

DISTRICT I
P.O. Box 1980, Hobbs, NM 88241-1980
DISTRICT II
P.O. Box Drawer DD, Artesia, NM 88211-0719
DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
DISTRICT IV
P.O. Box 2088, Santa Fe, NM 87504-2088

State of New Mexico
Energy, Minerals and Natural Resources Department

OIL CONSERVATION DIVISION

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

Form C-101
Revised February 10, 1999
Instructions on back
Submit to Appropriate District Office
State Lease - 6 Copy
Fee Lease - 5 Copy
☐ AMENDED REPORT

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

¹ Operator Name and Address CHEVRON USA INC 15 SMITH ROAD, MIDLAND, TX 79705		² OGRID Number 4323
⁴ Property Code 30020		⁵ Property Name V. M. HENDERSON
		³ API Number 30-025-32903
		⁶ Well No. 13

⁷ Surface Location									
UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
E	30	21-S	37-E		1890	NORTH	660	WEST	LEA

⁸ Proposed Bottom Hole Location If Different From Surface									
UI or lot no.	Section	Township	Range	Lot.Idn	Feet From The	North/South Line	Feet From The	East/West Line	County
⁹ Proposed Pool 1 PENROSE SKELLY GRAYBURG					¹⁰ Proposed Pool 2				

¹¹ Work Type Code D	¹² Well Type Code O	¹³ Rotary or C.T. ROTARY	¹⁴ Lease Type Code P	¹⁵ Ground Level Elevation 3503'
¹⁶ Multiple No	¹⁷ Proposed Depth 3950'	¹⁸ Formation GRAYBURG	¹⁹ Contractor	²⁰ Spud Date 7/15/2003

²¹ Proposed Casing and Cement Program

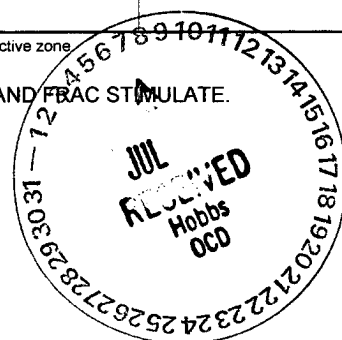
SIZE OF HOLE	SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH	SACKS OF CEMENT	EST. TOP
NO CHANGE					

²² Describe the proposed program. If this application is to DEEPEN or PLUG BACK give the data on the present productive zone and proposed new productive zone. Describe the blowout prevention program, if any. Use additional sheets if necessary.

CHEVRON U.S.A. INC. INTENDS TO DRILL THE SUBJECT WELL DEEPER TO THE GRAYBURG FORMATION AND FRAC STIMULATE.

THE INTENDED PROCEDURE AND WELLBORE DIAGRAMS IS ATTACHED FOR YOUR APPROVAL.

Permit Expires 1 Year From Approval
Date Unless Drilling Underway
Deeper



²³ I hereby certify that the rules and regulations of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief.

Signature *Denise Leake*

Printed Name Denise Leake

Title Regulatory Specialist

Date 7/3/2003

Telephone 915-687-7375

OIL CONSERVATION DIVISION

Approved By: *Paul J. Smith*

Title:

PETROLEUM ENGINEER

Approval Date:

JUL 10 2003

Expiration Date:

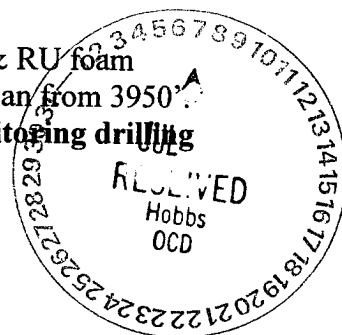
Conditions of Approval:

Attached ☐

V. M. Henderson # 13
Penrose Skelly Field
T21S, R37E, Section 30
Job: Drill Well Deeper To Grayburg Formation And Frac Stimulate

Procedure:

1. Displace flowline with fresh water. Have field specialist close valve at header. Pressure line according to the type of line. AGU, EMSU, and EMSUB buried fiberglass lines will be tested with 300 psi. All polypipe (SDR7 and SDR11) will be tested w/100 psi. All steel lines will be tested w/500 psi. If a leak is found, contact Larry Williams for repair/replacement. If test is good, bleed off pressure and **open valve** at header. Document this process in the morning report.
2. MI & RU pulling unit. Bleed pressure from well, if any. Pump down csg with 8.6 PPG cut brine water, if necessary to kill well. POH with rods and pump. Remove WH. Install BOP's and test to 1000 psi. **Note: Minimize water pumped into well since deepening will be performed using foam due to low pressure Upper Grayburg interval.**
3. PU 4 3/4" MT bit and GIH on 2 7/8" work string to PBTD at 3670'. POH with 2 7/8" work string and bit. LD bit.
4. PU & GIH with 5 1/2" sqz pkr on 2 7/8" work string to 3150'. Set pkr at 3150'. Pressure test pkr and csg to 500 psi. Leave pressure on casing while cmt squeezing. Establish injection rate into perfs 3390-3638'. Monitor csg pressure for communication.
5. RU DS Services cementing equipment. Cement squeeze perfs 3390-3638' using Class C cement mixed to 14.8 PPG w/ 1.35 CFY. Attempt to achieve at least 2000 psi squeeze pressure. Release pkr. Reverse out excess cement. PUH to approximately 2850'. Reset pkr at 2850' and pressure tbg and csg to 500 psi. RD and release DS Services cementing equipment. Shut well in and WOC overnight.
6. Open well. Bleed off pressure. POH with 2 7/8" work string and sqz packer. LD pkr.
7. PU and GIH with 4 3/4" MT bit on 2 7/8" tbg string to top of cement in csg at 3150'. LD and drill out cement to 3650'. Reverse circulate well clean from 3650' using 8.6 PPG cut brine water. Pressure test casing and sqzd perfs to 500 psi. If perfs leak, repeat cmt sqz procedure. LD and drill out cmt and fill in 5 1/2" csg to 3710'. Reverse circulate well clean from 3710' using 8.6 PPG cut brine water. POH with 2 7/8" work string and MT bit. LD MT bit.
8. PU 4 3/4" sealed bearing bit and GIH on 2 7/8" drill string to 3710'. MI & RU foam unit(s). LD and drill well deeper to 3950' using foam. Circulate well clean from 3950'. POH with 4 3/4" bit and drill string. LD bit. **Note: Geology will be monitoring drilling**



penetration rate while deepening well. Proposed TD may be adjusted during drilling operation.

9. PU treating packer and GIH on 2 7/8" work string to 3650'. Set pkr at 3650' and conduct open hole swab test of interval 3700-3950'. Report oil cut, recovered fluid volumes, pressures, and/or swabbing fluid levels. Obtain 1 qt. sample of formation fluids and deliver to Cardinal Laboratories in Hobbs for analysis. Release pkr at 3650'. POH with pkr and 2 7/8" work string. LD pkr.
10. PU 4 3/4" MT bit & DC's and GIH on 2 7/8" work string to 3950'. Circulate well clean from 3950' using foam. POH with 4 3/4" bit and drill string. LD bit. RD and release foam unit(s).
11. MI & RU electric line unit. GIH and conduct logs as directed by Geology (Contact: **Robert Martin**, telephone **687-7267**). POH. RD & release electric line unit.
12. PU & GIH 5 1/2" Lok-Set pkr and On-Off tool w/ 2.25" "F" profile on 2 7/8" EUE 8R L-80 work string. Set pkr at approximately 3650'. Pressure test pkr and csg to 350 psi. **Note: Do not exceed 350 psi csg pressure due to cmt sqzd perfs 3390-3638'.**
13. MI & RU DS Services. Acidize Grayburg interval from 3700-3950' with 6,000 gals antisludge 15% HCl acid *** at a maximum rate of **6 BPM** and a maximum surface pressure of **3500 psi**. Pump job as follows:

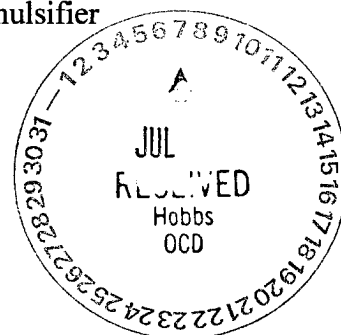
Pump 1,500 gals acid at 6 BPM
Pump 500 gals gelled 10 PPG brine containing 2000 lbs GRS at 6 BPM
Pump 1,500 gals acid at 6 BPM
Pump 500 gals gelled 10 PPG brine containing 1000 lbs GRS at 6 BPM
Pump 1,500 gals acid at 6 BPM
Pump 500 gals gelled 10 PPG brine containing 1000 lbs GRS at 6 BPM
Pump 1,500 gals acid at 6 BPM

Displace acid with 8.6 PPG cut brine water -- do not overdisplace. Record ISIP, 5, 10, & 15 minute SIP's. RD and release DS Services. **Note: It is not necessary to pickle tbg due to the low BHP.**

*** Acid system is to contain:

1 GPT A264
8 GPT L63
2 PPT A179
20 GPT U66
2 GPT W53

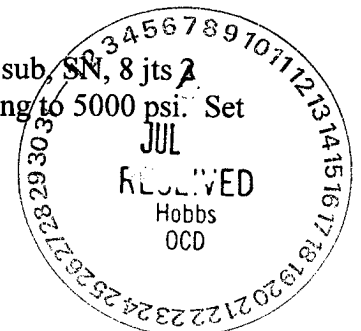
Corrosion Inhibitor
Iron Control Agent
Iron Control Aid
Mutual Solvent
Non-Emulsifier



14. Open well and flow/swab back spent treatment fluids. Recover 100% of spent acid and load before SI well for the night. Report oil cut, recovered fluid volumes, pressures, and/or swabbing fluid levels.
15. Open well. Pump down tbg with 8.6 PPG cut brine water to kill well, if necessary. Release pkr. POH with 2 7/8" work string and packer. LD pkr.
16. PU 4 3/4" MT bit and GIH on 2 7/8" work string to TD at 3950'. If fill is encountered, MI & RU foam unit(s) and cleanout to 3950' using foam. POH with 2 7/8" work string and MT bit. LD MT bit.
17. PU and GIH w/ 5 1/2" Lok-Set pkr & On-Off tool w/ 2.25" "F" profile, 12 jts. of 3 1/2" EUE 8R L-80 tbg, 5 1/2" hydraulic-set pkr, and 106 jts. of 3 1/2" EUE 8R L-80 work string, testing to 7500 psi. Set Lok-Set pkr at 3650'. Pressure annulus to 350 psi to test csg and Lok-Set pkr. Pressure tbg and set hydraulic pkr at approximately 3275'. Install frac head. Pressure annulus to 500 psi to test csg and hydraulic pkr. Leave pressure on csg during frac job to observe for communication.
18. MI & RU DS Services. Frac well down 3 1/2" tubing at **40 BPM** with 66,000 gals of YF135, 138,000 lbs. 16/30 mesh Jordan Sand, and 30,000 lbs **resin-coated** 16/30 mesh CR4000 proppant. Observe a maximum surface treating pressure of **7400 psi**. Pump job as follows:

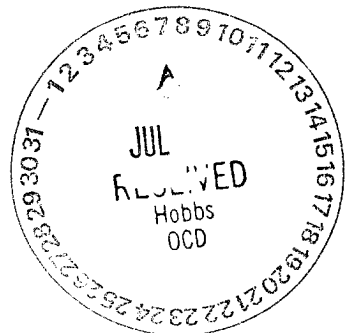
 Pump 2,000 gals 2% KCL water containing 110 gals Baker SCW-358 Scale Inhibitor
 Pump 1,000 gals 2% KCL water spacer
 Pump 25,000 gals YF135 pad containing 5 GPT J451 Fluid Loss Additive
 Pump 5,000 gals YF135 containing 1.5 PPG 16/30 mesh Jordan Sand
 Pump 6,000 gals YF135 containing 2.5 PPG 16/30 mesh Jordan Sand
 Pump 7,000 gals YF135 containing 3.5 PPG 16/30 mesh Jordan Sand
 Pump 8,000 gals YF135 containing 4.5 PPG 16/30 mesh Jordan Sand
 Pump 10,000 gals YF135 containing 5.5 PPG 16/30 mesh Jordan Sand
 Pump 5,000 gals YF135 containing 6 PPG **resin-coated** 16/30 mesh CR4000 proppant

 Flush to 3650' with 1,336 gals WF135. **Do not overflush.** Shut well in. Record ISIP, 5, 10, and 15 minute SI tbg pressures. SWI. RD & Release DS Services. **Leave well SI overnight.**
19. Open well. GIH and swab well until there is no sand inflow. Release pkr and POH with 3 1/2" work string. Lay down work string and pkrs.
20. PU 4 3/4" MT bit and GIH on 2 7/8" work string to TD at 3950'. If sand fill is encountered, MI & RU foam unit(s) and cleanout to 3950' using foam. POH with 2 7/8" work string and MT bit. LD work string and bit.
21. PU and GIH w/ BP mud anchor jt of 2 7/8" tbg, 2 7/8" x 4' perforated sub, SN, 8 jts 2 7/8" EUE 8R J-55 tbg, TAC, and 118 jts 2 7/8" EUE 8R J-55 tbg, testing to 5000 psi. Set TAC at 3650', with EOT at 3935' and SN at 3900'.



22. Remove BOP's and install WH. GIH with rods, weight bars, and pump per ALS recommended design. RD & release pulling unit.
23. Turn well over to production. Report producing rates, choke sizes, flowing pressures and/or fluid levels.

AMH
7/2/2003



Field: Eumont

Reservoir: Yates/ 7 Rivers/ Queen

Location:

1890' FNL & 660' FWL
Section: 30
Township: 21S
Range: 37E
County: Lea State: NM

Current Wellbore Diagram

Well ID Info:

Chevno: BE3398
API No: 30-025-32903
L5/L6: U482000
Spud Date: 6/19/95
Compl. Date: 7/30/95

Elevations:

GL: 3503'
KB: 3517'
DF: 3516'

Tbg Detail:

2 3/8" Notched Collar @ 3639'
1 jt. 2 3/8" EUE 8R J-55 Tbg
2 3/8" x 4' perf tbg sub
SN @ 3600"
118 jts. 2 3/8" EUE 8R J-55 Tbg

Surface Csg: 8 5/8", 24#, WC-50
Set: @ 425' w/ 200 sks
Hole Size: 12 1/4"
Circ: Yes TOC: Surface
TOC By: Circulated

Perfs:

3390-94'
3400-02'
3406-20'
3498-3536'
3540-44'
3554-56'
3570-88'
3598-3608'
3620-24'
3636-38'

Status:

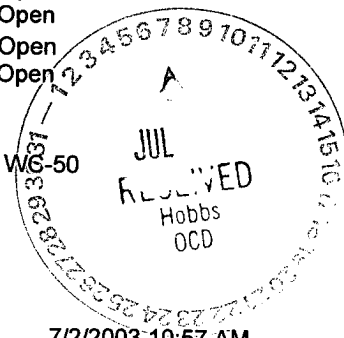
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COTD: 3670'
PBTD: 3670'
TD: 3700'

Updated: 7/1/03

By: A. M. Howell

Prod. Csg: 5 1/2", 15.50# WG-50
Set: @ 3700' w/ 725 sks
Hole Size: 7 7/8"
Circ: Yes TOC: Surface
TOC By: Circulated



Well: **V. M. Henderson # 13**

Field: **Penrose Skelly**

Reservoir: **Grayburg**

Location:

1890' FNL & 660' FWL
Section: 30
Township: 21S
Range: 37E
County: Lea State: NM

**Proposed
Wellbore Diagram**

Well ID Info:

Chevno: BE3398
API No: 30-025-32903
L5/L6: U493800
Spud Date: 6/19/95
Compl. Date: 7/30/95

Elevations:

GL: 3503'
KB: 3517'
DF: 3516'

Surface Csg: 8 5/8", 24#, WC-50
Set: @ 425' w/ 200 sks
Hole Size: 12 1/4"
Circ: Yes TOC: Surface
TOC By: Circulated

Tbg Detail:

EOT @ 3935'
2 7/8" OD EUE 8R J-55 mud jt.
2 7/8" x 4' perf tbg sub
SN @ 3900'
8 jts. 2 7/8" EUE 8R J-55 tbg
TAC @ 3650'
118 jts. 2 7/8" EUE 8R J-55 tbg

Perfs:

3390-94'
3400-02'
3406-20'
3498-3536'
3540-44'
3554-56'
3570-88'
3598-3608'
3620-24'
3636-38'

Status:

Eumont - Cmt Sqzd
Eumont - Cmt Sqzd
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Prod. Csg: 5 1/2", 15.50# WC-50

Set: @ 3700' w/ 725 sks
Hole Size: 7 7/8"

Circ: Yes TOC: Surface
TOC By: Circulated

4 3/4" Open-Hole
Production Interval
3700-3950' Grayburg - Open

COTD: 3950'
PBTD: 3950'
TD: 3950'

Updated: 7/1/03

By: A. M. Howell

