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

State of New Mexico
Energy, Minerals and Natural Resources

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-103
Revised July 18, 2013

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. 30-025-06610
1. Type of Well: Oil Well ☐ Gas Well ☐ Other Injection ☐		5. Indicate Type of Lease STATE ☒ FEE ☐
2. Name of Operator Apache Corporation		6. State Oil & Gas Lease No. 90-9188-0008
3. Address of Operator 303 Veterans Airpark Lane, Suite 1000 Midland, TX 79705		7. Lease Name or Unit Agreement Name Northeast Drinkard Unit (NEDU) / 22503
4. Well Location Unit Letter <u>B</u> : <u>660</u> feet from the <u>North</u> line and <u>1980</u> feet from the <u>East</u> line Section <u>15</u> Township <u>21S</u> Range <u>37E</u> NMPM County <u>Lea</u>		8. Well Number <u>609</u>
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3458' DF		9. OGRID Number 873
		10. Pool name or Wildcat Eunice; B-T-D, North (22900)

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK ☒	PLUG AND ABANDON ☐	REMEDIAL WORK ☐	ALTERING CASING ☐
TEMPORARILY ABANDON ☐	CHANGE PLANS ☐	COMMENCE DRILLING OPNS. ☐	P AND A ☐
PULL OR ALTER CASING ☐	MULTIPLE COMPL. ☐	CASING/CEMENT JOB ☐	
DOWNHOLE COMMINGLE ☐			
CLOSED-LOOP SYSTEM ☐			
OTHER: ☐		OTHER: ☐	

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.

Apache intends to isolate the Drinkard for injection, per the attached. We are still evaluating which scenario will be the most operational and cost effective.

Spud Date:

10/3/1950

Rig Release Date:

11/22/1950

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

SIGNATURE

Reesa Fisher

TITLE Sr. Staff Reg Analyst

DATE 11/15/2018

Type or print name Reesa Fisher

E-mail address: Reesa.Fisher@apachecorp.com

PHONE: (432) 818-1062

For State Use Only

APPROVED BY:

[Signature]

TITLE

Petroleum Engineer

DATE

11/21/18

Conditions of Approval (if any):

06610

NEDU 609W: (API: 30-025-~~06593~~)

OBJECTIVE: ISOLATE DRINKARD FOR INJECTION

Scenario 1: Dual Packer Isolation

1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer
2. PU workstring and RIH w bit and clean out well to PBTD at ~6960'.
3. Make casing scraper run to around 6700' (Below Bottom Perf). POOH
4. Run casing inspection log and cement bond log from top of Drinkard to surface. POOH.
5. RIH w/ logging tools and run cased hole compensated neutron/gamma log from PBTD to 5000'.
6. RIH to perforate Drinkard formation (depths dependent on log eval). POOH.
7. RIH w/ workstring and treating packer to acid stimulate Drinkard formation w/ 5000 gals 15% HCl using rock salt for diversion. POOH.
8. MIRU wireline. RIH w/ 5-1/2" permanent packer and set in good casing between Blinbry and Drinkard (Depth dependent on casing inspection log)
9. PU 700-800' of 2-3/8" IPC externally coated tubing w/ 5-1/2" hydraulic packer on top and tie into permanent packer. Ensure hydraulic packer is at or within 100' of top perf. Pressure up tubing to set hydraulic packer. Test casing to 500 psi.
10. Perform MIT for NMOCD and return well on injection.

Scenario 2: Cement 4" FJ liner from Blinbry to TD

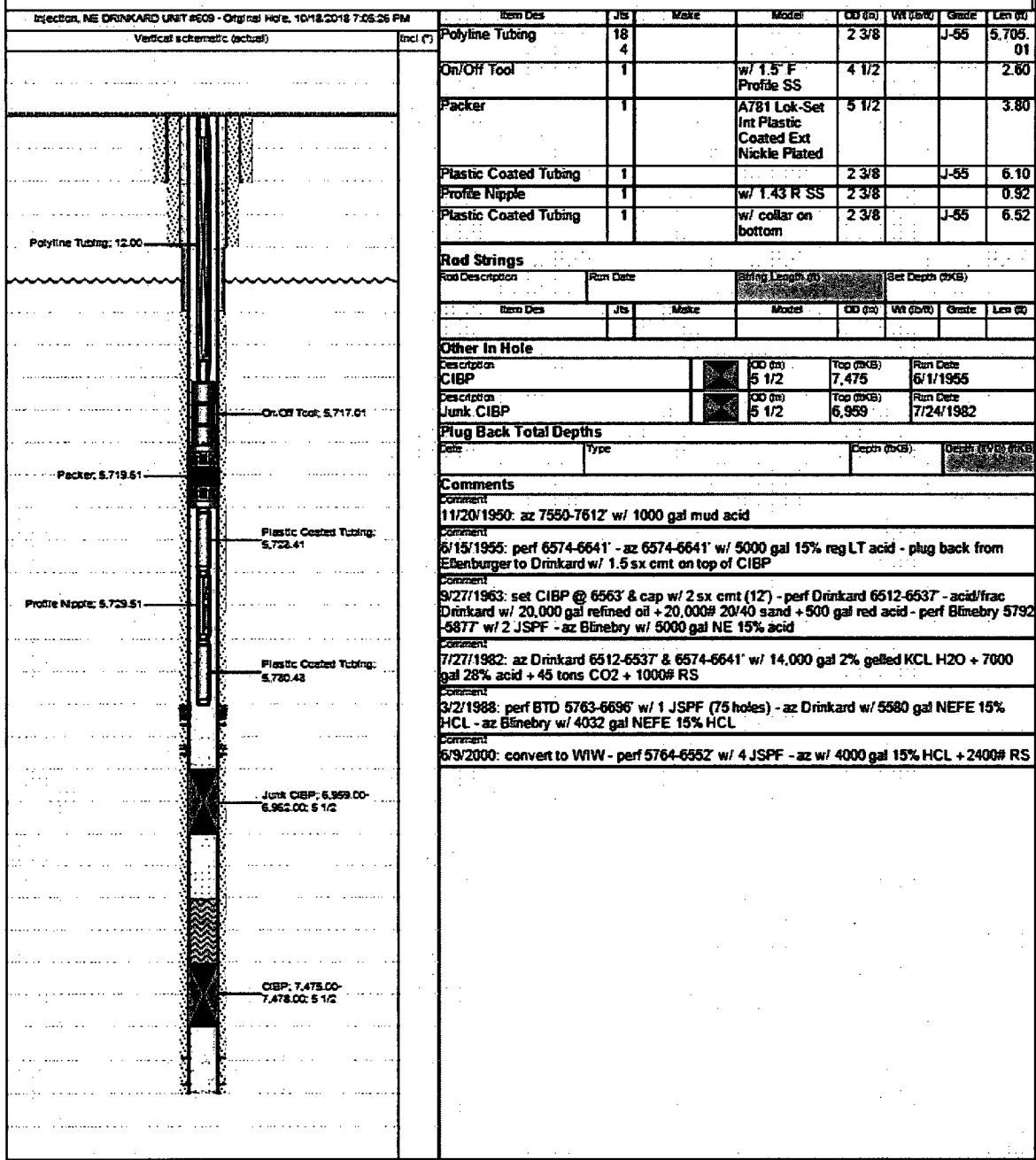
1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer
2. PU workstring and RIH w/ bit and clean out well to PBTD at ~6960'.
3. MIRU cement and casing crew and PU 1500' of 4" casing (including float shoe, float collar, landing collar and liner hanger) using 2-7/8" L-80 workstring.
4. RIH and tag TD. PU and set TOL around 250-300' above top Blinbry perf. Pump spacer followed by 50-100 SX of cement. Flush with fresh water.
5. Release workstring from liner. Reverse circulate to clean hole. POOH
6. If no cement circulated to surface, PU packer and attempt to squeeze liner top or RIH w/ liner packer and sting into tie back tool. Set liner packer and test casing.
7. PU bit and drill out cement to float collar. Pressure test casing. Continue drilling out cement if needed to perforate. POOH.
8. MIRU wireline. Run CBL from PBTD to surface
9. PU wireline guns and perforate Drinkard formation (depths dependent on log eval). POOH
10. PU 4" treating packer w/ ~40 jts of 2-3/8" followed by remaining 2-7/8" workstring to surface. Set packer ~100' above top perf and load backside.
11. Acid stimulate Drinkard formation w/ 5000 gals 15% HCl using 1.1 SG ball sealers for diversion. Release packer and knock off balls. POOH.
12. RIH w 4" injection packer and ~6500' of 2-3/8" IPC tubing. Set packer within 20' of top perf. Circulate packer fluid and test backside to 500 psi
13. Perform MIT for NMOCD

Apache		Downhole Well Profile w Cement						
Well Name: NEDU 609W								
API Surface Loc 3002506610	Surface Legal Location 660' FNL, 1980' FEL, Unit B, Sec 15, T-21S, R-37E	Field Name Eunice North	State/Province New Mexico					
Spud Date 10/3/1950	Original KB Elevation (ft) 3,459.0	Ground Elevation (ft) 3,447.0	KB-Ground Distance (ft) 12.0					
PEBD (ft) (KB) 7,631.0	Total Depth (ft) (KB) 7,631.0	Comment						
Injection, NE DRINKARD UNIT #609 - Original Hole, 10/18/2018 5:34:27 PM								
Vertical schematic (actual)		Casing Strings						
		Cas Des	OD (in)	WT Len (ft)	Grade	Set Depth (ft) (KB)		
		Surface	13 3/8	36.00	H-40	294.00		
		Inter 1	8 5/8	24.00	J-55	3,004.00		
		Prod 1	5 1/2	17.00	J-55	7,631.00		
		Cement						
		String Description	Top Depth (ft) (KB)	Bottom Depth (ft) (KB)	Top Meas Meth	Start Date		
		Surface - 300 294.00ftKB, 13 3/8	12.00	294.00	Returns at Surface	10/6/1950		
		String Description	Top Depth (ft) (KB)	Bottom Depth (ft) (KB)	Top Meas Meth	Start Date		
		Inter 1, 3,004.00ftKB, 8 5/8	12.00	3,004.00	Returns at Surface	10/12/1950		
		String Description	Top Depth (ft) (KB)	Bottom Depth (ft) (KB)	Top Meas Meth	Start Date		
		Prod 1, 7,631.00ftKB, 5 1/2	3,850.00	7,631.00	Temperature Survey	11/15/1950		
		String Description	Top Depth (ft) (KB)	Bottom Depth (ft) (KB)	Top Meas Meth	Start Date		
		Prod 1, 7,631.00ftKB, 5 1/2	7,464.00	7,475.00	Tag	6/1/1955		
		Perforations						
		Date	Type	Prop?	Top (ft) (KB)	Strn (ft) (KB)	Shot Dens (shots/ft)	Entered Shot Total
		3/2/1988	Blindbry	No	5,763	5,766	1.0	4
		6/13/2000	Blindbry	No	5,764	5,802	4.0	156
		3/2/1988	Blindbry	No	5,769	5,772	1.0	4
		10/3/1963	Blindbry	No	5,792	5,794	1.0	3
		10/3/1963	Blindbry	No	5,799	5,802	1.0	4
		10/3/1963	Blindbry	No	5,814	5,818	2.0	8
		10/3/1963	Blindbry	No	5,822	5,824	2.0	4
		10/3/1963	Blindbry	No	5,832	5,834	2.0	4
		10/3/1963	Blindbry	No	5,838	5,843	2.0	10
		10/3/1963	Blindbry	No	5,849	5,854	2.0	10
		10/3/1963	Blindbry	No	5,870	5,877	2.0	14
		3/2/1988	Blindbry	No	5,902	5,907	1.0	6
		3/2/1988	Blindbry	No	5,921	5,929	1.0	9
		3/2/1988	Blindbry	No	5,934	5,938	1.0	9
		3/2/1988	Blindbry	No	5,945	5,950	1.0	6
		3/2/1988	Blindbry	No	5,975	5,984	1.0	10
		3/2/1988	Blindbry	No	5,995	5,998	1.0	4
		6/13/2000	Blindbry	No	6,090	6,104	4.0	60
		6/13/2000	Tubb	No	6,120	6,128	4.0	36
		6/27/1963	Drinkard	No	6,512	6,537	2.0	52
		6/13/2000	Drinkard	No	6,552	6,570	4.0	76
		6/1/1955	Drinkard	No	6,574	6,641	6.0	402
		3/2/1988	Drinkard	No	6,663	6,672	1.0	10
		3/2/1988	Drinkard	No	6,677	6,681	1.0	5
		3/2/1988	Drinkard	No	6,685	6,696	1.0	12
		11/16/1950	Ellenberger Suspended	No	7,550	7,612	4.0	248
		Proposed Perforations						
		Date	Type	Prop?	Top (ft) (KB)	Strn (ft) (KB)	Shot Dens (shots/ft)	Entered Shot Total
		Tubing Strings						
		Tubing Description	Run Date	String Length (ft)	Set Depth (ft) (KB)			
		Tubing - Injection	10/31/2001	5,724.95	5,737.0			

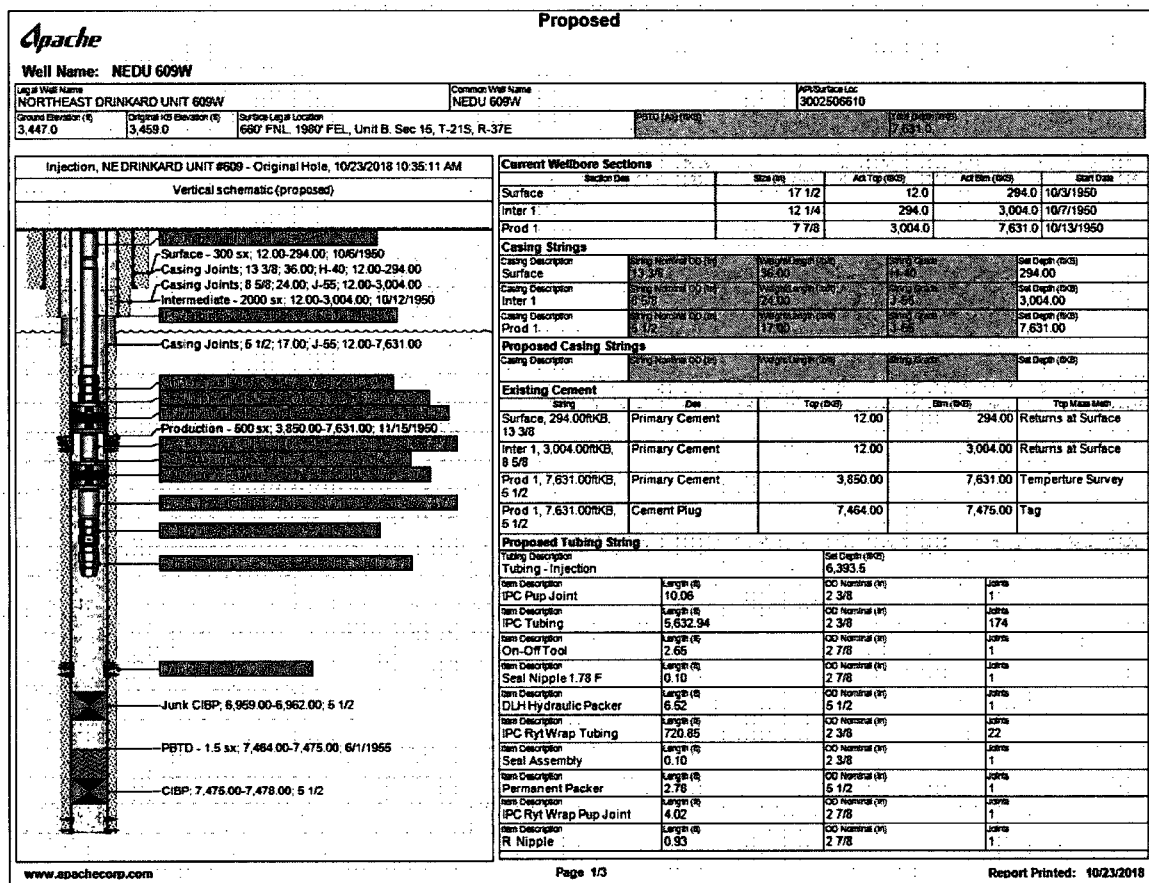


Downhole Well Profile w Cement

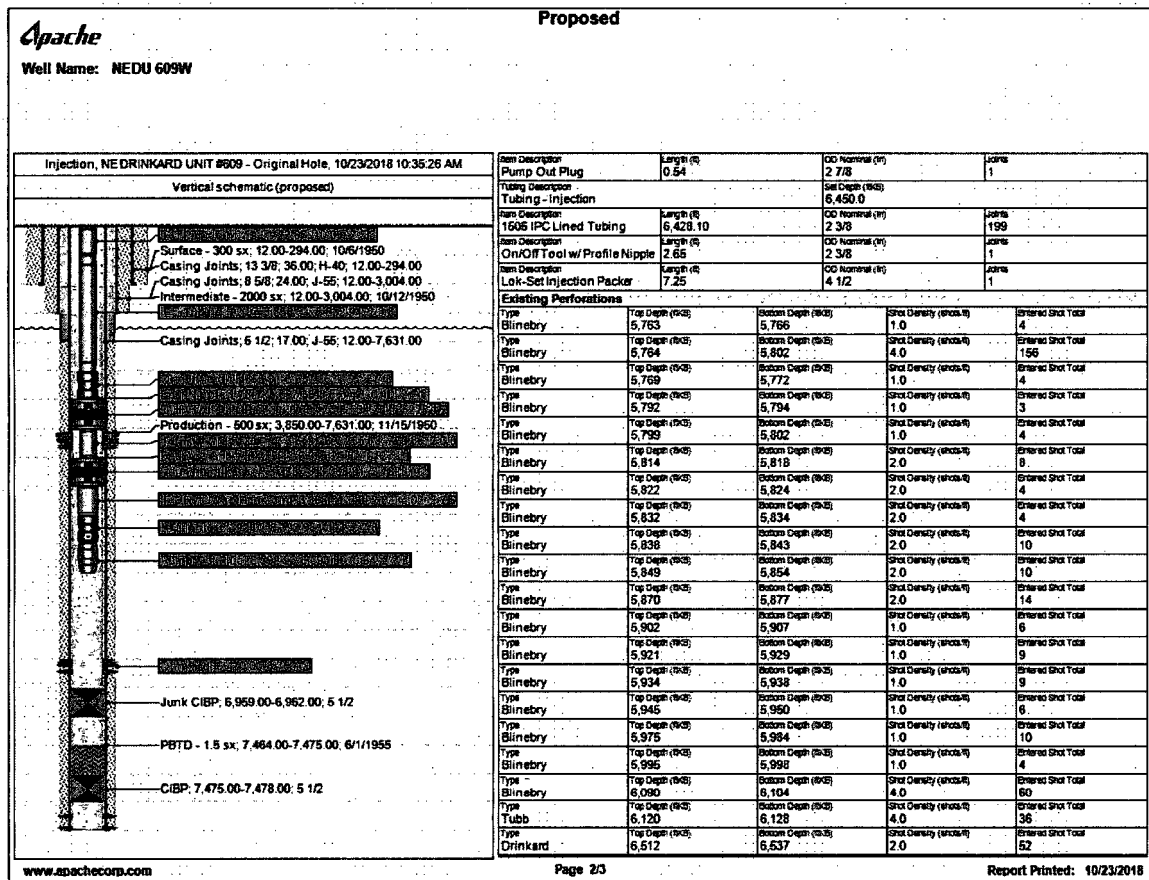
Well Name: NEDU 609W



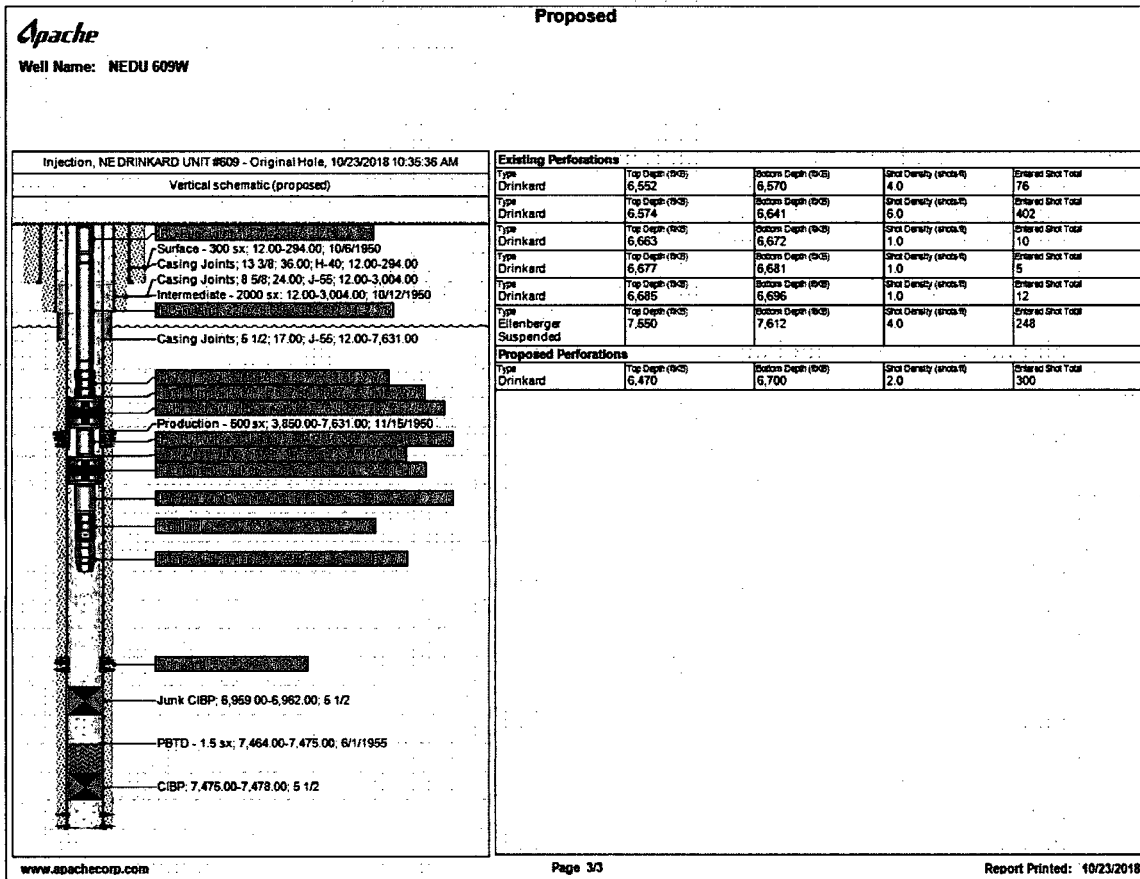
Scenario 1: Dual Packer Proposed WBD



Scenario 1: Dual Packer Proposed WBD (████████████████████)



Scenario 1: Dual Packer Proposed WBD ()



Scenario 2: FJ Liner Proposed WBD (Highlighted in Yellow)

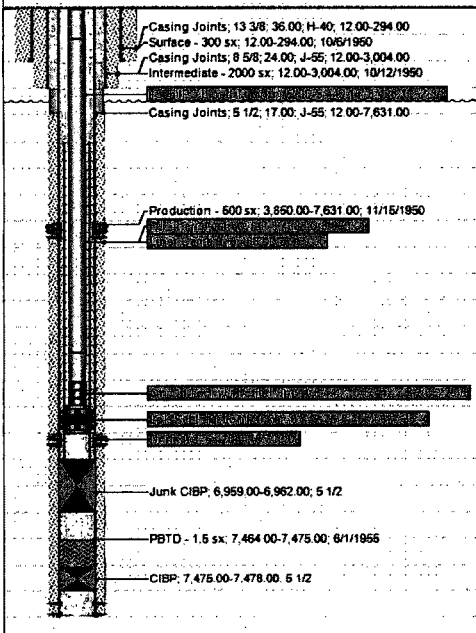
Proposed					
Apache Well Name: NEDU 609W					
Legal Well Name		Contract Well Name		AP Surface Loc	
NORTHEAST DRINKARD UNIT 609W		NEDU 609W		3002506510	
Ground Elevation (ft)	Original KB Elevation (ft)	Surface Legal Location	PSTD (AP) (ft)	Total Depth (ft)	
3,447.0	3,459.0	680' FNL, 1980' FEL, Unit B, Sec 15, T-21S, R-37E		7,631.0	
Injection, NEDRINKARD UNIT #609 - Original Hole, 10/23/2018 10:49:48 AM					
Vertical schematic (proposed)					
Current Wellbore Sections					
Section Desc	Size (in)	Act Top (ft)	Act Btm (ft)	Start Date	
Surface	17 1/2	12.0	294.0	10/3/1950	
Inter 1	12 1/4	294.0	3,004.0	10/7/1950	
Prod 1	7 7/8	3,004.0	7,631.0	10/13/1950	
Casing Strings					
Casing Description	String Nominal OD (in)	Weight Length (lb)	String Grade	Set Depth (ft)	
Surface	13 3/8	36.00	H-40	294.00	
Casing Description	String Nominal OD (in)	Weight Length (lb)	String Grade	Set Depth (ft)	
Inter 1	8 5/8	24.00	J-55	3,004.00	
Casing Description	String Nominal OD (in)	Weight Length (lb)	String Grade	Set Depth (ft)	
Prod 1	5 1/2	17.00	J-55	7,631.00	
Proposed Casing Strings					
Casing Description	String Nominal OD (in)	Weight Length (lb)	String Grade	Set Depth (ft)	
Prod Lnr 1	4 1/2	11.00	C-75	6,960.00	
Existing Cement					
String	Desc	Top (ft)	Btm (ft)	Top Measurement	
Surface, 294.00ftKB, 13 3/8	Primary Cement	12.00	294.00	Returns at Surface	
Inter 1, 3,004.00ftKB, 8 5/8	Primary Cement	12.00	3,004.00	Returns at Surface	
Prod 1, 7,631.00ftKB, 5 1/2	Primary Cement	3,850.00	7,631.00	Temperature Survey	
Prod 1, 7,631.00ftKB, 5 1/2	Cement Plug	7,464.00	7,475.00	Tag	
Proposed Cement					
String	Description	Top Depth (ft)	Bottom Depth (ft)	Top Measurement Method	
Prod Lnr 1, 6,960.00ftKB, <szodnonmaxcalc>	Primary Liner Cement	5,488.00	6,960.00	Returns at Surface	
Proposed Tubing String					
Tubing Description	Length (ft)	Set Depth (ft)			
Tubing - Injection		6,393.5			
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
IPC Plug Joint	10.05	2 3/8	1		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
IPC Tubing	6,632.94	2 3/8	174		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
On-Off Tool	2.65	2 7/8	1		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
Seal Nipple 1.78 F	0.10	2 7/8	1		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
DLH Hydraulic Packer	6.52	5 1/2	1		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
IPC RytWrap Tubing	720.85	2 3/8	22		
Item Description	Length (ft)	OD Nominal (in)	JOHNS		
Seal Assembly	0.10	2 3/8	1		
Annotations: - Casing Joints: 13 3/8; 36.00; H-40; 12.00-294.00 - Surface - 300 sx; 12.00-294.00; 10/6/1950 - Casing Joints: 8 5/8; 24.00; J-55; 12.00-3,004.00 - Intermediate - 2000 sx; 12.00-3,004.00; 10/12/1950 - Casing Joints: 5 1/2; 17.00; J-55; 12.00-7,631.00 - Production - 500 sx; 3,850.00-7,631.00; 11/15/1950 - Junk CIBP; 6,959.00-6,962.00; 5 1/2 - PSTD - 1.5 sx; 7,464.00-7,475.00; 6/1/1955 - CIBP; 7,475.00-7,478.00; 5 1/2					

Scenario 2: FJ Liner Proposed WBD

Apache

Proposed

Well Name: NEDU 609W

Injection, NE DRINKARD UNIT #609 - Original Hole, 10/23/2018 10:50:08 AM		Item Description	Length (ft)	OO Nominal (in)	Joints
 Vertical schematic (proposed) Casing Joints: 13 3/8; 36.00; H-40; 12.00-294.00 Surface - 300 sx; 12.00-294.00; 10/6/1950 Casing Joints: 8 5/8; 24.00; J-55; 12.00-3,004.00 Intermediate - 2000 sx; 12.00-3,004.00; 10/12/1950 Casing Joints: 5 1/2; 17.00; J-55; 12.00-7,631.00 Production - 600 sx; 3,850.00-7,631.00; 11/15/1950 Junk CIBP: 6,959.00-6,962.00; 5 1/2 PBTD - 1.5 sx; 7,464.00-7,475.00; 6/1/1955 CIBP: 7,475.00-7,478.00; 5 1/2		Permanent Packer	2.78	5 1/2	1
		IPC Ryt Wrap Pup Joint	4.02	2 7/8	1
		R Nipple	0.93	2 7/8	1
		Pump Out Plug	0.54	2 7/8	1
		Tubing - Injection		Set Depth (ft)	
				6,450.0	
		1505 IPC Lined Tubing	6,428.10	2 3/8	199
		On/Off Tool w/ Profile Nipple	2.65	2 3/8	1
		Lok-Set Injection Packer	7.25	4	1
		Existing Perforations			
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,763	5,766	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,764	5,802	4.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,769	5,772	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,782	5,794	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,799	5,802	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,814	5,818	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,822	5,824	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,832	5,834	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,838	5,843	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,849	5,854	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,870	5,877	2.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,902	5,907	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,921	5,929	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,934	5,936	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,945	5,950	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,975	5,984	1.0
		Type	Top Depth (ft)	Bottom Depth (ft)	Shots Density (shots/ft)
		Blindbry	5,995	5,998	1.0

Scenario 2: FJ Liner Proposed WBD

