

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTCarlsbad Field Office
OCD
FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018
5. Lease Serial No. NM2512**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.***SUBMIT IN TRIPLICATE - Other instructions on page 2**

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		7. If Unit or CA/Agreement, Name and/or No. 73888U3160
2. Name of Operator APACHE CORPORATION Contact: REESA FISHER E-Mail: Reesa.Fisher@apachecorp.com		8. Well Name and No. NEDU 405
3a. Address 303 VETERANS AIRPARK LANE SUITE 3000 MIDLAND, TX 79705	3b. Phone (include area code) Ph: 432-816-1166	9. API Well No. 30-025-06450-00-S1
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 10 T21S R37E NWNE 660FNL 1980FEL		10. Field and Pool or Exploratory Area EUNICE
		11. County or Parish, State LEA COUNTY, NM

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 recompletion 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-759)

14. I hereby certify that the foregoing is true and correct. Electronic Submission #442682 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 (19PP0304SE)	
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 JONATHON 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 ****MRS/OCD
11/29/2018

NEDU 405W: (API: 30-025-06450)

OBJECTIVE: ISOLATE DRINKARD FOR INJECTION

Scenario 1: Dual Packer Isolation

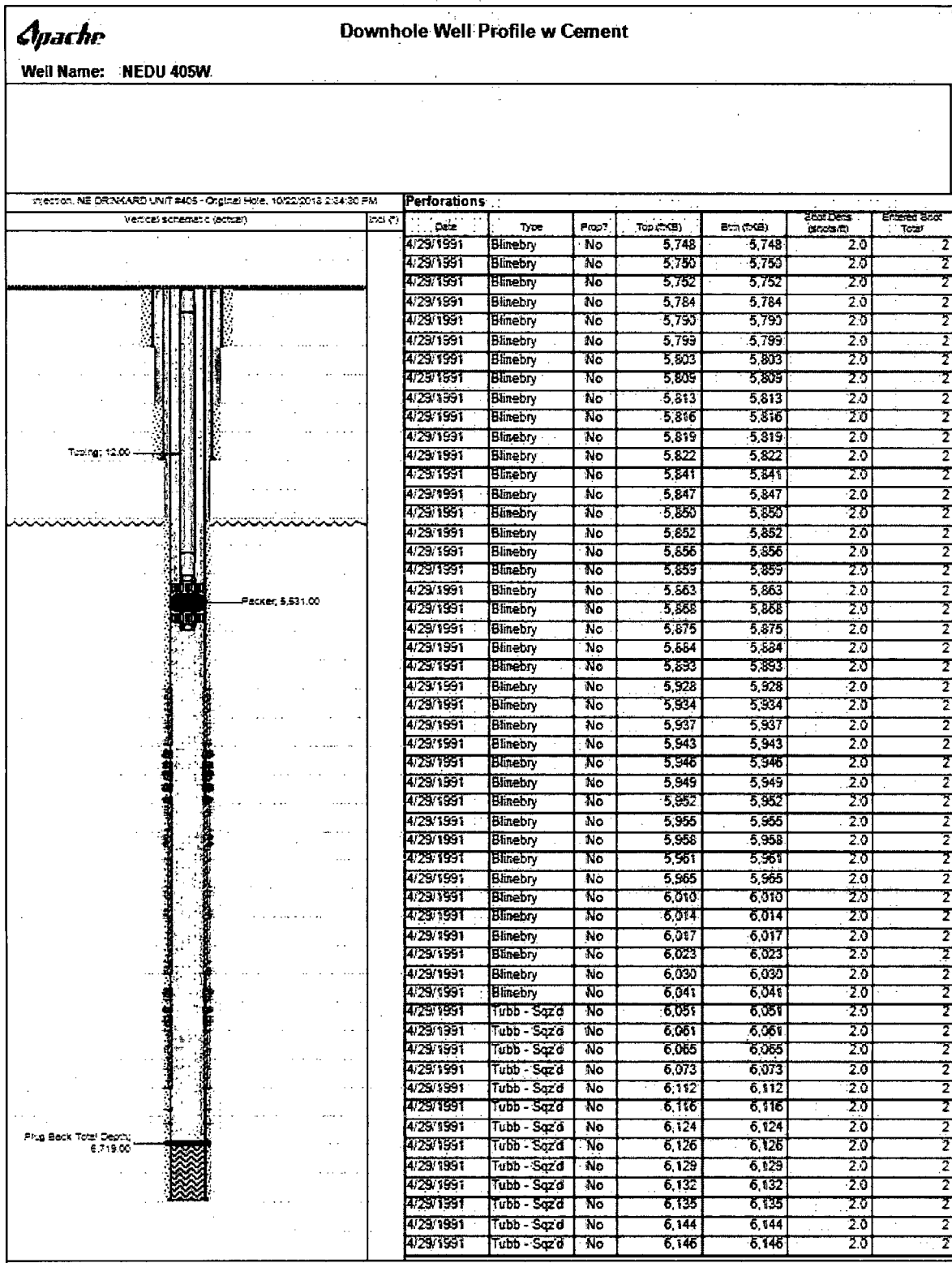
1. POOH w 2-3/8" injection tubing and 5-1/2" injection packer (@5537')
2. PU workstring and RIH w bit and clean out well to PBTD at ~6719'.
3. Make casing scraper run to around 6700' (Below Bottom Perf). POOH
4. Run casing inspection log and cement bond log from top of Drinkard to surface. POOH.
5. RIH to perforate Drinkard formation f/ 6590-6690'. 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 ~5537. 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" FJ 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 ~6719'.
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/6590'-6690'. 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**

Apache		Downhole Well Profile w Cement																																																																																																																								
Well Name: NEDU 405W																																																																																																																										
API#/Surface Loc 3002526450		Surface Legal Location 660' FNL, 1980' FEL, Unit B, Sec 10, T-21S, R-37E		Field Name Eunice North																																																																																																																						
State/Province New Mexico		Original KB Elevation (ft) 3,448.0		Ground Elevation (ft) 3,436.0																																																																																																																						
Spud Date 6/7/1950		KB-Grade Distance (ft) 12.0		PBD (ft) (ft) Original Hole - 5,719																																																																																																																						
Total Depth (ft) 6,722.0		Comment																																																																																																																								
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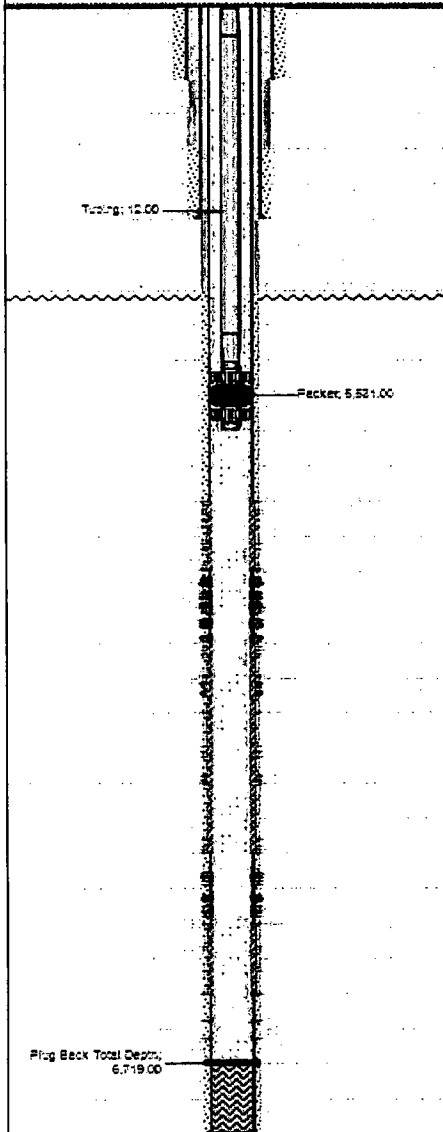


Apache**Downhole Well Profile w Cement**Well Name: **NEDU 405W**

Direction: NE DRINKARD UNIT #405 - Original Hole, 10/22/2016 2:35:04 PM

Vertical schematic (actual)

Casing (ft)

**Perforations**

Date	Type	Prod?	Top (FMS)	Bot (FMS)	Shot Dens (grains/ft)	Entered Shot Total
4/29/1991	Tubb - Sqzd	No	6,149	6,149	2.0	2
4/29/1991	Tubb - Sqzd	No	6,152	6,152	2.0	2
11/5/1996	Tubb - Sqzd	No	6,193	6,250	2.0	122
8/1/1961	Tubb - Sqzd	No	6,260	6,320	2.0	122
4/29/1991	Tubb - Sqzd	No	6,262	6,262	2.0	2
4/29/1991	Tubb - Sqzd	No	6,272	6,272	2.0	2
4/29/1991	Tubb - Sqzd	No	6,302	6,302	2.0	2
4/29/1991	Tubb - Sqzd	No	6,308	6,308	2.0	2
4/29/1991	Tubb - Sqzd	No	6,312	6,312	2.0	2
4/29/1991	Tubb - Sqzd	No	6,315	6,315	2.0	2
4/29/1991	Tubb - Sqzd	No	6,405	6,405	2.0	2
4/29/1991	Tubb - Sqzd	No	6,416	6,416	2.0	2
4/29/1991	Tubb - Sqzd	No	6,420	6,420	2.0	2
4/29/1991	Tubb - Sqzd	No	6,426	6,426	2.0	2
4/29/1991	Drinkard	No	6,495	6,495	2.0	2
4/29/1991	Drinkard	No	6,507	6,507	2.0	2
4/29/1991	Drinkard	No	6,511	6,511	2.0	2
4/29/1991	Drinkard	No	6,517	6,517	2.0	2
4/29/1991	Drinkard	No	6,520	6,520	2.0	2
4/29/1991	Drinkard	No	6,528	6,528	2.0	2
4/29/1991	Drinkard	No	6,548	6,548	2.0	2
4/29/1991	Drinkard	No	6,586	6,586	2.0	2
4/29/1991	Drinkard	No	6,589	6,589	2.0	2
4/29/1991	Drinkard	No	6,592	6,592	2.0	2
4/29/1991	Drinkard	No	6,594	6,594	2.0	2
8/1/1993	Drinkard	No	6,602	6,614	4.0	48
4/29/1991	Drinkard	No	6,620	6,620	2.0	2
8/1/1993	Drinkard	No	6,622	6,628	4.0	24
7/28/1990	Drinkard	No	6,634	6,640	4.0	24
4/29/1991	Drinkard	No	6,645	6,645	2.0	2
7/29/1990	Drinkard	No	6,650	6,657	4.0	28
7/27/1990	Drinkard	No	6,662	6,677	4.0	60
7/25/1990	Drinkard Sqzd	No	6,684	6,696	4.0	48
7/23/1990	Drinkard	No	6,705	6,711	4.0	24

Proposed Perforations

Date	Type	Prod?	Top (FMS)	Bot (FMS)	Shot Dens (grains/ft)	Entered Shot Total
4/29/1991	Blindbry	Yes	5,727	5,727	2.0	2

Tubing Strings

Tubing Description	Run Date	String Length (ft)	Set Depth (FMS)				
Tubing	10/11/2000	5,525.00	5,537.0				
Item Des	JIS	Make	Model	OD (in)	WT (lb/ft)	Grade	Len (ft)
Tubing			1505 IPC - Upset	2 3/8	4.80	J-55	5,519.00
Packer				2 3/8			6.00

Rod Strings

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

Other in Hole

Description	OD (in)	Top (FMS)	R/O Date

Scenario 1: Dual Packer Proposed WBD (Proposed Drifts to Follow)

Apache		Proposed			
Well Name: NEDU 405W					
Lag at Well Name NORTHEAST DRINKARD UNIT 405W		Common Well Name NEDU 405W		API Surface Loc. 3002506450	
Ground Elevation (ft) 3,435.0	Original KB Elevation (ft) 3,448.0	Surface Lag at Location 680' FNL, 1980' FEL, Unit B, Sec 10, T-21S, R-37E	PSTD (ft) (ft) (ft) Original Hole - 6,719	Total Depth (ft) (ft) 6,722.0	

Injection, NE DRINKARD UNIT #405 - Original Hole, 10/23/2018 2:18:50 PM

Vertical schematic (proposed)

Current Wellbore Sections				
Section Des	Size (in)	Act Top (ft) (ft)	Act Btm (ft) (ft)	Start Date
Surface	13 1/2	12.0	245.0	6/7/1950
Inter 1	9 7/8	245.0	3,049.0	6/9/1950
Prod 1	6 3/4	3,049.0	6,722.0	6/17/1950

Casing Strings				
Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ft) (ft)
Surface	10 3/4	32.75	H-40	245.00
Inter 1	7 5/8	26.40	J-55	3,049.00
Prod 1	5 1/2	14.00	J-55	6,722.00

Proposed Casing Strings				
Casing Description	String Nominal OD (in)	Weight/Length (lb/ft)	String Grade	Set Depth (ft) (ft)

Existing Cement				
String	Des	Top (ft) (ft)	Size (ft) (ft)	Top Meas Mark
Prod 1, 6,722.00ftKB, 5 1/2	Cement Squeeze	6,045.00	6,426.00	
Prod 1, 6,722.00ftKB, 5 1/2	Cement Squeeze	6,190.00	6,320.00	
Prod 1, 6,722.00ftKB, 5 1/2	Cement Squeeze	5,582.00	5,680.00	
Surface, 245.00ftKB, 10 3/4	Primary Cement	12.00	245.00	Returns at Surface
Inter 1, 3,049.00ftKB, 7 5/8	Primary Cement	600.00	3,049.00	Temperature Survey
Prod 1, 6,722.00ftKB, 5 1/2	Primary Cement	3,155.00	6,722.00	Temperature Survey
Prod 1, 6,722.00ftKB, 5 1/2	Cement Plug	6,719.00	6,722.00	Tag
Prod 1, 6,722.00ftKB, 5 1/2	Cement Squeeze	6,684.00	6,696.00	Calculated

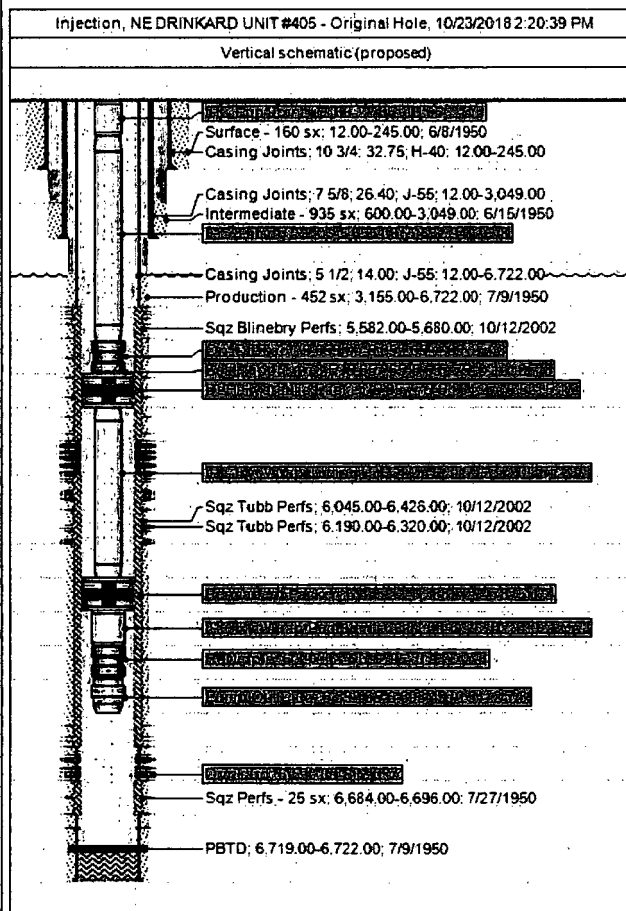
Proposed Tubing String			
Tubing Description	Length (ft)	Set Depth (ft) (ft)	
Tubing - Injection		6,393.5	
Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Pup Joint	10.06	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Tubing	5,632.94	2 3/8	174
Item Description	Length (ft)	OD Nominal (in)	Joints
On-Off Tool	2.65	2 7/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Seal Nipple 1.78 F	0.10	2 7/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
DLH Hydraulic Packer	6.52	5 1/2	1

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



Well Name: NEDU 405W

Proposed



Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Ryt Wrap Tubing	720.85	2 3/8	22
Item Description	Length (ft)	OD Nominal (in)	Joints
Seal Assembly	0.10	2 3/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Permanent Packer	2.78	5 1/2	1
Item Description	Length (ft)	OD Nominal (in)	Joints
IPC Ryt Wrap Pup Joint	4.02	2 7/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
R Nipple	0.93	2 7/8	1
Item Description	Length (ft)	OD Nominal (in)	Joints
Pump Out Plug	0.54	2 7/8	1

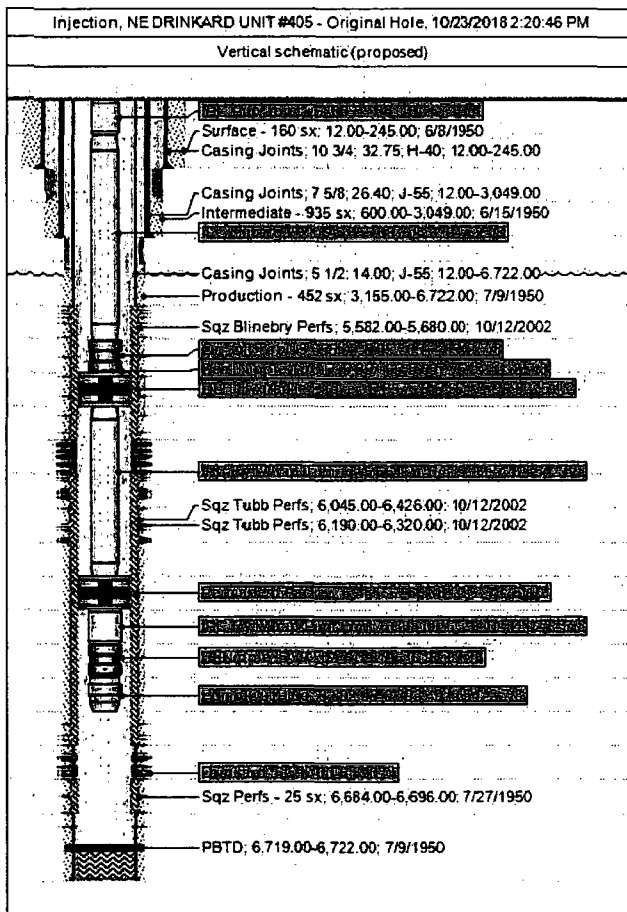
Existing Perforations				
Type	Top Depth (ftCS)	Bottom Depth (ftCS)	Shot Density (shots/ft)	Entered Shot Total
Blinebry - Sqz'd	5,584	5,587	1.0	4
Blinebry - Sqz'd	5,595	5,597	Shot Density (shots/ft)	Entered Shot Total
Blinebry - Sqz'd	5,600	5,604	1.0	5
Blinebry - Sqz'd	5,608	5,614	Shot Density (shots/ft)	Entered Shot Total
Blinebry - Sqz'd	5,620	5,642	1.0	23
Blinebry - Sqz'd	5,650	5,670	Shot Density (shots/ft)	Entered Shot Total
Blinebry - Sqz'd	5,677	5,677	2.0	2
Blinebry - Sqz'd	5,680	5,680	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,709	5,709	2.0	2
Blinebry	5,715	5,715	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,724	5,724	2.0	2
Blinebry	5,727	5,727	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,730	5,730	2.0	2
Blinebry	5,733	5,733	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,736	5,736	2.0	2
Blinebry	5,739	5,739	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,742	5,742	2.0	2
Blinebry	5,748	5,748	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,750	5,750	2.0	2

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

Apache

Well Name: NEDU 405W

Proposed



Existing Perforations				
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,752	5,752	2.0	2
Blinebry	5,784	5,784	2.0	2
Blinebry	5,790	5,790	2.0	2
Blinebry	5,799	5,799	2.0	2
Blinebry	5,803	5,803	2.0	2
Blinebry	5,809	5,809	2.0	2
Blinebry	5,813	5,813	2.0	2
Blinebry	5,816	5,816	2.0	2
Blinebry	5,819	5,819	2.0	2
Blinebry	5,822	5,822	2.0	2
Blinebry	5,841	5,841	2.0	2
Blinebry	5,847	5,847	2.0	2
Blinebry	5,850	5,850	2.0	2
Blinebry	5,852	5,852	2.0	2
Blinebry	5,856	5,856	2.0	2
Blinebry	5,859	5,859	2.0	2
Blinebry	5,863	5,863	2.0	2
Blinebry	5,868	5,868	2.0	2
Blinebry	5,875	5,875	2.0	2
Blinebry	5,884	5,884	2.0	2
Blinebry	5,893	5,893	2.0	2
Blinebry	5,928	5,928	2.0	2
Blinebry	5,934	5,934	2.0	2
Blinebry	5,937	5,937	2.0	2
Blinebry	5,943	5,943	2.0	2

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

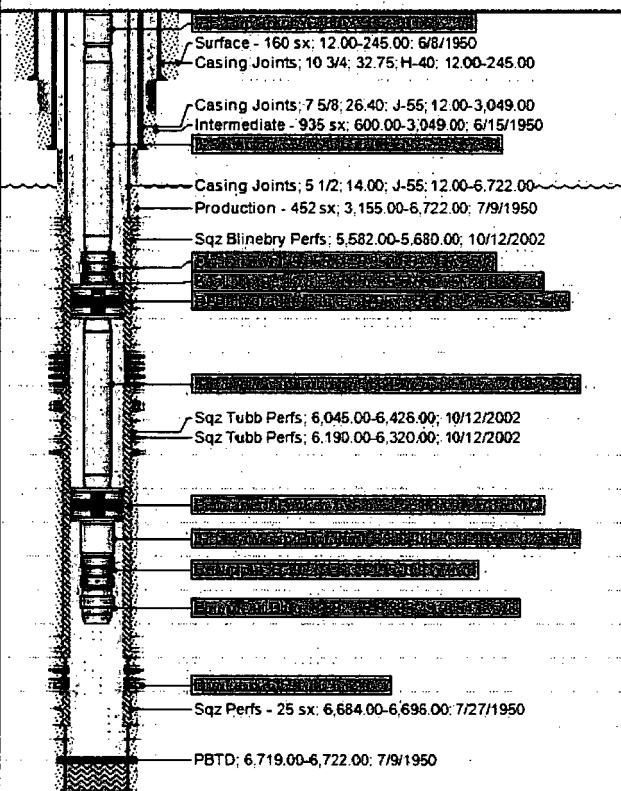
Apache

Well Name: NEDU 405W

Proposed

Injection, NEDRINKARD UNIT #405 - Original Hole, 10/23/2018 2:20:52 PM

Vertical schematic (proposed)



Existing Perforations:

Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinbry	5,946	5,946	2.0	2
Blinbry	5,949	5,949	2.0	2
Blinbry	5,952	5,952	2.0	2
Blinbry	5,955	5,955	2.0	2
Blinbry	5,958	5,958	2.0	2
Blinbry	5,961	5,961	2.0	2
Blinbry	5,965	5,965	2.0	2
Blinbry	6,010	6,010	2.0	2
Blinbry	6,014	6,014	2.0	2
Blinbry	6,017	6,017	2.0	2
Blinbry	6,023	6,023	2.0	2
Blinbry	6,030	6,030	2.0	2
Blinbry	6,041	6,041	2.0	2
Tubb - Sqz'd	6,051	6,051	2.0	2
Tubb - Sqz'd	6,061	6,061	2.0	2
Tubb - Sqz'd	6,065	6,065	2.0	2
Tubb - Sqz'd	6,073	6,073	2.0	2
Tubb - Sqz'd	6,112	6,112	2.0	2
Tubb - Sqz'd	6,116	6,116	2.0	2
Tubb - Sqz'd	6,124	6,124	2.0	2
Tubb - Sqz'd	6,126	6,126	2.0	2
Tubb - Sqz'd	6,129	6,129	2.0	2
Tubb - Sqz'd	6,132	6,132	2.0	2
Tubb - Sqz'd	6,135	6,135	2.0	2
Tubb - Sqz'd	6,144	6,144	2.0	2

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

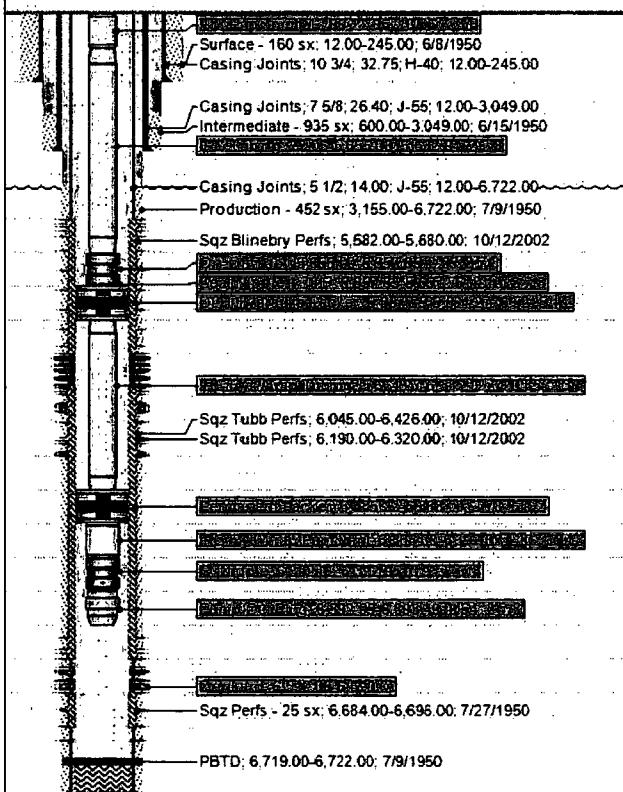
Apache

Well Name: NEDU 405W

Proposed

Injection, NE DRINKARD UNIT #405 - Original Hole, 10/23/2018 2:20:58 PM

Vertical schematic (proposed)



Existing Perforations:

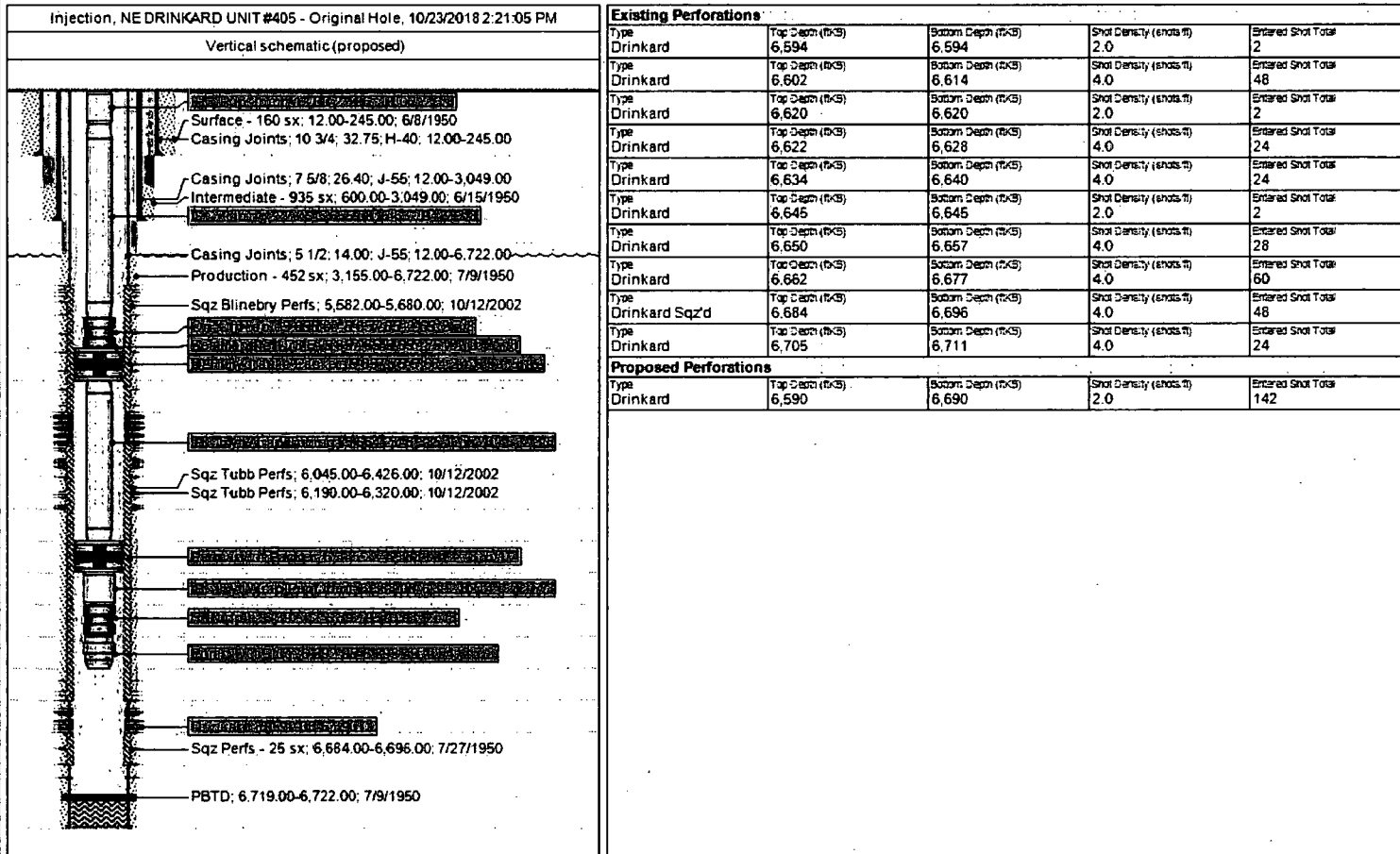
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,146	6,146	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,149	6,149	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,152	6,152	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,190	6,260	2.0	122
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,260	6,320	2.0	122
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,262	6,262	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,272	6,272	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,302	6,302	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,308	6,308	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,312	6,312	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,315	6,315	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,405	6,405	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,416	6,416	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,420	6,420	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,426	6,426	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,495	6,495	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,507	6,507	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,511	6,511	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,517	6,517	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,520	6,520	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,528	6,528	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,548	6,548	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,586	6,586	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,589	6,589	2.0	2
Type	Top Depth (ft:in)	Bottom Depth (ft:in)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,592	6,592	2.0	2

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

Apache

Well Name: NEDU 405W

Proposed



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

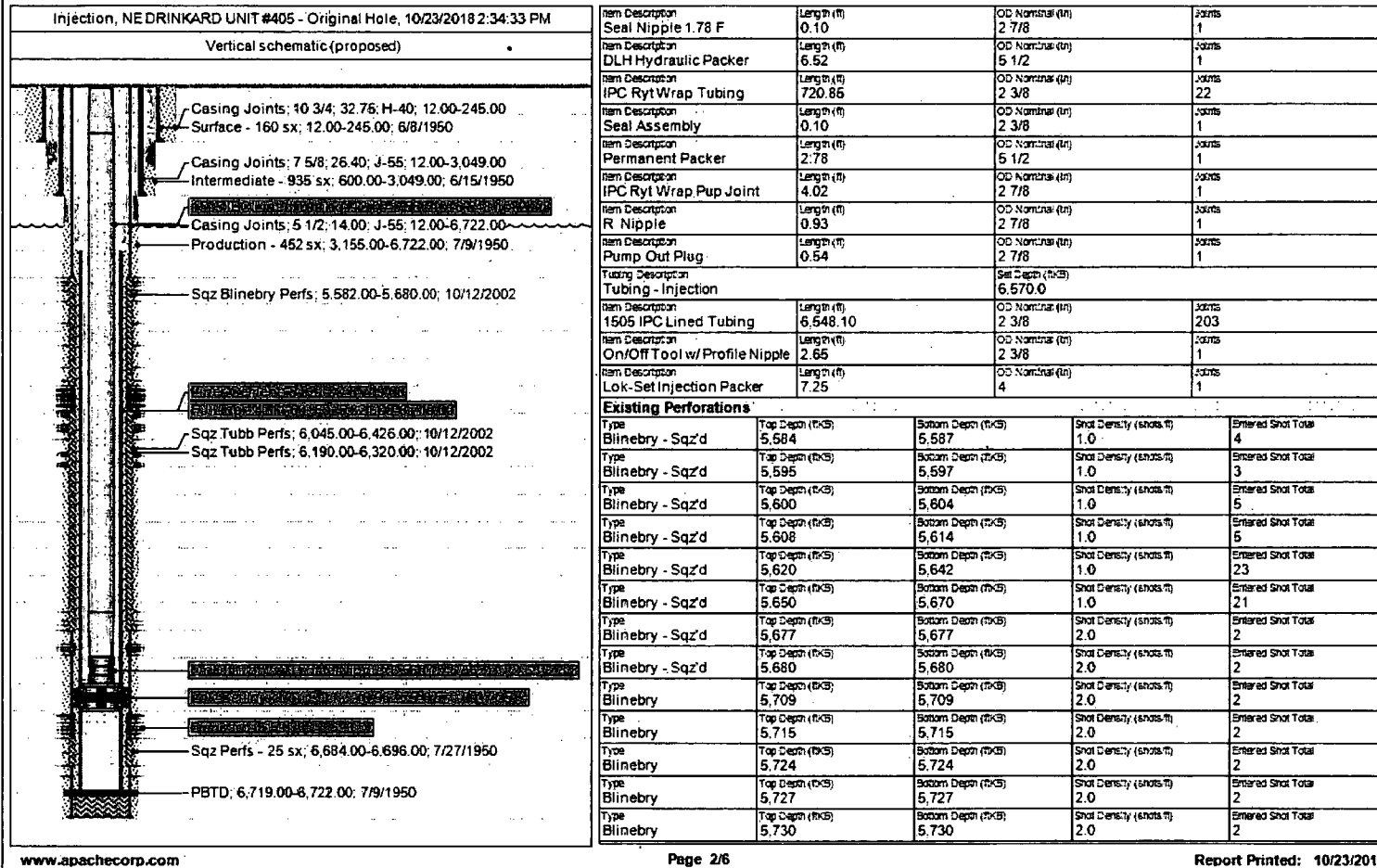
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Well Name: NEDU 405W Legal Well Name: NORTHEAST DRINKARD UNIT 405W Common Well Name: NEDU 405W API Surface Loc: 3002506450																																																		
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Proposed Cement <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>String</th> <th>Description</th> <th>Top Depth (ftCS)</th> <th>Bottom Depth (ftCS)</th> <th>Top Measurement Method</th> </tr> </thead> <tbody> <tr> <td>Prod Lnr 1, 6,719.00ftKB, 4</td> <td>Primary Liner Cement</td> <td>5,321.00</td> <td>6,719.00</td> <td>Returns at Surface</td> </tr> </tbody> </table>						String	Description	Top Depth (ftCS)	Bottom Depth (ftCS)	Top Measurement Method	Prod Lnr 1, 6,719.00ftKB, 4	Primary Liner Cement	5,321.00	6,719.00	Returns at Surface																																			
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Sqz Perfs - 25 sx: 6,684.00-6,696.00: 7/27/1950 PBTD: 6,719.00-6,722.00: 7/9/1950																																																		

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

Apache

Well Name: NEDU 405W

Proposed



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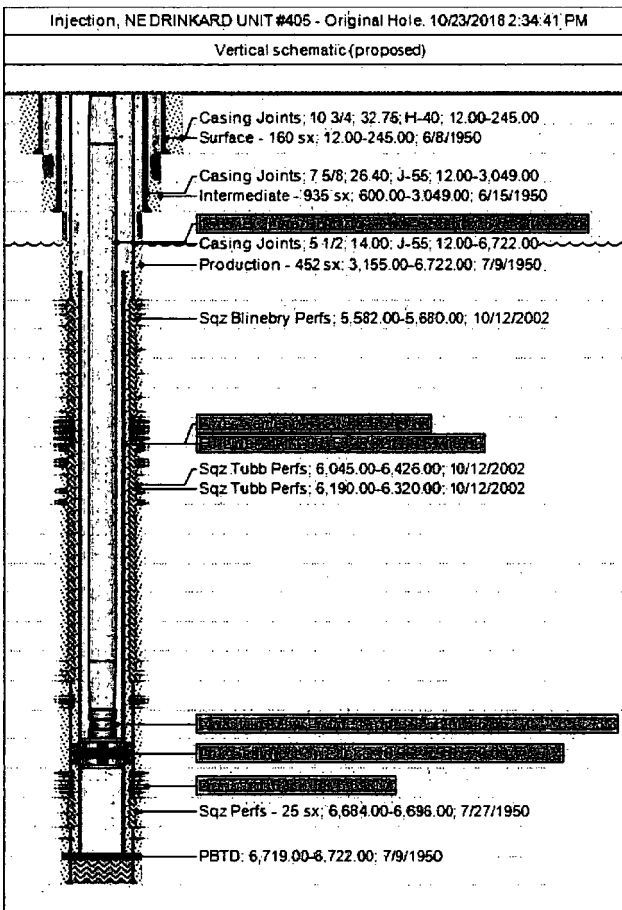
Report Printed: 10/23/2018

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



Well Name: NEDU 405W

Proposed



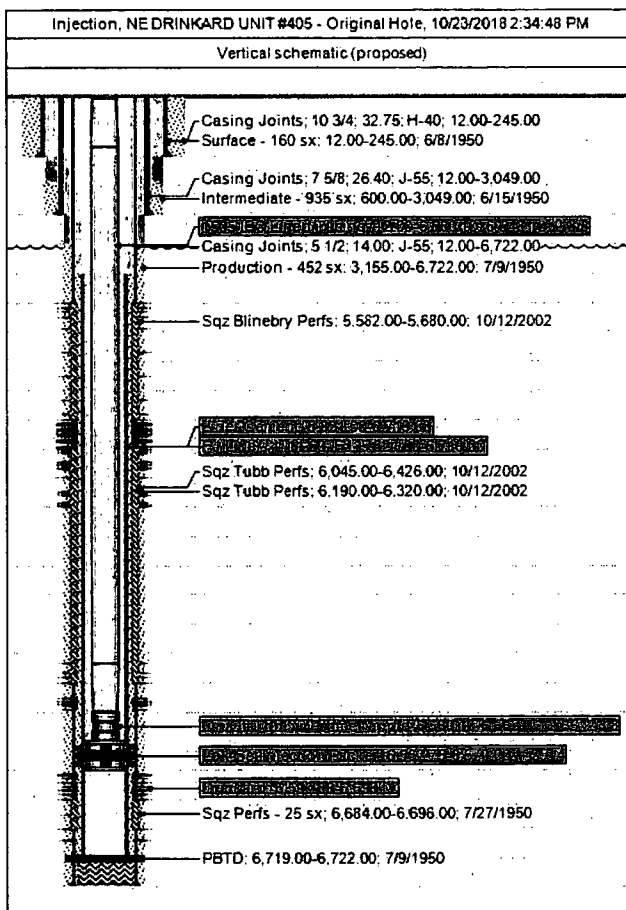
Existing Perforations				
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,733	5,733	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,736	5,736	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,739	5,739	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,742	5,742	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,748	5,748	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,750	5,750	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,752	5,752	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,784	5,784	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,790	5,790	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,799	5,799	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,803	5,803	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,809	5,809	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,813	5,813	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,816	5,816	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,819	5,819	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,822	5,822	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,841	5,841	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,847	5,847	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,850	5,850	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,852	5,852	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,856	5,856	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,859	5,859	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,863	5,863	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,868	5,868	2.0	2
Type	Top Depth (ftCB)	Bottom Depth (ftCB)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,875	5,875	2.0	2

Scenario 2: FJ Liner Proposed WBD (Proposed Oriented to Yellow)



Well Name: NEDU 405W

Proposed



Existing Perforations				
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Blinebry	5,884	5,884	2.0	2
Blinebry	5,893	5,893	2.0	2
Blinebry	5,928	5,928	2.0	2
Blinebry	5,934	5,934	2.0	2
Blinebry	5,937	5,937	2.0	2
Blinebry	5,943	5,943	2.0	2
Blinebry	5,946	5,946	2.0	2
Blinebry	5,949	5,949	2.0	2
Blinebry	5,952	5,952	2.0	2
Blinebry	5,955	5,955	2.0	2
Blinebry	5,958	5,958	2.0	2
Blinebry	5,961	5,961	2.0	2
Blinebry	5,965	5,965	2.0	2
Blinebry	6,010	6,010	2.0	2
Blinebry	6,014	6,014	2.0	2
Blinebry	6,017	6,017	2.0	2
Blinebry	6,023	6,023	2.0	2
Blinebry	6,030	6,030	2.0	2
Blinebry	6,041	6,041	2.0	2
Tubb - Sqz'd	6,051	6,051	2.0	2
Tubb - Sqz'd	6,061	6,061	2.0	2
Tubb - Sqz'd	6,065	6,065	2.0	2
Tubb - Sqz'd	6,073	6,073	2.0	2
Tubb - Sqz'd	6,112	6,112	2.0	2
Tubb - Sqz'd	6,116	6,116	2.0	2

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

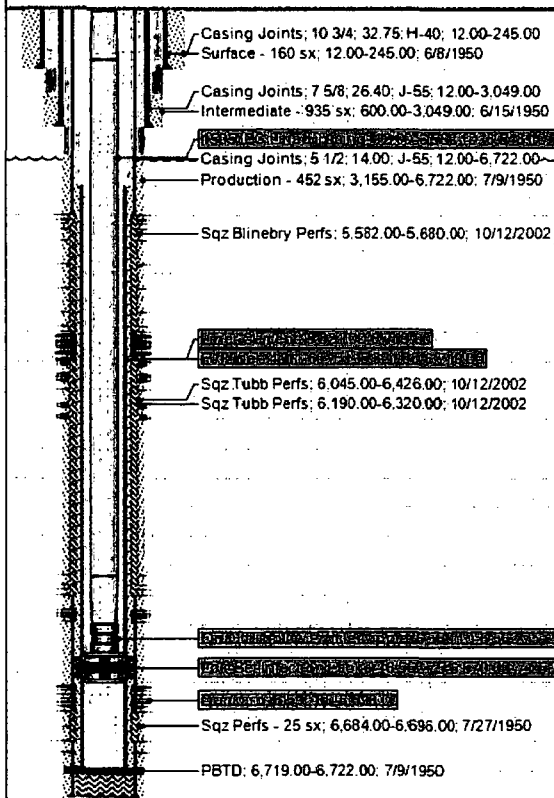
Apache

Well Name: NEDU 405W

Proposed

Injection, NEDRINKARD UNIT #405 - Original Hole, 10/23/2018 2:34:56 PM

Vertical schematic (proposed)



Existing Perforations

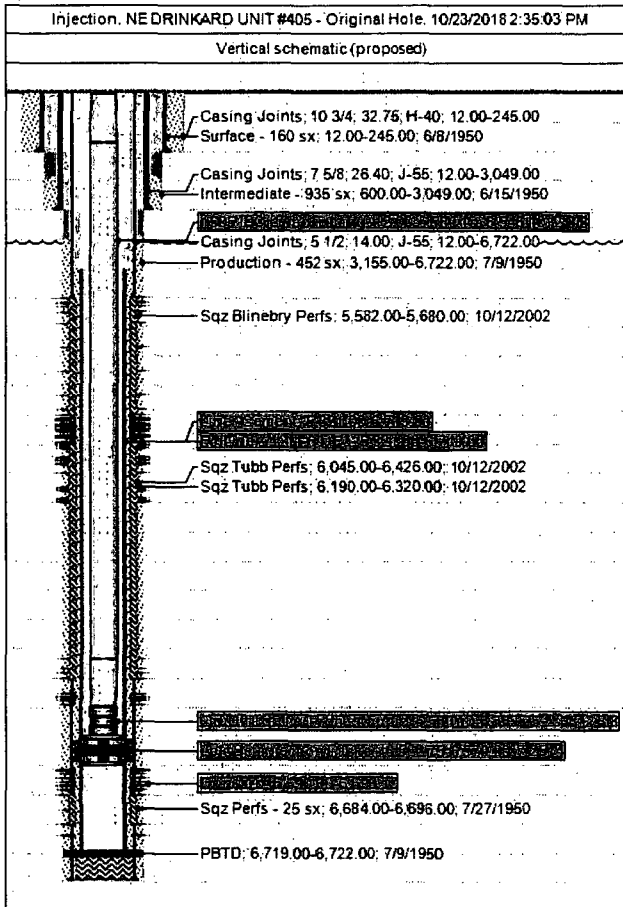
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,124	6,124	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,126	6,126	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,129	6,129	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,132	6,132	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,135	6,135	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,144	6,144	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,146	6,146	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,149	6,149	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,152	6,152	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,190	6,250	2.0	122
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,260	6,320	2.0	122
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,262	6,262	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,272	6,272	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,302	6,302	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,308	6,308	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,312	6,312	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,315	6,315	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,405	6,405	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,416	6,416	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,420	6,420	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Tubb - Sqz'd	6,426	6,426	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,495	6,495	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,507	6,507	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,511	6,511	2.0	2
Type	Top Depth (ft)	Bottom Depth (ft)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,517	6,517	2.0	2

Scenario 2: FJ Liner Proposed WBD (Required Changes in Version)

Apache

Well Name: NEDU 405W

Proposed



Existing Perforations				
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,520	6,520	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,528	6,528	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,548	6,548	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,586	6,586	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,589	6,589	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,592	6,592	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,594	6,594	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,602	6,614	4.0	48
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,620	6,620	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,622	6,628	4.0	24
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,634	6,640	4.0	24
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,645	6,645	2.0	2
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,650	6,657	4.0	28
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,662	6,677	4.0	60
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard Sqz'd	6,684	6,696	4.0	48
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,705	6,711	4.0	24
Proposed Perforations				
Type	Top Depth (ftGS)	Bottom Depth (ftGS)	Shot Density (shots/ft)	Entered Shot Total
Drinkard	6,590	6,690	2.0	142