

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS
Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

5. Lease Serial No.
NMNM2512

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.
73888U3160

8. Well Name and No.
NEDU 410

9. API Well No.
30-025-06453-00-S1

10. Field and Pool or Exploratory Area
EUNICE

11. County or Parish, State
LEA COUNTY, NM

SUBMIT IN TRIPLICATE - Other instructions on page

HOBBS OCD

NOV 28 2018

RECEIVED

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

2. Name of Operator
APACHE CORPORATION
Contact: REESA FISHER
E-Mail: Reesa.Fisher@apachecorp.com

3a. Address
303 VETERANS AIRPARK LANE SUITE 3000
MIDLAND, TX 79705

3b. Phone No. (include area code)
Ph: 432-818-1062

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)
Sec 10 T21S R37E SENE 1980FNL 660FEL

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Workover Operations
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.

Apache intends to isolate the Drinkard for injection, per the attached procedure and WBD's.
(WFX-774)

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #442695 verified by the BLM Well Information System
For APACHE CORPORATION, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 11/06/2018 (19PP0307SE)**

Name (Printed/Typed) REESA FISHER

Title SR STAFF REGULATORY ANALYST

Signature (Electronic Submission)

Date 11/05/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By JONATHAN SHEPARD

Title PETROELUM ENGINEER

Date 11/19/2018

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Hobbs

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

*YMB/OCD
11/29/2018*

NEDU 410W: (API: 30-025-06453)

OBJECTIVE: ISOLATE DRINKARD FOR INJECTION

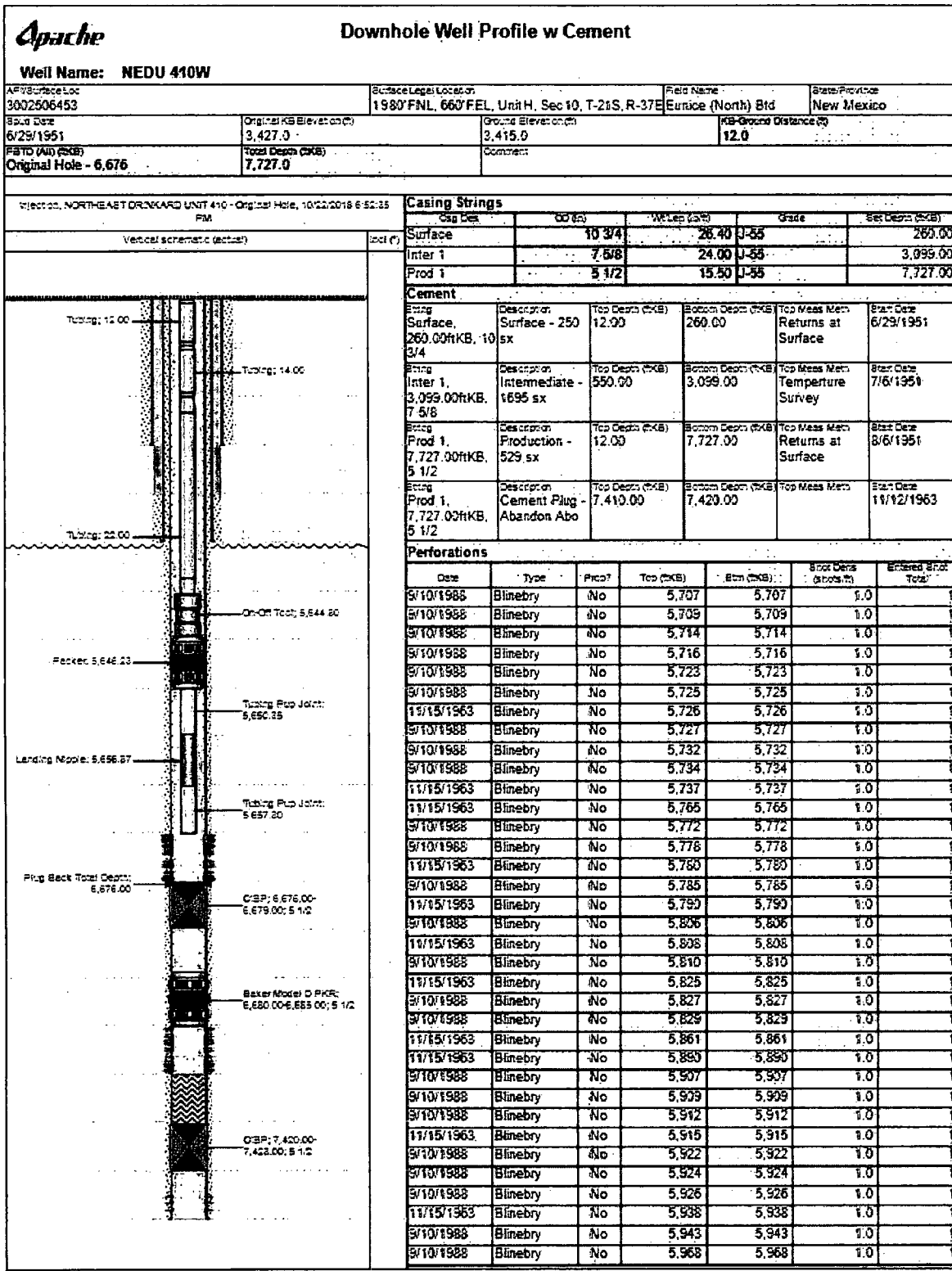
Scenario 1: Dual Packer Isolation

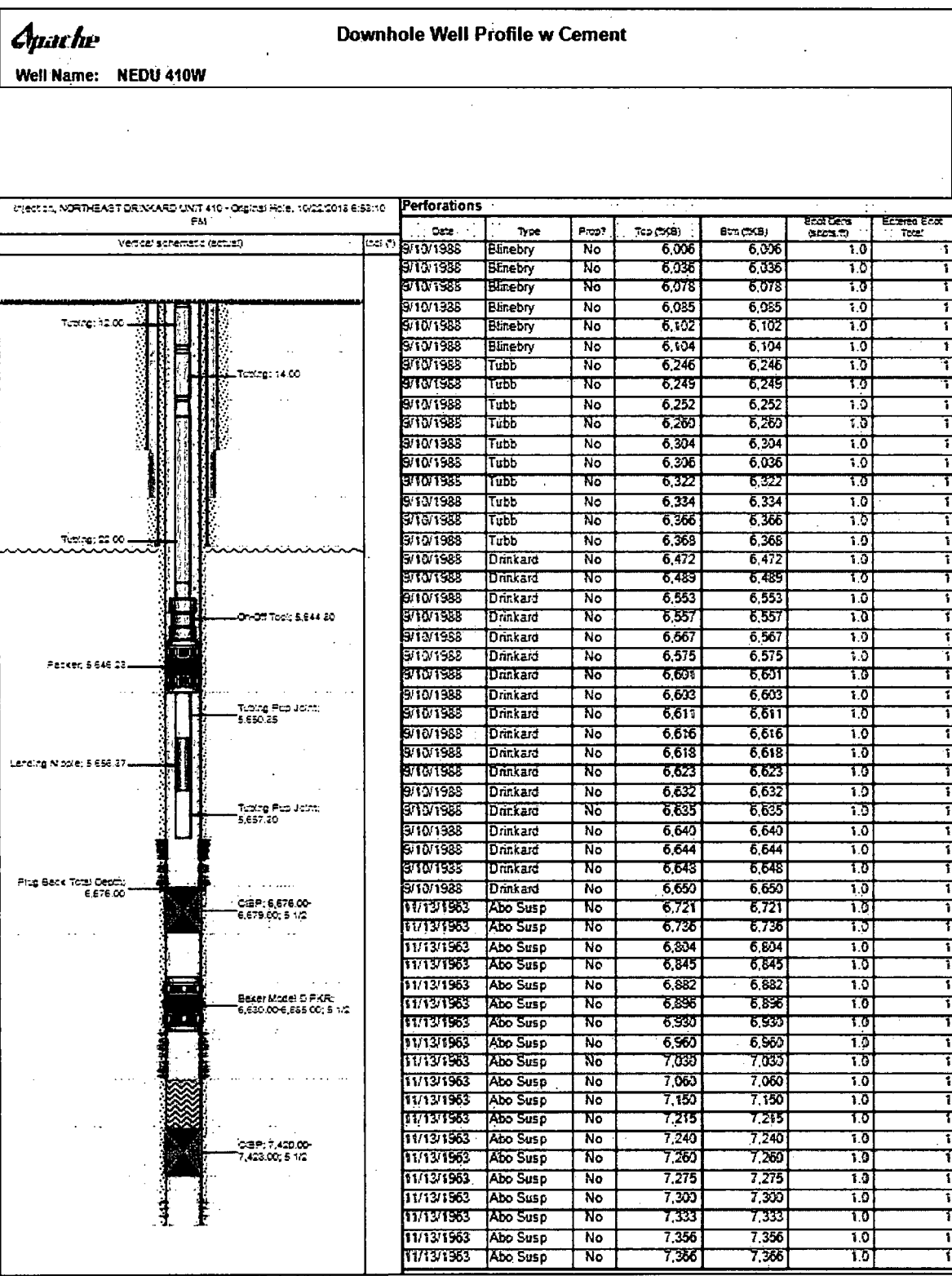
1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer
2. PU workstring and RIH w bit and clean out well to PBTD at ~6676'.
3. Make casing scraper run to around 6650' (Below Bottom Perf). POOH
4. Run casing inspection log and cement bond log from top of Drinkard to surface. POOH.
5. RIH to perforate Drinkard formation f/ 6500-6650'. POOH.
6. RIH w/ workstring and treating packer to acid stimulate Drinkard formation w/ 5000 gals 15% HCl using rock salt for diversion. POOH.
7. MIRU wireline. RIH w/ 5-1/2" permanent packer and set in good casing between Blinebry and Drinkard (Depth dependent on casing inspection log)
8. 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.
9. Perform MIT for NMOCD and return well on injection.

Scenario 2: Cement 4" FI liner from Blinebry 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 ~6676'.
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 Blinebry 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 f/6500'-6650'. 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

**Condition of Approval: notify
OCD Hobbs office 24 hours
prior of running MIT Test & Chart**







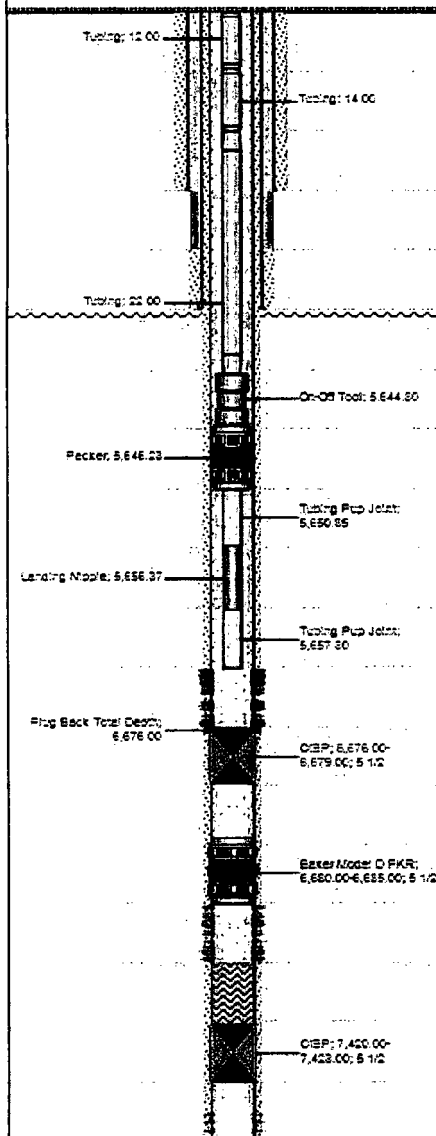
Downhole Well Profile w Cement

Well Name: NEDU 410W

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/22/2018 6:54:00 PM

Vertical schematic (actual)

Depth (ft)



Perforations

Date	Type	Prod?	Top (ftKB)	Bot (ftKB)	Shot Dens (shots/ft)	Entered Shot Total
8/16/1951	EBR Susp	No	7,584	7,612	4.0	112
8/16/1951	EBR Susp	No	7,622	7,656	4.0	136
8/16/1951	EBR Susp	No	7,665	7,693	4.0	96

Proposed Perforations

Date	Type	Prod?	Top (ftKB)	Bot (ftKB)	Shot Dens (shots/ft)	Entered Shot Total

Tubing Strings

Tubing Description	Run Date	String Length (ft)	Set Depth (ftKB)				
Tubing - Injection	6/9/2017	5,651.84	5,663.8				
Item Des	JIS	Make	Model	OD (in)	WT (lb/ft)	Grade	Len (ft)
Tubing	1		1505 IPC - NonUpset	2 3/8	4.70	L-80	2.00
Tubing	2		1505 IPC - Upset	2 3/8	4.80	J-55	8.00
Tubing	16		1505 IPC - Upset	2 3/8	4.80	L-80	5,622.80
On-Off Tool	1			4			1.43
Packer	1			5			4.12
Tubing Pup Joint	1			2 3/8	4.80	L-80	6.02
Landing Nipple	1		T&C Upset	2 3/8	4.80	L-80	0.93
Tubing Pup Joint	1		INT EXT PC	2 3/8	4.80	L-80	6.54

Rod Strings

Rod Description	Run Date	String Length (ft)	Set Depth (ft)				
Item Des	JIS	Make	Model	OD (in)	WT (lb/ft)	Grade	Len (ft)

Other in Hole

Description	OD (in)	Top (ftKB)	Run Date
CIBP	5 1/2	7,420	11/12/1963
Description	OD (in)	Top (ftKB)	Run Date
Baker Model D PKR	5 1/2	6,680	12/17/1963
Description	OD (in)	Top (ftKB)	Run Date
CIBP	5 1/2	6,676	11/17/1987

Plug Back Total Depths

Date	Type	Depth (ftKB)	Depth (ftKB) (NEDU)
	Bridge Plug/Packer	6,676	

Comments

Comment:
8/4/1951: az Ellenberger 7584-7693' w/ 1000 gal

Comment:
11/11/1963: abandon Ellenberger w/ CIBP @ 7420' w/ 10' cmt plug - perf Abo 6721-7366' - frac w/ 11,000 gal w/ 3000@ sand - perf Blinbery 5726-5938' - frac w/ 22,000 gal, 10,000# sand

Comment:
1/1/1987: abandon Abo w/ CIBP @ 6676'

Comment:
1/1/1988: perf BTD - az Drinkard w/ 5250 gal 15% HCL - az Tubb w/ 15% HCL - az Blinbery w/ 10,000 gal 15% HCL

Comment:
1/1/2001: convert to WIW

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

Apache					
Well Name: NEDU 410W					
Legal Well Name NORTHEAST DRINKARD UNIT 410W		Common Well Name NEDU 410W		API Surface Loc 3002506463	
Ground Elevation (ft) 3,415.0	Original KB Elevation (ft) 3,427.0	Surface Leg at Location 1980' FNL, 660' FEL, Unit H, Sec 10, T-21S, R-37E	PSTD (API) (ft) Original Hole - 6,678	Total Depth (ft) 7,727.0	
Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:49:06 PM					
Vertical schematic (proposed)					
Current Wellbore Sections					
Section Des	Size (in)	Act Top (ft)	Act Btm (ft)	Start Date	
Surface	13 1/2	12.0	260.0	6/29/1951	
Inter 1	9 7/8	260.0	3,099.0	7/1/1951	
Prod 1	6 3/4	3,099.0	7,727.0	7/8/1951	
Casing Strings					
Casing Description	String Nominal OD (in)	Weight Length (lb/ft)	String Grade	Set Depth (ft)	
Surface	10 3/4	26.40	J-55	260.00	
Inter 1	7 5/8	24.00	J-55	3,099.00	
Prod 1	5 1/2	15.50	J-55	7,727.00	
Proposed Casing Strings					
Casing Description	String Nominal OD (in)	Weight Length (lb/ft)	String Grade	Set Depth (ft)	
Existing Cement					
String	Obs	Top (ft)	52m (ft)	Top Mass Mass	
Surface, 260.00ftKB, 10 3/4	Primary Cement	12.00	260.00	Returns at Surface	
Inter 1, 3,099.00ftKB, 7 5/8	Primary Cement	550.00	3,099.00	Temperature Survey	
Prod 1, 7,727.00ftKB, 5 1/2	Primary Cement	12.00	7,727.00	Returns at Surface	
Prod 1, 7,727.00ftKB, 5 1/2	Cement Plug	7,410.00	7,420.00		
Proposed Tubing String					
Tubing Description	Length (ft)	OD Nominal (in)	Joints	Set Depth (ft)	
Tubing - Injection				6,423.5	
IPC Pup Joint	10.06	2 3/8	1		
IPC Tubing	5,632.94	2 3/8	174		
On-Off Tool	2.65	2 3/8	1		
Seal Nipple 1.78 F	0.10	2 3/8	1		
DLH Hydraulic Packer	6.52	5 1/2	1		
IPC RytWrap Tubing	750.85	2 3/8	22		
Seal Assembly	0.10	2 3/8	1		
Permanent Packer	2.78	5 1/2	1		
IPC Ryt Wrap Pup Joint	4.02	2 3/8	1		
R Nipple	0.93	2 3/8	1		

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

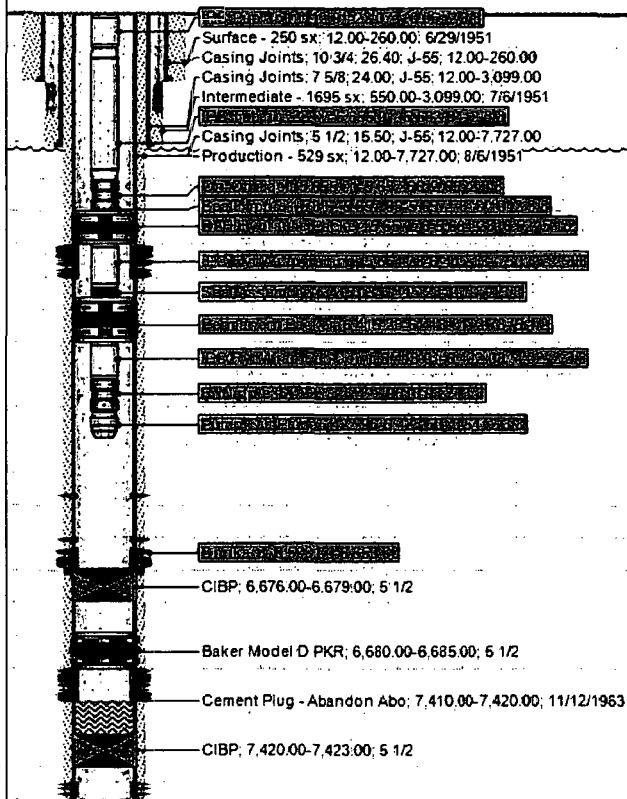
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:49:16 PM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
Pump Out Plug	0.54	2 3/8	1
Tubing Description		Set Depth (ft)	
Tubing - Injection		6,480.0	
Item Description	Length (ft)	OD Nominal (in)	Joints
1505 IPC Lined Tubing	6,458.10	2 3/8	200
Item Description	Length (ft)	OD Nominal (in)	Joints
On/Off Tool w/ Profile Nipple	2.65	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Lok-Set Injection Packer	7.25	4	1

Existing Perforations				
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,707	5,707	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,709	5,709	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,714	5,714	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,716	5,716	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,723	5,723	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,725	5,725	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,726	5,726	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,727	5,727	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,732	5,732	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,734	5,734	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,737	5,737	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,765	5,765	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,772	5,772	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,778	5,778	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,780	5,780	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,785	5,785	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,790	5,790	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,806	5,806	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,808	5,808	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,810	5,810	1.0	1

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

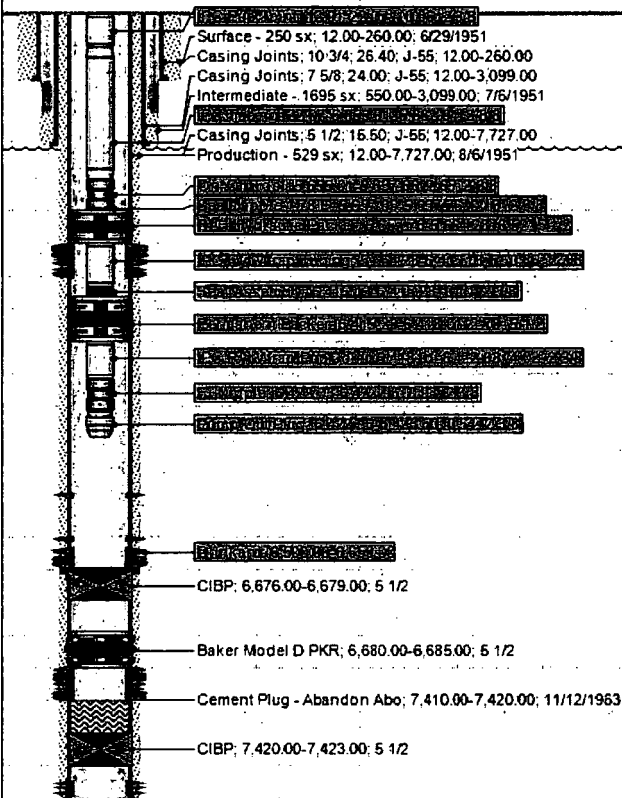
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:49:24 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,825	5,825	1.0	1
Blinebry	5,827	5,827	1.0	1
Blinebry	5,829	5,829	1.0	1
Blinebry	5,861	5,861	1.0	1
Blinebry	5,890	5,890	1.0	1
Blinebry	5,907	5,907	1.0	1
Blinebry	5,909	5,909	1.0	1
Blinebry	5,912	5,912	1.0	1
Blinebry	5,915	5,915	1.0	1
Blinebry	5,922	5,922	1.0	1
Blinebry	5,924	5,924	1.0	1
Blinebry	5,926	5,926	1.0	1
Blinebry	5,938	5,938	1.0	1
Blinebry	5,943	5,943	1.0	1
Blinebry	5,968	5,968	1.0	1
Blinebry	6,006	6,006	1.0	1
Blinebry	6,036	6,036	1.0	1
Blinebry	6,078	6,078	1.0	1
Blinebry	6,085	6,085	1.0	1
Blinebry	6,102	6,102	1.0	1
Blinebry	6,104	6,104	1.0	1
Tubb	6,246	6,246	1.0	1
Tubb	6,249	6,249	1.0	1
Tubb	6,252	6,252	1.0	1
Tubb	6,260	6,260	1.0	1

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

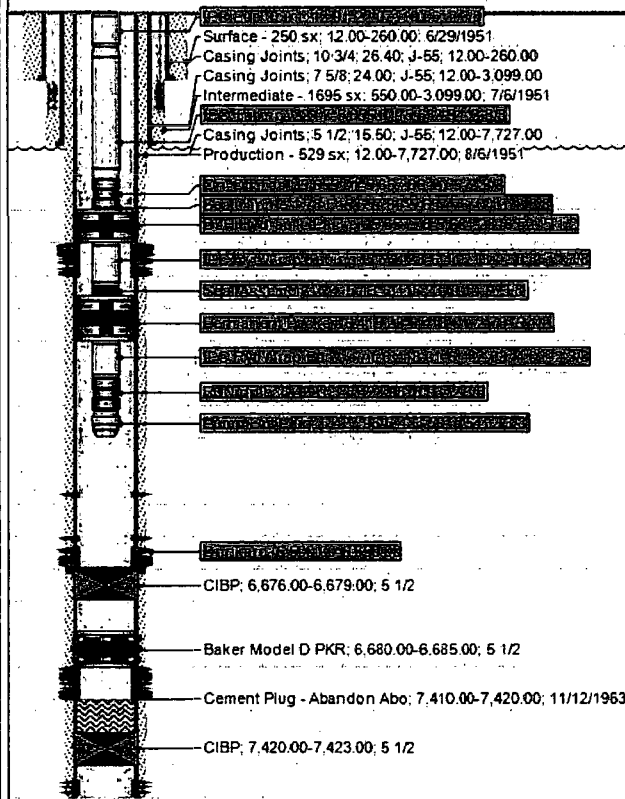


Well Name: NEDU 410W

Proposed

Injection: NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:49:31 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.304	6.304	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.306	6.036	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.322	6.322	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.334	6.334	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.366	6.366	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6.368	6.368	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.472	6.472	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.489	6.489	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.500	6.650	2.0	156
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.553	6.553	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.557	6.557	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.567	6.567	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.575	6.575	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.601	6.601	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.603	6.603	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.611	6.611	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.616	6.616	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.618	6.618	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.623	6.623	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.632	6.632	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.635	6.635	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.640	6.640	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.644	6.644	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.648	6.648	1.0	1
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.650	6.650	1.0	1

Scenario 1: Dual Packer Proposed WBD (Proposed Changes in Yellow)

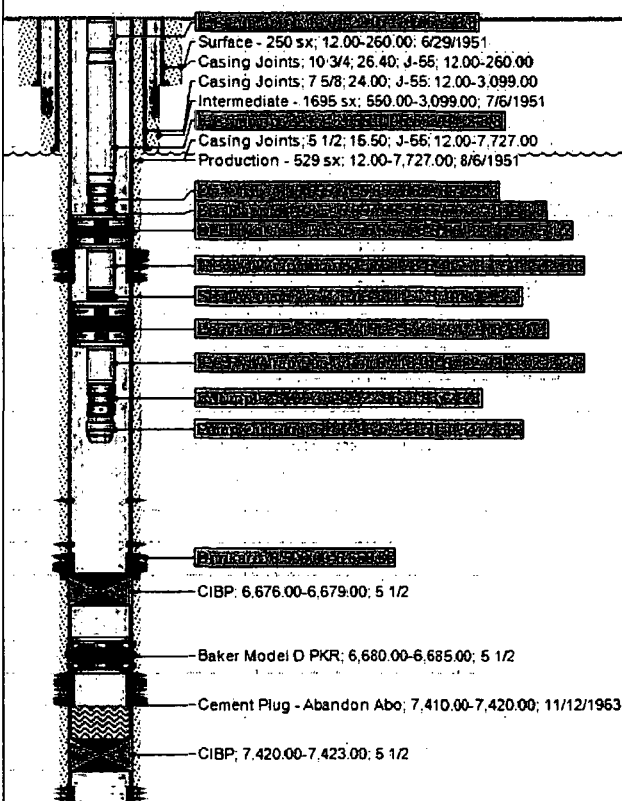
Apache

Well Name: NEDU 410W

Proposed

Injection. NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:49:39 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,721	6,721	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,736	6,736	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,804	6,804	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,845	6,845	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,882	6,882	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,896	6,896	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,930	6,930	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6,960	6,960	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,030	7,030	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,060	7,060	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,150	7,150	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,215	7,215	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,240	7,240	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,260	7,260	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,275	7,275	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,300	7,300	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,333	7,333	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,356	7,356	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7,366	7,366	1.0	1
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7,584	7,612	4.0	112
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7,622	7,656	4.0	136
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7,666	7,690	4.0	96

Proposed Perforations

Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,500	6,650	2.0	156



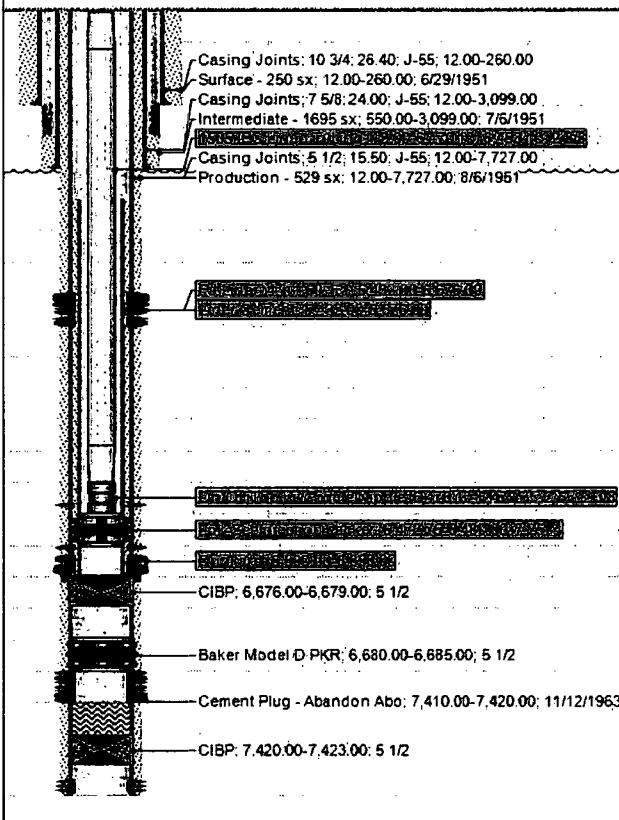
Proposed

Well Name: NEDU 410W

Lag at Well Name NORTHEAST DRINKARD UNIT 410W		Common Well Name NEDU 410W	API Surface Loc. 3002506453
Ground Elevation (ft) 3,415.0	Original KB Elevation (ft) 3,427.0	Surface Lag at Location 1980' FNL, 660' FEL, Unit H, Sec 10, T-21S, R-37E	PTD (ft) (DCB) Original Hole-6,676
			Total Depth (ft) (DCB) 7,727.0

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:44:42 PM

Vertical schematic (proposed)



Current Wellbore Sections

Section Des	Size (in)	Act Top (ft) (DCB)	Act Btm (ft) (DCB)	Start Date
Surface	13 1/2	12.0	260.0	6/29/1951
Inter 1	9 7/8	260.0	3,099.0	7/1/1951
Prod 1	6 3/4	3,099.0	7,727.0	7/8/1951

Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ft) (DCB)
Surface	10 3/4	26.40	J-55	260.00
Inter 1	7 5/8	24.00	J-55	3,099.00
Prod 1	5 1/2	15.50	J-55	7,727.00

Proposed Casing Strings

Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ft) (DCB)
Prod Lnr 1	4	11.60	FJ	6,676.00

Existing Cement

String	Des	Top (ft) (DCB)	Btm (ft) (DCB)	Top Measurement Method
Surface, 260.00ftKB, 10 3/4	Primary Cement	12.00	260.00	Returns at Surface
Inter 1, 3,099.00ftKB, 7 5/8	Primary Cement	550.00	3,099.00	Temperature Survey
Prod 1, 7,727.00ftKB, 5 1/2	Primary Cement	12.00	7,727.00	Returns at Surface
Prod 1, 7,727.00ftKB, 5 1/2	Cement Plug	7,410.00	7,420.00	

Proposed Cement

String	Description	Top Depth (ft) (DCB)	Bottom Depth (ft) (DCB)	Top Measurement Method
Prod Lnr 1, 6,676.00ftKB, 4	Primary Liner Cement	5,432.00	6,676.00	Returns at Surface

Proposed Tubing String

Tubing Description	Length (ft)	Set Depth (ft) (DCB)
Tubing - Injection		6,395.5
Item Description	Length (ft)	OD Nominal (in)
IPC Pup Joint	10.06	2 3/8
Item Description	Length (ft)	OD Nominal (in)
IPC Tubing	5,632.94	2 3/8
Item Description	Length (ft)	OD Nominal (in)
On-Off Tool	2.65	2 3/8
Item Description	Length (ft)	OD Nominal (in)
Seal Nipple 1.78 F	0.10	2 3/8
Item Description	Length (ft)	OD Nominal (in)
DLH Hydraulic Packer	6.52	5 1/2
Item Description	Length (ft)	OD Nominal (in)
IPC RytWrap Tubing	720.86	2 3/8
Item Description	Length (ft)	OD Nominal (in)
Seal Assembly	0.10	2 3/8
Item Description	Length (ft)	OD Nominal (in)
Permanent Packer	2.78	5 1/2

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

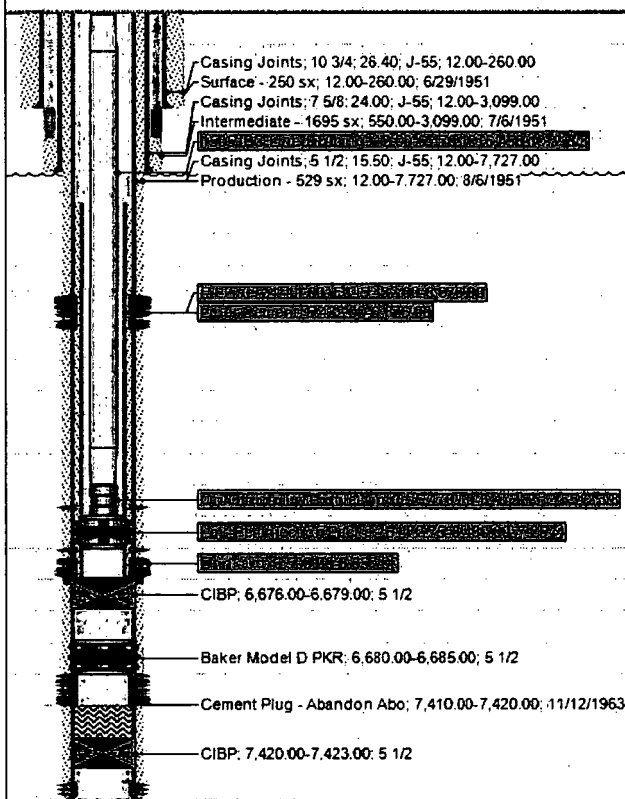
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:45:23 PM

Vertical schematic (proposed)



Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Ryt Wrap Pup Joint	4.02	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
R Nipple	0.93	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Pump Out Plug	0.54	2 3/8	1
Tubing Description		Set Depth (ft-S)	
Tubing - Injection		6,480.0	
Item Description	Length (ft)	OD Nominal (in)	Joints
1505 IPC Lined Tubing	6,458.10	2 3/8	200
Item Description	Length (ft)	OD Nominal (in)	Joints
On/Off Tool w/ Profile Nipple	2.65	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Lok-Set Injection Packer	7.25	4	1

Existing Perforations				
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,707	5,707	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,709	5,709	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,714	5,714	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,716	5,716	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,723	5,723	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,725	5,725	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,726	5,726	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,727	5,727	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,732	5,732	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,734	5,734	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,737	5,737	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,765	5,765	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,772	5,772	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,778	5,778	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,780	5,780	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,785	5,785	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,790	5,790	1.0	1
Type	Top Depth (ft-S)	Bottom Depth (ft-S)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,806	5,806	1.0	1

Scenario 2: FJ Liner Proposed WBD (Proposed - Change to Yellow)

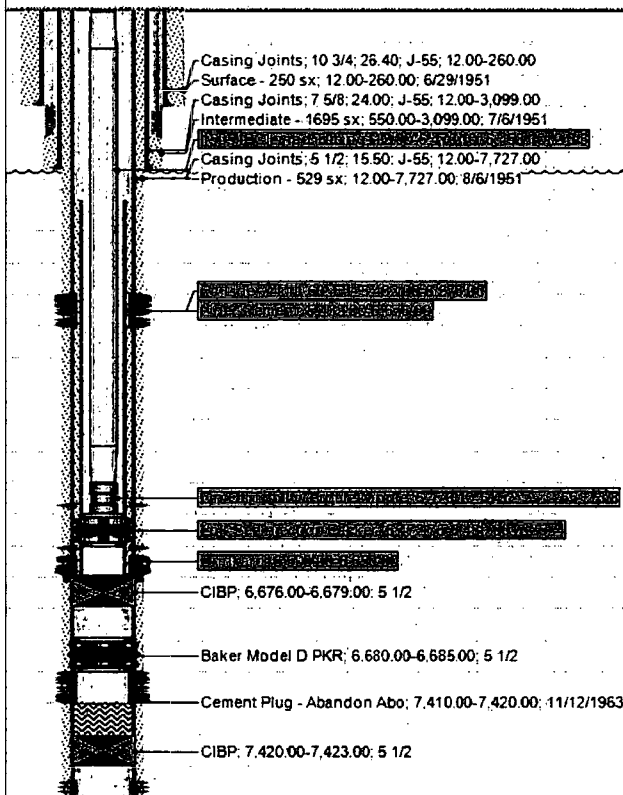
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:45:30 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5.808	5.808	1.0	1
Blinebry	5.810	5.810	1.0	1
Blinebry	5.825	5.825	1.0	1
Blinebry	5.827	5.827	1.0	1
Blinebry	5.829	5.829	1.0	1
Blinebry	5.861	5.861	1.0	1
Blinebry	5.890	5.890	1.0	1
Blinebry	5.907	5.907	1.0	1
Blinebry	5.909	5.909	1.0	1
Blinebry	5.912	5.912	1.0	1
Blinebry	5.915	5.915	1.0	1
Blinebry	5.922	5.922	1.0	1
Blinebry	5.924	5.924	1.0	1
Blinebry	5.926	5.926	1.0	1
Blinebry	5.938	5.938	1.0	1
Blinebry	5.943	5.943	1.0	1
Blinebry	5.968	5.968	1.0	1
Blinebry	6.006	6.006	1.0	1
Blinebry	6.036	6.036	1.0	1
Blinebry	6.078	6.078	1.0	1
Blinebry	6.085	6.085	1.0	1
Blinebry	6.102	6.102	1.0	1
Blinebry	6.104	6.104	1.0	1
Tubb	6.246	6.246	1.0	1
Tubb	6.249	6.249	1.0	1

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

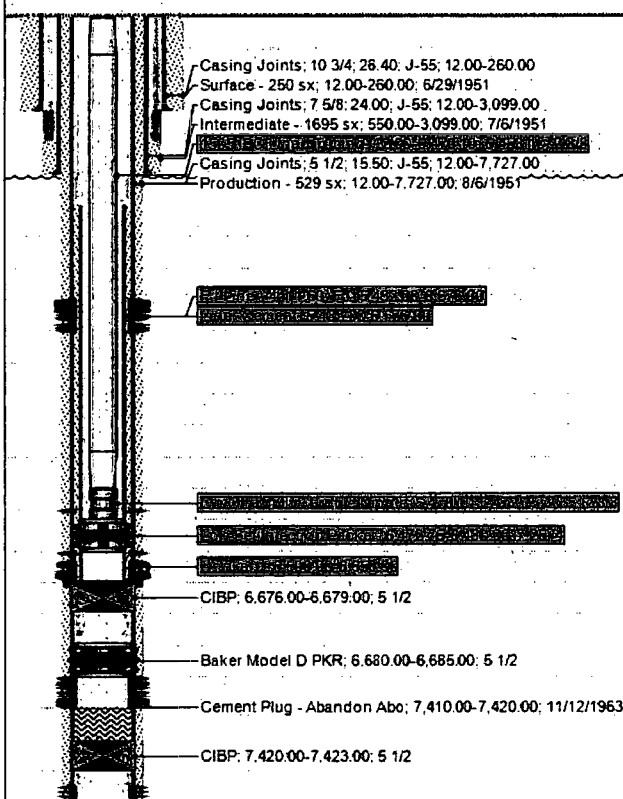
Apache

Well Name: NEU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:45:38 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Tubb	6,252	6,252	1.0	1
Tubb	6,260	6,260	1.0	1
Tubb	6,304	6,304	1.0	1
Tubb	6,306	6,036	1.0	1
Tubb	6,322	6,322	1.0	1
Tubb	6,334	6,334	1.0	1
Tubb	6,366	6,366	1.0	1
Tubb	6,368	6,368	1.0	1
Drinkard	6,472	6,472	1.0	1
Drinkard	6,489	6,489	1.0	1
Drinkard	6,600	6,650	2.0	156
Drinkard	6,553	6,553	1.0	1
Drinkard	6,557	6,557	1.0	1
Drinkard	6,567	6,567	1.0	1
Drinkard	6,575	6,575	1.0	1
Drinkard	6,601	6,601	1.0	1
Drinkard	6,603	6,603	1.0	1
Drinkard	6,611	6,611	1.0	1
Drinkard	6,616	6,616	1.0	1
Drinkard	6,618	6,618	1.0	1
Drinkard	6,623	6,623	1.0	1
Drinkard	6,632	6,632	1.0	1
Drinkard	6,635	6,635	1.0	1
Drinkard	6,640	6,640	1.0	1
Drinkard	6,644	6,644	1.0	1

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

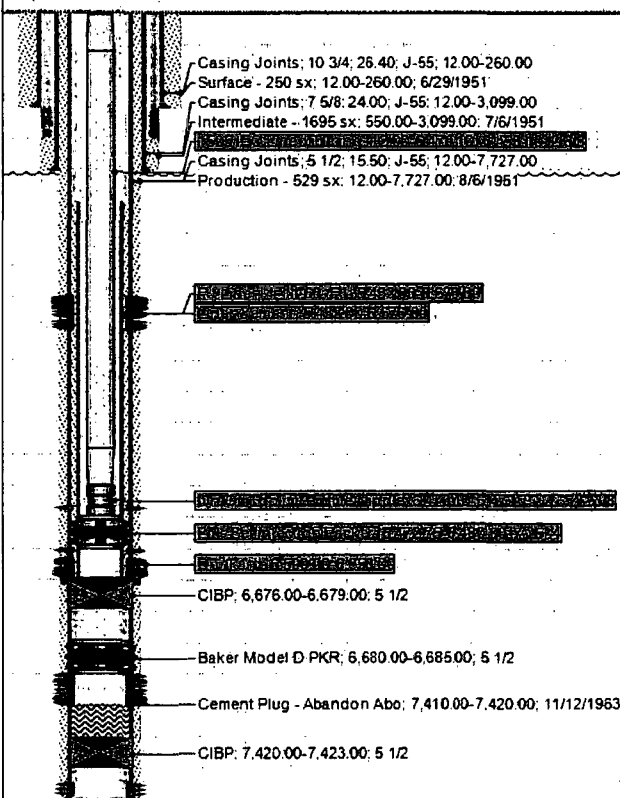
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:45:46 PM

Vertical schematic (proposed)



Existing Perforations

Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.648	6.648	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6.650	6.650	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.721	6.721	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.736	6.736	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.804	6.804	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.845	6.845	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.882	6.882	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.896	6.896	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.930	6.930	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	6.960	6.960	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.030	7.030	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.060	7.060	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.150	7.150	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.215	7.215	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.240	7.240	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.260	7.260	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.275	7.275	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.300	7.300	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.333	7.333	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.356	7.356	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Abo Susp	7.366	7.366	1.0	1
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7.684	7.612	4.0	112
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7.622	7.656	4.0	136
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
EBR Susp	7.666	7.690	4.0	96

Scenario 2: FJ Liner Proposed WBD (Proposed Diameters Yellow)

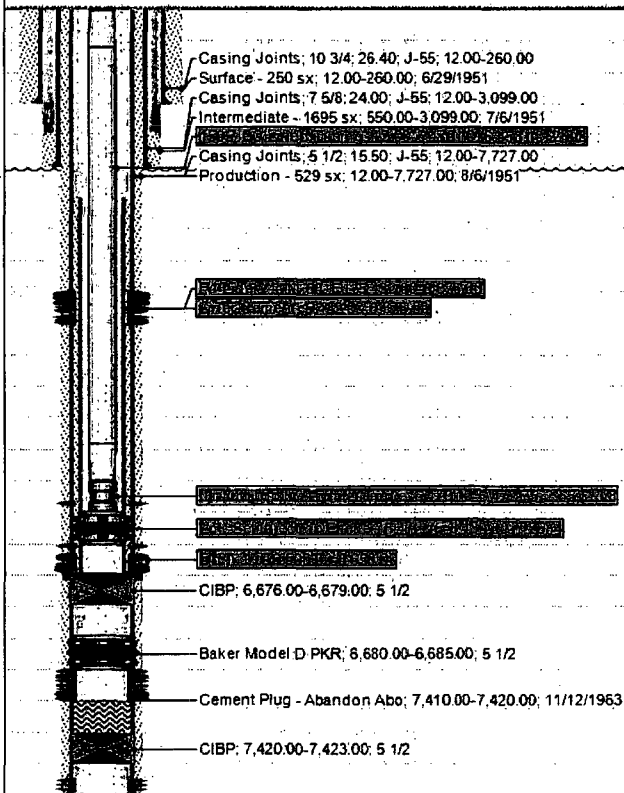
Apache

Well Name: NEDU 410W

Proposed

Injection, NORTHEAST DRINKARD UNIT 410 - Original Hole, 10/23/2018 3:45:52 PM

Vertical schematic(proposed)



Proposed Perforations

Type	Top Depth (ft/3)	Bottom Depth (ft/3)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,500	6,650	2.0	156