Form 3160-5
(June 1990)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

N.M. Oil Cons. Division
1625 N. French Dr.
Hobbs, NM 88240

FORM APPROVED
Budget Bureau No. 1004-0135
Expires: March 31, 1993

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to deepen or reentry to a different reservoir.
Use "APPLICATION FOR PERMIT-" for such proposals

SUBMIT IN TRIPLICATE

1. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other
2. Name of Operator: Doyle Hartman
3. Address and Telephone No.: 500 N. Main St., Midland, Texas 79701 (915) 684-4011
4. Location of Well (Footage, Sec., T., R., M., or Survey Description): 1650' FNL & 1650' FWL (G) Section 7, T-20-S, R-37-E, NMPM

5. Lease Designation and Serial No.: LC-031621A
6. If Indian, Allottee or Tribe Name:
7. If Unit or CA, Agreement Designation:
8. Well Name and No.: H.M. Britt No. 11
9. API Well No.: 30-025-05998
10. Field and Pool, or Exploratory Area: Eumont (Y-7R-Qn)
11. County or Parish, State: Lea Co., NM

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

TYPE OF SUBMISSION	TYPE OF ACTION	
☐ Notice of Intent	☐ Abandonment	☐ Change of Plans
☒ Subsequent Report	☐ Recompletion	☐ New Construction
☐ Final Abandonment Notice	☐ Plugging Back	☐ Non-Routine Fracturing
	☒ Casing ~~Repair~~ & Cement Repair	☒ Water Shut-Off
	☐ Altering Casing	☐ Conversion to Injection
	☒ Other RETURN WELL TO BENEFICIAL USE	☐ Dispose Water

(Note: Report results of multiple completion on Well Completion or Recompletion Report and Log form.)

13. Describe Proposed or Completed Operations (Clearly state all pertinet details, and give pertinent dates, including estimated date of starting any proposed work. If well is directionally drilled, give subsurface locations and measured and true vertical depths for all markders and zones pertinent to this work.)*

In compliance with the BLM's notice of 7-24-00, the following well operations, as described on pages 2 of 9, 3 of 9, 4 of 9, 5 of 9, 6 of 9, 7 of 9, 8 of 9, and 9 of 9 (attached hereto), have been performed, to repair wellbore, and return, to beneficial use, the 32-year shut-in-and-abandoned H. M. Britt No. 11 well.

Approval Subject To Keeping Well On Continuous Production.

ACCEPTED FOR RECORD
(ORIG. SGD.) DAVID R. GLASS
OCT 1 [illegible]
DAVID R. GLASS
PETROLEUM ENGINEER

14. I hereby certify that the foregoing is true and correct
Signed Steve Hartman Title Steve Hartman, Engineer Date 10/02/01

(This space for Federal or State office use)

Approved by _____ Title _____ Date _____
Conditions of approval, if any:

KZ

Title 18 U.S.C. Section 1001, makes 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.

*See Instruction on Reverse Side

SCS

DETAILS OF COMPLETED OPERATIONS

Moved in dirt contractor. Knocked down Mesquite. Filled in gully around wellhead. Rebuilt location.

Moved in and rigged up well service unit, on 7-26-01. Pulled and laid down 106 jts (3370') of old 2 3/8" O.D. tubing, and Baker 5 ½" Model "R" packer.

Ran new 2 3/8" O.D. tubing and 5 ½" casing scraper. Tagged up, at 3565' (TOC @ 3610'). Pulled 5 ½" casing scraper.

Ran bottom-hole drilling assembly, consisting of 4 3/4" cone bit and (6) 3 ½" O.D. drill collars.

Hooked up air units. Drilled out cement, from 3610' to 3641'. Bit fell free, at 3641'. Cleaned out wellbore, to 4004'. While circulating down (below 3641'), well initially flowed water, with show of gas. Pulled 14 jts of 2 3/8" O.D. tubing. Shut down for night. SICP = 16 psig, at 8:00 a.m., 7-28-01.

Blew well down. Pulled bottom-hole drilling assembly.

Ran 5 ½" casing scraper, to 4004'. While on bottom, hooked up air units. Circulated wellbore, with air, to blowdown tank. Pumped 66 bbls of 2% KCL water down 2 3/8" O.D. tubing. Pulled 2 3/8" O.D. tubing.

Hooked up Schlumberger. Logged well with DS-CNL-GR-CCL log and VDCBL-GR-CCL log.

Ran into hole with 2 3/8" O.D. tubing, 5 ½" Model "C" packer, and 5 ½" Model "C" RBP. Set 5 ½" Model "C" RBP, at 3612'. Tested 5 ½" Model "C" RBP, to 1000 psi.

Pulled and laid down 1 jt of tubing. Spotted 250 gallons of 15% NEFE acid, from 3350' to 3600'. Raised 5 ½" Model "C" packer, to 3323'. Let acid soak, for 30 minutes.

Acidized all casing holes and perfs, from 3331' to 3670', with an additional 750 gallons (total of 1,000 gallons) of 15% NEFE acid, at an average treating rate of 4.8 BPM and average treating pressure of 270 psi. Displaced acid with 19 bbls of 2% KCL water.

Pulled and laid down 5 ½" Model "C" RBP.

Ran and set 5 ½" Model "C" packer, at 3255'. Pressured 5 ½" x 2 3/8' casing-tubing annulus to 1000 psi. Cemented perfs and casing holes, from 3331' to 3670', with a total of 1250 sx of cement, consisting of 1050 sx of API Class "C" Neat cement, 100 sx of API Class "C" cement containing 2% $CaCl_2$, 3 lb/sx Gilsonite, 0.25 lb/sx Flocele and 100 sx of API Class "C" cement containing 3% $CaCl_2$, 3lb/sx Gilsonite, and 0.25 lb/sx Flocele. Final displacement rate was 0.5 BPM, at 3680 psi.

Raised 5 ½" Model "C" packer, to 2588'. Pressured 2 3/8' O.D. tubing to 2000 psi. Pressured 5 ½" x 2 3/8" casing-tubing annulus to 1000 psi.

Hooked up Halliburton, to 13 3/8" x 8 5/8" casing annulus. Pressured 13 3/8" x 8 5/8" casing annulus to 1600 psi, before pressure broke. Performed injectivity test down 13 3/8" x 8 5/8" annulus, at 2 BPM, at 1000 psi.

Cemented down 13 3/8" x 8 5/8" annulus, at 2 BPM, at 800 psi, with 100 sx of API Class "C" cement containing 3% $CaCl_2$, 3 lb/sx Gilsonite, and 0.25 lb/sx Flocele, followed by 200 sx of API Class "C" Neat cement. ISIP = 450 psi. Closed casing valve. Rigged down Halliburton.

WOC overnight. Released pressure on 2 3/8" O.D. tubing and 5 ½" x 2 3/8" casing-tubing annulus. Pulled and laid down 5 ½" Model "C" packer.

Ran 2 3/8" O.D. tubing and bottom-hole drilling assembly, consisting of 4 3/4" bit and (6) 3 ½" O.D. drill collars. Tagged top of cement, at 3233'. Drilled 228' of cement, from 3233' to 3461', in 3.33 hrs (67.6 ft/hr). WOC overnight. Temporarily ceased drilling, at 3461', to provide more time for cement to harden.

Using reverse-circulation pump, pressure tested 5 ½" O.D. casing, to 1500 psi. Pressure broke back to 1200 psi. Pulled bottom-hole drilling assembly.

Ran and set 5 ½" Model "C" packer, at 2841'. Pressured 5 ½" O.D. casing-tubing annulus, from 0' to 2841', to 2650 psi. Pressure held okay.

Lowered 5 ½" Model "C" packer, to 3331'. Pressure tested 5 ½" O.D. casing, from 0' to 3331', to 2500 psi. Pressure held okay. Moved 5 ½" Model "C" packer, to 3357'. Pressured 5 ½" O.D. casing, from 0' to 3357', to 2500 psi. Lost 600 psi, in one minute (leak between 3331' and 3357').

Pressure 2 3/8" O.D. tubing, to 3000 psi. Lost 275 psi, in one minute.

Pulled 5 ½" Model "C" packer.

Ran bottom-hole drilling assembly. Drilled cement, from 3461' to 3500', in 1.72 hrs (22.7 ft/hr). Circulated hole clean. Pulled bottom-hole drilling assembly.

Ran 2 3/8" O.D. tubing and 5 ½" Model "C" packer, to 3461'. Spotted 150 gal, of 15% NEFE acid, from 3300' to 3461'. Raised and set 5 ½" Model "C" packer, at 3255'. Let acid soak, for 30 minutes. Pumped down 2 3/8" O.D. tubing. Pressure broke, at 1650 psi. Pumped away acid, at 4.2 BPM, at 900 psi.

Raised and set 5 ½" Model "C" packer, at 3161'. Pressured 5 ½" x 2 3/8" annulus to 500 psi. Squeeze cemented, from 3331' to 3500', with 1000 sx of API Class "C" Neat cement and 300 sx of API Class "C" cement, containing 2% $CaCl_2$, 3 lb/sx Gilsonite, and 0.25 lb/sx Flocele. Displaced cement with 17 bbls of 2% KCL water.

ISIP = 2430 psi
5-min SIP = 2210 psi
10-min SIP = 2145 psi
15-min SIP = 1970 psi

Pumped an additional 0.3 bbls of 2% KCL water. Pressure increased to 4180 psi. Released tubing pressure. Observed no flowback. Raised packer to 2651'. Pressured 2 3/8" O.D. tubing to 3000 psi. Placed 1000 psi on 5 ½" x 2 3/8" annulus. Shut down for weekend.

Ran 2 3/8" O.D. tubing and bottom-hole assembly, consisting of 4 3/4" O.D. bit and (6) 3 ½" O.D. drill collars. Tagged top of cement, at 3050'.

Due to rig shortage, rigged down well service unit. Temporarily moved rig to Britt-Laughlin No. 1 well, for a pump replacement and sand cleanout.

Moved well service unit back onto well, on 8-8-01. Drilled hard cement, from 3030' to 3375'. Circulated hole clean. Pressure tested 5 ½" O.D. casing, to 1000 psi. Pressure held okay. Increased pressure, to 1500 psi. Lost 125 psi, in 5 minutes.

Repaired surface leaks. Pressure tested 5 ½" O.D. casing, to 2000 psi. Lost 675 psi (to 1325 psi) in 10 minutes.

Pulled bottom-hole drilling assembly.

Ran 5 ½" Model "C" packer, to 3382'. Spotted 250 gal of 15% NEFE acid, from 3132' to 3382'. Raised 5 ½" Model "C" packer, to 3130'. Let acid soak, for 30 minutes. Pumped away acid, at 3.9 BPM, at 2150 psi.

Raised and set 5 ½" Model "C" packer, at 3002'. Pressure tested 5 ½" O.D. casing, from 0' to 3002', to 2500 psi, for 1 hr. Pressure held okay.

Rigged up Halliburton. Squeeze cemented casing hole, from 3331' to 3370', with 200 sx of API Class "C" Neat cement, followed by 200 sx of API Class"C" cement containing 2% $CaCl_2$, 3 lb/sx Gilsonite, 0.25 lb/sx Flocele. Final squeeze pressure was 4280 psi, at 1.0 BPM. After shutting down, lost 20 psi, from 4280 psi to 4260 psi, in 5 minutes.

Reversed excess cement from 2 3/8" O.D. tubing. Raised 5 ½" Model "C" packer, to 2809'. Pressured 2 3/8" O.D. tubing to 2500 psi. Pressured 5 ½" x 2 3/8" annulus to 1000 psi. WOC overnight.

Pulled and laid down 5 ½" Model "C" packer. Ran bottom-hole drilling assembly, consisting of 4 3/4" cone bit and (6) 3 ½" 0.D. drill collars. Drilled 295' of cement, from 3006' to 3301', in 4.25 hrs (69.4 ft/hr). Shut down for remainder of day, to allow more time for remainder of cement to harden.

Drilled cement, from 3301' to 3435' (134'), in 2.87 hrs (46.7 ft/hr.) Pressure tested 5 ½" O.D. casing, from 0' to 3435', to 2000 psi, for 10 minutes, with no drop in pressure.

Rigged up air unit. Unloaded water from hole. Pulled and laid down bottom-hole drilling assembly.

Dumped 1650 lbs of 20/40 frac sand down 5 ½" O.D. casing. Ran 2 3/8" O.D. tubing. Found top of sand, at 3320' (above casing hole). Pulled 2 3/8" O.D. tubing.

Rigged up Capitan Corporation wireline truck.

Perforated well, with a total of (29) 0.38" x 19" holes, with one shot each, at:

3081	3132	3169	3239	3263	3283
3088	3135	3214	3242	3270	3285
3094	3145	3217	3248	3272	3296
3114	3148	3224	3250	3276	3298
3116	3151	3228	3255	3281	

Ran 2 3/8" O.D. tubing and Baker 5 ½" Model "C" packer, to 3320'. Spotted acid across and above perfs, from 3213' to 3298', by pumping 150 gal of 15% MCA acid, followed by 0.5 bbls of 2% KCL water. Allowed acid to fall and equalize.

Raised and set packer, at 3190'. Pumped an additional 200 gal, of 15% MCA acid, down 2 3/8" O.D. tubing. Let acid soak, for 30 minutes.

Acidized perfs, from 3213' to 3398' (18 holes), with an additional 3250 gal (total of 3600 gal), of 15% MCA acid and 24 ball sealers, at an average treating rate of 4.0 BPM and average treating pressure of 1940 psi. Flushed acid with 17 bbls of 2% KCL water. TP_{mx} = 2700 psi (at ballout). TP_{bd} = 1600 psi (at 4.3 BPM). ISIP = 302 psi. 2-min SIP = 0 psi.

Surged off ball sealers. Pumped away remaining 688 gal, of 15% MCA acid, at 4.4 BPM, at 1235 psi.

Pulled 2 3/8" O.D. tubing and 5 ½" Model "C" packer.

Ran 2 3/8" O.D. tubing, 5 ½" Model "C" packer, and 5 ½ Model "C" RBP. Set 5 ½" Model "C" RBP, at 3190'. Spotted acid across and above upper perfs, from 3081' to 3169' (11 holes), by pumping 82 gal of 15% MCA acid, followed by 0.5 bbls of 2% KCL water. Allowed acid to fall and equalize.

Raised and set 5 ½" Model "C" packer, at 3035'. Pumped an additional 200 gal, of 15% MCA acid, down 2 3/8" O.D. tubing. Let acid soak, for 35 minutes.

Acidized perfs, from 3081' to 3169' (11 holes), with an additional 2116 gal (total of 2400 gal), of 15% MCA acid, and 16 ball sealers, at 2.5 BPM, at 2500 psi. Flushed acid, with 17 bbls of 2% KCL water. TP_{mx} = 2700 psi (at ballout). TP_{bd} = 2480 psi (at 0.8 BPM).

ISIP = 1539 psi
5-min SIP = 203 psi
8-min SIP = 0 psi

While acidizing, observed the following treating pressures and ball action.

Balls on Formation	Acid Pumped (Gal)	Rate (BPM)	WHTP (psi)
3	1050	2.6	2480
6	1260	2.6	2510
9	1470	2.6	2500
12	1680	2.6	2700 (ballout)

Released 5 ½" Model "C" packer. Hooked up air unit. Unloaded fluid from hole.

Pulled 5 ½" Model "C" packer and 5 ½" Model "C" RBP. Shut down for night.

SICP = 118 psig, at 8:00 a.m., CDT, 8-17-01.

Ran and landed 2 3/8" O.D. tubing, at 3290' RKB (101 jts @ 32.16 ft/jt + (2) 2 3/8" x 8' subs + 1.1' SN + 18' MA - 2' AGL + 10' KBC = 3290.16').

Ran 2" x 1 1/4" x 12' RHAC insert pump and 3/4" rod string, consisting of (130) 3/4" x 25' Axelson S-87 API Class "KD" rods, (1) 3/4" x 2' rod sub, and (1) 3/4" x 8' rod sub. Started pumping and cleaning up well, at 1:30 p.m., CDT, 8-17-01, at 8.5 x 64 x 1 1/4.

Performed well test:

	9-5-01	
Gas Rate	=	120 MCFPD
Water Rate	=	1.66 BPD
CP	=	21.9 psi
LP	=	21.2 psi

Shut in well, on 9-7-01, for pressure buildup. 32.5-hr SICP = 168 psig.

Rigged up well service unit. Pulled rods and pump. Lowered tubing. Tagged top of frac sand, at 3314'. Raised and landed bottom of tubing, at 3051' (94 jts @ 32.16 ft/jt + 1.1' SN + 18' MA + 2' CBJ - 3' AGL + 10' KBC = 3051.14').

Installed Halliburton 3 ½" heavy-duty frac valves, on 5 ½" x 2 3/8" casing-tubing annulus. Made up flowing wellhead assembly.

Rigged up Halliburton. Performed CO_2 foam frac down casing-tubing annulus, with 164,139 gal of gelled water and CO_2, plus a combined total of 350,000 lbs of 20/40, 10/20, and 8/16 frac sand, at an average treating rate of 27.9 BPM and average WHCP of 1993 psi. Static tubing pressure = 1551 psi.

Left well shut in, for one hour. Hooked up well, to blowdown tank. Flowed well to blowdown tank, for 10 hours.

Hooked up air unit. Cleaned out wellbore, to 3435' (PBTD). Flowed well to blowdown tank, through 2" flowline, for an additional 8 hours. FCP = 37 psig. FTP = 152.5 psig.

Lowered 2 3/8" O.D. tubing. Found no additional sand fill. Raised and landed bottom of tubing, at 3368' RKB (104 jts @ 32.16 ft/jt + 1.1' SN + 18' MA - 3' AGL + 10' KBC = 3367.7').

Ran 2" x 1 1/4" x 12' RHAC insert pump and 3/4" rod string, consisting of (134) 3/4" x 25' Axelson S-87 API Class "KD" rods, (1) 3/4" x 4' rod sub, 1 1/4" x 16' polish rod. Resumed pumping and cleaning up well, at 1:30 p.m., CDT, 9-12-01, at 8.5 spm x 64" x 1 1/4".

Moved off Lufkin C-114-143-64 pumping unit. Installed Lufkin C-228-213-100 pumping unit equipped with 30-hp NEMA "D" motor.

Rigged up well service unit. Pulled 2" x 1 1/4" x 12' RHAC top-hold-down insert pump. Ran 2" x 1 ½" x 16' RWBC bottom-hold-down insert pump. Resumed pumping and cleaning up well, on 9-17-01, at 8.9 spm x 100" x 1 ½".

Performed well test:

		9-30-01
Gas Rate	=	460 MCFPD
Water Rate	=	138.6 BWPD
Choke	=	32/128
CP	=	141 psig
LP	=	19.7 psig
CO_2	=	8%
Test Period	=	24 hrs.

In compliance with the BLM's notice of July 24, 2000, the 32-year shut-in-and-abandoned Britt No. 11 wellbore has now been repaired, tested, and returned to beneficial use.