

District I  
1625 N French Dr., Hobbs, NM 88240  
Phone (575) 393-6161 Fax (575) 393-0720  
District II  
811 S First St., Artesia, NM 88210  
Phone (575) 748-1283 Fax (575) 848-9720  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone (505) 334-6178 Fax (505) 334-6170  
District IV  
1220 S St Francis Dr., Santa Fe, NM 87505  
Phone (505) 476-3460 Fax (505) 476-3462

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-101  
Revised August 1, 2011

Permit

HOBBS OCD

SEP 12 2011

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

Operator Name and Address CHEVRON U.S.A. INC. 15 SMITH ROAD MIDLAND, TEXAS 79705		RECEIVED OGRID Number 4323
		API Number 30-025-03087
Property Code 29965	Property Name CENTRAL VACUUM UNIT (formerly NM "AB" #4)	Well No. #4 442

7 Surface Location

UL - Lot I	Section 6	Township 18-S	Range 35-E	Lot Idn	Feet from 1650	N/S Line SOUTH	Feet From 660	E/W Line EAST	County LEA
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8 Pool Information

VACUUM GRAYBURG SAN ANDRES
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Additional Well Information

9 Work Type <del>RE-ENTRY &amp; RC</del>	10 Well Type OIL	11 Cable/Rotary	12 Lease Type S	13 Ground Level Elevation
14 Multiple NO	15 Proposed Depth 9080'	16 Formation SAN ANDRES	17 Contractor	18 Spud Date
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

19 Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
			NO CHANGE			

Permit Expires 2 Years From Approval  
Date Unless Drilling Underway

Casing/Cement Program: Additional Comments

Plugback

Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

I hereby certify that the information given above is true and complete to the best of my knowledge and belief  
I further certify that the drilling pit will be constructed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.

Printed name DENISE PINKERTON

Title: REGULATORY SPECIALIST

E-mail Address: leakejd@chevron.com

Date 09-09-2011

Phone: 432-687-7375

OIL CONSERVATION DIVISION

Approved By.

Title:

Approved Date.

Expiration Date

NOTE: Property name & code will change after subsequent report (form C-103) has been approved that shows how and when you plugged of the Vacuum Abo Reef perms.

SEP 15 2011

### **CVU #442 - Overview**

The CVU #442 (formerly the NM 'AB' State #4), API 30-025-03087, was a 1961 Vacuum Abo Reef completion that was TA'd in 1989. After an unsuccessful Abo recompletion attempt in 1997, the well was re-TA'd with a CIBP set at 8020'. The recommendation is to test the lower San Andres.

The lower San Andres appears to be stratigraphically separate from the CVU Main Pay and we believe it to be stratigraphic traps at the shelf margin, which exhibit very good porosity and a Pulsed Neutron Log across the proposed interval suggests favorable hydrocarbon saturations.

The recommendation is to re-enter the CVU #442, P&A the Abo Reef, tie into Schlumberger's GR-CNL log dated 10/24/1977, and perforate 4944'-4950', 4959'-4965', 5007'-5013', acidize, and swab test. If acceptable oil saturations are present, then the well will be put on production.

## **CVU #442 (Formerly NM 'AB' State #4)**

**Job: Perf and Acidize**

**API No. 30-025-03087**

**Lea County, NM**

### **Workover Procedure:**

1. MIRU PU.
2. Kill well as necessary. Note that the well should be dead due to a CIBP set @ 8020'. Open bradenhead valves, bleed pressure, & monitor throughout job.
3. ND wellhead. NU 5K hydraulic BOP w/ blind rams in bottom and 2 3/8" pipe rams in top + stripper head. PU 7-5/8" packer & set @ 30'. Test BOP to 250 low, 550 high psi for 5 minutes. LD test joint and packer.
4. Fill hole & test casing f/ blind rams to CIBP to 550 psi for 10 minutes. Note any injection rate & pressure response in Wellview and notify remedial engineer as a potential leak isolation & squeeze may be necessary.
5. RU WL. Make dummy run w/gauge ring to CIBP @ 8020'.
  - a. If gauge ring tags above 8020', PU 2-3/8" 4.7# L-80 work string & make cleanout run to 8020' with appropriate size bit (depending on the casing size where fill is tagged) on 2 3/8" EUE, L-80, 6.5# WS. TOH standing back workstring.
6. Dump bail cement 35' class H neat cement on top of CIBP. POOH w/ WL.
7. TIH with 2-3/8" workstring to TOC on CIBP @ 7985'. Circulate abandonment fluid (25 sks gel / 100 bbls of water) to 5278'.
8. Pull up hole with 2-3/8" workstring open ended to 5298' & spot a balanced cement plug to 5030' w/ class C neat cement (29 sks, WSM verify quantity prior to pumping). Pull out of plug slowly to 5040' & reverse excess cement out of workstring. Pull up to 4530'.
9. WOC 4 hours or until surface samples indicate good cement integrity.
10. Tag plug per NMOCD. Cement must be tagged minimum of 50' above the liner top (TOL @ 5108'). Dump bail additional cement if required.
11. TOH stand back workstring. LD WS. Swap 2 3/8" WS to 2 7/8" WS for acid job.

12. RU Baker Hughes perforating services & lubricator. Get on depth with Schlumberger's GR-CNL dated 10/24/1997. Perforate 7 5/8" casing w/ 2 JSPF at 120 degree phasing, 0.47" AEHD, & 49.3" penetration as follows:

4944'-4950', 4959'-4965', 5007'-5013' (36 total holes)

RDMO wireline unit.

13. TIH w/ 7 5/8" treating pkr on 2-7/8" EUE, L-80, 6.5# workstring. Test tbg to 6000 psi below slips while RIH. Set pkr @ 4850'. Load casing and test packer to 500 psi.
14. MIRU Acid Unit. Acidize perms w/ 3,000 gallons 15% NEFE HCL. Divert using 55, 1.2 SG, 7/8" bio-ball sealers spread evenly throughout the job. Pump acid at 8-10 BPM.  
Max Pressure = 5800 psi. Displace with FW to bottom perf.
15. Shut-in for 1 hour to allow acid to spend.
16. Attempt to flow back load.
- a. If well is dead and will not flow, release packer and run past all perms to wipe any excess balls off seat. Reset packer @ 4850'. Swab back load. Record stabilized fluid level, fluid entry rate, monitor returns for traces of oil and notify Production Engineer.
17. Release packer. TOH & lay down workstring and packer.
18. Contact Production Engineer (Acero) prior to RIH with tubing and production equipment to confirm if flow/swab back results are successful.
19. RIH w/ new bare 2 7/8" J-55 EUE, 6.5# production tubing.

BHA:

Tubing - 2 7/8" 6.5# J-55

1 - 2 7/8" X 6' Marker Sub

2 - Joints 2 7/8" J-5 tubing

1 - 2 7/8" X 7 5/8" TAC @ 4880' (Garner)

Tbg 2 7/8" J-55

1 - 2 7/8" X 30' Enduroalloy Blast Joint (Garner)

1 - Cup Type Seat Nipple @ 5015' No Higher (Garner)

1 - 3 1/2" X 20'~30' Slotted Mud Anchor w/Bull Plug (Garner)

End of Tubing ~ 5040'

Load Cell - Danny Acosta 432-631-9033

20. ND BOP. NU wellhead.

21. RIH w/ pump and rods.

- 1 – 1 ½" X 22' SM Polish Rod w/7/8" pin & PR coupling (Garner)
- 1 – Set Norris 7/8" N-97 Pony Rods W/FH Tee couplings
- 98ea. – 2450' Norris 7/8" N-97 Rods W/FH Tee couplings
- 90ea. – 2250' Norris 3/4" N-97 Rods W/FH Tee couplings
- 13ea. – 325' Grade K 1 ½" Sinker Bars W/3/4" pins & SHSM boxes
- 1 – 4' Guided Pony Sub 3-guides, 7/8" body, ¾" pins (Garner)
- 1 – 1.5" Insert Pump (Garner)
- 1 – 1 ¼" X 12' Dip Tube
- 1 – 7/8" X 3/4" crossover coupling
- Garner Pump (575 397-4788)

22. RDMO PU.

23. Turn well over to production.

Contacts:

Nathaniel Brummert – Remedial Engineer (713-409-6170)

Danny Acosta – ALCR (Cell: 432-631-9033)

Edgar Acero – Production Engineer (432-687-7343 / Cell: 432-230-0704)

Drilling Supt. - Heath Lynch – (432-687-7402 / Cell: 432-238-3667)

OS – Nick M. – 432 631 0646

**CVU #442 (Formerly NM 'AB' State # 4) Wellbore Diagram**

Created:	07/08/11	By:	BBMK	Well #	4	Fd /St #	427775
Updated:		By		API		30-025-03087	
Lease:	New Mexico "AB"			Surface	Tshp/Rng.	I-06-18S-35E	
Field:	Vacuum ABO			Unit Ltr		Section:	6
Surf Loc:	1650 FSL & 660 FEL			Bottom hole	Tshp/Rng:		
Bot Loc				Unit Ltr		Section:	
County	LEA	St.:	NM	Directions			
Status		TA		Chevno		FA4239	

**Surface Casing**

Size: 10 3/4  
Wt , Grd : 28 60#  
Depth: 309'  
Sxs Cmt : 350  
Circulate : Yes  
TOC : Surface  
Hole Size : 13 1/4

**Intermediate Casing**

Size : 7 5/8  
Wt , Grd : J-55 26 40#  
Depth : 5261'  
Sxs Cmt : 650'  
Circulate : Yes  
TOC : Surface  
Hole Size : 9 7/8

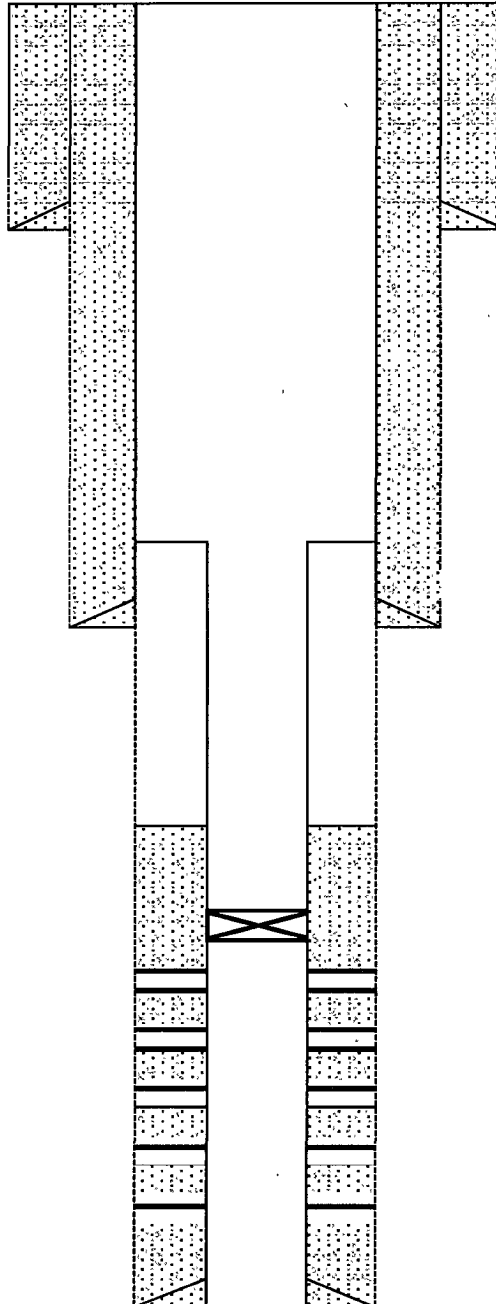
**Production Casing (Liner)**

Size: 4 1/2  
Wt , Grd : J-55 11 60#  
Depth : 9080'  
Sxs Cmt : 550'  
Circulate : No  
CMT Top : 6300' (Calc)  
Hole Size : 6 3/4  
Hung @ : 5108'

KB. \_\_\_\_\_  
DF : 3894'  
GL : \_\_\_\_\_  
Ini Spud : 11/06/61  
Ini Comp : \_\_\_\_\_

Formation	Tops
Anhy	1500'
Salt	1664'
Salt	2640'
Yates	2920'
San Andres	4733'
Abo	8182'

8075'-8176' 11/97  
8196'-8660' 10/97  
8208'-8439' 7/73  
8483'-8640' 1/68  
8674'-8826' 12/61



CIBP @ 8020'

PBTD: 9066'  
TD: 9080'