

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
Energy Minerals and Natural Resources

Form C-101
Revised July 18, 2013

Oil Conservation Division
1220 South St. Francis Dr.

Santa Fe, NM 87505

HOBBS OCD
NOV 14 2014

☐ AMENDED REPORT

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

1. Operator Name and Address CROSS TIMBERS ENERGY, LLC 400 WEST 7th STREET FORT WORTH, TX 76102		2. OGRID Number 298299
3. Property Name BRIDGES STATE		4. API Number 30-025-29563
5. Property Code 312507	6. Well No. 506	

7. Surface Location

UL - Lot N	Section 13	Township 17S	Range 34E	Lot Idn 14	Feet from 830	N/S Line S	Feet From 2175	E/W Line W	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

UPPER VACUUM; MIDDLE PENN	Pool Name	62320 Pool Code 62300
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Additional Well Information

11. Work Type RECOMPLETE	12. Well Type OIL	13. Cable/Rotary NA	14. Lease Type OIL	15. Ground Level Elevation 4015
16. Multiple	17. Proposed Depth 10176	18. Formation VACUUM; UPR PENN	19. Contractor TBD	20. Spud Date 11/20/2014
Depth to Ground water		Distance from nearest fresh water well		Distance to nearest surface water
N/A		N/A		N/A

☒ 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
SURF	17 1/2	13 3/8	48#	401	500X C	CIRCULATE
PROD	12 1/4	9 5/8	36#, 40#	5000	2700X C	CALCULATE
	8 3/4	7 3/4	46#	11400	1500X H	CALCULATE

Casing/Cement Program: Additional Comments

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22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
DOUBLE RAM	3000	1500	TBD

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 ☒ and/or 19.15.14.9 (B) NMAC ☐ if applicable. Signature: <i>Robbie A Grigg</i>		OIL CONSERVATION DIVISION	
Printed name: Robbie A Grigg		Approved By: <i>[Signature]</i>	
Title: Regulatory Compliance		Title: Petroleum Engineer	
E-mail Address: rgrigg@mspartners.com		Approved Date: 11/24/14 Expiration Date: 11/21/16	
Date: 11/13/2014	Phone: 817-334-7842	Conditions of Approval Attached	

7m
NOV 25 2014

SPECIFICS OF OPERATION:

- 1) Safety is the highest priority. Hold tailgate safety meetings prior to each significant stage of the operation. Ensure all personnel understand the procedure, its objectives, and the precautions to be followed at all points.
- 2) Inspect location. Add caliche to pad if needed and rplc anchors. Do not install electric service, POC, & flowlines until decision is made to POP.
- 3) MIRU PU, kill truck, 10,560' of 2-3/8" 4.7# N-80 (or L) 8rd tbg.
- 4) Tally, ND WH, NU 3k manual BOP. RIH 6-3/8" (or smaller) bit to CIBP, tag. MIRU rvs unit. Load rvs pit w/ 2% KCL trtd w biocide. Establish circulation, DO CIBP & push to below M. Penn perfs (push to $\pm 10,560$), PUH 1 std, circ. btms up. POOH SB.
- 5) MIRU WL svc w/ 5k lubricator. Set CIBP in middle of csg jt above perf @ 10,410'. (If there is no GR-CCL to correlate with in the Buckeye office, RIH to set CIBP w/ GR & CCL on tool string. Correlate to *Compensated Neutron-Density log dated February 26, 1986.*) Dump bail 8 sx Class H cmt on top of plug. Pressure test csg to 500#.
- 6) RIH 3-1/8" slick guns loaded w/ 19 g, 0.40" EH, 47" penetration charges or better, (and if can get better hole size and penetration out of 4" or 4-1/2", and not too much more cost, go with that size gun.) 2 SPF, 60 deg phasing, except 10,176' which if possible should be 180 deg phasing. Correlate to *Compensated Neutron-Density log dated February 26, 1986.* Shoot the following depths in the Upper Penn. POOH, verify all shots fired. RDMO WL.

	Top	Bottom	Ft	SPF	Shots
Stage 1	10,176	10,176	1	2	2
	10,168	10,172	5	2	10
	10,160	10,162	3	2	6
	10,154	10,157	4	2	8
	10,146	10,148	3	2	6
			16	32	

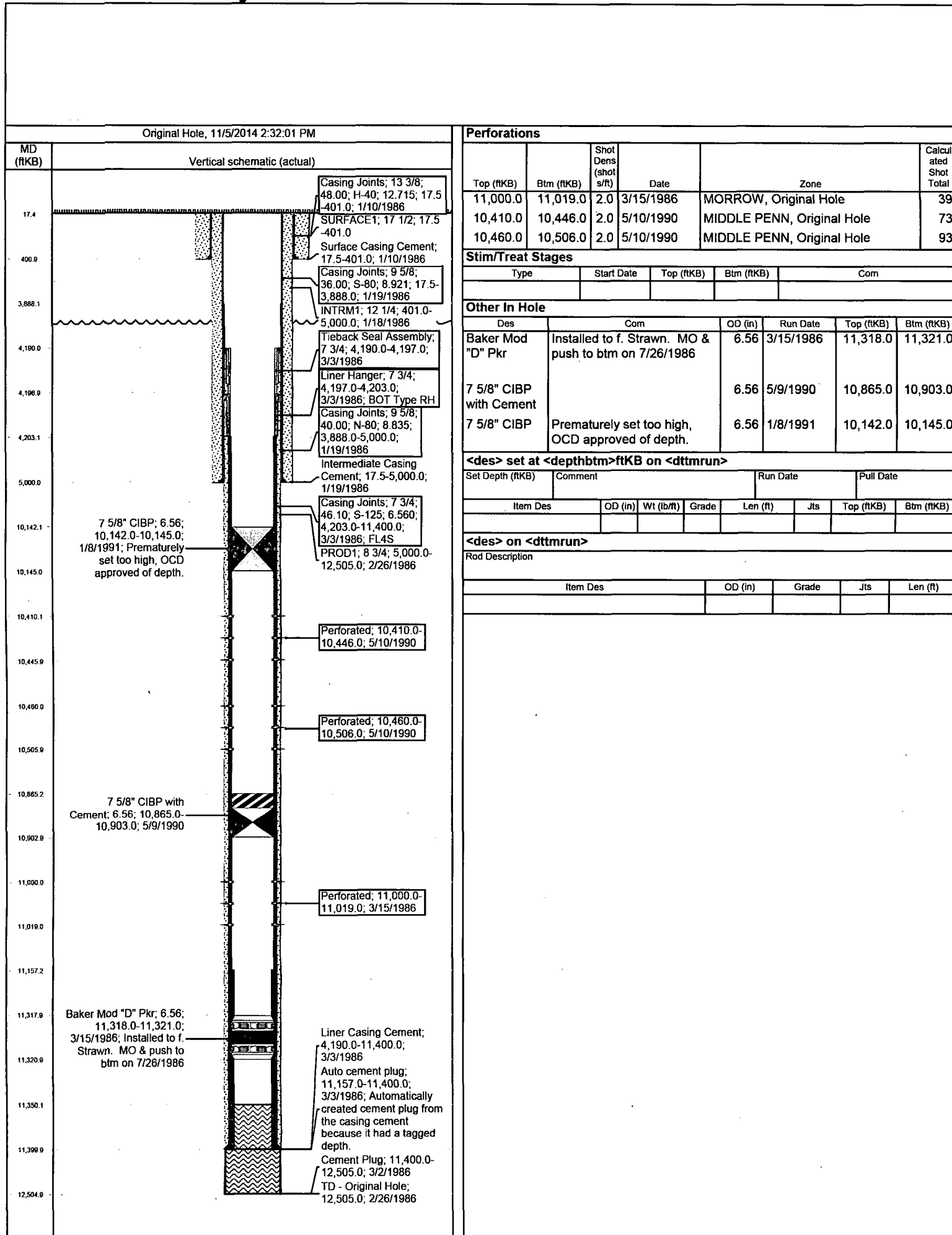
- 7) MIRU hydrotstg svc, RIH 7-3/4" 10k trtg pkr dressed for 46.1#, 10k SN, and tbg, tstg to 10k below the slips. Set pkr @ $\pm 10,126'$. Tst TCA to 500#. Swab test U. Penn perfs. Swab 1 or 2 days, then operations team will make election to abandon, POP, or acidize.
- 8) If elect to acidize, MIRU frac tank, acid svc w/ 10k iron, 4,000 gal 15% HCL NEFE, ball dropper, 50 RCN BS, 1 transport w/ full load of 2% KCL trtd w biocide. NU pressure transducer to TCA and monitor throughout job. MAX TP 10,000 psi.
 - i. Open bypass/rls pkr, spot acid @ EOT.
 - ii. Est. inj. w/ KCL, catch and report BDTP
 - iii. Go to acid, bring rate up to pump maximum or to rate/pressure to allow ball out. Immediately start dropping balls evenly spaced through the next 44 bbls of acid.

- iv. Put away remaining 12 bbls acid.
 - v. Flush to top perf w/ 40 bbls KCL.
 - vi. If ball out, surge and wait for balls to drop, put away remaining acid/flush.
- 9) SD, record ISIP, 5, 10, 15" SIP. RDMO acid svc. Allow acid to spend for 2-4 hours. Flow/swab load back. Note times, FL's, oil cut, tail gas, and volumes. Swab 1 or 2 days, then operations team will make election to abandon, POP, or acidize.
- 10) If elect to POP, rls pkr, POOH. RIH BP, 1jt MA, PS, SN (50-100' below btm perf), 2-3/8" tbg, 7-3/4"x2-3/8" TAC (50-100' abv top perf), 2-3/8" N80 tbg. ND BOP, set TAC, NU WH.
- 11) RIH 2.0x1.5x24 pump, 18 1-1/4" sinker bars, 246 3/4" N97 sucker rods, ±148 7/8" N97 sucker rods to surface. Space out, L&T. Clean location, RDMO.
- 12) Install POC & electric service for 60 HP motor. Install American C640-365-164 from NVAU #269 location (keep 50 HP & 7.3 SPM sheave for now). Hang on & balance cranks. Turn to production. Report fluid levels and well tests at least once a week, optimize unit as needed.

Schematic & History

Well Name BRIDGES STATE 506		API/UWI 3002529563		County Lea		State/Province New Mexico		Field Name VACUUM	
Location 830 FSL & 2175 FWL				Township 17S	Range 34E	Section 13	Latitude (°) 32° 29' 59.031" N		Longitude (°) 103° 30' 54.396" W
Section		Survey				Block		Township	
Original KB Elevation (ft)		Ground/Corrected Ground Elevation (ft)		KB-Ground Distance (ft)		Spud Date			
4,028.00		4,021.00		7.00					
Original Hole, 11/5/2014 2:32:01 PM									
MD (ftKB)	Vertical schematic (actual)								
17.4	Casing Joints; 13 3/8; 48.00; H-40; 12.715; 17.5 -401.0; 1/10/1986								
400.9	SURFACE1; 17 1/2; 17.5 -401.0								
3,888.1	Surface Casing Cement; 17.5-401.0; 1/10/1986								
4,190.0	Casing Joints; 9 5/8; 36.00; S-80; 8.921; 17.5- 3,888.0; 1/19/1986								
4,196.9	INTRM1; 12 1/4; 401.0- 5,000.0; 1/18/1986								
4,203.1	Tieback Seal Assembly; 7 3/4; 4,190.0-4,197.0; 3/3/1986								
5,000.0	Liner Hanger; 7 3/4; 4,197.0-4,203.0; 3/3/1986; BOT Type RH								
10,142.1	Casing Joints; 9 5/8; 40.00; N-80; 8.835; 3,888.0-5,000.0; 1/19/1986								
10,145.0	Intermediate Casing Cement; 17.5-5,000.0; 1/19/1986								
10,410.1	Casing Joints; 7 3/4; 46.10; S-125; 6.560; 4,203.0-11,400.0; 3/3/1986; FL4S								
10,445.9	PROD1; 8 3/4; 5,000.0- 12,505.0; 2/26/1986								
10,460.0	Perforated; 10,410.0- 10,446.0; 5/10/1990								
10,505.9	Perforated; 10,460.0- 10,506.0; 5/10/1990								
10,865.2	7 5/8" CIBP with Cement; 6.56; 10,865.0- 10,903.0; 5/9/1990								
10,902.9									
11,090.0	Perforated; 11,000.0- 11,019.0; 3/15/1986								
11,019.0									
11,157.2									
11,317.9	Baker Mod "D" Pkr; 6.56; 11,318.0-11,321.0; 3/15/1986; Installed to f. Strawn. MO & push to btm on 7/26/1986								
11,320.9	Liner Casing Cement; 4,190.0-11,400.0; 3/3/1986								
11,350.1	Auto cement plug; 11,157.0-11,400.0; 3/3/1986; Automatically created cement plug from the casing cement because it had a tagged depth.								
11,399.9	Cement Plug; 11,400.0- 12,505.0; 3/2/1986								
12,504.8	TD - Original Hole; 12,505.0; 2/26/1986								
Jobs									
Type		Start Date		Summary					
Acidize		7/9/1986		Acidize Strawn					
PWOP		7/26/1986		POP					
Recompletion		5/8/1990		Pull prod. equip. Set CIBP over Strawn, perf M. Penn, A. Penn, re-A. Penn, POP.					
Temporarily Abandon Well		1/4/1991		Pull prod. equip. set CIBP, circ. pkr fluid, pressure tst, abandon.					
Wellbore Sections									
Section Des	Wellbore Name	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date				
SURFACE1	Original Hole	17 1/2	17.5	401.0	1/10/1986				
Section Des	Wellbore Name	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date				
INTRM1	Original Hole	12 1/4	401.0	5,000.0	1/11/1986				
Section Des	Wellbore Name	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date				
PROD1	Original Hole	8 3/4	5,000.0	12,505.0	1/19/1986				
Surface 401.0 ftKB 1/10/1986									
Comment									
OD (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)	Item Des			
13 3/8	48.00	H-40	17.5	401.0	383.50	Casing Joints			
Intermediate 5,000.0 ftKB 1/19/1986									
Comment									
OD (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)	Item Des			
9 5/8	36.00	S-80	17.5	3,888.0	3,870.50	Casing Joints			
9 5/8	40.00	N-80	3,888.0	5,000.0	1,112.00	Casing Joints			
Liner 11,400.0 ftKB 3/3/1986									
Comment									
OD (in)	Wt (lb/ft)	Grade	Top (ftKB)	Btm (ftKB)	Len (ft)	Item Des			
7 3/4			4,190.0	4,197.0	7.00	Tieback Seal Assembly			
7 3/4			4,197.0	4,203.0	6.00	Liner Hanger			
7 3/4	46.10	S-125	4,203.0	11,400.0	7,197.00	Casing Joints			
Cement Stages									
Description	Top (ftKB)	Btm (ftKB)	Top Meas Meth	Comment					
Surface Casing Cement	17.5	401.0	Cement Returns	500 SX CL "C" CMT w/2% CaCl2 & 1/4#/SX CF. CIRC 140 SX CMT TO SURF.					
Description	Top (ftKB)	Btm (ftKB)	Top Meas Meth	Comment					
Intermediate Casing Cement	17.5	5,000.0	Unknown	2,500 SX CL "C" CMT w/75 SCF/BBL N2 (13.5 PPG, 1.54 FT3/SX) & 200 SX CL "C" CMT w/2% CaCl2 (14.8 PG, 1.32 FT3/SX). CAPPED w/100 SX CL "C" THIXOTROPIC CMT (14.8 PPG, 1.32 FT3/SX).					
Description	Top (ftKB)	Btm (ftKB)	Top Meas Meth	Comment					
Cement Plug	11,400.0	12,505.0	Bit Tag	SET 500 SX CL "H" NEAT (15.6 PPG, 1.18 FT3/SX) CMT PLUG fr/12,505'- 11,100'. DRESSED OFF PLUG TO 11,400'.					
Description	Top (ftKB)	Btm (ftKB)	Top Meas Meth	Comment					
Liner Casing Cement	4,190.0	11,400.0	Cement Returns	900 SX TLW CMT (12.6 PPG, 1.51 FT3/SX) & 600 SX CL "H" CMT (16.4 PPG, 1.05 FT3/SX). CIRC CMT TO LINER TOP.					

Schematic & History



Proposed Schematic & Details

Well Name BRIDGES STATE 506		API/UWI 3002529563		County Lea		State/Province New Mexico		Field Name VACUUM	
Location 830 FSL & 2175 FWL				Township 17S	Range 34E	Section 13	Latitude (°) 32° 29' 59.031" N		Longitude (°) 103° 30' 54.396" W
Section		Survey		Block		Township		Abstract	
Original KB Elevation (ft) 4,028.00		Ground/Corrected Ground Elevation (ft) 4,021.00		KB-Ground Distance (ft) 7.00		Spud Date			

Original Hole, 11/30/2014	
Vertical schematic (actual) D (ft KB) V (ft KB) n (ft KB) c (ft KB) i (ft KB) k (ft KB)	Vertical schematic (proposed) D (ft KB) V (ft KB) n (ft KB) c (ft KB) i (ft KB) k (ft KB)

Jobs					
Recompletion, <dtmstart>					
Type Recompletion	Planned Start Date 11/30/2014	Objective Test U. Penn			
Wellbore Sections					
Section Des	Wellbore Name	Size (in)	Act Top (ftKB)	Act Btm (ftKB)	Start Date
Cement Stages					
Description	Top (ftKB)	Btm (ftKB)	Top Meas Meth	Comment	
Perforations					
Top (ftKB)	Btm (ftKB)	Shot Dens (shot s/ft)	Date	Zone	Calculated Shot Total
10,146.0	10,148.0	2.0	11/30/2014	UPPER PENN, Original Hole	5
10,154.0	10,157.0	2.0	11/30/2014	UPPER PENN, Original Hole	7
10,160.0	10,162.0	2.0	11/30/2014	UPPER PENN, Original Hole	5
10,168.0	10,172.0	2.0	11/30/2014	UPPER PENN, Original Hole	9
10,176.0	10,176.0	2.0	11/30/2014	UPPER PENN, Original Hole	1
Stim/Treat Stages					
Type	Start Date	Top (ftKB)	Btm (ftKB)	Com	
Other In Hole					
Des	Com	OD (in)	Run Date	Top (ftKB)	Btm (ftKB)
7 5/8" CIBP	DO CIBP @ 10142' & push to btm	7 5/8	11/30/2014	10,862.0	10,865.0
7 5/8" CIBP with Cement		7 5/8	11/30/2014	10,355.0	10,393.0
<des> set at <depth>ftKB on <dtmrun>					
Set Depth (ftKB)	Comment	Run Date	Pull Date		
Item Des	OD (in)	Wt (lb/ft)	Grade	Len (ft)	Jts
<des> on <dtmrun>					
Rod Description					
Item Des	OD (in)	Grade	Jts	Len (ft)	