

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT



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

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on reverse side

1. Type of Well

☐ Oil Well ☒ Gas Well ☐ Other

2. Name of Operator

ENERGEN RESOURCES CORPORATION

3a. Address

2198 Bloomfield Highway, Farmington, NM 87401

3b. Phone No. (include area code)

505-325-6800

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

1180' FSL, 1840' FWL, Sec. 14, T29N, R12W, N.M.P.M.

5. Lease Serial No.

6. If Indian, Allottee or Tribe Name

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

8. Well Name and No.

Hardie F 1

9. API Well No.

30-045-08237

10. Field and Pool, or Exploratory Area

Basin Dakota

11. County or Parish, State

San Juan NM

12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION

- ☒ Notice of Intent
☐ Subsequent Report
☐ Final Abandonment Notice

TYPE OF ACTION

- | | | | |
|---|--|---|---|
| <input type="checkbox"/> Acidize | <input type="checkbox"/> Deepen | <input checked="" type="checkbox"/> Production (Start/Resume) | <input type="checkbox"/> Water Shut-Off |
| <input type="checkbox"/> Alter Casing | <input type="checkbox"/> Fracture Treat | <input type="checkbox"/> Reclamation | <input type="checkbox"/> Well Integrity |
| <input type="checkbox"/> Casing Repair | <input type="checkbox"/> New Construction | <input type="checkbox"/> Recomplete | <input type="checkbox"/> Other |
| <input type="checkbox"/> Change Plans | <input checked="" type="checkbox"/> Plug and Abandon | <input type="checkbox"/> Temporarily Abandon | |
| <input type="checkbox"/> Convert to Injection | <input type="checkbox"/> Plug Back | <input type="checkbox"/> Water Disposal | |

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the final site is ready for final inspection.)

Energen Resources intends to plug and abandon the Hardie F #1 according to the attached plugging procedures.

14. I hereby certify that the foregoing is true and correct
Name (Printed/Typed)

Vicki Donaghey

Title

Regulatory Analyst

Date

07/21/06

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Original Signed: Stephen Mason

Title

Date

AUG 07 2006

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

NMOCDD 46

PLUG AND ABANDONMENT PROCEDURE

July 12, 2006

Hardie F #1

Basin Dakota
1180' FSL & 1840' FWL, SW, Section 14, T29N, R12W
San Juan County, New Mexico, API #30-045-08237

Note: All cement volumes use 100% excess outside pipe and 50' excess inside pipe. The stabilizing wellbore fluid will be 8.3 ppg, sufficient to balance all exposed formation pressures.
Cement will be ASTM Type III, mixed at 14.8 ppg with a 1.32 cf/sx yield.

1. Install and test location rig anchors. Prepare blow pit. Comply with all NMOCD, BLM, and Energen safety regulations. MOL and RU daylight pulling unit. Conduct safety meeting for all personnel on location. NU relief line and blow down well; kill with water as necessary.
2. ND wellhead and NU BOP. Test BOP. TOH and tally 198 joints 2.375" tubing, total 6058'. If necessary, LD tubing and use a workstring. Round trip 4.5" gauge ring or casing scraper to 6078'.
3. **Plug #1 (Dakota perforations and top, 6078' – 5978')**: TIH and set cement retainer at 6078'. Load casing with water and circulate well clean. Pressure test casing to 800#. *If casing does not test, then spot or tag subsequent plugs as appropriate.* Mix 10 sxs cement and spot a balanced plug inside casing above CR to isolate the Dakota perforations and top. TOH with tubing.
4. **Plug #2 (Galup top, 5332' – 5232')**: Perforate 3 squeeze holes at 5332'. Attempt to establish rate into squeeze holes if the casing pressure tested. Set 4.5" cement retainer at 5282'. Establish rate into squeeze holes. Mix and pump 45 sxs cement, squeeze 35 sxs outside the casing and leave 10 sxs inside casing to cover Mesaverde top. TOH with tubing.
5. **Plug #3 (Mesaverde top, 3264' – 3164')**: Perforate 3 squeeze holes at 3264'. Attempt to establish rate into squeeze holes if the casing pressure tested. Set 4.5" cement retainer at 3214'. Establish rate into squeeze holes. Mix and pump 45 sxs cement, squeeze 35 sxs outside the casing and leave 10 sxs inside casing to cover Mesaverde top. TOH with tubing.
6. **Plug #4 (Chacra top, ^{2706'}2390' – ^{2606'}2290')**: Perforate 3 squeeze holes at ^{2706'}2390'. Attempt to establish rate into squeeze holes if the casing pressure tested. Set 4.5" cement retainer at 2340'. Establish rate into squeeze holes. Mix and pump 45 sxs cement, squeeze 35 sxs outside the casing and leave 10 sxs inside casing to cover Chacra top. PUH to 1728'.
7. **Plug #5 (Pictured Cliffs top, 1728' – 1628')**: Mix 10 sxs cement and spot a balanced plug inside casing to cover the Pictured Cliffs top. TOH with tubing.
8. **Plug #6 (Fruitland top, 1360' – 1260')**: Perforate 3 squeeze holes at 1360'. Attempt to establish rate into squeeze holes if the casing tested. Set 4.5" cement retainer at 1310'. Establish rate into squeeze holes. Mix and pump 45 sxs cement, squeeze 35 sxs outside the casing and leave 10 sxs inside casing to cover the Fruitland top. TOH and LD tubing.
9. **Plug #7 (Kirtland top, 9.625" Surface casing shoe, Ojo Alamo top, surface, 524' – 0')**: Perforate 3 squeeze holes at 524'. Establish circulation out the bradenhead valve with water; circulate the BH

annulus clean. Mix and pump approximately 200 sxs cement down the 4.5" casing to circulate good cement out bradenhead valve. Shut well in and WOC.

10. ND BOP and cut off casing below surface casing flange. Install P&A marker with cement to comply with regulations. RD, move off location, cut off anchors and restore location.

Hardie F #1

Proposed P&A

Basin Dakota

1180' FSL & 1840' FWL, Section 14, T-29-N, R-12-W
San Juan County, NM / API #30-045-08237

Today's Date: 7/12/06

Spud: 4/20/62

Comp: 5/10/62

Elevation: 5630' GI

5640' KB

Ojo Alamo behind casing

13.75" Hole

Kirtland @ 474'

Fruitland @ 1310'

Pictured Cliffs @ 1678'

Squeeze casing leaks from
1849' to 1818' with 400 sxs
(1970)

Chacra @ 2340'

Mesaverde @ 3214'

Squeeze casing leaks from
4125' to 3391' with 175 sxs
(2004)

Gallup @ 5282'

Dakota @ 6204'

7.875" Hole

9.625" 32.3# H-40 Casing set @ 295'
200 sxs cement, circulated to surface

Plug #7: 524' – 0'
Type III cement, 200 sxs

Perforate @ 524'

Cmt Retainer @ 1310'

Plug #6: 1360' – 1260'
Type III cement, 45 sxs:
35 outside and 10 inside

Perforate @ 1360'

Top of Cmt @ 1410' (T.S.)

Plug #5: 1728' – 1628'
Type III cement, 10 sxs

DV Tool @ 1827'
Cemented with 135 sxs

Cmt Retainer @ 2340'

Plug #4: 2390' – 2290'
Type III cement, 45 sxs:
35 outside and 10 inside

Perforate @ 2390'

Cmt Retainer @ 3214'

Plug #3: 3264' – 3164'
Type III cement, 45 sxs:
35 outside and 10 inside

Perforate @ 3264'

Cmt Retainer @ 5282'

Plug #2: 5332' – 5232'
Type III cement, 45 sxs:
35 outside and 10 inside

Perforate @ 5332'

Top of Cmt @ 5939' (Calc, 75%)

Set CR @ 6078'

Plug #1: 6078' – 5978'
Type III cement, 10 sxs

Dakota Perforations:
6128' – 6225'

4.5" 10.5#, J-55 Casing @ 6367'
Cemented with 110 sxs

TD 6368'
PBTD 6260'

Hardie F #1

Current
Basin Dakota

1180' FSL & 1840' FWL, Section 14, T-29-N, R-12-W
San Juan County, NM / API #30-045-08237

Today's Date: 7/12/06

Spud: 4/20/62

Comp: 5/10/62

Elevation: 5630' GI

5640' KB

Ojo Alamo behind casing

Kirtland @ 474'

Fruitland @ 1310'

Pictured Cliffs @ 1678'

Squeeze casing leaks from
1849' to 1818' with 400 sxs
(1970)

Chacra @ 2340'

Mesaverde @ 3214'

Squeeze casing leaks from
4125' to 3391' with 175 sxs
(2004)

Gallup @ 5282'

Dakota @ 6204'

13.75" Hole

7.875" Hole

9.625" 32.3# H-40 Casing set @ 295'
200 sxs cement, circulated to surface

Well History

Jul '70: Isolate casing leak 1818' – 1849'. Squeeze with 400 sxs. Drill out and P/T. Land tubing at 6090' with Baker Model D packer at 6090'.

Nov '04: Mill out Model D production packer. Set RBP at 6064'. Isolate casing leaks 3391' to 4125'. Squeeze with 175 sxs cement. TOH with packer. Drill out cement. TOH with RBP. Land tubing at 6058'.

Top of Cmt @ 1410' (T.S.)

2.375" Tubing at 6058'
(198 joints, 4.7#, J-55)

DV Tool @ 1827'
Cemented with 135 sxs

Top of Cmt @ 5939' (Calc, 75%)

Dakota Perforations:
6128' – 6225'

4.5" 10.5#, J-55 Casing @ 6367'
Cemented with 110 sxs

TD 6368'
PBSD 6260'