

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) 748-9720
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

Form C-101
 Revised July 18, 2013

Energy Minerals and Natural Resources

HOBBS OCD

Oil Conservation Division

AMENDED REPORT

OCT 18 2013

1220 South St. Francis Dr.

Santa Fe, NM 87505

RECEIVED

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

¹ Operator Name and Address VANGUARD PERMAIN LLC P O BOX 281 NORTH HIGHWAY 248 EUNICE, NEW MEXICO 88231		² OGRID Number 258350
		³ API Number 30-025-37828
⁴ Property Code 301544	⁵ Property Name COLE STATE	⁶ Well No. 23

⁷ Surface Location

UL - Lot E	Section 16	Township 22S	Range 37E	Lot Idn	Feet from 1650	N/S Line NORTH	Feet From 990	E/W Line WEST	County LEA
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⁸ Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
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⁹ Pool Information

Pool Name PENROSE SKELLY GRAYBURG <i>EUNICE, YATES - 7 CURS - QUEEN (OIL)</i>	Pool Code 50250 22800
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Additional Well Information

¹¹ Work Type P	¹² Well Type O	¹³ Cable/Rotary	¹⁴ Lease Type STATE	¹⁵ Ground Level Elevation 3391 GL
¹⁶ Multiple NO	¹⁷ Proposed Depth 4148	¹⁸ Formation GRAYBURG <i>QUEEN</i>	¹⁹ Contractor	²⁰ Spud Date
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water

We will be using a closed-loop system in lieu of lined pits

²¹ Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
		8.652	24	862	180SX POZ/C	
		5.5	7	7875	680 SX POZ/C	

Casing/Cement Program: Additional Comments

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²² Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer

²³ I hereby certify that the information given above is true and complete to the best of my knowledge and belief. I further certify that I have complied with 19.15.14.9 (A) NMAC <input type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input type="checkbox"/> , if applicable. Signature: <i>Gaye Heard</i> Printed name: GAYE HEARD Title: AGENT E-mail Address: gheard@oilreportsinc.com Date: 10-17-2013	OIL CONSERVATION DIVISION	
	Approved By: <i>[Signature]</i>	
	Title: Petroleum Engineer	
	Approved Date: <i>11/13/13</i>	Expiration Date: <i>11/13/15</i>
	Conditions of Approval Attached	
	Phone: 575-383-2727	NOV 14 2013



Cole State #23
P. Skelly/Graygurg/San Andres - 30-025-37828
Lea County, New Mexico
 PROPOSED COMPLETION - 10/2013

KB: 3401'
 GL: 3391'

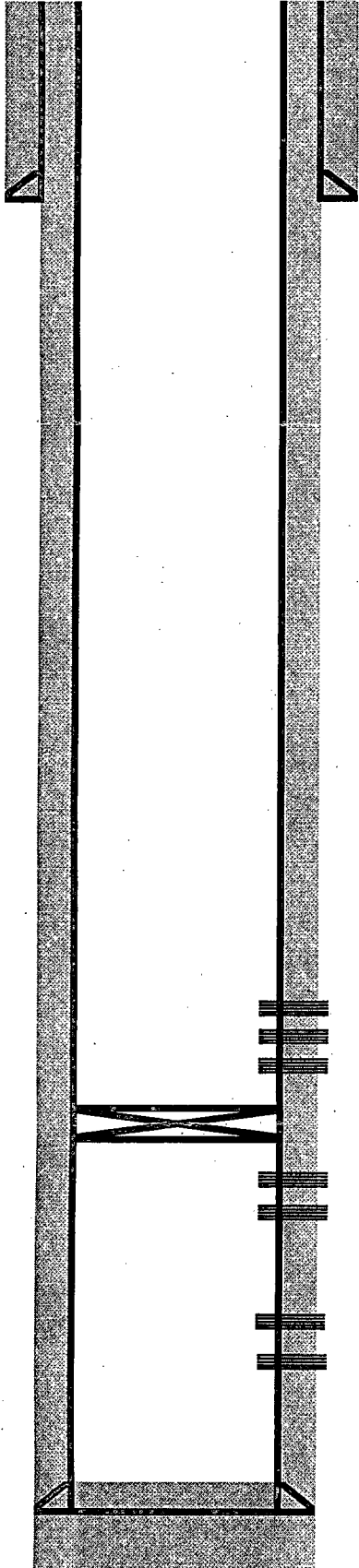
TOC @ surf
 330 sxs

8 5/8" csg @ 862

TOC @ surface
 680 sxs

Marker Jt
 3444.6' - 3465.6'

5 1/2" csg @ 4148



<u>CASING PROGRAM</u>						
<u>Depth</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>I.D.</u>	<u>Collapse</u>	<u>Burst</u>
862	8 5/8"	24#	K-55	8.097	1,370	2,950
4148	5 1/2"	17#	K-55	4.892	4,910	5,320

<u>PRODUCTION TUBING</u>				
<u>Depth</u>	<u>Size</u>	<u>Weight</u>	<u>Grade</u>	<u>Threads</u>
unknown	2 7/8"	6.5#	J-55	EUE

QUEEN
 Penrose Skelly Perforations 45 holes:
 3,470' - 3,474' (4', 12 holes) PROPOSED
 3,520' - 3,528' (8', 24 holes) PROPOSED
 3,551' - 3,553' (3', 9 holes) PROPOSED

PENROSE & KELLY GRAYBURG CIBP @ 3600'
 Grayburg Perforations 16 holes:
 3,678' - 3,682' (8 holes)
 3,812' - 3,816' (8 holes)

San Andres Perforations 98 holes:
 3,838' - 3,842' (8 holes)
 3,870' - 3,920' (50 holes)
 3,960' - 4,000' (40 holes)

PBTD = 4,107' FC

Note: This schematic is not to scale. For display purposes only.



WORKOVER PROCEDURE
Add Perforations, Stimulate & Test the Penrose Skelly

Cole State #23
 Eunice Area
 Lea County, New Mexico
 10/11/2013

AFE # _____

Well Data:

RKB - GL: 3401' / 3391'
 Surf. Casing: 8-5/8", 24# k-55, set at 862'
 Prod. Casing: 5-1/2", 17# K-55, set at 4148'
 Tbg & Pkr: 2 7/8", 6.5# J-55 EUE, set at unknown
 Perforations: Grayburg/San Andres 3678' – 4000' (See WBD)
 PBTD: 4107'
 BHP: Not certain – well on pump
 BHT: 99°F @ TD from logs

Casing Specifications

Depth (ft)	Casing Wt & Grade	Burst	Col	Body Yield	JT Yield	Wall	ID	Drift Dia.	Top Cmt
0 – 862'	8-5/8, 24#, K-55 ST&C	2,950	1,370	630	381	-	8.097	7.972	Surf.
0 – 4148'	5-1/2", 17#, J-55	5,320	4,910	273	272	-	4.892	4.767	Surf.

Safety:

Vanguard's policy on safety as employees and contractors is for everyone to go home safely every day. To this end a safety meeting involving all persons on location will be held at the beginning of each day and prior to any significant activity during the course of this operation. **It is the responsibility of the Wellsite Supervisor to lead these safety**

Cole State #23
 Isolate, Perf, Stim & Test Penrose Skelly

meetings, document attendance, note in the daily report, and retain the documentation for the permanent well record.

While there are multiple aspects running a safe operation, one key point that should be made at each safety meeting is the Stop Work Authority (SWA) policy. The SWA Policy grants all persons on a Vanguard site, facility, location, or property the **Right, Obligation, Authority, and Responsibility** to stop any work or action that are unsafe to personnel, equipment, or that if continued may damage the environment. This is a key component of our safety policy and must be conveyed to all personnel on location.

Scope of Operations:

Isolate the current Grayburg/San Andres interval and add 45 new perforations to the Penrose Skelly Formation, fracture stimulate and test the Penrose Skelly.

Contact Information:

Name	Title	Office	Cell
Bryan Kindred	Workover Foreman		575-602-1788
Mike Jones	Production Foreman	575-396-0812	575-390-4611
Newt Painter	Production Superintendent	432-362-2209	432-438-3872
Randall Hicks	Senior Operations Engineer	832-377-2207	713-252-1626
Frank Lemkowitz	Operations Manager	832-377-2237	713-560-3122

Procedure:

1. MIRU completion rig and test anchors.
2. Unseat pump and POOH w/ rods and pump.
3. ND WH and NU BOP. Kill well with 2% KCL water, if necessary. Release TAC and POOH w/ tubing.
4. PU, strap and TIH with 4-3/4" bit, 5-1/2" casing scrapper & 2-7/8" tubing. Clean out hole to ~4107' until clean returns, POOH and rack back 2-7/8" tubing.
5. MI wireline w/ packoff. RIH w/ CBP and GR/CCL & correlate to the Halliburton Gamma/Neu/Den Log dated 3-Jul-2006.
6. Set CBP @ ~3600'. Test CBP and casing to 1000 psi.
7. MU 3-1/8" slick casing guns set at 3 spf, 120° phasing (0.40" hole, 21" penetration).
8. Perforate as follows:
 - a. 3470' – 3474' (4', 3 spf, 12 shots)
 - b. 3520' – 3528' (8', 3 spf, 24 shots)
 - c. 3551' – 3553' (3', 3 spf, 9 shots) for a total of 45 shots
9. RD wireline.
10. PU a 5-1/2" Arrowset packer and RIH with tubing to ~3450' and prepare to set packer. Test tubing going in the hole to 3500 psi.

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Isolate, Perf, Stim & Test Penrose Skelly*

11. MIRU pump truck (with 2000 gals acid) and test lines to 3500 psi.
 - a. Spot 500 gals of acid across perforations. Load tubing with 2 % KCl and set packer at 3450'.
 - b. Pump 1000 gals 15% NEFE acid with 20 ball sealers.
 - c. Pump 500 gal then drop 30 balls over next 500 gals.
 - d. Pump last 500 gals and flush to 3470'.
 - e. Record ISIP, 5 min, 10 min and 30 min.
12. RU swabber and swab well in to test acid job. Recover load and report fluid/gas entry, if possible. If well is on vacuum, continue to Step 13.
13. RDMO completion rig.
14. Call out 3-500 bbl tanks & fill with 2% KCl water. Install frac valve in preparation for frac job down 5-1/2" casing.
15. RU frac Co. and test lines & pump as per frac schedule.
16. Monitor ISIP, 5 min, 10 min, 15 min. Flowback until well dies.
17. Rig down frac valve and release frac tanks.
18. MIRU completion rig.
19. PU a 4-3/4" bit and RIH to confirm perfs are open, POOH.
20. RU and bail sand if necessary.
21. RIH w/ 5-1/2" TAC, SN and 2-7/8" tubing. Set SN at ~3520'.
22. RIH w/ rods and pump.
23. RD & MO.
24. Turn well on to production and test.
25. See additional procedure to comingle zones, if needed.

Note: It is the responsibility of Wellsite Supervisor to enter all daily activity reports and costs into WellView on a timely basis.

Originator:

Randall Hicks
Senior Operations Engineer

Approved:

Frank Lemkowitz
Operations Manager

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Isolate, Perf, Stim & Test Penrose Skelly