Petrotek

Technical Report

MECHANICAL INTEGRITY AND RESERVOIR TESTING

CLASS I NON-HAZARDOUS DEEPWELL
MEWBOURNE WELL NO. 1
(OCD UIC Permit: UICI-008-1)
(API Number: 30-015-27592)

HollyFrontier Navajo Refining Company
Artesia, New Mexico

Section 31, Township 17S, Range 28E
660 FSL, 2310 FEL

December 2021

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EXECUTIVE SUMMARY

This report summarizes the successful mechanical integrity testing (MIT) and falloff testing activities performed on the Mewbourne WDW-1 at the HollyFrontier Navajo Refining Company (HFNR) facility at Artesia, New Mexico. The work was performed as a condition of the applicable UIC permit issued by the New Mexico Oil Conservation Division (OCD). Under contract, Petrotek Corporation (Petrotek) developed the MIT procedures, provided field supervision, completed pressure transient test analysis, and prepared the final report documenting the fieldwork on the Class I non-hazardous injection well.

The test procedures were submitted to the OCD headquarters and OCD District II on July 8, 2021, before field activities commenced. Attachment 1 presents the test notification and procedures. Approvals were received from regulatory agency staff prior to commencement of activities. No OCD personnel were present to witness testing. MIT and reservoir testing activities were supervised by David Huffington (Petrotek).

The field activities consisted of an annulus pressure test (APT) and an injection falloff test. The well satisfactorily demonstrated mechanical integrity pursuant to the applicable UIC permit, guidelines and regulations. All MIT requirements were satisfied as a result of the work performed. Wellbore and reservoir properties were confirmed as similar to those determined from analysis of the previous testing conducted in the well.

1. FACILITY INFORMATION

a. **Name** - HollyFrontier Navajo Refining Company

b. **Location** - Highway 82 East, Artesia, New Mexico, 88211

c. **Operator's Oil And Gas Remittance Identifier (GRD) Number** - 15694

2. WELL INFORMATION

a. **OCD UIC Permit number authorizing injection** - OCD UIC Permit: UICI-008-1

b. **Well classification** - Class I Non-hazardous

c. **Well name and number** - Mewbourne WDW-1

d. **API Number** - 30-015-27592

e. **Legal Location** - 660 FSL, 2210 FEL, Section 31, Township 17S, Range 28E

3. CURRENT WELLBORE SCHEMATIC

A wellbore schematic displaying the well configuration during testing is provided as Figure 1. A wellhead schematic is provided as Figure 2.

4. COPY OF AN ELECTRIC LOG ENCOMPASSING THE COMPLETED INTERVAL

A copy of the dual induction log run in 1993 during the initial completion of the well was submitted with the original permit and can be found online on the OCD website as part of the OCD well files for this well.

5. COPY OF RELEVANT PORTIONS OF ANY POROSITY LOG USED TO ESTIMATE FORMATION POROSITY

A copy of the neutron density log, encompassing the completed interval between 7,924 and 8,476 feet Below Ground Level (BGL), can be found online on the OCD website as part of the well files for this well. From these logs, it was determined that the injection reservoir thickness is approximately 175 feet with an average porosity of 10 percent. These values are consistent with historical test analyses. Petrotek utilized these values for the analysis performed for and presented in this report.

6. PVT DATA OF THE FORMATION AND INJECTION FLUID

Fluid samples of connate brine from the injection interval were collected from WDW-1 (33,000 mg/L) and WDW-2 (20,000 mg/L) during recompletion as Class I UIC wells. Both of these wells are completed in the same injection formation. The average density and total dissolved solids (TDS) of the fluids recovered from the two wells were 1.03 g/cc and 26,500 mg/l, respectively. The results of formation fluid analysis were provided in documents previously submitted to and approved by OCD. Available analyte values for WDWs 1, 2 and 3 are provided in Table 1.

TABLE 1
HFNR FORMATION FLUID SAMPLE ANALYSIS RESULTS

Chemical	Mewbourne Well (WDW-1)	Chukka Well (WDW-2)	Gaines Well (WDW-3)	Average
Date	7/31/1998	6/14/1999	9/8/2006	
Fluoride (mg/L)	2.6	9.7	ND	6.15
Chloride (mg/L)	19,000	15,000	10,447	14,816
NO_3-N (mg/L)	<10	<10	--	<10
SO_4 (mg/L)	2,200	2,000	1,908	2,036
$CaCO_3$ (mg/L)	1,000	1,210	--	1,105
Specific Gravity (unitless)	1.0340	1.0249	--	1.0295
TDS (mg/L)	33,000	20,000	--	26,500
Specific Conductance (uMHOs/cm)	52,000	43,000	--	47,500
Potassium (mg/L)	213	235	85.5	177.8
Magnesium (mg/L)	143	128	155	142
Calcium (mg/L)	390	609	393	464
Sodium (mg/L)	12,770	8,074	6,080	8,975
pH	8.10	7.20	--	7.65

Note: ND: Non-detect; -- indicates no analysis.

The formation viscosity, fluid compressibility, and total compressibility were estimated using the average brine salinity along with the bottom hole temperature and pressure recorded in the well at the depth of the injection zone in conjunction with industry standard correlations. The correlations used are presented in the SPE textbook on Pressure Transient Testing which was published as part of the SPE Textbook Series as Volume 9. For the sake of brevity, only page, equation, and figure numbers from this volume are listed subsequently in this report as a reference for all correlations presented for the PVT data.

The percent solids for the fluid was approximated as 2.65%, based on the average 26,500 mg/l TDS brine concentration for the formation samples presented in Table 1. A bottom hole temperature of 126.4 °F has been used as representative of the formation for these correlations. This value was derived from the original temperature log, run in 1998 when the well was recompleted. This log is can be found online on the OCD site as part of the WDW-1 well files.

Fluid viscosity was estimated using multiple equations developed by McCain that first are used to estimate fluid viscosity at atmospheric conditions (equations B-72, 73, and 74), which is then converted to viscosity at bottom hole conditions (equation B-75) by using a correction factor. These equations can be found on page 527. As a primary input for the correlation, pressure is required. The formation pressure has been estimated at a depth of 7,924 feet using the average formation fluid specific gravity based on the TDS values provided in Table 1. Using this method, a value of 3,522 psi has been estimated as the pressure at the depth the gauges were set at for testing (7,924 feet BGL). At this pressure and a temperature of 126.4 °F, the following equations have been used to derive viscosity:

$$\mu_{w1} = AT^{B} \quad \text{(B-72)}$$

$$A = 109.574 - 8.40564 * S + 0.313314 * S^2 + 8.72213 * 10^{-3} * S^3 \quad \text{(B-73)}$$

$$B = -1.12166 + 2.63951 * 10^{-2} * S - 6.79461 * 10^{-4} * S^2 - 5.47119 * 10^{-5} * S^3 + 1.55586 * 10^{-6} * S^4 \quad \text{(B-74)}$$

$$\frac{\mu_w}{\mu_{w1}} = 0.9994 + 4.0295 * 10^{-5} * P + 3.1062 * 10^{-9} * P^2 \quad \text{(B-75)}$$

Where,

μ_{w1} is the viscosity of the formation fluid at atmospheric conditions
T_F is the bottom hole temperature in °F
S is the percent of solids
P is the bottom hole pressure in psi
μ_w is the viscosity of the brine at bottom hole conditions

Using these equations, a value of 0.57 centipoise is calculated for the formation fluid viscosity.

Formation Compressibility was estimated using equation L-89 provided on page 337. This equation was developed for limestone formations, consistent with the primary composition of the effective injection interval (see discussion in Section 11).

$$c_f = \frac{a}{(1+bc\Phi)^{\frac{1}{b}}} \quad \text{(L-89)}$$

Where,

a = 0.8535
b = 1.075
c = 2.303 * 10^6
Φ = 0.10

Based on this equation, a value of 8.20E-6 psi^{-1} is derived for formation compressibility.

Fluid compressibility was estimated using figures L-30 and L-31 on page 338 with a bottom hole temperature of 126.4 °F, a bottom hole pressure of 3,522 psi, and a dissolved solids weight of 2.65%. Using Figure L-31 to first estimate freshwater compressibility, a value of 2.86E-06 psi^{-1} is derived. Using Figure L-30, the coefficient of isothermal compressibility (ratio of brine compressibility over freshwater compressibility) was determined to be approximately 0.95. This results in a value of 2.70E-06 psi^{-1} for the formation fluid compressibility (c_w).

By combining the formation and formation fluid compressibility, the total system compressibility is determined. The total system compressibility (c_t) is approximately 1.09 E-05 psi^{-1}.

The values presented in this section have been used for analysis unless stated otherwise.

7. DAILY RATE HISTORY FOR A MINIMUM OF ONE MONTH PRECEDING THE FALLOFF TEST

The following table summarizes data acquired with HFNR well monitoring equipment for the month prior to and the month that testing was conducted.

TABLE 2
AUGUST AND SEPTEMBER INJECTION DATA

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
8/1/2021	1,090.16	342.79	71.55
8/2/2021	1,229.97	302.71	136.29
8/3/2021	1,077.95	259.84	77.21
8/4/2021	1,106.60	293.40	82.64
8/5/2021	1,110.41	292.57	85.14
8/6/2021	1,280.50	323.16	100.26
8/7/2021	1,210.35	234.88	88.24
8/8/2021	1,129.48	211.83	51.66
8/9/2021	1,165.19	259.18	61.46
8/10/2021	1,301.97	247.40	82.06
8/11/2021	1,367.51	238.85	81.93
8/12/2021	1,176.77	259.14	61.87
8/13/2021	732.81	307.86	22.18
8/14/2021	800.55	261.71	15.90
8/15/2021	951.47	288.59	24.89
8/16/2021	989.92	272.26	35.65
8/17/2021	1,028.87	277.71	45.03
8/18/2021	1,082.23	262.55	57.65
8/19/2021	1,106.54	266.76	62.11
8/20/2021	1,125.08	256.49	70.10
8/21/2021	1,171.90	289.52	90.82
8/22/2021	1,204.87	246.34	104.34
8/23/2021	1,245.38	306.31	139.34
8/24/2021	1,225.11	300.22	161.15
8/25/2021	1,225.06	281.16	170.14
8/26/2021	1,225.05	293.33	166.14
8/27/2021	1,171.62	247.68	143.37
8/28/2021	1,100.08	276.65	97.41
8/29/2021	1,100.08	287.07	92.71
8/30/2021	1,108.87	254.15	50.71

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
8/31/2021	1,163.59	297.47	22.47
9/1/2021	1,062.12	264.79	14.64
9/2/2021	1,156.33	298.75	13.80
9/3/2021	1,276.15	241.62	28.98
9/4/2021	1,257.95	281.19	27.56
9/5/2021	1,040.41	237.30	6.73
9/6/2021	995.28	276.42	-0.38
9/7/2021	1,014.06	332.86	3.77
9/8/2021	1,002.13	269.62	8.06
9/9/2021	919.57	268.47	1.61
9/10/2021	932.70	282.17	0.36
9/11/2021	924.91	251.18	-1.69
9/12/2021	950.08	284.47	-0.65
9/13/2021	950.06	293.06	-0.83
9/14/2021	950.08	262.63	-1.27

8. CUMULATIVE INJECTION INTO THE FORMATION FROM TEST WELL

At the time of shut-in for testing, the cumulative volume of waste injected into this well since operations began, based on OCD and HFNR records, is 47,079,054 barrels (1,977,341,285 gallons).

9. PRESSURE GAUGES

a. **Describe the type of downhole surface pressure readout gauge used included manufacturer and type -** Two downhole pressure and temperature memory gauges were utilized for the falloff testing. The gauges were 1.25-inch Quartz pressure and temperature memory gauges manufactured by DataCan (Part No. 100229).

b. **List the full range, accuracy and resolution of the gauge(s) -** The memory gauges are designed to measure pressure to an accuracy of 0.03% of full scale and a resolution of 0.01% of full scale, and operate within a range of 14.7 to 16,000 psi.

c. **Provide the manufacturer's recommended frequency of calibration and a calibration certificate showing the date the gauge was last calibrated -** These gauges are recommended to be calibrated once per year. These gauges were last calibrated on 11/25/2020 (Gauge #220992) and 12/19/2020 (Gauge #224821). The most recent calibration certificates are provided in Attachment 3. The bottom gauge (Serial Number - 220992) was utilized for analysis. The

bottom gauge was hung at a test depth of 7,887 feet BGL.

10. ONE-MILE AREA OF REVIEW (AOR)

A standard one-mile Area of Review (AOR) was evaluated for WDW-1 as part of the annual testing and reporting requirements. This evaluation was performed by Federal Abstract Company. The wells located within this one-mile AOR are listed in Attachment 6. This table contains the operator, well name, API number, well type, well status, location, and date of abandonment or completion. A figure displaying the wells located in the AOR and the wells in the surrounding sections has been provided as Figure 13.

Based on the data review, there have been no wells drilled within the AOR in the last year. A total of eight wells have been P&A'd within the AOR in the past year, one of which penetrates the injection interval (No Bluff 36 State Com #002, API #30-015-31123). According to records, the original top of the long string casing cement extended approximately 100 feet above the injection interval in the only offset plugged well that penetrated the injection interval within the AOR. Inside the casing, a cast-iron bridge plug was set at 9,827' and capped with a 35-foot cement plug. In addition, a total of eight 50-ft cement plugs were squeezed inside the long-string casing from 1,952' – 9,514'. Attachment 6 contains a plugging schematic for the referenced well. Table 3 lists the wells that have been plugged and abandoned within the prior year.

TABLE 3
WELLS PLUGGED WITHIN AOR DURING THE PAST YEAR

Operator	Well Name	API	Well Type	S	T	R	Total Vertical Depth (ft)	Lat Long	Date Plugged
APACHE CORPORATION	EMPIRE ABO UNIT #026A	30-015-01659	Oil	32	17S	28E	6,172	32.78540 -104.19981	3/8/2021
APACHE CORPORATION	EMPIRE ABO UNIT #026E	30-015-02606	Oil	5	18S	28E	6,254	32.78268 -104.19991	1/15/2021
APACHE CORPORATION	EMPIRE ABO UNIT #026B	30-015-01661	Oil	32	17S	28E	6,083	32.78814 -104.19877	3/12/2021
APACHE CORPORATION	EMPIRE ABO UNIT #272	30-015-22009	Oil	32	17S	28E	6,370	32.78453 -104.19737	9/23/2021
APACHE CORPORATION	EMPIRE ABO UNIT #019A	30-015-05934	Oil	36	17S	27E	5,970	32.78780 -104.22895	9/14/2021
APACHE CORPORATION	EMPIRE ABO UNIT #223	30-015-22527	Oil	6	18S	28E	6,250	32.77608 -104.21728	9/23/2021
APACHE CORPORATION	EMPIRE ABO UNIT #023C	30-015-02625	Oil	6	18S	28E	6,194	32.78208 -104.21328	3/26/2021
Contango Resources, Inc.	NO BLUFF 36 STATE COM #002	30-015-31123	Gas	36	17S	27E	10,050	32.79230 -104.22607	11/12/20

a. **Wells Located Within the One-mile AOR -** The wells located within the one-mile AOR are provided as Attachment 6. This table contains the operator, well name, API number, well type, well status, location, and date of abandonment or completion.

b. **Status of Wells Within AOR -** In Attachment 6, the abbreviation SWD indicates Salt Water Disposal, P&A indicates Plugged and Abandoned, TA indicates Temporarily Abandoned, and AL indicates Abandoned Location.

c. **Provide details on any offset producers and injectors completed in the same injection interval -** HFNR operates three other Class I Injection wells, two of which are completed in the same interval, WDW-2 and WDW-3. Neither well is located within the one-mile WDW-1 AOR. Based on public data, there is one additional well, not operated by HFNR that is located within the AOR and injects into the same interval. This well is the Walter Solt State #001 (ID - 48) operated by Walter Solt, LLC. No offset producers exist in the injection interval within the AOR based on public data. Additional information is presented in Section 12 of this report.

11. GEOLOGY

a. Describe the geologic environment of the injection interval
b. Discuss the presence of geologic features, i.e., pinchouts, channels and faults, if applicable
c. Provide a portion of a relevant structure map, if necessary

The following discussion provides responses to the requirements listed above. This discussion is primarily based on information presented in previous permit applications for this well.

The WDW-1, 2 and 3 wells are located in the northern part of the Delaware Basin. The injection interval for these three wells is composed of carbonates from the Permian-age Lower Wolfcamp Formation, Pennsylvanian-age Cisco Formation, and Pennsylvanian-age Canyon Formation. The Wolfcamp unconformably overlies the Cisco and Canyon Formations. Table 3, sourced from the 2019 MIT report, presents a summary of the logged formation depths for these formations in each of the wells. The geologic interpretations have been confirmed but not revised as part of this report.

TABLE 4
HFNR INJECTION FORMATION TOPS – WDW-1, 2 and 3

Formation	WDW-1 (KB = 3,693 ft AMSL)		WDW-2 (KB = 3,623 ft AMSL)		WDW-3 (KB = 3,625 ft AMSL)	
	MD, KB (ft)	AMSL, KB (ft)	MD, KB (ft)	AMSL, KB (ft)	MD, KB (ft)	AMSL, KB (ft)
Lower Wolfcamp	7,450	-3,757	7,270	-3,647	7,303	-3,678
Cisco	7,816	-4,123	7,645	-4,022	7,650	-4,025
Canyon	8,475	-4,782	8,390	-4,767	8,390	-4,765
Base of Injection Zone (Base of Canyon)	9,016	-5,323	8,894	-5,271	8,894	-5,269

The lower portion of the Wolfcamp Formation, referred to as the Lower Wolfcamp, is the uppermost unit in the injection interval. The top of the zone ranges from a depth of 7,303 – 7,450 feet KB in the referenced wells. A structure map of the top of the Lower Wolfcamp is provided in Figure 3. The Wolfcamp ranges from fine to medium-grained, limestones with interbedded shales (Meyer, 1966). The picks for the top of the Wolfcamp were made from log correlations. The Wolfcamp is overlain by the dense, dolomitic Abo Formation. The gross thickness of the Lower Wolfcamp is approximately 363 feet thick. According to porosity log data from the area, the Wolfcamp porosity is generally greater than 5%.

The Cisco Formation is described as consisting of limestone/dolomite with some interbedded shales and fine-grained sandstones (Lindsay et al., 2006). The top of the Cisco occurs at approximately 7,645 – 7,816 feet KB. A structure map of the top of the Cisco can be found in Figure 4. Coarse-grained dolomites have been noted to have interstitial to cavernous porosity (Lindsay et al., 2006). At the three HFNR wells, the Cisco Formation is a porous dolomite that ranges from gross thickness of 659 feet to 745 feet. The net thickness using a porosity cutoff of greater than 10% is approximately 100 feet in WDW-1, 32 feet in WDW-2, and 65 feet in WDW-3.

The Canyon Formation typically consists mostly of brown limestone with interbedded grey shales (Lindsay et al., 2006). The top of the Canyon occurs at approximately 8,400 KB. Some white sandstone and conglomerates have been noted at the base of the Canyon (Lindsay et al., 2006). Some dolomites have been noted to be present in the Canyon as well. Gross thickness of the Canyon Formation is approximately 504-541 feet in the three wells. The net thickness using a porosity cutoff greater than 5% is approximately 34 feet in WDW-1, 30 feet in WDW-2, and 10 feet in WDW-3. No intervals appear to have a porosity more than 10%, based on logs. A structure map is provided in Figure 5 which displays the top of the Strawn Formation, indicating the bottom of the Canyon Formation.

12. OFFSET WELLS

HFNR operates three other Class I Injection wells locally, two of which are completed in the same interval, WDW-2 and WDW-3. These wells are not within the 1-mile AOR surrounding WDW-1. WDW-2 is approximately 10,900 feet to the southwest of WDW-1, while WDW-3 is approximately 7,800 feet to the southwest of WDW-1. These wells were injected into at a constant rate during the duration of testing this year, are at a significant distance from the test well in a relatively high-permeability system, and are not considered to have had a significant impact on the testing performed on WDW-1.

There is one additional well, not operated by HFNR, that is within the AOR and injects into the same interval. As noted in 10.c, this well is the Walter Solt State #001 (ID - 48) operated by Walter Solt, LLC.

a. **Identify the distance between the test well and any offset wells completed in the same injection interval –** The Walter Solt State #001 is approximately 4,600 feet to the southeast. Distance to the other HFNR injectors is discussed in the preceding paragraph.

b. **Report the status of the offset wells during both the injection and shut-in portions of the test -** The offset HFNR wells were operated at a constant rate

during testing.

c. **Describe the impact, if any, of the offset wells during both the injection and shut-in portions of the test** - There was no significant impact on the character of the falloff test and the development of a useful test from these offset injectors. No injection was listed on the state website for the Walter Solt State #001 well during September 2021. Further discussion of possible late-time effects is included in Section 15 of this report.

13. CHRONOLOGICAL LISTING OF THE DAILY TESTING ACTIVITIES

a. **Date of the test** - Testing was performed from September 15 through 27, 2021.

b. **Time of the injection period** - Constant-rate injection occurred for approximately 58 hours before the falloff test began. This injection period exceeded the duration of the falloff. Figure 7 presents the test history.

c. **Type of injection fluid** - Filtered waste was utilized as test injection fluid.

d. **Final injection pressure and temperature prior to shutting in the well** - Prior to shutting in the well, the bottom hole injection pressure was 4,357.0 psia (at 7,887 feet BGL) and the injection rate was 80.0 gpm (2,743 bwpd) with a measured bottom hole temperature of 100.0 °F.

e. **Total shut-in time** - The well was shut-in for approximately 44 hours for testing.

f. **Final static pressure and temperature at the end of the falloff portion of the test** - At the conclusion of the test, the final bottom hole pressure was 4,122.8 psia and the final bottom hole temperature was 105.3 °F.

14. DESCRIBE THE LOCATION OF THE SHUT-IN VALVE USED TO CEASE FLOW TO THE WELL FOR THE SHUT-IN PORTION OF THE TEST

The well was shut-in using a wing valve located on the inlet side of the wellhead.

15. PRESSURE FALLOFF ANALYSIS

This section addresses requirements 15-20 of Section IX, Report Components, of the OCD falloff test guidelines.

The equations, parameters and calculations utilized to derive these values are detailed further in the following discussion. Table 4 contains input values used to perform the specified calculations.

The raw digital data collected during the test is provided in Attachment 7. The contracted service company that supplied the gauges used for testing generated an injection falloff test summary report based on the data that was collected. This report is provided in Attachment 4.

a. **Radius of test investigation -** The radius of investigation for this test was determined to be approximately 9,456 feet based on the average permeability derived from test analysis.

b. **Time to beginning of the infinite acting portion of the test -** The time at which the test began to display attributes of radial flow was approximately 9 hours after shut-in. This value was derived from the log-log plot.

c. **Slope(s) determined from the semi-log plot -** The slope for the middle-time radial period, as determined from the semi-log plot, was 0.9676 psi/cycle.

d. **Transmissibility (kh/μ) -** The transmissibility was determined to be 460,906 md-ft/cp.

e. **Permeability (k) -** The permeability was determined to be 1,501 md.

f. **Skin Factor (s) -** The skin factor was determined to be 264.0 units.

g. **Pressure drop due to skin (ΔP_{skin}) -** The pressure drop due to skin was determined to be 222.0 psi

h. **Flow efficiency -** The flow efficiency was determined to be 0.05.

i. **Flow capacity (kh) -** The flow capacity (permeability-thickness) was determined to be 262,716 md-ft.

j. **P_{1hr} -** The extrapolated 1-hr pressure was determined to be 4,128.3 psi.

TABLE 5
FALLOFF TEST ANALYSIS INPUT VALUES

Parameter	Value	Unit
Formation Thickness, h	175	feet
Porosity, Φ	10	percent
Viscosity, μ	0.57	centipoise
Formation Compressibility, c_f	8.20E-06	1/psi
Total Compressibility, c_t	10.90E-06	1/psi
Formation Volume Factor, B	1.00	bbl/stb
Wellbore Radius, r_w	0.3646	feet
Final Well Flowing Pressure, p_{wf}	4,357.0	psia
Final Injection Rate, q_{final}	2,743 80.0	bwpd (gpm)
Horner Straight Line Slope, m	0.9676	psi/cycle

The average historical injection period used to account for total volume in the analysis was calculated by dividing the cumulative historical injection through August 17 ,2020 (43,995,961 barrels) by the final injection rate (163 gpm). This resulted in a value of 188,939 hours. This value of 188,939 hours of injection at 163 gpm was used in conjunction with the injection data collected from August 17, 2020 through September 15, 2021. The total waste volume injected up to the time of shut-in utilized for calculations was 1,977,341,285 gallons (47,079,554 bbls).

To determine the mobility-thickness (transmissibility), the following equation was utilized. The resulting transmissibility was 460,906 md-ft/cp.

$$\frac{kh}{\mu} = 162.6\frac{q_{final}B}{m}$$

Where,

k is the permeability, in md
h is the formation thickness, in feet
μ is the viscosity of the formation fluid, in cp
q is the final flow rate, in bpd
B is the formation volume factor in RB/STB
m is the slope of the line assigned to the radial flow period on the semi-log plot, in psi/cycle
and 162.6 is a units conversion constant

$$\frac{kh}{\mu} = Transmissibility = 162.6\frac{2{,}742.86 * 1.0}{0.9676} = 460{,}906\frac{md-ft}{cp}$$

The transmissibility derived from the slope of the semi-log straight line was then used to determine the permeability thickness. The resulting permeability-thickness was 262,716 md-ft.

$$kh = \left(\frac{kh}{\mu}\right)\mu = 460{,}906\left(\frac{md-ft}{cp}\right)0.57\ cp = 262{,}716\ md-ft$$

This permeability thickness was then used to determine the permeability of the reservoir. The resulting permeability was 1,501 md.

$$k = \frac{kh}{h} = \frac{262{,}716\ md-ft}{175\ ft} = 1{,}501\ md$$

In order to determine if the appropriate viscosity was utilized in the previous calculations, it must be determined if the pressure transient was traveling through reservoir fluids. This is done by determining the time it is expected to take the pressure transient to travel through the injected fluid. The first step of this is to determine the radius of waste emplaced by injection. The piston-like displacement radius was estimated to be 2,193 feet.

$$r_{waste} = \sqrt{\frac{0.13368 * V}{\pi h \Phi}}$$

Where,

r_{waste} is the distance to the waste front, in feet
V is the total volume of fluid injected into the well, in gallons
h is the formation thickness, in feet
Φ is the porosity, as a fraction
0.13368 is a conversion constant

$$r_{waste} = \sqrt{\frac{0.13368 * (1{,}977{,}341{,}285)}{\pi * 175 * 0.10}} = 2{,}193\ feet$$

Based on this radius, the time for a pressure transient to travel through this fluid can be calculated. The resulting time was approximately 1.89 hours.

$$t_{waste} = 948\frac{\Phi\mu_{waste}c_t r_{waste}^2}{k}$$

Where,

t_{waste} is the time for a pressure transient to reach the waste front, in hours
Φ is the porosity, as a fraction
μ_{waste} is the viscosity of the waste, in cp
r_{waste} is the radius of the waste front, in feet
c_t is the total compressibility, in psi^{-1}
k is the permeability, in md
948 is a conversion constant

$$t_{waste} = 948\frac{0.10 * 0.57 * 10.90E-06 * (2{,}193)^2}{1{,}501} = 1.89\ hours$$

Based on this result, and the time it took for radial flow to be reached (9.0 hours), it is likely that the pressure transient was dominated by reservoir fluid properties during the middle-time radial flow period, indicating that the appropriate viscosity was used for analysis.

The near wellbore damage, referred to as skin, can be calculated based on the results of the straight line, semi-log analysis as well. This is done by utilizing the following equation. The result of this calculation was a skin of 264.0 units.

$$s = 1.151\left(\frac{P_{wf} - P_{1hr}}{m} - log\left(\frac{k}{\Phi\mu c_t r_w^2}\right) + 3.23\right)$$

Where,

s is skin damage, in units
P_{wf} is the shut-in well pressure, in psi
P_{1hr} is the extrapolated pressure at a time of 1 hour, using the slope of the straight line from the semi-log analysis, in psi
m is the slope of the radial line, in psi/cycle
k is the permeability, in md
Φ is the porosity, as a fraction
μ is the viscosity, in cp
r_w is radius of the wellbore in feet
1.151 and 3.23 are constants

$$s = 1.151\left(\frac{4{,}357.0 - 4{,}128.3}{0.9676} - log\left(\frac{1{,}501}{0.10 * 0.57 * 10.90E-06 * 0.3646^2}\right) + 3.23\right)$$

$$= 264.0$$

The pressure contribution of the skin term to wellbore pressure can be calculated using the following equation. The result of this calculation was 222.0 psi of pressure due to skin.

$$\Delta P_{skin} = 0.869 * m * s$$

Where,

ΔP_{skin} is the change in pressure due to skin damage, in psi
m is slope of the radial line, in psi/cycle
s is skin, in units
0.869 is a conversion constant

$$\Delta P_{skin} = 0.869 * 0.9676 * 264.0 = 222.0\ psi$$

The flow efficiency (FE) can be determined using the following equation, provided within the OCD Guidelines (Section IX, 15, h). The result of this calculation was 0.05.

$$FE = \frac{P_{wf} - \Delta P_{skin} - P_{end\ of\ test}}{P_{wf} - P_{end\ of\ test}}$$

Where,

P_{wf} is the shut-in well pressure, in psi
ΔP_{skin} is the change in pressure due to skin damage, in psi
$P_{end\ of\ test}$ is the pressure at the end of the falloff test, in psi

$$FE = \frac{4{,}357.0 - 222.0 - 4{,}122.8}{4{,}357.0 - 4{,}122.8} = 0.05$$

The test radius of investigation (r_{inv}) can be determined using the following equation. The result of this calculation was 9,456 feet.

$$r_{inv} = 0.029\sqrt{\frac{kt}{\Phi\mu c_t}}$$

Where,

k is permeability, in md
t is time, in hours
Φ is porosity, as a fraction
μ is viscosity, in cp
c_t is total compressibility, in psi^{-1}
0.029 is a constant

$$r_{inv} = 0.029\sqrt{\frac{1{,}501 * 44}{0.1 * 0.57 * 10.90E-06}} = 9{,}456\ feet$$

Based on examination of the log-log diagnostic plot provided as Figure 9, the early time data is dominated by changing wellbore storage. The change in storage trend in the falloff after approximately 1-2 minutes may be associated with a transition to vacuum. This event extended the early time period of the test. It is likely that the test was reaching the onset of radial flow approximately 10 hours after shut-in and the test has been analyzed using the analytical Horner semi-log method based on the reasonable assumption that a period of radial flow exists in the data. However, late time data in the test is potentially impacted by gauge noise and non-radial behavior. The derivative shows that offset heterogeneity, interference, and/or dual porosity effects may influence the data for the remainder of the test, with no clear indication of the late-time transition. Figure 10 shows the semi-log plot of the falloff with a straight line representing the possible radial flow period consistent with the deviation from storage shown on the log-log plot. The late-time tail at the end of the test is not accounted for in this analysis. The simulation analysis presented in Figure 9 generally supports the more simplistic graphical analysis that relies upon the semi-log slope.

The following figures are provided illustrating the test analysis and results:

- Figure 6 - Cartesian Plot of Pressure, Temperature and Rate vs. Time
- Figure 7 - Full Rate History Plot
- Figure 8 - Cartesian Plot of Pressure Falloff with Model Match
- Figure 9 - Log-log Derivative Plot with Model Match
- Figure 10 - Semi-log Horner Plot with Model Match
- Figure 11 - Daily Injection Rate History for Month Prior to Test Plot
- Figure 12 - Hall Plot

As specified by OCD requirements, a Hall Plot (Figure 12) generated from the data presented in Table 2 over the month leading up to the falloff test this year is included. It is noted that this plot of a limited elapsed time of the Hall function is a simplistic presentation based on correcting average daily wellhead pressures to

bottomhole conditions based on hydrostatic head and tubing friction loss. The plot has been made with these BHP values rather than a pressure change (or dp) that would be generated by subtracting original reservoir pressure from the injection pressure value. Because this BHP value is used, the Hall plot slope is not proportional to other indicators, but qualitatively can yield insight to well conditions based on changing slopes. Further, consistent with the Hall method, it is assumed that the reservoir is homogenous and isotropic, that none of the average daily pressures are impacted by transient flow (relatively continuous, constant rate injection took place), and that no offset wells are impacting pressure at this well during the time that the Hall function has been plotted. The slope of the data is fairly linear, and this linearity is consistent with no significant changes in well condition taking place during this time period. Based on this observed linear trend, there are no significant concerns noted with regard to well or reservoir performance.

Table 5 summarizes historical well test analysis results, including the results from the test this year. Attachment 5 presents a summary of the falloff test analysis.

TABLE 6
HISTORICAL AMBIENT RESERVOIR TESTING

Year	Fill Depth (feet)	Permeability (md)	Mobility-thickness (md-ft/cp)	Skin (units)	P* (psia)
2021	8,375	1,501	460,906	264.0	4,111.4
2020	NA	1,155	320,873	117.9	4,153.3
2019	8,512	1,129	346,733	129.0	4,290.9
2018	8,470	1,025	314,769	87.0	4,361.6
2017	9,001	412	126,471	57.0	4,359.6
2016	8,890	520	159,662	67.0	4,433.2
2015	8,995	423	130,002	44.0	4,542.8
2014	8,990	546	167,698	44.0	4,404.7
2012	9,018	661	202,929	36.0	4,008.0
2011	9,001	685	210,441	69.0	3,846.2
2010	9,001	521	159,979	93.0	3,716.9
2009	9,001	883	271,155	77.0	3,591.6
2008	NA	1,592	488,655	262.0	3,527.4
Permit	NA	250	40,094	NA	NA

All raw data generated by the test will be kept on file by HFNR for a period not less than five years. The raw data has been provided as a part of this report, with additional files available upon OCD request.

16. INTERNAL MECHANICAL INTEGRITY

On September 17, the annulus was pressured to 538.5 psi. The well had been shut in for approximately 48 hours prior to the test, ensuring thermal equilibrium. A calibrated digital pressure gauge (Fluke 700G29, 3,000 psi, SN - 2643157) supplied by Petrotek was installed on the annulus at the wellhead. The well and test gauge were then isolated from the rest of the system and annulus pressure was then monitored for a period of thirty minutes at 5-minute intervals. During the test the pressure decreased by 5.3 psi. Since a change of 10% (53.9 psi) of the test pressure is allowable, this test is within acceptable specifications.

Attachment 2 presents a copy of the gauge certification. Attachment 7 contains the digital data collected during the APT. Pressures were observed as follows during testing:

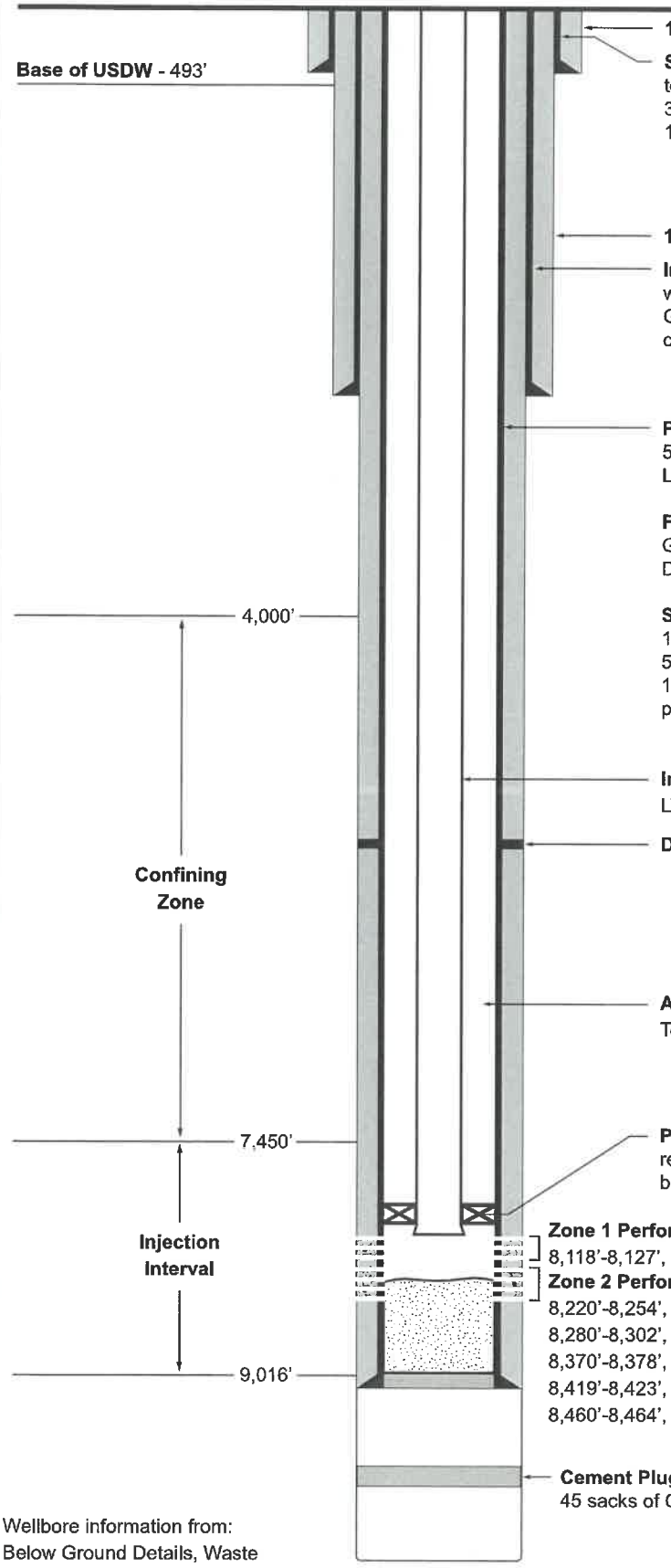
TABLE 7
ANNULUS PRESSURE TEST MEASUREMENTS

Time, Minutes	0	5	10	15	20	25	30
Annulus Pressure, Psi	538.5	537.2	536.0	535.1	534.3	533.7	533.2

FIGURES

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 2.5' above ground level.
Ground Level Elevation: +3,678' MSL



17-1/2" Hole

Surface Casing (0' - 390'): 13-3/8", 48 lb/ft, J-55, ST&C cemented to surface with 150 sacks of Class C with 3% calcium chloride, 375 sacks of Class C Litewate with 3% calcium chloride and 1/2 lb/sk flocele. Circulated 86 sacks to surface.

12-1/4" Hole

Intermediate Casing (0' - 2,555'): 9-5/8", 36 lb/ft, J-55, ST&C cemented with 800 sacks of Class C Lite with 1/2 lb/sk flocele and 2 lb/sk Gilsonite and 12% salt. Followed by 200 sacks of Class C with 2% calcium chloride. Circulated 133 sacks to surface.

Protection Casing (0' - 9,094'): 7", 26 lb/ft, P-110, LT&C (Surface - 5,845'). 7", 29 lb/ft, P-110, LT&C (5,845' - 7,031'). 7", 29 lb/ft, N-80, LT&C (7,031' - 9,094').

First Stage: 600 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, and 1 lb/sk salt mixed at 13.0 ppg. Opened DV tool at 5,498' and circulated 142 sacks to surface.

Second Stage: Lead Slurry: 220 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 550 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, 0.1% HR-7, and 1 lb/sk mixed at 13.0 ppg. Circulated 75 sacks to surface. Topped out with 20 sacks of premium plus 3% calcium chloride.

Injection Tubing (0' - 7,879'): 4-1/2", 11.6 lb/ft, N-80, SMLS, R3, LT&C

DV Tool (5,498')

Annulus Fluid: 8.7 lb/gal brine water mixed with UniChem Techni-Hib 370 corrosion inhibitor

Packer (7,879'): 7" x 3-1/2" EVI Oil Tools (Arrow), Model X-1 retrievable packer. Minimum I.D. = 3.0". Wireline re-entry guide at bottom. To release, turn 1/4-turn to the right and pick up.

Zone 1 Perforations: 7,924'-7,942', 7,974'-8,030', 8,050'-8,056', 8,066-8,080', 8,118'-8,127', 8,132'-8,140', 8,160'-8,164', 8,170'-8,188'.

Zone 2 Perforations: 8,220'-8,254', 8,260'-8,270', 8,280'-8,302', 8,360'-8,366', 8,370'-8,378', 8,400'-8,410', 8,419'-8,423', 8,430'-8,446', 8,460'-8,464', 8,470'-8,476'.

Cement Plug (9,624' - 9,734'): 45 sacks of Class H

Top of Fill: 8,375' (Tagged 8/2021)
PBTD: 9,004'
TD: 10,200'

Wellbore information from: Below Ground Details, Waste Disposal Well No. 1, by Subsurface Technology, Figure 1, 2001.

NOT TO SCALE

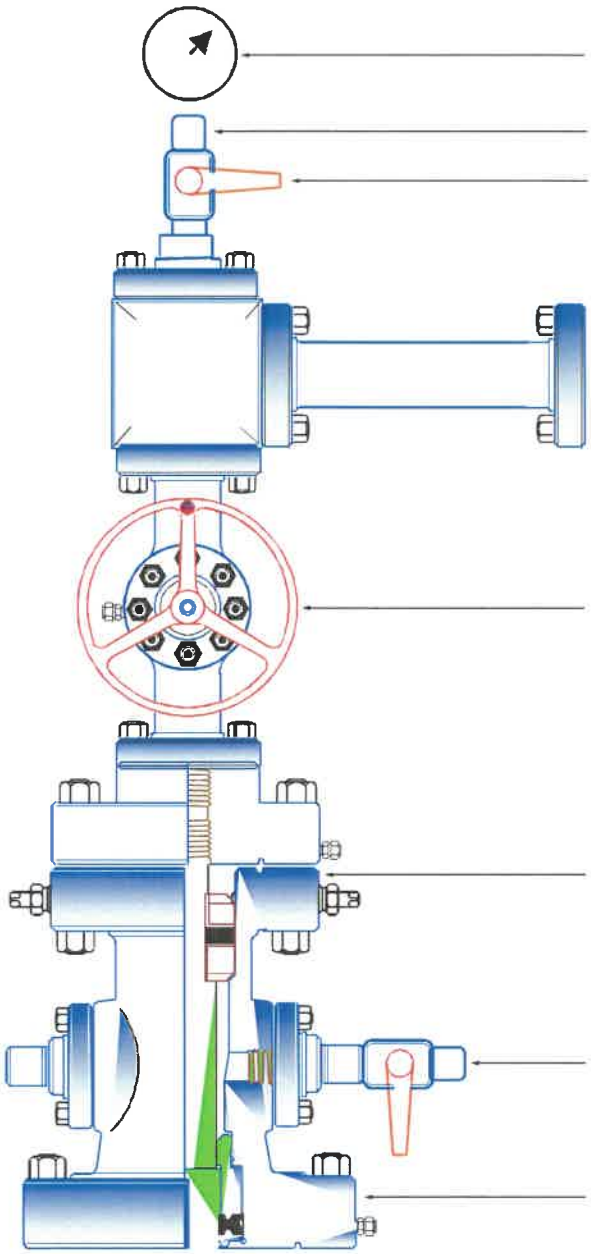
HOLLYFRONTIER

Figure 1
WDW No. 1,
Wellbore Schematic
2021 FOT/MIT Report

Scale: NTS	Date: October 2021	
Fig_01_HF_Artesia_2021_WDW_01.pdf	By: WEK	Checked: LW

Petrotek
5935 South Zang Street, Suite 200
Littleton, Colorado 80127 USA
303-290-9414
www.petrotek.com

OCD UIC Permit: UICI-008-1
Well API Number: 30-015-27592
Eddy County, New Mexico
Sec. 31, T17S-R28E
Lat. 32.78517° / Long. -104.21376° (NAD 83)



Well Head information partially from: Figure 5, Mewbourne Well No. 1 Wellhead Schematic by Superior Wellhead.

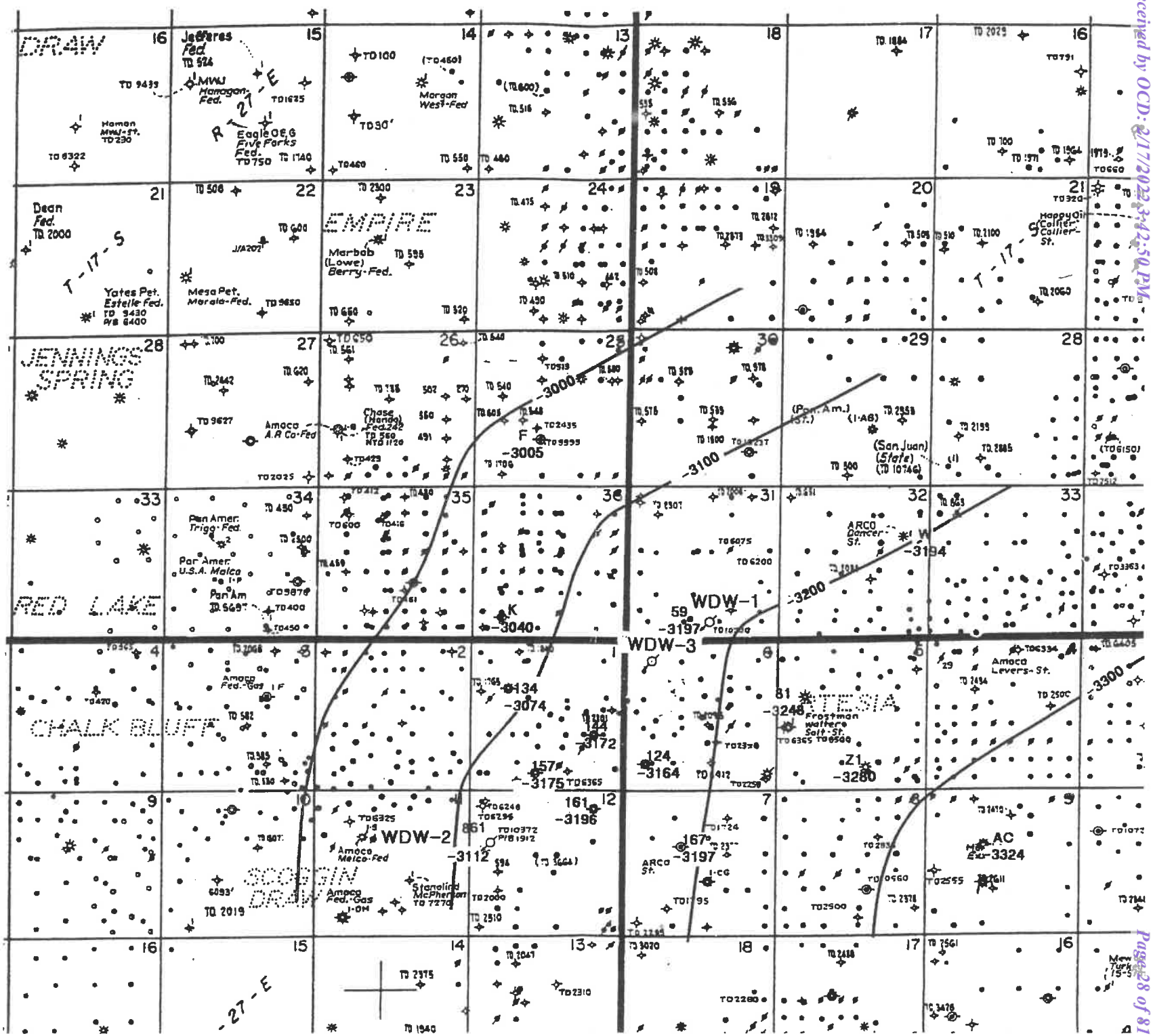
NOT TO SCALE

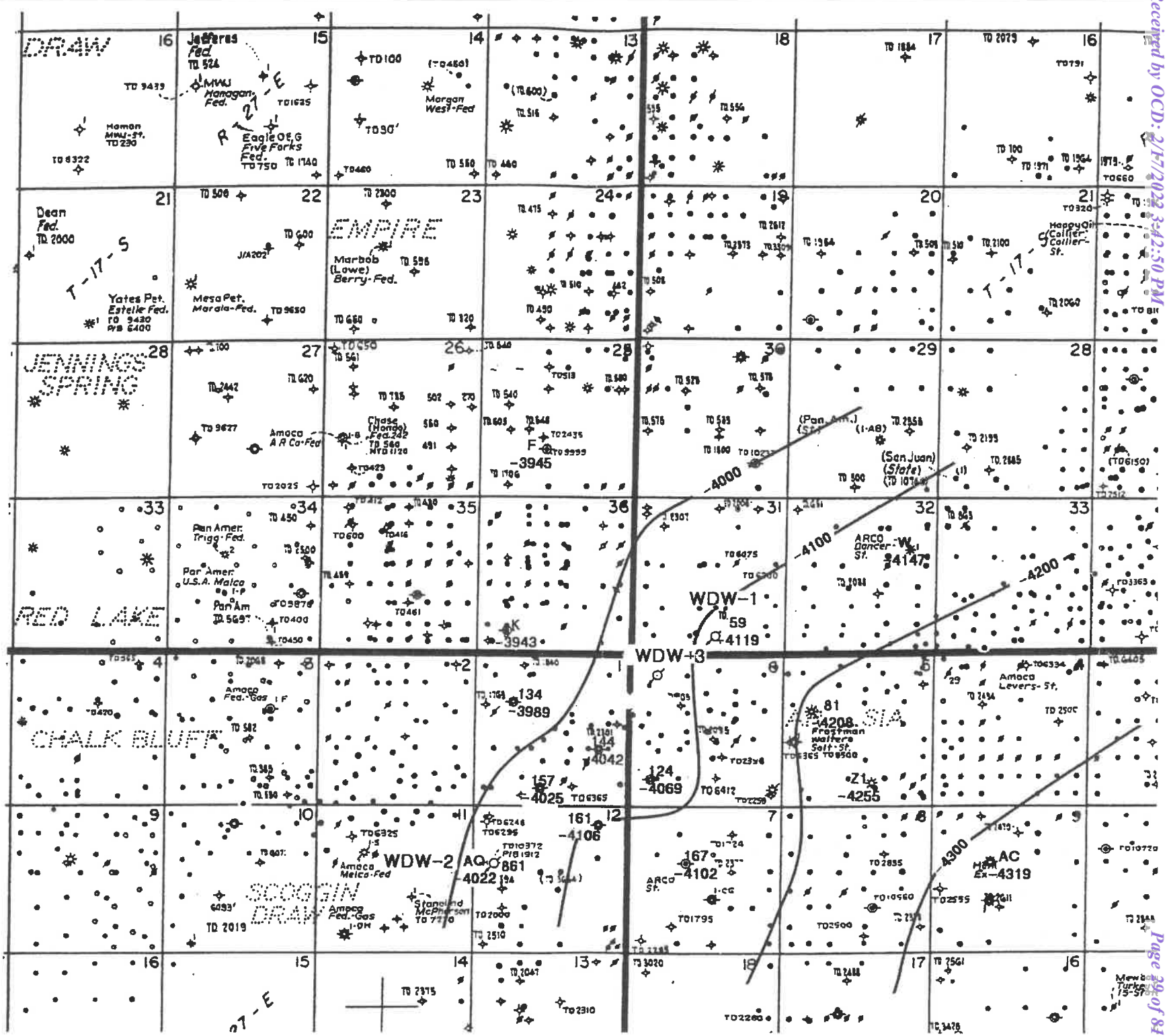
HOLLYFRONTIER

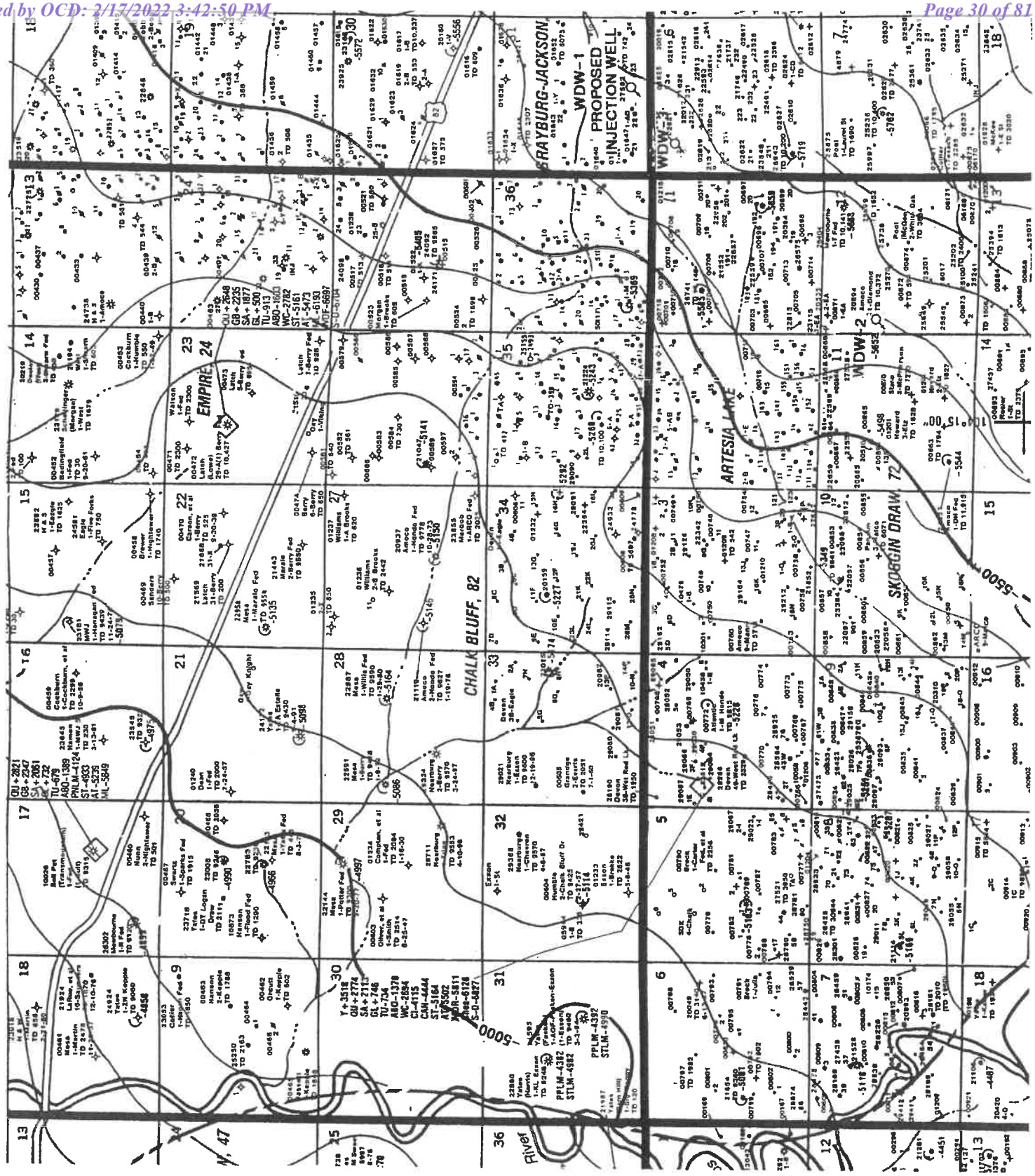
Figure 2
WDW No. 1,
Wellhead Schematic
2021 FOT/MIT Report

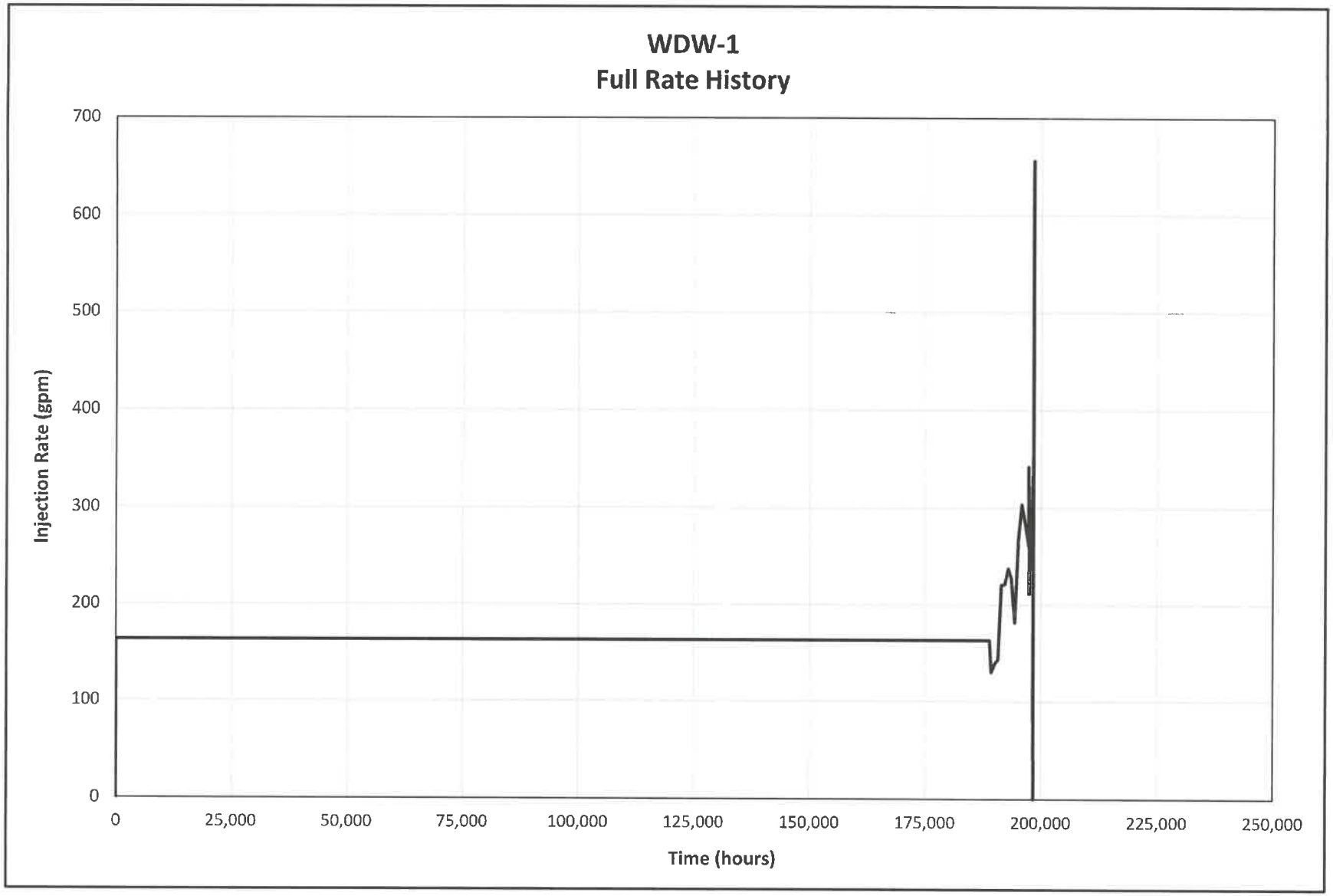
Scale: NTS	Date: October 2021	
Fig_02_HF_Artesia_2021_WDW_01.pdf	By: WEK	Checked: LW

Petrotek
5935 South Zang Street, Suite 200
Littleton, Colorado 80127 USA
303-290-9414
www.petrotek.com






PROPOSED
INJECTION WELL
WDW-1
WDW-2
WDW-3
EMPIRE
ARTESIA
GRAYBURG-JACKSON
CHALK BLUFF, 82
SKAGGS DRAW
ARTESIA LAKE
Pecos River



HOLLYFRONTIER

Figure 6
Full Rate History
2021 Well Testing

Petrotek

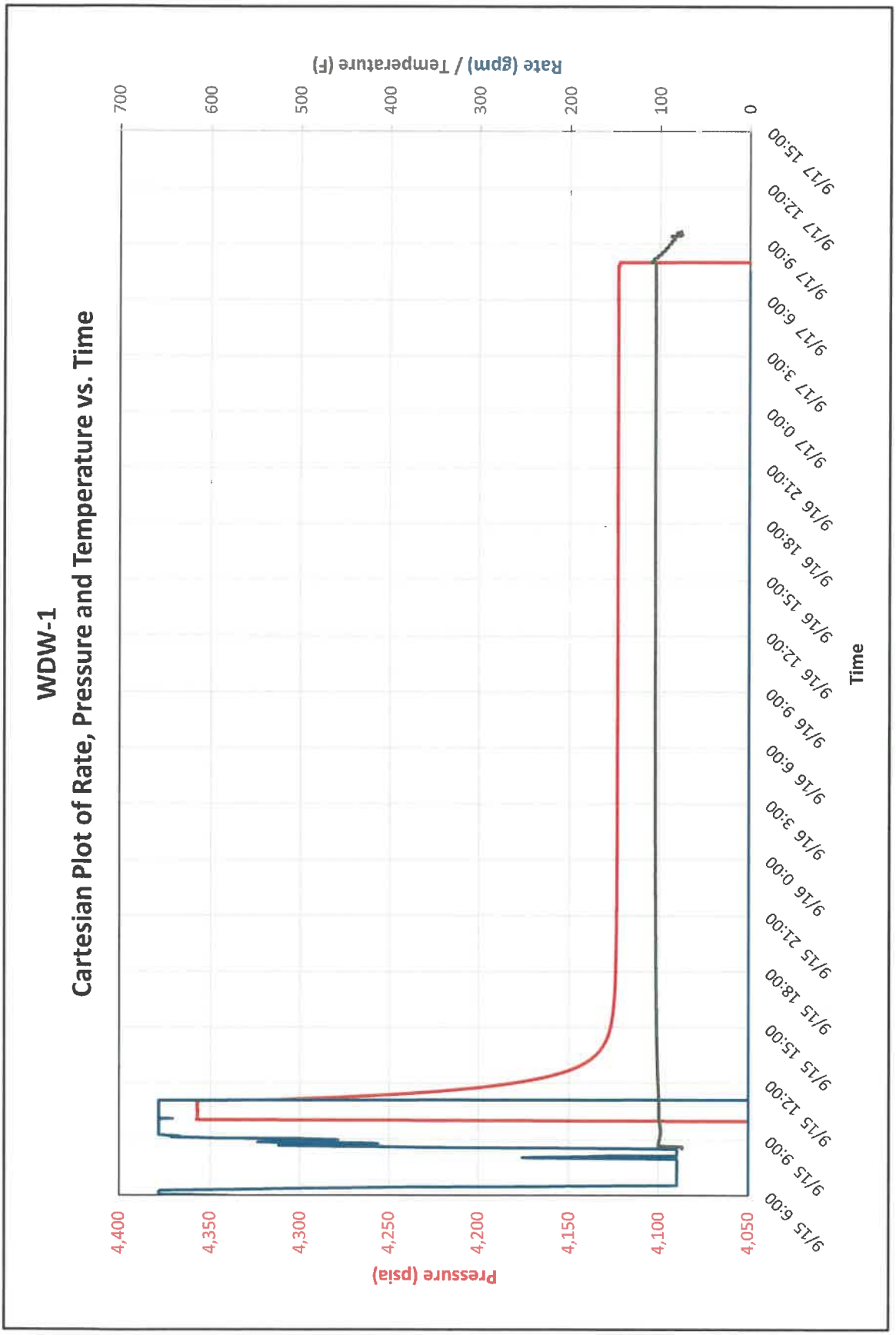


Figure 7
Cartesian Plot of Rate, Pressure and Temperature vs Time
2021 Well Testing

Petrotek

HOLLYFRONTIER

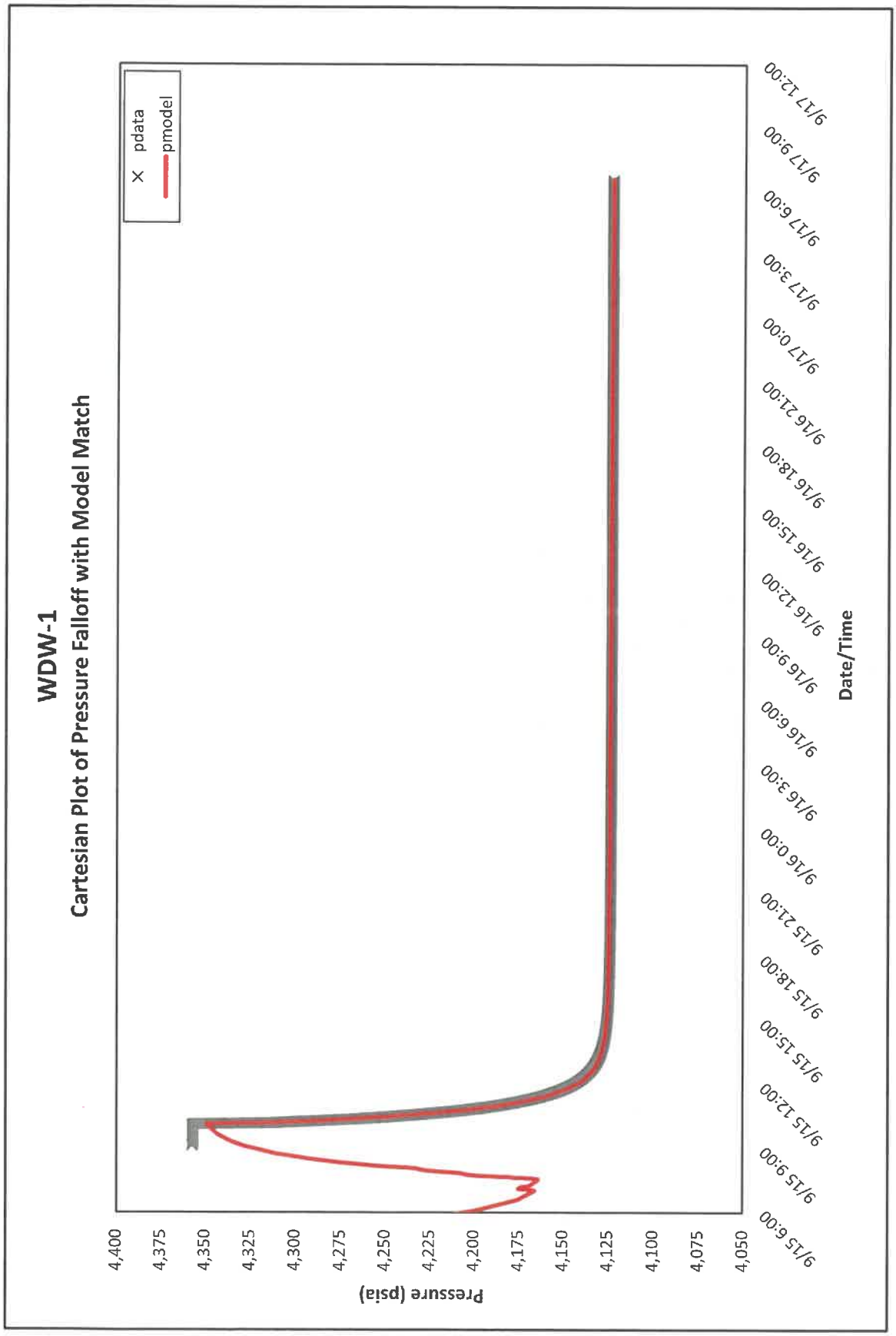


Figure 8
Cartesian Plot of Pressure Falloff with Model Match
2021 Well Testing

HOLLYFRONTIER

Petrotek

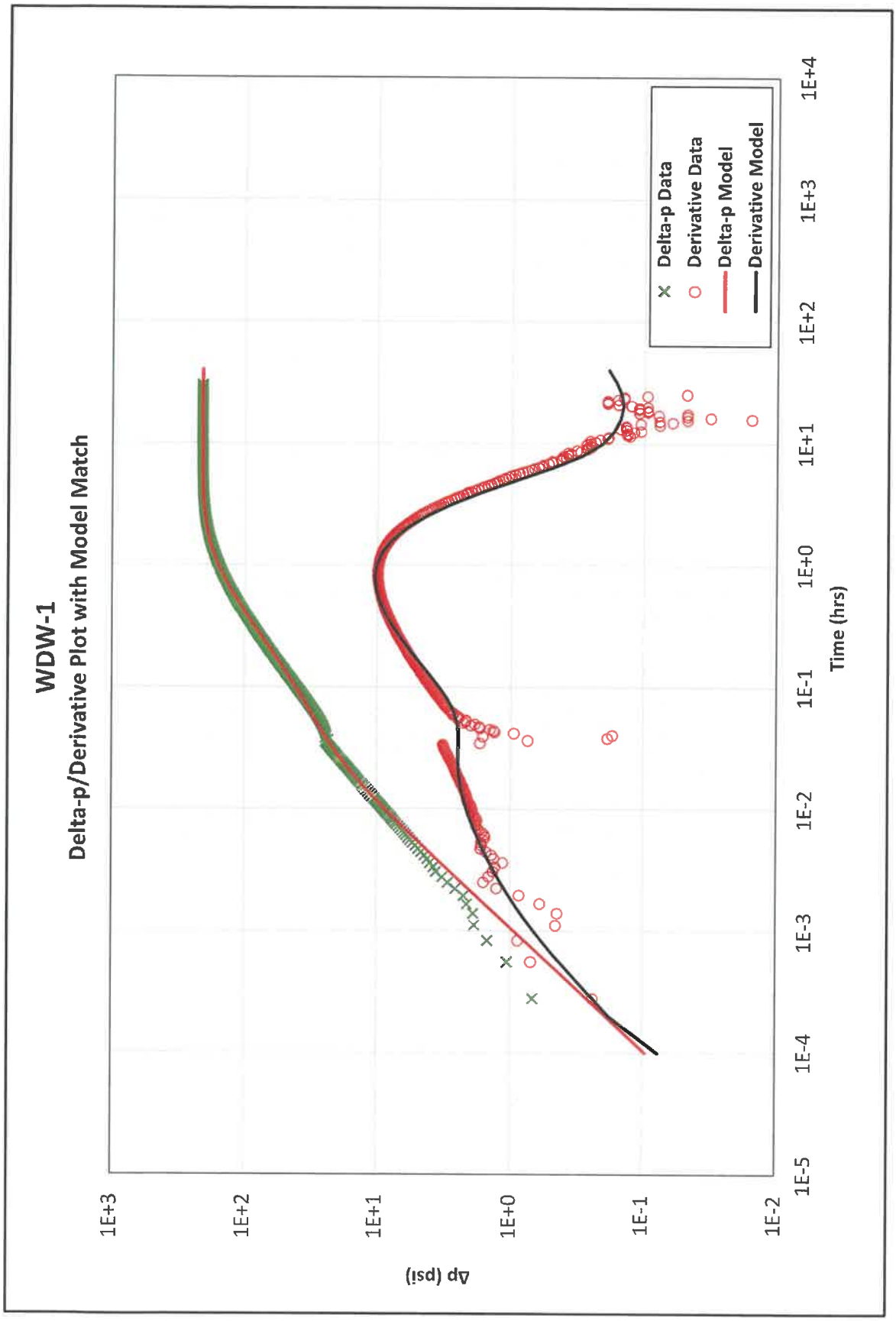


Figure 9
Delta-p/Derivative Plot with Model Match
2021 Well Testing

HOLLYFRONTIER

Petrotek

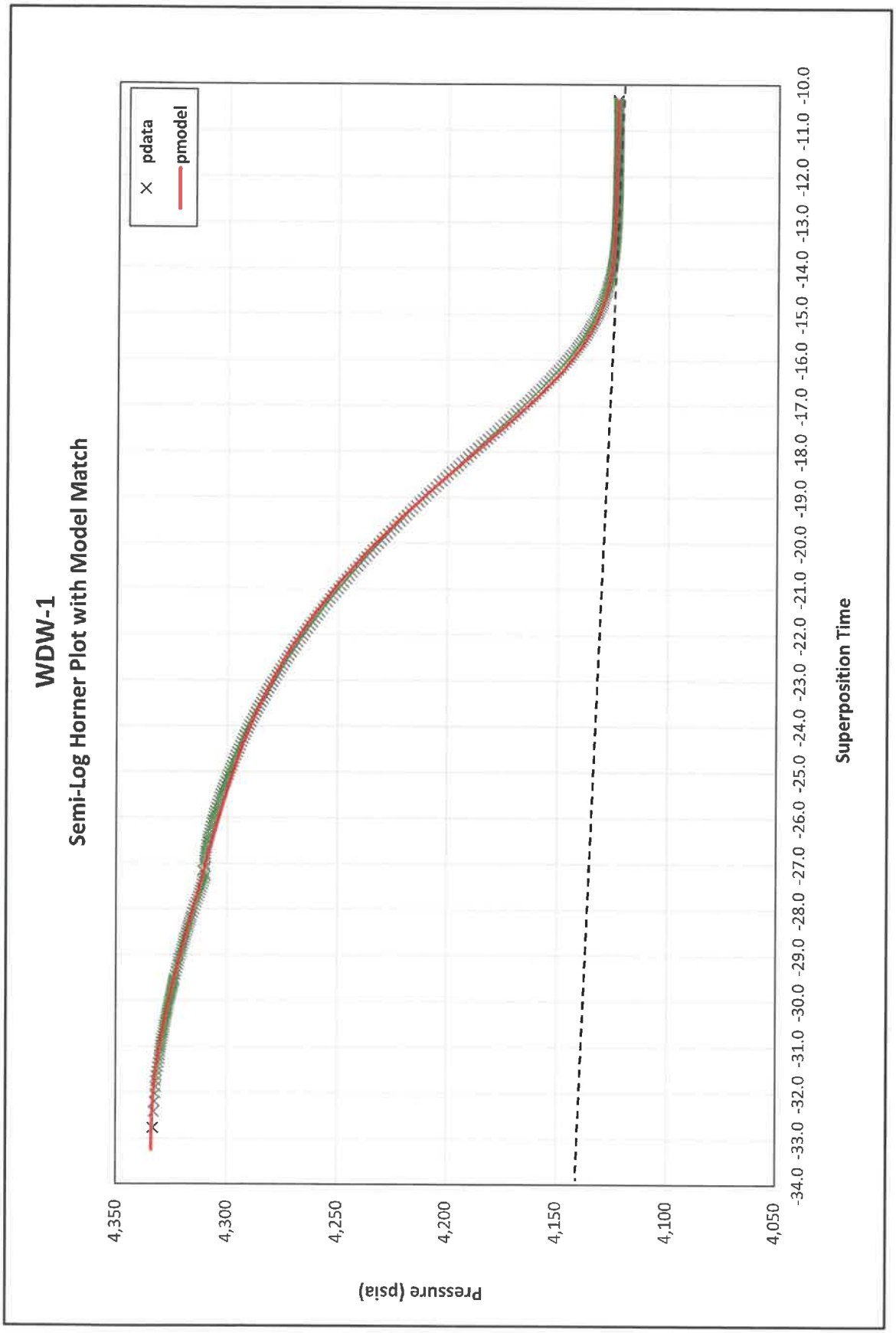
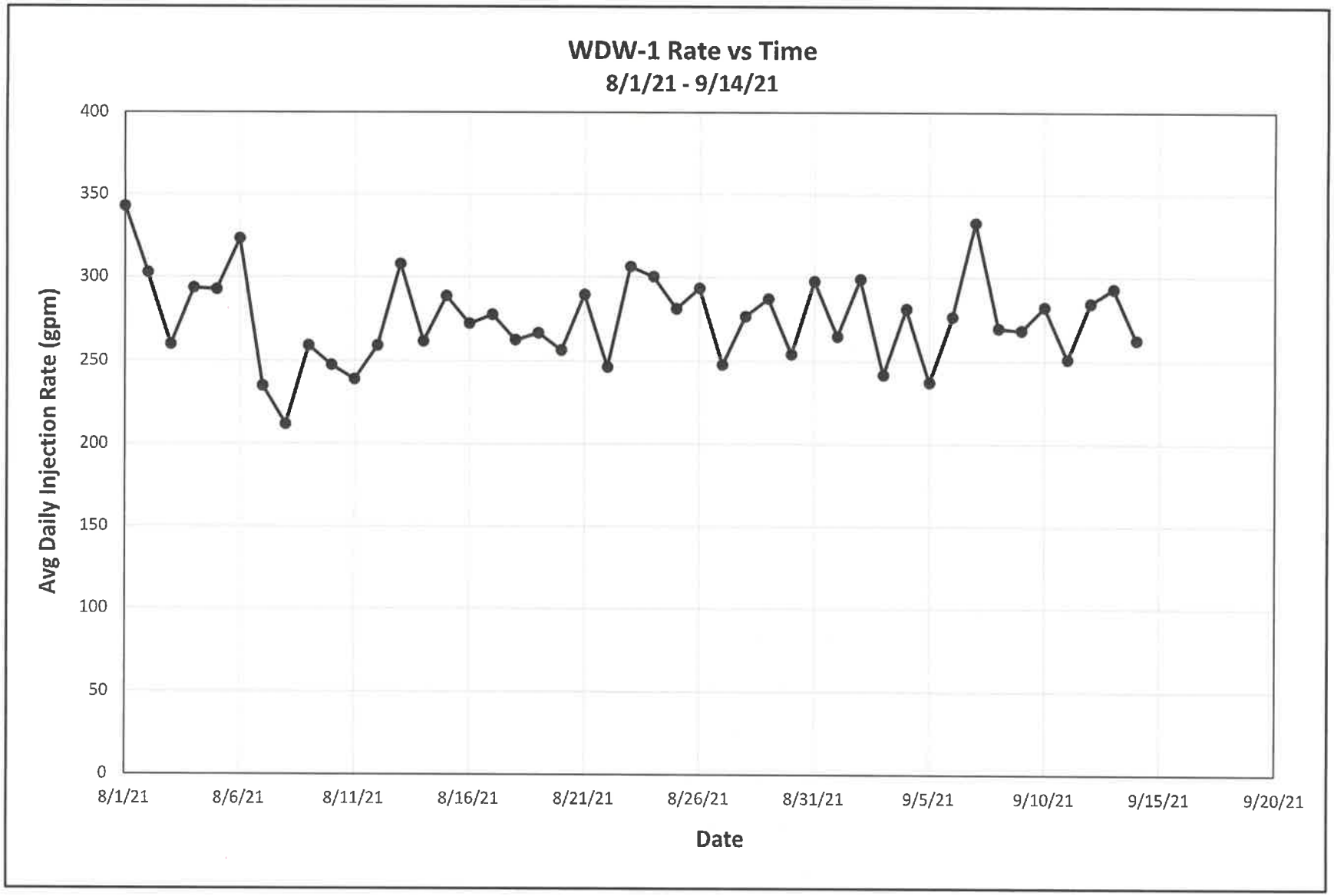


Figure 10
Semi-Log Horner Plot with Model Match
2021 Well Testing

HOLLYFRONTIER

Petrotek



HOLLYFRONTIER

Figure 11
Daily Rate vs Time
2021 Well Testing

Petrotek

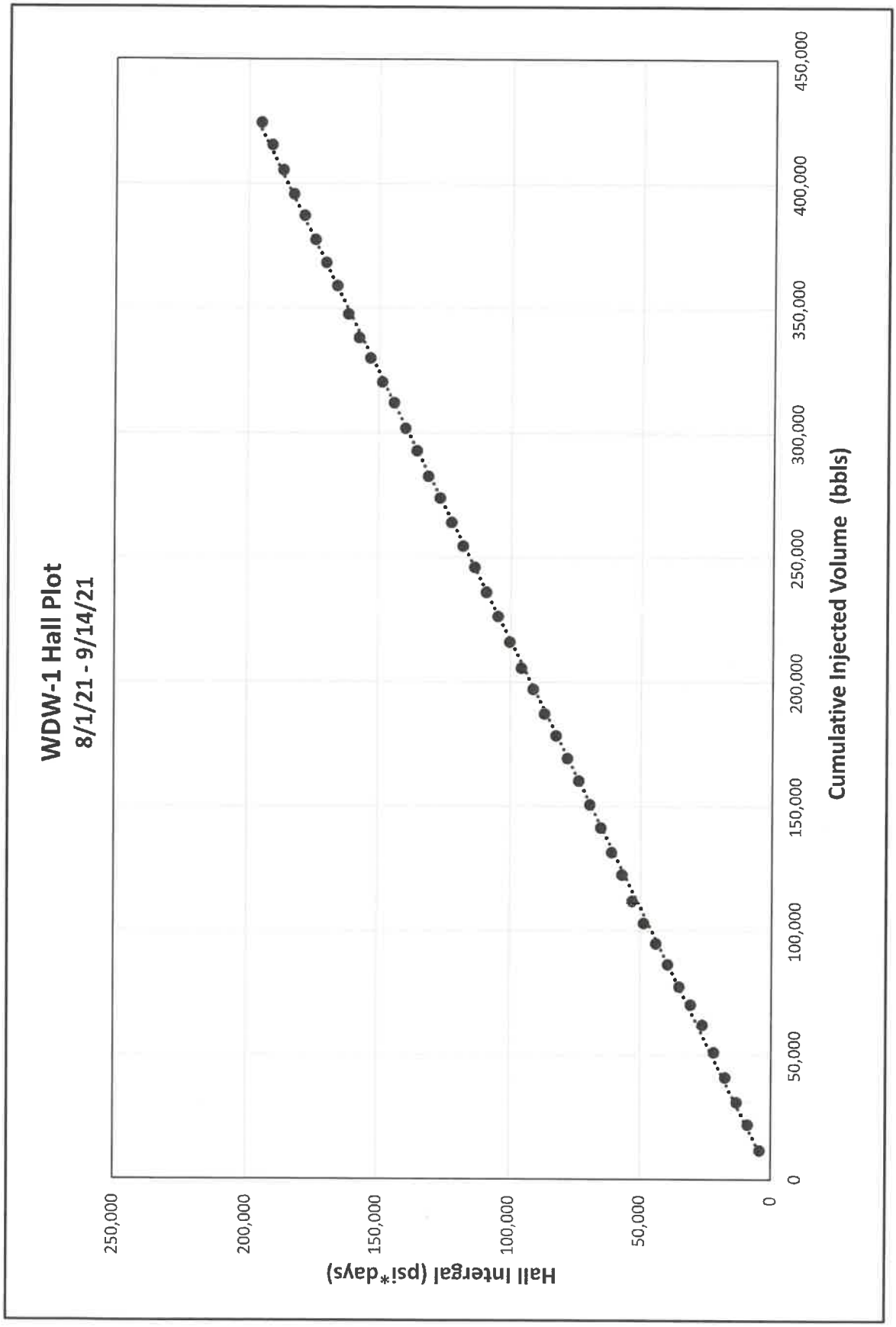
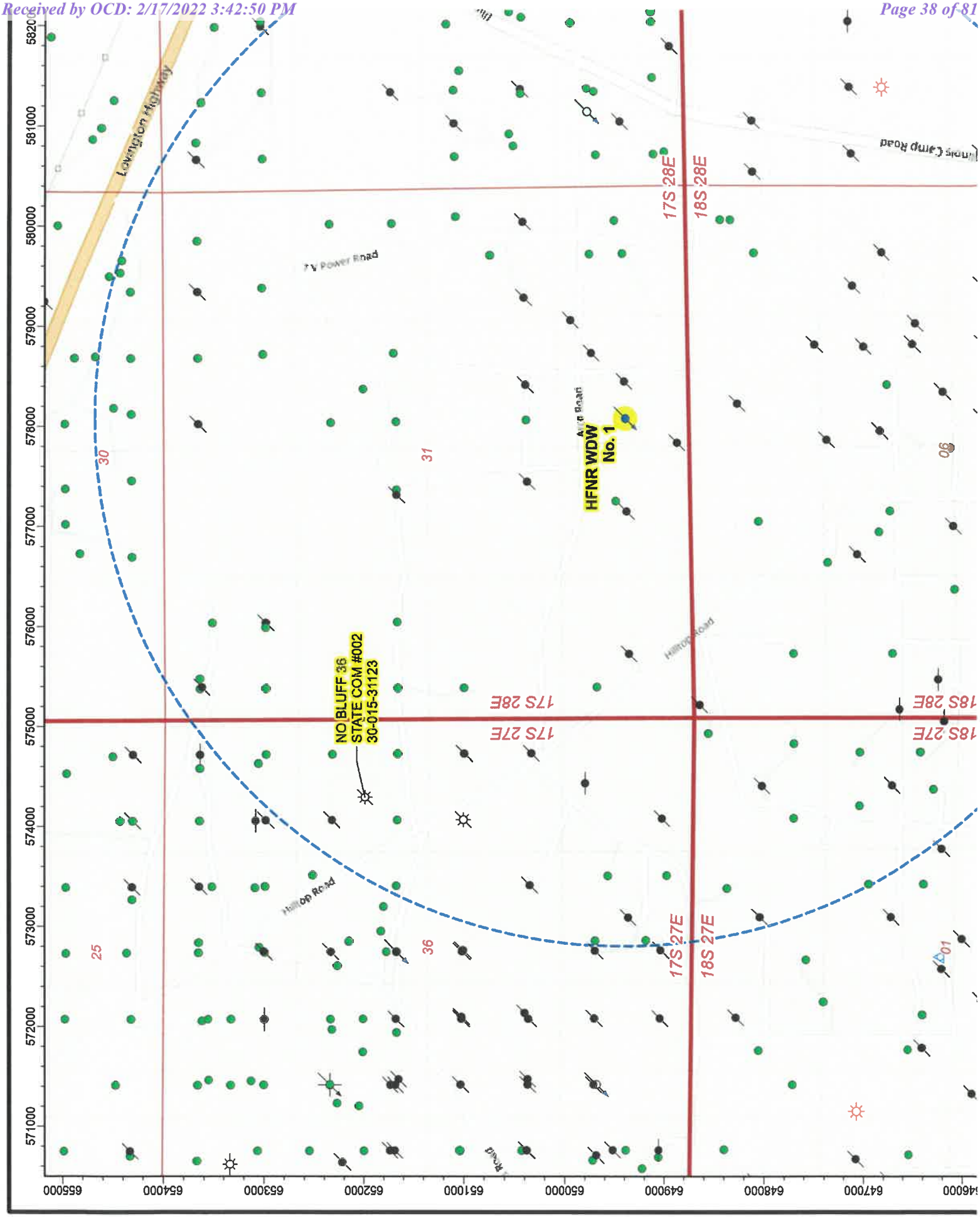


Figure 12
Hall Plot
2021 Well Testing

HOLLYFRONTIER

Petrotek


Lovington Highway
TV Power Road
Hilltop Road
HFNR WDW No. 1
NO BLUFF 36 STATE COM #002 30-015-31123
17S 28E
18S 28E
17S 27E
18S 27E
30
31
25
36
06
01
581000
580000
579000
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647000

ATTACHMENTS

Attachment 1
OCD Test Notification

Petrotek

Submit 1 Copy To Appropriate District Office
District I – (575) 393-6161
1625 N. French Dr., Hobbs, NM 88240
District II – (575) 748-1283
811 S. First St., Artesia, NM 88210
District III – (505) 334-6178
1000 Rio Brazos Rd., Aztec, NM 87410
District IV – (505) 476-3460
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

WELL API NO.
30-015-27592

5. Indicate Type of Lease
STATE X☐ FEE ☐

6. State Oil & Gas Lease No.
B-2071-28

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.)

7. Lease Name or Unit Agreement Name
MEWBOURNE WDW- 1

1. Type of Well: Oil Well ☐ Gas Well ☐ Other: UIC INJECTION WELL

8. Well Number WDW-1

2. Name of Operator
HOLLYFRONTIER NAVAJO REFINING LLC

9. OGRID Number 15694

3. Address of Operator
P.O. BOX 159, ARTESIA, NM 88211-0159

Pool name or Wildcat: PENN 96918

4. Well Location
Unit Letter: O___660 feet from the SOUTH_ line and _2210_feet from the EAST_line
Section 31 Township 17S Range 28E NMPM County EDDY

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3,678' GL

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: PRESSURE FALL OFF TEST / MIT ☐				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.

Aug 8, 2021; Day 1: Begin constant-rate injection into Mewbourne WDW-1 as well as the three (3) offset wells for at least 30 hours prior to shut-in of WDW-1 for falloff testing. Target rate for WDW-1 is approximately 160 gpm. Wellhead pressure will not exceed 1,400 psig. Plant personnel will record rate, volume and pressure during the constant-rate injection period to ensure steady flow for analysis. Samples of the injectate will be collected approximately every 10 hours and analyzed for pH and specific gravity.
Aug 9, 2021; Day 2:Continue constant-rate injection into all four well
Aug 10, 2021; Day 3: While injection continues, run dual downhole memory gauges to test depth making flowing gradient stopes every 1,000 feet. Collect pressure data at test depth for at least 1 hour while injecting at constant rate. Shut in WDW-2 and collect falloff data for a minimum of 30 hours. WDW-2, WDW-3 and WDW-4 will continue injection at constant rate until downhole memory gauges are pulled from WDW-1.
Aug 11, 2021; Day 4: WDW-1 will remain shut-in while collecting falloff pressure data using downhole memory gauges.
Aug 12, 2021; Day 5: After a minimum of 30 hours of falloff data collection, remove gauges from the well making 5-minute gradient stops every 1,000 feet. Note the top of fill will be tagged either with gauges prior to pulling from the well, or on a second run with sinker bars after gauges are removed (TBD). Conduct MIT for 30 min. minimum. Rig down wireline and return well to service

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 Lewis R Dade TITLE Environmental Specialist DATE 7/8/2021

Type or print name Lewis Dade E-mail address: Lewis.Dade@hollyfrontier.com PHONE: 575-746-5281

For State Use Only

APPROVED BY: Carl J. Chavez TITLE Environmental Engineer DATE 07/09/2021

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 35644
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	WDW-1 Fall-Off Test (FOT) Submittal is not considered to be an MIT under the UIC Program. Handled under the Permit Facility ID# fCJC2117350329 Admin. Record and not via the Sundry Process.	7/9/2021

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 35644

CONDITIONS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 35644
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	1) Follow approved FOT Guidelines. 2) Provide a phone call to the OCD Artesia District Office Engineers with Scheduled Date and Time of FOT for communication.	7/9/2021

Attachment 2
Annulus Pressure Gauge Certification

Petrotek

JMC INSTRUMENTS INC.
9829 E. Easter Ave. • Centennial, CO 80112
303.794.8833 • Fax 303.730.1220
Toll Free 1.800.327.7257
www.jmcinstruments.com

CERTIFIED CALIBRATION

CUSTOMER PETROTEK ORDER NO. _____

ITEM Digital Gauge RANGE 0-3000PSIG ITEM NO. 5095-2

TRUE VALUE	INDICATED VALUE	
PSIG	INCREASING READINGS	DECREASING READINGS
0.00	0	0
300.00	299.6	299.7
600.00	599.4	599.7
900.00	899.2	899.5
1200.00	1199.0	1199.4
1500.00	1498.9	1499.2
1800.00	1798.8	1799.0
2100.00	2098.5	2098.7
2400.00	2398.1	2398.3
2700.00	2698.0	2698.1
3000.00	2997.8	2997.8

Tested On: Deadweight Tester S/N# 1GA4474

Traceable to National Institute of Standards and Technology certificate # 17-043

Tested By: BMZ Date 22 Jan 2021

Remarks:

Fluke	700G29		SN 2643157
Accuracy is +/-	.25	% of Full Scale or Better	
Test Conditions	68 °F;	619	mmHg Atm. Pressure

Attachment 3
Downhole Pressure Gauge Certification

Petrotek

DataCan Gauge Program Sheet

Gauge Information

Tool Model	:	Quartz Pressure Recorder 2 Million Samples
Serial Number	:	220992
Max. Calibration Pressure	:	16000 psi
Max. Calibration Temperature	:	175 DegC
Sample Capacity	:	2 000 000
Calibration Date	:	Wednesday, November 25, 2020

Program

Step	Sample Rate	Days	Hours	Minutes	Samples
1	1	0	0	1.08	65
2	5	0	2	0.00	1440
3	1	0	6	0.00	21600
4	5	10	0	0.00	172800

Summary

	Steps	Days	Hours	Minutes	Samples	Power Required
Total	4	10	8	1.08	195905	See Battery Calculator Ah

Overrun (for reference)

Overrun - 637 days 13 hours 51.5 minutes at 30 second sample rate

Date: Friday, July 23, 2021 04:57:58 PM **Programmed By: FRANK**

DataCan Gauge Program Sheet

Gauge Information

Tool Model	:	Quartz Pressure Recorder 2 Million Samples
Serial Number	:	224821
Max. Calibration Pressure	:	16000 psi
Max. Calibration Temperature	:	175 DegC
Sample Capacity	:	2 000 000
Calibration Date	:	Saturday, December 19, 2020

Program

Step	Sample Rate	Days	Hours	Minutes	Samples
1	1	0	0	1.08	65
2	5	0	2	0.00	1440
3	1	0	6	0.00	21600
4	5	10	0	0.00	172800

Summary

	Steps	Days	Hours	Minutes	Samples	Power Required
Total	4	10	8	1.08	195905	See Battery Calculator Ah

Overrun (for reference)

Overrun - 637 days 13 hours 51.5 minutes at 30 second sample rate

Date: Friday, July 23, 2021 04:55:32 PM Programmed By: FRANK

Attachment 4
FESCO Injection Falloff Test Report

Petrotek

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	Petrotek Corporation	Test Date:	09/15/2021
Well:	Navajo Refining Waste Disposal Well No. 1	Location:	Eddy County, NM
Field:	Davonia	Status:	Injecting
Formation:	Unavailable		

Well Data:	Wellhead Connection: 4-1/16" 3k Flange	Gauge Type:	Electronic
	Elevation: 15 ft above GL	Gauge SN:	SP-220992
	Tubing: 4.5" Set at 7879 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9094 ft	Gauge OD:	1.2500"
	Perfs: 7924 - 8188; 8220 - 8476 ft (MD		
	Datum: 8200 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	961	100.50	959.93	0.00	0.0000	
1000	1000	1000		99.59	1391.85	431.92	0.4319	
2000	2000	1000		98.81	1823.03	431.18	0.4312	
3000	3000	1000		98.23	2253.92	430.89	0.4309	
4000	4000	1000		97.96	2682.87	428.95	0.4289	
5000	5000	1000		98.03	3111.19	428.32	0.4283	
6000	6000	1000		98.41	3541.24	430.05	0.4300	
7000	7000	1000		99.14	3973.07	431.83	0.4318	
7887	7887	887	961	99.92	4356.77	383.70	0.4326	

BHT at Test Depth:	105.22 °F	Oil Level:	Injecting	Previous BHP:	U/A
Extrapolated BHP at Datum:	4492.17 psia	Water Level:	Injecting	BHP Change:	U/A
BHP Gradient at Datum :	0.4326 psi/ft	Csg Press:	950 psig		

Remarks: MIRU slickline. RIH with gauge ring. Cleared 7887 ft. POOH. RIH with electronic gauge making injecting gradient stops to 7887 ft. Inject for 1 hr. SI well for 47.8 hr falloff test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Midland, TX

By: Michael Carnes
District Manager - (432) 332-3211

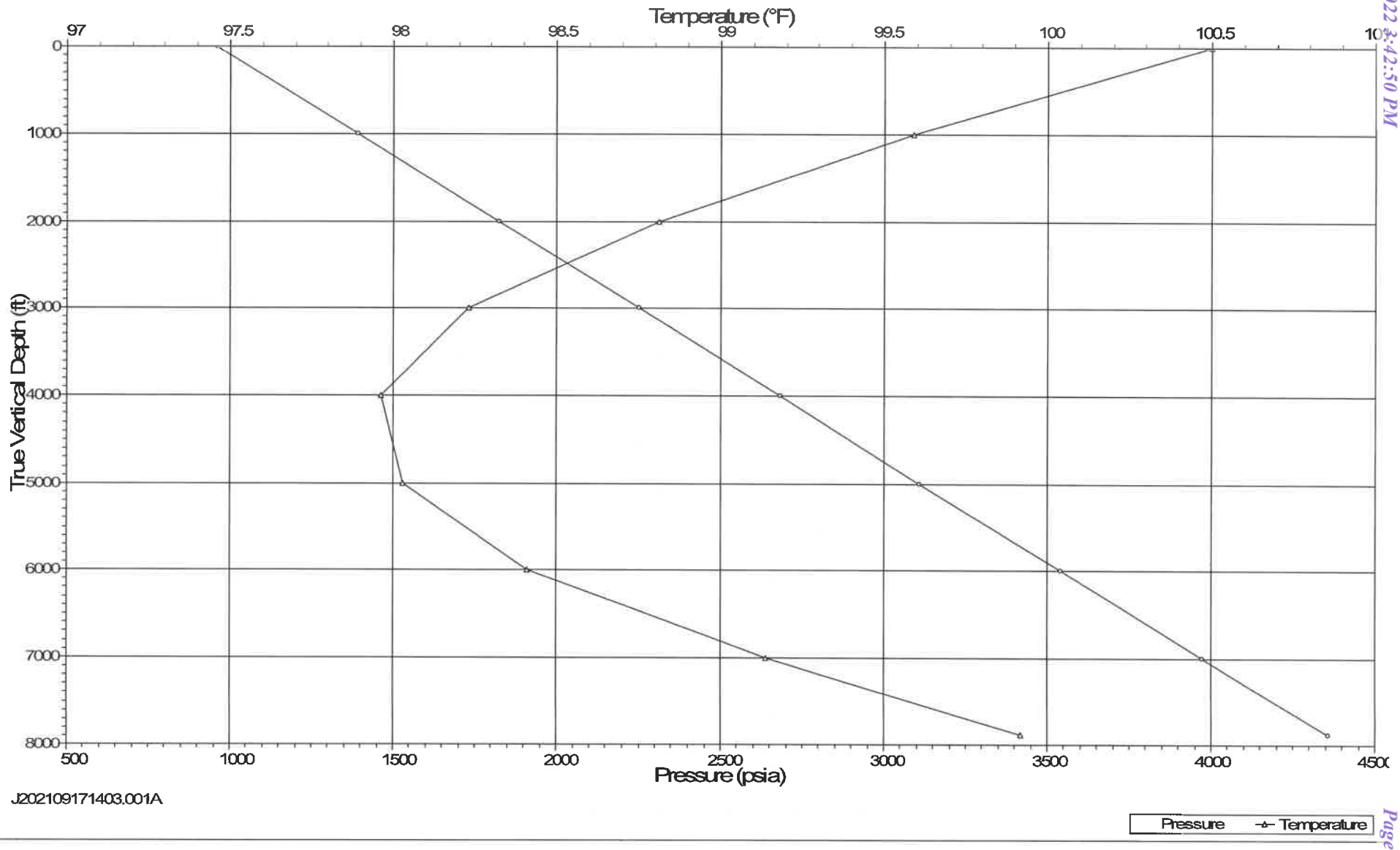
Job No.: J202109171403.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Test Date: 09/15/2021

Gauge Type: Electronic
Gauge Range: 16000 psi
Gauge SN: SP-220992

Flowing Gradient Plot



J202109171403.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	Petrotek Corporation	Test Date:	09/17/2021
Well:	Navajo Refining Waste Disposal Well No. 1	Location:	Eddy County, NM
Field:	Davonia	Status:	SI for 47.8 hrs
Formation:	Unavailable		

Well Data:	Wellhead Connection: 4-1/16" 3k Flange	Gauge Type:	Electronic
	Elevation: 15 ft above GL	Gauge SN:	SP-220992
	Tubing: 4.5" Set at 7879 ft (EOT)	Gauge Range:	16000 psi
	Casing: 7" Set at 9094 ft	Gauge OD:	1.2500"
	Perfs: 7924 - 8188; 8220 - 8476 ft (MD		
	Datum: 8200 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psia	BHT °F	Gauge Pressure psia	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	688	76.03	688.07	0.00	0.0000	
1000	1000	1000		84.57	1122.87	434.80	0.4348	
2000	2000	1000		87.91	1558.08	435.21	0.4352	
3000	3000	1000		91.39	1993.66	435.58	0.4356	
4000	4000	1000		94.77	2429.35	435.69	0.4357	
5000	5000	1000		98.77	2865.23	435.88	0.4359	
6000	6000	1000		103.16	3300.30	435.07	0.4351	
7000	7000	1000		107.03	3735.84	435.54	0.4355	
7887	7887	887		105.22	4123.52	387.68	0.4371	Ended 47.8-hr BHP Falloff Test.

BHT at Test Depth:	105.22 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4260.33 psia	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4371 psi/ft	Csg Press:	950 psig		

Remarks: MIRU slickline. RIH with gauge ring. Cleared 7887 ft. POOH. RIH with electronic gauge making injecting gradient stops to 7887 ft. Inject for 1 hr. SI well for 47.8 hr falloff test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Midland, TX

By: Michael Carnes
District Manager - (432) 332-3211

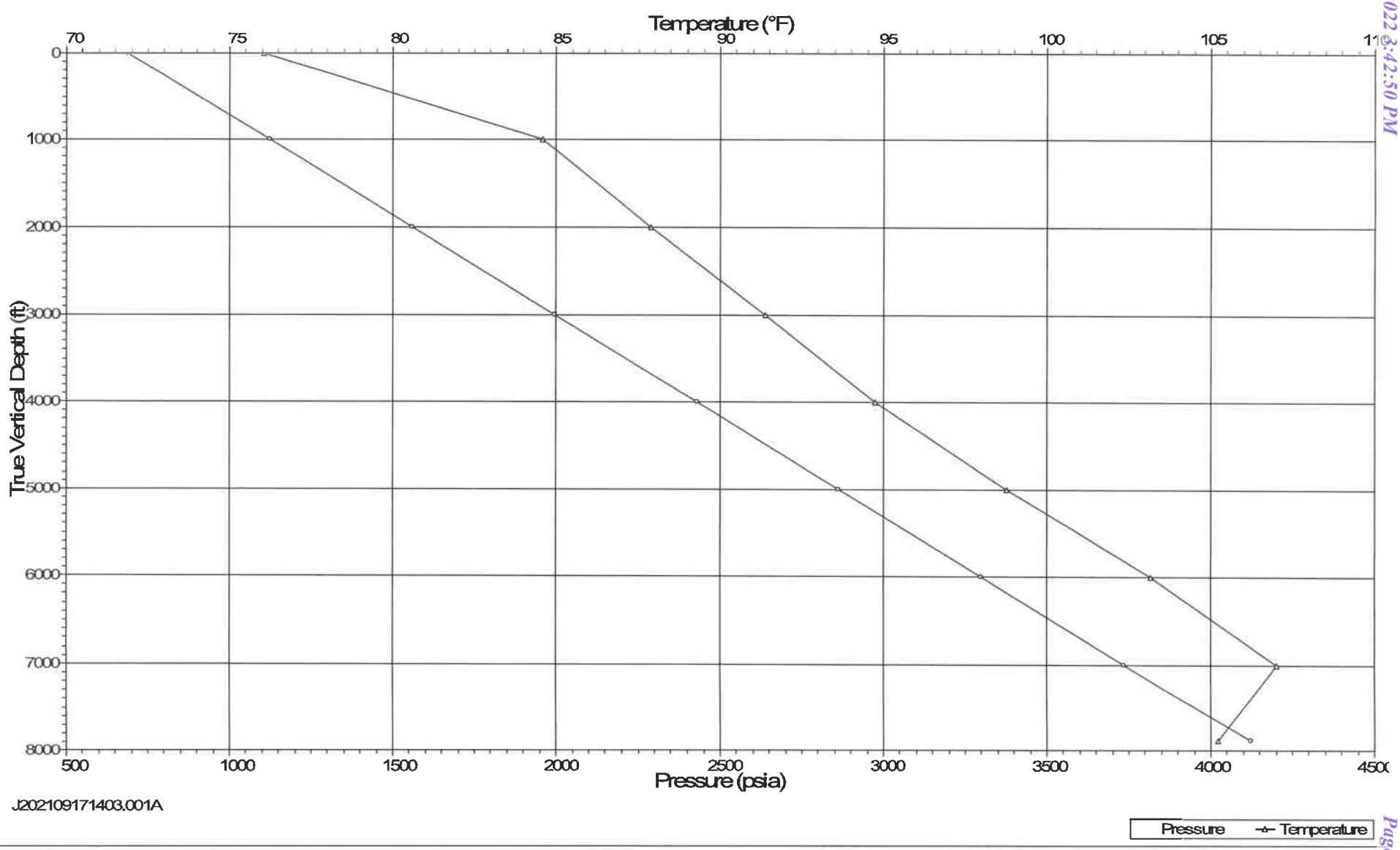
Job No.: J202109171403.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Test Date: 09/17/2021

Gauge Type: Electronic
Gauge Range: 16000 psi
Gauge SN: SP-220992

Static Gradient Plot



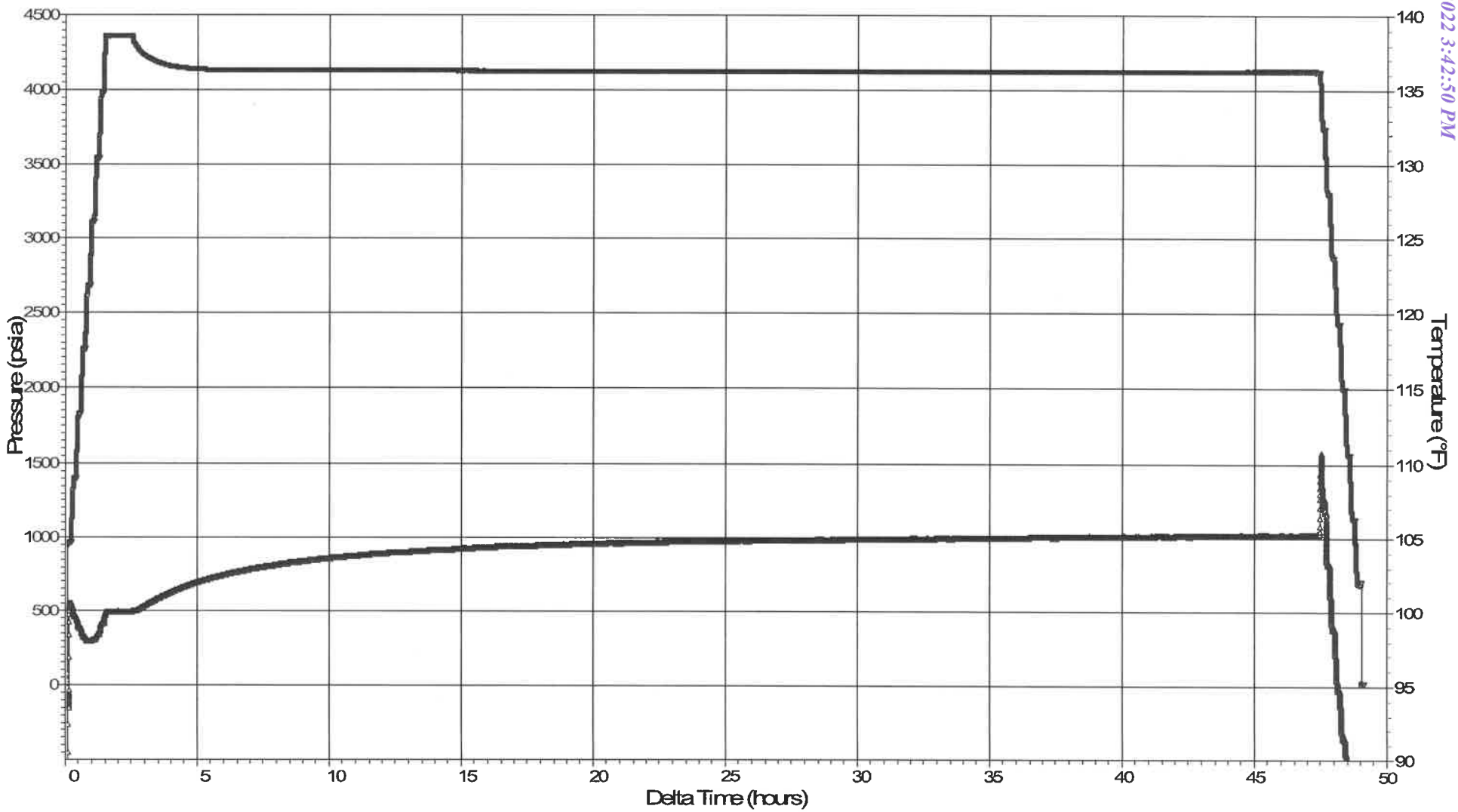
J202109171403.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Test Date: 09/15 - 09/17/2021

Gauge Type: Electronic
Gauge Range: 16000 psi
Gauge SN: SP-220992

Cartesian Plot



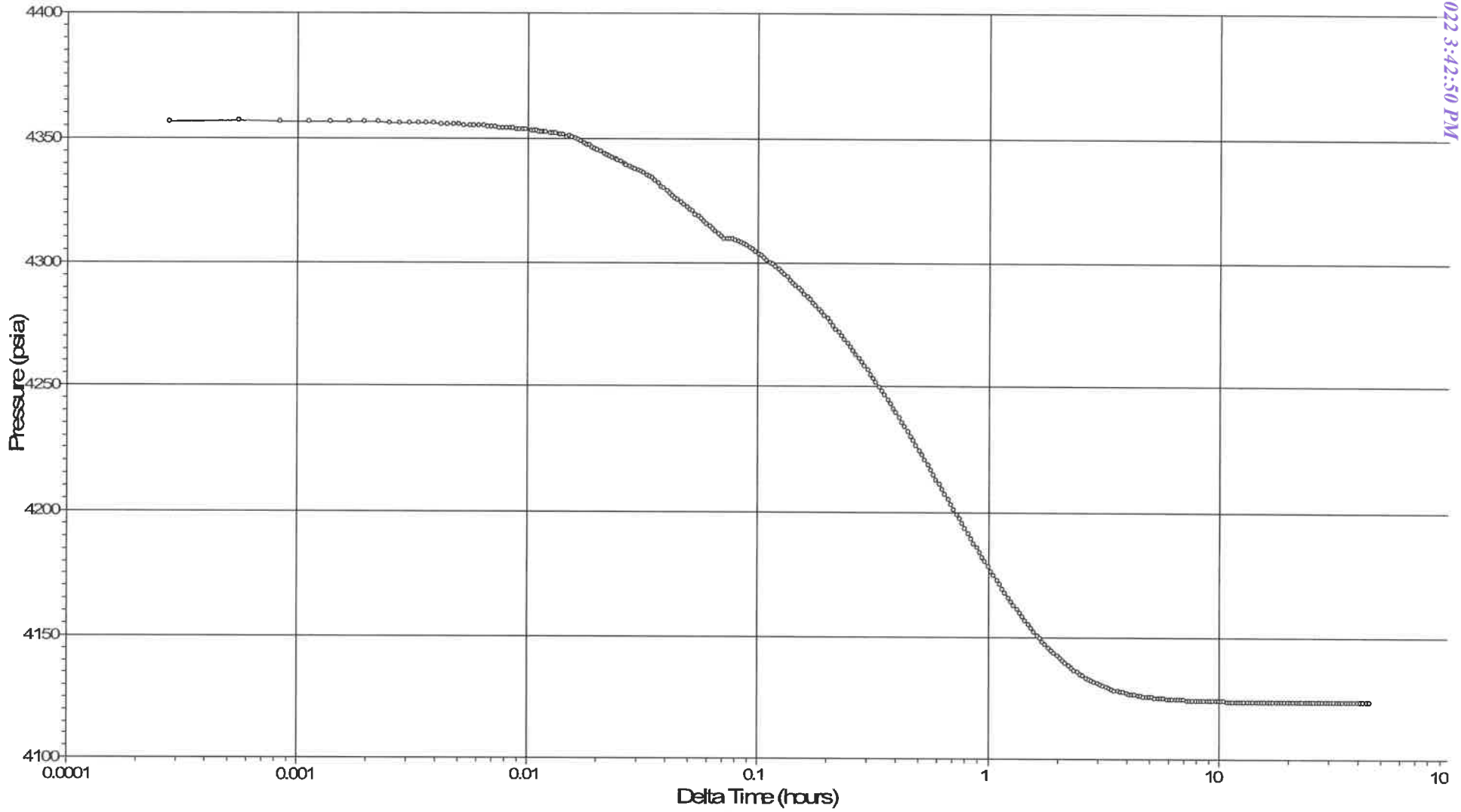
J202109171403.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Test Date: 09/15 - 09/17/2021

Gauge Type: Electronic
Gauge Range: 16000 psi
Gauge SN: SP-220992

Semilog Plot (Falloff Test)



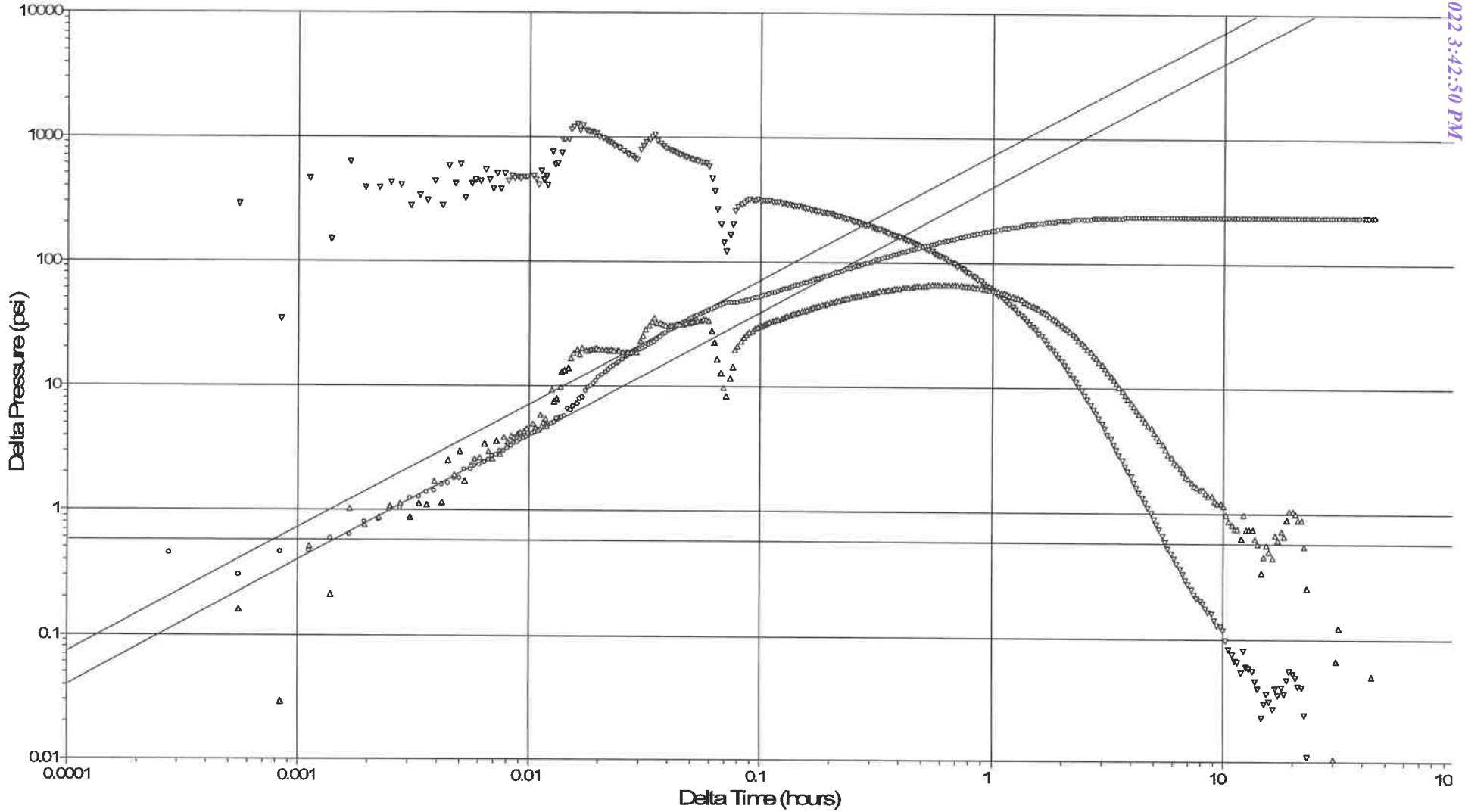
J202109171403.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Test Date: 09/15 - 09/17/2021

Gauge Type: Electronic
Gauge Range: 16000 psi
Gauge SN: SP-220992

Log Plot (Falloff Test)



FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	08:30:51	-2.53833		15.92		74.44	Powered up gauge.
09/15/21	08:31:00	-2.53583		15.71		74.40	
09/15/21	08:32:00	-2.51917		15.42		74.32	
09/15/21	08:33:00	-2.50250		15.04		74.53	
09/15/21	08:34:00	-2.48583		15.22		74.45	
09/15/21	08:35:00	-2.46917		15.95		74.28	
09/15/21	08:36:00	-2.45250		15.35		73.91	
09/15/21	08:37:00	-2.43583		16.13		74.00	
09/15/21	08:37:45	-2.42333		937.74		92.36	Pressured up lubricator.
09/15/21	08:38:00	-2.41917		952.38		94.40	
09/15/21	08:39:00	-2.40250		942.62		94.67	
09/15/21	08:40:00	-2.38583		960.99		100.41	
09/15/21	08:41:00	-2.36917		962.04		100.47	
09/15/21	08:42:00	-2.35250		960.93		100.50	
09/15/21	08:43:00	-2.33583		962.55		100.50	
09/15/21	08:43:55	-2.32056		961.50		100.50	Casing Pressure = 950 psig.
09/15/21	08:44:00	-2.31917	961	959.93		100.50	RIH making injecting gradient stops.
09/15/21	08:45:00	-2.30250		1011.21		100.42	
09/15/21	08:46:00	-2.28583		1081.07		100.34	
09/15/21	08:47:00	-2.26917		1151.18		100.22	
09/15/21	08:48:00	-2.25250		1221.34		100.07	
09/15/21	08:49:00	-2.23583		1291.14		99.90	
09/15/21	08:50:00	-2.21917		1364.31		99.72	
09/15/21	08:50:35	-2.20944		1392.65		99.64	Arrived at 1000 ft stop.
09/15/21	08:51:00	-2.20250		1391.98		99.61	
09/15/21	08:52:00	-2.18583		1392.52		99.61	
09/15/21	08:53:00	-2.16917		1392.14		99.56	
09/15/21	08:54:00	-2.15250		1391.83		99.58	
09/15/21	08:55:00	-2.13583		1391.60		99.59	
09/15/21	08:55:30	-2.12750		1391.85		99.59	Left 1000 ft stop.
09/15/21	08:56:00	-2.11917		1415.90		99.58	
09/15/21	08:57:00	-2.10250		1495.51		99.43	
09/15/21	08:58:00	-2.08583		1574.98		99.27	
09/15/21	08:59:00	-2.06917		1655.31		99.12	
09/15/21	09:00:00	-2.05250		1734.74		98.97	
09/15/21	09:01:00	-2.03583		1808.59		98.85	
09/15/21	09:01:20	-2.03028		1822.58		98.82	Arrived at 2000 ft stop.
09/15/21	09:02:00	-2.01917		1823.05		98.80	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	09:03:00	-2.00250		1822.72		98.80	
09/15/21	09:04:00	-1.98583		1823.26		98.80	
09/15/21	09:05:00	-1.96917		1822.94		98.80	
09/15/21	09:06:00	-1.95250		1823.27		98.81	
09/15/21	09:06:25	-1.94556		1823.03		98.81	Left 2000 ft stop.
09/15/21	09:07:00	-1.93583		1869.24		98.77	
09/15/21	09:08:00	-1.91917		1951.85		98.64	
09/15/21	09:09:00	-1.90250		2036.15		98.53	
09/15/21	09:10:00	-1.88583		2119.60		98.41	
09/15/21	09:11:00	-1.86917		2205.92		98.31	
09/15/21	09:11:40	-1.85806		2254.36		98.24	Arrived at 3000 ft stop.
09/15/21	09:12:00	-1.85250		2254.64		98.23	
09/15/21	09:13:00	-1.83583		2253.76		98.22	
09/15/21	09:14:00	-1.81917		2254.94		98.22	
09/15/21	09:15:00	-1.80250		2254.00		98.22	
09/15/21	09:16:00	-1.78583		2254.48		98.23	
09/15/21	09:16:40	-1.77472		2253.92		98.23	Left 3000 ft stop.
09/15/21	09:17:00	-1.76917		2275.62		98.22	
09/15/21	09:18:00	-1.75250		2362.64		98.15	
09/15/21	09:19:00	-1.73583		2450.90		98.08	
09/15/21	09:20:00	-1.71917		2537.61		98.03	
09/15/21	09:21:00	-1.70250		2627.22		97.99	
09/15/21	09:21:50	-1.68861		2683.00		97.97	Arrived at 4000 ft stop.
09/15/21	09:22:00	-1.68583		2682.55		97.96	
09/15/21	09:23:00	-1.66917		2682.88		97.96	
09/15/21	09:24:00	-1.65250		2682.74		97.96	
09/15/21	09:25:00	-1.63583		2683.33		97.96	
09/15/21	09:26:00	-1.61917		2682.53		97.96	
09/15/21	09:26:50	-1.60528		2682.87		97.96	Left 4000 ft stop.
09/15/21	09:27:00	-1.60250		2688.39		97.96	
09/15/21	09:28:00	-1.58583		2770.77		97.95	
09/15/21	09:29:00	-1.56917		2848.18		97.95	
09/15/21	09:30:00	-1.55250		2927.17		97.95	
09/15/21	09:31:00	-1.53583		3008.70		97.97	
09/15/21	09:32:00	-1.51917		3090.52		98.00	
09/15/21	09:32:20	-1.51361		3111.24		98.02	Arrived at 5000 ft stop.
09/15/21	09:33:00	-1.50250		3111.95		98.03	
09/15/21	09:34:00	-1.48583		3111.37		98.03	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Corporation	Test Date:	09/15 - 09/17/2021
Well:	Navajo Refining Waste Disposal Well No. 1	Gauge Depth:	7887 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-220992
Perfs:	7924 - 8188; 8220 - 8476 ft (MD)	Gauge Range:	16000 psi
Formation:	Unavailable	Gauge OD:	1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	09:35:00	-1.46917		3111.95		98.03	
09/15/21	09:36:00	-1.45250		3111.33		98.03	
09/15/21	09:37:00	-1.43583		3111.35		98.03	
09/15/21	09:37:20	-1.43028		3111.19		98.03	Left 5000 ft stop.
09/15/21	09:38:00	-1.41917		3157.62		98.04	
09/15/21	09:39:00	-1.40250		3240.60		98.09	
09/15/21	09:40:00	-1.38583		3328.43		98.16	
09/15/21	09:41:00	-1.36917		3415.87		98.24	
09/15/21	09:42:00	-1.35250		3504.48		98.33	
09/15/21	09:42:35	-1.34278		3541.80		98.39	Arrived at 6000 ft stop.
09/15/21	09:43:00	-1.33583		3540.87		98.40	
09/15/21	09:44:00	-1.31917		3542.07		98.41	
09/15/21	09:45:00	-1.30250		3542.65		98.41	
09/15/21	09:46:00	-1.28583		3541.33		98.41	
09/15/21	09:47:00	-1.26917		3541.17		98.41	
09/15/21	09:47:30	-1.26083		3541.24		98.41	Left 6000 ft stop.
09/15/21	09:48:00	-1.25250		3571.43		98.42	
09/15/21	09:49:00	-1.23583		3659.18		98.53	
09/15/21	09:50:00	-1.21917		3747.26		98.67	
09/15/21	09:51:00	-1.20250		3837.47		98.82	
09/15/21	09:52:00	-1.18583		3925.64		99.01	
09/15/21	09:52:45	-1.17333		3973.37		99.11	Arrived at 7000 ft stop.
09/15/21	09:53:00	-1.16917		3973.62		99.12	
09/15/21	09:54:00	-1.15250		3973.23		99.13	
09/15/21	09:55:00	-1.13583		3973.28		99.13	
09/15/21	09:56:00	-1.11917		3973.09		99.14	
09/15/21	09:57:00	-1.10250		3973.18		99.14	
09/15/21	09:57:40	-1.09139		3973.07		99.14	Left 7000 ft stop.
09/15/21	09:58:00	-1.08583		3985.77		99.14	
09/15/21	09:59:00	-1.06917		4070.24		99.27	
09/15/21	10:00:00	-1.05250		4159.25		99.45	
09/15/21	10:01:00	-1.03583		4248.70		99.64	
09/15/21	10:02:00	-1.01917		4334.13		99.84	
09/15/21	10:02:30	-1.01083		4357.23		99.89	Arrived at 7887 ft stop.
09/15/21	10:03:00	-1.00250		4357.24		99.91	
09/15/21	10:04:00	-0.98583		4357.12		99.92	
09/15/21	10:05:00	-0.96917		4357.02		99.92	
09/15/21	10:06:00	-0.95250		4356.96		99.92	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	10:07:00	-0.93583		4356.91		99.92	
09/15/21	10:08:00	-0.91917		4356.89		99.92	
09/15/21	10:09:00	-0.90250		4356.82		99.92	
09/15/21	10:10:00	-0.88583	961	4356.77		99.92	7887 ft stop.
09/15/21	10:15:00	-0.80250		4356.69		99.93	
09/15/21	10:20:00	-0.71917		4356.66		99.93	
09/15/21	10:25:00	-0.63583		4356.67		99.93	
09/15/21	10:30:00	-0.55250		4356.74		99.93	
09/15/21	10:35:00	-0.46917		4356.75		99.93	
09/15/21	10:40:00	-0.38583		4356.79		99.94	
09/15/21	10:45:00	-0.30250		4356.83		99.94	
09/15/21	10:50:00	-0.21917		4356.84		99.94	
09/15/21	10:55:00	-0.13583		4356.82		99.94	
09/15/21	11:00:00	-0.05250		4356.88		99.94	
09/15/21	11:03:07	-0.00056		4357.02		99.95	Injection Rate = Unavailable.
09/15/21	11:03:08	-0.00028		4357.02		99.95	Casing Pressure = 950 psig.
09/15/21	11:03:09	0.00000	961	4357.02	0.00	99.95	Shut in well for 47.8 hr BHP Falloff Test.
09/15/21	11:03:10	0.00028		4356.58	-0.44	99.95	
09/15/21	11:03:11	0.00056		4356.72	-0.30	99.95	
09/15/21	11:03:12	0.00083		4356.57	-0.45	99.95	
09/15/21	11:03:13	0.00111		4356.56	-0.46	99.95	
09/15/21	11:03:14	0.00139		4356.43	-0.59	99.95	
09/15/21	11:03:15	0.00167		4356.39	-0.63	99.95	
09/15/21	11:03:16	0.00194		4356.22	-0.80	99.95	
09/15/21	11:03:17	0.00222		4356.20	-0.82	99.95	
09/15/21	11:03:18	0.00250		4356.01	-1.01	99.95	
09/15/21	11:03:19	0.00278		4355.99	-1.03	99.95	
09/15/21	11:03:20	0.00306		4355.78	-1.24	99.95	
09/15/21	11:03:21	0.00333		4355.77	-1.25	99.95	
09/15/21	11:03:22	0.00361		4355.63	-1.39	99.95	
09/15/21	11:03:23	0.00389		4355.59	-1.43	99.95	
09/15/21	11:03:24	0.00417		4355.43	-1.59	99.95	
09/15/21	11:03:25	0.00444		4355.39	-1.63	99.95	
09/15/21	11:03:26	0.00472		4355.24	-1.78	99.95	
09/15/21	11:03:27	0.00500		4355.21	-1.81	99.95	
09/15/21	11:03:28	0.00528		4354.93	-2.09	99.95	
09/15/21	11:03:29	0.00556		4354.91	-2.11	99.95	
09/15/21	11:03:30	0.00583		4354.73	-2.29	99.95	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	11:03:31	0.00611		4354.69	-2.33	99.95	
09/15/21	11:03:32	0.00639		4354.59	-2.43	99.95	
09/15/21	11:03:33	0.00667		4354.47	-2.55	99.95	
09/15/21	11:03:34	0.00694		4354.26	-2.76	99.95	
09/15/21	11:03:35	0.00722		4354.23	-2.79	99.95	
09/15/21	11:03:36	0.00750		4354.02	-3.00	99.95	
09/15/21	11:03:37	0.00778		4353.99	-3.03	99.95	
09/15/21	11:03:38	0.00806		4353.85	-3.17	99.95	
09/15/21	11:03:39	0.00833		4353.76	-3.26	99.95	
09/15/21	11:03:40	0.00861		4353.56	-3.46	99.95	
09/15/21	11:03:41	0.00889		4353.52	-3.50	99.95	
09/15/21	11:03:42	0.00917		4353.33	-3.69	99.95	
09/15/21	11:03:43	0.00944		4353.27	-3.75	99.95	
09/15/21	11:03:44	0.00972		4353.12	-3.90	99.95	
09/15/21	11:03:46	0.01028		4352.84	-4.18	99.95	
09/15/21	11:03:47	0.01056		4352.78	-4.24	99.95	
09/15/21	11:03:48	0.01083		4352.60	-4.42	99.95	
09/15/21	11:03:49	0.01111		4352.53	-4.49	99.95	
09/15/21	11:03:50	0.01139		4352.37	-4.65	99.95	
09/15/21	11:03:51	0.01167		4352.31	-4.71	99.95	
09/15/21	11:03:52	0.01194		4352.07	-4.95	99.95	
09/15/21	11:03:54	0.01250		4351.96	-5.06	99.95	
09/15/21	11:03:55	0.01278		4351.84	-5.18	99.95	
09/15/21	11:03:56	0.01306		4351.55	-5.47	99.95	
09/15/21	11:03:58	0.01361		4351.43	-5.59	99.95	
09/15/21	11:03:59	0.01389		4351.32	-5.70	99.95	
09/15/21	11:04:00	0.01417		4351.22	-5.80	99.95	
09/15/21	11:04:02	0.01472		4350.36	-6.66	99.95	
09/15/21	11:04:03	0.01500		4350.58	-6.44	99.95	
09/15/21	11:04:05	0.01556		4350.10	-6.92	99.95	
09/15/21	11:04:07	0.01611		4349.69	-7.33	99.95	
09/15/21	11:04:08	0.01639		4349.08	-7.94	99.95	
09/15/21	11:04:10	0.01694		4348.73	-8.29	99.95	
09/15/21	11:04:12	0.01750		4347.85	-9.17	99.95	
09/15/21	11:04:14	0.01806		4347.19	-9.83	99.95	
09/15/21	11:04:15	0.01833		4346.96	-10.06	99.95	
09/15/21	11:04:17	0.01889		4346.39	-10.63	99.95	
09/15/21	11:04:19	0.01944		4345.85	-11.17	99.95	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	11:04:21	0.02000		4345.21	-11.81	99.95	
09/15/21	11:04:23	0.02056		4344.63	-12.39	99.95	
09/15/21	11:04:26	0.02139		4343.79	-13.23	99.95	
09/15/21	11:04:28	0.02194		4343.26	-13.76	99.95	
09/15/21	11:04:30	0.02250		4342.75	-14.27	99.95	
09/15/21	11:04:32	0.02306		4342.24	-14.78	99.95	
09/15/21	11:04:35	0.02389		4341.56	-15.46	99.95	
09/15/21	11:04:37	0.02444		4341.07	-15.95	99.95	
09/15/21	11:04:40	0.02528		4340.36	-16.66	99.96	
09/15/21	11:04:43	0.02611		4339.73	-17.29	99.96	
09/15/21	11:04:45	0.02667		4339.29	-17.73	99.96	
09/15/21	11:04:48	0.02750		4338.68	-18.34	99.96	
09/15/21	11:04:51	0.02833		4338.10	-18.92	99.96	
09/15/21	11:04:54	0.02917		4337.52	-19.50	99.96	
09/15/21	11:04:57	0.03000		4336.98	-20.04	99.96	
09/15/21	11:05:00	0.03083		4336.45	-20.57	99.96	
09/15/21	11:05:03	0.03167		4335.92	-21.10	99.96	
09/15/21	11:05:07	0.03278		4335.25	-21.77	99.96	
09/15/21	11:05:10	0.03361		4334.76	-22.26	99.96	
09/15/21	11:05:14	0.03472		4334.13	-22.89	99.97	
09/15/21	11:05:17	0.03556		4332.88	-24.14	99.97	
09/15/21	11:05:21	0.03667		4331.83	-25.19	99.97	
09/15/21	11:05:25	0.03778		4330.70	-26.32	99.97	
09/15/21	11:05:29	0.03889		4329.75	-27.27	99.97	
09/15/21	11:05:33	0.04000		4328.81	-28.21	99.97	
09/15/21	11:05:37	0.04111		4327.93	-29.09	99.98	
09/15/21	11:05:41	0.04222		4327.07	-29.95	99.98	
09/15/21	11:05:46	0.04361		4326.05	-30.97	99.98	
09/15/21	11:05:50	0.04472		4325.23	-31.79	99.98	
09/15/21	11:05:55	0.04611		4324.27	-32.75	99.99	
09/15/21	11:06:00	0.04750		4323.31	-33.71	99.99	
09/15/21	11:06:05	0.04889		4322.37	-34.65	99.99	
09/15/21	11:06:10	0.05028		4321.47	-35.55	99.99	
09/15/21	11:06:15	0.05167		4320.57	-36.45	99.99	
09/15/21	11:06:21	0.05333		4319.52	-37.50	99.99	
09/15/21	11:06:26	0.05472		4318.64	-38.38	99.99	
09/15/21	11:06:32	0.05639		4317.62	-39.40	99.99	
09/15/21	11:06:38	0.05806		4316.61	-40.41	99.99	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	11:06:44	0.05972		4315.64	-41.38	99.99	
09/15/21	11:06:50	0.06139		4314.66	-42.36	99.99	
09/15/21	11:06:57	0.06333		4313.53	-43.49	99.99	
09/15/21	11:07:03	0.06500		4312.59	-44.43	99.99	
09/15/21	11:07:10	0.06694		4311.50	-45.52	99.99	
09/15/21	11:07:17	0.06889		4310.44	-46.58	99.99	
09/15/21	11:07:24	0.07083		4309.66	-47.36	99.99	
09/15/21	11:07:32	0.07306		4309.67	-47.35	99.99	
09/15/21	11:07:39	0.07500		4309.54	-47.48	99.99	
09/15/21	11:07:47	0.07722		4309.62	-47.40	100.00	
09/15/21	11:07:55	0.07944		4309.21	-47.81	100.00	
09/15/21	11:08:04	0.08194		4308.73	-48.29	100.00	
09/15/21	11:08:12	0.08417		4308.19	-48.83	100.00	
09/15/21	11:08:21	0.08667		4307.61	-49.41	100.00	
09/15/21	11:08:30	0.08917		4306.96	-50.06	100.00	
09/15/21	11:08:40	0.09194		4306.12	-50.90	100.00	
09/15/21	11:08:49	0.09444		4305.40	-51.62	100.00	
09/15/21	11:08:59	0.09722		4304.62	-52.40	100.00	
09/15/21	11:09:10	0.10028		4303.74	-53.28	100.00	
09/15/21	11:09:20	0.10306		4302.91	-54.11	100.00	
09/15/21	11:09:31	0.10611		4302.03	-54.99	100.00	
09/15/21	11:09:42	0.10917		4301.13	-55.89	100.00	
09/15/21	11:09:53	0.11222		4300.24	-56.78	100.00	
09/15/21	11:10:05	0.11556		4299.29	-57.73	100.00	
09/15/21	11:10:17	0.11889		4298.34	-58.68	100.00	
09/15/21	11:10:30	0.12250		4297.31	-59.71	100.00	
09/15/21	11:10:43	0.12611		4296.29	-60.73	100.00	
09/15/21	11:10:56	0.12972		4295.29	-61.73	100.00	
09/15/21	11:11:10	0.13361		4294.21	-62.81	100.00	
09/15/21	11:11:24	0.13750		4293.14	-63.88	100.00	
09/15/21	11:11:38	0.14139		4292.09	-64.93	100.00	
09/15/21	11:11:53	0.14556		4290.97	-66.05	100.00	
09/15/21	11:12:08	0.14972		4289.86	-67.16	100.00	
09/15/21	11:12:24	0.15417		4288.69	-68.33	100.00	
09/15/21	11:12:40	0.15861		4287.53	-69.49	100.01	
09/15/21	11:12:57	0.16333		4286.31	-70.71	100.02	
09/15/21	11:13:14	0.16806		4285.11	-71.91	100.02	
09/15/21	11:13:32	0.17306		4283.86	-73.16	100.03	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	11:13:50	0.17806		4282.62	-74.40	100.03	
09/15/21	11:14:08	0.18306		4281.40	-75.62	100.04	
09/15/21	11:14:28	0.18861		4280.06	-76.96	100.04	
09/15/21	11:14:47	0.19389		4278.79	-78.23	100.05	
09/15/21	11:15:08	0.19972		4277.43	-79.59	100.06	
09/15/21	11:15:29	0.20556		4276.07	-80.95	100.06	
09/15/21	11:15:50	0.21139		4274.73	-82.29	100.07	
09/15/21	11:16:13	0.21778		4273.28	-83.74	100.07	
09/15/21	11:16:35	0.22389		4271.91	-85.11	100.08	
09/15/21	11:16:59	0.23056		4270.45	-86.57	100.08	
09/15/21	11:17:23	0.23722		4269.01	-88.01	100.09	
09/15/21	11:17:48	0.24417		4267.52	-89.50	100.10	
09/15/21	11:18:14	0.25139		4266.00	-91.02	100.11	
09/15/21	11:18:40	0.25861		4264.51	-92.51	100.12	
09/15/21	11:19:07	0.26611		4262.99	-94.03	100.12	
09/15/21	11:19:35	0.27389		4261.43	-95.59	100.13	
09/15/21	11:20:04	0.28194		4259.83	-97.19	100.14	
09/15/21	11:20:34	0.29028		4258.21	-98.81	100.14	
09/15/21	11:21:04	0.29861		4256.62	-100.40	100.15	
09/15/21	11:21:36	0.30750		4254.93	-102.09	100.17	
09/15/21	11:22:08	0.31639		4253.30	-103.72	100.18	
09/15/21	11:22:41	0.32556		4251.63	-105.39	100.19	
09/15/21	11:23:15	0.33500		4249.97	-107.05	100.21	
09/15/21	11:23:51	0.34500		4248.21	-108.81	100.22	
09/15/21	11:24:27	0.35500		4246.49	-110.53	100.22	
09/15/21	11:25:04	0.36528		4244.76	-112.26	100.23	
09/15/21	11:25:43	0.37611		4242.96	-114.06	100.25	
09/15/21	11:26:22	0.38694		4241.21	-115.81	100.26	
09/15/21	11:27:03	0.39833		4239.39	-117.63	100.28	
09/15/21	11:27:45	0.41000		4237.59	-119.43	100.29	
09/15/21	11:28:28	0.42194		4235.76	-121.26	100.30	
09/15/21	11:29:12	0.43417		4233.93	-123.09	100.31	
09/15/21	11:29:58	0.44694		4232.07	-124.95	100.32	
09/15/21	11:30:45	0.46000		4230.19	-126.83	100.33	
09/15/21	11:31:33	0.47333		4228.34	-128.68	100.35	
09/15/21	11:32:23	0.48722		4226.42	-130.60	100.36	
09/15/21	11:33:14	0.50139		4224.54	-132.48	100.38	
09/15/21	11:34:06	0.51583		4222.64	-134.38	100.39	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	11:35:01	0.53111		4220.69	-136.33	100.40	
09/15/21	11:35:56	0.54639		4218.78	-138.24	100.42	
09/15/21	11:36:54	0.56250		4216.82	-140.20	100.44	
09/15/21	11:37:53	0.57889		4214.87	-142.15	100.46	
09/15/21	11:38:54	0.59583		4212.93	-144.09	100.47	
09/15/21	11:39:57	0.61333		4210.95	-146.07	100.49	
09/15/21	11:41:01	0.63111		4209.02	-148.00	100.51	
09/15/21	11:42:07	0.64944		4207.07	-149.95	100.52	
09/15/21	11:43:16	0.66861		4205.08	-151.94	100.54	
09/15/21	11:44:26	0.68806		4203.13	-153.89	100.56	
09/15/21	11:45:38	0.70806		4201.17	-155.85	100.58	
09/15/21	11:46:53	0.72889		4199.18	-157.84	100.60	
09/15/21	11:48:09	0.75000		4197.25	-159.77	100.62	
09/15/21	11:49:28	0.77194		4195.29	-161.73	100.65	
09/15/21	11:50:49	0.79444		4193.35	-163.67	100.67	
09/15/21	11:52:13	0.81778		4191.39	-165.63	100.69	
09/15/21	11:53:39	0.84167		4189.45	-167.57	100.72	
09/15/21	11:55:07	0.86611		4187.54	-169.48	100.74	
09/15/21	11:56:38	0.89139		4185.64	-171.38	100.77	
09/15/21	11:58:12	0.91750		4183.73	-173.29	100.79	
09/15/21	11:59:48	0.94417		4181.85	-175.17	100.81	
09/15/21	12:01:27	0.97167		4179.98	-177.04	100.84	
09/15/21	12:03:10	1.00028		4178.11	-178.91	100.86	
09/15/21	12:04:55	1.02944		4176.27	-180.75	100.89	
09/15/21	12:06:43	1.05944		4174.46	-182.56	100.92	
09/15/21	12:08:34	1.09028		4172.67	-184.35	100.95	
09/15/21	12:10:29	1.12222		4170.89	-186.13	100.97	
09/15/21	12:12:27	1.15500		4169.14	-187.88	101.00	
09/15/21	12:14:28	1.18861		4167.42	-189.60	101.03	
09/15/21	12:16:33	1.22333		4165.71	-191.31	101.06	
09/15/21	12:18:42	1.25917		4164.04	-192.98	101.10	
09/15/21	12:20:54	1.29583		4162.39	-194.63	101.12	
09/15/21	12:23:10	1.33361		4160.78	-196.24	101.15	
09/15/21	12:25:30	1.37250		4159.20	-197.82	101.19	
09/15/21	12:27:55	1.41278		4157.64	-199.38	101.22	
09/15/21	12:30:23	1.45389		4156.13	-200.89	101.26	
09/15/21	12:32:56	1.49639		4154.65	-202.37	101.29	
09/15/21	12:35:33	1.54000		4153.20	-203.82	101.32	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	12:38:15	1.58500		4151.81	-205.21	101.35	
09/15/21	12:41:02	1.63139		4150.44	-206.58	101.39	
09/15/21	12:43:53	1.67889		4149.10	-207.92	101.42	
09/15/21	12:46:50	1.72806		4147.79	-209.23	101.46	
09/15/21	12:49:51	1.77833		4146.54	-210.48	101.49	
09/15/21	12:52:58	1.83028		4145.33	-211.69	101.53	
09/15/21	12:56:11	1.88389		4144.15	-212.87	101.56	
09/15/21	12:59:29	1.93889		4143.02	-214.00	101.61	
09/15/21	13:02:52	1.99528		4141.93	-215.09	101.64	
09/15/21	13:06:22	2.05361		4140.88	-216.14	101.69	
09/15/21	13:09:58	2.11361		4139.88	-217.14	101.73	
09/15/21	13:13:40	2.17528		4138.90	-218.12	101.75	
09/15/21	13:17:29	2.23889		4137.97	-219.05	101.80	
09/15/21	13:21:24	2.30417		4137.09	-219.93	101.84	
09/15/21	13:25:26	2.37139		4136.24	-220.78	101.88	
09/15/21	13:29:36	2.44083		4135.44	-221.58	101.92	
09/15/21	13:33:52	2.51194		4134.65	-222.37	101.97	
09/15/21	13:38:16	2.58528		4133.92	-223.10	102.00	
09/15/21	13:42:48	2.66083		4133.23	-223.79	102.05	
09/15/21	13:47:28	2.73861		4132.57	-224.45	102.09	
09/15/21	13:52:16	2.81861		4131.95	-225.07	102.13	
09/15/21	13:57:12	2.90083		4131.36	-225.66	102.17	
09/15/21	14:02:17	2.98556		4130.81	-226.21	102.22	
09/15/21	14:07:31	3.07278		4130.29	-226.73	102.26	
09/15/21	14:12:54	3.16250		4129.80	-227.22	102.30	
09/15/21	14:18:26	3.25472		4129.35	-227.67	102.34	
09/15/21	14:24:08	3.34972		4128.92	-228.10	102.39	
09/15/21	14:30:00	3.44750		4128.52	-228.50	102.43	
09/15/21	14:36:03	3.54833		4128.14	-228.88	102.48	
09/15/21	14:42:16	3.65194		4127.79	-229.23	102.52	
09/15/21	14:48:40	3.75861		4127.48	-229.54	102.56	
09/15/21	14:55:15	3.86833		4127.17	-229.85	102.60	
09/15/21	15:02:01	3.98111		4126.90	-230.12	102.65	
09/15/21	15:09:00	4.09750		4126.63	-230.39	102.69	
09/15/21	15:16:11	4.21722		4126.39	-230.63	102.73	
09/15/21	15:23:34	4.34028		4126.16	-230.86	102.79	
09/15/21	15:31:10	4.46694		4125.97	-231.05	102.83	
09/15/21	15:39:00	4.59750		4125.77	-231.25	102.86	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/15/21	15:47:03	4.73167		4125.60	-231.42	102.92	
09/15/21	15:55:20	4.86972		4125.43	-231.59	102.95	
09/15/21	16:03:52	5.01194		4125.28	-231.74	102.99	
09/15/21	16:12:39	5.15833		4125.13	-231.89	103.05	
09/15/21	16:21:41	5.30889		4125.00	-232.02	103.07	
09/15/21	16:30:59	5.46389		4124.88	-232.14	103.13	
09/15/21	16:40:35	5.62389		4124.76	-232.26	103.17	
09/15/21	16:50:25	5.78778		4124.65	-232.37	103.21	
09/15/21	17:00:35	5.95722		4124.56	-232.46	103.25	
09/15/21	17:11:00	6.13083		4124.47	-232.55	103.29	
09/15/21	17:21:45	6.31000		4124.39	-232.63	103.32	
09/15/21	17:32:50	6.49472		4124.32	-232.70	103.37	
09/15/21	17:44:10	6.68361		4124.25	-232.77	103.41	
09/15/21	17:55:55	6.87944		4124.19	-232.83	103.45	
09/15/21	18:08:00	7.08083		4124.13	-232.89	103.50	
09/15/21	18:20:20	7.28639		4124.08	-232.94	103.54	
09/15/21	18:33:10	7.50028		4124.02	-233.00	103.58	
09/15/21	18:46:15	7.71833		4123.98	-233.04	103.63	
09/15/21	18:59:45	7.94333		4123.94	-233.08	103.65	
09/15/21	19:13:40	8.17528		4123.91	-233.11	103.69	
09/15/21	19:28:00	8.41417		4123.86	-233.16	103.74	
09/15/21	19:42:45	8.66000		4123.83	-233.19	103.77	
09/15/21	19:57:55	8.91278		4123.79	-233.23	103.81	
09/15/21	20:13:35	9.17389		4123.76	-233.26	103.86	
09/15/21	20:29:40	9.44194		4123.73	-233.29	103.90	
09/15/21	20:46:10	9.71694		4123.70	-233.32	103.92	
09/15/21	21:03:10	10.00028		4123.67	-233.35	103.97	
09/15/21	21:20:45	10.29333		4123.65	-233.37	103.99	
09/15/21	21:38:45	10.59333		4123.61	-233.41	104.03	
09/15/21	21:57:20	10.90306		4123.60	-233.42	104.06	
09/15/21	22:16:25	11.22111		4123.58	-233.44	104.10	
09/15/21	22:36:05	11.54889		4123.55	-233.47	104.14	
09/15/21	22:56:20	11.88639		4123.53	-233.49	104.16	
09/15/21	23:17:05	12.23222		4123.54	-233.48	104.19	
09/15/21	23:38:35	12.59056		4123.52	-233.50	104.28	
09/16/21	00:00:35	12.95722		4123.52	-233.50	104.30	
09/16/21	00:23:20	13.33639		4123.51	-233.51	104.32	
09/16/21	00:46:40	13.72528		4123.48	-233.54	104.34	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/16/21	01:10:45	14.12667		4123.48	-233.54	104.37	
09/16/21	01:35:30	14.53917		4123.43	-233.59	104.39	
09/16/21	02:00:55	14.96278		4123.45	-233.57	104.41	
09/16/21	02:27:10	15.40028		4123.45	-233.57	104.44	
09/16/21	02:54:10	15.85028		4123.44	-233.58	104.47	
09/16/21	03:21:55	16.31278		4123.43	-233.59	104.51	
09/16/21	03:50:30	16.78917		4123.44	-233.58	104.53	
09/16/21	04:19:55	17.27944		4123.43	-233.59	104.56	
09/16/21	04:50:10	17.78361		4123.43	-233.59	104.59	
09/16/21	05:21:20	18.30306		4123.41	-233.61	104.60	
09/16/21	05:53:25	18.83778		4123.41	-233.61	104.63	
09/16/21	06:26:25	19.38778		4123.41	-233.61	104.64	
09/16/21	07:00:20	19.95306		4123.38	-233.64	104.68	
09/16/21	07:35:20	20.53639		4123.38	-233.64	104.70	
09/16/21	08:11:15	21.13500		4123.36	-233.66	104.74	
09/16/21	08:48:20	21.75306		4123.35	-233.67	104.75	
09/16/21	09:26:25	22.38778		4123.31	-233.71	104.76	
09/16/21	10:05:40	23.04194		4123.28	-233.74	104.79	
09/16/21	10:46:00	23.71417		4123.25	-233.77	104.81	
09/16/21	11:27:35	24.40722		4123.26	-233.76	104.79	
09/16/21	12:10:20	25.11972		4123.26	-233.76	104.83	
09/16/21	12:54:20	25.85306		4123.25	-233.77	104.83	
09/16/21	13:39:40	26.60861		4123.27	-233.75	104.86	
09/16/21	14:26:15	27.38500		4123.29	-233.73	104.85	
09/16/21	15:14:15	28.18500		4123.31	-233.71	104.89	
09/16/21	16:03:35	29.00722		4123.33	-233.69	104.90	
09/16/21	16:54:25	29.85444		4123.36	-233.66	104.91	
09/16/21	17:46:45	30.72667		4123.38	-233.64	104.97	
09/16/21	18:40:35	31.62389		4123.39	-233.63	104.97	
09/16/21	19:36:00	32.54750		4123.38	-233.64	104.95	
09/16/21	20:33:00	33.49750		4123.38	-233.64	104.98	
09/16/21	21:31:40	34.47528		4123.40	-233.62	105.04	
09/16/21	22:32:05	35.48222		4123.41	-233.61	105.05	
09/16/21	23:34:15	36.51833		4123.42	-233.60	105.06	
09/17/21	00:38:15	37.58500		4123.42	-233.60	105.09	
09/17/21	01:44:05	38.68222		4123.43	-233.59	105.09	
09/17/21	02:51:50	39.81139		4123.45	-233.57	105.13	
09/17/21	04:01:35	40.97389		4123.48	-233.54	105.15	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/17/21	05:13:20	42.16972		4123.51	-233.51	105.16	
09/17/21	06:27:15	43.40167		4123.52	-233.50	105.17	
09/17/21	07:43:20	44.66972		4123.52	-233.50	105.22	
09/17/21	07:48:30	44.75583		4123.52	-233.50	105.21	Casing Pressure = 950 psig.
09/17/21	07:48:35	44.75722		4123.52	-233.50	105.22	Ended BHP Falloff Test.
09/17/21	07:48:40	44.75861		4123.23		105.22	
09/17/21	07:48:45	44.76000		4123.13		105.22	
09/17/21	07:48:50	44.76139		4123.06		105.22	
09/17/21	07:48:55	44.76278		4122.74		105.23	Prepared to POOH with slickline.
09/17/21	07:50:00	44.78083		4122.82		105.26	
09/17/21	07:51:00	44.79750		4122.83		105.27	
09/17/21	07:52:00	44.81417		4122.84		105.27	
09/17/21	07:53:00	44.83083		4122.85		105.28	
09/17/21	07:54:00	44.84750		4122.84		105.28	
09/17/21	07:55:00	44.86417		4122.85		105.28	
09/17/21	07:56:00	44.88083		4122.83		105.27	
09/17/21	07:57:00	44.89750		4122.83		105.28	
09/17/21	07:58:00	44.91417		4122.83		105.28	
09/17/21	07:59:00	44.93083		4122.83		105.29	
09/17/21	07:59:55	44.94611	688	4122.82		105.29	POOH making static gradient stops from 7887 ft.
09/17/21	08:00:00	44.94750		4122.48		105.29	
09/17/21	08:01:00	44.96417		4037.87		110.04	
09/17/21	08:02:00	44.98083		3953.01		110.52	
09/17/21	08:03:00	44.99750		3866.94		109.47	
09/17/21	08:04:00	45.01417		3783.15		107.99	
09/17/21	08:05:00	45.03083		3736.63		107.14	Arrived at 7000 ft stop.
09/17/21	08:06:00	45.04750		3736.11		107.05	
09/17/21	08:07:00	45.06417		3736.10		107.04	
09/17/21	08:08:00	45.08083		3736.08		107.04	
09/17/21	08:09:00	45.09750		3736.06		107.03	
09/17/21	08:10:00	45.11417		3735.84		107.03	Left 7000 ft stop.
09/17/21	08:11:00	45.13083		3655.08		107.21	
09/17/21	08:12:00	45.14750		3576.06		107.39	
09/17/21	08:13:00	45.16417		3494.43		105.75	
09/17/21	08:14:00	45.18083		3413.41		104.50	
09/17/21	08:15:00	45.19750		3336.90		103.49	
09/17/21	08:15:40	45.20861		3300.81		103.28	Arrived at 6000 ft stop.
09/17/21	08:16:00	45.21417		3300.45		103.20	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/17/21	08:17:00	45.23083		3300.33		103.17	
09/17/21	08:18:00	45.24750		3300.32		103.17	
09/17/21	08:19:00	45.26417		3300.31		103.16	
09/17/21	08:20:00	45.28083		3300.31		103.16	
09/17/21	08:20:45	45.29333		3300.30		103.16	Left 6000 ft stop.
09/17/21	08:21:00	45.29750		3287.84		103.13	
09/17/21	08:22:00	45.31417		3219.41		102.48	
09/17/21	08:23:00	45.33083		3146.56		101.56	
09/17/21	08:24:00	45.34750		3073.56		100.83	
09/17/21	08:25:00	45.36417		3000.61		100.28	
09/17/21	08:26:00	45.38083		2927.45		99.56	
09/17/21	08:27:00	45.39750		2866.78		98.88	
09/17/21	08:27:05	45.39889		2865.51		98.84	Arrived at 5000 ft stop.
09/17/21	08:28:00	45.41417		2865.26		98.78	
09/17/21	08:29:00	45.43083		2865.24		98.77	
09/17/21	08:30:00	45.44750		2865.24		98.77	
09/17/21	08:31:00	45.46417		2865.23		98.77	
09/17/21	08:32:00	45.48083		2865.23		98.77	
09/17/21	08:32:05	45.48222		2865.23		98.77	Left 5000 ft stop.
09/17/21	08:33:00	45.49750		2812.50		98.38	
09/17/21	08:34:00	45.51417		2748.80		97.77	
09/17/21	08:35:00	45.53083		2685.27		97.15	
09/17/21	08:36:00	45.54750		2621.40		96.53	
09/17/21	08:37:00	45.56417		2557.97		95.94	
09/17/21	08:38:00	45.58083		2494.20		95.35	
09/17/21	08:39:00	45.59750		2437.02		94.97	
09/17/21	08:39:20	45.60306		2429.64		94.83	Arrived at 4000 ft stop.
09/17/21	08:40:00	45.61417		2429.38		94.78	
09/17/21	08:41:00	45.63083		2429.36		94.77	
09/17/21	08:42:00	45.64750		2429.35		94.77	
09/17/21	08:43:00	45.66417		2429.35		94.77	
09/17/21	08:44:00	45.68083		2429.35		94.77	
09/17/21	08:44:40	45.69194		2429.35		94.77	Left 4000 ft stop.
09/17/21	08:45:00	45.69750		2411.71		94.70	
09/17/21	08:46:00	45.71417		2333.73		94.05	
09/17/21	08:47:00	45.73083		2255.40		93.48	
09/17/21	08:48:00	45.74750		2177.22		92.88	
09/17/21	08:49:00	45.76417		2098.16		92.12	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/17/21	08:50:00	45.78083		2021.06		91.69	
09/17/21	08:50:35	45.79056		1994.00		91.43	Arrived at 3000 ft stop.
09/17/21	08:51:00	45.79750		1993.72		91.40	
09/17/21	08:52:00	45.81417		1993.68		91.40	
09/17/21	08:53:00	45.83083		1993.68		91.40	
09/17/21	08:54:00	45.84750		1993.67		91.39	
09/17/21	08:55:00	45.86417		1993.66		91.39	
09/17/21	08:55:35	45.87389		1993.66		91.39	Left 3000 ft stop.
09/17/21	08:56:00	45.88083		1970.47		91.34	
09/17/21	08:57:00	45.89750		1900.58		90.94	
09/17/21	08:58:00	45.91417		1830.45		90.44	
09/17/21	08:59:00	45.93083		1760.36		89.74	
09/17/21	09:00:00	45.94750		1688.77		88.95	
09/17/21	09:01:00	45.96417		1617.06		88.25	
09/17/21	09:02:00	45.98083		1558.38		87.99	Arrived at 2000 ft stop.
09/17/21	09:03:00	45.99750		1558.09		87.92	
09/17/21	09:04:00	46.01417		1558.08		87.92	
09/17/21	09:05:00	46.03083		1558.08		87.92	
09/17/21	09:06:00	46.04750		1558.08		87.91	
09/17/21	09:07:00	46.06417		1558.08		87.91	Left 2000 ft stop.
09/17/21	09:08:00	46.08083		1492.99		87.89	
09/17/21	09:09:00	46.09750		1418.80		87.24	
09/17/21	09:10:00	46.11417		1344.97		86.54	
09/17/21	09:11:00	46.13083		1271.07		86.07	
09/17/21	09:12:00	46.14750		1196.78		85.70	
09/17/21	09:13:00	46.16417		1132.52		84.72	
09/17/21	09:13:15	46.16833		1123.24		84.58	Arrived at 1000 ft stop.
09/17/21	09:14:00	46.18083		1122.89		84.57	
09/17/21	09:15:00	46.19750		1122.87		84.57	
09/17/21	09:16:00	46.21417		1122.88		84.57	
09/17/21	09:17:00	46.23083		1122.88		84.57	
09/17/21	09:18:00	46.24750		1122.87		84.57	
09/17/21	09:18:15	46.25167		1122.87		84.57	Left 1000 ft stop.
09/17/21	09:19:00	46.26417		1081.58		85.27	
09/17/21	09:20:00	46.28083		1020.18		83.97	
09/17/21	09:21:00	46.29750		957.00		83.75	
09/17/21	09:22:00	46.31417		887.90		83.80	
09/17/21	09:23:00	46.33083		821.16		87.00	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 1
Field: Davonia
Location: Eddy County, NM
Perfs: 7924 - 8188; 8220 - 8476 ft (MD)
Formation: Unavailable

Test Date: 09/15 - 09/17/2021
Gauge Depth: 7887 ft
Gauge Type: Electronic
Gauge SN: SP-220992
Gauge Range: 16000 psi
Gauge OD: 1.2500"

Test Date mm/dd/yy	Real Time hh:mm:ss	Delta Time hours	WHP psia	BHP psia	Delta BHP psi	Temp. °F	Comments
09/17/21	09:24:00	46.34750		750.98		87.22	
09/17/21	09:24:55	46.36278		699.41		87.85	Gauge at surface.
09/17/21	09:25:00	46.36417		699.85		87.55	
09/17/21	09:26:00	46.38083		689.34		77.43	
09/17/21	09:27:00	46.39750		688.07		77.01	
09/17/21	09:28:00	46.41417		688.02		76.65	
09/17/21	09:29:00	46.43083		687.75		76.22	
09/17/21	09:30:00	46.44750		688.30		76.08	
09/17/21	09:30:20	46.45306	688	688.07		76.03	Surface stop.
09/17/21	09:31:00	46.46417		676.71		80.24	
09/17/21	09:32:00	46.48083		680.64		80.74	
09/17/21	09:33:00	46.49750		684.10		80.88	
09/17/21	09:34:00	46.51417		699.67		81.25	
09/17/21	09:34:05	46.51556		700.23		81.28	Pressured down lubricator.
09/17/21	09:35:00	46.53083		6.33		81.36	
09/17/21	09:35:10	46.53361		12.78		81.57	Test completed.
09/17/21	09:36:00	46.54750		17.02		80.77	
09/17/21	09:37:00	46.56417		16.52		78.70	
09/17/21	09:38:00	46.58083		15.71		78.44	
09/17/21	09:39:00	46.59750		15.98		77.77	
09/17/21	09:40:00	46.61417		15.96		77.14	Powered down gauge.

Remarks: MIRU slickline. RIH with gauge ring. Cleared 7887 ft. POOH. RIH with electronic gauge making injecting gradient stops to 7887 ft. Inject for 1 hr. SI well for 47.8 hr falloff test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Midland, TX

By: Michael Carnes
District Manager - (432) 332-3211

Job No.: J202109171403.001A

Attachment 5
Falloff Test Summary

Petrotek

Falloff Test Summary

Reservoir Properties

Net Pay (h)	175	ft
Porosity (Φ)	10.0	%
Formation Compressibility (c_f)	8.20E-06	psi^{-1}
Total Compressibility (c_t)	1.09E-05	psi^{-1}
Wellbore Radius (r_w)	0.3646	ft

Fluid Properties

Water Viscosity (μ_w)	0.57	cp
Water Compressibility (c_w)	2.70E-06	psi^{-1}
Water Formation Volume Factor (B_w)	1.00	bbl/stb

Model Parameters

Wellbore Model	Changing hegeman
Reservoir Model	Dual porosity pseudo steady state
Boundary Model	Infinite-acting

Analysis Results

Well & Wellbore

Initial Wellbore Storage	0.851	bbl/psi
Final Wellbore Storage	2.831	bbl/psi
D_t [changing storage]	0.128	hr
Skin	264.0	

Reservoir & Boundary

Average Pressure (P*)	4,111.4	psia
Permeability (k)	1,501	md
Transmissibility	2.63E+05	md-ft
Omega	0.0962	
Lambda	2.621E-09	
Radius of Investigation (r_i)	9,456	ft

Attachment 6
AOR Well List

Petrotek

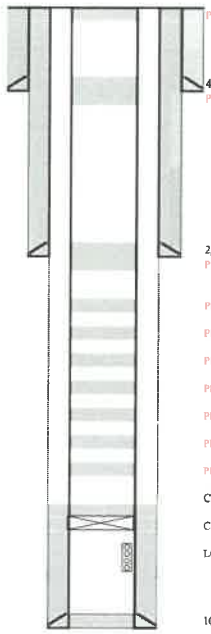
Operator	Well Name	API	Type	Well Status	Latitude	Longitude	Spud Date	P&A Date
APACHE CORPORATION	EMPIRE ABO UNIT #025C	30-015-02607	Oil	Plugged (site released)	32.7817	-104.20408	31-Dec-99	25-Jun-13
APACHE CORPORATION	AB STATE 647 #012	30-015-41496	Oil	Active	32.786	-104.20518	19-Sep-13	N/A
APACHE CORPORATION	AB STATE 647 #013	30-015-41497	Oil	Active	32.7841	-104.20509	10-Oct-13	N/A
APACHE CORPORATION	AB STATE 647 #006	30-015-41503	Oil	Active	32.78826	-104.20489	30-Aug-13	N/A
APACHE CORPORATION	AB STATE 647 #005	30-015-41502	Oil	Active	32.78985	-104.20525	23-Aug-13	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #025	30-015-01660	Oil	Plugged (site released)	32.78533	-104.2041	31-Dec-99	30-Jun-09
APACHE CORPORATION	AB STATE 647 #011	30-015-41495	Oil	Active	32.78606	-104.20313	13-Sep-13	N/A
Contango Resources, Inc.	NORTHWEST ARTESIA UNIT #012	30-015-20043	Inj	Active	32.78624	-104.20379	29-Apr-67	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #025A	30-015-01662	Oil	Plugged (site released)	32.78807	-104.20306	31-Dec-99	16-May-13
CONOCOPHILLIPS COMPANY	STATE E AI #001	30-015-02608	Oil	Plugged (site released)	32.77893	-104.20515	31-Dec-99	13-Jan-06
CONOCOPHILLIPS COMPANY	ILLINOIS CAMP A COM #001	30-015-24485	Gas	Active	32.77809	-104.20301	28-May-83	N/A
Contango Resources, Inc.	NW STATE #029	30-015-36554	Oil	Active	32.78838	-104.20451	21-Jan-09	N/A
Contango Resources, Inc.	NW STATE #032	30-015-37058	Oil	Active	32.7844	-104.20516	12-Aug-09	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #025B	30-015-01671	Oil	Plugged (site released)	32.79161	-104.20316	31-Dec-99	21-Jul-08
Contango Resources, Inc.	ENRON STATE #002	30-015-31920	Oil	Active	32.79515	-104.20318	4-Sep-01	N/A
APACHE CORPORATION	AB STATE 647 #007	30-015-41491	Oil	Active	32.78807	-104.2032	29-Oct-13	N/A
APACHE CORPORATION	AB STATE 647 #004	30-015-41505	Oil	Active	32.78973	-104.20246	2-Oct-13	N/A
Contango Resources, Inc.	NW STATE #007	30-015-30685	Oil	Active	32.78625	-104.20304	30-Aug-99	N/A
Contango Resources, Inc.	ENRON STATE #012	30-015-35050	Oil	Active	32.79695	-104.2048	20-Nov-06	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #261	30-015-21539	Oil	Plugged (not released)	32.78397	-104.20167	24-Jun-75	31-May-17
LIME ROCK RESOURCES A, L.P.	NORTHWEST ARTESIA UNIT #009	30-015-10795	Oil	Plugged (site released)	32.78987	-104.20417	31-Dec-99	28-May-08
MARBOB ENERGY CORP	LP STATE #001	30-015-31086	Oil	Plugged (site released)	32.779	-104.203	3-Jul-00	11-Mar-08
APACHE CORPORATION	AB STATE 647 #014	30-015-41498	Oil	Active	32.78445	-104.20268	4-Nov-13	N/A
APACHE CORPORATION	AB STATE 647 #003	30-015-41501	Oil	Active	32.79008	-104.20095	23-Oct-13	N/A
APACHE CORPORATION	AB STATE 647 #015	30-015-41504	Oil	Active	32.78447	-104.20087	26-Sep-13	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #026D	30-015-02602	Oil	Temporary Abandonment	32.77903	-104.20086	28-Nov-59	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #261A	30-015-22697	Oil	Plugged (site released)	32.78061	-104.2	31-Dec-99	15-Jun-09
MACK ENERGY CORP	STATE AG #001	30-015-10244	Oil	Plugged (site released)	32.77534	-104.20516	31-Dec-99	26-Mar-01
APACHE CORPORATION	AB STATE 647 #010	30-015-41494	Oil	Active	32.7867	-104.2009	16-Oct-13	N/A
Contango Resources, Inc.	NW STATE #031	30-015-37057	Oil	Active	32.78448	-104.20054	21-Jul-09	N/A
Contango Resources, Inc.	NW STATE #006	30-015-30777	Oil	Active	32.78988	-104.20309	19-Oct-99	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #026A	30-015-01659	Oil	Plugged (not released)	32.7854	-104.19981	26-Jan-60	8-Mar-21
APACHE CORPORATION	AB STATE 647 #001	30-015-39927	Oil	Active	32.78838	-104.20055	11-Aug-13	N/A
APACHE CORPORATION	AB STATE 647 #008	30-015-41492	Oil	Active	32.78738	-104.19873	15-Nov-13	N/A
SDX RESOURCES INC	NORTHWEST ARTESIA UNIT #008	30-015-10818	Oil	Plugged (site released)	32.78994	-104.19947	31-Dec-99	6-Nov-06
APACHE CORPORATION	AB STATE 647 #016	30-015-41511	Oil	Active	32.78451	-104.19854	9-Nov-13	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #026E	30-015-02606	Oil	Plugged (not released)	32.78268	-104.19991	5-Jul-60	15-Jan-21
APACHE CORPORATION	AA STATE #001	30-015-01657	Oil	Active	32.79165	-104.1999	29-Jul-60	N/A
APACHE CORPORATION	AB STATE 647 #009	30-015-41493	Oil	Active	32.78658	-104.19801	5-Sep-13	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #026B	30-015-01661	Oil	Plugged (site released)	32.78814	-104.19877	13-Mar-60	12-Mar-21
APACHE CORPORATION	AB STATE 647 #002	30-015-41500	Oil	Active	32.79009	-104.19786	17-Aug-13	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #272	30-015-22009	Oil	Plugged (site released)	32.78453	-104.19737	8-Feb-77	4-May-21
SDX RESOURCES INC	NORTHWEST ARTESIA UNIT #013	30-015-10834	Oil	Plugged (site released)	32.78631	-104.19965	31-Dec-99	1-Nov-06
Contango Resources, Inc.	NW STATE #005	30-015-30781	Inj	Active	32.78881	-104.19932	28-Oct-99	N/A
Contango Resources, Inc.	NW STATE #008	30-015-30815	Inj	Active	32.78659	-104.19935	18-Nov-99	N/A
Contango Resources, Inc.	NW STATE #030	30-015-36989	Oil	Active	32.78805	-104.20072	7-Jul-09	N/A
WALTER SOLT, LLC	WALTER SOLT STATE #001	30-015-25522	SWD	Active	32.77515	-104.20493	9-Jan-86	N/A
Spur Energy Partners LLC	BIG BOY STATE #006	30-015-39324	Oil	Active	32.7846	-104.23075	18-Dec-11	N/A
Spur Energy Partners LLC	BIG BOY STATE #007	30-015-39325	Oil	Active	32.786	-104.23076	6-Jan-12	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #019B	30-015-00708	Oil	Plugged (site released)	32.78146	-104.23	31-Dec-99	22-May-13
REMNANT OIL OPERATING, LLC	SOUTH RED LAKE II UNIT #057	30-015-36116	Oil	Active	32.79144	-104.22897	14-Apr-08	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #019A	30-015-05934	Oil	Plugged (not released)	32.7878	-104.22895	11-Feb-64	8-Jun-21
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #019	30-015-01251	Oil	Plugged (site released)	32.78509	-104.23001	31-Dec-99	9-Sep-09
APACHE CORPORATION	AAO FEDERAL #003	30-015-32309	Oil	Active	32.78236	-104.22906	12-Mar-03	N/A
Spur Energy Partners LLC	BIG BOY STATE #008	30-015-39326	Oil	Active	32.78402	-104.22864	6-May-13	N/A
Spur Energy Partners LLC	BIG BOY STATE #005	30-015-39323	Oil	Active	32.78565	-104.22865	21-Apr-12	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #020	30-015-00677	Oil	Plugged (site released)	32.78415	-104.22678	31-Dec-99	9-Sep-09
ASPEN OIL INC	GATES STATE #002	30-015-00647	Oil	Plugged (site released)	32.79322	-104.22683	31-Dec-99	31-Oct-04
LLJ VENTURES, LLC DBA MARKER OIL & GA	GATES STATE #003	30-015-31036	Oil	Active	32.7914	-104.22682	25-Mar-00	N/A
LLJ VENTURES, LLC DBA MARKER OIL & GA	GATES STATE #001	30-015-00689	Oil	Active	32.7932	-104.22469	21-Jul-51	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #203	30-015-22656	Oil	Active	32.77663	-104.22584	13-Sep-78	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #020D	30-015-01215	Oil	Plugged (site released)	32.7814	-104.22572	7-Nov-59	19-May-17
APACHE CORPORATION	EMPIRE ABO UNIT #020C	30-015-00711	Oil	Plugged (site released)	32.77779	-104.22571	31-Dec-99	8-Jul-13
LLJ VENTURES, LLC DBA MARKER OIL & GA	HOMAN #001	30-015-00669	Oil	Active	32.79139	-104.22467	22-May-49	N/A
APACHE CORPORATION	AAO FEDERAL #008	30-015-33784	Oil	Active	32.77868	-104.22463	28-Feb-05	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #021B	30-015-02613	Oil	Active	32.78052	-104.22141	8-Dec-59	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #201	30-015-21553	Oil	Temporary Abandonment	32.77633	-104.22363	28-Jun-75	N/A
APACHE CORPORATION	AAO FEDERAL #007	30-015-33473	Oil	Active	32.77845	-104.22893	22-Oct-04	N/A
TARCO ENERGY, LC	DELHI #007	30-015-00646	Oil	Active	32.79502	-104.22469	26-Mar-50	N/A
LLJ VENTURES, LLC DBA MARKER OIL & GA	ASTON & FAIR A #001	30-015-01633	Oil	Active	32.79683	-104.22256	28-Dec-45	N/A
APACHE CORPORATION	AAO FEDERAL #024	30-015-42337	Oil	Active	32.78051	-104.22435	3-Jun-14	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #417	30-015-39401	Oil	Temporary Abandonment	32.78628	-104.22562	9-Jan-12	N/A
APACHE CORPORATION	AAO FEDERAL #014	30-015-42024	Oil	Active	32.78286	-104.22401	7-Mar-14	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #212	30-015-22637	Oil	Temporary Abandonment	32.77649	-104.22226	4-Dec-78	N/A
APACHE CORPORATION	AAO FEDERAL #004	30-015-32310	Oil	Active	32.78052	-104.22678	14-Jul-03	N/A
APACHE CORPORATION	AAO FEDERAL #023	30-015-42336	Oil	Active	32.77699	-104.22463	4-Aug-14	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #021D	30-015-02622	Oil	Temporary Abandonment	32.77503	-104.22141	27-Dec-59	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01634	Oil	Plugged (site released)	32.79678	-104.2225	1-Jan-00	1-Jan-01
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #021	30-015-01647	Oil	Plugged (site released)	32.78506	-104.22142	31-Dec-99	23-Jul-05
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #020	30-015-00685	Oil	Plugged (site released)	32.78775	-104.22466	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #411	30-015-39021	Oil	Plugged (site released)	32.7831	-104.22308	31-Oct-11	18-Mar-15
ROVER OPERATING, LLC	HUDSON SAIKIN STATE #001	30-015-02666	Oil	Active	32.79139	-104.22253	17-Apr-48	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01645	Oil	Plugged (site released)	32.79503	-104.2204	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #022C	30-015-02610	Oil	Active	32.77156	-104.21787	19-Jul-60	N/A
Contango Resources, Inc.	STALEY STATE #020	30-015-40983	Oil	Active	32.79871	-104.21181	3-Mar-13	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #022E	30-015-02621	Oil	Active	32.78149	-104.21711	29-Nov-59	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #022F	30-015-02623	Oil	Active	32.77512	-104.2168	28-Jan-60	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #211	30-015-21395	Oil	Active	32.77604	-104.21933	12-Dec-74	N/A
GEORGE A CHASE JR DBA G AND C SERVIC	ASTON & FAIR #001Y	30-015-01635	Oil	Active	32.79142	-104.21608	7-Jun-47	N/A

BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #023D	30-015-02628	Oil	Plugged (site released)	32.77516	-104.21362	2-Apr-60	5-Dec-08
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01636	Oil	Plugged (site released)	32.79688	-104.21394	1-Jan-00	1-Jan-00
GEORGE A CHASE JR DBA G AND C SERVIC	MALCO STATE #001	30-015-01637	Oil	Active	32.79144	-104.21386	14-Jan-53	N/A
Contango Resources, Inc.	STALEY STATE #017	30-015-40026	Oil	Active	32.79869	-104.21579	15-Mar-12	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #222	30-015-22012	Oil	Active	32.77958	-104.21844	17-Feb-77	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #022	30-015-01643	Oil	Plugged (site released)	32.79142	-104.21624	31-Dec-99	10-Jul-09
APACHE CORPORATION	EMPIRE ABO UNIT #235	30-015-22913	Oil	Plugged (site released)	32.77859	-104.21143	31-Dec-99	21-Apr-10
APACHE CORPORATION	EMPIRE ABO UNIT #024C	30-015-02616	Oil	Plugged (site released)	32.7789	-104.20945	31-Dec-99	7-Jun-13
APACHE CORPORATION	EMPIRE ABO UNIT #022D	30-015-02620	Oil	Active	32.77784	-104.21678	3-Nov-59	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00264	Oil	Plugged (site released)	32.7753	-104.21375	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-02611	Oil	Plugged (site released)	32.7753	-104.21375	1-Jan-00	1-Jan-00
Contango Resources, Inc.	ENRON STATE #020	30-015-42372	Oil	Active	32.79683	-104.22223	6-Jul-14	N/A
Contango Resources, Inc.	STALEY STATE #012	30-015-37673	Oil	Active	32.79867	-104.21827	24-May-10	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #023	30-015-01649	Oil	Plugged (site released)	32.7852	-104.21255	31-Dec-99	14-Jan-10
APACHE CORPORATION	EMPIRE ABO UNIT #419	30-015-39011	Oil	Plugged (not released)	32.78669	-104.21056	11-Oct-11	13-Feb-18
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-02626	Oil	Plugged (site released)	32.77876	-104.21819	1-Jan-00	1-Jan-00
Contango Resources, Inc.	ENRON STATE #004	30-015-32162	Oil	Active	32.79649	-104.22041	25-Mar-03	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-02618	Gas	Plugged (site released)	32.77348	-104.213	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #231A	30-015-21626	Oil	Plugged (site released)	32.77961	-104.21446	31-Dec-99	1-Jul-13
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #231B	30-015-22491	Oil	Plugged (site released)	32.77362	-104.21388	31-Dec-99	24-Aug-09
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #023A	30-015-01650	Oil	Plugged (site released)	32.78792	-104.21266	31-Dec-99	17-Sep-03
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #232	30-015-21737	Oil	Plugged (site released)	32.77721	-104.21136	31-Dec-99	9-Oct-09
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-02624	Oil	Plugged (site released)	32.77161	-104.21363	1-Jan-00	1-Jan-00
APACHE CORPORATION	RED LAKE 36 A STATE #002	30-015-33994	Oil	Active	32.79523	-104.22498	23-Mar-05	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #021C	30-015-02619	Oil	Active	32.77777	-104.22141	7-Oct-59	N/A
ROJO GRANDE LLC	RAMAPO #007	30-015-31592	Oil	Plugged (site released)	32.78419	-104.23108	14-Feb-01	21-Dec-01
Contango Resources, Inc.	NORTHWEST ARTESIA UNIT #011	30-015-20042	Oil	Active	32.78617	-104.20841	26-Apr-67	N/A
Contango Resources, Inc.	NW STATE #009	30-015-30849	Oil	Active	32.78982	-104.2072	14-Dec-99	N/A
APACHE CORPORATION	AAO FEDERAL #017	30-015-42027	Oil	Active	32.7787	-104.22637	27-Mar-14	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #213	30-015-23116	Oil	Temporary Abandonment	32.77758	-104.22324	9-Mar-80	31-Dec-99
ROVER OPERATING, LLC	RAMPO #002	30-015-01640	Oil	Active	32.78957	-104.22252	15-Jun-55	N/A
CFM OIL, LLC	BLAKE STATE #001	30-015-01616	Oil	Active	32.79872	-104.20966	21-Nov-52	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #231	30-015-21542	Oil	Plugged (site released)	32.77994	-104.21136	31-Dec-99	13-Jun-13
GEORGE A CHASE JR DBA G AND C SERVIC	MALCO STATE #003	30-015-37428	Oil	Active	32.79235	-104.2128	20-Dec-09	N/A
SBKF, LLC	POWCO STATE #002	30-015-25621	Oil	Active	32.79511	-104.21167	12-May-86	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #233	30-015-22490	Oil	Plugged (site released)	32.77637	-104.21291	31-Dec-99	9-Oct-09
APACHE CORPORATION	EMPIRE ABO UNIT #211A	30-015-23548	Oil	Temporary Abandonment	32.7743	-104.22031	11-Feb-81	31-Dec-99
APACHE CORPORATION	EMPIRE ABO UNIT #023B	30-015-02614	Oil	Active	32.77793	-104.21267	28-Dec-59	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #223	30-015-22527	Oil	Plugged (not released)	32.77608	-104.21728	21-Apr-78	23-Jul-21
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #022B	30-015-01651	Oil	Plugged (site released)	32.78787	-104.21581	31-Dec-99	10-Feb-10
APACHE CORPORATION	EMPIRE ABO UNIT #408	30-015-39020	Oil	Plugged (site released)	32.78373	-104.21455	18-Oct-11	18-Jan-17
APACHE CORPORATION	EMPIRE ABO UNIT #023C	30-015-02625	Oil	Plugged (not released)	32.78208	-104.21328	11-Oct-59	26-Mar-21
BP AMERICA PRODUCTION COMPANY	SLIDER 6 STATE #001	30-015-34028	Oil	Plugged (site released)	32.77713	-104.21068	19-Jun-05	23-Dec-08
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #021A	30-015-01648	Oil	Plugged (site released)	32.78796	-104.20983	14-Apr-60	24-Aug-02
APACHE CORPORATION	EMPIRE ABO UNIT #024B	30-015-02615	Oil	Active	32.78164	-104.20837	28-Jan-60	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #024A	30-015-01644	Oil	Plugged (site released)	32.788	-104.20737	31-Dec-99	15-Jun-09
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #022A	30-015-01646	Oil	Plugged (site released)	32.78513	-104.21679	31-Dec-99	20-Aug-09
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #241	30-015-23547	Oil	Plugged (site released)	32.77809	-104.20837	31-Dec-99	23-Dec-08
APACHE CORPORATION	EMPIRE ABO UNIT #221	30-015-21746	Oil	Active	32.77617	-104.21473	28-Mar-76	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #234	30-015-22593	Oil	Plugged (site released)	32.77813	-104.21417	31-Dec-99	25-Nov-08
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #232A	30-015-22528	Oil	Plugged (site released)	32.77528	-104.21134	27-Jun-78	9-Oct-09
GEORGE A CHASE JR DBA G AND C SERVIC	MALCO STATE #002	30-015-36343	Oil	Active	32.79325	-104.21389	30-Jun-08	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01638	Oil	Plugged (site released)	32.79691	-104.20965	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01654	Oil	Plugged (site released)	32.79694	-104.20535	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #251	30-015-22750	Oil	Plugged (site released)	32.78167	-104.20573	31-Dec-99	19-Jun-13
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-01653	Oil	Plugged (site released)	32.78612	-104.21163	1-Jan-00	1-Jan-00
ROVER OPERATING, LLC	RAMPO #001	30-015-01639	Oil	Active	32.78595	-104.2225	17-Mar-48	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #024K	30-015-02617	Oil	Plugged (site released)	32.77531	-104.20946	31-Dec-99	12-Dec-02
APACHE CORPORATION	EMPIRE ABO UNIT #024	30-015-01641	Oil	Active	32.78526	-104.2084	26-Feb-60	N/A
ROVER OPERATING, LLC	HUDSON SAIKIN STATE #002	30-015-24887	Oil	Active	32.7914	-104.22038	5-Jun-84	N/A
SBKF, LLC	POWCO STATE #001	30-015-21594	Oil	Active	32.79689	-104.2118	28-Aug-75	N/A
Contango Resources, Inc.	STALEY STATE #009	30-015-36564	Oil	Active	32.7987	-104.21363	15-Dec-08	N/A
Contango Resources, Inc.	NORTHWEST ARTESIA UNIT #004	30-015-10537	Oil	Active	32.79157	-104.20742	3-Mar-66	N/A
Contango Resources, Inc.	NW STATE #015	30-015-30785	Oil	Active	32.78228	-104.2073	20-Dec-99	N/A
KERSEY & COMPANY	RAMAPO #001	30-015-00688	Oil	Plugged (site released)	32.78957	-104.22466	2-Oct-41	18-Jun-96
KERSEY & COMPANY	RAMAPO #003	30-015-00670	Oil	Plugged (site released)	32.78957	-104.22466	31-Dec-99	17-Jun-96
Contango Resources, Inc.	ENRON STATE #015	30-015-36978	Oil	Active	32.79502	-104.22254	25-Jun-09	N/A
Contango Resources, Inc.	ENRON STATE #016	30-015-38512	Oil	Active	32.79503	-104.22056	11-Aug-11	N/A
Contango Resources, Inc.	NO BLUFF 36 STATE COM #002	30-015-31123	Gas	Plugged (not released)	32.7923	-104.22607	18-Mar-01	19-Nov-20
Contango Resources, Inc.	NW STATE #011	30-015-30783	Oil	Active	32.79329	-104.20744	3-Nov-99	N/A
Contango Resources, Inc.	NW STATE #028	30-015-30893	Oil	Active	32.79514	-104.20952	14-Sep-00	N/A
KERSEY & COMPANY	BOLING #001	30-015-01652	Oil	Active	32.79151	-104.21163	14-Dec-89	N/A
Contango Resources, Inc.	NORTHWEST ARTESIA UNIT #016	30-015-20019	Oil	Active	32.78256	-104.2073	15-Feb-67	N/A
Contango Resources, Inc.	ENRON STATE #018	30-015-40339	Oil	Active	32.79513	-104.20532	11-Jan-14	N/A
Contango Resources, Inc.	ANTHONEY #002	30-015-38234	Oil	Active	32.799	-104.20904	1-Feb-11	N/A
Contango Resources, Inc.	NW STATE #012	30-015-30784	Oil	Active	32.79692	-104.20799	11-Nov-99	N/A
Contango Resources, Inc.	NW STATE #010	30-015-30760	Oil	Active	32.78548	-104.20732	12-Oct-99	N/A
Contango Resources, Inc.	STALEY STATE #029	30-015-42726	Oil	Active	32.79918	-104.21343	22-Nov-14	N/A
ROVER OPERATING, LLC	STATE FV #001	30-015-10118	Oil	Active	32.78543	-104.21645	8-Feb-63	N/A
ROVER OPERATING, LLC	STATE FW #001	30-015-01642	Oil	Active	32.7879	-104.21381	29-Nov-62	N/A
KERSEY & COMPANY	RAMAPO #002	30-015-00687	Gas	Plugged (site released)	32.78959	-104.22681	31-Dec-99	14-Jun-96
Contango Resources, Inc.	NORTHWEST ARTESIA UNIT #010	30-015-10833	Oil	Active	32.78889	-104.20845	4-Jun-66	N/A
ROVER OPERATING, LLC	STATE FX #001	30-015-10107	Oil	Active	32.77815	-104.21746	9-Jul-63	N/A
NAVAJO REFINING COMPANY, L.L.C.	WDW #001	30-015-27592	SWD	Active	32.78518	-104.21377	4-Aug-93	N/A

LEASE/WELL:	**NO BLUFF "36" STATE COM #002**
LOCATION	1,980' FNL & 460' FEL H-36-17S-27E
CO/ST:	EDDY COUNTY, NEW MEXICO
FIELD:	ILLINOIS CAMP; MORROW, NORTH
API NO.	30-015-31123

GR	3634
SPUDDED	3/19/2001
COMPLETED	4/28/2001
LAT	32.7923050
LONG	-104.2260742

PROPOSED P&A



17-1/2" HOLE

13-3/8" 61# H-40
CMT W/ 465 SX. CIRC.

12-1/4" HOLE

8-5/8" 32# J-55
CMT W/ 650 SX. CIRC.

7-7/8" HOLE

5-1/2" 17# N-80
CMT W/ 553 SX.

PERF @ 100' & CIRC CMT TO SURF BEHIND ALL 3 STRINGS

425'
PERF @ 475' & SQZ 50 SX "C" 375-475'. WOC & TAG. (13-3/8" SHOE)

2,002'
PERF @ 2,052' & SQZ 50 SX "C" 1,952-2,052'. WOC & TAG. (8-5/8" SHOE)

PERF @ 3,249' & SQZ 50 SX "C" 3,149-3,249'. WOC & TAG. (GLORIETA)

PERF @ 4,109' & SQZ 50 SX "C" 4,009-4,109'. WOC & TAG. (TUBB)

PERF @ 5,068' & SQZ 50 SX "C" 4,968-5,068'. WOC & TAG. (ABO)

PERF @ 6,790' & SQZ 50 SX "C" 6,690-6,790'. WOC & TAG. (WOLFCAMP)

PERF @ 8,400' & SQZ 100 SX "H" 8,200-8,400'. WOC & TAG. (CISCO & CANYON)

PERF @ 8,931' & SQZ 50 SX "H" 8,831-8,931'. WOC & TAG. (STRAWN)

PERF @ 9,514' & SQZ 50 SX "H" 9,414-9,514'. WOC & TAG. (ATOKA)

CALC TOC @ 7,350'

CIBP @ 9,827'. CAP W/ 35' CMT.

LOWER MORROW PERFS: 9,927-9,964' (222 HOLES)

10,050'

PBTD: 10,015'
TD: 10,050'

FORMATION TOPS PER C-105

GLORIETA	3159
TUBB	4059
ABO	5018
WOLFCAMP	6740
CISCO	8242
CANYON	8350
STRAWN	8881
ATOKA	9464

KDZ 10-11-2020

Attachment 7
Digital Data

Petrotek

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 Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

COMMENTS

Action 82493

COMMENTS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 82493
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	WDW-1 Fall Off Test (FOT) Report December 2021	5/10/2022

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
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CONDITIONS

Action 82493

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Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 82493
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	None	5/10/2022