

Submit 1 Copy To Appropriate District Office
 District I - (575) 393-6161
 1625 N. French Dr., Hobbs, NM 88240
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 District III - (505) 334-6178
 1000 Rio Brazos Rd., Aztec, NM 87404
 District IV - (505) 476-3460
 1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
 Energy, Minerals and Natural Resources

Form C-103
 Revised July 18, 2013

HOBBS OCD

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
 Santa Fe, NM 87505

JUN 16 2014

RECEIVED

SUNDRY NOTICES AND REPORTS ON WELLS (DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)		WELL API NO. 30-025-41369
1. Type of Well: Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/>		5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
2. Name of Operator CHEVRON U.S.A. INC.		6. State Oil & Gas Lease No.
3. Address of Operator 15 SMITH ROAD, MIDLAND, TEXAS 79705		7. Lease Name or Unit Agreement Name VACUUM GRAYBURG SAN ANDRES UNIT
4. Well Location Unit Letter: P 820 feet from SOUTH line and 175 feet from the EAST line Section 1 Township 18S Range 34E NMPM County LEA		8. Well Number 113
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3985' GR		9. OGRID Number 4323
		10. Pool name or Wildcat VACUUM GRAYBURG SAN ANDRES

12. Check Appropriate Box to Indicate Nature of Notice, Report or Other Data

NOTICE OF INTENTION TO:

- PERFORM REMEDIAL WORK PLUG AND ABANDON
 TEMPORARILY ABANDON CHANGE PLANS
 PULL OR ALTER CASING MULTIPLE COMPL
 DOWNHOLE COMMINGLE
 CLOSED-LOOP SYSTEM
 OTHER:

SUBSEQUENT REPORT OF:

- REMEDIAL WORK ALTERING CASING
 COMMENCE DRILLING OPNS. P AND A
 CASING/CEMENT JOB
 OTHER: DRILL NEW WELL

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

PLEASE FIND ATTACHED, REPORTS FOR WORK DONE FROM 11/23/2013 THROUGH 12/11/2013 FOR THE DRILLING OF THIS NEW WELL.

SPUD DATE: 11/28/2013

11/29/2013: SET SURFACE CSG, 11.75", SET @ 1526. CMT W/1035 SX CMT.

12/06/2013: SET INTERMEDIATE CSG, 8.625", SET @ 3210'. CMT W/595 SX CMT.

12/11/2013: SET PRODUCTION CSG, 5.5", SET @ 5119'. CMT W/880 SX CMT.

TD: 5130:

PBTD: 5119'

Spud Date:

Rig Release Date:

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE 

TITLE REGULATORY SPECIALIST

DATE 06/11/2014

Type or print name DENISE PINKERTON
 For State Use Only

E-mail address: leakejd@chevron.com

PHONE: 432-687-7375

APPROVED BY: 
 Conditions of Approval (if any):

TITLE Petroleum Engineer

DATE 06/20/14

JUN 23 2014



Summary Report

Drill
Drill and Suspend
Job Start Date: 11/23/2013
Job End Date: 12/11/2013

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Report Start Date: 11/23/2013

Com

R/D H&P 356 on CVU 181wi

Operations suspended due to icy weather conditions

Report Start Date: 11/24/2013

Com

Operations suspended due to icy weather conditions

R/D H&P 356 on CVU 181wi.

Power down top drive & drawworks. Dock top drive. Scope in derrick. Finish R/D front and back yard rig components. Finish Unplugging All Electric Wires, Bleed & Pin MRCs

Operations suspended until daylight

Report Start Date: 11/25/2013

Com

Operations suspended until daylight

R/U H&P 356 on VGSAU 113. Spotted ODS sub, VFD, Mud pump skid and shaker skid.

Operations suspended until daylight

Report Start Date: 11/26/2013

Com

Continue moving H&P 356 & rigging up

Report Start Date: 11/27/2013

Com

Continue rigging up, install flow line. Weld on conductor.

Connect flow line & turnbuckles.

Continue rigging up, repair damage from recent freeze, Lay out and strap BHA.

TIH, tag @ 75'

Report Start Date: 11/28/2013

Com

Change saver sub from XT-39' to 4 1/2XO

Fill surface lines & pressure test standpipe to 1500psi

Drill 14 3/4" surface hole section from 75' to 1195'

AROP = 124 FPH
WOB = 5-10 Klbs
RPM = 150
Motor RPM = 165
GPM = 750
SPP = 1900psi
Torque = 5-6 Kft*lbs
Differential = 450 psi

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Teledrift would not give survey, changed control wire and stand pipe transducer, no success, discussion made to drill to TD and drop Totco survey

Drill 14 3/4" surface hole section from 1195' to 1526'

AROP = 49 FPH
WOB = 5-10 Klbs
RPM = 150
Motor RPM = 165
GPM = 750
SPP = 1900psi
Torque = 5-6 Kft*lbs
Differential = 450 psi

Pump 2 40 bbl high vis sweeps, circulate hole clean

Monitor well while letting Totco survey fall

PJSM, TOH with 14 3/4" surface drilling assembly from 1526' to 1165'

Backream from 1165' to 1040'

Continue TOH from 1040' to 385' (Midnight Depth)

Report Start Date: 11/29/2013

Com

Continue TOH from 385' to surface, break bit & L/D

Clean Rig Floor

Review JSA, R/U H&P CRT & 2-point calibrate draw works

PJSM, R/U Franks power tongs



Summary Report

Drill
Drill and Suspend
Job Start Date: 11/23/2013
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Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

PJSM, M/U Shoe Track & Pump Through Same, RIH with 11 3/4" 42# STC surface casing, tagged bottom @ 1526' (Washed down last two joints)
 Circulate 1 1/2 casing volume (Held safety meeting with Halliburton, Chevron & H&P rig crew on rig up & pumping cement schedule)
 R/U Halliburton cmt head & pumping iron
 Test lines to 2500 psi, Cement per Halliburton pump schedule. Displace 177 bbls of FW. Bumped plug and held 1050 psi for 5 minutes (FCP=590 psi), test good. Checked floats, bled back 1/2 bbl. Full returns throughout the job. Returned 180 bbls of cement to surface.

	bbls	sacks	bpm	wt. (ppg)
Spacer	20	n/a	5	8.4
Lead	200	610	6	12.9
Tail	101	425	6	14.8
Disp.	177	n/a	5	8.4

Rig down Halliburton CMT head & pumping iron, flush through surface lines
 Set casing on bottom, Pull Trip Nipple, R/D conductor pipe, cut conductor & 11 3/4" surface casing, L/D, cut conductor & casing, make final cut on 11 3/4" casing and dress for MB-260 wellhead

PJSM, R/D H&P CRT

Cut off conductor casing and prep
 Install wellhead and test to 850/10 min
 Nipple up BOP

Report Start Date: 11/30/2013

Com

Install Flowline, Turnbuckles, Accumulator Lines, Fill Up Line, Trip Nipple, Drain Lines, Center Stack, & Function Test Rams
 PJSM with Mans Nipple. Up, Chevron & H&P crew on testing BOPE, Install Test Plug & Fill Stack With Water
 Perform Koomey Test (Draw Down Pressure 1500 PSI) Test Pipe Rams, HCR, Choke Line, Kill Line, Break On Weld Head & Choke Manifold 250 low, 1500 High
 Test Annular to 250 Low, test to 1500 high failed, top seal on hydrill was leaking. Torque cap with Manns nipple up crew, Re-test to 250 low, 1500 high, high test failed again, worked annular, opened up and pump through stack with rig pumps, pressure up again, 250 low, 1500 high, pressure held
 Tested casing to 1500 psi for 30 min
 Tested standpipe back to mud pumps, 4" valves on standpipe, Kelly hose, Lower & Upper kelly valves, TIWs & Inside Gray, 250 low, 1500 high
 An Attempt to change out saver sub the top drive would not turn on, troubleshoot with H&P electrician, changed out inverter in VFD house, Top Drive running as designed
 Changed out top drive grabber dies & saver sub from 4 1/2 X-O to XT-39

P/U BHA and install Wear Bushing

TIH with 10 5/8" drilling assembly to 1435'

Perform choke drill while displacing fresh water from hole with 10# brine. Note: Top drive inverter was bad again, we could not function top drive

Report Start Date: 12/1/2013

Com

Continue to displace fresh water with 10# Brine
 Troubleshoot top drive, changed out another inverter
 Drill cement & float equipment from 1484' to 1526'

AROP= 42 FPH
 WOB = 5-8 Klbs
 RPM = 20
 Motor RPM = 77
 GPM = 350
 SPP = 600psi
 Torque =5-6 Kft*lbs
 Differential = 300 psi

Drill 10 5/8" Intermediate Hole Section From 1526' to 1578'

AROP= 26 FPH
 WOB = 10-12 Klbs
 RPM = 40
 Motor RPM = 110
 GPM = 500
 SPP = 900 psi
 Torque =5-6 Kft*lbs
 Differential = 300 psi

On attempt to make connection, top drive alarmed major fault, circulate while waiting on H&P electrician & tech from SLPC, Electricians checked various parts inside top drive bay in VFD house, changed out inverter, checked wires from VFD house to rig floor, while checking wires they found a splice in phase cable not properly spliced, did not have enough insulation separating splice, remove cable got replacement from Odessa yard and installed



Summary Report

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Job End Date: 12/11/2013

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

Drill 10 5/8" Intermediate Hole Section From 1578' to 2025 '

AROP= 99 FPH
WOB = 11 Klbs
RPM = 150
Motor RPM = 203
GPM = 500
SPP = 900 psi
Torque =5-6 Kft*lbs
Differential = 300 psi

Report Start Date: 12/2/2013

Com

Drill 10 5/8" Intermediate Hole Section From 2025' to 3210 '

AROP= 132 FPH
WOB = 15-20 Klbs
RPM = 150
Motor RPM = 154
GPM = 700
SPP = 1000 psi
Torque =6-7 Kft*lbs
Differential = 300 psi

Pump 2 40 bbl High Vis Sweeps & Circualte Hole Clean
Monitor Well On Trip Tank For 30 Min, Well Static
TOH With 10 5/8 Intermediate Drilling Assembly and L/D tools.
PJSM, R/U H&P 8 5/8" external CRT
Troubleshoot HPU

Report Start Date: 12/3/2013

Com

Continue troubleshooting HPU control faults, changed out electric motor
Top drive showed major fault, inverter in VFD house out again, troubleshoot with H&P electrician & SLPC tech. Discssion made to change out top drive traction motor, wait on motor and mechanic, traction motor on location @ 17:00 hours, mechanic on location @ 18:00 hours, remove traction motor

Report Start Date: 12/4/2013

Com

R&R T/D traction motor.

Report Start Date: 12/5/2013

Com

Top drive repairs
Perform top drive and derrick inspection. Ensure tools were cleared from work area.
Install trip nipple and master bushings, rig up tongs.
Review JSA for running casing
Make up float collar and shoe.

Report Start Date: 12/6/2013

Com

Run 8 5/8" 32 # J55 Intermediate casing string as follows:

Float shoe
2 joints
Float collar
81 Joints
28 Cent.

Review JSA for running casing with incoming crew.
Run 8 5/8" 32 # J55 Intermediate casing string as follows:

Float shoe
2 joints
Float collar
81 Joints
28 Cent.
Set hanger

Review JSA for rigging up cement equip.
Rig up cementers
Review JSA pumping cement



Summary Report

Drill
Drill and Suspend
Job Start Date: 11/23/2013
Job End Date: 12/11/2013

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

Perform cmt job as follows:

- Pressure test lines to 4000 psi
- Pump 45 bbls of spacer at 10 ppg.
- Mix and pump 405 sxs (131 bbls) Econocem-HLTRRC Lead cement at 12.9 ppg.
- Mix and pump 190 sxs (46 bbls) Premium Plus Tail cement at 14.8 ppg.
- Drop top plug and displace cmt w/ 190 bbls of 10 ppg brine.
- Bump plug with 500 psi over final circulating pressure.
- Bleed off pressure – floats held, bled back 1/2 bbl

Details:

Full returns throughout job
Final circulation pressure prior to bumping plug 800 psi at 3 bpm
30 bbls of cmt to surface
Cmt in place at 17:04 hrs.
Set Weatherford ECP with 2100 psi

Test casing with Halliburton pumps. 1500 psi for 30 min.

Review JSA for R/D cmt equip.

R/D CMT equip

Back out of landing jt, wash up top of hanger L/D landing jt.

Review JSA and R/D CRT

Set packer & test to 1500 psi

Report Start Date: 12/7/2013

Com

Lay out BHA, strap & caliper same

Install wearbushing & trip nipple

Held PJSM on picking up BHA, talked about working in icy conditions

Pick Up BHA#3 as follows:

7 7/8" Security MM55DM PDC bit
6.5" Motor (.16 rev/gal)

TIH and tag cement at 3010'

Circ hole with 10 ppg brine and perform choke drill.

Rig Service

Blow out water from choke manifold, suck out water from gas buster to prevent from freezing

Pull trip nipple & install rotating head

Dril FE & Cmt from 3010' to 3210'.

Drig f/ 3210' to 3259' (prior trip note reason - TD intermediate section, ran casing)

AROP = 33 fph
WOB = 5-10 kips
TD RPM = 30
Motor RPM = 75
GPM = 469 ppg
SPP = 1300 psi
Diff psi= 120
MW = 10 ppg
pH = 10

Note:

Pump 20 bbls of high vis sweeps every 3rd connection

While making a connection bolts on top drive grabber block broke, replace bolts



Summary Report

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Drill and Suspend
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Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

Drig f/ 3259' to 3440 '
 AROP = 52 fph
 WOB = 5-10 kips
 TD RPM = 110
 Motor RPM = 77
 GPM = 500 ppg
 SPP = 1850 psi
 Diff psi= 140
 MW = 9.8 ppg
 pH = 10

Note:
 Pump 20 bbls of high vis sweeps every 3rd connection
 Raise mud property f/ 10 ppg clear brine to 11.2 brine mud at 3800+/-'

Report Start Date: 12/8/2013

Com

Drig f/ 3440' - 3800'
 AROP = 65 fph
 WOB = 12-15 kips
 TD RPM = 110
 Motor RPM = 77
 GPM = 500 ppg
 SPP = 2450 psi
 Diff psi= 140
 MW = 9.8 ppg
 pH = 10

Note:
 Pump 20 bbls of high vis sweeps every 3rd connection
 Raise mud property f/ 10 ppg clear brine to 11.2 brine mud at 3800+/-'

Displace with 11 pound mud

Drig f/ 3800' - 4495'
 AROP = 41 fph
 WOB = 10-12 kips
 TD RPM = 110
 Motor RPM = 77
 GPM = 465 ppg
 SPP = 3150 psi
 Diff psi= 80
 MW = 11 ppg
 pH = 10

Note:
 Pump 20 bbls of high vis sweeps every 3rd connection
 Reduce WOB to control deviation

Report Start Date: 12/9/2013

Com

Drig f/ 4495' - 4615'
 AROP = 48 fph
 WOB = 10-12 kips
 TD RPM = 110
 Motor RPM = 77
 GPM = 465 ppg
 SPP = 3150 psi
 Diff psi= 80
 MW = 11 ppg
 pH = 10

Note:
 Pump 20 bbls of high vis sweeps every 3rd connection
 Reduce WOB to control deviation

Rig service, Replace packer



Summary Report

Drill
Drill and Suspend
Job Start Date: 11/23/2013
Job End Date: 12/11/2013

Well Name VACJUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

Drig f/ 4615' - 5130'
 AROP = 36 fph
 WOB = 10-12 kips
 TD RPM = 110
 Motor RPM = 77
 GPM = 465 ppg
 SPP = 3150 psi
 Diff psi= 80
 MW = 11 ppg
 pH = 10

Note:
 Pump 20 bbls of high vis sweeps every 3rd connection
 Reduce WOB to control deviation

Flowcheck, take final svy

Circulate sweeps out of hole

POOH wet to 4412

Pump slug

POOH to 1430

Report Start Date: 12/10/2013

Com

TOH f/1430' to 739'. Hold SM with crew on LD BHA.
 TOH & LD BHA, motor & bit.

PJSM w/ H&P crew. R/U CRT, casing running and torque turn equipment.

Run 5 1/2" 17# J-55 LTC csg to 4500':

Float Shoe/Guide Shoe (auto fill)
 2 Shoe Jts
 Float Collar (auto fill)
 40 Joints
 Marker Joint
 6 Joints
 ECP
 60 Joints

Report Start Date: 12/11/2013

Com

Continue running 5.5" 17# J-55 production csg from 4500' to 5119'. Washing last 2 jts to bottom.

Run 5 1/2" 17# J-55 LTC production csg as follows:

Float Shoe/Guide Shoe
 2 Shoe Jts
 Float Collar
 40 Joints
 Marker Joint
 6 Joints
 ECP
 76 Joints

Centralizer place 10' above FS, 10' above FC and one per jt to 1615'.

Tag bottom at 5130'

Casing shoe landed at 5119'

Top of FC at 82'

Notified OCD at 2000 hrs on 12/09/2013 of intent to run and cmt csg.

Washed csg f/ 5098' - 5119'.

Broke circulation or cir b/u @ 5109'

Lay down tag joint and land Hanger.

PJSM on rig up & pump Halliburton Cement & equipment.

R/U Halliburton Cementers



Summary Report

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Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit	Field Name Vacuum	Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Com

Pump Halliburton cement schedule.

Perform cmt job as follows:

Pressure test lines to 4060 psi

Pump 30 bbls of spacer at 12.3 ppg.

Mix and pump 420 sxs (125 bbls) of EconoCem HLC of cement lead at 13.2 ppg.

Mix and pump 460 sxs (84 bbls) of CorrosaCem of cement tail at 15.8 ppg.

Drop top plug and displace cmt w/ 109 bbls of Freshwater (Note: calculated amount was 116 Bbls of freshwater).

Bump plug with 500 psi over final circulating pressure.

Bleed off pressure – floats held.

Details:

Full returns throughout job

Final circulation pressure prior to bumping plug 3820 psi at 2 bpm

32 bbls of lead cmt to surface

Cmt in place at 0535 hrs.

Review JSA & R/D Halliburton Cementers

Back out of landing jt. & Flush lines.

Review JSA & R/D H&P's CRT tool.

Set Backpressure valve and packoff. Test packoff to 5000 psi.

PJSM with Mann welding nipple down crew.

Nipple down BOP

Install tubing head. Torque and test to 5,000 psi.

Commence Cleaning pits, Release rig at 1300 Hrs.



Casing Summary

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit		Field Name Vacuum		Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013				Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Surface, Planned? - N, 1,526ftKB

Set Depth (MD) (ftKB) 1,526		Set Tension (kips)		String Nominal OD (in) 11 3/4		String Min Drift (in)		Centralizers 10		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
36	Casing Joint	11 3/4	11.094	42.00	H-40	ST&C	-6	1,482	1,488.21		
1	Float Collar	11 3/4	11.094	42.00	H-40	ST&C	1,482	1,483	1.11		
1	Casing Joint	11 3/4	11.094	42.00	H-40	ST&C	1,483	1,524	40.92		
1	Guide Shoe	11 3/4	11.094	42.00	H-40	ST&C	1,524	1,526	1.78		

Intermediate Casing 1, Planned? - N, 3,210ftKB

Set Depth (MD) (ftKB) 3,210		Set Tension (kips)		String Nominal OD (in) 8 5/8		String Min Drift (in)		Centralizers 28		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
1	Landing Joint	8 5/8	7.906	32.00	J-55	LT&C	16	34	18.50		
1	Pup joint	8 5/8	7.906	32.00	J-55	LT&C	34	39	4.36		
36	Casing Joint	8 5/8	7.906	32.00	J-55	LT&C	39	1,438	1,399.64		
1	External Casing Packer	8 5/8	7.906	32.00	J-55	LT&C	1,438	1,463	24.55		
43	Casing Joint	8 5/8	7.906	32.00	J-55	LT&C	1,463	3,131	1,668.14		
1	Float Collar	8 5/8	7.906	32.00	J-55	LT&C	3,131	3,133	1.46		
2	Casing Joint	8 5/8	7.906	32.00	J-55	LT&C	3,133	3,208	75.89		
1	Float Shoe	8 5/8	7.906	32.00	J-55	LT&C	3,208	3,210	1.54		

Production Casing, Planned? - N, 5,119ftKB

Set Depth (MD) (ftKB) 5,119		Set Tension (kips)		String Nominal OD (in) 5 1/2		String Min Drift (in)		Centralizers 59		Scratchers	
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Thread	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	Len (ft)	P Burst (psi)	P Collapse (psi)
1	Landing Joint	5 1/2	4.892			LT&C	-1	18	18.50		
1	Pup Joint	5 1/2	4.892	17.00	J-55	LT&C	18	21	3.34		
37	Casing Joint	5 1/2	4.892	17.00	J-55	LT&C	21	1,557	1,536.37		
1	Casing Joint	5 1/2	4.892	17.00	J-55		1,557	1,599	41.54		
36	Casing Joint	5 1/2	4.892	17.00	J-55	LT&C	1,599	3,095	1,495.94		
1	ECP	5 1/2	4.892	17.00	J-55	LT&C	3,095	3,120	25.02		
6	Casing Joint	5 1/2	4.892	17.00	J-55	LT&C	3,120	3,369	249.29		
1	Marker Joint	5 1/2	4.892	17.00	J-55	LT&C	3,369	3,379	9.67		
40	Casing Joint	5 1/2	4.892	17.00	J-55	LT&C	3,379	5,037	1,658.29		
1	Float Collar	5 1/2	4.892	17.00	J-55	LT&C	5,037	5,038	1.11		
2	Casing Joint	5 1/2	4.892	17.00	J-55	LT&C	5,038	5,118	79.53		
1	Float Shoe	5 1/2	4.892	17.00	J-55	LT&C	5,118	5,119	1.35		

HOBBS OCD

JUN 16 2014

RECEIVED



Cement Summary

HOBBS OCD

Production Casing Cement

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit		Field Name Vacuum		Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013		JUN 16 2014		Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Original Hole				RECEIVED			
Wellbore Name Original Hole		Directional Type Vertical		Kick Off Depth (ftKB)		Vertical Section Direction (*)	
Hole Size (in)		Act Top (ftKB)		Act Btm (ftKB)			
14 3/4		18.5		1,526.0		1,526.0	
10 5/8				3,210.0		3,210.0	
7 7/8				5,130.0		5,130.0	

VG-MB 226, Vetco Grey on 12/11/2013 11:00					
Type VG-MB 226			Install Date 12/11/2013		
Des	Make	Model	WP (psi)	Service	SN

Surface, Planned?-N, 1,526ftKB											
Casing Description Surface		Wellbore Original Hole		Run Date 11/29/2013		Set Depth (MD) (ftKB) 1,526		Stick Up (ftKB) 6.0		Set Tension (kips)	
Centralizers 10						Scratchers					
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	
36	Casing Joint	11 3/4	11.094	42.00	H-40		ST&C	1,488.21	-6	1,482	
1	Float Collar	11 3/4	11.094	42.00	H-40		ST&C	1.11	1,482	1,483	
1	Casing Joint	11 3/4	11.094	42.00	H-40		ST&C	40.92	1,483	1,524	
1	Guide Shoe	11 3/4	11.094	42.00	H-40		ST&C	1.78	1,524	1,526	

Intermediate Casing 1, Planned?-N, 3,210ftKB											
Casing Description Intermediate Casing 1		Wellbore Original Hole		Run Date 12/6/2013		Set Depth (MD) (ftKB) 3,210		Stick Up (ftKB) -15.9		Set Tension (kips)	
Centralizers 28						Scratchers					
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	
1	Landing Joint	8 5/8	7.906	32.00	J-55		LT&C	18.50	16	34	
1	Pup joint	8 5/8	7.906	32.00	J-55		LT&C	4.36	34	39	
36	Casing Joint	8 5/8	7.906	32.00	J-55		LT&C	1,399.64	39	1,438	
1	External Casing Packer	8 5/8	7.906	32.00	J-55		LT&C	24.55	1,438	1,463	
43	Casing Joint	8 5/8	7.906	32.00	J-55		LT&C	1,668.14	1,463	3,131	
1	Float Collar	8 5/8	7.906	32.00	J-55		LT&C	1.46	3,131	3,133	
2	Casing Joint	8 5/8	7.906	32.00	J-55		LT&C	75.89	3,133	3,208	
1	Float Shoe	8 5/8	7.906	32.00	J-55		LT&C	1.54	3,208	3,210	

Production Casing, Planned?-N, 5,119ftKB											
Casing Description Production Casing		Wellbore Original Hole		Run Date 12/11/2013		Set Depth (MD) (ftKB) 5,119		Stick Up (ftKB) 0.9		Set Tension (kips)	
Centralizers 59						Scratchers					
Jts	Item Des	OD (in)	ID (in)	Wt (lb/ft)	Grade	Top Conn Sz (in)	Top Thread	Len (ft)	Top Depth (MD) (ftKB)	Btm Depth (MD) (ftKB)	
1	Landing Joint	5 1/2	4.892	17.00	J-55		LT&C	18.50	-1	18	
1	Pup Joint	5 1/2	4.892	17.00	J-55		LT&C	3.34	18	21	
37	Casing Joint	5 1/2	4.892	17.00	J-55		LT&C	1,536.37	21	1,557	
1	Casing Joint	5 1/2	4.892	17.00	J-55			41.54	1,557	1,599	
36	Casing Joint	5 1/2	4.892	17.00	J-55		LT&C	1,495.94	1,599	3,095	
1	ECP	5 1/2	4.892	17.00	J-55		LT&C	25.02	3,095	3,120	
6	Casing Joint	5 1/2	4.892	17.00	J-55		LT&C	249.29	3,120	3,369	
1	Marker Joint	5 1/2	4.892	17.00	J-55		LT&C	9.67	3,369	3,379	
40	Casing Joint	5 1/2	4.892	17.00	J-55		LT&C	1,658.29	3,379	5,037	
1	Float Collar	5 1/2	4.892	17.00	J-55		LT&C	1.11	5,037	5,038	
2	Casing Joint	5 1/2	4.892	17.00	J-55		LT&C	79.53	5,038	5,118	
1	Float Shoe	5 1/2	4.892	17.00	J-55		LT&C	1.35	5,118	5,119	

Production Casing Cement, Casing, 12/11/2013 04:00											
Cementing Start Date 12/11/2013				Cementing End Date 12/11/2013				Wellbore Original Hole			
Evaluation Method Returns to Surface		Cement Evaluation Results Full returns throughout job, 32 Bbls Lead cement return at surface.									
Comment											



Cement Summary

Production Casing Cement

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andrés Unit		Field Name Vacuum		Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013				Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

1, 18.5-5,119.0ftKB						
Top Depth (ftKB) 18.5	Bottom Depth (ftKB) 5,119.0	Full Return? Y	Vol Cement Ret (bbl) 32.0	Top Plug? Y	Bottom Plug? N	
Initial Pump Rate (bbl/min) 6	Final Pump Rate (bbl/min) 2	Avg Pump Rate (bbl/min) 6		Final Pump Pressure (psi) 3,556.0	Plug Bump Pressure (psi) 3,820.0	
Pipe Reciprocated? N	Reciprocation Stroke Length (ft)	Reciprocation Rate (spm)	Pipe Rotated? N		Pipe RPM (rpm)	
Depth Tagged (MD) (ftKB)	Tag Method	Depth Plug Drilled Out To (ftKB)	Drill Out Diameter (in)	Drill Out Date		

Spacer				
Fluid Type Spacer	Fluid Description	Quantity (sacks)	Class	Volume Pumped (bbl) 30.0
Estimated Top (ftKB)	Estimated Bottom Depth (ftKB)	Percent Excess Pumped (%)	Yield (ft ³ /sack) 0.00	Fluid Mix Ratio (gal/sack)
Free Water (%)	Density (lb/gal) 12.30	Zero Gel Time (min)	Thickening Time (hr)	1st Compressive Strength (psi)

Cement Fluid Additives				
Add		Type		Conc
Barite				173.37
D-Air				2.0
FE-2				0.35
Fresh Water				33.38
Surfactant				1.0

Lead				
Fluid Type Lead	Fluid Description	Quantity (sacks) 420	Class H	Volume Pumped (bbl) 125.0
Estimated Top (ftKB) 18.5	Estimated Bottom Depth (ftKB) 4,600.0	Percent Excess Pumped (%)	Yield (ft ³ /sack) 1.68	Fluid Mix Ratio (gal/sack) 8.43
Free Water (%)	Density (lb/gal) 13.20	Zero Gel Time (min)	Thickening Time (hr) 0.00	1st Compressive Strength (psi) 324.0

Cement Fluid Additives				
Add		Type		Conc
Fresh Water				0.3
HR-601				
KOL-SEAL				
POLY-E-FLAKE				

Tail				
Fluid Type Tail	Fluid Description	Quantity (sacks) 460	Class H	Volume Pumped (bbl) 84.0
Estimated Top (ftKB) 4,600.0	Estimated Bottom Depth (ftKB) 5,119.0	Percent Excess Pumped (%)	Yield (ft ³ /sack) 1.03	Fluid Mix Ratio (gal/sack) 3.53
Free Water (%)	Density (lb/gal) 15.80	Zero Gel Time (min)	Thickening Time (hr) 5.00	1st Compressive Strength (psi) 1,038.0

Cement Fluid Additives				
Add		Type		Conc
CFR-3 (W/O DEFOAMER)				0.2
D-AIR				
FRESH WATER				
HALAD-322				0.4
KCL 3%				
KOL-SEAL				
LAP-1				1.0
POLY-E-FLAKE				



Directional Survey

Well Name VACUUM GRAYBURG SA UNIT 113		Lease Vacuum Grayburg San Andres Unit		Field Name Vacuum		Business Unit Mid-Continent	
Ground Elevation (ft) 3,985.00	Original RKB (ft) 4,003.50	Current RKB Elevation 4,003.50, 11/12/2013				Mud Line Elevation (ft) 0.00	Water Depth (ft) 0.00

Wellbore Name Original Hole		Parent Wellbore Original Hole		Kick Off Depth (ftKB)		Vertical Section Direction (°)	
UTM Northing (Y) (ft)		UTM Easting (X) (ft)		UTM Grid Zone			
Date 11/28/2013		Definitive? Y		Description Totco		Planned? N	
MD Tie In (ftKB)	TVD Tie In (ftKB)	Inclination Tie In (°)	Azimuth Tie In (°)		NS Tie In (ft)	EW Tie In (ft)	

Survey Data

MD (ftKB)	Incl (°)	Azm (°)	TVD (ftKB)	NS (ft)	EW (ft)	VS (ft)	DLS (°/100ft)	Method	Survey Company	Build (°/100ft)	Depart (ft)	Turn (°/100ft)	Unused data
250	0.20		250.00					Inc. Only		0.08			N
500	0.20		500.00					Inc. Only		0.00			N
750	0.70		749.99					Inc. Only		0.20			N
835	0.90		834.99					Inc. Only		0.24			N
924	1.30		923.99					Inc. Only		0.45			N
1,012	1.90		1,011.99					Inc. Only		0.68			N
1,073	2.50		1,072.99					Inc. Only		0.98			N
1,526	4.00		1,525.94					Inc. Only	Rig	0.33			N
1,578	4.10		1,577.94					Inc. Only		0.19			N
1,760	3.60		1,759.94					Inc. Only		-0.27			N
2,025	2.20		2,024.91					Inc. Only		-0.53			N
2,520	2.60		2,519.91					Inc. Only		0.08			N
3,021	2.00		3,020.90					Inc. Only		-0.12			N
3,198	1.60		3,197.90					Inc. Only		-0.23			N
3,484	1.70		3,483.90					Inc. Only		0.03			N
3,845	2.60		3,844.88					Inc. Only		0.25			N
3,980	3.20		3,979.88					Inc. Only		0.44			N
4,115	3.80		4,114.88					Inc. Only		0.44			N
4,204	3.90		4,203.88					Inc. Only		0.11			N
4,292	3.70		4,291.88					Inc. Only		-0.23			N
4,656	3.40		4,655.87					Inc. Only		-0.08			N
4,744	2.60		4,743.87					Inc. Only		-0.91			N
4,882	3.70		4,881.86					Inc. Only		0.80			N
5,108	3.50		5,107.86					Inc. Only		-0.09			N

HOBBS OCD

JUN 16 2014

RECEIVED