/40 sand; average treating pressure 2500 psi @ 34 BPM. ISIP - 2250 psi; 5 min. - 2200 psi; 10 min. - 2150 psi.

Rig down Smith Energy, rig down tree saver. Rig up Basin Perforators, set Baker top drillable bridge plug at 8535'. Nipple up stripping head. TIH with 3-1/2" tubing to 4000' and swab tubing.

POOH, rig up perforators, perf Morrison formation with 22 holes. Perfs at 8514', 8509', 8474', 8457', 8452', 8444', 8434', 8422', 8416', 8411', 8379', 8371', 8358', 8317', 8312', 8267', 8195', 8191', 8187', 8160', 8155', and 8152'.

Rig down perforators, nipple up stripping head. Pick up 7" Baker Lok-set packer. TIH to 8080', set packer and swab tubing to obtain water sample.

11-29-90 Bailing water from Morrison.

Swab Morrison to recover water sample - no recovery.

Wait on fluid entry.

Rig down swabbing equipment. Rig up to run bailer and bail water from 8200'. Recover 5 gal. water each run.

11-30-90 Flowing Morrison back through variable choke; pressure = 1000 psi.

Make final run with 2" bailer, recover water sample from Morrison formation, lay down bailer.

Rig up Smith to acidize, test surface lines to 4000 psi.

Acidize Morrison with 1500 gal. 7-1/2% HCl, dropped 44 7/8" RCN ball sealers, had good ball action. Did not ball off completely. Release packer, knock balls off. POOH.

Cont'd)

11-30-90 Rig up Smith tree saver, pressure test surface lines to 4000 psi. Frac Morrison with 138,950 gal. cross-link gel water and 10,560# 40/70 sand and 195,000# 20/40 sand. Well started sanding off during flush. Shut down with 12 Bbls of flush remaining. ISIP - 3200 psi; 5 min. - 2650; 10 min. - 2500; 15 min. - 2450 psi. Maximum treating pressure 3500 psi before screen out. Average treating pressure 2800 psi @ 33 BPM. Shut well in. Rig down Smith. Left well shut in 5-1/2 hours for gel to break. Flow well back on 1/4" choke. Initial pressure 1620 psi.

12-01-90 Milling bridge plug at 8535'.

Flow Morrison frac treatment back. 1/4" choke pressure dropped from 1620 to 900 psig in 6 hours. Recovered 300 Bbls of frac fluid.

Open choke up to 3/8". Pressure dropped in 6 hours from 900 to 500 psig. Recovered 140 Bbls frac fluid

Open choke up to 1/2". Pressure dropped in 4 hours from 500 to 300 psig. Recovered 90 Bbls of fluid.

Open choke to 3/4". Pressure dropped to 50 psi in 2 hours.

Open choke up to 2". Flowing 2" stream to pit. Returns heavy viscous slickwater with no trace of frac sand.

Changed out stripping rubber.

Pick up 6-1/8" Homco super mill, 2 cross-over subs, 1 jt. 3-1/2" 9.3# tubing, and seating nipple. TIH to 7617'. Tag DV tool. Pick up power swivel and mill through remnant of DV tool. Work mill through DV tool several times. Hang swivel back and finish tripping in hole.

Tag first Baker drillable bridge plug at 8535'. Rig up pump to reverse out 88' of sand. Tag sand at 8447'. Start milling on plug.

12-02-90 Milling bridge plug #2 at 8710'.

Mill on bridge plug at 8535'; push plug down hole. 1100 psig below bridge plug at 8535', pressure surged and blew stripper rubber out. Shut BOP pipe rams, bleed pressure off through 1/4" choke. Open up to 3/8" choke @ 800 psig, then went to 1/2" @ 500 psig, 3/4" @ 250 psig, and 2" full opening pressure was 0. Took 11 hours of flow back to bleed off pressure.

(Cont'd)

12-02-90 Change stripper rubber, open BOP.

Drill on remnant of first bridge plug; push down hole.

Hang back swivel, chase plug down hole to 8664'. Tag 40' of sand.

Pick up swivel, mill on junk and wash sand from 8664' to 8710'.

Mill on bridge plug at 8710'.

12-03-90 Laying down 3-1/2" tubing.

Mill on bridge plug at 8710'.

TIH, chase remnant of bridge plug down to 8820'. Mill up junk and bridge plug #2. Mill out bridge plug #3 at 8820'.

Chase bridge plug #3 (last plug) to total depth at 9083'. Circulate hole clean.

Prepare to lay down 3-1/2" tubing TOOH laying down tubing.

12-04-90 Running 3-1/2" production tubing.

Lay down 3-1/2" tubing, rig up Smith Energy and Jay Wireline. Run pressure bomb in hole below lowest perf. Smith ran step-rate test, 2 BPM to 23 BPM:

<u>BPM</u>	<u>PSI</u>
0	0
2	0
3	0
4	100
5	200
6	300
7	360
8	600
9	690
10	810
11	920
12	1020
13	1180
14	1300
15	1410
16	1580
17	1650
18	1750
19	1850
20	2000
21	2060
22	2150
23	2250
ISIP	1500

762 Total Bbls

Shut in well, monitor pressure with downhole bomb for 4 hours. Pull pressure bomb, rig down slick line.

12-04-90 Wait on packer, rig up Basin Wireline and run packer (model FD1) with 6' mill-out extension with R nipple (2.75" ID) set at 8060'. POOH with wireline and rig down.

12-05-90 Rig released.

Run 261 jts (8060.58') 3-1/2" 9.3# J-55 EUE 8rd tubing, set at 8072.58'; model FB-1 packer at 8073.0'. Pick up. Lay down 1 jt. Pick up one 10' J-55 pup jt., one 8' J-55 pup jt., 1 Baker F nipple (2.81' ID), and 1 jt 3-1/2" space out. Install donut.

(Cont'd)

12-05-90 Clean pit and load with water. Mix packer fluid.

Circulate down backside with 250 Bbls packer fluid.

Land tubing at 8060.58' with Baker 80-HO E-22 anchor seal assembly. Lock down donut. 35,000# set down on packer.

Pressure test backside to 1000 psi. Held OK for 15 minutes, witnessed by Charlie Ghoulson with NMOCD.

Lay down landing jt, nipple down BOP, install wellhead. Start rigging down.

Release rig at 9:00 p.m., 12-04-90.