UICI-8-3

EPA FALL-OFF TEST REPORT (WDW-3)

2023

Petrotek

Technical Report

MECHANICAL INTEGRITY AND RESERVOIR TESTING

CLASS I NON-HAZARDOUS DEEPWELL GAINES WDW-3

(OCD UIC Permit: UICI-008-3)
(API Number: 30-015-26575)

HollyFrontier Navajo Refining Company
Artesia, New Mexico

Section 1, Township 18S, Range 27E
2250 FWL, 790 FSL

September 2023

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EXECUTIVE SUMMARY

This report summarizes the successful mechanical integrity testing (MIT) and falloff testing activities performed on the Gaines WDW-3 (WDW-3) 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 April 26, 2023, before field activities commenced. Attachment 1 presents the test notification and procedures submitted to OCD. 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 Gary Hastings (Petrotek) from August 30 through September 1, 2023.

The field activities consisted of an annulus pressure test (APT) and an injection falloff test on WDW-3. 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-008-3

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

c. **Well name and number** - Gaines WDW-3

d. **API Number** - 30-015-26575

e. **Legal Location** - Section 1, Township 18S, Range 27E, 2250 FWL, 790 FSL

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 1991 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:

https://ocdimage.emnrd.nm.gov/imaging/WellFileView.aspx?RefType=WL&RefID=30015265750000

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 7,660 and 8,620 ft KB, 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 was approximately 175 feet with an average porosity of 10 percent. Consistent with the most recent test analysis submitted, these values were used for the analysis performed in this report.

6. PVT DATA OF THE FORMATION AND INJECTION FLUID

As reported in previous test analysis reports, fluid samples of connate brine from the injection interval were collected from the 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. Note that formation fluid samples were collected from WDW-4, but the well was completed in a separate injection zone. As such, WDW-4 geology and formation fluid samples will be discussed separately in the testing report for that well.

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)	213.0	235.0	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 recorded bottom hole pressure and temperature in conjunction with industry standard correlations. The correlations used are from 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 in Table 1. A bottom hole temperature of 127.4 °F has been used as representative of the formation for these correlations. This value was derived from the original temperature log, run in 2006 when the well was recompleted. This log is can be found online on the OCD site as part of the well files for this well.

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 original formation pressure has been estimated at a depth of 7,660 feet BGL using the average formation fluid specific gravity based on the TDS values provided in Table 1. Using this method, a value of 3,404.7 psi has been estimated as the original pressure at gauge depth (7,660 feet BGL). At this pressure and a temperature of 127.4 °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 0.56 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).

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

Where,

a = 0.8535
b = 1.075
c = 2.303 E06
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. The estimate is based on a bottom hole temperature of 127.4 °F, a bottom hole pressure of 3,404.7 psi, and a 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 10.9 E-06 psi^{-1}.

The specific gravity of the test fluid, based on the static gradient survey performed at the end of the test, was 1.007 (gradient of 0.436 psi/ft) with a measured temperature during injection of 105.4 °F. Using Equations L-84 through L-87, the viscosity of the injected fluid at bottom hole conditions at the wellbore during injection is 0.71 cp. The compressibility of the injected fluid is (based on Figures L-30 and 31) is 2.88 E-06 psi^{-1}.

The values presented in this section have been utilized 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.

TABLE 2
MAY AND JUNE INJECTION DATA

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
7/1/2023	1125.2	107.71	708.9
7/2/2023	1125.1	106.64	714.6
7/3/2023	1120.7	105.37	682.8
7/4/2023	1045.4	95.26	611.6
7/5/2023	1055.9	98.04	592.3
7/6/2023	1075.2	101.55	607.2
7/7/2023	1081.1	102.41	639.1
7/8/2023	1127.3	109.94	702.6
7/9/2023	1182.4	120.78	771.2
7/10/2023	1171.0	118.57	768.3
7/11/2023	1143.6	116.08	767.1
7/12/2023	1131.1	114.01	756.7
7/13/2023	1114.9	111.84	759.7
7/14/2023	1147.0	117.37	793.5
7/15/2023	1115.0	112.40	779.7
7/16/2023	1125.1	114.30	767.1
7/17/2023	1126.5	115.47	781.2
7/18/2023	1180.3	125.98	788.1
7/19/2023	1243.7	136.87	802.7
7/20/2023	1136.7	119.27	797.9
7/21/2023	1061.3	106.81	761.3
7/22/2023	1081.8	110.15	778.9
7/23/2023	1140.2	119.80	845.8
7/24/2023	1163.8	123.74	880.8
7/25/2023	1135.1	118.71	861.7
7/26/2023	1135.2	119.03	853.9
7/27/2023	1141.8	120.00	844.8
7/28/2023	1171.5	124.36	845.1
7/29/2023	1171.0	123.74	831.6
7/30/2023	1165.3	122.44	815.8
7/31/2023	1218.4	131.46	842.9
8/1/2023	1268.3	140.44	868.3
8/2/2023	1138.9	121.72	803.6

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
8/3/2023	1148.0	122.19	841.4
8/4/2023	1142.8	121.50	879.1
8/5/2023	1165.0	124.72	871.8
8/6/2023	1164.3	124.33	803.6
8/7/2023	1169.4	124.43	737.8
8/8/2023	1180.1	124.88	751.4
8/9/2023	1104.3	111.89	700.6
8/10/2023	1015.7	96.91	624.5
8/11/2023	1064.6	105.64	650.3
8/12/2023	1108.5	111.26	699.8
8/13/2023	1082.2	104.98	752.1
8/14/2023	1142.9	114.65	826.2
8/15/2023	1175.2	118.42	830.7
8/16/2023	1175.3	119.06	777.3
8/17/2023	1180.7	119.58	727.8
8/18/2023	1200.2	122.09	751.3
8/19/2023	1200.1	121.91	821.0
8/20/2023	1183.7	118.58	865.4
8/21/2023	1150.2	114.39	840.5
8/22/2023	1151.0	114.22	847.6
8/23/2023	1217.1	120.46	891.9
8/24/2023	1250.3	126.25	870.8
8/25/2023	1223.7	120.79	897.1
8/26/2023	1204.4	117.77	875.1
8/27/2023	1248.6	123.15	875.3
8/28/2023	1174.7	112.01	796.1
8/29/2023	1169.0	111.29	713.4

8. CUMULATIVE INJECTION INTO THE FORMATION FROM TEST WELL

At the time of shut-in for testing this year, the cumulative volume of waste injected into this well since operations began was 25,368,168 barrels (1,065,463,051 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. 101696).

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 10,000 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 3/10/2022. The most recent calibration certificates are provided in Attachment 3. The bottom gauge (Serial Number - 224831) was utilized for analysis and hung at a test depth 7,572 feet BGL.

10. ONE-MILE AREA OF REVIEW (AOR)

A standard one-mile Area of Review (AOR) was evaluated for WDW-3 by Petrotek as part of the annual testing and reporting requirements. 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 dates of spud and abandonment. A figure displaying the wells located in the AOR and the wells in the surrounding sections has been provided as Figure 13.

No new wells have been drilled or P&A'd within the AOR since the prior report.

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, 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-1 and WDW-2. Only WDW-2 is located within the AOR. Based on public data, there are three additional wells, not operated by HFNR that are located within the AOR and inject into the same interval. 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 detailed 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 the three wells are 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 4, 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 3
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 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. 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 log review. A structure map is provided in Figure 5 which displays the top of the Strawn Formation, indicating the bottom of the Canyon.

12. OFFSET WELLS

HFNR operates three other Class I Injection wells locally, two of which are completed in the same interval, WDW-1 and WDW-2. Only WDW- 2 is listed in Attachment 6 since WDW-1 is not within the 1-mile AOR surrounding WDW-3. No changes have occurred to either of these wells since testing last year.

WDW-1 is approximately 7,800 feet to the northeast of WDW-3, while WDW-2 is approximately 3,100 feet to the west-southwest of WDW-3. These wells are at a significant distance from the test well in a relatively high permeability system, and are not considered to have had an unacceptable impact on the testing performed on WDW-3.

There are three additional wells, not operated by HFNR, that are within the AOR and inject into the same formation interval. These wells are the AAO Federal SWD No. 1 (API #30-015-42549,) operated by Apache Corporation, the Chalk Bluff Federal SWD #001 (API #30-015-27163) and Federal T SWD #1 (API #30-015-27163), both operated by Redwood Operating, LLC.

a. **Identify the distance between the test well and any offset wells completed in the same injection interval –** WDW-2 is approximately 3,100 feet to the west-southwest, the Federal T SWD #1 is approximately 3,500 feet to the east-southeast, the Chalk Bluff Federal SWD #001 is approximately 2,300 feet to the east-northeast, and the AAO Federal SWD #001 is approximately 2,000 feet to the north-northeast.

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. Data from the state website, last updated in June 2023 indicated average injection rates of approximately 28 gpm for the AAO Federal SWD #1, 147 gpm for the Chalk Bluff Federal SWD #001 and 189 gpm for the Federal T SWD #1.

c. **Describe the impact, if any, of the offset wells during both the injection and shut-in portions of the test -** These offset injectors did not prevent conducting a useful test on the well, although late-time data is likely impacted by the start of non-radial flow effects. 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 August 30 through September 1, 2023.

b. **Time of the injection period -** Test injection occurred for approximately 48 hours before the falloff test began. This injection period exceeded the duration of the falloff.

c. **Type of injection fluid -** Filtered waste was utilized for 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 4,310.1 psia (at 7,572 feet BGL) and the injection rate was 111.7 gpm (3,830.3 bpd) with a measured bottom hole temperature of 106.5 °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 4,211.7 psia and the final bottom hole temperature was 111.7 °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 15-19 of Section IX, Report Components, of the OCD's falloff test guidelines.

The equations, parameters and calculations utilized to derive these values are detailed further below. Table 5 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 4,792 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 transition into radial flow was approximately 9 hours after shut-in. This value was derived from the semi-log plot.

c. **Slope(s) determined from the semi-log plot -** The slope for this likely radial period, as determined by the semi-log plot, was 5.38 psi/cycle.

d. **Transmissibility (kh/μ) -** The transmissibility was determined to be 115,729 md-ft/cp.

e. **Permeability (k) -** The permeability was determined to be 370 md.

f. **Skin Factor (s) -** The skin factor was determined to be 11.7 units.

g. **Pressure drop due to skin (ΔP_{skin}) -** The pressure drop due to skin was determined to be 54.5 psi

h. **Flow efficiency -** The flow efficiency was determined to be 0.45.

i. **Flow capacity (kh) -** The flow capacity (permeability-thickness) was determined to be 64,808 md-ft.

j. **P_{1hr} -** The extrapolated 1-hr pressure was determined to be 4,220.4 psi.

TABLE 4
FALLOFF TEST ANALYSIS INPUT VALUES

Parameter	Value	Unit
Formation Thickness, h	175	feet
Porosity, Φ	10	percent
Viscosity, μ	0.56	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	0.3246	feet
Final Well Flowing Pressure, p_{wf}	4,310.1	psia
Final Injection Rate, q_{final}	3,830.3 111.7	bwpd (gpm)
Horner Straight Line Slope, m	5.38165	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 6/22/2020 (21,187,321 barrels) by the final injection rate (47.0 gpm). This resulted in a value of 315,489 hours of injection at 47.0 gpm. This value was used in conjunction with the injection data collected from 6/22/2020 through 8/30/2023. The total waste volume injected up to the time of shut-in utilized for calculations was 1,065,463,051 gallons (25,368,168 bbls).

To determine the mobility-thickness (transmissibility), the following equation was utilized. The resulting transmissibility was 115,729 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 unit conversion constant

$$\frac{kh}{\mu} = Transmissibility = 162.6\frac{3{,}830.3 * 1.0}{5.38165} = 115{,}729\frac{md-ft}{cp}$$

The transmissibility was then used to determine the permeability thickness. The resulting permeability-thickness was 64,808 md-ft.

$$kh = \left(\frac{kh}{\mu}\right)\mu = 115{,}729\left(\frac{md-ft}{cp}\right)0.56\ cp = 64{,}808\ md-ft$$

The permeability thickness was then used to determine the permeability of the reservoir. The resulting permeability was 370 md.

$$k = \frac{kh}{h} = \frac{64{,}808\ md-ft}{175\ ft} = 370\ md$$

In order to determine if the proper 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 resulting radius was estimated to be 1,610 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

$$r_{waste} = \sqrt{\frac{0.13368 * (1{,}065{,}63{,}051)}{\pi * 175 * 0.10}} = 1{,}610\ feet$$

Based on this radius, the time for a pressure transient to travel through this fluid can be calculated. The resulting time was 4.05 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

$$t_{waste} = 948\frac{0.10 * 0.56 * 10.90E-06 * (1{,}610)^2}{370.3} = 4.05\ hours$$

Based on this result, and the time it took for radial flow to be reached (~9 hours), it is known that the pressure transient was traveling through reservoir fluid 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 11.7 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

$$s = 1.151\left(\frac{4{,}310.1 - 4{,}220.4}{5.38165} - log\left(\frac{370.3}{0.10 * 0.56 * 10.90E-06 * 0.3246^2}\right) + 3.23\right) = 11.7$$

The change in pressure, due to skin, in the wellbore can be calculated using the following equation. The result of this calculation was 54.5 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

$$\Delta P_{skin} = 0.869 * 5.38165 * 11.7 = 54.5\ psi$$

The flow efficient (FE) can be determined using the following equation, provided within the OCD Guidelines (Section IX, 15, h). The result of this calculation was 0.45.

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

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

$$FE = \frac{4{,}310.1 - 54.5 - 4{,}211.7}{4{,}310.1 - 4{,}211.7} = 0.45$$

The test radius of investigation (r_{inv}) can be determined using the following equation. The result of this calculation was 4,792 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

$$r_{inv} = 0.029\sqrt{\frac{370.3 * 44.4}{0.1 * 0.56 * 10.90E-06}} = 4{,}792\ feet$$

Based on examination of the superposition time semi-log diagnostic plot provided as Figure 10, the test reached what appears to be radial flow approximately 9 hours after shutting the well in. Early-time data was dominated by wellbore storage for more than the first hour of the test. 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. Figure 10 presents a simple analysis consistent with the pseudo straight-line analysis equations presented in the preceding text. Figure 9 presents a simulation analysis generated for a limited-entry, homogenous radial flow system. The simulation analysis generally supports the more simplistic graphical analysis based on the linear portion of the semi-log plot.

Toward the end of the test it is possible that a late-time period may be developing where the effects of heterogeneity, multi-layer crossflow or offset injection interference may be starting to influence the test. However, the substantial permeability-thickness of this injection zone yield small pressure changes during both middle- and late-time periods of the test that generate a somewhat noisy derivative even with the high-resolution gauges used to collect the pressure-transient data. The character of the fall-off data and the derivative are similar to the patterns evident in previous testing of this well.

The following figures are provided:

- 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 presented. 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 this raw BHP 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 current concerns noted with regard to well or reservoir performance.

Table 6 contains all historical well test analysis results, including the results from the test this year. Attachment 5 presents a summary of the falloff test analysis.

TABLE 5
HISTORICAL AMBIENT RESERVOIR TESTING

Year	Fill Depth (feet)	Permeability (md)	Mobility-thickness (md-ft/cp)	Skin (units)	P* (psia)
2023	8,627	370	115,729	11.7	4,193.9
2022	8,657	463	144,601	20.6	3,998.4
2021	`8,604	630	197,009	37.3	3,969.1
2020	8,639	174	49,010	11.8	4,069.4
2019	8,632	340	104,265	12.0	4,170.0
2018	8,632	366	112,323	8.8	4,287.6
2017	9,060	533	163,612	12.2	4,259.3
2016	9,093	409	125,443	8.1	4,281.0
2014	8,946	730	224,096	10.5	4,351.6
2012	8,972	1,248	383,087	8.3	3,941.9
2012	8,986	597	183,293	27.3	3,792.3
2010	8,986	568	174,376	14.6	3,622.2
2009	8,986	719	233,008	54.1	3,475.7
2008	NA	1,322	321,411	107	3,430.3
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 June 16, the annulus was pressurized to approximately 587 psi to begin the test. A calibrated digital pressure gauge (Crystal XP2i, 5,000 psi, SN - 901241) 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, injection pressure and injection rate were then monitored for a period of thirty minutes at 5-minute intervals. During the Part I internal mechanical integrity test the pressure decreased by 15.8 psi. Since a change of 10% (58.7 psi) of the starting test pressure is allowable, this test is within acceptable specifications.

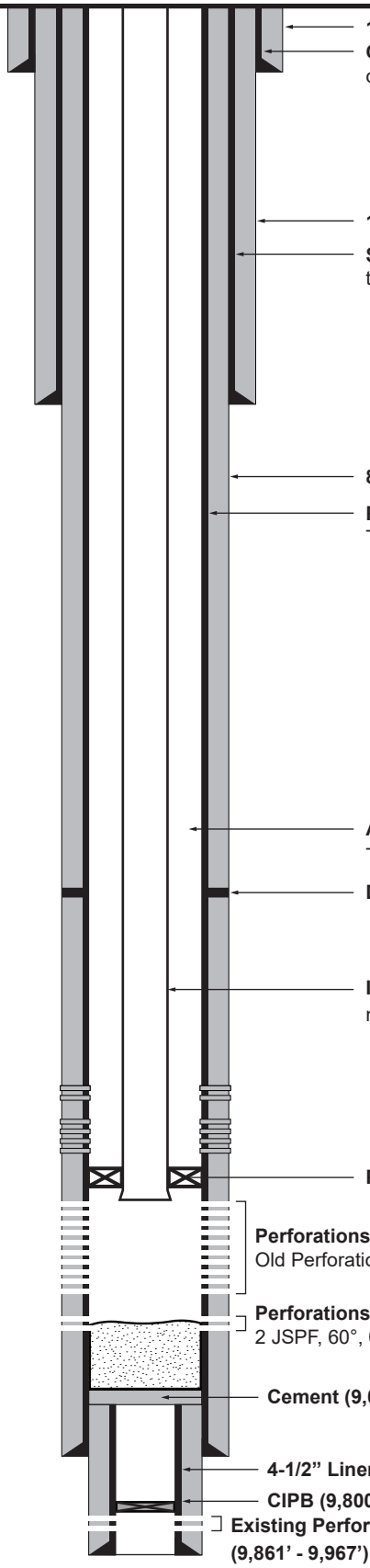
Attachment 2 presents a copy of the gauge certification. Pressures were observed as follows during testing.

TABLE 7
ANNULUS PRESSURE TEST MEASUREMENTS

Time, Minutes	0	5	10	15	20	25	30
Annulus Pressure, Psi	587.3	582.4	580.0	577.2	574.4	573.3	571.5

FIGURES

OCD UIC Permit: UICI-008-3
Well API Number: 30-015-26575
Eddy County, New Mexico
Sec. 31, T18S-R27E
Lat. 32.771186° / Long. -104.233306° (NAD 83)



17.5" Hole
Conductor Casing (0' - 400'): 13-3/8", 54.5 lb/ft, J-55 STC Steel, cemented to surface with 425 sacks of cement.

12.25" Hole
Surface Casing (0' - 2,600'): 9-5/8", 36 lb/ft, J-55 STC Steel, cemented to surface with 1,025 sacks of cement.

8-3/4" Hole
Protection Casing (0' - 9,450'): 7", 26 lb/ft & 29 lb/ft, N-80 & P110 Steel. Top of cement at 900', cement with 1,350 sacks of cement.

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

DV Tool (5,785')

Injection Tubing (0' - 7,568'): 4-1/2", 11.6 lb/ft, J-55 LTC Steel, no nipples, Injection Tubing - 10/24/06.

Packer (7,575'): 7" x 2-7/8" Arrow X-1 Packer, no nipples, 37K Tension.

Perforations (7,660' - 8,450'): 2 JSPF, 60°, 0.5"
Old Perforations Open: 7,676' - 7,698'

Perforations (8,540' - 8,620'):
2 JSPF, 60°, 0.5"

Cement (9,022')

4-1/2" Liner (9,051' - 10,119')

CIPB (9,800'): 35' of cement.

Existing Perforations (9,861' - 9,967')

Top of Fill:
8,604' (Tagged 8/2021)

PBTD: 9,022'

TD: 10,119'

Wellbore information from:
Gaines Well #3 Navajo
Refining schematic by
Subsurface Technology, 2009.

NOT TO SCALE

HF Sinclair

Figure 1
WDW No. 3,
Wellbore Schematic

2023 Schematic Update

Scale: NTS	Date: September 2023	
Fig_01_HF_Artesia_2023_WDW_03.pdf	By: WEK	Checked: LW

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

OCD UIC Permit: UICI-008-3
Well API Number: 30-015-26575
Eddy County, New Mexico
Sec. 31, T17S-R27E
Lat. 32.771186° / Long. -104.233306° (NAD 83)

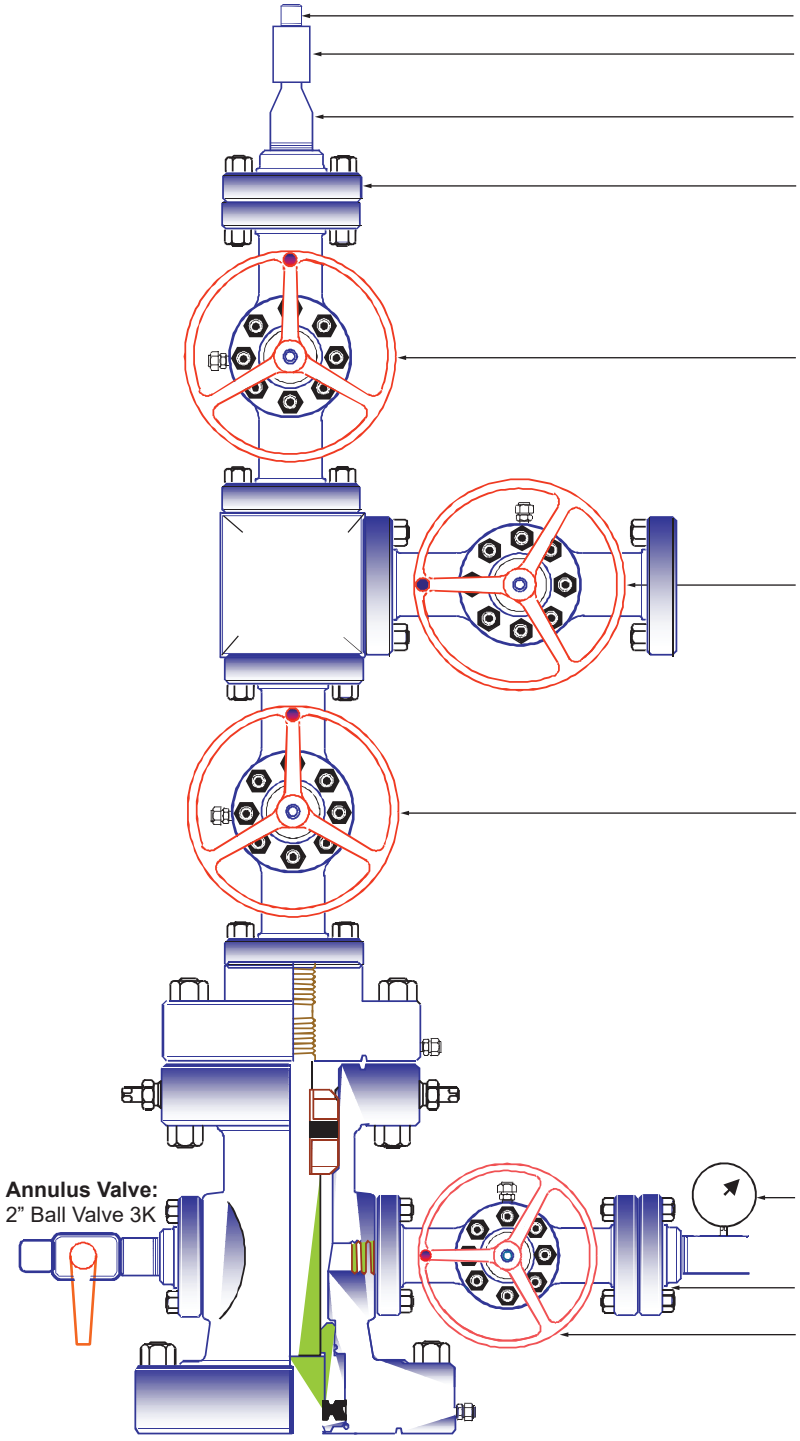

Figure 2
WDW No. 3,
Wellhead Schematic
2023 FOT/MIT Report

Scale: NTS	Date: September 2023	
Fig_02_HF_Artesia_2023_WDW_03.pdf	By: WEK	Checked: LW

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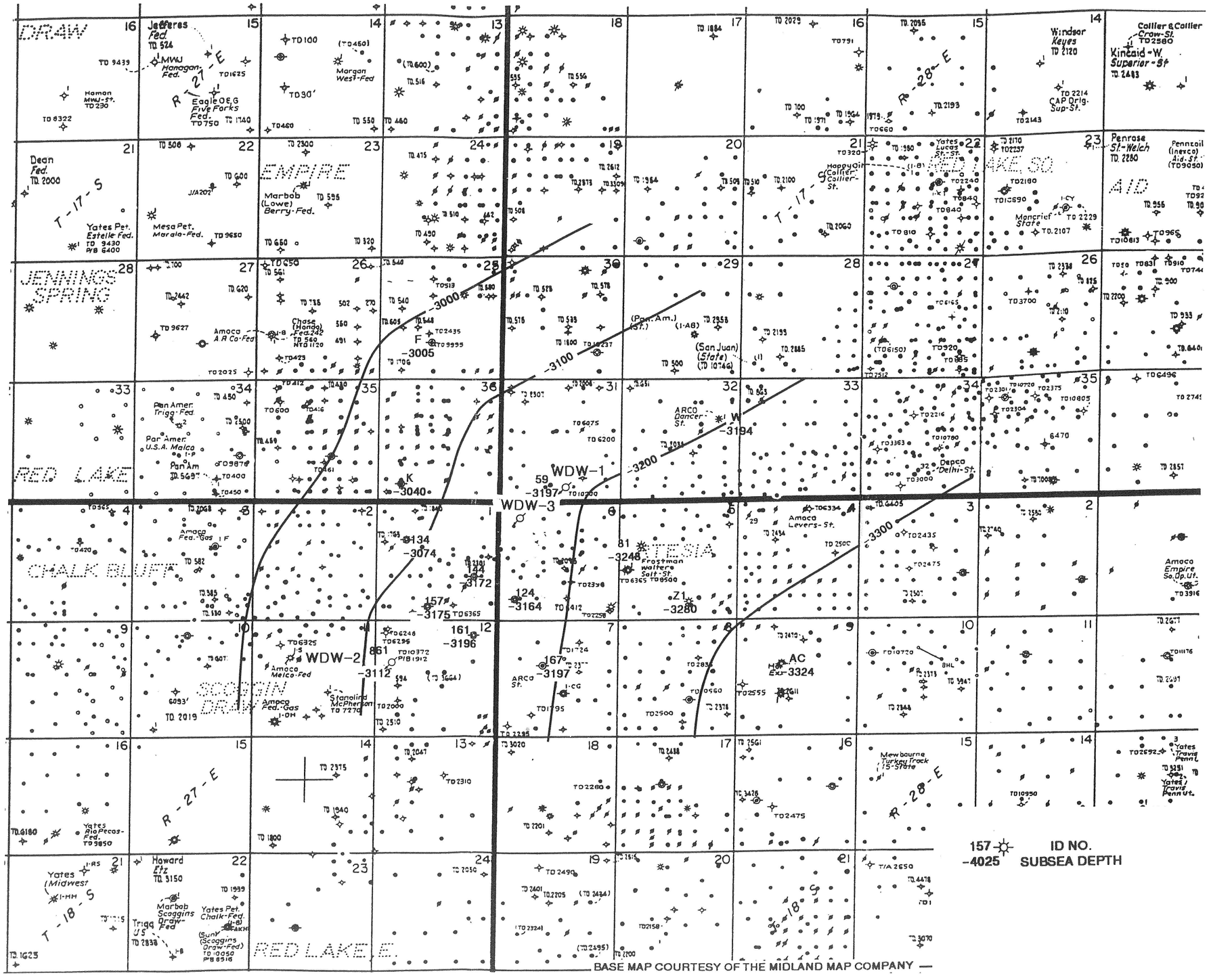
Well Head information partially
from: Well: Navajo Refining
WDW #3, by Subsurface Technology.

NOT TO SCALE



BASE MAP COURTESY OF THE MIDLAND MAP COMPANY

Adapted from Navajo Refining Co., Attachment VIII-12, Structure - Top of Wolfcamp Formation, Envirocorp, 1998.

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Figure 3
Wolfcamp Formation Structure Map

2023 FOT/MIT Report

Contour Interval = 100'	Date: September 2023	
Fig_03_HF_Artesia_2023_FOT.pdf	By: WEK	Checked: LW

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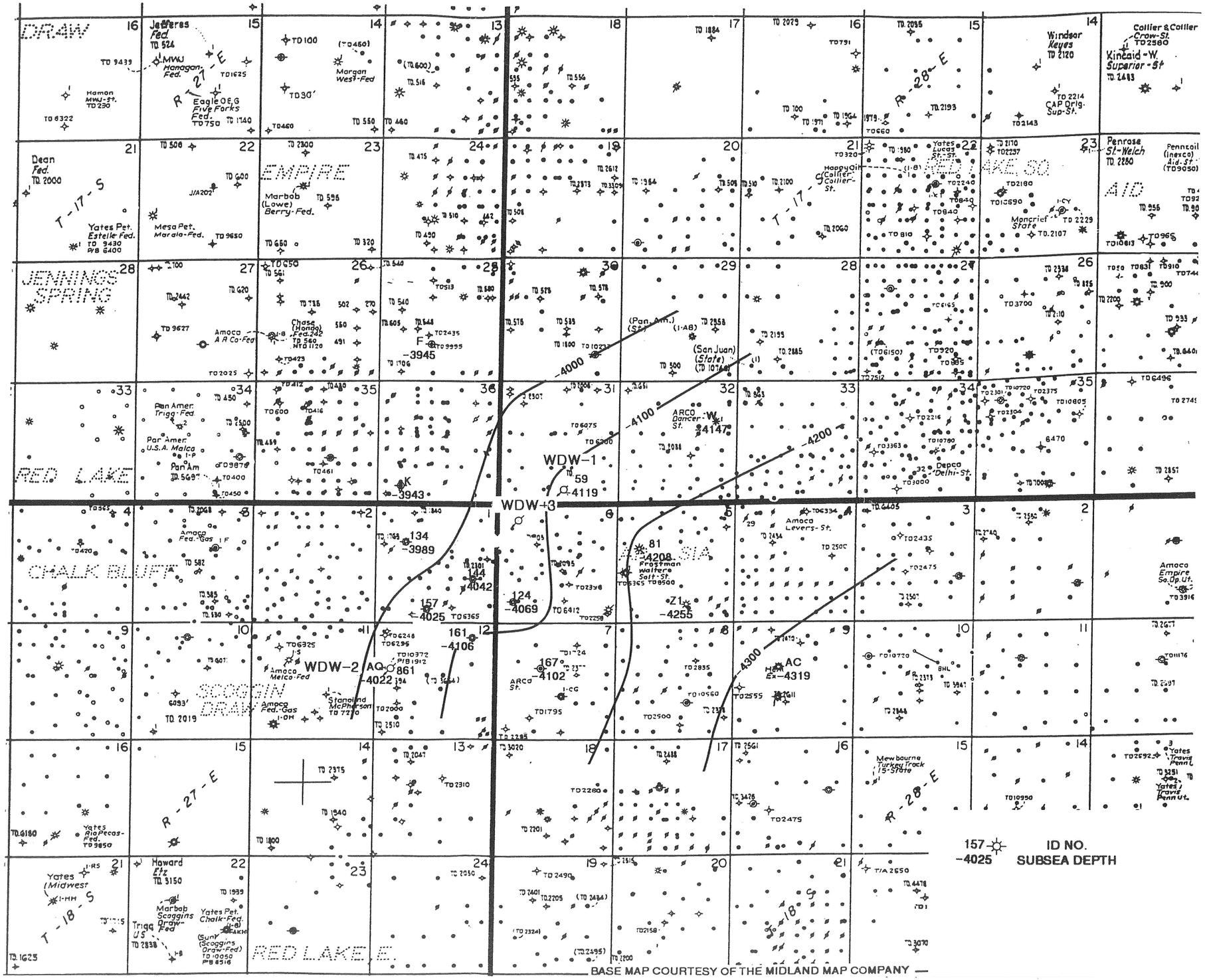

Adapted from Navajo Refining Co., Attachment VIII-13, Structure - Top of Cisco Formation, Envirocorp, 1998.

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Figure 4
Cisco Formation Structure Map

2023 FOT/MIT Report

Contour Interval = 100'	Date: September 2023	
Fig_04_HF_Artesia_2023_FOT.pdf	By: WEK	Checked: LW

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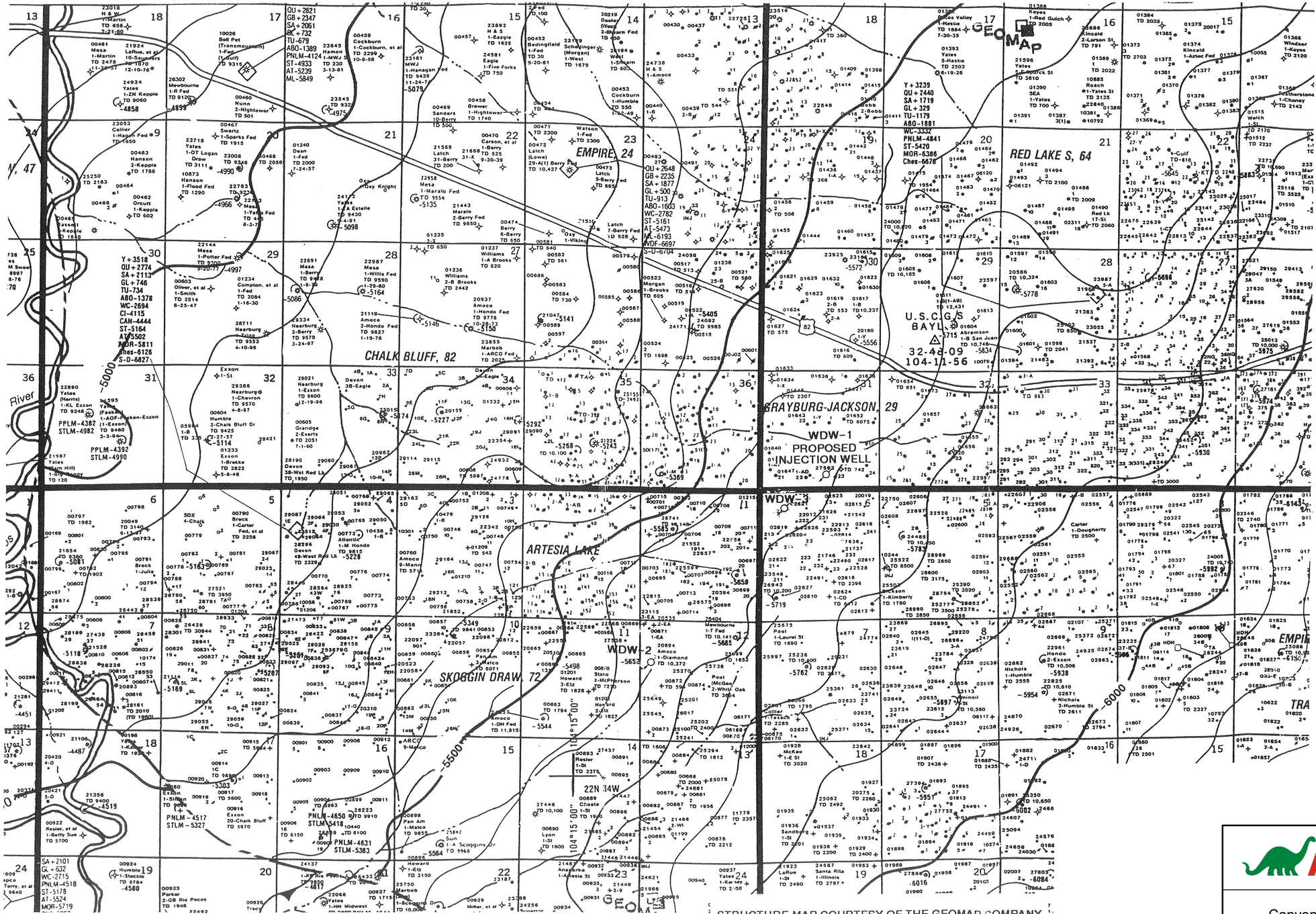

STRUCTURE MAP COURTESY OF THE GEOMAP COMPANY
Poster July 1997

Adapted from Navajo Refining Co., Attachment VIII-11,
Structure Map of the Strawn Formation, Envirocorp, 1999.

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Figure 5
Canyon/Strawn Formation
Structure Map
2023 FOT/MIT Report

Contour Interval = 100'	Date: September 2023	
Fig_05_HF_Artesia_2023_FOT.pdf	By: WEK	Checked: LW

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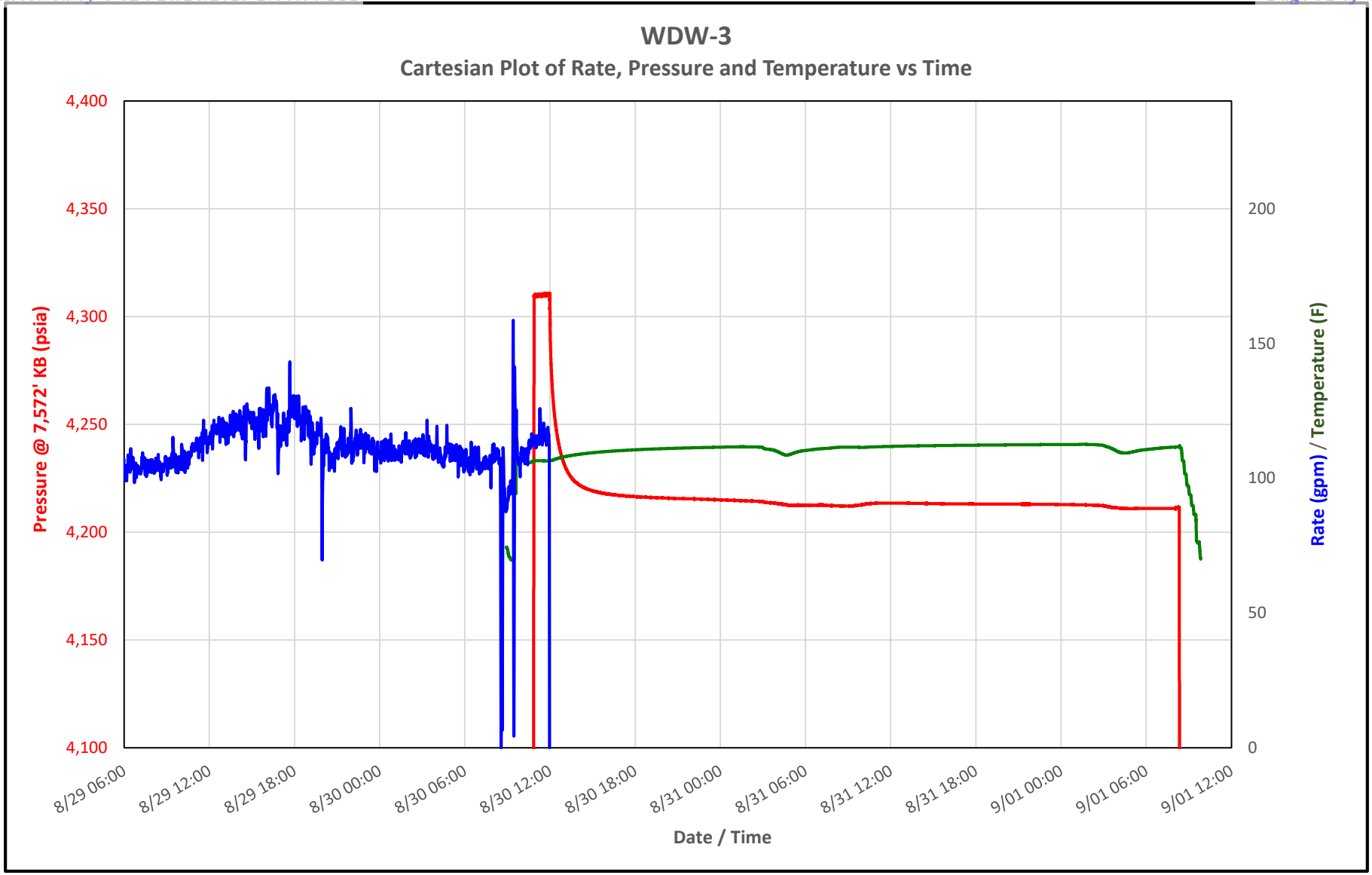


Figure 6
Cartesian Plot of Rate, Pressure and Temperature vs Time
2023 Well Testing

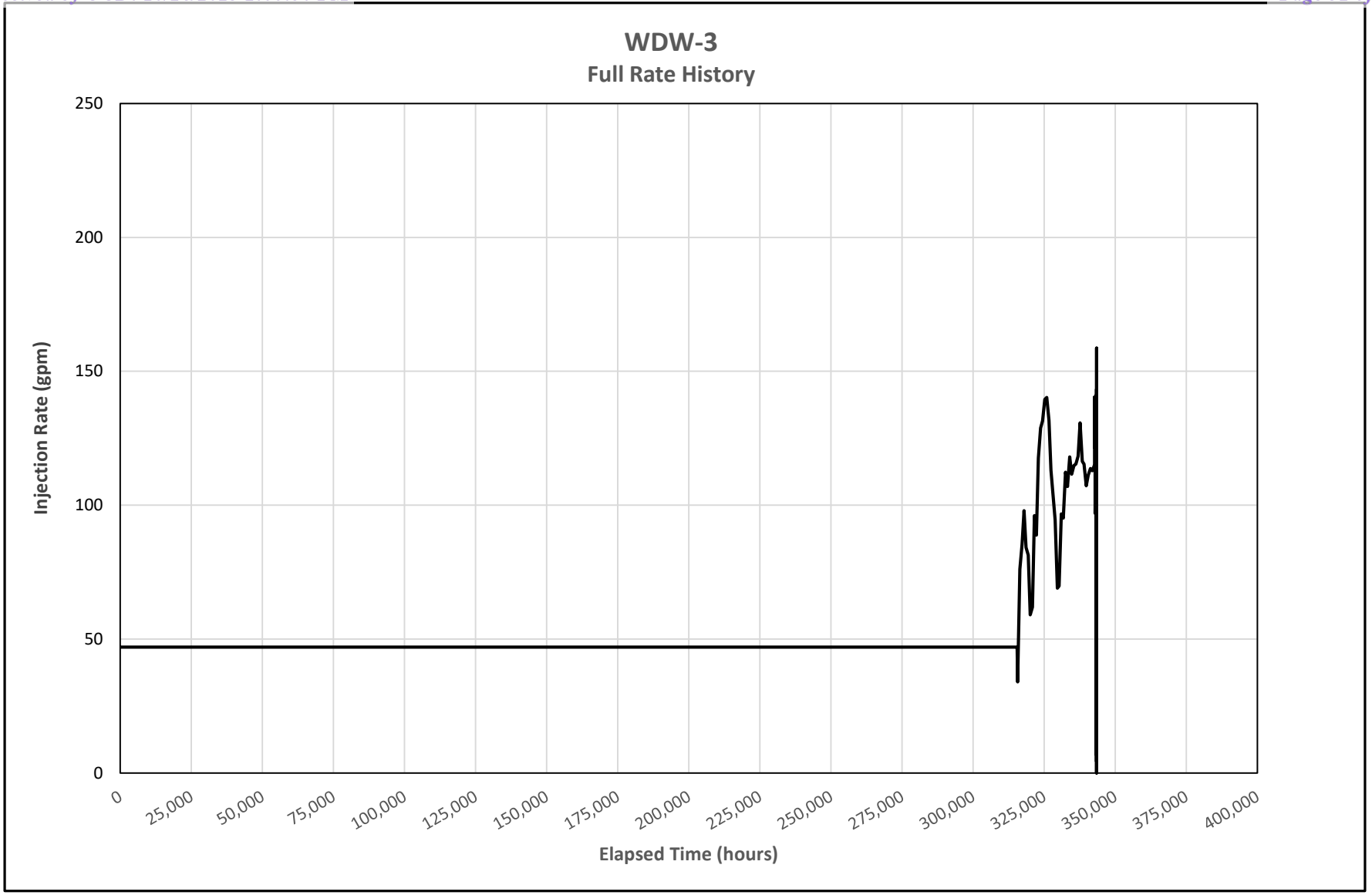


Figure 7
Full Rate History
2023 Well Testing

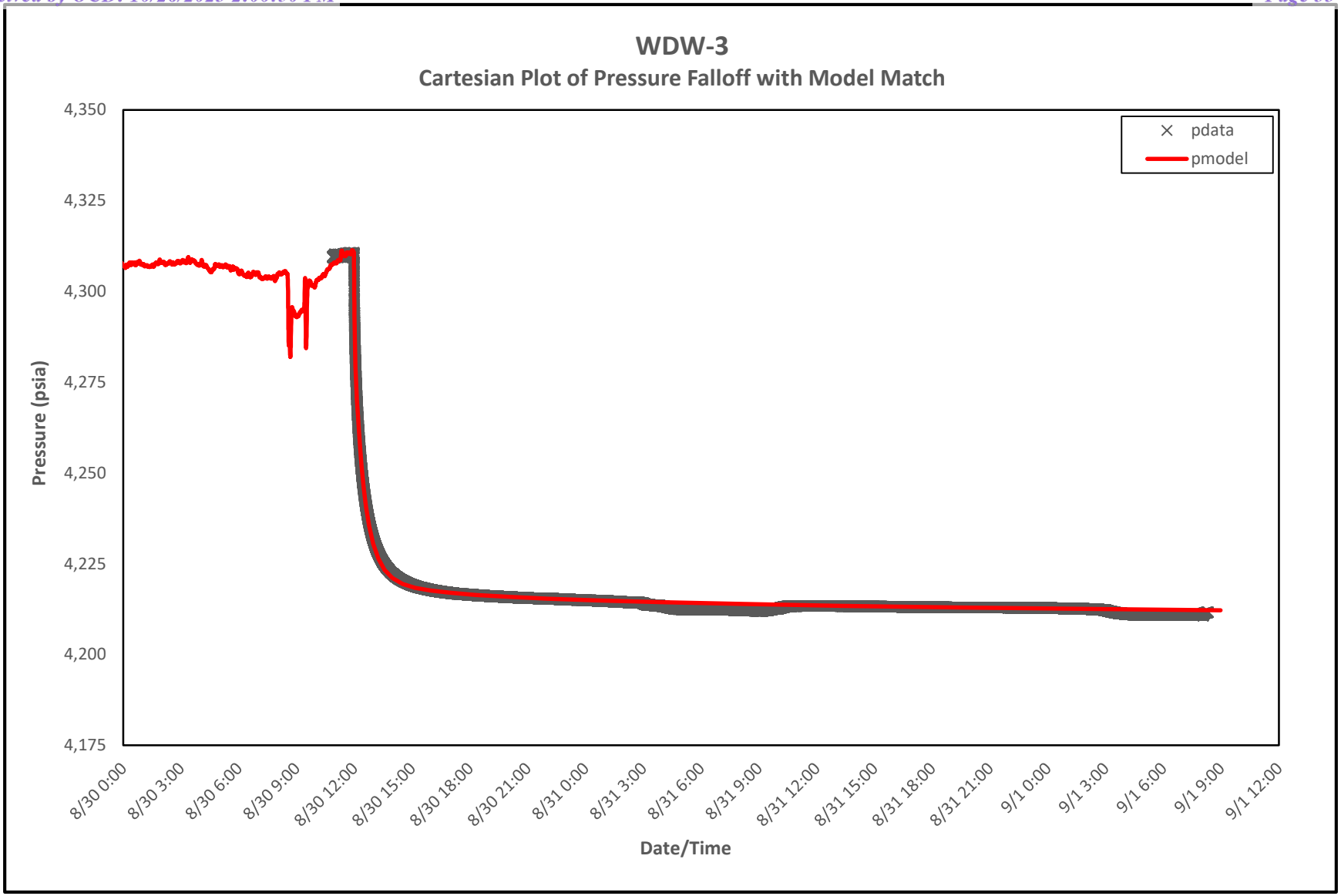


Figure 8
Cartesian Plot of Pressure Falloff with Model Match
2023 Well Testing

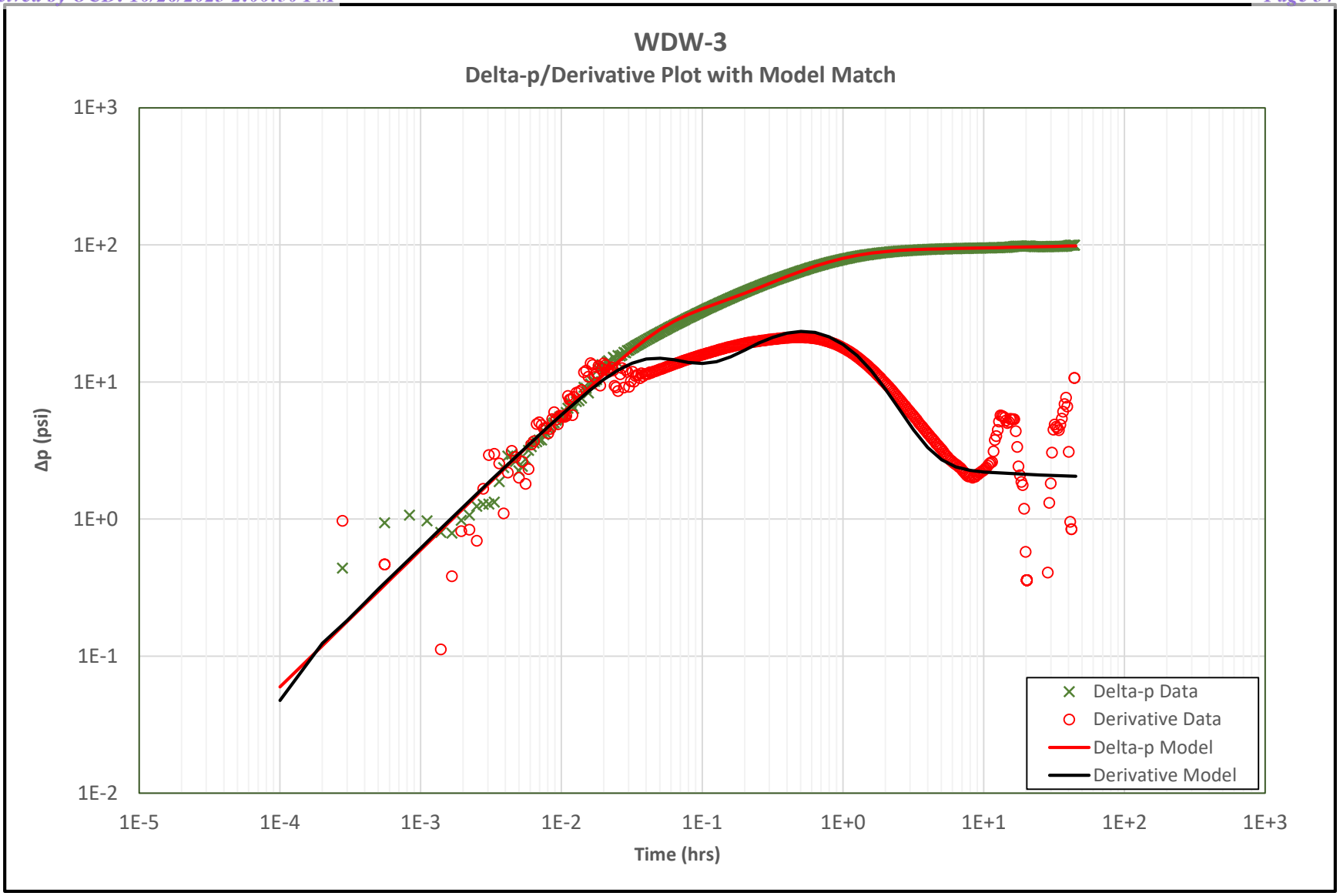


Figure 9
Delta-p/Derivative Plot with Model Match
2023 Well Testing

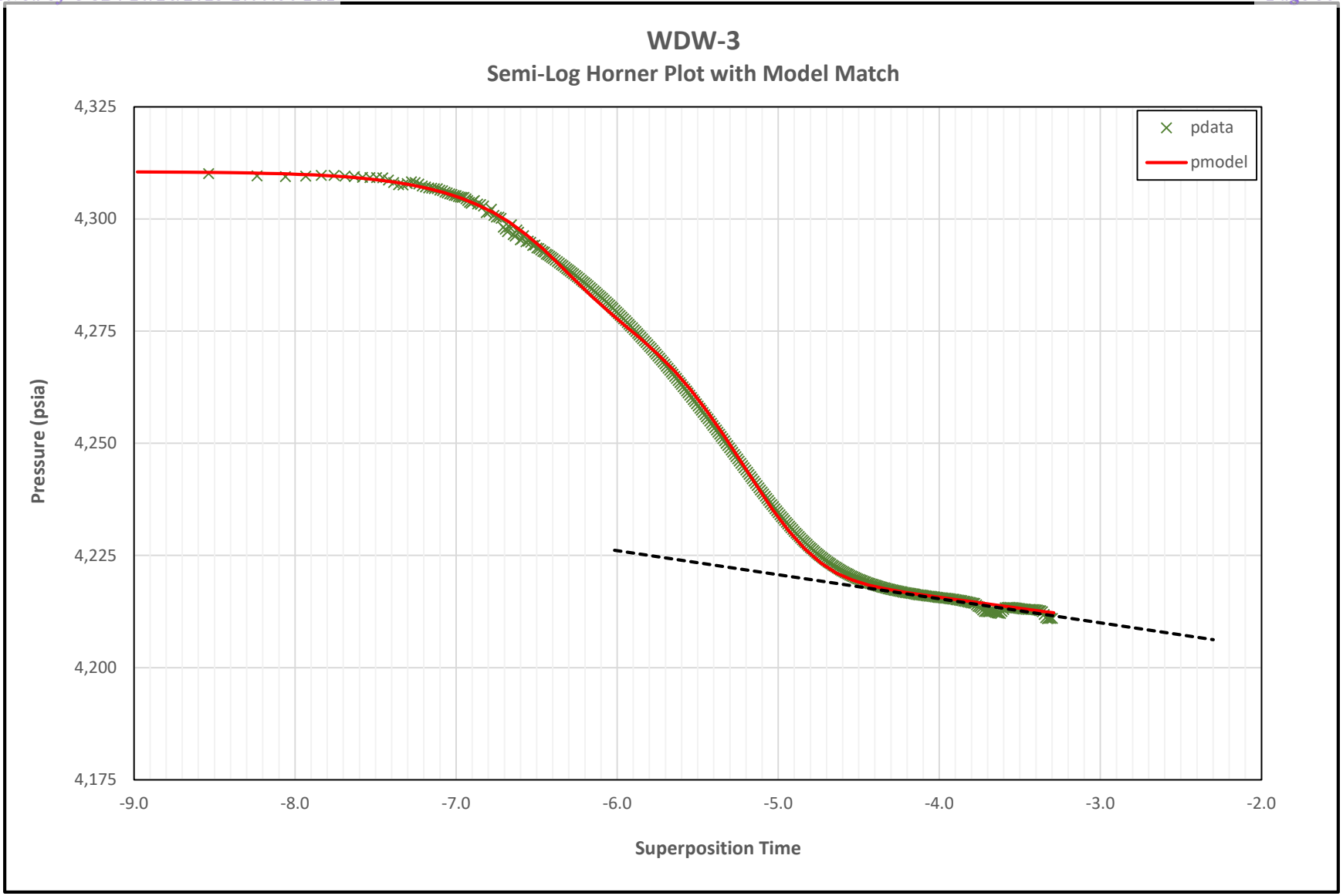


Figure 10
Semi-Log Horner Plot with Model Match
2023 Well Testing

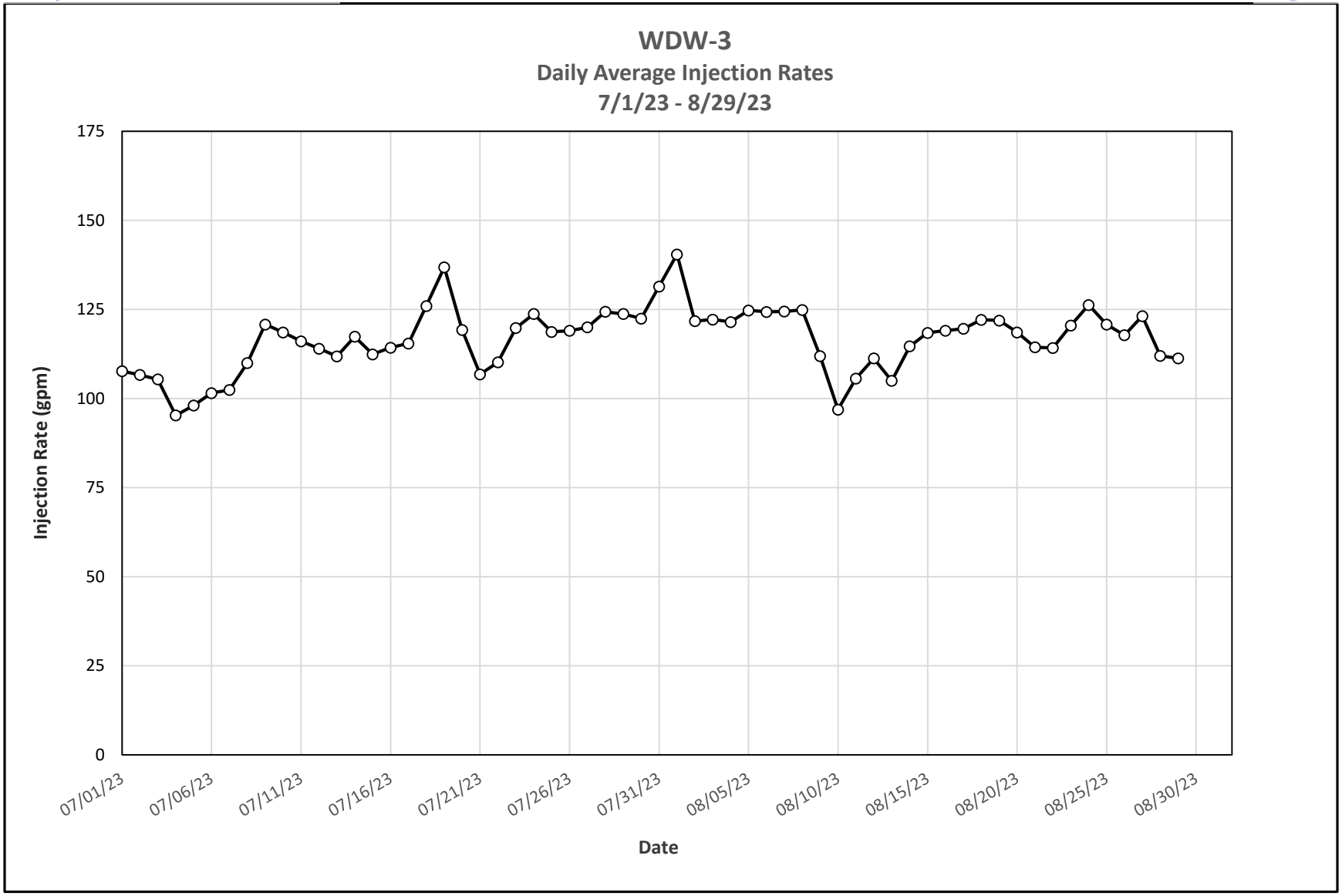


Figure 11
Daily Average Injection Rates
2023 Well Testing

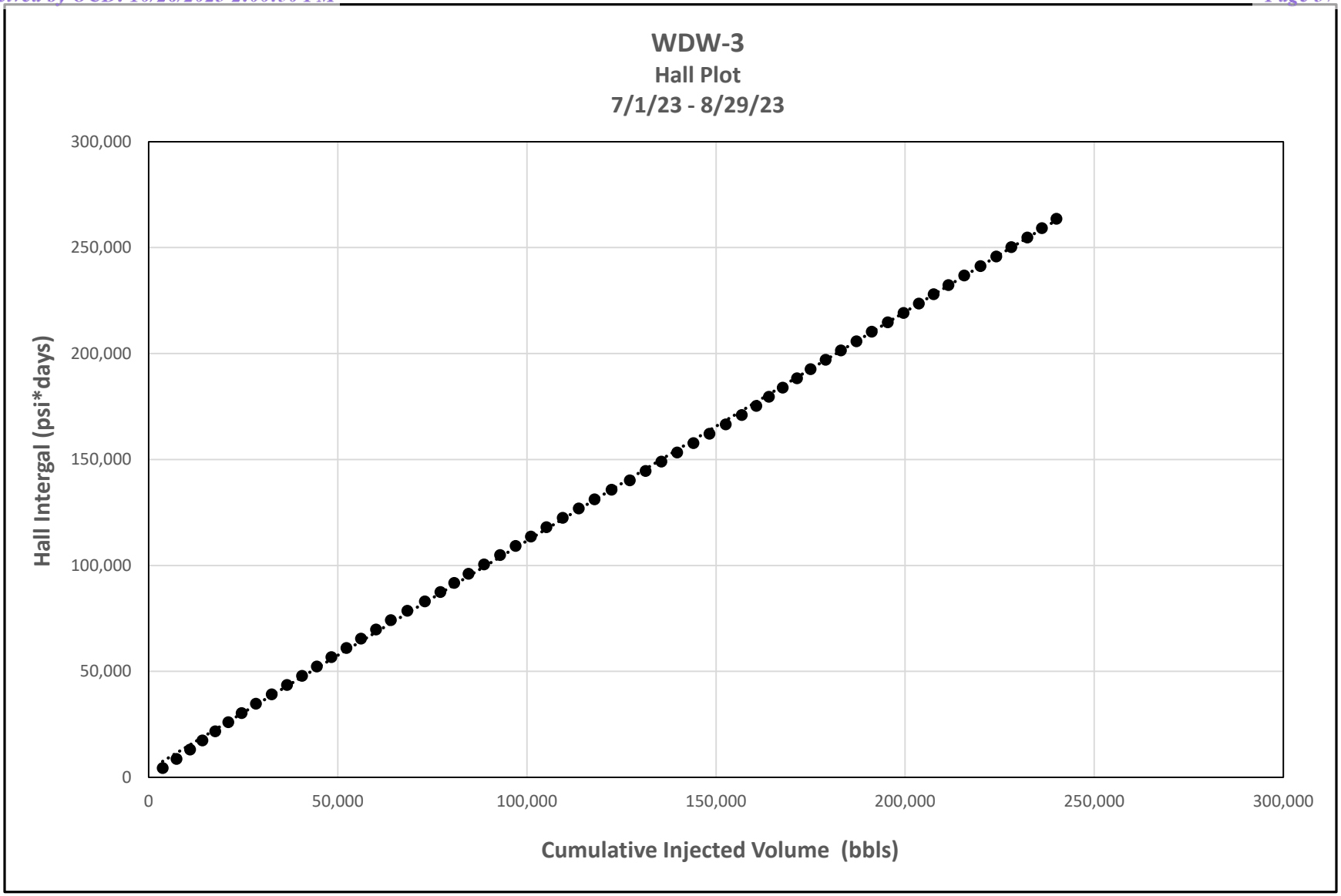
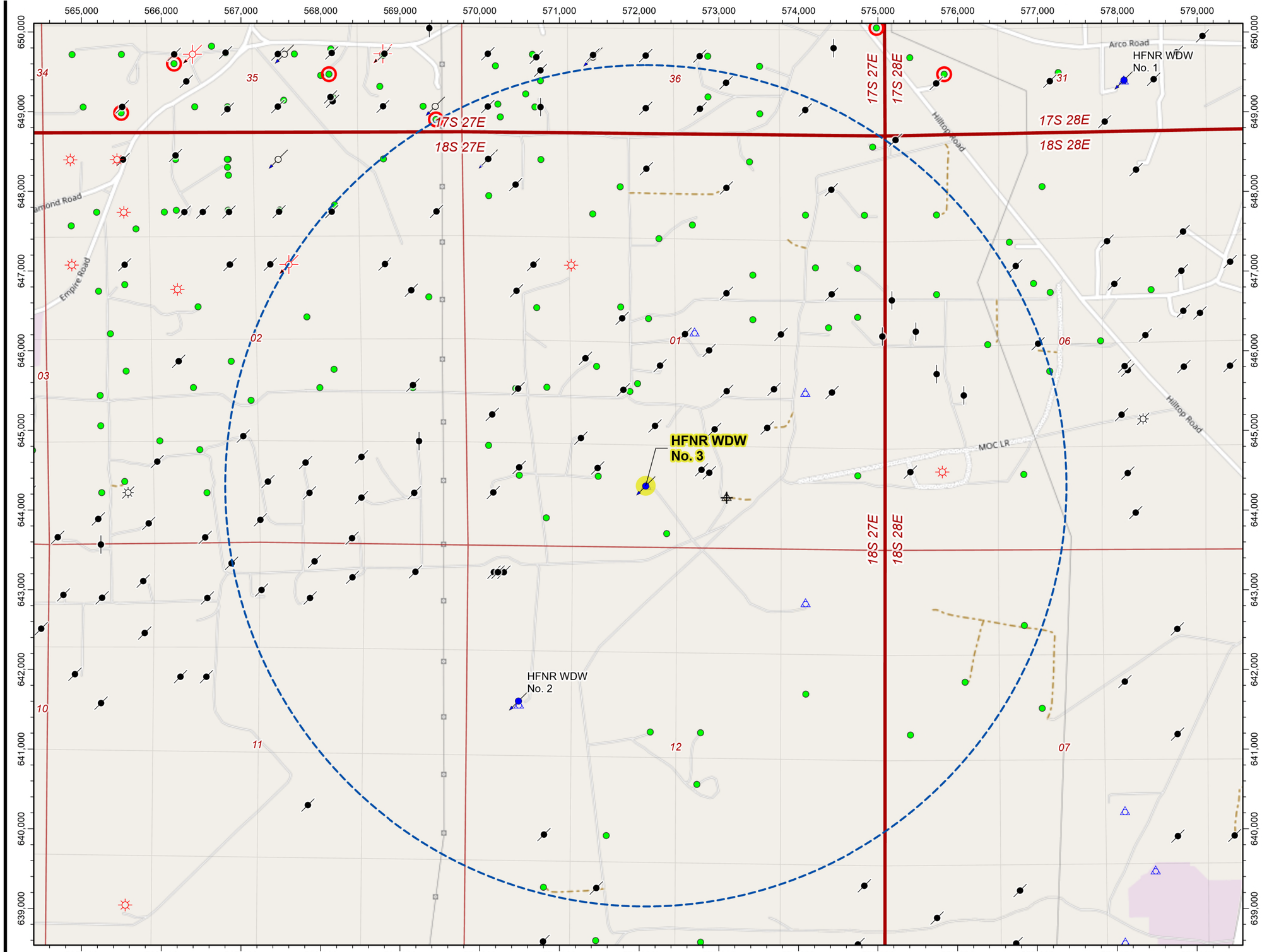


Figure 12
Hall Plot
2023 Well Testing



HollyFrontier Navajo Refining Wells

- HFNR WDW No. 3
- HFNR WDW Location

Area of Review

- One-Mile Radius

Oil & Gas Wells (NM EMNRD OCD)

- Active Injection Well
- Plugged Injection Well
- Active Salt Water Disposal
- Plugged Salt Water Disposal
- Active Oil Well
- New Oil Well
- Temporary Abandonment Oil Well
- Plugged Oil Well
- Active Gas Well
- Plugged Gas Well

Note:
One-Mile radius extends from HFNR WDW No. 2.

Oil & Gas well data from the EMNRD, OCD GIS Public FTP Site, accessed and downloaded 08/08/2023. Last updated by EMNRD 01/17/2023.

0 300 600 1,200 1,800 2,400 US Feet

1 inch = 1,200 feet

XY Coordinate System: NAD 1983 StatePlane New Mexico East FIPS 3001 (US Feet)

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Figure 13
WDW No. 3, One-Mile AOR Map

2023 FOT/MIT Report

Scale: 1:14,400	Date: September 2023	
Fig_13_HF_Artesia_2023_WDW_03	By: WEK	Checked: LW

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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.
30-015-26575

5. Indicate Type of Lease
STATE ☒ 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
GAINES WDW-3

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

8. Well Number: WDW-3

2. Name of Operator
HF SINCLAIR NAVAJO REFINERY LLC

9. OGRID Number: 15694

3. Address of Operator
P.O. Box 159, Artesia, NM 88210

10. Pool name or Wildcat
PENN 9691

4. Well Location
Unit Letter_N_____790____feet from the _____SOUTH_ line and __2,250_____feet from the _____WEST_____line
Section 1 Township 18S Range 27E NMPM County: EDDY

11. Elevation *(Show whether DR, RKB, RT, GR, etc.)*
3,609' 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 FALLOFF 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.

June 25, 2023; Day 1: Begin constant-rate injection (+/- 10%) into GAINES WDW-3 as well as the three (3) offset wells for at least 30 hours prior to shut-in of WDW-3 for falloff testing. Target rate for WDW-3 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.
June 26, 2023; Day 2: Continue constant-rate injection into all four (4) wells.
June 27, 2023; 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-3 and collect falloff data for a minimum of 30 hours. WDW-1, WDW-2 and WDW-4 will continue injection at constant rate until downhole memory gauges are pulled from WDW-3.
June 28, 2023; Day 4: WDW-3 will remain shut-in while collecting falloff pressure data using downhole memory gauges.
June 29, 2023; 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 a minimum of 30 minutes recording data electronically. 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_____ TITLE_____DATE_____

Type or print name _____ E-mail address: _____ PHONE: _____

For State Use Only

APPROVED BY:_____TITLE_____DATE_____
Conditions of Approval (if any):

Attachment 2
Annulus Pressure Gauge Certification

Petrotek

APEX INSTRUMENTS
7200 E. Dry Creek Rd, STE C-102, Centennial, CO 80112
Ph. 303-804-0667 Cal.Lab@Apex-Instruments.com

Calibration Certificate

Certificate Number: 232833

Customer:
Petrotek
Littleton, CO

Manufacturer:	Crystal Engineering	***Calibration Date:***	6/13/2023
Model Number:	XP2i 5000 psi	***Due Date:***	6/13/2024
Serial Number:	212165	***As Found:***	In Tolerance
Description:	Digital Test Gauge	***As Left:***	As Found
Procedure:	CI-001	***Temperature:***	71.5 F
Calibrated To:	Manufacturer's Specifications	***Humidity:***	45.8 %
Technician:	Ben Campbell	***Issue Date:***	6/13/2023

Tolerance Specs:
0 - 20%: +/- (0.02% of FS)
20% - 100%: +/- (0.1% of Rdg)

Technician Notes:

As Left Userspan: 1.00000

Approved Signatory: Ben Campbell

Apex Instruments certifies that the instrument listed above meets the specifications of the manufacturer at the completion of its calibration. The calibrations within the certificate are traceable through NIST or another National Metrology Institute to the International System of Units (SI).

Methods used are in accordance with the procedure listed above. This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

Unless otherwise contractually specified, a binary decision rule, utilizing simple acceptance, and simple rejection criteria will be used for the determination of compliance. When compliance statements are present, they are reported without factoring in the effects of uncertainty and the limits are defined by the manufacturer's stated accuracy.

This certificate does not guarantee the continued performance of the instrument listed above. Any modifications or services performed hereafter may void this certificate.

Standards Used

Description	Model Number	Serial Number	Calibration Date	Due Date	ID
Electronic Deadweight Tester	RPM4-E-DWT A100M/A10M	1709	8/31/2022	8/31/2023	APX00024
Temp / RH Datalogger	UX100-011	21284718	9/26/2022	9/26/2023	APX09582

Compass Import

Gauge Pressure — As Found - As Left — Pass

Test Description	Nominal	Test Results	Tolerance (+/-)	UUT Error	Status
0	-0.02 psi	0.00 psi	1.00 psi	0.02 psi	Pass
1000	999.91 psi	999.90 psi	1.00 psi	-0.01 psi	Pass
2000	2000.10 psi	2000.11 psi	2.00 psi	0.01 psi	Pass
3000	3000.02 psi	3000.04 psi	3.00 psi	0.02 psi	Pass
4000	3999.89 psi	3999.96 psi	4.00 psi	0.07 psi	Pass
5000	5000.03 psi	5000.43 psi	5.00 psi	0.40 psi	Pass
4000	4000.04 psi	4000.38 psi	4.00 psi	0.34 psi	Pass
3000	3000.11 psi	3000.44 psi	3.00 psi	0.33 psi	Pass
2000	2000.04 psi	2000.31 psi	2.00 psi	0.27 psi	Pass
1000	1000.39 psi	1000.60 psi	1.00 psi	0.21 psi	Pass
0	0.09 psi	0.30 psi	1.00 psi	0.21 psi	Pass

-- End of measurement results--

Attachment 3
Downhole Pressure Gauge Certifications

Petrotek

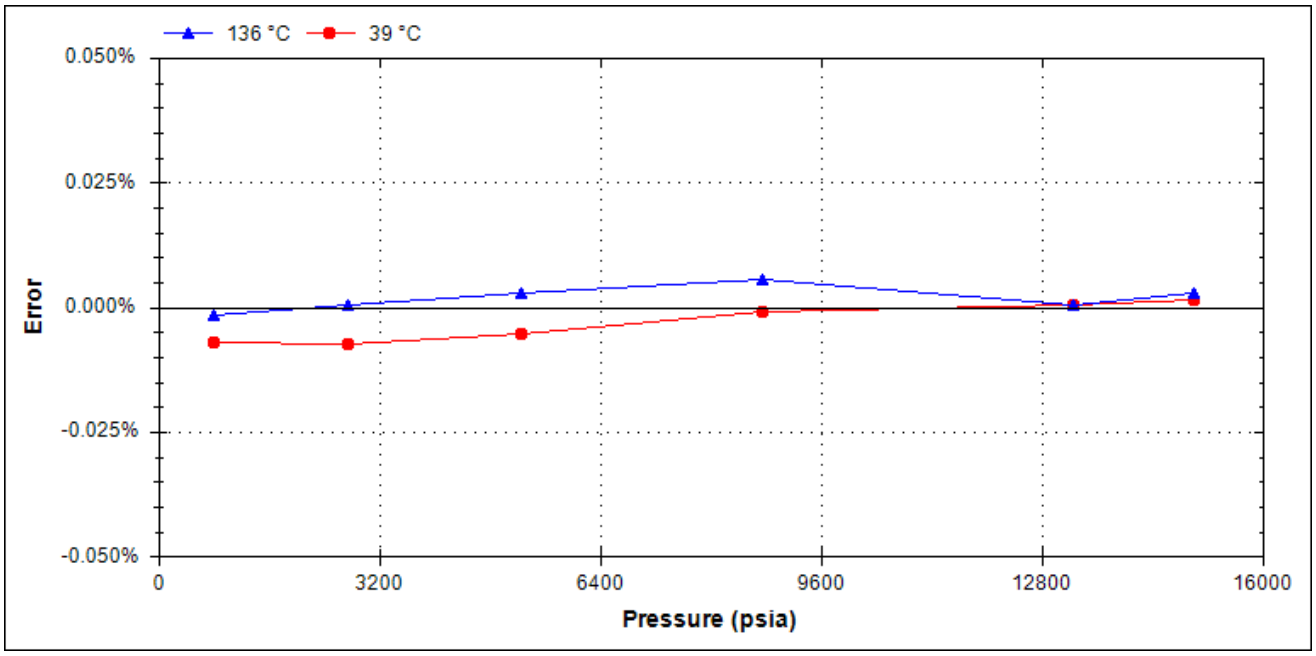
DataCan

"The Next Generation of Down Hole Tools"

Calibration Date:	28-May-21	**Calibration System:**	CALIBRATION03
Max Pressure Error:	0.010% F.S.	**Batch Number:**	20210104.143132
Max Temperature Error:	0.110 °C		
Part Number:	101696		
Serial Number:	224831		

1.25 OD_Quartz DXB 2_Assembly			
Max Pressure		Max Temperature	
psi	kPa	ºF	ºC
16,000	110,316	351	177

Accuracy: As shown in the graph below, this DataCan Pressure gauge conforms to within +/- 0.030% F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading.



Working Standards

Sun Electronic Systems Environmental Chamber, Model: EC127, Serial: EC0020
DHI Instruments Pressure Controller, Model: PPCH-200M (30,000psi Reference), Serial: 1529

Traceability Statement

All working standards are traceable to nationally or internationally recognized standards.

Approved By:
DataCan Services Corp.

Calibrated By:
Angelo Pulido

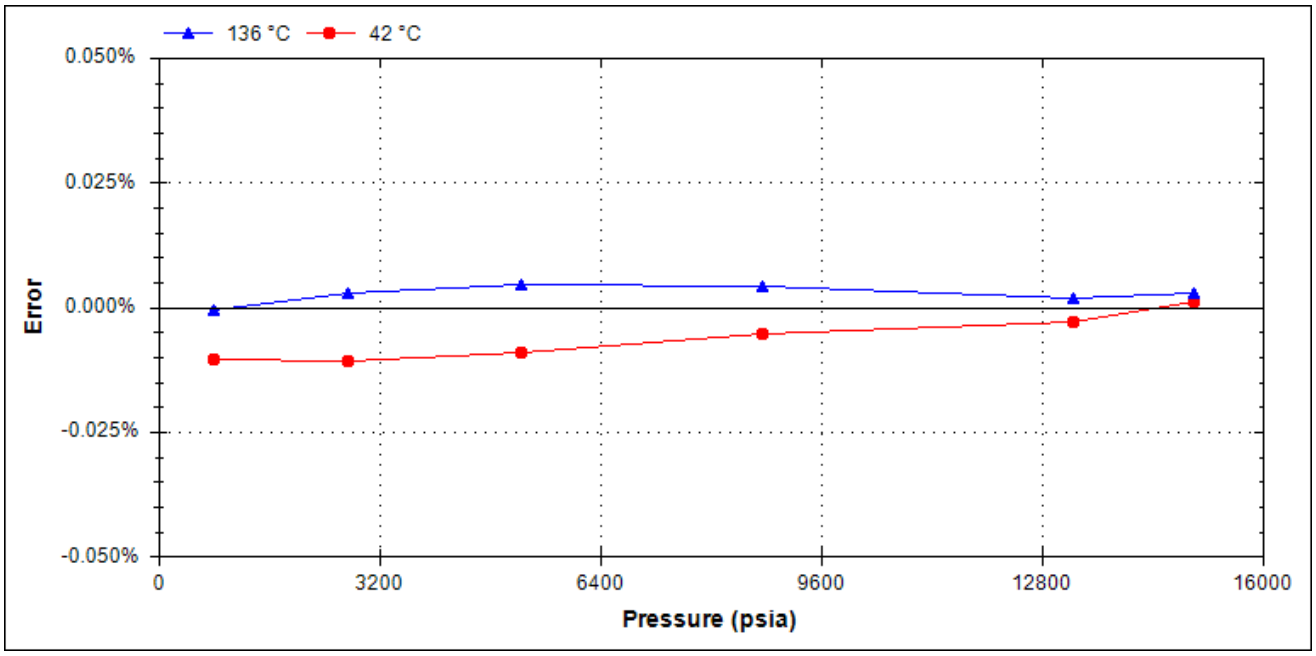
DataCan

"The Next Generation of Down Hole Tools"

Calibration Date: 10-Mar-22
Max Pressure Error: 0.011% F.S.
Max Temperature Error: 0.210 °C
Part Number: 101696
Serial Number: 242665

1.25 OD_Quartz DXB 2_Assembly			
Max Pressure		Max Temperature	
psi	kPa	ºF	ºC
16,000	110,316	351	177

Accuracy: As shown in the graph below, this DataCan Pressure gauge conforms to within +/- 0.030% F.S. of the pressure standard used in calibration, which is accurate to within +/- 0.01% of reading.



Working Standards

Sun Electronic Systems Environmental Chamber, Model: EC127
DHI Instruments Pressure Controller, Model: PPCH-200M (30,000psi Reference)

Traceability Statement

All working standards are traceable to nationally or internationally recognized standards.

Approved By:
DataCan Services Corp.

Calibrated By:
Angelo Pulido

Attachment 4
FESCO Injection Falloff Test Report

Petrotek

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	Petrotek Corporation	Test Date:	08/30/2023
Well:	Navajo Refining Waste Disposal Well No. 3	Location:	Eddy County, NM
Field:	Davonia	Status:	Flowing
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2.5" EUE	Gauge Type:	Electronic
	Elevation: 15 ft above GL	Gauge SN:	DC-22483
	Tubing: 4.5" Set at 7568 ft (EOT)	Gauge Range:	15000 psi
	Casing: 7" Set at 9450 ft	Gauge OD:	1.2500"
	Perfs: 7660 - 8450; 8540 - 8620 ft (MD		
	Datum: 8140 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	1100	94.34	1099.20	0.00	0.0000	
1000	1000	1000		107.68	1567.26	468.06	0.4681	
2000	2000	1000		107.00	1977.87	410.61	0.4106	
3000	3000	1000		106.44	2391.04	413.17	0.4132	
4000	4000	1000		106.02	2806.98	415.94	0.4159	
5000	5000	1000		105.84	3226.89	419.91	0.4199	
6000	6000	1000		105.92	3646.88	419.99	0.4200	
7000	7000	1000		106.25	4068.21	421.33	0.4213	
7572	7572	572	1100	106.50	4309.66	241.45	0.4221	Set 44-hr Falloff Test

BHT at Test Depth:	106.50 °F	Oil Level:	Flowing	Previous BHP:	U/A
Extrapolated BHP at Datum:	4549.41 psia	Water Level:	Flowing	BHP Change:	U/A
BHP Gradient at Datum :	0.4221 psi/ft	Csg Press:	640 psig		

Remarks: RIH with electronic gauges making injecting gradient stops to 7572 ft. Injected water into well for 1 hr. SI well for 44.3 hr BHP Falloff Test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Midland, TX

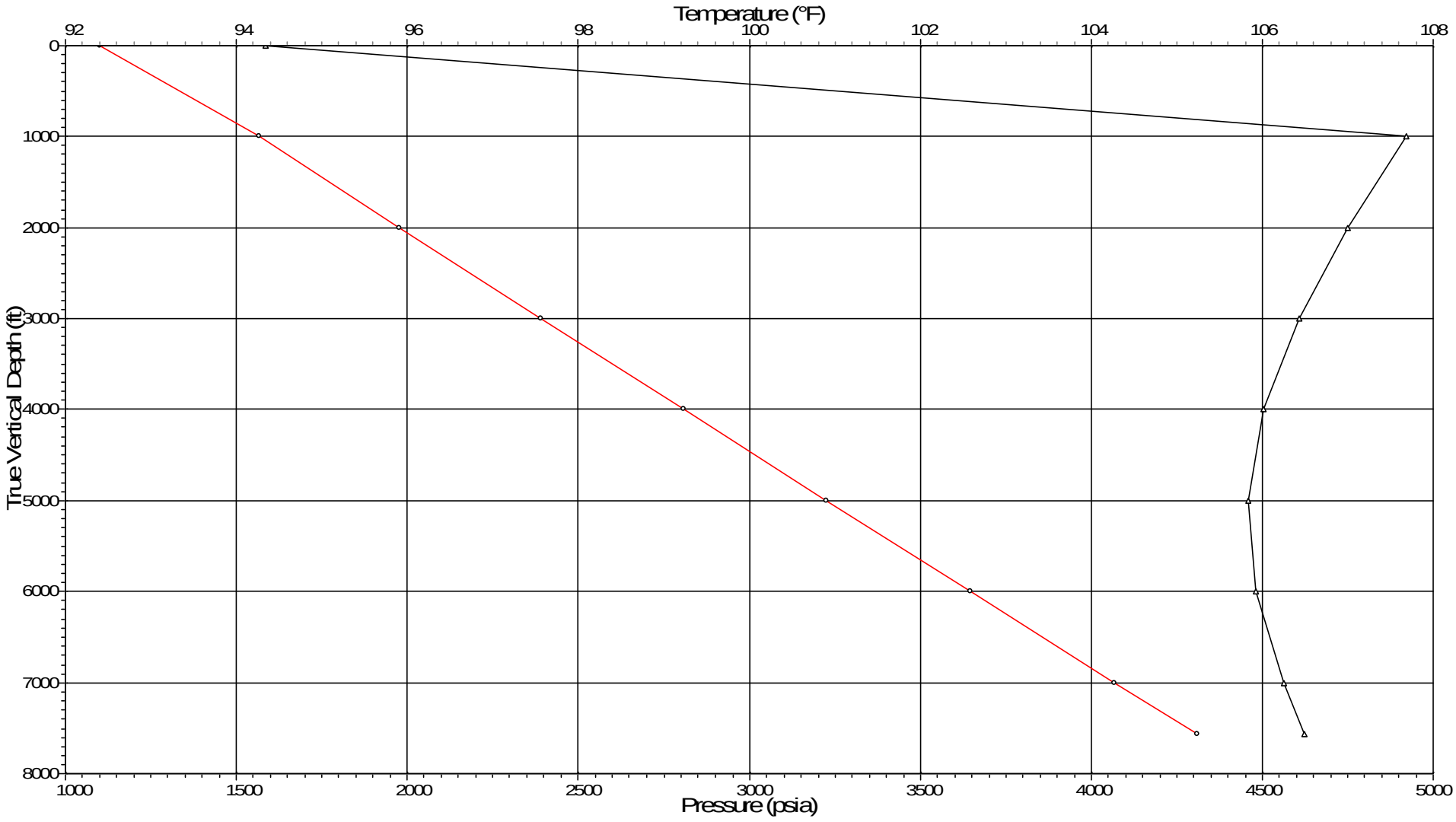
By: Michael Carnes
District Manager - (432) 332-3211

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Test Date: 08/30/2023

Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: DC-22483

Flowing Gradient Plot



J202309011401.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	Petrotek Corporation	Test Date:	09/01/2023
Well:	Navajo Refining Waste Disposal Well No. 3	Location:	Eddy County, NM
Field:	Davonia	Status:	SI for 44.3 hrs
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2.5" EUE	Gauge Type:	Electronic
	Elevation: 15 ft above GL	Gauge SN:	DC-22483
	Tubing: 4.5" Set at 7568 ft (EOT)	Gauge Range:	15000 psi
	Casing: 7" Set at 9450 ft	Gauge OD:	1.2500"
	Perfs: 7660 - 8450; 8540 - 8620 ft (MD		
	Datum: 8140 ft (MD)		

Depth			Pressure					
MD ft	TVD ft	Delta Depth ft	WHP psig	BHT °F	Gauge Pressure psig	Delta Pressure psi	Pressure Gradient psi / ft	Comments
0	0	0	920	75.85	917.48	0.00	0.0000	Water level at surface
1000	1000	1000		86.50	1361.18	443.70	0.4437	
2000	2000	1000		89.89	1794.31	433.13	0.4331	
3000	3000	1000		93.85	2227.08	432.77	0.4328	
4000	4000	1000		97.16	2661.12	434.04	0.4340	
5000	5000	1000		101.58	3095.40	434.28	0.4343	
6000	6000	1000		106.42	3529.41	434.01	0.4340	
7000	7000	1000		111.23	3962.87	433.46	0.4335	
7572	7572	572	920	111.67	4211.69	248.82	0.4350	

BHT at Test Depth:	111.67 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4458.77 psig	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4350 psi/ft	Csg Press:	N/A		

Remarks: POOH after 44.3-hr BHP Falloff Test making static gradient stops to surface. RDMO.

Certified: FESCO, Ltd. - Midland, TX

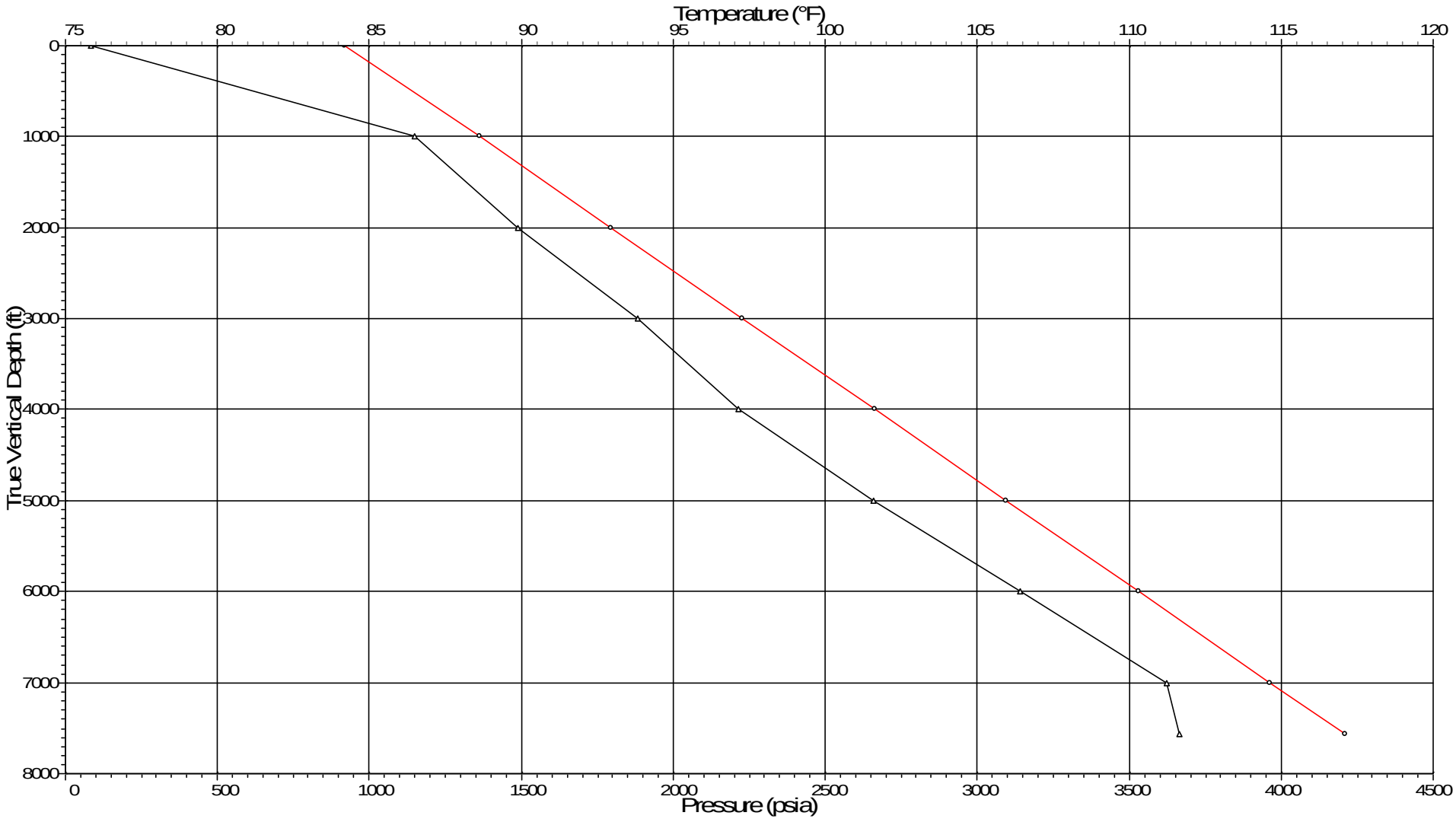
By: Michael Carnes
District Manager - (432) 332-3211

Petrotek Corporation

Static Gradient Plot

Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Test Date: 09/01/2023

Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: DC-22483



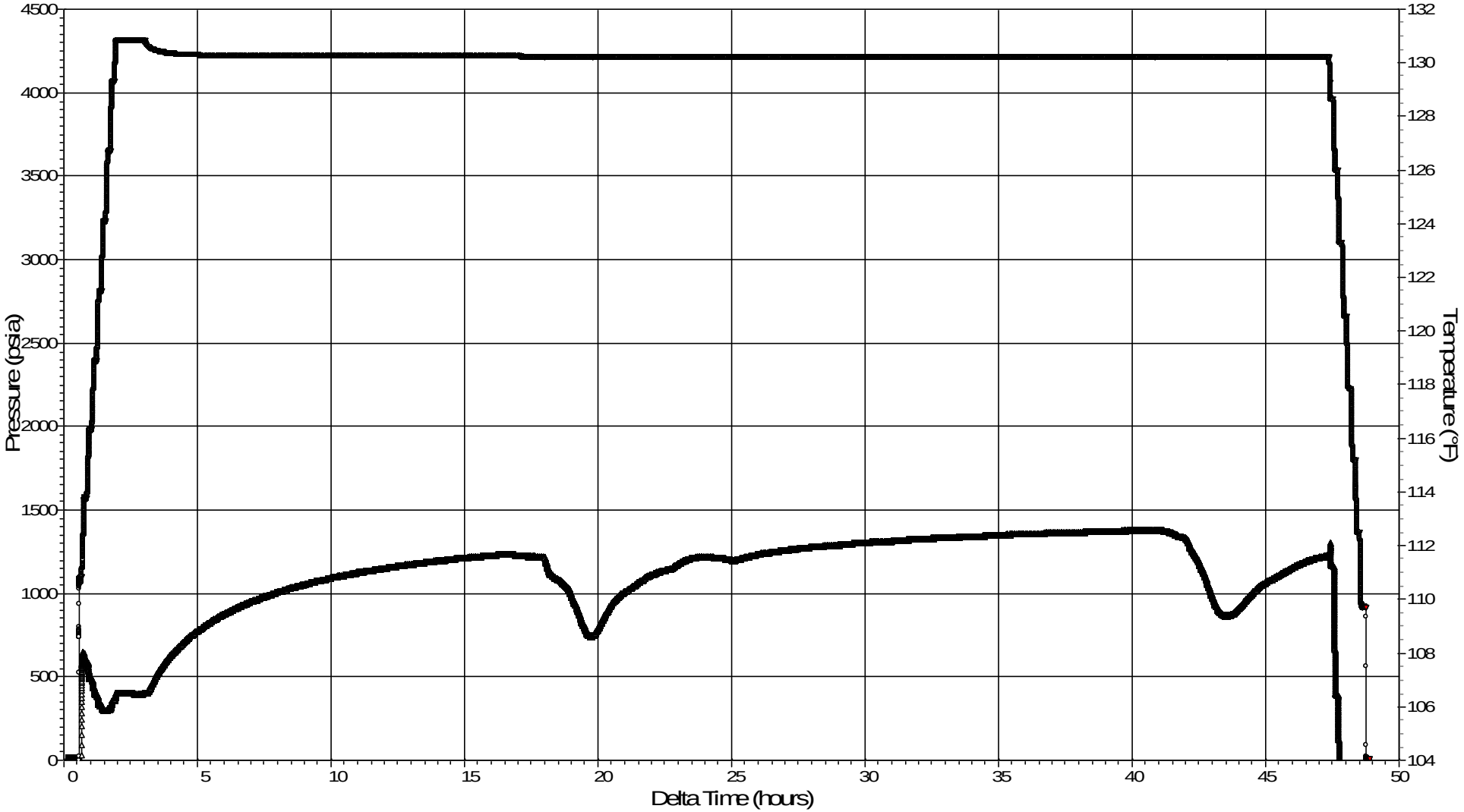
J202309011401.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Test Date: 08/30 - 09/01/2023

Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: DC-22483

Cartesian Plot



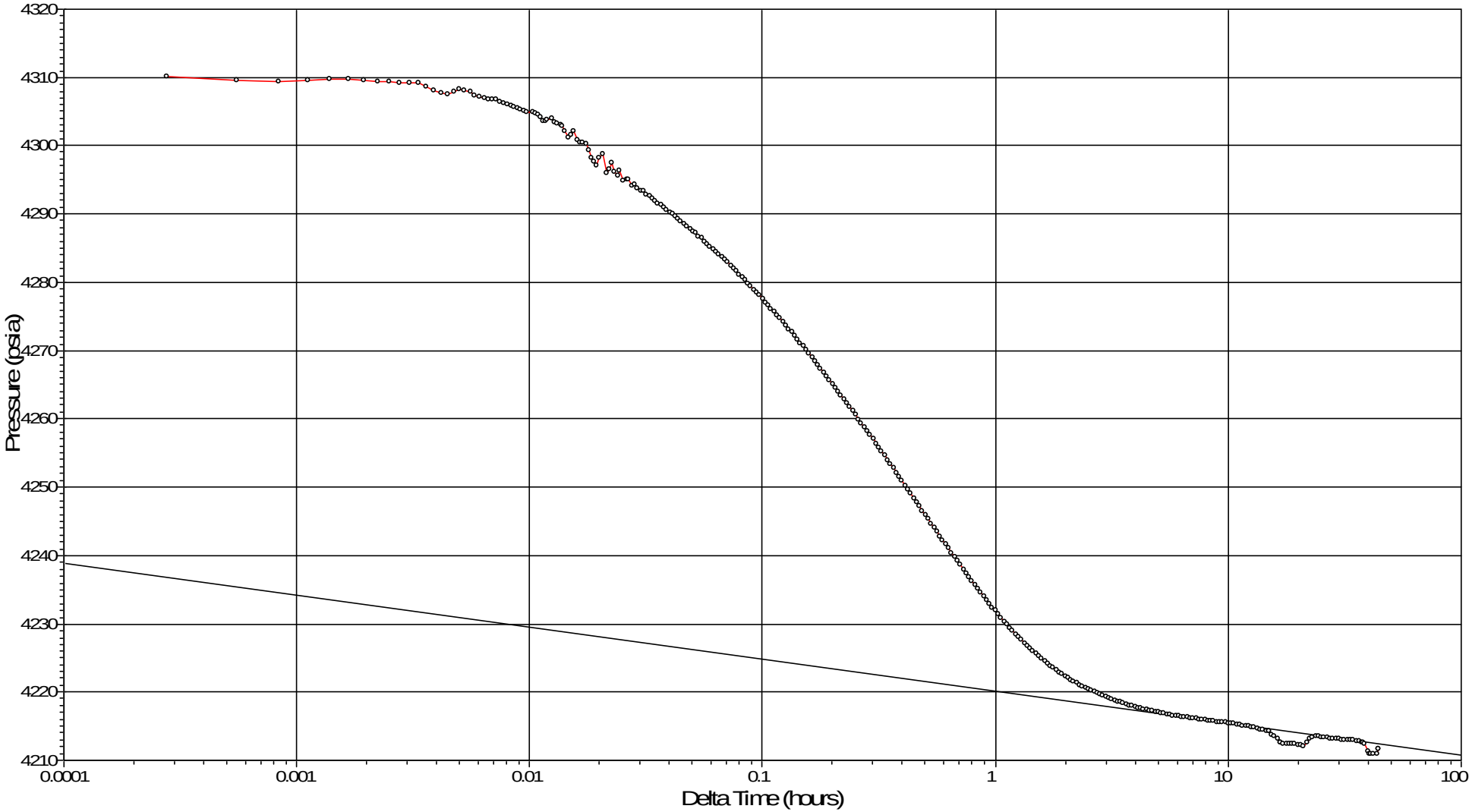
J202309011401.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Test Date: 08/30 - 09/01/2023

Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: DC-22483

Semilog Plot (Falloff Test)



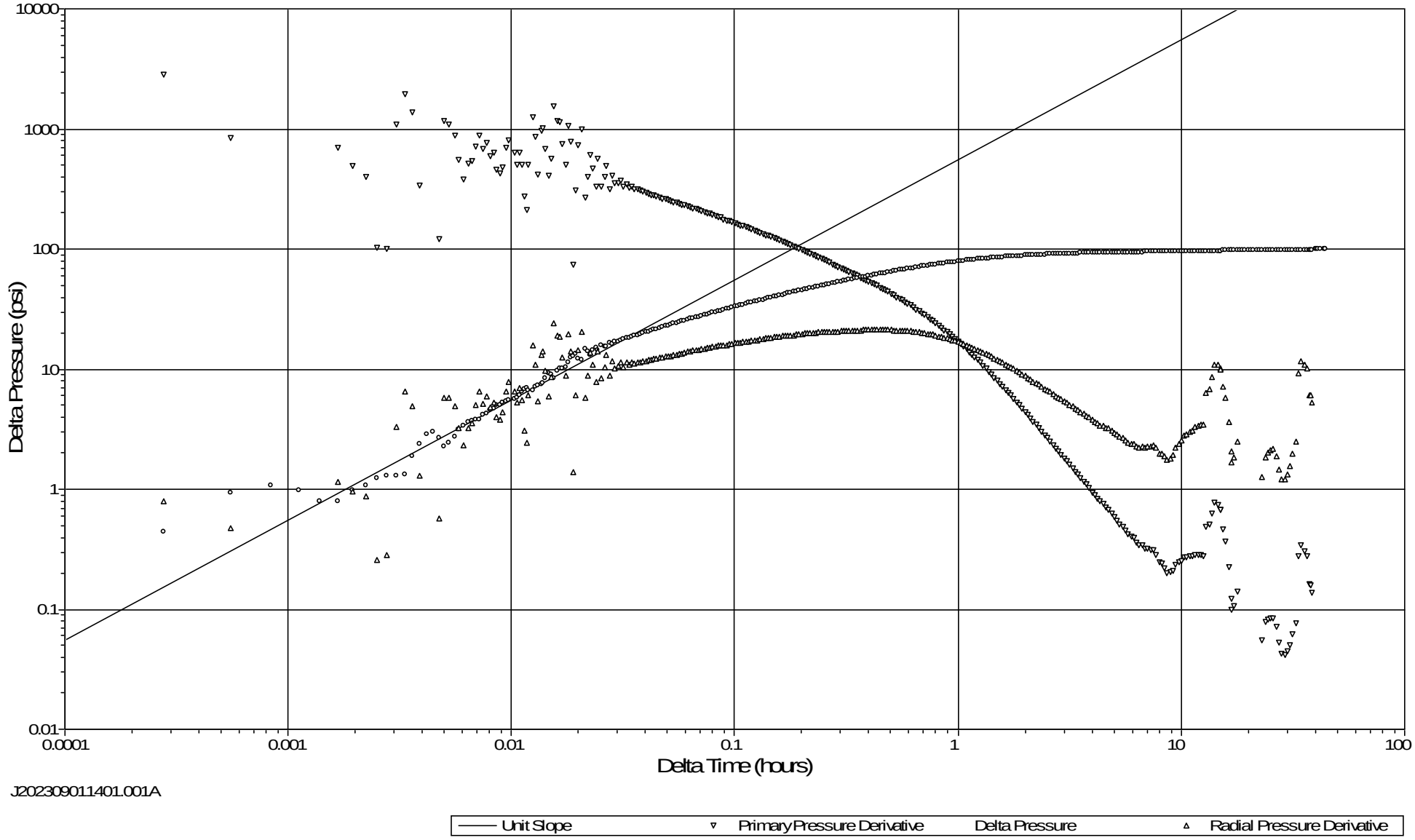
J202309011401.001A

Petrotek Corporation

Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Test Date: 08/30 - 09/01/2023

Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: DC-22483

Log Plot (Falloff Test)



FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Corporation	Test Date:	08/30 - 09/01/2023
Well:	Navajo Refining Waste Disposal Well No. 3	Gauge Depth:	5772 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	DC-22483
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	15000 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
08/30/23	08:55:40	-3.05250		17.14		74.48	Powered up gauge.
08/30/23	09:00:00	-2.98028		16.45		73.65	
08/30/23	09:10:00	-2.81361		16.30		70.57	
08/30/23	09:20:00	-2.64694		16.31		69.66	
08/30/23	09:28:00	-2.51361		16.87		69.86	
08/30/23	09:29:54	-2.48194		1045.50		99.08	Pressured up lubricator.
08/30/23	09:30:00	-2.48028		1054.19		99.36	
08/30/23	09:31:00	-2.46361		1085.22		97.37	
08/30/23	09:32:00	-2.44694		1093.24		96.24	
08/30/23	09:33:00	-2.43028		1095.84		95.50	
08/30/23	09:34:00	-2.41361		1092.26		94.99	
08/30/23	09:35:00	-2.39694		1095.41		94.66	
08/30/23	09:35:48	-2.38361		1098.09		94.33	Casing Pressure = 640 psig.
08/30/23	09:35:49	-2.38333	1100	1099.20		94.34	RIH making injecting gradient stops.
08/30/23	09:36:00	-2.38028		1095.93		95.48	
08/30/23	09:37:00	-2.36361		1138.56		107.57	
08/30/23	09:38:00	-2.34694		1201.67		108.00	
08/30/23	09:39:00	-2.33028		1264.93		108.04	
08/30/23	09:40:00	-2.31361		1349.76		108.00	
08/30/23	09:41:00	-2.29694		1433.95		107.87	
08/30/23	09:42:00	-2.28028		1525.84		107.69	
08/30/23	09:42:27	-2.27278		1572.72		107.62	Arrived at 1000 ft stop.
08/30/23	09:43:00	-2.26361		1559.86		107.61	
08/30/23	09:44:00	-2.24694		1574.99		107.63	
08/30/23	09:45:00	-2.23028		1561.39		107.64	
08/30/23	09:46:00	-2.21361		1564.28		107.66	
08/30/23	09:47:00	-2.19694		1567.52		107.68	
08/30/23	09:47:58	-2.18083		1567.26		107.68	Left 1000 ft stop.
08/30/23	09:48:00	-2.18028		1571.07		107.68	
08/30/23	09:49:00	-2.16361		1623.96		107.60	
08/30/23	09:50:00	-2.14694		1708.00		107.47	
08/30/23	09:51:00	-2.13028		1781.91		107.34	
08/30/23	09:52:00	-2.11361		1859.51		107.23	
08/30/23	09:53:00	-2.09694		1929.85		107.12	
08/30/23	09:53:46	-2.08417		1979.24		107.05	Arrived at 2000 ft stop.
08/30/23	09:54:00	-2.08028		1976.66		107.03	
08/30/23	09:55:00	-2.06361		1977.58		107.03	
08/30/23	09:56:00	-2.04694		1973.58		107.02	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	09:57:00	-2.03028		1977.10		107.01	
08/30/23	09:58:00	-2.01361		1978.52		107.01	
08/30/23	09:58:56	-1.99806		1977.87		107.00	Left 2000 ft stop.
08/30/23	09:59:00	-1.99694		1978.66		107.00	
08/30/23	10:00:00	-1.98028		2021.99		106.95	
08/30/23	10:01:00	-1.96361		2092.54		106.85	
08/30/23	10:02:00	-1.94694		2152.53		106.76	
08/30/23	10:03:00	-1.93028		2236.48		106.67	
08/30/23	10:04:00	-1.91361		2312.67		106.56	
08/30/23	10:04:52	-1.89917		2392.38		106.46	Arrived at 3000 ft stop.
08/30/23	10:05:00	-1.89694		2391.55		106.45	
08/30/23	10:06:00	-1.88028		2391.34		106.44	
08/30/23	10:07:00	-1.86361		2391.51		106.44	
08/30/23	10:08:00	-1.84694		2392.60		106.44	
08/30/23	10:09:00	-1.83028		2393.13		106.44	
08/30/23	10:09:58	-1.81417		2391.04		106.44	Left 3000 ft stop.
08/30/23	10:10:00	-1.81361		2387.62		106.44	
08/30/23	10:11:00	-1.79694		2434.72		106.40	
08/30/23	10:12:00	-1.78028		2526.12		106.31	
08/30/23	10:13:00	-1.76361		2630.51		106.19	
08/30/23	10:14:00	-1.74694		2727.40		106.11	
08/30/23	10:14:59	-1.73056		2808.94		106.04	Arrived at 4000 ft stop.
08/30/23	10:15:00	-1.73028		2808.63		106.04	
08/30/23	10:16:00	-1.71361		2807.19		106.02	
08/30/23	10:17:00	-1.69694		2809.64		106.02	
08/30/23	10:18:00	-1.68028		2805.99		106.02	
08/30/23	10:19:00	-1.66361		2806.49		106.02	
08/30/23	10:20:00	-1.64694		2808.60		106.02	
08/30/23	10:20:10	-1.64417		2806.98		106.02	Left 4000 ft stop.
08/30/23	10:21:00	-1.63028		2851.69		106.00	
08/30/23	10:22:00	-1.61361		2945.11		105.95	
08/30/23	10:23:00	-1.59694		3026.25		105.91	
08/30/23	10:24:00	-1.58028		3108.76		105.87	
08/30/23	10:25:00	-1.56361		3197.43		105.85	
08/30/23	10:25:22	-1.55750		3225.76		105.84	Arrived at 5000 ft stop.
08/30/23	10:26:00	-1.54694		3228.14		105.84	
08/30/23	10:27:00	-1.53028		3228.04		105.84	
08/30/23	10:28:00	-1.51361		3227.35		105.84	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	10:29:00	-1.49694		3225.61		105.84	
08/30/23	10:30:00	-1.48028		3228.00		105.84	
08/30/23	10:30:39	-1.46944		3226.89		105.84	Left 5000 ft stop.
08/30/23	10:31:00	-1.46361		3251.28		105.84	
08/30/23	10:32:00	-1.44694		3336.55		105.83	
08/30/23	10:33:00	-1.43028		3433.84		105.84	
08/30/23	10:34:00	-1.41361		3550.34		105.87	
08/30/23	10:34:58	-1.39750		3648.09		105.91	Arrived at 6000 ft stop.
08/30/23	10:35:00	-1.39694		3645.34		105.91	
08/30/23	10:36:00	-1.38028		3646.44		105.92	
08/30/23	10:37:00	-1.36361		3646.74		105.92	
08/30/23	10:38:00	-1.34694		3645.39		105.92	
08/30/23	10:39:00	-1.33028		3646.24		105.91	
08/30/23	10:40:00	-1.31361		3645.31		105.92	
08/30/23	10:40:05	-1.31222		3646.88		105.92	Left 6000 ft stop.
08/30/23	10:41:00	-1.29694		3705.05		105.94	
08/30/23	10:42:00	-1.28028		3829.03		106.01	
08/30/23	10:43:00	-1.26361		3921.12		106.09	
08/30/23	10:44:00	-1.24694		4022.65		106.18	
08/30/23	10:44:38	-1.23639		4068.16		106.23	Arrived at 7000 ft stop.
08/30/23	10:45:00	-1.23028		4068.19		106.24	
08/30/23	10:46:00	-1.21361		4068.36		106.24	
08/30/23	10:47:00	-1.19694		4068.10		106.25	
08/30/23	10:48:00	-1.18028		4068.47		106.25	
08/30/23	10:49:00	-1.16361		4067.91		106.25	
08/30/23	10:49:45	-1.15111		4068.21		106.25	Left 7000 ft stop.
08/30/23	10:50:00	-1.14694		4074.58		106.25	
08/30/23	10:51:00	-1.13028		4143.19		106.30	
08/30/23	10:52:00	-1.11361		4232.65		106.39	
08/30/23	10:52:47	-1.10056	1100	4309.85		106.48	Softset gauge at 7572 ft.
08/30/23	10:53:00	-1.09694		4309.60		106.50	
08/30/23	10:54:00	-1.08028		4309.57		106.50	
08/30/23	10:55:00	-1.06361		4309.80		106.50	
08/30/23	11:00:00	-0.98028	1100	4309.66		106.50	7572 ft stop.
08/30/23	11:10:00	-0.81361		4309.81		106.50	
08/30/23	11:20:00	-0.64694		4309.63		106.49	
08/30/23	11:30:00	-0.48028		4310.17		106.49	
08/30/23	11:40:00	-0.31361		4310.07		106.48	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Corporation	Test Date:	08/30 - 09/01/2023
Well:	Navajo Refining Waste Disposal Well No. 3	Gauge Depth:	5772 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	DC-22483
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	15000 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
08/30/23	11:50:00	-0.14694		4310.19		106.48	
08/30/23	11:55:00	-0.06361		4310.20		106.49	
08/30/23	11:58:47	-0.00056		4310.25		106.49	Injection Rate = Unavailable.
08/30/23	11:58:48	-0.00028		4310.41		106.49	Casing Pressure = 640 psig.
08/30/23	11:58:49	0.00000	1100	4310.54	0.00	106.49	Shut in well for 44.3-hr falloff test.
08/30/23	11:58:50	0.00028		4310.10	-0.44	106.49	
08/30/23	11:58:51	0.00056		4309.60	-0.94	106.49	
08/30/23	11:58:52	0.00083		4309.47	-1.07	106.49	
08/30/23	11:58:53	0.00111		4309.57	-0.97	106.49	
08/30/23	11:58:54	0.00139		4309.74	-0.80	106.49	
08/30/23	11:58:55	0.00167		4309.75	-0.79	106.49	
08/30/23	11:58:56	0.00194		4309.56	-0.98	106.49	
08/30/23	11:58:57	0.00222		4309.47	-1.07	106.49	
08/30/23	11:58:58	0.00250		4309.30	-1.24	106.49	
08/30/23	11:58:59	0.00278		4309.26	-1.28	106.49	
08/30/23	11:59:00	0.00306		4309.25	-1.29	106.49	
08/30/23	11:59:01	0.00333		4309.21	-1.33	106.49	
08/30/23	11:59:02	0.00361		4308.66	-1.88	106.49	
08/30/23	11:59:03	0.00389		4308.16	-2.38	106.49	
08/30/23	11:59:04	0.00417		4307.65	-2.89	106.49	
08/30/23	11:59:05	0.00444		4307.57	-2.97	106.49	
08/30/23	11:59:06	0.00472		4307.90	-2.64	106.49	
08/30/23	11:59:07	0.00500		4308.29	-2.25	106.49	
08/30/23	11:59:08	0.00528		4308.11	-2.43	106.49	
08/30/23	11:59:09	0.00556		4307.81	-2.73	106.49	
08/30/23	11:59:10	0.00583		4307.36	-3.18	106.49	
08/30/23	11:59:11	0.00611		4307.16	-3.38	106.49	
08/30/23	11:59:12	0.00639		4306.95	-3.59	106.49	
08/30/23	11:59:13	0.00667		4306.87	-3.67	106.49	
08/30/23	11:59:14	0.00694		4306.77	-3.77	106.49	
08/30/23	11:59:15	0.00722		4306.76	-3.78	106.49	
08/30/23	11:59:16	0.00750		4306.41	-4.13	106.49	
08/30/23	11:59:17	0.00778		4306.30	-4.24	106.50	
08/30/23	11:59:18	0.00806		4305.99	-4.55	106.50	
08/30/23	11:59:19	0.00833		4305.82	-4.72	106.50	
08/30/23	11:59:20	0.00861		4305.58	-4.96	106.50	
08/30/23	11:59:21	0.00889		4305.50	-5.04	106.50	
08/30/23	11:59:22	0.00917		4305.28	-5.26	106.50	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	11:59:23	0.00944		4305.20	-5.34	106.50	
08/30/23	11:59:24	0.00972		4304.98	-5.56	106.50	
08/30/23	11:59:26	0.01028		4304.86	-5.68	106.50	
08/30/23	11:59:27	0.01056		4304.83	-5.71	106.50	
08/30/23	11:59:28	0.01083		4304.53	-6.01	106.50	
08/30/23	11:59:29	0.01111		4304.10	-6.44	106.50	
08/30/23	11:59:30	0.01139		4303.71	-6.83	106.50	
08/30/23	11:59:31	0.01167		4303.53	-7.01	106.50	
08/30/23	11:59:32	0.01194		4303.85	-6.69	106.50	
08/30/23	11:59:34	0.01250		4303.91	-6.63	106.50	
08/30/23	11:59:35	0.01278		4303.35	-7.19	106.50	
08/30/23	11:59:36	0.01306		4303.18	-7.36	106.50	
08/30/23	11:59:38	0.01361		4303.15	-7.39	106.50	
08/30/23	11:59:39	0.01389		4302.91	-7.63	106.50	
08/30/23	11:59:40	0.01417		4302.21	-8.33	106.50	
08/30/23	11:59:42	0.01472		4301.25	-9.29	106.50	
08/30/23	11:59:43	0.01500		4301.54	-9.00	106.50	
08/30/23	11:59:45	0.01556		4302.21	-8.33	106.50	
08/30/23	11:59:47	0.01611		4300.84	-9.70	106.50	
08/30/23	11:59:48	0.01639		4300.49	-10.05	106.50	
08/30/23	11:59:50	0.01694		4300.41	-10.13	106.50	
08/30/23	11:59:52	0.01750		4300.19	-10.35	106.50	
08/30/23	11:59:54	0.01806		4299.28	-11.26	106.50	
08/30/23	11:59:55	0.01833		4298.15	-12.39	106.50	
08/30/23	11:59:57	0.01889		4297.73	-12.81	106.50	
08/30/23	11:59:59	0.01944		4297.17	-13.37	106.50	
08/30/23	12:00:01	0.02000		4298.25	-12.29	106.50	
08/30/23	12:00:03	0.02056		4298.73	-11.81	106.50	
08/30/23	12:00:06	0.02139		4295.90	-14.64	106.51	
08/30/23	12:00:08	0.02194		4296.64	-13.90	106.51	
08/30/23	12:00:10	0.02250		4297.50	-13.04	106.51	
08/30/23	12:00:12	0.02306		4296.13	-14.41	106.51	
08/30/23	12:00:15	0.02389		4295.60	-14.94	106.51	
08/30/23	12:00:17	0.02444		4296.28	-14.26	106.51	
08/30/23	12:00:20	0.02528		4294.92	-15.62	106.51	
08/30/23	12:00:23	0.02611		4295.07	-15.47	106.51	
08/30/23	12:00:25	0.02667		4295.10	-15.44	106.51	
08/30/23	12:00:28	0.02750		4294.17	-16.37	106.51	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	12:00:31	0.02833		4294.24	-16.30	106.51	
08/30/23	12:00:34	0.02917		4293.75	-16.79	106.51	
08/30/23	12:00:37	0.03000		4293.45	-17.09	106.51	
08/30/23	12:00:40	0.03083		4293.31	-17.23	106.51	
08/30/23	12:00:43	0.03167		4292.80	-17.74	106.51	
08/30/23	12:00:47	0.03278		4292.60	-17.94	106.51	
08/30/23	12:00:50	0.03361		4292.20	-18.34	106.51	
08/30/23	12:00:54	0.03472		4291.93	-18.61	106.51	
08/30/23	12:00:57	0.03556		4291.59	-18.95	106.51	
08/30/23	12:01:01	0.03667		4291.30	-19.24	106.51	
08/30/23	12:01:05	0.03778		4290.93	-19.61	106.51	
08/30/23	12:01:09	0.03889		4290.60	-19.94	106.51	
08/30/23	12:01:13	0.04000		4290.27	-20.27	106.51	
08/30/23	12:01:17	0.04111		4289.96	-20.58	106.52	
08/30/23	12:01:21	0.04222		4289.64	-20.90	106.52	
08/30/23	12:01:26	0.04361		4289.26	-21.28	106.52	
08/30/23	12:01:30	0.04472		4288.95	-21.59	106.52	
08/30/23	12:01:35	0.04611		4288.58	-21.96	106.52	
08/30/23	12:01:40	0.04750		4288.22	-22.32	106.52	
08/30/23	12:01:45	0.04889		4287.86	-22.68	106.52	
08/30/23	12:01:50	0.05028		4287.51	-23.03	106.52	
08/30/23	12:01:55	0.05167		4287.16	-23.38	106.52	
08/30/23	12:02:01	0.05333		4286.76	-23.78	106.52	
08/30/23	12:02:06	0.05472		4286.42	-24.12	106.52	
08/30/23	12:02:12	0.05639		4286.03	-24.51	106.52	
08/30/23	12:02:18	0.05806		4285.64	-24.90	106.52	
08/30/23	12:02:24	0.05972		4285.26	-25.28	106.52	
08/30/23	12:02:30	0.06139		4284.89	-25.65	106.52	
08/30/23	12:02:37	0.06333		4284.46	-26.08	106.52	
08/30/23	12:02:43	0.06500		4284.10	-26.44	106.53	
08/30/23	12:02:50	0.06694		4283.69	-26.85	106.53	
08/30/23	12:02:57	0.06889		4283.28	-27.26	106.53	
08/30/23	12:03:04	0.07083		4282.87	-27.67	106.53	
08/30/23	12:03:12	0.07306		4282.42	-28.12	106.53	
08/30/23	12:03:19	0.07500		4282.04	-28.50	106.53	
08/30/23	12:03:27	0.07722		4281.60	-28.94	106.53	
08/30/23	12:03:35	0.07944		4281.18	-29.36	106.54	
08/30/23	12:03:44	0.08194		4280.71	-29.83	106.54	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	12:03:52	0.08417		4280.31	-30.23	106.54	
08/30/23	12:04:01	0.08667		4279.86	-30.68	106.54	
08/30/23	12:04:10	0.08917		4279.41	-31.13	106.55	
08/30/23	12:04:20	0.09194		4278.92	-31.62	106.55	
08/30/23	12:04:29	0.09444		4278.49	-32.05	106.56	
08/30/23	12:04:39	0.09722		4278.03	-32.51	106.56	
08/30/23	12:04:50	0.10028		4277.52	-33.02	106.56	
08/30/23	12:05:00	0.10306		4277.08	-33.46	106.57	
08/30/23	12:05:11	0.10611		4276.61	-33.93	106.57	
08/30/23	12:05:22	0.10917		4276.14	-34.40	106.58	
08/30/23	12:05:33	0.11222		4275.67	-34.87	106.58	
08/30/23	12:05:45	0.11556		4275.17	-35.37	106.59	
08/30/23	12:05:57	0.11889		4274.68	-35.86	106.59	
08/30/23	12:06:10	0.12250		4274.17	-36.37	106.60	
08/30/23	12:06:23	0.12611		4273.67	-36.87	106.60	
08/30/23	12:06:36	0.12972		4273.18	-37.36	106.61	
08/30/23	12:06:50	0.13361		4272.66	-37.88	106.61	
08/30/23	12:07:04	0.13750		4272.15	-38.39	106.62	
08/30/23	12:07:18	0.14139		4271.65	-38.89	106.62	
08/30/23	12:07:33	0.14556		4271.12	-39.42	106.63	
08/30/23	12:07:48	0.14972		4270.61	-39.93	106.64	
08/30/23	12:08:04	0.15417		4270.07	-40.47	106.64	
08/30/23	12:08:20	0.15861		4269.54	-41.00	106.65	
08/30/23	12:08:37	0.16333		4269.00	-41.54	106.66	
08/30/23	12:08:54	0.16806		4268.46	-42.08	106.66	
08/30/23	12:09:12	0.17306		4267.91	-42.63	106.67	
08/30/23	12:09:30	0.17806		4267.36	-43.18	106.68	
08/30/23	12:09:48	0.18306		4266.82	-43.72	106.69	
08/30/23	12:10:08	0.18861		4266.24	-44.30	106.70	
08/30/23	12:10:27	0.19389		4265.71	-44.83	106.71	
08/30/23	12:10:48	0.19972		4265.14	-45.40	106.72	
08/30/23	12:11:09	0.20556		4264.58	-45.96	106.74	
08/30/23	12:11:30	0.21139		4264.02	-46.52	106.75	
08/30/23	12:11:53	0.21778		4263.43	-47.11	106.76	
08/30/23	12:12:15	0.22389		4262.87	-47.67	106.78	
08/30/23	12:12:39	0.23056		4262.29	-48.25	106.79	
08/30/23	12:13:03	0.23722		4261.72	-48.82	106.80	
08/30/23	12:13:28	0.24417		4261.12	-49.42	106.81	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	12:13:54	0.25139		4260.54	-50.00	106.82	
08/30/23	12:14:20	0.25861		4259.94	-50.60	106.84	
08/30/23	12:14:47	0.26611		4259.37	-51.17	106.86	
08/30/23	12:15:15	0.27389		4258.76	-51.78	106.89	
08/30/23	12:15:44	0.28194		4258.17	-52.37	106.91	
08/30/23	12:16:14	0.29028		4257.57	-52.97	106.92	
08/30/23	12:16:44	0.29861		4257.00	-53.54	106.94	
08/30/23	12:17:16	0.30750		4256.38	-54.16	106.96	
08/30/23	12:17:48	0.31639		4255.78	-54.76	106.98	
08/30/23	12:18:21	0.32556		4255.20	-55.34	107.00	
08/30/23	12:18:55	0.33500		4254.59	-55.95	107.02	
08/30/23	12:19:31	0.34500		4253.99	-56.55	107.04	
08/30/23	12:20:07	0.35500		4253.35	-57.19	107.05	
08/30/23	12:20:44	0.36528		4252.74	-57.80	107.07	
08/30/23	12:21:23	0.37611		4252.14	-58.40	107.09	
08/30/23	12:22:02	0.38694		4251.53	-59.01	107.11	
08/30/23	12:22:43	0.39833		4250.92	-59.62	107.13	
08/30/23	12:23:25	0.41000		4250.29	-60.25	107.15	
08/30/23	12:24:08	0.42194		4249.67	-60.87	107.17	
08/30/23	12:24:52	0.43417		4249.07	-61.47	107.19	
08/30/23	12:25:38	0.44694		4248.43	-62.11	107.21	
08/30/23	12:26:25	0.46000		4247.81	-62.73	107.23	
08/30/23	12:27:13	0.47333		4247.19	-63.35	107.25	
08/30/23	12:28:03	0.48722		4246.57	-63.97	107.27	
08/30/23	12:28:54	0.50139		4245.95	-64.59	107.29	
08/30/23	12:29:46	0.51583		4245.32	-65.22	107.31	
08/30/23	12:30:41	0.53111		4244.69	-65.85	107.33	
08/30/23	12:31:36	0.54639		4244.09	-66.45	107.36	
08/30/23	12:32:34	0.56250		4243.46	-67.08	107.39	
08/30/23	12:33:33	0.57889		4242.84	-67.70	107.41	
08/30/23	12:34:34	0.59583		4242.22	-68.32	107.44	
08/30/23	12:35:37	0.61333		4241.62	-68.92	107.46	
08/30/23	12:36:41	0.63111		4241.01	-69.53	107.49	
08/30/23	12:37:47	0.64944		4240.40	-70.14	107.51	
08/30/23	12:38:56	0.66861		4239.80	-70.74	107.54	
08/30/23	12:40:06	0.68806		4239.19	-71.35	107.57	
08/30/23	12:41:18	0.70806		4238.60	-71.94	107.60	
08/30/23	12:42:33	0.72889		4237.99	-72.55	107.63	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	12:43:49	0.75000		4237.42	-73.12	107.65	
08/30/23	12:45:08	0.77194		4236.84	-73.70	107.68	
08/30/23	12:46:29	0.79444		4236.26	-74.28	107.71	
08/30/23	12:47:53	0.81778		4235.69	-74.85	107.75	
08/30/23	12:49:19	0.84167		4235.13	-75.41	107.78	
08/30/23	12:50:47	0.86611		4234.57	-75.97	107.81	
08/30/23	12:52:18	0.89139		4234.03	-76.51	107.84	
08/30/23	12:53:52	0.91750		4233.47	-77.07	107.86	
08/30/23	12:55:28	0.94417		4232.95	-77.59	107.89	
08/30/23	12:57:07	0.97167		4232.42	-78.12	107.93	
08/30/23	12:58:50	1.00028		4231.90	-78.64	107.96	
08/30/23	13:00:35	1.02944		4231.38	-79.16	107.99	
08/30/23	13:02:23	1.05944		4230.88	-79.66	108.03	
08/30/23	13:04:14	1.09028		4230.38	-80.16	108.06	
08/30/23	13:06:09	1.12222		4229.90	-80.64	108.10	
08/30/23	13:08:07	1.15500		4229.42	-81.12	108.13	
08/30/23	13:10:08	1.18861		4228.96	-81.58	108.17	
08/30/23	13:12:13	1.22333		4228.50	-82.04	108.20	
08/30/23	13:14:22	1.25917		4228.06	-82.48	108.23	
08/30/23	13:16:34	1.29583		4227.62	-82.92	108.27	
08/30/23	13:18:50	1.33361		4227.20	-83.34	108.30	
08/30/23	13:21:10	1.37250		4226.78	-83.76	108.34	
08/30/23	13:23:35	1.41278		4226.38	-84.16	108.38	
08/30/23	13:26:03	1.45389		4225.98	-84.56	108.42	
08/30/23	13:28:36	1.49639		4225.60	-84.94	108.45	
08/30/23	13:31:13	1.54000		4225.23	-85.31	108.50	
08/30/23	13:33:55	1.58500		4224.86	-85.68	108.53	
08/30/23	13:36:42	1.63139		4224.51	-86.03	108.57	
08/30/23	13:39:33	1.67889		4224.17	-86.37	108.61	
08/30/23	13:42:30	1.72806		4223.85	-86.69	108.65	
08/30/23	13:45:31	1.77833		4223.52	-87.02	108.69	
08/30/23	13:48:38	1.83028		4223.22	-87.32	108.73	
08/30/23	13:51:51	1.88389		4222.91	-87.63	108.77	
08/30/23	13:55:09	1.93889		4222.62	-87.92	108.82	
08/30/23	13:58:32	1.99528		4222.33	-88.21	108.85	
08/30/23	14:02:02	2.05361		4222.06	-88.48	108.90	
08/30/23	14:05:38	2.11361		4221.79	-88.75	108.94	
08/30/23	14:09:20	2.17528		4221.54	-89.00	108.98	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	14:13:09	2.23889		4221.29	-89.25	109.03	
08/30/23	14:17:04	2.30417		4221.06	-89.48	109.07	
08/30/23	14:21:06	2.37139		4220.83	-89.71	109.11	
08/30/23	14:25:16	2.44083		4220.60	-89.94	109.15	
08/30/23	14:29:32	2.51194		4220.39	-90.15	109.20	
08/30/23	14:33:56	2.58528		4220.18	-90.36	109.24	
08/30/23	14:38:28	2.66083		4219.97	-90.57	109.29	
08/30/23	14:43:08	2.73861		4219.78	-90.76	109.33	
08/30/23	14:47:56	2.81861		4219.60	-90.94	109.38	
08/30/23	14:52:52	2.90083		4219.43	-91.11	109.42	
08/30/23	14:57:57	2.98556		4219.25	-91.29	109.47	
08/30/23	15:03:11	3.07278		4219.08	-91.46	109.51	
08/30/23	15:08:34	3.16250		4218.92	-91.62	109.55	
08/30/23	15:14:06	3.25472		4218.77	-91.77	109.60	
08/30/23	15:19:48	3.34972		4218.61	-91.93	109.64	
08/30/23	15:25:40	3.44750		4218.47	-92.07	109.69	
08/30/23	15:31:43	3.54833		4218.33	-92.21	109.74	
08/30/23	15:37:56	3.65194		4218.19	-92.35	109.78	
08/30/23	15:44:20	3.75861		4218.07	-92.47	109.83	
08/30/23	15:50:55	3.86833		4217.94	-92.60	109.88	
08/30/23	15:57:41	3.98111		4217.82	-92.72	109.92	
08/30/23	16:04:40	4.09750		4217.70	-92.84	109.97	
08/30/23	16:11:51	4.21722		4217.59	-92.95	110.01	
08/30/23	16:19:14	4.34028		4217.48	-93.06	110.06	
08/30/23	16:26:50	4.46694		4217.38	-93.16	110.10	
08/30/23	16:34:40	4.59750		4217.28	-93.26	110.15	
08/30/23	16:42:43	4.73167		4217.19	-93.35	110.20	
08/30/23	16:51:00	4.86972		4217.09	-93.45	110.24	
08/30/23	16:59:32	5.01194		4217.00	-93.54	110.29	
08/30/23	17:08:19	5.15833		4216.91	-93.63	110.33	
08/30/23	17:17:21	5.30889		4216.82	-93.72	110.38	
08/30/23	17:26:39	5.46389		4216.74	-93.80	110.42	
08/30/23	17:36:14	5.62361		4216.66	-93.88	110.47	
08/30/23	17:46:05	5.78778		4216.58	-93.96	110.52	
08/30/23	17:56:13	5.95667		4216.51	-94.03	110.56	
08/30/23	18:06:40	6.13083		4216.44	-94.10	110.60	
08/30/23	18:17:24	6.30972		4216.37	-94.17	110.65	
08/30/23	18:28:27	6.49389		4216.30	-94.24	110.69	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/30/23	18:39:50	6.68361		4216.24	-94.30	110.74	
08/30/23	18:51:32	6.87861		4216.18	-94.36	110.78	
08/30/23	19:03:36	7.07972		4216.12	-94.42	110.83	
08/30/23	19:16:00	7.28639		4216.05	-94.49	110.87	
08/30/23	19:28:46	7.49917		4216.00	-94.54	110.91	
08/30/23	19:41:54	7.71806		4215.94	-94.60	110.95	
08/30/23	19:55:25	7.94333		4215.87	-94.67	110.99	
08/30/23	20:09:20	8.17528		4215.82	-94.72	111.04	
08/30/23	20:23:40	8.41417		4215.75	-94.79	111.07	
08/30/23	20:38:24	8.65972		4215.68	-94.86	111.12	
08/30/23	20:53:35	8.91278		4215.62	-94.92	111.15	
08/30/23	21:09:11	9.17278		4215.58	-94.96	111.19	
08/30/23	21:25:16	9.44083		4215.55	-94.99	111.23	
08/30/23	21:41:48	9.71639		4215.50	-95.04	111.27	
08/30/23	21:58:50	10.00028		4215.45	-95.09	111.31	
08/30/23	22:16:21	10.29222		4215.40	-95.14	111.35	
08/30/23	22:34:23	10.59278		4215.33	-95.21	111.39	
08/30/23	22:52:56	10.90194		4215.27	-95.27	111.42	
08/30/23	23:12:02	11.22028		4215.19	-95.35	111.47	
08/30/23	23:31:42	11.54806		4215.11	-95.43	111.50	
08/30/23	23:51:56	11.88528		4215.03	-95.51	111.54	
08/31/23	00:12:45	12.23222		4214.94	-95.60	111.57	
08/31/23	00:34:11	12.58944		4214.85	-95.69	111.61	
08/31/23	00:56:14	12.95694		4214.77	-95.77	111.64	
08/31/23	01:18:56	13.33528		4214.67	-95.87	111.67	
08/31/23	01:42:18	13.72472		4214.56	-95.98	111.67	
08/31/23	02:06:21	14.12556		4214.46	-96.08	111.62	
08/31/23	02:31:06	14.53806		4214.36	-96.18	111.60	
08/31/23	02:54:50	14.93361		4214.27	-96.27	111.56	BHT began decreasing.
08/31/23	02:56:34	14.96250		4214.23	-96.31	111.51	
08/31/23	03:22:47	15.39944		4213.69	-96.85	110.76	
08/31/23	03:49:46	15.84917		4213.50	-97.04	110.38	
08/31/23	04:17:32	16.31194		4213.08	-97.46	109.23	
08/31/23	04:42:52	16.73417		4212.62	-97.92	108.62	BHT began increasing.
08/31/23	04:46:06	16.78806		4212.55	-97.99	108.66	
08/31/23	05:15:31	17.27833		4212.49	-98.05	109.51	
08/31/23	05:45:48	17.78306		4212.51	-98.03	110.16	
08/31/23	06:16:57	18.30222		4212.46	-98.08	110.50	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
08/31/23	06:49:01	18.83667		4212.50	-98.04	110.86	
08/31/23	07:22:01	19.38667		4212.47	-98.07	111.07	
08/31/23	07:55:59	19.95278		4212.28	-98.26	111.32	
08/31/23	08:30:56	20.53528		4212.19	-98.35	111.54	
08/31/23	09:06:55	21.13500		4212.10	-98.44	111.57	
08/31/23	09:43:57	21.75222		4212.55	-97.99	111.50	
08/31/23	10:22:03	22.38722		4213.17	-97.37	111.54	
08/31/23	11:01:17	23.04111		4213.42	-97.12	111.69	
08/31/23	11:41:39	23.71389		4213.46	-97.08	111.80	
08/31/23	12:23:12	24.40639		4213.45	-97.09	111.88	
08/31/23	13:05:57	25.11889		4213.43	-97.11	111.96	
08/31/23	13:49:58	25.85250		4213.38	-97.16	112.03	
08/31/23	14:35:16	26.60750		4213.30	-97.24	112.09	
08/31/23	15:21:53	27.38444		4213.22	-97.32	112.14	
08/31/23	16:09:51	28.18389		4213.16	-97.38	112.19	
08/31/23	16:59:14	29.00694		4213.12	-97.42	112.24	
08/31/23	17:50:03	29.85389		4213.08	-97.46	112.29	
08/31/23	18:42:22	30.72583		4213.02	-97.52	112.33	
08/31/23	19:36:12	31.62306		4212.99	-97.55	112.38	
08/31/23	20:31:36	32.54639		4212.99	-97.55	112.41	
08/31/23	21:28:37	33.49667		4212.97	-97.57	112.45	
08/31/23	22:27:18	34.47472		4212.93	-97.61	112.48	
08/31/23	23:27:42	35.48139		4212.87	-97.67	112.52	
09/01/23	00:29:52	36.51750		4212.77	-97.77	112.55	
09/01/23	01:33:51	37.58389		4212.67	-97.87	112.58	
09/01/23	01:48:02	37.82028		4212.63	-97.91	112.58	BHT began decreasing.
09/01/23	02:39:42	38.68139		4212.41	-98.13	112.37	
09/01/23	03:47:28	39.81083		4211.36	-99.18	110.48	
09/01/23	04:31:16	40.54083		4211.02	-99.52	109.37	BHT began increasing.
09/01/23	04:57:13	40.97333		4210.93	-99.61	109.69	
09/01/23	06:09:00	42.16972		4210.99	-99.55	110.74	
09/01/23	07:22:53	43.40111		4211.02	-99.52	111.38	
09/01/23	08:19:00	44.33639		4211.68	-98.86	111.67	
09/01/23	08:19:32	44.34528	920	4211.69	-98.85	111.67	Ended 44.3-hr Falloff Test.
09/01/23	08:19:33	44.34556		4211.60		111.67	POOH making static gradient stops.
09/01/23	08:19:39	44.34722		4203.93		111.67	BHT began increasing POOH.
09/01/23	08:20:00	44.35306		4166.92		111.79	
09/01/23	08:21:00	44.36972		4059.53		112.09	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
09/01/23	08:21:01	44.37000		4057.91		112.09	BHT began decreasing POOH.
09/01/23	08:22:00	44.38639		3970.61		111.51	
09/01/23	08:22:10	44.38917		3963.31		111.39	Arrived at 7000 ft stop.
09/01/23	08:23:00	44.40306		3962.90		111.31	
09/01/23	08:24:00	44.41972		3962.89		111.29	
09/01/23	08:25:00	44.43639		3962.89		111.28	
09/01/23	08:26:00	44.45306		3962.89		111.26	
09/01/23	08:27:00	44.46972		3962.91		111.25	
09/01/23	08:28:00	44.48639		3962.91		111.24	
09/01/23	08:28:22	44.49250		3962.87		111.23	Left 7000 ft stop.
09/01/23	08:29:00	44.50306		3900.55		110.87	
09/01/23	08:30:00	44.51972		3800.98		109.73	
09/01/23	08:31:00	44.53639		3696.69		108.57	
09/01/23	08:32:00	44.55306		3593.99		107.47	
09/01/23	08:32:43	44.56500		3530.34		106.62	Arrived at 6000 ft stop.
09/01/23	08:33:00	44.56972		3529.70		106.48	
09/01/23	08:34:00	44.58639		3529.43		106.44	
09/01/23	08:35:00	44.60306		3529.39		106.43	
09/01/23	08:36:00	44.61972		3529.39		106.43	
09/01/23	08:37:00	44.63639		3529.40		106.43	
09/01/23	08:38:00	44.65306		3529.41		106.43	
09/01/23	08:38:21	44.65889		3529.41		106.42	Left 6000 ft stop.
09/01/23	08:39:00	44.66972		3464.32		105.85	
09/01/23	08:40:00	44.68639		3359.01		104.71	
09/01/23	08:41:00	44.70306		3251.69		103.55	
09/01/23	08:42:00	44.71972		3144.41		102.39	
09/01/23	08:42:53	44.73444		3095.57		101.63	Arrived at 5000 ft stop.
09/01/23	08:43:00	44.73639		3095.50		101.63	
09/01/23	08:44:00	44.75306		3095.41		101.60	
09/01/23	08:45:00	44.76972		3095.40		101.59	
09/01/23	08:46:00	44.78639		3095.39		101.59	
09/01/23	08:47:00	44.80306		3095.40		101.59	
09/01/23	08:48:00	44.81972		3095.41		101.58	
09/01/23	08:48:22	44.82583		3095.40		101.58	Left 5000 ft stop.
09/01/23	08:49:00	44.83639		3033.00		101.03	
09/01/23	08:50:00	44.85306		2923.11		99.82	
09/01/23	08:51:00	44.86972		2813.80		98.78	
09/01/23	08:52:00	44.88639		2705.46		97.84	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Corporation
Well: Navajo Refining Waste Disposal Well No. 3
Field: Davonia
Location: Eddy County, NM
Perfs: 7660 - 8450; 8540 - 8620 ft (MD)
Formation: Unavailable

Test Date: 08/30 - 09/01/2023
Gauge Depth: 5772 ft
Gauge Type: Electronic
Gauge SN: DC-22483
Gauge Range: 15000 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
09/01/23	08:52:59	44.90278		2661.14		97.22	Arrived at 4000 ft stop.
09/01/23	08:53:00	44.90306		2661.20		97.22	
09/01/23	08:54:00	44.91972		2661.13		97.21	
09/01/23	08:55:00	44.93639		2661.13		97.19	
09/01/23	08:56:00	44.95306		2661.13		97.18	
09/01/23	08:57:00	44.96972		2661.13		97.17	
09/01/23	08:58:00	44.98639		2661.12		97.16	
09/01/23	08:58:15	44.99056		2661.12		97.16	Left 4000 ft stop.
09/01/23	08:59:00	45.00306		2594.50		96.77	
09/01/23	09:00:00	45.01972		2486.39		96.01	
09/01/23	09:01:00	45.03639		2375.09		95.11	
09/01/23	09:02:00	45.05306		2266.85		94.35	
09/01/23	09:02:48	45.06639		2227.19		93.89	Arrived at 3000 ft stop.
09/01/23	09:03:00	45.06972		2227.15		93.88	
09/01/23	09:04:00	45.08639		2227.08		93.87	
09/01/23	09:05:00	45.10306		2227.09		93.87	
09/01/23	09:06:00	45.11972		2227.08		93.86	
09/01/23	09:07:00	45.13639		2227.07		93.86	
09/01/23	09:08:00	45.15306		2227.09		93.85	
09/01/23	09:08:29	45.16111		2227.08		93.85	Left 3000 ft stop.
09/01/23	09:09:00	45.16972		2167.88		93.55	
09/01/23	09:10:00	45.18639		2046.21		92.70	
09/01/23	09:11:00	45.20306		1924.62		91.27	
09/01/23	09:12:00	45.21972		1812.66		90.16	
09/01/23	09:12:35	45.22944		1794.38		89.92	Arrived at 2000 ft stop.
09/01/23	09:13:00	45.23639		1794.31		89.91	
09/01/23	09:14:00	45.25306		1794.31		89.90	
09/01/23	09:15:00	45.26972		1794.30		89.90	
09/01/23	09:16:00	45.28639		1794.30		89.89	
09/01/23	09:17:00	45.30306		1794.31		89.89	
09/01/23	09:18:00	45.31972		1794.31		89.89	
09/01/23	09:18:14	45.32361		1794.31		89.89	Left 2000 ft stop.
09/01/23	09:19:00	45.33639		1664.85		89.27	
09/01/23	09:20:00	45.35306		1555.71		88.40	
09/01/23	09:21:00	45.36972		1416.66		87.47	
09/01/23	09:21:53	45.38444		1361.26		86.54	Arrived at 1000 ft stop.
09/01/23	09:22:00	45.38639		1361.20		86.53	
09/01/23	09:23:00	45.40306		1361.17		86.52	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Corporation	Test Date:	08/30 - 09/01/2023
Well:	Navajo Refining Waste Disposal Well No. 3	Gauge Depth:	5772 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	DC-22483
Perfs:	7660 - 8450; 8540 - 8620 ft (MD)	Gauge Range:	15000 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
09/01/23	09:24:00	45.41972		1361.17		86.52	
09/01/23	09:25:00	45.43639		1361.18		86.51	
09/01/23	09:26:00	45.45306		1361.18		86.51	
09/01/23	09:27:00	45.46972		1361.18		86.50	
09/01/23	09:28:00	45.48639		1361.18		86.50	
09/01/23	09:28:14	45.49028		1361.18		86.50	Left 1000 ft stop.
09/01/23	09:29:00	45.50306		1256.03		86.28	
09/01/23	09:30:00	45.51972		1115.06		84.91	
09/01/23	09:31:00	45.53639		967.81		84.70	
09/01/23	09:32:00	45.55306		921.31		77.29	
09/01/23	09:32:13	45.55667		917.21		77.00	Gauge at surface.
09/01/23	09:33:00	45.56972		917.30		76.74	
09/01/23	09:34:00	45.58639		917.50		76.61	
09/01/23	09:35:00	45.60306		917.61		76.47	
09/01/23	09:36:00	45.61972		917.55		76.28	
09/01/23	09:37:00	45.63639		917.53		76.13	
09/01/23	09:38:00	45.65306		917.53		76.00	
09/01/23	09:39:00	45.66972		917.47		75.92	
09/01/23	09:40:00	45.68639		917.47		75.87	
09/01/23	09:40:35	45.69611	920	917.48		75.85	Closed crown valve.
09/01/23	09:41:00	45.70306		916.21		75.84	
09/01/23	09:41:04	45.70417		916.11		75.84	Pressured down lubricator.
09/01/23	09:41:17	45.70778		7.87		75.74	Test completed.
09/01/23	09:45:00	45.76972		8.46		75.20	
09/01/23	09:50:00	45.85306		10.24		70.16	
09/01/23	09:50:49	45.86667		10.15		70.00	Powered down gauge.

Remarks: RIH with electronic gauges making injecting gradient stops to 7572 ft. Injected water into well for 1 hr. SI well for 44.3 hr BHP Falloff Test. POOH making static gradient stops. RDMO.

Certified: FESCO, Ltd. - Midland, TX

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

Job No.: J202309011401.001A

Attachment 5
Falloff Test Summary

Petrotek

WDW-3
2023 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)	0.325	ft

Fluid Properties

Viscosity (μ)	0.56	cp
Fluid Compressibility (c_f)	2.70E-06	psi^{-1}
Formation Volume Factor (B)	1.00	bbl/stb

Model Parameters

Wellbore Storage	Changing hegeman
Well Model	Vertical
Reservoir Model	Homogenous
Boundary Model	Infinite

Analysis Results

Well & Wellbore

Initial Wellbore Storage	2.77E-01	bbl/psi
Final Wellbore Storage	9.21E-01	bbl/psi
D_t [changing storage]	1.96E-01	hr
Skin	11.7	

Reservoir & Boundary

Permeability (k)	370	md
Transmissibility	115,729	md-ft/cp
Radius of Investigation (r_i)	4,792	ft

Attachment 6
AOR Well List

Petrotek

Operator	Well Name	API	Well Type	PLSS Location	Latitude	Longitude	Well Status	SPUD Date	Plug Date
APACHE CORPORATION	EMPIRE ABO UNIT #143A	30-015-22896	Oil	K-02-18S-27E	32.77410	-104.24940	Active	4/16/1979	-
APACHE CORPORATION	EMPIRE ABO UNIT #015B	30-015-00741	Oil	G-02-18S-27E	32.77700	-104.24710	Active	2/1/1900	-
APACHE CORPORATION	EMPIRE ABO UNIT #015	30-015-00716	Oil	J-02-18S-27E	32.77460	-104.24660	Active	2/11/1959	-
REMNANT OIL OPERATING, LLC	SOUTH RED LAKE II UNIT #038	30-015-00737	Oil	B-02-18S-27E	32.78090	-104.24600	Active	2/1/1900	-
APACHE CORPORATION	SCBP STATE #001	30-015-32946	Oil	J-02-18S-27E	32.77520	-104.24600	Active	3/14/2005	-
REMNANT OIL OPERATING, LLC	SOUTH RED LAKE II UNIT #036	30-015-00721	Oil	A-02-18S-27E	32.78250	-104.24400	Active	10/21/1941	-
RILEY PERMIAN OPERATING COMPANY, LLC	STATE H #002	30-015-35814	Oil	H-02-18S-27E	32.77770	-104.24210	Active	10/31/2007	-
APACHE CORPORATION	EMPIRE ABO UNIT #016	30-015-00717	Oil	I-02-18S-27E	32.77460	-104.24280	Active	3/30/1959	-
REMNANT OIL OPERATING, LLC	SOUTH RED LAKE II UNIT #037	30-015-00715	Injection	D-01-18S-27E	32.78250	-104.23970	Active	2/28/1948	-
APACHE CORPORATION	AAO FEDERAL #022	30-015-42335	Oil	D-01-18S-27E	32.78120	-104.23970	Active	7/27/2014	-
APACHE CORPORATION	AAO FEDERAL #030	30-015-42360	Oil	M-01-18S-27E	32.77260	-104.23970	Active	7/20/2014	-
Spur Energy Partners LLC	BIG BOY STATE #002	30-015-40428	Oil	M-36-17S-27E	32.78390	-104.23920	Active	4/27/2013	-
LLJ VENTURES, LLC DBA MARKER OIL & GAS	STATE #007	30-015-21623	Oil	M-36-17S-27E	32.78440	-104.23930	Active	9/16/1975	-
APACHE CORPORATION	AAO FEDERAL #009	30-015-34387	Oil	L-01-18S-27E	32.77460	-104.23860	Active	11/7/2005	-
HF Sinclair Navajo Refining LLC	WDW #002	30-015-20894	SWD	E-12-18S-27E	32.76370	-104.23850	Active	5/5/1999	-
APACHE CORPORATION	AAO FEDERAL #011	30-015-34555	Oil	M-01-18S-27E	32.77160	-104.23850	Active	2/15/2006	-
LLJ VENTURES, LLC DBA MARKER OIL & GAS	STATE #006	30-015-10184	Oil	M-36-17S-27E	32.78430	-104.23780	Active	3/3/1963	-
APACHE CORPORATION	AAO FEDERAL #020	30-015-42036	Oil	E-01-18S-27E	32.77730	-104.23770	Active	4/10/2014	-
Spur Energy Partners LLC	BIG BOY STATE #004	30-015-40429	Oil	M-36-17S-27E	32.78470	-104.23820	Active	8/28/2014	-
APACHE CORPORATION	AAO FEDERAL #025	30-015-42361	Oil	L-01-18S-27E	32.77460	-104.23730	Active	6/23/2014	-
APACHE CORPORATION	AAO FEDERAL #029	30-015-42339	Oil	M-01-18S-27E	32.77010	-104.23740	Active	6/16/2014	-
APACHE CORPORATION	AAO FEDERAL #001	30-015-32307	Oil	D-01-18S-27E	32.78240	-104.23760	Active	11/20/2002	-
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #003	30-015-25545	Oil	M-12-18S-27E	32.75730	-104.23750	Active	5/19/1986	-
MEWBOURNE OIL CO	CHALK BLUFF 36 STATE #001	30-015-27286	Oil	M-36-17S-27E	32.78520	-104.23760	Active	2/2/1993	-
MEWBOURNE OIL CO	CHALK BLUFF FEDERAL COM #002	30-015-26741	Gas	F-01-18S-27E	32.77880	-104.23630	Active	5/13/1991	-
APACHE CORPORATION	AAO FEDERAL #021	30-015-42334	Oil	C-01-18S-27E	32.78060	-104.23550	Active	5/27/2014	-
APACHE CORPORATION	AAO FEDERAL #026	30-015-42338	Oil	K-01-18S-27E	32.77530	-104.23530	Active	6/10/2014	-
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #002	30-015-25201	Oil	K-12-18S-27E	32.75910	-104.23490	Active	3/16/1985	-
APACHE CORPORATION	AAO FEDERAL #012	30-015-34998	Oil	N-01-18S-27E	32.77150	-104.23520	Active	8/13/2006	-
APACHE CORPORATION	AAO FEDERAL #006	30-015-34071	Oil	F-01-18S-27E	32.77740	-104.23430	Active	7/6/2005	-
APACHE CORPORATION	AAO FEDERAL #013	30-015-00710	Oil	C-01-18S-27E	32.78150	-104.23430	Active	7/14/1959	-
APACHE CORPORATION	AAO FEDERAL #027	30-015-42359	Oil	K-01-18S-27E	32.77440	-104.23390	Active	7/3/2014	-
APACHE CORPORATION	AAO FEDERAL #010	30-015-34576	Oil	K-01-18S-27E	32.77470	-104.23360	Active	6/2/2006	-
HF Sinclair Navajo Refining LLC	WDW #003	30-015-26575	SWD	N-01-18S-27E	32.77120	-104.23330	Active	12/22/1990	-
APACHE CORPORATION	AAO FEDERAL #019	30-015-42051	Oil	F-01-18S-27E	32.77700	-104.23320	Active	4/2/2014	-
APACHE CORPORATION	AAO FEDERAL #016	30-015-42026	Oil	C-01-18S-27E	32.77970	-104.23280	Active	3/20/2014	-
BILL L MILLER	CHUKKA FEDERAL #001	30-015-25270	Oil	F-12-18S-27E	32.76270	-104.23310	Active	4/23/1985	-
APACHE CORPORATION	AAO FEDERAL #028	30-015-42358	Oil	N-01-18S-27E	32.76950	-104.23250	Active	7/12/2014	-
APACHE CORPORATION	AAO FEDERAL #015	30-015-42025	Oil	B-01-18S-27E	32.78020	-104.23140	Active	3/15/2014	-
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #007	30-015-00874	Oil	J-12-18S-27E	32.76090	-104.23120	Active	7/28/1948	-
APACHE CORPORATION	AAO FEDERAL SWD #001	30-015-42549	SWD	G-01-18S-27E	32.77650	-104.23130	Active	10/24/2014	-
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #009	30-015-25738	Oil	G-12-18S-27E	32.76270	-104.23110	Active	4/25/1987	-
Spur Energy Partners LLC	BIG BOY STATE #006	30-015-39324	Oil	O-36-17S-27E	32.78460	-104.23080	Active	12/18/2011	-
Spur Energy Partners LLC	BIG BOY STATE #008	30-015-39326	Oil	O-36-17S-27E	32.78400	-104.22860	Active	5/6/2013	-
APACHE CORPORATION	AAO FEDERAL #007	30-015-33473	Oil	G-01-18S-27E	32.77840	-104.22890	Active	10/22/2004	-
APACHE CORPORATION	AAO FEDERAL #003	30-015-32309	Oil	B-01-18S-27E	32.78240	-104.22910	Active	3/13/2003	-
APACHE CORPORATION	AAO FEDERAL #018	30-015-42035	Oil	G-01-18S-27E	32.77690	-104.22890	Active	8/9/2014	-
APACHE CORPORATION	AAO FEDERAL #004	30-015-32310	Oil	01-18S-27E	32.78050	-104.22680	Active	7/14/2003	-
RILEY PERMIAN OPERATING COMPANY, LLC	CHALK BLUFF FEDERAL SWD #001	30-015-27163	SWD	I-01-18S-27E	32.77440	-104.22680	Active	5/10/1981	-
RILEY PERMIAN OPERATING COMPANY, LLC	FEDERAL T SWD #001	30-015-26404	SWD	A-12-18S-27E	32.76720	-104.22680	Active	6/28/1990	-
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #006	30-015-25099	Oil	H-12-18S-27E	32.76400	-104.22680	Active	8/18/1985	-
APACHE CORPORATION	AAO FEDERAL #017	30-015-42027	Oil	H-01-18S-27E	32.77870	-104.22640	Active	3/27/2014	-
APACHE CORPORATION	EMPIRE ABO UNIT #203	30-015-22656	Oil	H-01-18S-27E	32.77660	-104.22580	Active	9/13/1978	-
APACHE CORPORATION	AAO FEDERAL #023	30-015-42336	Oil	H-01-18S-27E	32.77700	-104.22460	Active	8/4/2014	-
APACHE CORPORATION	AAO FEDERAL #014	30-015-42024	Oil	A-01-18S-27E	32.78290	-104.22400	Active	3/7/2014	-
APACHE CORPORATION	AAO FEDERAL #024	30-015-42337	Oil	A-01-18S-27E	32.78050	-104.22440	Active	6/3/2014	-
APACHE CORPORATION	EMPIRE ABO UNIT #020B	30-015-00699	Oil	P-01-18S-27E	32.77150	-104.22460	Active	11/16/1961	-
APACHE CORPORATION	AAO FEDERAL #008	30-015-33784	Oil	01-18S-27E	32.77870	-104.22460	Active	2/28/2005	-
LLJ VENTURES, LLC DBA MARKER OIL & GAS	LAUREL STATE #003	30-015-31319	Oil	E-07-18S-28E	32.76260	-104.22250	Active	10/2/2000	-
APACHE CORPORATION	EMPIRE ABO UNIT #021C	30-015-02619	Oil	E-06-18S-28E	32.77780	-104.22140	Active	10/8/1959	-
APACHE CORPORATION	EMPIRE ABO UNIT #021B	30-015-02613	Oil	D-06-18S-28E	32.78050	-104.22140	Active	12/8/1959	-
LLJ VENTURES, LLC DBA MARKER OIL & GAS	LAUREL STATE #002	30-015-25675	Oil	E-07-18S-28E	32.76440	-104.22030	Active	10/28/1988	-
MEWBOURNE OIL CO	CHALK BLUFF 6 STATE #001	30-015-26943	Gas	M-06-18S-28E	32.77170	-104.22120	Active	2/17/1992	-
APACHE CORPORATION	EMPIRE ABO UNIT #211	30-015-21395	Oil	E-06-18S-28E	32.77600	-104.21930	Active	12/12/1974	-
APACHE CORPORATION	EMPIRE ABO UNIT #022C	30-015-02610	Oil	N-06-18S-28E	32.77160	-104.21790	Active	7/20/1960	-
LLJ VENTURES, LLC DBA MARKER OIL & GAS	LAUREL STATE #001	30-015-25997	Oil	C-07-18S-28E	32.76640	-104.21780	Active	12/15/1986	-
APACHE CORPORATION	EMPIRE ABO UNIT #022F	30-015-02623	Oil	K-06-18S-28E	32.77510	-104.21680	Active	1/28/1960	-
APACHE CORPORATION	EMPIRE ABO UNIT #016B	30-015-00724	Oil	A-02-18S-27E	32.78070	-104.24180	Plugged (not released)	8/1/1959	2/3/2021
APACHE CORPORATION	EMPIRE ABO UNIT #183	30-015-22096	Oil	K-01-18S-27E	32.77560	-104.23580	Plugged (not released)	6/23/1977	4/27/2021
APACHE CORPORATION	EMPIRE ABO UNIT #193	30-015-22657	Oil	J-01-18S-27E	32.77590	-104.23070	Plugged (not released)	9/29/1978	4/29/2021
APACHE CORPORATION	EMPIRE ABO UNIT #194	30-015-22658	Oil	J-01-18S-27E	32.77310	-104.23050	Plugged (not released)	10/18/1978	4/19/2021
APACHE CORPORATION	EMPIRE ABO UNIT #192	30-015-22560	Oil	J-01-18S-27E	32.77450	-104.22810	Plugged (not released)	5/30/1978	4/22/2021
APACHE CORPORATION	EMPIRE ABO UNIT #223	30-015-22527	Oil	F-06-18S-28E	32.77610	-104.21730	Plugged (not released)	4/22/1978	7/23/2021
APACHE CORPORATION	EMPIRE ABO UNIT #152	30-015-21825	Oil	O-02-18S-27E	32.77000	-104.24910	Plugged (site released)	-	12/27/2011
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #152B	30-015-22569	Oil	B-11-18S-27E	32.76760	-104.24900	Plugged (site released)	-	10/2/2008
APACHE CORPORATION	EMPIRE ABO UNIT #141A	30-015-22051	Oil	K-02-18S-27E	32.77290	-104.24970	Plugged (site released)	-	12/21/2011
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #154	30-015-22669	Oil	O-02-18S-27E	32.77130	-104.24870	Plugged (site released)	-	6/30/2009
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153B	30-015-22838	Oil	B-11-18S-27E	32.76860	-104.24680	Plugged (site released)	-	12/22/2008
APACHE CORPORATION	EMPIRE ABO UNIT #155	30-015-22885	Oil	O-02-18S-27E	32.77200	-104.24720	Plugged (site released)	3/30/1979	1/3/2012
BP AMERICA PRODUCTION COMPANY	RIVERWOLF UNIT #004	30-015-00720	Oil	B-02-18S-27E	32.78070	-104.24610	Plugged (site released)	-	12/4/2008
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015C	30-015-00868	Oil	B-11-18S-27E	32.76730	-104.24700	Plugged (site released)	-	7/16/2004
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015A	30-015-00731	Oil	O-02-18S-27E	32.77100	-104.24700	Plugged (site released)	-	2/12/2009
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153	30-015-22013	Oil	O-02-18S-27E	32.76940	-104.24530	Plugged (site released)	-	10/30/2008
MCQUADRANGLE, LC	SOUTH RED LAKE GRAYBURG UNIT #040	30-015-00740	Injection	G-02-18S-27E	32.77880	-104.24790	Plugged (site released)	-	7/10/2002
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #151B	30-015-22568	Oil	B-11-18S-27E	32.76800	-104.24530	Plugged (site released)	-	8/16/2006
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #156	30-015-22808	Oil	O-02-18S-27E	32.77080	-104.24490	Plugged (site released)	-	10/7/2009
APACHE CORPORATION	EMPIRE ABO UNIT #151	30-015-21544	Oil	O-02-18S-27E	32.77220	-104.24490	Plugged (site released)	-	1/6/2012
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #039	30-015-00742	Oil	H-02-18S-27E	32.77880	-104.24400	Plugged (site released)	-	-
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00726	Oil	L-02-18S-27E	32.77470	-104.24280	Plugged (site released)	-	-
MACK ENERGY CORP	STATE H #001	30-015-00745	Oil	H-02-18S-27E	32.77790	-104.24290	Plugged (site released)	-	3/7/2008
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016A	30-015-00722	Oil	P-02-18S-27E	32.77100	-104.24280	Plugged (site released)	-	2/23/2009
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016C	30-015-00869	Oil	A-11-18S-27E	32.76820	-104.24270	Plugged (site released)	-	1/24/2007
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #002	30-015-00662	Oil	M-36-17S-27E	32.78430	-104.23970	Plugged (site released)	-	-
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00701	Oil	D-01-18S-27E	32.78250	-104.23970	Plugged (site released)	-	-
APACHE CORPORATION	EMPIRE ABO UNIT #171	30-015-22815	Oil	M-01-18S-27E	32.77100	-104.23950	Plugged (site released)	5/22/1979	10/24/2019
RHONDA OPERATING CO	FEDERAL EA #001	30-015-00871	Oil	D-12-18S-27E	32.76820	-104.23950	Plugged (site released)	-	4/12/1994
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #002	30-015-20535	Oil	D-12-18S-27E	32.76820	-104.23910	Plugged (site released)	-	-
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #003	30-015-23115	Oil	D-12-18S-27E	32.76820	-104.23930	Plugged (site released)	-	-
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00695	Oil	L-01-18S-27E	32.77370	-104.23960	Plugged (site released)	-	-
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #017	30-015-00704	Oil	E-01-18S-27E	32.77790	-104.23860	Plugged (site released)	-	-

BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017A	30-015-00703	Oil	L-01-18S-27E	32.77450	-104.23850	Plugged (site released)	-	3/19/2009
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #017	30-015-00712	Oil	D-01-18S-27E	32.78160	-104.23860	Plugged (site released)	-	-
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017B	30-015-00705	Oil	M-01-18S-27E	32.77180	-104.23850	Plugged (site released)	-	7/21/2004
APACHE CORPORATION	AAO FEDERAL #005	30-015-32959	Oil	E-01-18S-27E	32.77880	-104.23790	Plugged (site released)	11/4/2003	6/14/2017
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #008	30-015-25649	Oil	L-12-18S-27E	32.75920	-104.23750	Plugged (site released)	-	-
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #181	30-015-21554	Oil	K-01-18S-27E	32.77280	-104.23590	Plugged (site released)	-	4/17/2003
EASTLAND OIL CO	COMSTOCK FEDERAL #010	30-015-26017	Oil	N-12-18S-27E	32.75730	-104.23530	Plugged (site released)	-	1/23/2003
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #018D	30-015-00713	Oil	N-01-18S-27E	32.77180	-104.23530	Plugged (site released)	-	9/27/2003
APACHE CORPORATION	EMPIRE ABO UNIT #018A	30-015-00706	Oil	F-01-18S-27E	32.77700	-104.23430	Plugged (site released)	4/24/1959	9/20/2019
APACHE CORPORATION	EMPIRE ABO UNIT #018B	30-015-00707	Oil	K-01-18S-27E	32.77450	-104.23420	Plugged (site released)	4/23/1959	6/7/2017
APACHE CORPORATION	AAO FEDERAL #002	30-015-32308	Oil	C-01-18S-27E	32.78210	-104.23330	Plugged (site released)	8/20/2002	2/8/2018
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #018	30-015-01218	Oil	N-36-17S-27E	32.78420	-104.23330	Plugged (site released)	-	9/9/2009
APACHE CORPORATION	EMPIRE ABO UNIT #182	30-015-21792	Oil	K-01-18S-27E	32.77330	-104.23290	Plugged (site released)	5/6/1976	4/14/2021
APACHE CORPORATION	EMPIRE ABO UNIT #184	30-015-22559	Oil	K-01-18S-27E	32.77530	-104.23270	Plugged (site released)	-	7/18/2013
APACHE CORPORATION	EMPIRE ABO UNIT #191	30-015-21552	Oil	G-01-18S-27E	32.77640	-104.23170	Plugged (site released)	-	7/23/2013
ROJO GRANDE LLC	RAMAPO #007	30-015-31592	Oil	N-36-17S-27E	32.78420	-104.23110	Plugged (site released)	2/14/2001	12/21/2001
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #005	30-015-20388	Oil	N-01-18S-27E	32.77170	-104.23100	Plugged (site released)	-	1/1/1901
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #019	30-015-20394	Oil	O-01-18S-27E	32.77160	-104.23070	Plugged (site released)	-	1/1/1900
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #019	30-015-01251	Oil	O-36-17S-27E	32.78510	-104.23000	Plugged (site released)	-	9/9/2009
ARCO PERMIAN	EMPIRE ABO UNIT #191	30-015-00698	SWD	O-01-18S-27E	32.77080	-104.23000	Plugged (site released)	10/7/1959	12/8/1989
APACHE CORPORATION	EMPIRE ABO UNIT #019B	30-015-00708	Oil	B-01-18S-27E	32.78150	-104.23000	Plugged (site released)	-	5/22/2013
APACHE CORPORATION	EMPIRE ABO UNIT #019C	30-015-00709	Oil	G-01-18S-27E	32.77780	-104.23000	Plugged (site released)	-	2/18/2013
APACHE CORPORATION	EMPIRE ABO UNIT #191A	30-015-21873	Oil	J-01-18S-27E	32.77320	-104.22830	Plugged (site released)	8/27/1976	5/19/2017
APACHE CORPORATION	EMPIRE ABO UNIT #019Q	30-015-00696	Oil	J-01-18S-27E	32.77440	-104.23000	Plugged (site released)	-	7/12/2013
APACHE CORPORATION	EMPIRE ABO UNIT #202	30-015-21783	Oil	H-01-18S-27E	32.77640	-104.22780	Plugged (site released)	4/17/1976	6/9/2017
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #020	30-015-00677	Oil	P-36-17S-27E	32.78410	-104.22680	Plugged (site released)	-	9/9/2009
APACHE CORPORATION	EMPIRE ABO UNIT #020D	30-015-01215	Oil	A-01-18S-27E	32.78140	-104.22570	Plugged (site released)	11/7/1959	5/19/2017
APACHE CORPORATION	EMPIRE ABO UNIT #020C	30-015-00711	Oil	H-01-18S-27E	32.77780	-104.22570	Plugged (site released)	-	7/8/2013
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #020K	30-015-00697	Oil	I-01-18S-27E	32.77440	-104.22570	Plugged (site released)	-	1/5/2003
MARBOB ENERGY CORP	LP STATE #003	30-015-31087	Oil	M-06-18S-28E	32.77160	-104.22250	Plugged (site released)	6/19/2000	3/17/2008
RUTH OIL CO, LLC	STATE M-AI #002	30-015-02627	Oil	M-06-18S-28E	32.77150	-104.22030	Reclamation Fund Pending	10/4/1960	-
APACHE CORPORATION	EMPIRE ABO UNIT #161	30-015-22914	Oil	I-02-18S-27E	32.77270	-104.24260	Temporary Abandonment	6/21/1979	-
APACHE CORPORATION	EMPIRE ABO UNIT #017	30-015-00676	Oil	M-36-17S-27E	32.78430	-104.23760	Temporary Abandonment	2/5/1960	-
APACHE CORPORATION	EMPIRE ABO UNIT #213	30-015-23116	Oil	E-06-18S-28E	32.77760	-104.22320	Temporary Abandonment	3/10/1980	-
APACHE CORPORATION	EMPIRE ABO UNIT #201	30-015-21553	Oil	H-01-18S-27E	32.77630	-104.22360	Temporary Abandonment	6/28/1975	-
APACHE CORPORATION	EMPIRE ABO UNIT #212	30-015-22637	Oil	E-06-18S-28E	32.77650	-104.22230	Temporary Abandonment	12/4/1978	-
APACHE CORPORATION	EMPIRE ABO UNIT #021D	30-015-02622	Oil	L-06-18S-28E	32.77500	-104.22140	Temporary Abandonment	12/27/1959	-
APACHE CORPORATION	EMPIRE ABO UNIT #211A	30-015-23548	Oil	L-06-18S-28E	32.77430	-104.22030	Temporary Abandonment	2/11/1981	-

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 279780

COMMENTS

Operator: HF Sinclair Navajo Refining LLC ATTN: GENERAL COUNSEL Dallas, TX 75201	OGRID: 15694
	Action Number: 279780
	Action Type: [C-103] Sub. General Sundry (C-103Z)

COMMENTS

Created By	Comment	Comment Date
cchavez	WDW-3 Fall Off Test 2023 Final Report	11/2/2023

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CONDITIONS

Created By	Condition	Condition Date
cchavez	None	11/2/2023