Petrotek

Technical Report

MECHANICAL INTEGRITY AND RESERVOIR TESTING

CLASS I NON-HAZARDOUS DEEPWELL CHUKKA WELL NO. 2

(OCD UIC Permit: UICI-008-2)
(API Number: 30-015-20894)

HollyFrontier Navajo Refining Company
Artesia, New Mexico

Section 12, Township 18S, Range 27E
1980 FNL, 660 FWL

December 2021

Petrotek Corporation
5935 South Zang Street, Suite 200
Littleton, Colorado 80127
Phone: (303) 290-9414
Fax: (303) 290-9580

2021 MECHANICAL INTEGRITY AND RESERVOIR TESTING
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EXECUTIVE SUMMARY

This report summarizes the successful mechanical integrity testing (MIT) and falloff testing activities performed on the Chukka WDW-2 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 May 18, 2020, 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 David Huffington (Petrotek).

The field activities consisted of an annulus pressure test (APT) and an injection falloff test on WDW-2. 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-008-2

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

c. **Well name and number** - Chukka WDW-2

d. **API Number** - 30-015-20894

e. **Legal Location** - Section 12, Township 18S, Range 27E, 1980 FNL, 660 FWL

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 1973 during the initial completion of the well was submitted with the original permit and can be found online on the OCD website as part of the OCD well files for this well.

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

A copy of the neutron density log, encompassing the completed interval between 7,570 and 8,399, 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

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 presented in Table 1. A bottom hole temperature of 127 °F has been used as representative of the formation for these correlations. This value was derived from the original temperature log, run in 1999 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 7,570 feet using the average formation fluid specific gravity based on the TDS values provided in Table 1. Using this method, a value of 3,364.7 psi has been estimated as the original pressure at the depth the gauges were set at for testing (7,570 feet BGL). At this pressure and a temperature of 127 °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).

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

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. Based on a bottom hole temperature of 127 °F, a bottom hole pressure of 3,374 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 1.001 (gradient of 0.4335 psi/ft) with a measured temperature during injection of 102.2 °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
JUNE AND JULY INJECTION DATA

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
6/1/2021	1,070.69	93.34	836.13
6/2/2021	1,186.79	107.36	924.87
6/3/2021	1,054.55	92.81	850.23
6/4/2021	1,040.08	91.47	856.38
6/5/2021	1,060.81	93.51	883.99
6/6/2021	972.05	83.08	892.71
6/7/2021	900.03	74.09	866.02
6/8/2021	942.06	79.32	928.52
6/9/2021	934.93	78.93	948.65
6/10/2021	890.83	73.26	896.16
6/11/2021	944.97	79.93	888.00
6/12/2021	1,065.43	94.03	874.42
6/13/2021	1,120.52	99.64	958.29
6/14/2021	1,058.83	93.91	929.22
6/15/2021	1,031.10	90.49	891.22
6/16/2021	1,000.06	87.76	799.03
6/17/2021	969.05	83.72	760.51
6/18/2021	1,112.94	99.55	874.30
6/19/2021	1,072.35	94.66	889.87
6/20/2021	999.31	87.24	808.13
6/21/2021	1,094.31	97.18	917.74
6/22/2021	1,048.79	91.56	802.98
6/23/2021	1,180.15	106.36	851.29
6/24/2021	1,316.33	121.31	890.60
6/25/2021	1,029.39	92.36	843.79
6/26/2021	1,013.98	90.21	838.36
6/27/2021	925.07	78.99	572.59
6/28/2021	992.18	86.16	646.56
6/29/2021	1,000.01	86.71	485.60
6/30/2021	980.73	83.30	366.90

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
7/1/2021	895.20	73.54	353.06
7/2/2021	980.76	84.20	417.51
7/3/2021	1,020.92	89.34	486.94
7/4/2021	1,010.39	88.54	509.89
7/5/2021	1,025.11	89.72	525.48
7/6/2021	1,037.74	91.29	534.45
7/7/2021	1,066.03	94.66	567.72
7/8/2021	624.63	44.68	429.35
7/9/2021	1,072.28	97.61	783.06
7/10/2021	1,061.51	97.01	1,050.97
7/11/2021	1,060.08	96.49	1,108.56
7/12/2021	936.23	81.11	1,047.36
7/13/2021	979.45	86.34	1,028.69
7/14/2021	900.63	76.49	1,006.81
7/15/2021	961.51	84.02	1,035.14
7/16/2021	1,052.67	95.01	1,113.93
7/17/2021	881.01	73.99	1,035.61
7/18/2021	1,009.38	89.34	1,062.61
7/19/2021	1,037.52	92.53	1,074.78
7/20/2021	980.70	86.28	1,035.95
7/21/2021	1,006.29	88.71	1,038.46
7/22/2021	1,010.73	88.86	1,081.30
7/23/2021	933.64	78.64	1,083.29
7/24/2021	986.29	85.61	1,157.76
7/25/2021	1,053.90	93.05	1,180.06
7/26/2021	991.13	85.28	1,131.27

8. CUMULATIVE INJECTION INTO THE FORMATION FROM TEST WELL

At the time of shut-in for testing the cumulative volume of waste injected into this well since operations began, based on HFNR records, is 29,690,533 barrels (1,247,002,393 gallons).

9. PRESSURE GAUGES

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

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

c. **Provide the manufacturer's recommended frequency of calibration and a calibration certificate showing the date the gauge was last calibrated -** These gauges are recommended to be calibrated once per year. These gauges were last calibrated on 11/25/2020 (Gauge #220992) and 12/19/2020 (Gauge #224821). The most recent calibration certificates are provided in Attachment 3. The bottom gauge (Serial Number - 220992) was utilized for analysis. The bottom gauge was hung at a test depth of 7,557 feet BGL.

10. ONE-MILE ARE OF REVIEW (AOR)

A standard one-mile Area of Review (AOR) was evaluated for WDW-2 as part of the annual testing and reporting requirements. This evaluation was performed by Federal Abstract Company. The wells located within this one-mile AOR are listed in Attachment 6. This table contains the operator, well name, API number, well type, well status, location, and date of abandonment or completion. A figure displaying the wells located in the AOR and the wells in the surrounding sections has been provided as Figure 13.

There are five wells within the AOR that were plugged and abandoned within the past year, none of which penetrate the injection interval. These wells are identified in Table 3 below. No new wells have been drilled within the AOR in the last year.

TABLE 3
WELLS PLUGGED WITHIN AOR DURING THE PAST YEAR

Operator	Well Name	API	Well Type	S	T	R	Total Vertical Depth (ft)	Lat Long	Date Plugged
APACHE CORPORATION	EMPIRE ABO UNIT #183	30-015-22096	Oil	1	18S	27E	6,210	32.77559 -104.23576	4/27/2021
APACHE CORPORATION	EMPIRE ABO UNIT #194	30-015-22658	Oil	1	18S	27E	6,325	32.77313 -104.23049	4/19/2021
APACHE CORPORATION	EMPIRE ABO UNIT #193	30-015-22657	Oil	1	18S	27E	6,225	32.77586 -104.23072	4/30/2021
APACHE CORPORATION	EMPIRE ABO UNIT #182	30-015-21792	Oil	1	18S	27E	6,369	32.77325 -104.23293	9/23/2021
APACHE CORPORATION	EMPIRE ABO UNIT #192	30-015-22560	Oil	1	18S	27E	6,250	32.77451 -104.22807	4/22/2021

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. The only changes to this AOR list are presented in Table 3 above.

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-3. Only WDW-3 is located within the AOR. Based on public data, there are two additional wells, not operated by HFNR that are located within the AOR and inject into the same interval. These wells are the AAO Federal SWD No. 1, operated by Apache Corporation, and the Federal T SWD #1, operated by Limerock Resources. In addition, there is one permitted, not yet drilled well that is intended to target the same completion interval, the Limerock Resources Choate Davis 13 State #3 (ID - 103). 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 is composed of carbonates from the Permian-age Lower Wolfcamp Formation, Pennsylvanian-age Cisco Formation, and Pennsylvanian-age Canyon Formation. The Wolfcamp unconformably overlies the Cisco and Canyon Formations. Table 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 4
HFNR INJECTION FORMATION TOPS – WDW-1, 2 and 3

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

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

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

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

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-3. Only WDW-3 is listed in Attachment 6 since WDW-1 is not within the 1-mile AOR surrounding WDW-2.

WDW-1 is approximately 10,900 feet to the northeast of WDW-2, while WDW-3 is approximately 3,100 feet to the northeast of WDW-2. These wells were injected into at a constant rate during the duration of testing, 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-2.

There are two additional wells, not operated by HFNR, that are within the AOR and inject into the same interval. These wells are the AAO Federal SWD No. 1 (ID - 6) operated by Apache Corporation, and the Federal T SWD #1 (ID - 76) operated by Limerock Resources. In addition to this, there is one permitted, not yet drilled well, the Choate Davis 13 State #3 (ID - 103). The permit for this well is held by Limerock Resources. This well targets the Wolfcamp and Cisco for the injection interval.

a. **Identify the distance between the test well and any offset wells completed in the same injection interval** - WDW-3 is approximately 3,100 feet to the north-northeast, the AAO Federal SWD No. 1 is approximately 5,100 feet to the north-northeast, and the Federal T SWD #1 is approximately 3,800 feet to the east-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. During July 2021, data from the state website indicated average injection rates of approximately 20 gpm for the AAO Federal SWD #1 and 300 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** - There was no significant impact on the development of a useful test from these offset injectors, although late-time data is likely impacted by 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 July 27 – July 29, 2021.

b. **Time of the injection period** - Constant-rate injection occurred for approximately 61 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 4,189.6 psia (at 7,557 feet BGL) and the injection rate was 20.6 gpm (705.3 bpd) with a measured bottom hole temperature of 105.8 °F.

e. **Total shut-in time** - The well was shut-in for approximately 41 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 3,964.5 psia and the final bottom hole temperature was 107.9 °F.

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

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

15. PRESSURE FALLOFF ANALYSIS

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

The equations, parameters and calculations utilized to derive these values are detailed further 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 5,280 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 to radial flow was approximately 9 hours after shut-in. This value was derived from the log-log plot.

c. **Slope(s) determined from the semi-log plot -** The slope for the likely radial period, as determined by the semi-log plot, was 0.7437 psi/cycle.

d. **Transmissibility (kh/μ) -** The transmissibility was determined to be 154,200 md-ft/cp.

e. **Permeability (k) -** The permeability was determined to be 493.4 md.

f. **Skin Factor (s) -** The skin factor was determined to be 336.9 units.

g. **Pressure drop due to skin (ΔP_{skin}) -** The pressure drop due to skin was determined to be 217.7 psi

h. **Flow efficiency -** The flow efficiency was determined to be 0.03.

i. **Flow capacity (kh) -** The flow capacity (permeability-thickness) was determined to be 86,352 md-ft.

j. **P_{1hr} -** The extrapolated 1-hr pressure was determined to be 3,967.0 psi.

TABLE 5
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	0.3281	feet
Final Well Flowing Pressure, p_{wf}	4,189.6	psia
Final Injection Rate, q_{final}	705.3 20.6	bwpd (gpm)
Horner Straight Line Slope, m	0.7437	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 6/1/2020 (28,632,970 barrels) by the final injection rate (50.8 gpm). This resulted in a value of 394,919 hours. This value of 394,919 hours of injection at 50.8 gpm was used in conjunction with the injection data collected from 6/1/2020 through 7/27/2021. The total waste volume injected up to the time of shut-in utilized for calculations was 1,247,002,393 gallons (29,690,533 bbls).

To determine the mobility-thickness (transmissibility), the following equation was utilized. The resulting transmissibility was 154,200 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

$$\frac{kh}{\mu} = Transmissibility = 162.6\frac{705.3 * 1.0}{0.7437} = 154{,}200\frac{md - ft}{cp}$$

The transmissibility was then used to determine the permeability thickness. The resulting permeability-thickness was 86,352 md-ft.

$$kh = \left(\frac{kh}{\mu}\right)\mu = 154{,}200\left(\frac{md - ft}{cp}\right)0.56\ cp = 86{,}352\ md - ft$$

The permeability thickness was then used to determine the permeability of the reservoir. The resulting permeability was 493.4 md.

$$k = \frac{kh}{h} = \frac{86{,}352\ md - ft}{175\ ft} = 493.4\ md$$

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 radius was estimated to be 1,741 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

$$r_{waste} = \sqrt{\frac{0.13368 * (1{,}247{,}002{,}393)}{\pi * 175 * 0.10}} = 1{,}741\ feet$$

Based on this radius, the time for a pressure transient to travel through this fluid can be calculated. The resulting time was 3.56 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

$$t_{waste} = 948\frac{0.10 * 0.56 * 10.90E-06 * (1{,}741)^2}{493.4} = 3.56\ hours$$

Based on this result, and the time it took for radial flow to be reached (6.0 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 336.9 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

$$s = 1.151\left(\frac{4{,}189.6 - 3{,}967.0}{0.7437} - log\left(\frac{493.4}{0.10 * 0.56 * 10.90E-06 * 0.3281^2}\right) + 3.23\right) = 336.9$$

The change in pressure, due to skin, in the wellbore can be calculated using the following equation. The result of this calculation was 217.7 psi of pressure due to skin.

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

Where,

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

$$\Delta P_{skin} = 0.869 * 0.7437 * 336.9 = 217.7\ psi$$

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 0.03.

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

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

$$FE = \frac{4{,}189.6 - 217.7 - 3{,}964.5}{4{,}189.6 - 3{,}964.5} = 0.03$$

The test radius of investigation (r_{inv}) can be determined using the following equation. The result of this calculation was 5,280 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

$$r_{inv} = 0.029\sqrt{\frac{493.4 * 41}{0.1 * 0.56 * 10.90E-06}} = 5{,}280\ feet$$

Based on examination of the log-log diagnostic plot provided as Figure 9, early time data is dominated by changing wellbore storage. The change in storage trend in the falloff after approximately 0.5 to 1 minute may be associated with a transition to vacuum. This event extended the early time period of the test It is likely that the test was reaching the onset of radial flow approximately 6 to 9 hours after shut-in and the test has been analyzed using the analytical Horner semi-log method based on the reasonable assumption that a period of radial flow exists in the data). The derivative shows that offset heterogeneity, interference, and/or dual porosity effects may influence the data for the remainder of the test, with no clear indication of the late-time transition. Figure 10 shows the semi-log plot of the falloff with a straight line representing a possible radial flow period consistent with the deviation from storage shown on the log-log plot. The late-time tail at the end of the test is not accounted for in this analysis. The simulation analysis presented in Figure 9 generally supports the more simplistic graphical analysis that relies upon the semi-log slope. The 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 (June and July of 2021). The slope of the data is fairly linear, and this linearity is consistent with no significant changes in well condition taking place during this time period. Based on this observed linear trend, there are no significant concerns noted with regard to well or reservoir performance.

Table 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 6
HISTORICAL AMBIENT RESERVOIR TESTING

Year	Fill Depth (feet)	Permeability (md)	Mobility-thickness (md-ft/cp)	Skin (units)	P* (psia)
2021	8,304	493	154,200	336.9	3,951.0
2020	8,355	825	229,281	149.4	4,039.6
2019	8,375	466	143,138	77.7	4,138.6
2018	8,356	785	240,931	117.0	4,239.8
2017	8,356	829	254,457	83.9	4,216.1
2016	8,362	510	156,606	25.8	4,259.4
2014	8,773	1,080	320,328	38.6	4,285.2
2012	8,775	1,848	548,069	26.0	3,898.6
2011	8,335	1,451	430,405	29.4	3,697.3
2010	8,775	820	243,821	86.5	3,576.6
2009	8,775	856	253,821	39.7	3,445.9
2008	NA	1,091	265,300	155.0	3,393.5
2006	NA	2,184	707,629	81.6	3,393.6
2005	NA	2,496	808,946	23.5	3,348.0
2001	NA	2,211	716,551	54.1	3,236.4
1999	NA	4,712	1,527,060	59.7	2,844.5
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 July 29, the annulus was pressured to 561.7 psi. The well had been shut in for approximately 45 hours prior to the test, ensuring thermal equilibrium. A calibrated digital pressure gauge (Fluke 700G29, 3,000 psi, SN - 2643157) supplied by Petrotek was installed on the annulus at the wellhead. The well and test gauge were then isolated from the rest of the system and annulus pressure was then monitored for a period of thirty minutes at 5-minute intervals. During the test the

pressure decreased by 1.8 psi. Since a change of 10% (56.2 psi) of the test pressure is allowable, this test is within acceptable specifications.

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

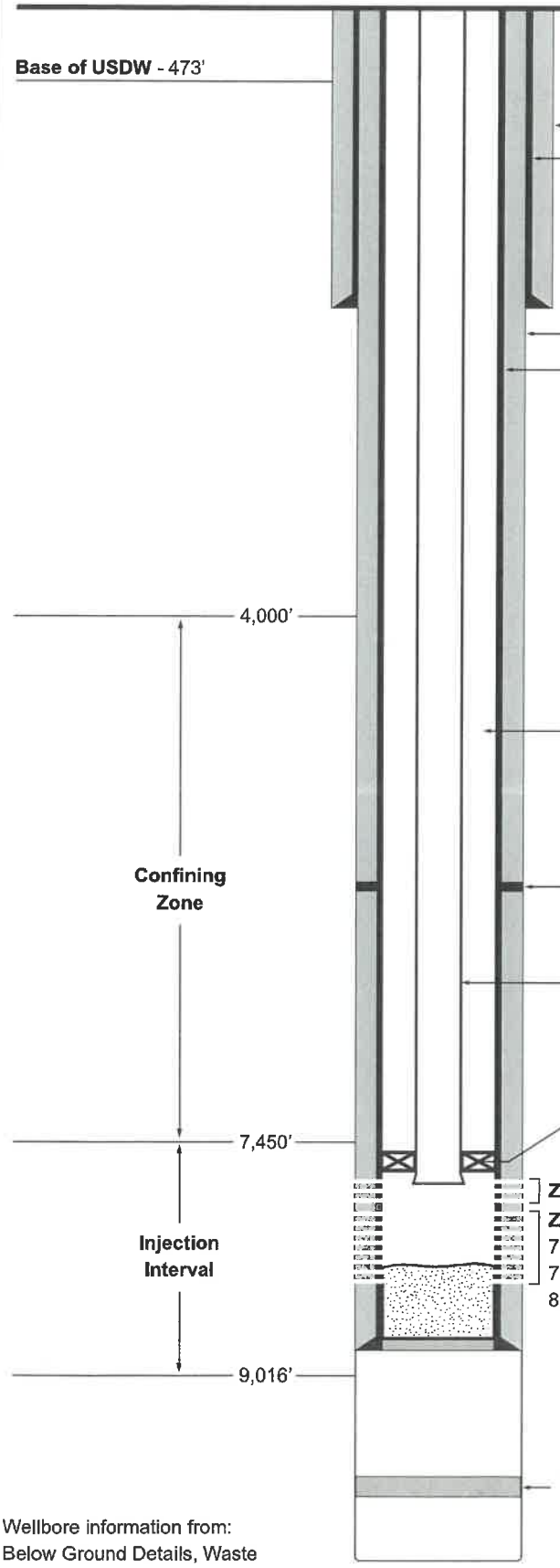
TABLE 7
ANNULUS PRESSURE TEST MEASUREMENTS

Time, Minutes	0	5	10	15	20	25	30
Pressure, Psi	561.7	561.1	560.8	560.4	560.2	560.1	559.9

FIGURES

OCD UIC Permit: UICI-008-2
Well API Number: 30-015-20894
Eddy County, New Mexico
Sec. 31, T17S-R27E
Lat. 32.763772° / Long. -104.238508° (NAD 83)

All depths referenced to Kelly Bushing (KB) elevation 13' above ground level.
Ground Level Elevation: +3,610' MSL



11" Hole

Surface Casing (0' - 1,955'): 8-5/8", 32 lb/ft, cemented to surface with 800 sacks of cement.

7-7/8" Hole

Protection Casing (0' - 8,869'): 5-1/2", 17 lb/ft, L-80, LT&C. Casing cemented in two stages.

First Stage: 575 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344, and 3 lb/sk salt. Mixed at 13.0 ppg. Opened DV tool at 5,785' and circulated 20 sacks to surface.

Second Stage: Lead Slurry: 300 sacks of Interfill "C" (35:65:6) mixed at 11.7 ppg. Tail Slurry: 695 sacks of modified Class "H" with 0.4% CFR-3, 5 lb/sk Gilsonite, 0.5% Halad-344 and 3 lb/sk salt, mixed at 13.0 ppg. Circulated 150 sacks to surface. Topped out with 10 yards of Redi-Mix.

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

DV Tool (5,785')

Injection Tubing (0' - 7,528'): 3-1/2", 9.2 lb/ft, J-55, smls, NUE 10rd.

Packer (7,528'): 5-1/2" x 2-7/8" Weatherford Completion Tools (Arrow) Model X-1 retrievable packer. Minimum I.D. = 2.4375". Wireline re-entry guide at bottom. To release, turn 1/4-turn to the right and pick up.

Zone 1 Perforations: 7,570'-7,620', 7,676'-7,736'

Zone 2 Perforations:
7,826'-7,834', 7,858'-7,880', 7,886'-7,904', 7,916'-7,936', 7,944'-7,964', 7,990'-8,042', 8,096'-8,116', 8,191'-8,201' 8,304'-8,319', 8,395'-8,399'

Cement Plug (9,675 - 9,775'): 45 sacks.

Top of Fill: 8,304' (Tagged 7/2021)
PBTD: 8,770'
TD: 10,372'

Wellbore information from: Below Ground Details, Waste Disposal Well No. 2, by Subsurface Technology, Figure 1, 2001.

NOT TO SCALE

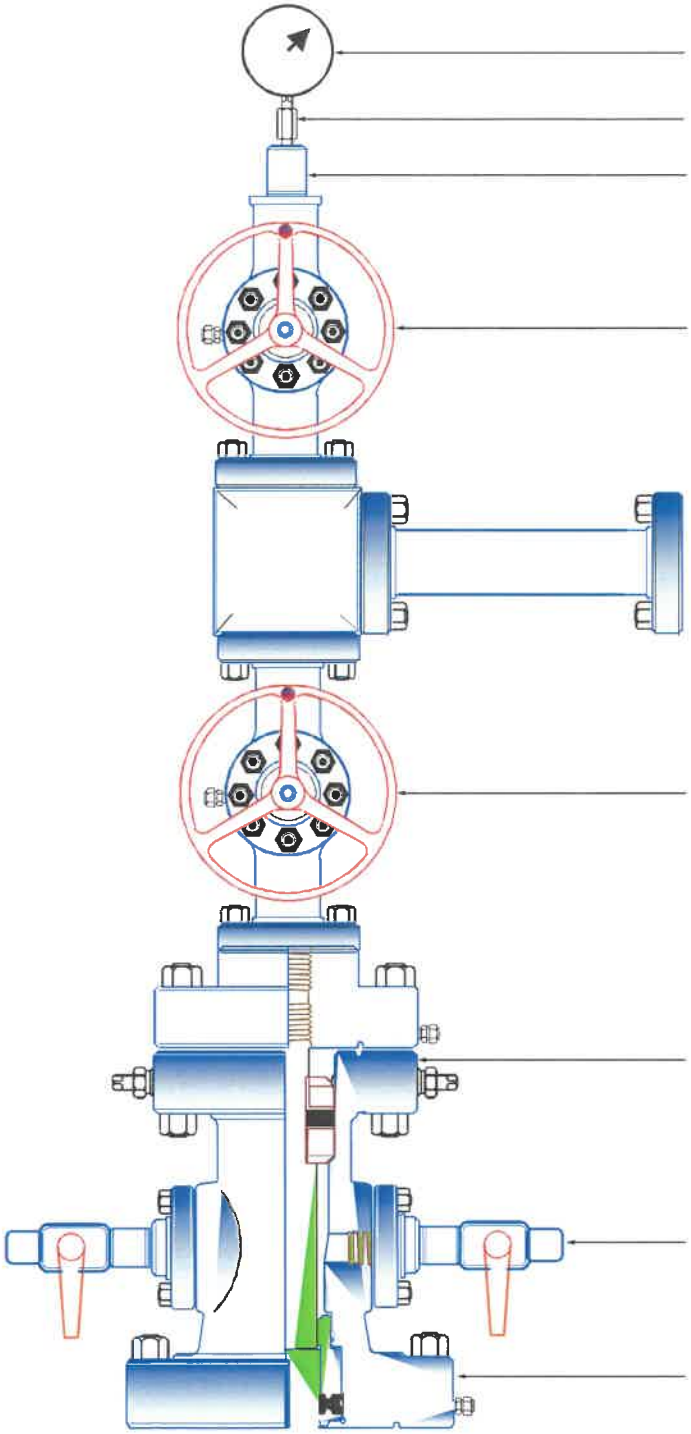
HOLLYFRONTIER

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

Scale: NTS	Date: October 2021	
Fig_01_HF_Artesia_2021_WDW_02.pdf	By: WEK	Checked: LW

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

OCD UIC Permit: UICI-008-2
Well API Number: 30-015-20894
Eddy County, New Mexico
Sec. 31, T17S-R27E
Lat. 32.763772° / Long. -104.238508° (NAD 83)



Well Head information partially
from: Well: Navajo Refining
WDW #2, by Subsurface Technology

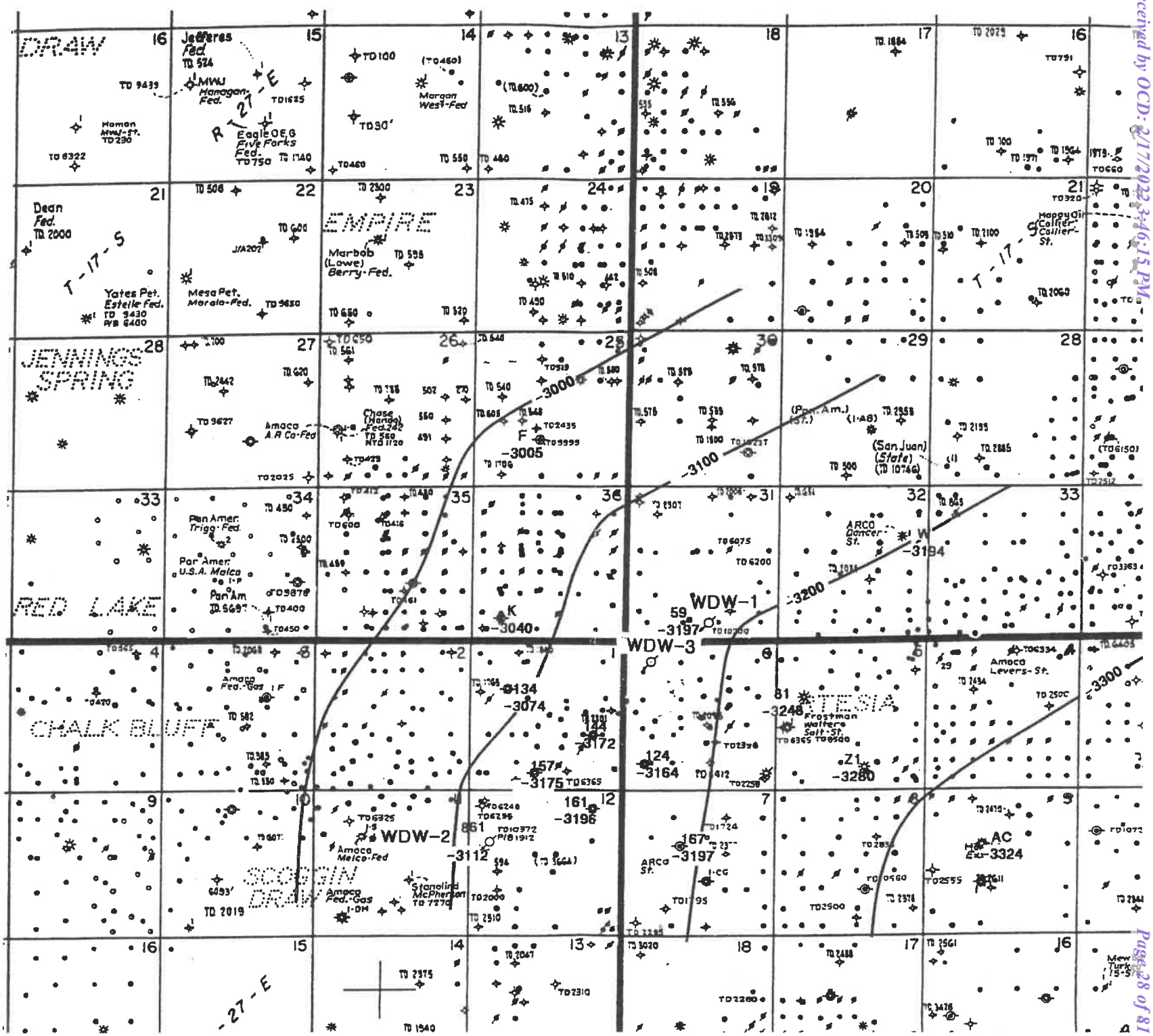
NOT TO SCALE

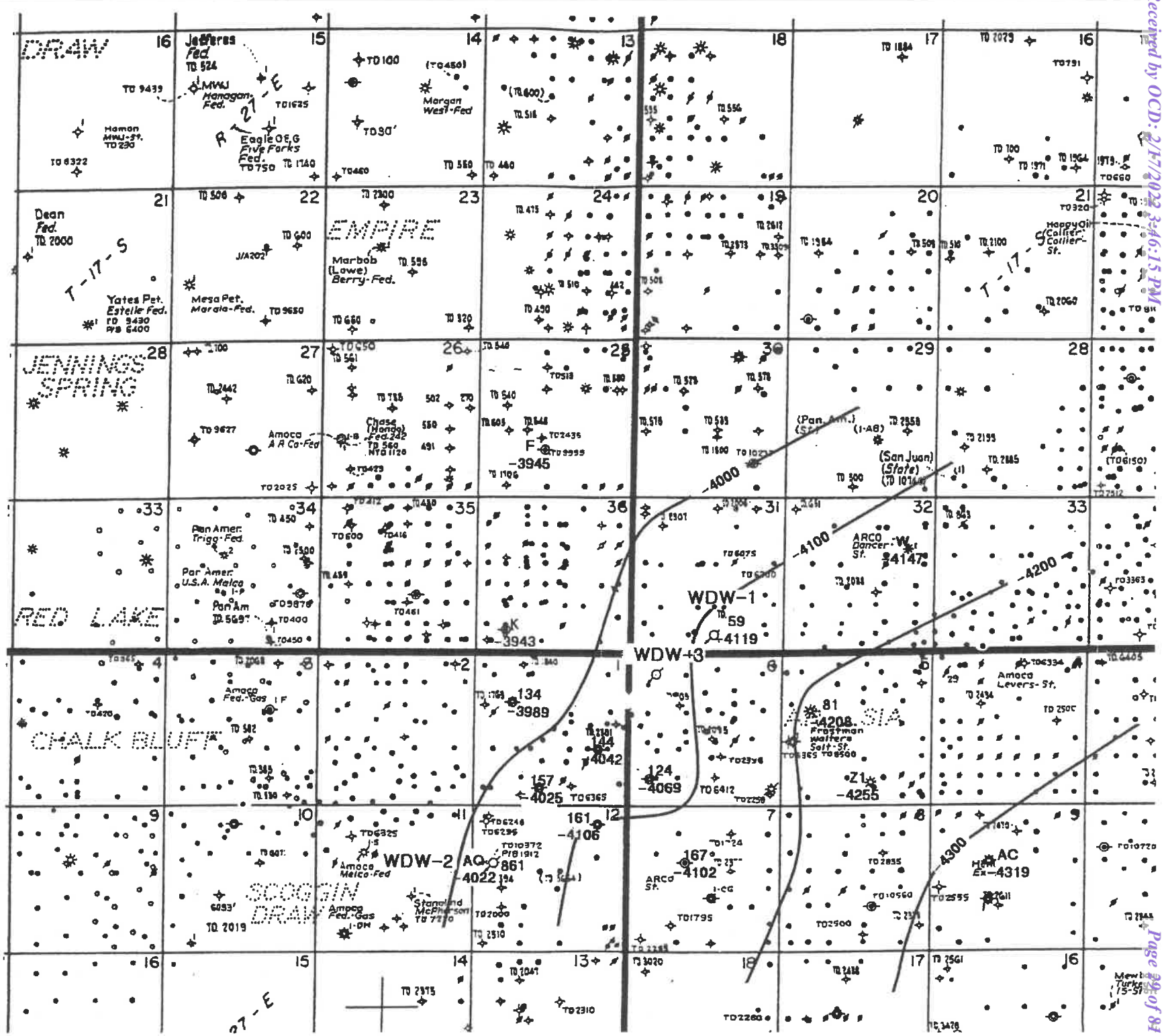
HOLLYFRONTIER

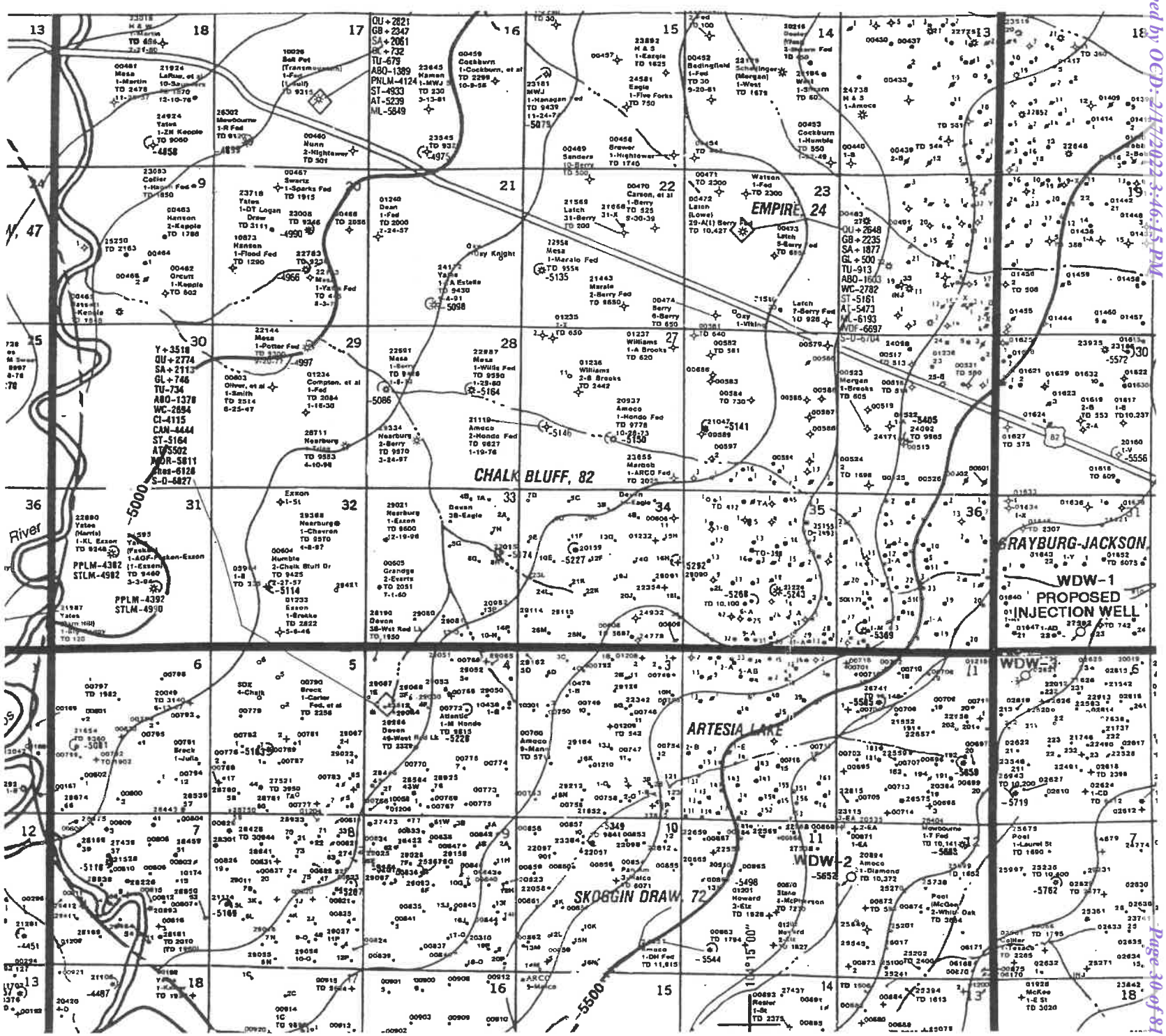
Figure 2
WDW No. 2,
Wellhead Schematic
2021 FOT/MIT Report

Scale: NTS	Date: October 2021	
Fig_02_HF_Artesia_2021_WDW_02.pdf	By: WEK	Checked: LW

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







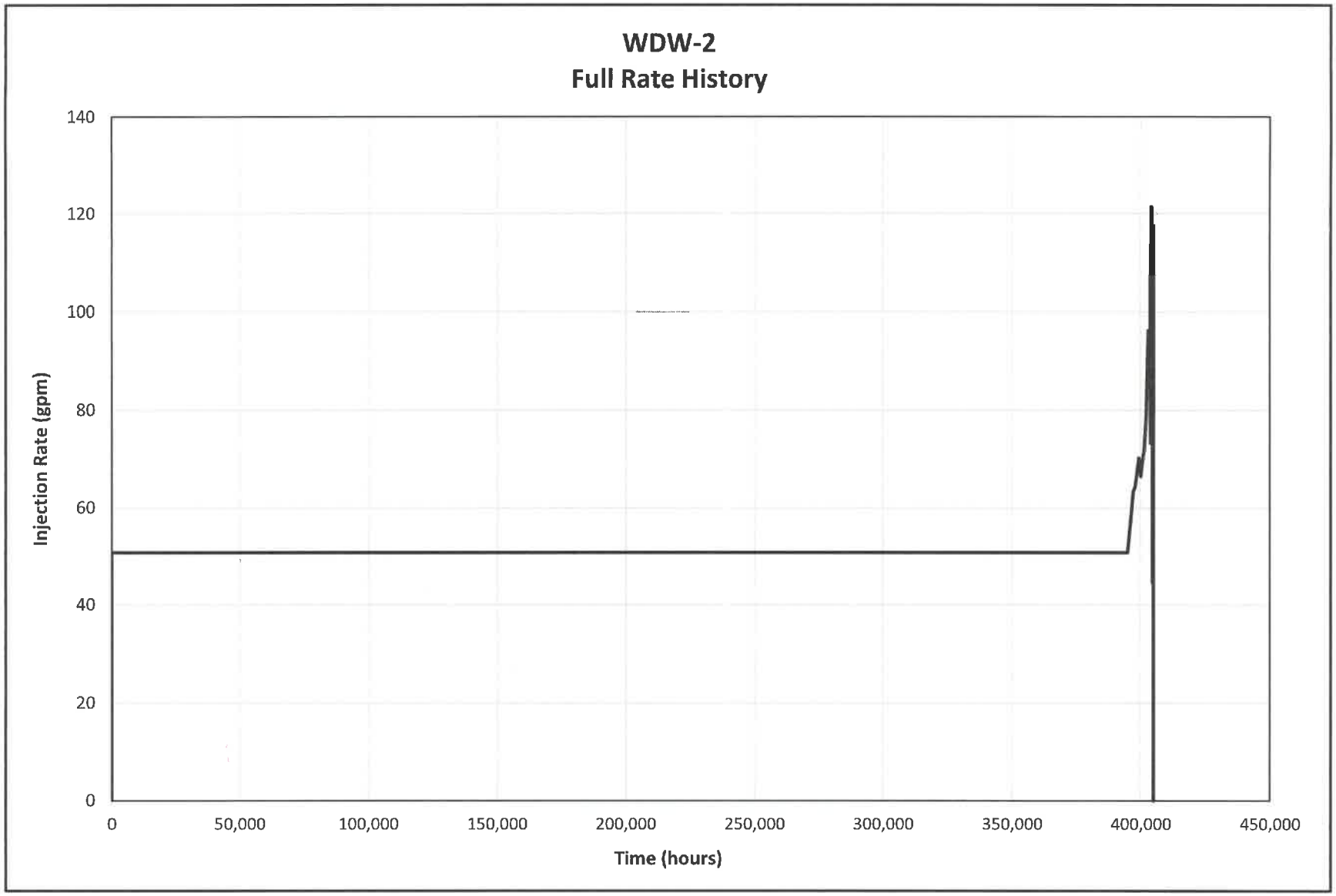


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Figure 6
Full Rate History
2021 Well Testing

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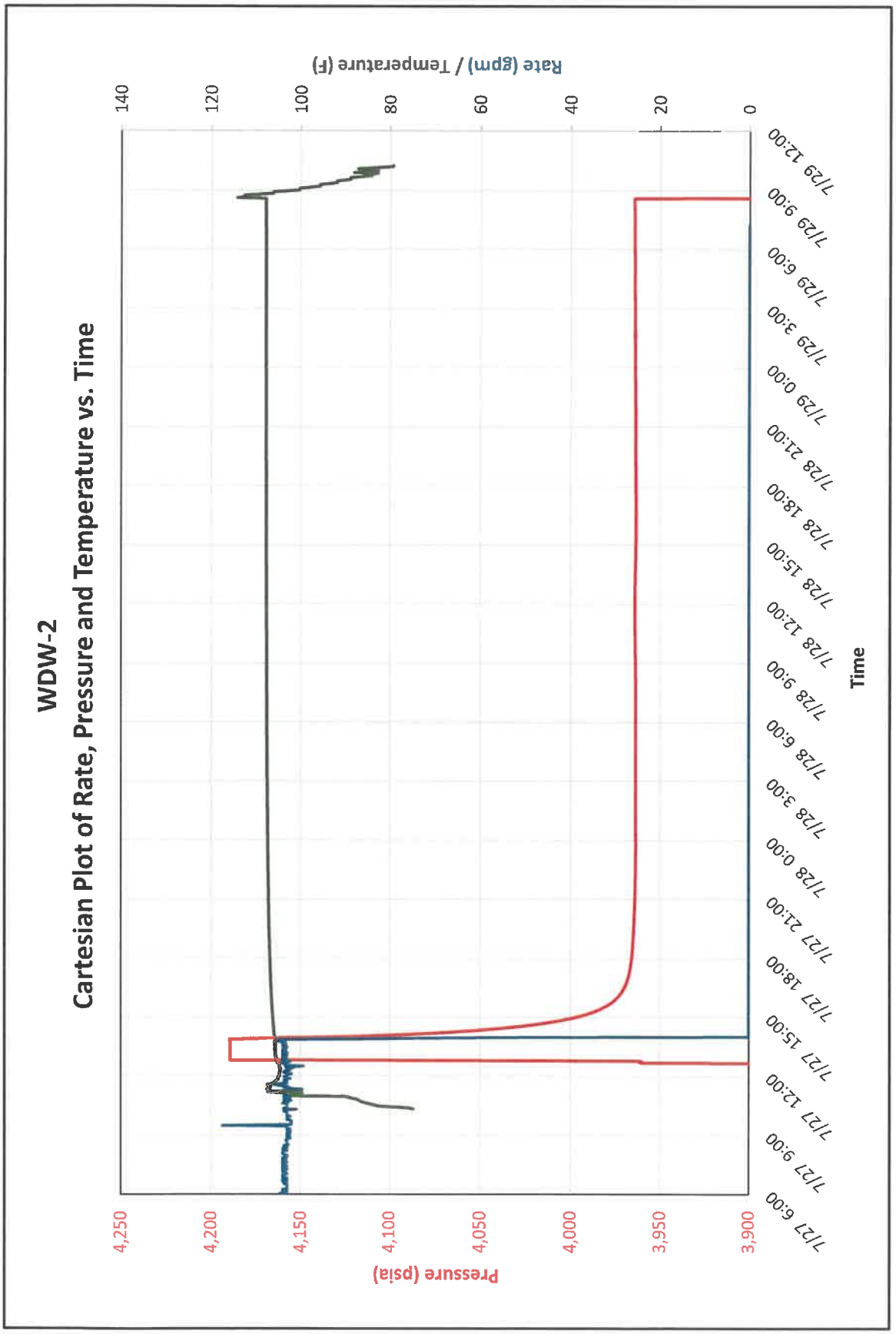


Petrotek

HOLLYFRONTIER

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

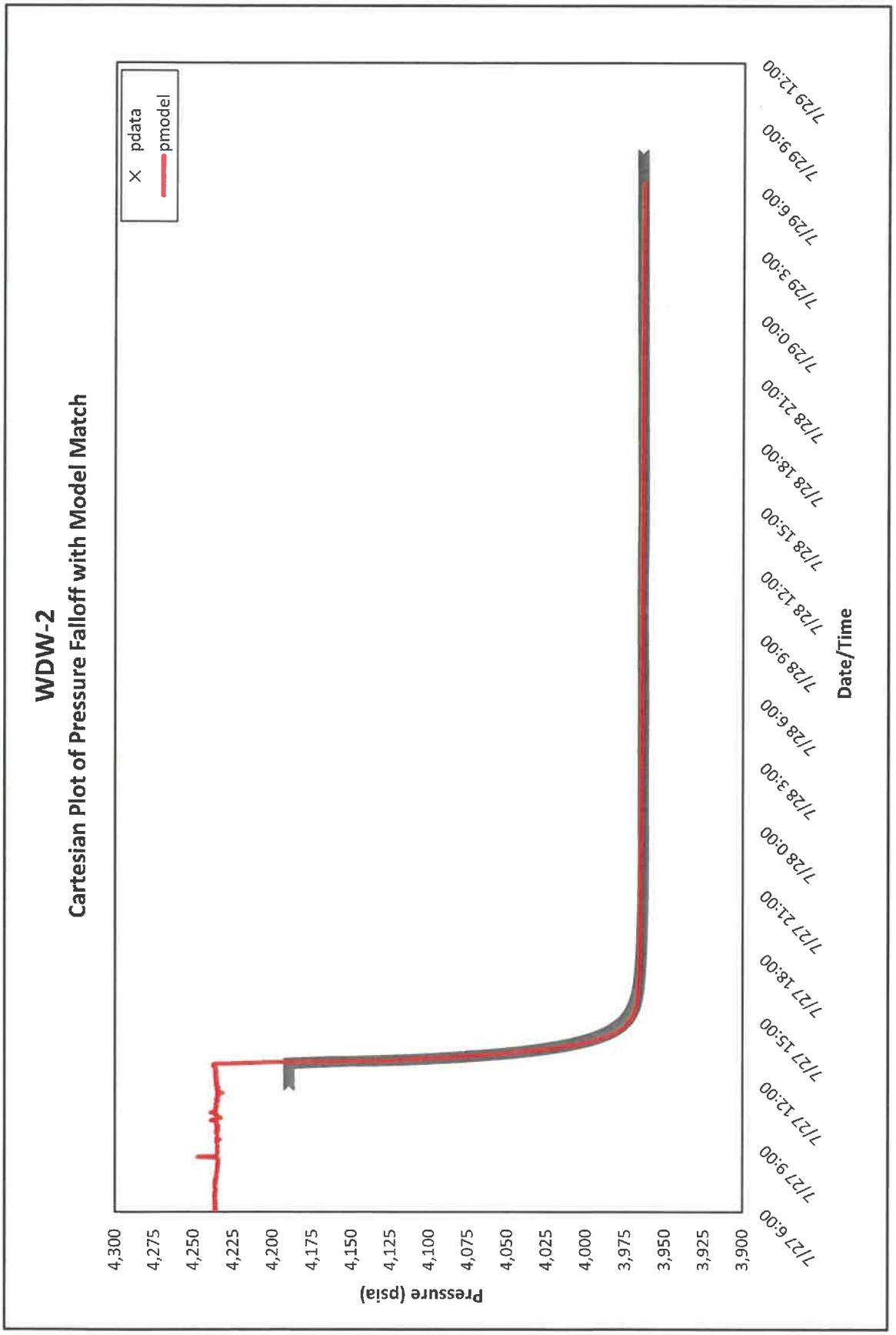


Figure 8
Cartesian Plot of Pressure Falloff with Model Match
2021 Well Testing

HOLLYFRONTIER

Petrotek

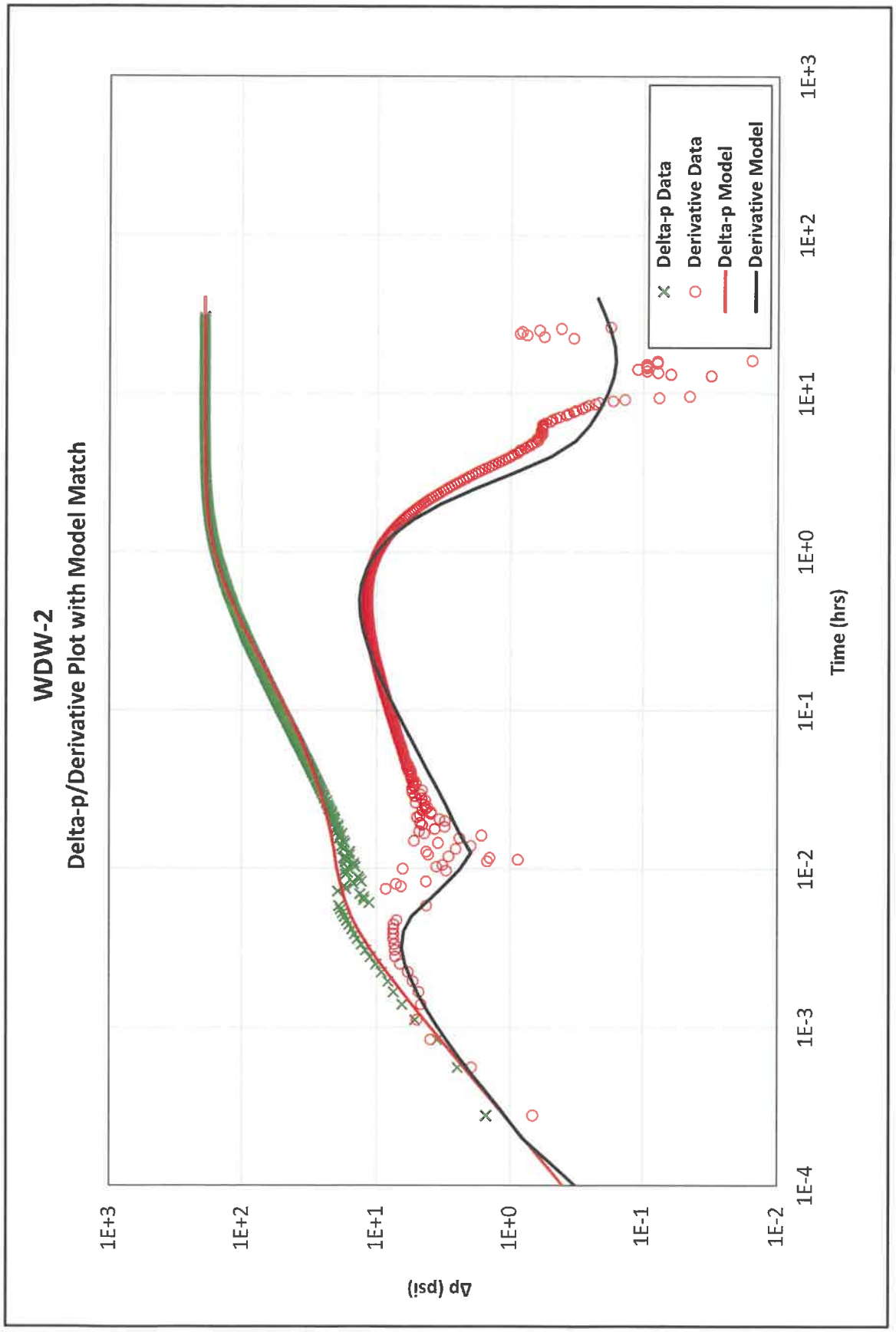


Figure 9
Delta-p/Derivative Plot with Model Match
2021 Well Testing

HOLLYFRONTIER

Petrotek

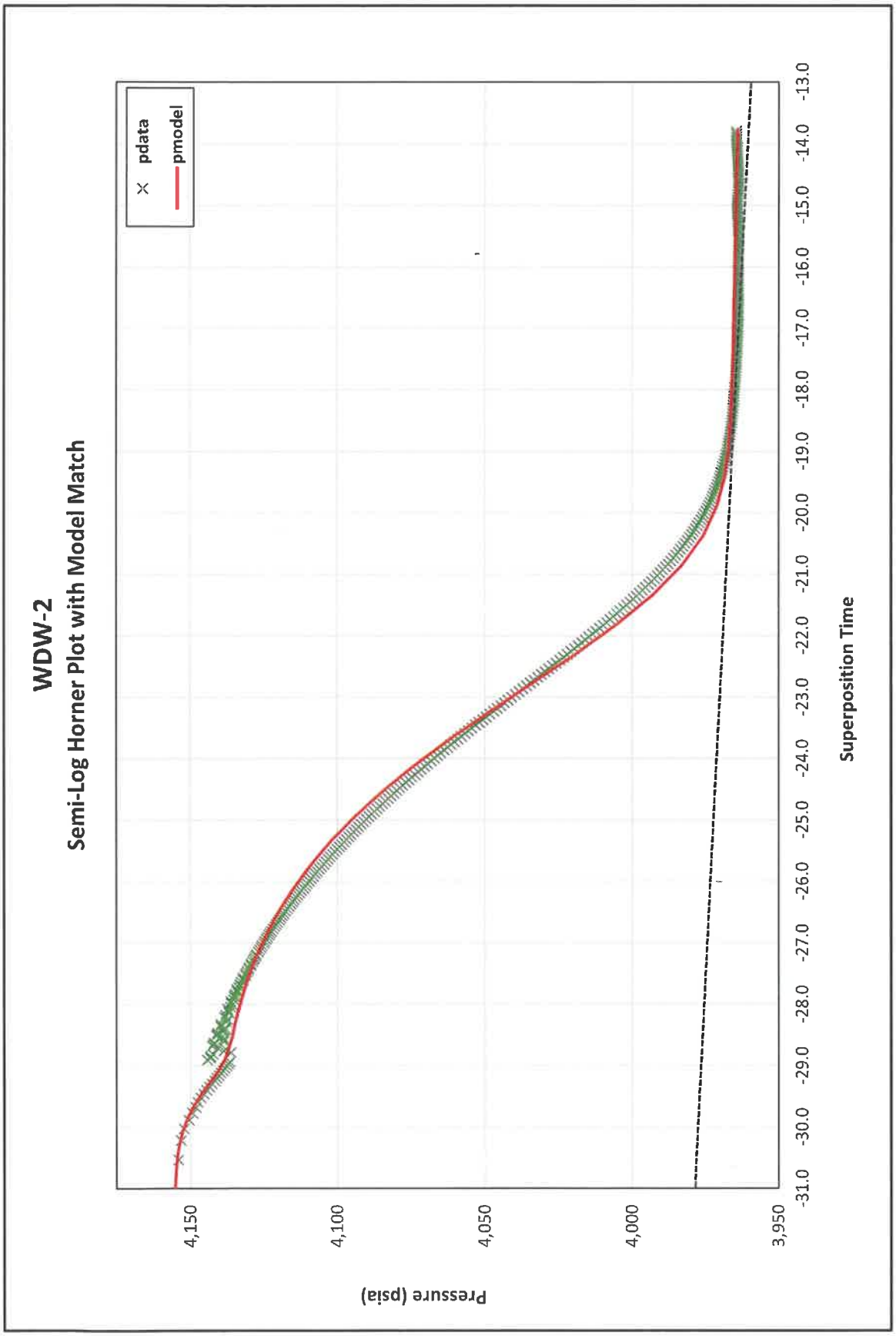
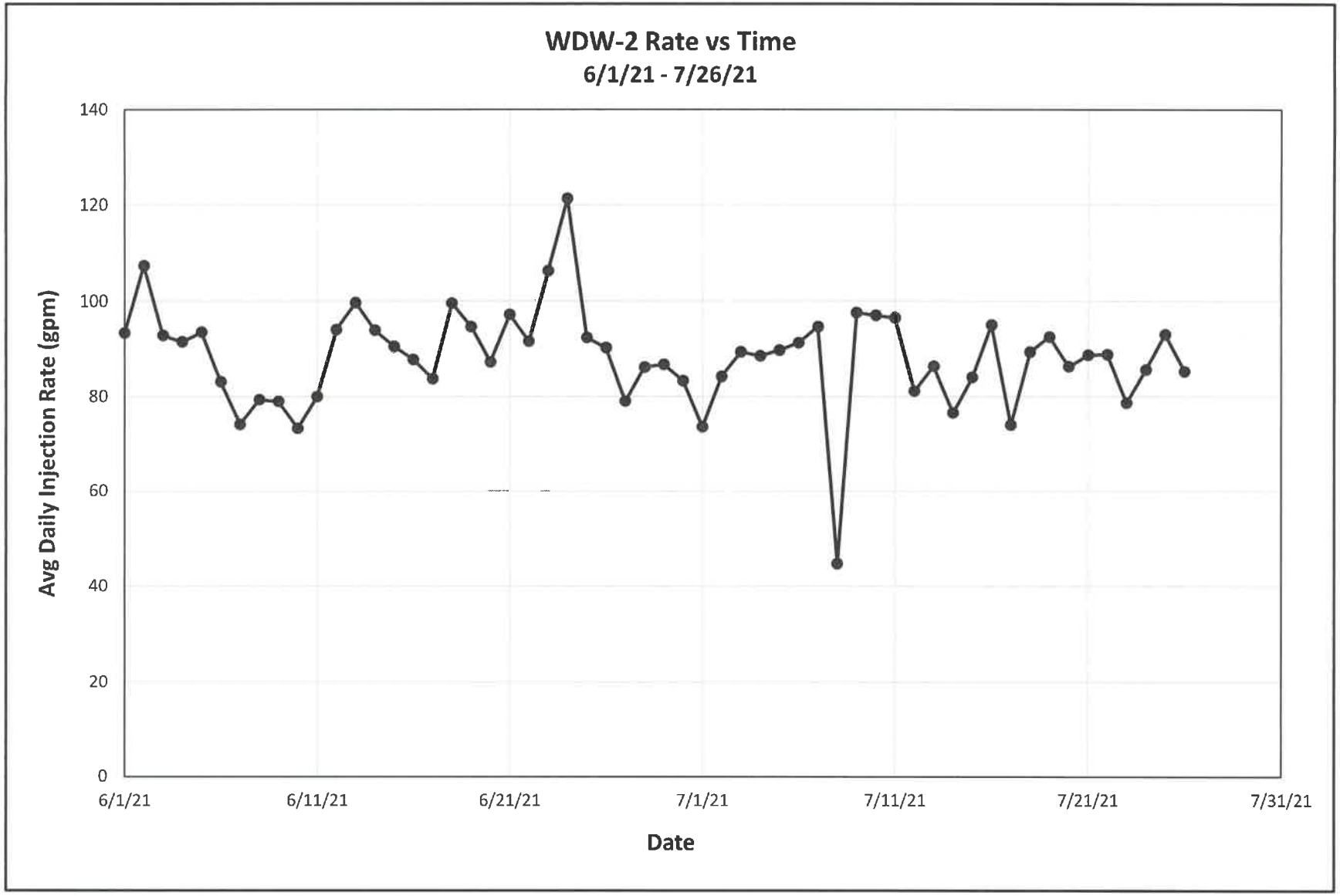


Figure 10
Semi-Log Horner Plot with Model Match
2021 Well Testing

HOLLYFRONTIER

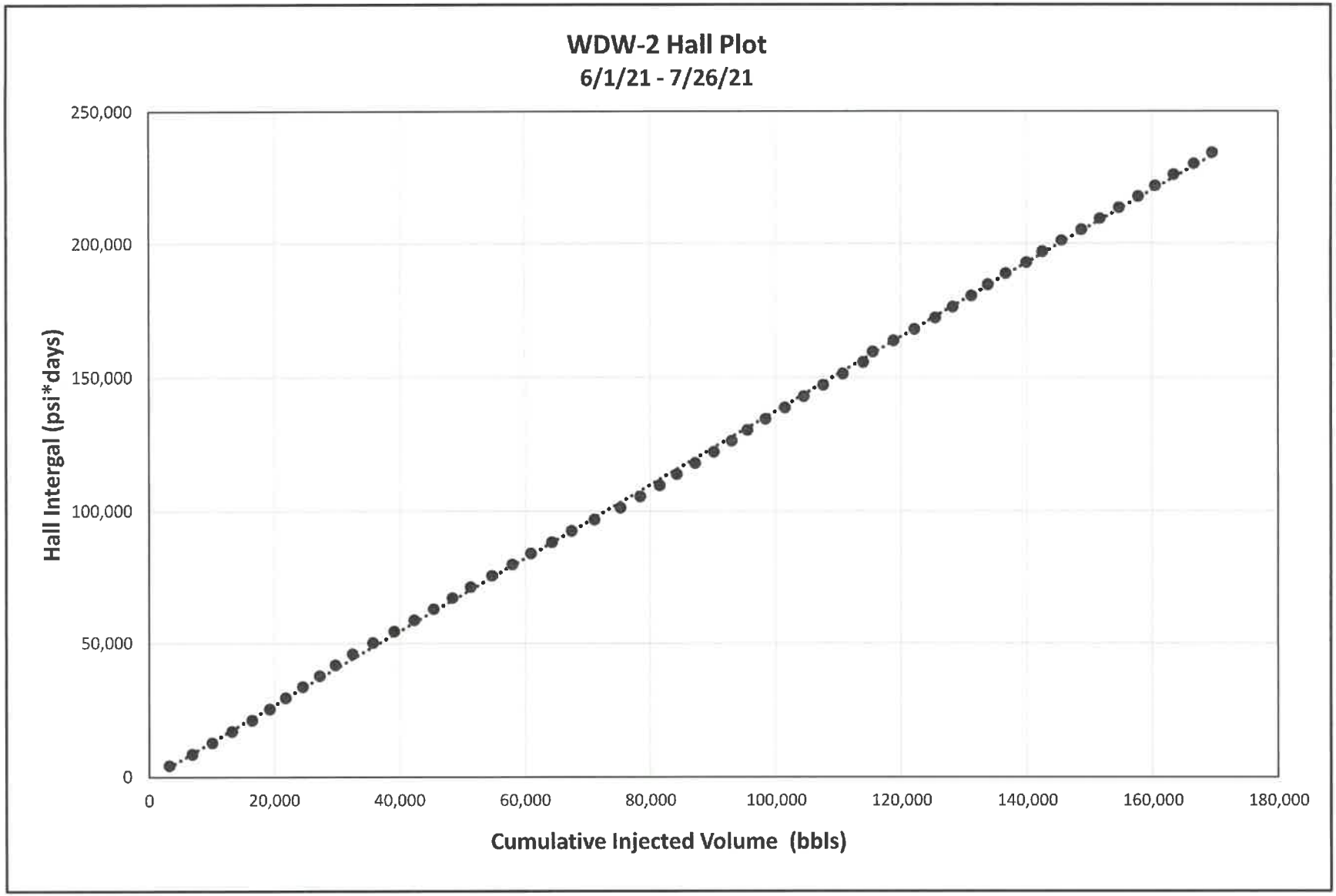
Petrotek



HOLLYFRONTIER

Figure 11
Daily Rate vs Time
2021 Well Testing

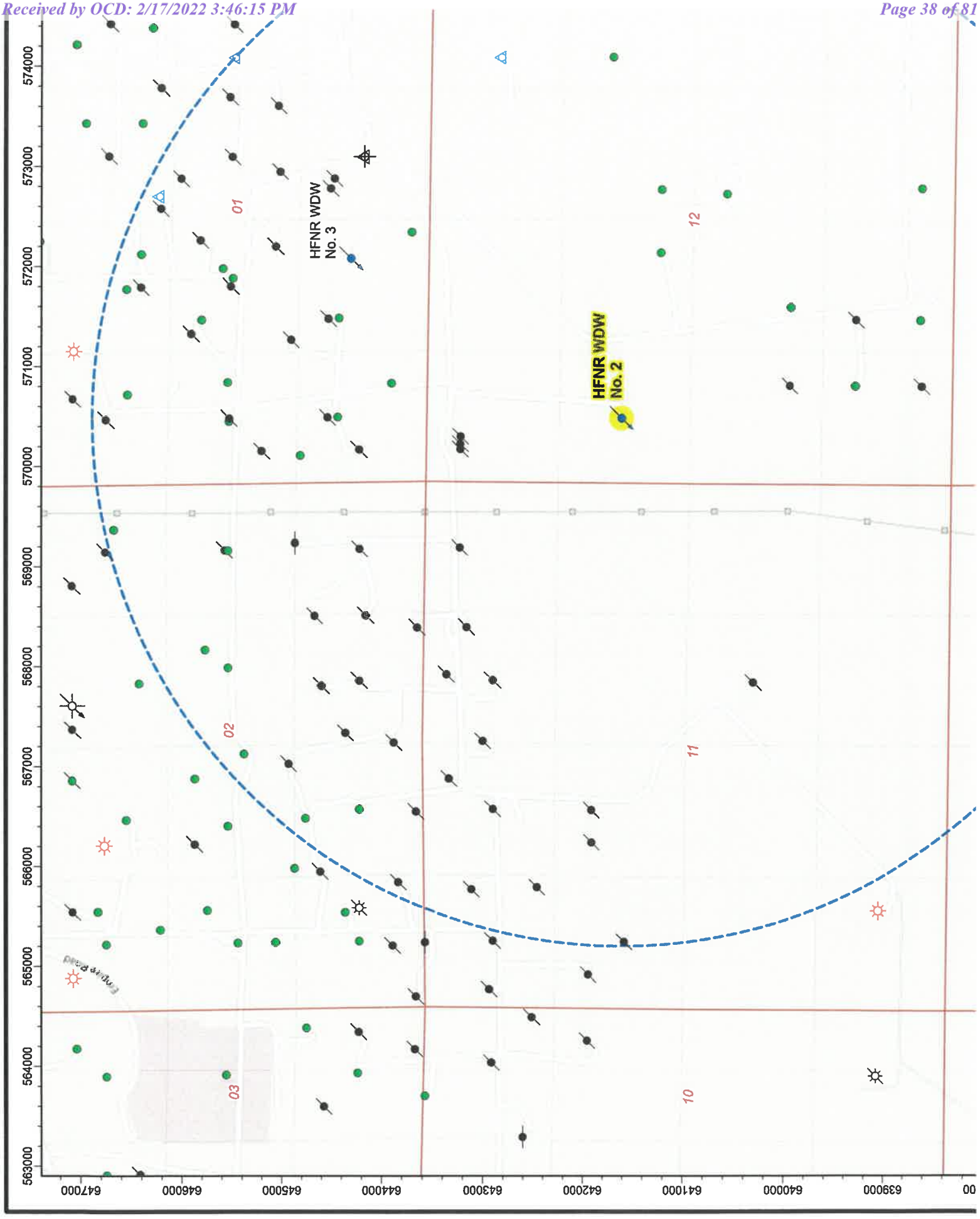
Petrotek



HOLLYFRONTIER

Figure 12
Hall Plot
2021 Well Testing

Petrotek


HFNR WDW
No. 3
HFNR WDW
No. 2
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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.
30-015-20894

5. Indicate Type of Lease
STATE X☐ FEE ☐

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

SUNDRY NOTICES AND REPORTS ON WELLS
(DO NOT USE THIS FORM FOR PROPOSALS TO DRILL OR TO DEEPEN OR PLUG BACK TO A DIFFERENT RESERVOIR. USE "APPLICATION FOR PERMIT" (FORM C-101) FOR SUCH PROPOSALS.)

7. Lease Name or Unit Agreement Name
CHUKKA WDW-2

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

8. Well Number WDW-2

2. Name of Operator
HOLLYFRONTIER NAVAJO REFINING LLC

9. OGRID Number 15694

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

Pool name or Wildcat: PENN 9681

4. Well Location
Unit Letter: E____1980 feet from the NORTH_ line and _660_feet from the WEST_line
Section 12 Township 18S Range 27E NMPM County EDDY

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

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

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

13. Describe proposed or completed operations. (Clearly state all pertinent details, and give pertinent dates, including estimated date of starting any proposed work). SEE RULE 19.15.7.14 NMAC. For Multiple Completions: Attach wellbore diagram of proposed completion or recompletion.

July 25, 2021; Day 1: Begin constant-rate injection into CHUKKA WDW-2 as well as the three (3) offset wells for at least 30 hours prior to shut-in of WDW-2 for falloff testing. Target rate for WDW-2 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.
July 26, 2021; Day 2:Continue constant-rate injection into all four well
July 27, 2021; Day 3: While injection continues, run dual downhole memory gauges to test depth making flowing gradient stopes every 1,000 feet. Collect pressure data at test depth for at least 1 hour while injecting at constant rate. Shut in WDW-2 and collect falloff data for a minimum of 30 hours. WDW-1, WDW-3 and WDW-4 will continue injection at constant rate until downhole memory gauges are pulled from WDW-2.
July 28, 2021; Day 4: WDW-2 will remain shut-in while collecting falloff pressure data using downhole memory gauges.
July 29, 2021; Day 5: After a minimum of 30 hours of falloff data collection, remove gauges from the well making 5-minute gradient stops every 1,000 feet. Note the top of fill will be tagged either with gauges prior to pulling from the well, or on a second run with sinker bars after gauges are removed (TBD). Conduct MIT for 30 min. minimum. Rig down wireline and return well to service

Spud Date: Rig Release Date:

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

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

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

For State Use Only

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

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

COMMENTS

Action 35668

COMMENTS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 35668
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	WDW-2 Fall-Off Test (FOT) is not considered to be an MIT under the UIC Program; therefore, it is handled as a permit submittal to the admin. record and not as a Sundry Submittal.	7/9/2021

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

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

CONDITIONS

Action 35668

CONDITIONS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 35668
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

Created By	Condition	Condition Date
cchavez	1) Follow approved FOT Plan. 2) Notify OCD Artesia District Office Engineers of Date and Time of FOT for communication purposes.	7/9/2021

Attachment 2
Annulus Pressure Gauge Certification

Petrotek

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

CERTIFIED CALIBRATION

CUSTOMER PETROTEK ORDER NO. _____

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

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

Tested On: Deadweight Tester S/N# 1GA4474

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

Tested By: BMZ Date 22 Jan 2021

Remarks:

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

Attachment 3
Downhole Pressure Gauge Certification

Petrotek

DataCan Gauge Program Sheet

Gauge Information

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

Program

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

Summary

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

Overrun (for reference)

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

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

DataCan Gauge Program Sheet

Gauge Information

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

Program

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

Summary

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

Overrun (for reference)

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

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

Attachment 4
FESCO Injection Falloff Test Report

Petrotek

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	Petrotek Engineering Corporation	Test Date:	07/27/2021
Well:	Navajo Refining Waste Disposal-Chukka WDW No.	Location:	Eddy County, NM
Field:	Davonia	Status:	Injecting
Formation:	Unavailable		

Well Data:	Wellhead Connection: 4-1/16" BX-155 Flange	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	SP-220992
	Tubing: 4.5" Set at 7528 ft (EOT)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8869 ft	Gauge OD:	1.2500"
	Perfs: 7570 - 7736; 7826 - 8399 ft (MD		
	Datum: 7985 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		106.79	1167.14	0.00	0.0000	
1000	1000	1000		107.05	1561.28	394.14	0.3941	
2000	2000	1000		105.80	1959.17	397.89	0.3979	
3000	3000	1000		105.15	2355.24	396.07	0.3961	
4000	4000	1000		104.81	2746.24	391.00	0.3910	
5000	5000	1000		104.68	3144.15	397.91	0.3979	
6000	6000	1000		104.80	3549.54	405.39	0.4054	
7000	7000	1000		105.25	3960.56	411.02	0.4110	
7557	7557	557		105.63	4189.44	228.88	0.4109	

BHT at Test Depth:	105.63 °F	Oil Level:	Flowing	Previous BHP:	U/A
Extrapolated BHP at Datum:	4365.31 psia	Water Level:	Flowing	BHP Change:	U/A
BHP Gradient at Datum :	0.4109 psi/ft	Csg Press:	990 psig		

Remarks: MIRU slickline. RIH with electronic gauge making injecting gradient stops to 7557 ft. Continued injection for 1 hr. SI well for 42.7 hr falloff test. POOH making static gradient stops to surface. RDMO.

Certified: FESCO, Ltd. - Midland, TX

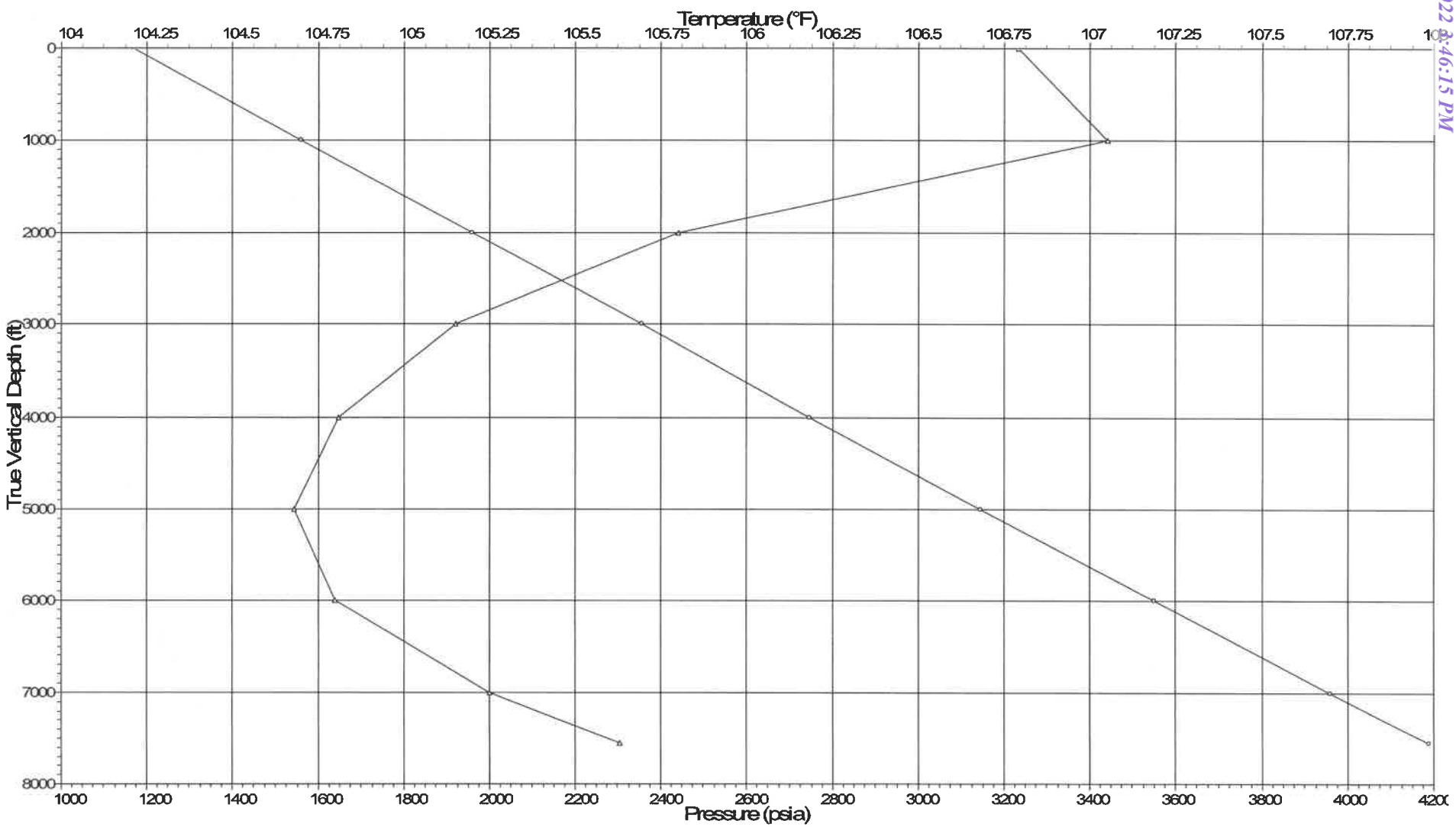
By: Michael Carnes
District Manager - (432) 332-3211

Job No.: J202107291401.001A

Petrotek Engineering Corporation

Well: Navajo Refining Waste Disposal-Chukka WDW Gauge2Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/27/2021 Gauge SN: SP-220992

Flowing Gradient Plot



J202107291401.001A

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	Petrotek Engineering Corporation	Test Date:	07/29/2021
Well:	Navajo Refining Waste Disposal-Chukka WDW No.	Location:	Eddy County, NM
Field:	Davonia	Status:	SI for 42.7 hrs
Formation:	Unavailable		

Well Data:	Wellhead Connection: 4-1/16" BX-155 Flange	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	SP-220992
	Tubing: 4.5" Set at 7528 ft (EOT)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8869 ft	Gauge OD:	1.2500"
	Perfs: 7570 - 7736; 7826 - 8399 ft (MD		
	Datum: 7985 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		82.87	673.75	0.00	0.0000	Water at surface.
1000	1000	1000		84.21	1108.29	434.54	0.4345	
2000	2000	1000		88.89	1543.69	435.40	0.4354	
3000	3000	1000		92.00	1979.11	435.42	0.4354	
4000	4000	1000		95.82	2414.89	435.78	0.4358	
5000	5000	1000		100.38	2850.62	435.73	0.4357	
6000	6000	1000		106.27	3286.25	435.63	0.4356	
7000	7000	1000		111.63	3721.47	435.22	0.4352	
7557	7557	557		107.92	3962.61	241.14	0.4329	

BHT at Test Depth:	107.92 °F	Oil Level:	None	Previous BHP:	U/A
Extrapolated BHP at Datum:	4147.89 psia	Water Level:	Surface	BHP Change:	U/A
BHP Gradient at Datum :	0.4329 psi/ft	Csg Press:	N/A		

Remarks: MIRU slickline. RIH with electronic gauge making injecting gradient stops to 7557 ft. Continued injection for 1 hr. SI well for 42.7 hr falloff test. POOH making static gradient stops to surface. RDMO.

Certified: FESCO, Ltd. - Midland, TX

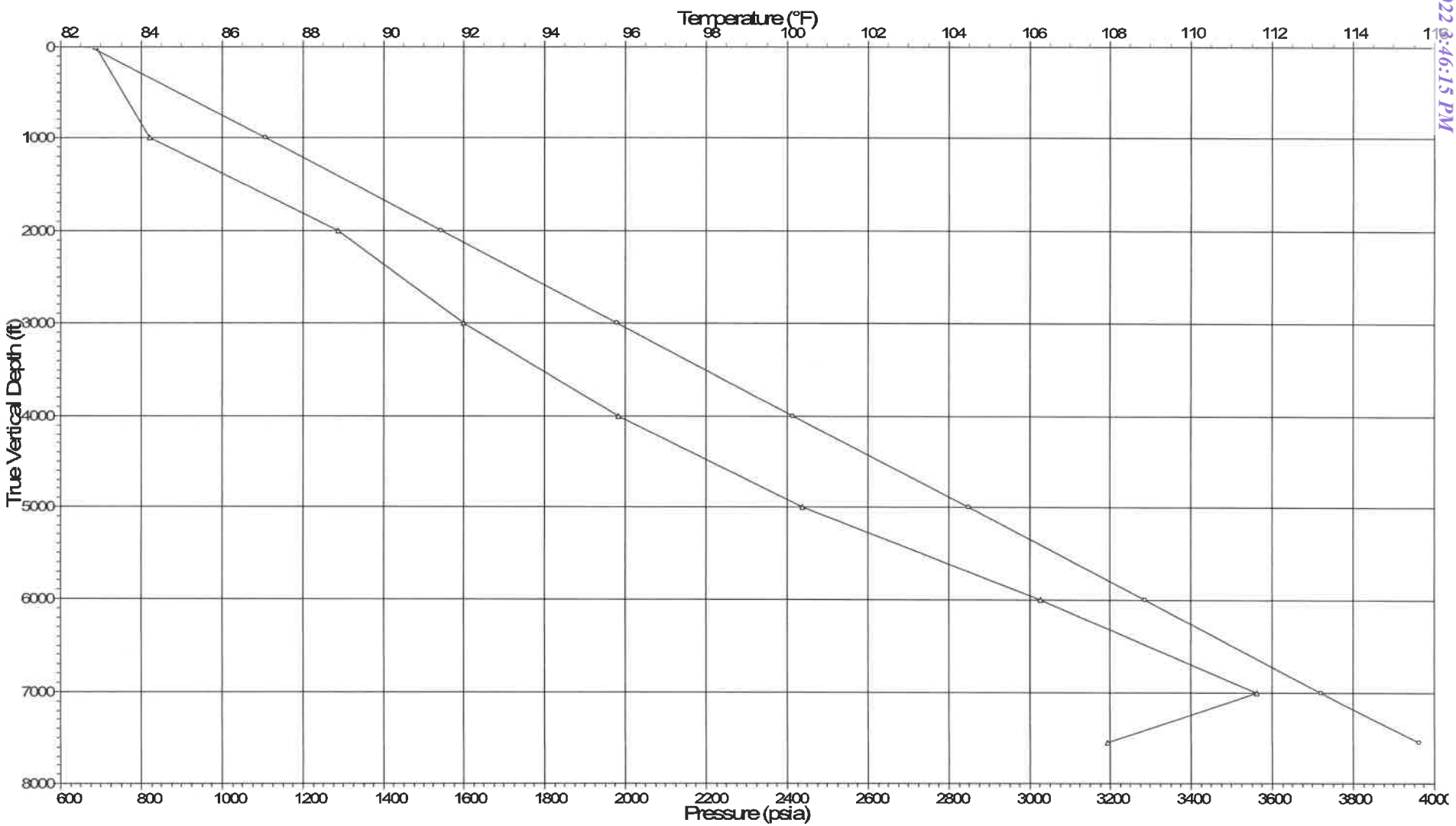
By: Michael Carnes
District Manager - (432) 332-3211

Job No.: J202107291401.001A

Petrotek Engineering Corporation

Well: Navajo Refining Waste Disposal-Chukka WDW Gauge2 Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/29/2021 Gauge SN: SP-220992

Static Gradient Plot

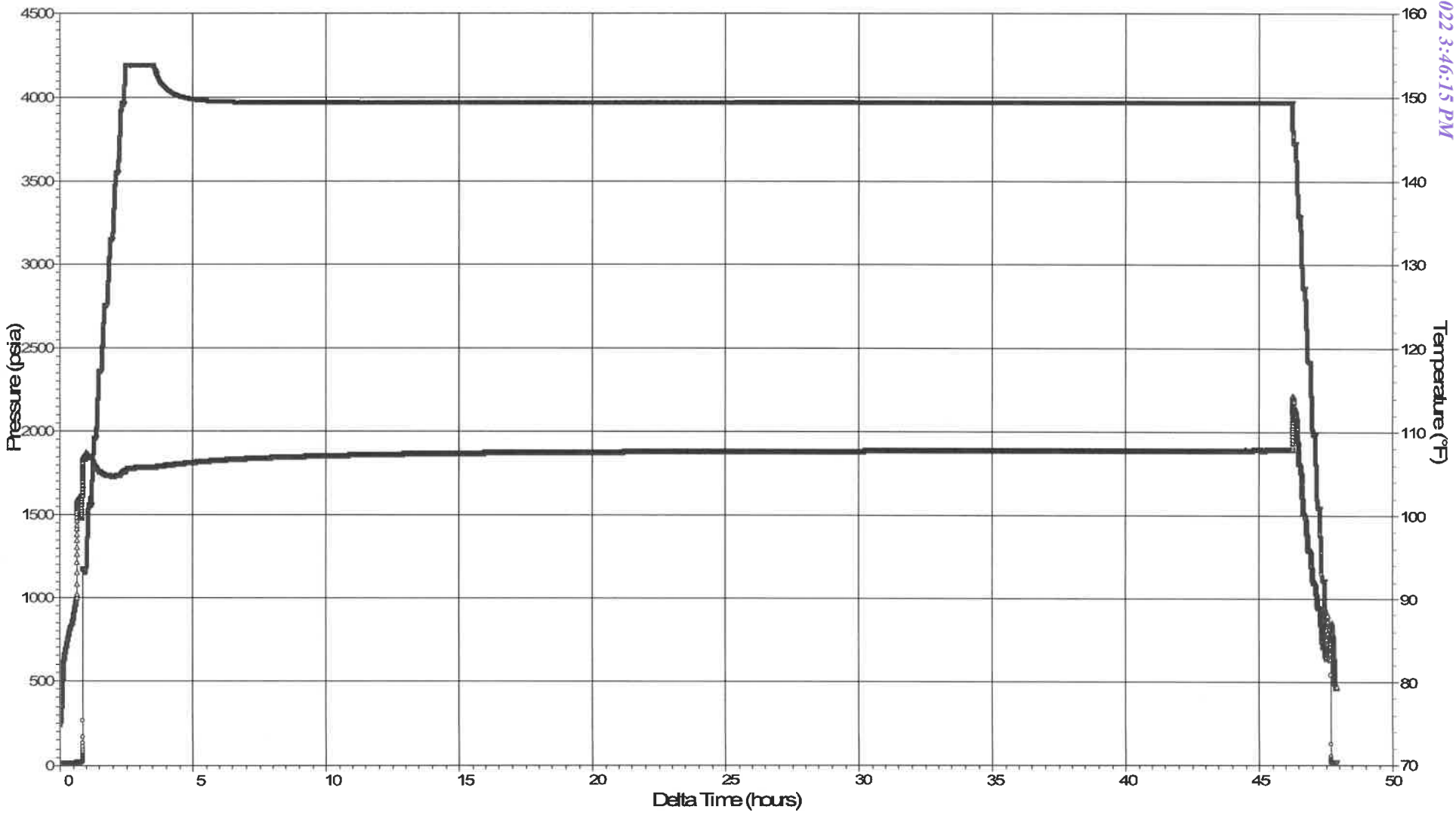


J202107291401.001A

Petrotek Engineering Corporation

Cartesian Plot

Well: Navajo Refining Waste Disposal-Chukka WDW Gauge2Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/29 - 07/31/2021 Gauge SN: SP-220992

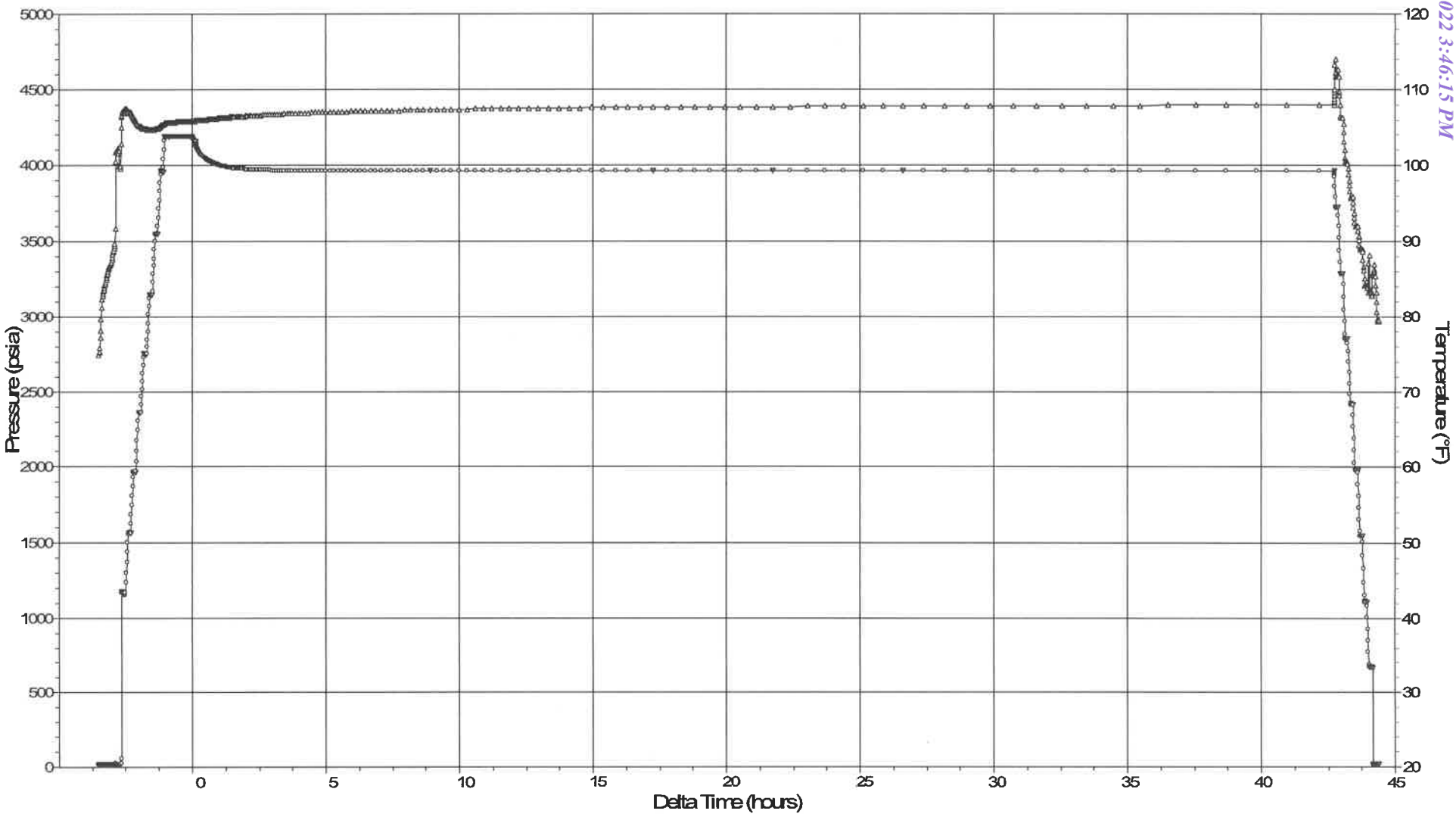


J202107291401.001A

Petrotek Engineering Corporation

Well: Navajo Refining Waste Disposal-Chukka WDW Gauge2Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/27 - 07/29/2021 Gauge SN: SP-220992

Cartesian Plot

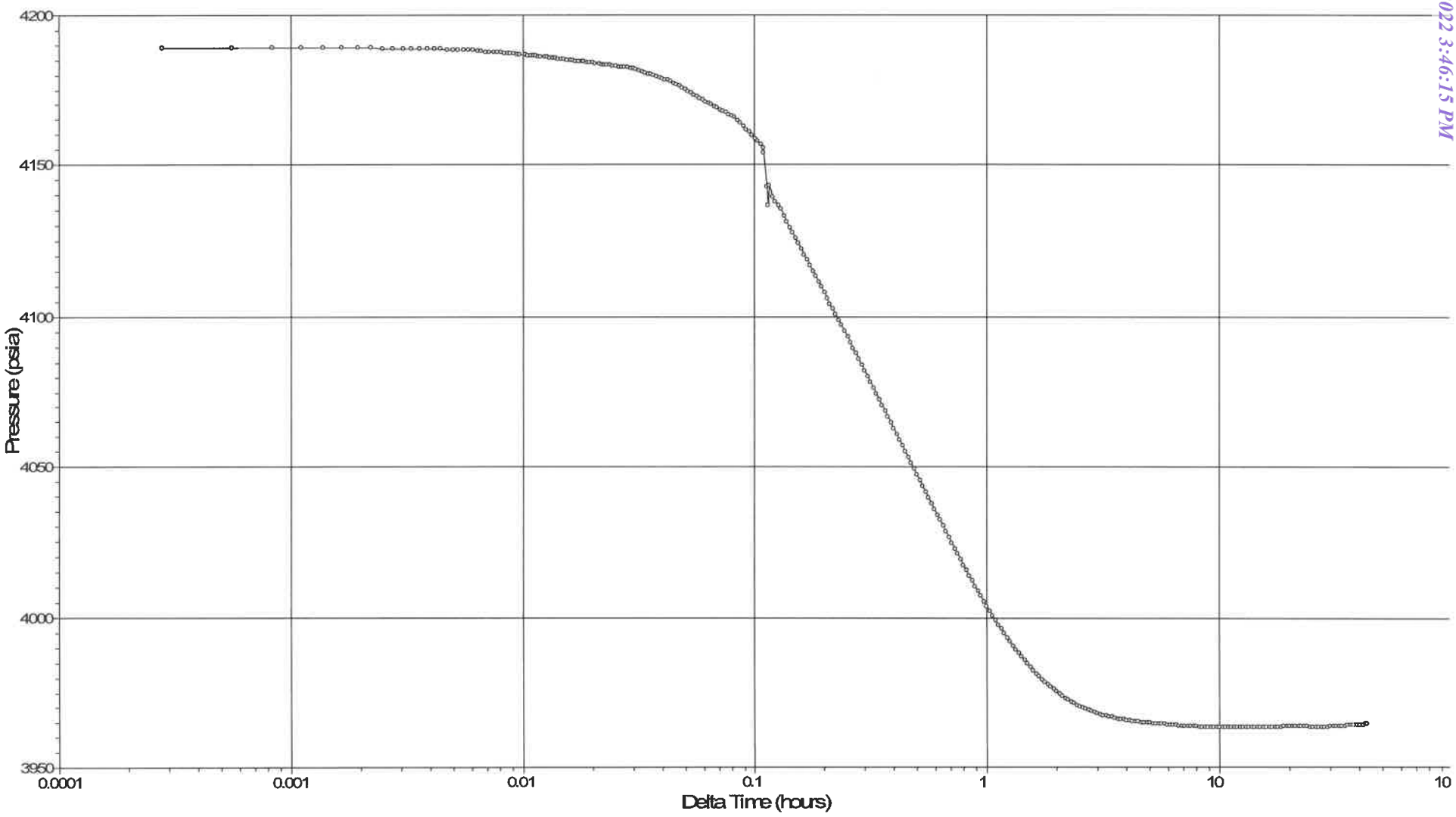


J202107291401.001A

Petrotek Engineering Corporation

Well: Navajo Refining Waste Disposal-Chukka WDW3 Gauge2 Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/27 - 07/29/2021 Gauge SN: SP-220992

Semilog Plot (Falloff Test)

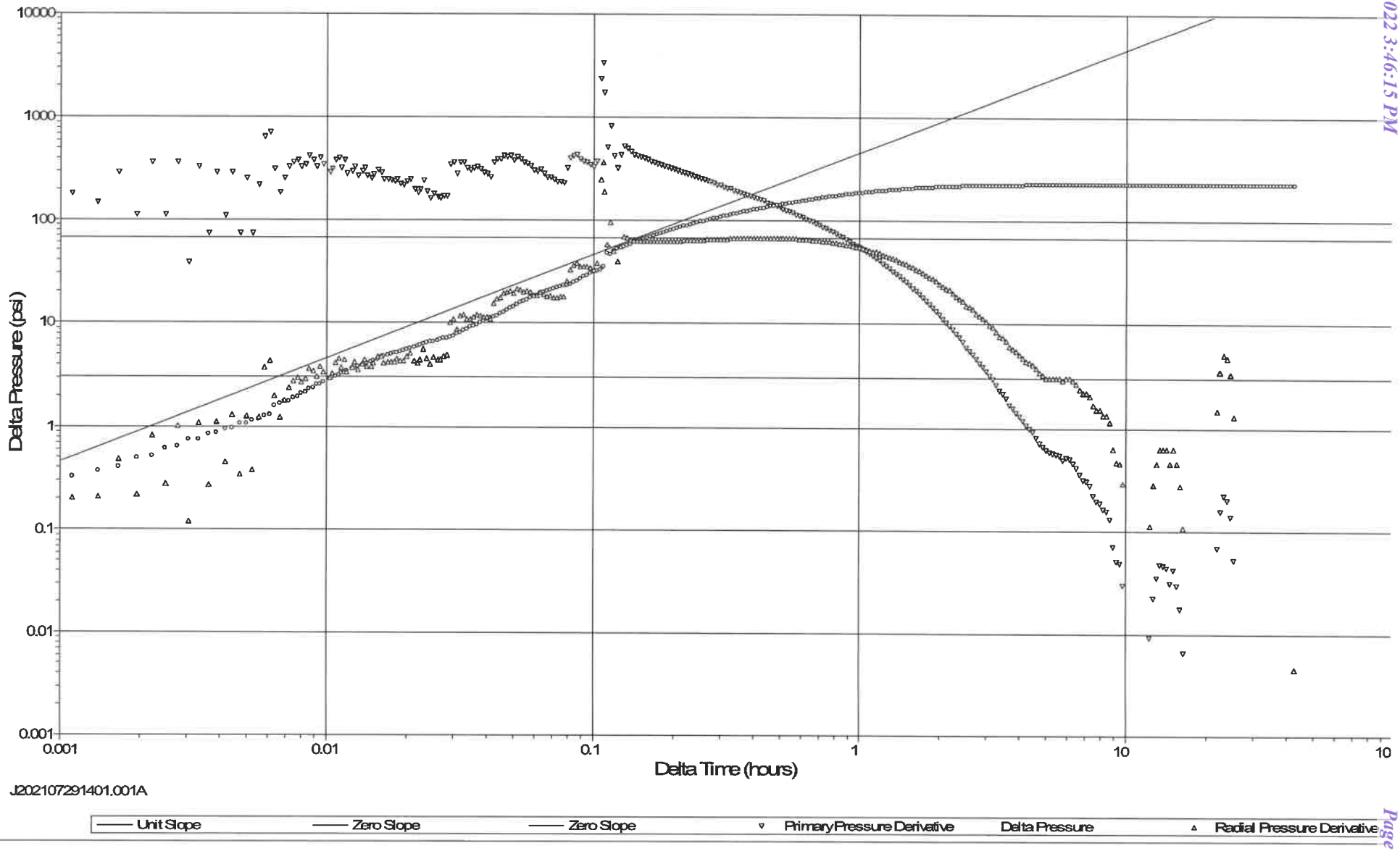


J202107291401.001A

Petrotek Engineering Corporation

Well: Navajo Refining Waste Disposal-Chukka WDW Gauge2Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 07/27 - 07/29/2021 Gauge SN: SP-220992

Log Plot (Falloff Test)



FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	07/27 - 07/29/2021
Well:	Navajo Refining Waste Disposal-Chukka WDW No.	Gauge Depth:	7557 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-220992
Perfs:	7570 - 7736; 7826 - 8399 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
07/27/21	10:20:56	-3.51778		16.16		74.83	Powered up gauge.
07/27/21	10:25:00	-3.45000		14.54		77.16	
07/27/21	10:30:00	-3.36667		15.21		82.69	
07/27/21	10:35:00	-3.28333		15.21		84.08	
07/27/21	10:40:00	-3.20000		15.27		85.53	
07/27/21	10:45:00	-3.11667		15.40		86.62	
07/27/21	10:50:00	-3.03333		15.34		87.25	
07/27/21	10:55:00	-2.95000		15.28		88.85	
07/27/21	11:00:00	-2.86667		18.10		100.52	
07/27/21	11:05:00	-2.78333		15.41		102.21	
07/27/21	11:10:00	-2.70000		15.38		99.67	
07/27/21	11:11:00	-2.68333		17.28		99.94	
07/27/21	11:12:00	-2.66667		23.85		102.86	
07/27/21	11:13:00	-2.65000		50.45		105.06	
07/27/21	11:13:55	-2.63472		1172.08		106.35	Pressured up lubricator.
07/27/21	11:14:00	-2.63333		1170.57		106.56	
07/27/21	11:15:00	-2.61667		1168.78		107.11	
07/27/21	11:16:00	-2.60000		1165.15		107.03	
07/27/21	11:17:00	-2.58333		1167.05		106.82	
07/27/21	11:18:00	-2.56667		1168.04		106.80	
07/27/21	11:18:30	-2.55833		1167.20		106.79	Casing Pressure = 990 psig.
07/27/21	11:18:35	-2.55694		1167.14		106.79	RIH making injecting gradient stops.
07/27/21	11:19:00	-2.55000		1148.43		106.79	
07/27/21	11:20:00	-2.53333		1151.41		107.09	
07/27/21	11:21:00	-2.51667		1159.13		107.35	
07/27/21	11:22:00	-2.50000		1169.10		107.48	
07/27/21	11:23:00	-2.48333		1234.25		107.44	
07/27/21	11:24:00	-2.46667		1298.48		107.39	
07/27/21	11:25:00	-2.45000		1366.07		107.27	
07/27/21	11:26:00	-2.43333		1433.98		107.13	
07/27/21	11:27:00	-2.41667		1501.16		106.99	
07/27/21	11:27:55	-2.40139		1557.44		106.87	Arrived at 1000 ft stop.
07/27/21	11:28:00	-2.40000		1557.13		106.86	
07/27/21	11:29:00	-2.38333		1551.26		106.87	
07/27/21	11:30:00	-2.36667		1558.19		106.90	
07/27/21	11:31:00	-2.35000		1557.73		106.92	
07/27/21	11:32:00	-2.33333		1566.79		106.98	
07/27/21	11:32:55	-2.31806		1561.28		107.05	Left 1000 ft stop.

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	11:33:00	-2.31667		1561.35		107.05	
07/27/21	11:34:00	-2.30000		1624.61		106.97	
07/27/21	11:35:00	-2.28333		1684.17		106.84	
07/27/21	11:36:00	-2.26667		1745.74		106.71	
07/27/21	11:37:00	-2.25000		1807.38		106.59	
07/27/21	11:38:00	-2.23333		1867.51		106.44	
07/27/21	11:39:00	-2.21667		1928.37		106.31	
07/27/21	11:39:40	-2.20556		1960.47		106.24	Arrived at 2000 ft stop.
07/27/21	11:40:00	-2.20000		1959.84		106.21	
07/27/21	11:41:00	-2.18333		1959.84		106.10	
07/27/21	11:42:00	-2.16667		1960.15		105.99	
07/27/21	11:43:00	-2.15000		1959.46		105.90	
07/27/21	11:44:00	-2.13333		1959.59		105.83	
07/27/21	11:44:45	-2.12083		1959.17		105.80	Left 2000 ft stop.
07/27/21	11:45:00	-2.11667		1971.32		105.79	
07/27/21	11:46:00	-2.10000		2035.80		105.68	
07/27/21	11:47:00	-2.08333		2102.15		105.58	
07/27/21	11:48:00	-2.06667		2171.94		105.47	
07/27/21	11:49:00	-2.05000		2238.70		105.39	
07/27/21	11:50:00	-2.03333		2305.53		105.30	
07/27/21	11:50:55	-2.01806		2355.74		105.23	Arrived at 3000 ft stop.
07/27/21	11:51:00	-2.01667		2355.10		105.23	
07/27/21	11:52:00	-2.00000		2354.49		105.21	
07/27/21	11:53:00	-1.98333		2353.93		105.20	
07/27/21	11:54:00	-1.96667		2354.73		105.18	
07/27/21	11:55:00	-1.95000		2354.64		105.17	
07/27/21	11:55:50	-1.93611		2355.24		105.15	Left 3000 ft stop.
07/27/21	11:56:00	-1.93333		2355.72		105.15	
07/27/21	11:57:00	-1.91667		2407.78		105.10	
07/27/21	11:58:00	-1.90000		2461.47		105.05	
07/27/21	11:59:00	-1.88333		2514.50		105.00	
07/27/21	12:00:00	-1.86667		2567.36		104.96	
07/27/21	12:01:00	-1.85000		2620.62		104.92	
07/27/21	12:02:00	-1.83333		2673.77		104.89	
07/27/21	12:03:00	-1.81667		2726.10		104.86	
07/27/21	12:03:30	-1.80833		2748.10		104.85	Arrived at 4000 ft stop.
07/27/21	12:04:00	-1.80000		2747.68		104.85	
07/27/21	12:05:00	-1.78333		2746.49		104.84	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	12:06:00	-1.76667		2747.09		104.83	
07/27/21	12:07:00	-1.75000		2747.05		104.82	
07/27/21	12:08:00	-1.73333		2746.01		104.82	
07/27/21	12:08:50	-1.71944		2746.24		104.81	Left 4000 ft stop.
07/27/21	12:09:00	-1.71667		2749.46		104.81	
07/27/21	12:10:00	-1.70000		2795.12		104.78	
07/27/21	12:11:00	-1.68333		2845.93		104.76	
07/27/21	12:12:00	-1.66667		2900.19		104.74	
07/27/21	12:13:00	-1.65000		2955.30		104.73	
07/27/21	12:14:00	-1.63333		3011.00		104.72	
07/27/21	12:15:00	-1.61667		3065.96		104.71	
07/27/21	12:16:00	-1.60000		3121.35		104.71	
07/27/21	12:16:25	-1.59306		3143.57		104.71	Arrived at 5000 ft stop.
07/27/21	12:17:00	-1.58333		3144.36		104.72	
07/27/21	12:18:00	-1.56667		3144.47		104.71	
07/27/21	12:19:00	-1.55000		3144.14		104.70	
07/27/21	12:20:00	-1.53333		3144.62		104.69	
07/27/21	12:21:00	-1.51667		3144.54		104.69	
07/27/21	12:21:30	-1.50833		3144.15		104.68	Left 5000 ft stop.
07/27/21	12:22:00	-1.50000		3167.42		104.67	
07/27/21	12:23:00	-1.48333		3228.50		104.68	
07/27/21	12:24:00	-1.46667		3282.11		104.69	
07/27/21	12:25:00	-1.45000		3336.89		104.71	
07/27/21	12:26:00	-1.43333		3387.76		104.73	
07/27/21	12:27:00	-1.41667		3447.32		104.76	
07/27/21	12:28:00	-1.40000		3501.88		104.80	
07/27/21	12:28:53	-1.38528		3547.86		104.83	Arrived at 6000 ft stop.
07/27/21	12:29:00	-1.38333		3547.03		104.83	
07/27/21	12:30:00	-1.36667		3545.79		104.83	
07/27/21	12:31:00	-1.35000		3546.31		104.82	
07/27/21	12:32:00	-1.33333		3547.39		104.81	
07/27/21	12:33:00	-1.31667		3551.40		104.80	
07/27/21	12:34:00	-1.30000		3550.19		104.80	
07/27/21	12:34:03	-1.29917		3549.54		104.80	Left 6000 ft stop.
07/27/21	12:35:00	-1.28333		3602.16		104.82	
07/27/21	12:36:00	-1.26667		3658.90		104.88	
07/27/21	12:37:00	-1.25000		3715.84		104.94	
07/27/21	12:38:00	-1.23333		3772.58		105.00	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	12:39:00	-1.21667		3829.71		105.07	
07/27/21	12:40:00	-1.20000		3886.76		105.15	
07/27/21	12:41:00	-1.18333		3944.25		105.23	
07/27/21	12:41:23	-1.17694		3960.67		105.27	Arrived at 7000 ft stop.
07/27/21	12:42:00	-1.16667		3960.82		105.28	
07/27/21	12:43:00	-1.15000		3960.74		105.28	
07/27/21	12:44:00	-1.13333		3960.74		105.27	
07/27/21	12:45:00	-1.11667		3960.67		105.26	
07/27/21	12:46:00	-1.10000		3960.59		105.26	
07/27/21	12:46:30	-1.09167		3960.56		105.25	Left 7000 ft stop.
07/27/21	12:47:00	-1.08333		3983.79		105.27	
07/27/21	12:48:00	-1.06667		4045.17		105.35	
07/27/21	12:49:00	-1.05000		4107.06		105.46	
07/27/21	12:50:00	-1.03333		4169.04		105.55	
07/27/21	12:50:26	-1.02611		4189.39		105.58	Arrived at 7557 ft stop.
07/27/21	12:51:00	-1.01667		4189.38		105.58	
07/27/21	12:52:00	-1.00000		4189.39		105.57	
07/27/21	12:53:00	-0.98333		4189.38		105.57	
07/27/21	12:54:00	-0.96667		4189.40		105.57	
07/27/21	12:55:00	-0.95000		4189.38		105.58	
07/27/21	12:56:00	-0.93333		4189.39		105.58	
07/27/21	12:57:00	-0.91667		4189.39		105.60	
07/27/21	12:58:00	-0.90000		4189.41		105.61	
07/27/21	12:59:00	-0.88333		4189.42		105.62	
07/27/21	13:00:00	-0.86667		4189.44		105.63	7557 ft stop.
07/27/21	13:01:00	-0.85000		4189.44		105.64	
07/27/21	13:02:00	-0.83333		4189.44		105.65	
07/27/21	13:03:00	-0.81667		4189.47		105.66	
07/27/21	13:04:00	-0.80000		4189.47		105.66	
07/27/21	13:05:00	-0.78333		4189.46		105.67	
07/27/21	13:06:00	-0.76667		4189.47		105.67	
07/27/21	13:07:00	-0.75000		4189.46		105.68	
07/27/21	13:08:00	-0.73333		4189.45		105.69	
07/27/21	13:09:00	-0.71667		4189.45		105.69	
07/27/21	13:10:00	-0.70000		4189.46		105.69	
07/27/21	13:11:00	-0.68333		4189.47		105.70	
07/27/21	13:12:00	-0.66667		4189.48		105.70	
07/27/21	13:13:00	-0.65000		4189.48		105.70	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	13:14:00	-0.63333		4189.51		105.70	
07/27/21	13:15:00	-0.61667		4189.49		105.71	
07/27/21	13:16:00	-0.60000		4189.48		105.71	
07/27/21	13:17:00	-0.58333		4189.48		105.71	
07/27/21	13:18:00	-0.56667		4189.48		105.71	
07/27/21	13:19:00	-0.55000		4189.48		105.72	
07/27/21	13:20:00	-0.53333		4189.50		105.72	
07/27/21	13:21:00	-0.51667		4189.49		105.72	
07/27/21	13:22:00	-0.50000		4189.48		105.72	
07/27/21	13:23:00	-0.48333		4189.48		105.72	
07/27/21	13:24:00	-0.46667		4189.48		105.72	
07/27/21	13:25:00	-0.45000		4189.49		105.73	
07/27/21	13:26:00	-0.43333		4189.46		105.73	
07/27/21	13:27:00	-0.41667		4189.49		105.73	
07/27/21	13:28:00	-0.40000		4189.49		105.73	
07/27/21	13:29:00	-0.38333		4189.50		105.73	
07/27/21	13:30:00	-0.36667		4189.47		105.73	
07/27/21	13:31:00	-0.35000		4189.50		105.73	
07/27/21	13:32:00	-0.33333		4189.45		105.73	
07/27/21	13:33:00	-0.31667		4189.49		105.74	
07/27/21	13:34:00	-0.30000		4189.50		105.74	
07/27/21	13:35:00	-0.28333		4189.49		105.74	
07/27/21	13:36:00	-0.26667		4189.50		105.74	
07/27/21	13:37:00	-0.25000		4189.50		105.74	
07/27/21	13:38:00	-0.23333		4189.51		105.75	
07/27/21	13:39:00	-0.21667		4189.51		105.75	
07/27/21	13:40:00	-0.20000		4189.50		105.75	
07/27/21	13:41:00	-0.18333		4189.52		105.75	
07/27/21	13:42:00	-0.16667		4189.52		105.75	
07/27/21	13:43:00	-0.15000		4189.54		105.75	
07/27/21	13:44:00	-0.13333		4189.53		105.75	
07/27/21	13:45:00	-0.11667		4189.53		105.76	
07/27/21	13:46:00	-0.10000		4189.54		105.76	
07/27/21	13:47:00	-0.08333		4189.54		105.76	
07/27/21	13:48:00	-0.06667		4189.55		105.76	
07/27/21	13:49:00	-0.05000		4189.54		105.76	
07/27/21	13:50:00	-0.03333		4189.59		105.76	
07/27/21	13:51:00	-0.01667		4189.60		105.77	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	13:51:59	-0.00028		4189.59		105.77	Final Injection Rate = Unavailable.
07/27/21	13:52:00	0.00000		4189.59	0.00	105.77	Shut in well for 42.7 hr falloff test.
07/27/21	13:52:01	0.00028		4189.34	-0.25	105.77	
07/27/21	13:52:02	0.00056		4189.26	-0.33	105.77	
07/27/21	13:52:03	0.00083		4189.24	-0.35	105.77	
07/27/21	13:52:04	0.00111		4189.27	-0.32	105.77	
07/27/21	13:52:05	0.00139		4189.22	-0.37	105.77	
07/27/21	13:52:06	0.00167		4189.18	-0.41	105.77	
07/27/21	13:52:07	0.00194		4189.10	-0.49	105.77	
07/27/21	13:52:08	0.00222		4189.07	-0.52	105.77	
07/27/21	13:52:09	0.00250		4188.97	-0.62	105.77	
07/27/21	13:52:10	0.00278		4188.94	-0.65	105.77	
07/27/21	13:52:11	0.00306		4188.84	-0.75	105.77	
07/27/21	13:52:12	0.00333		4188.83	-0.76	105.77	
07/27/21	13:52:13	0.00361		4188.74	-0.85	105.77	
07/27/21	13:52:14	0.00389		4188.72	-0.87	105.77	
07/27/21	13:52:15	0.00417		4188.64	-0.95	105.77	
07/27/21	13:52:16	0.00444		4188.61	-0.98	105.77	
07/27/21	13:52:17	0.00472		4188.53	-1.06	105.77	
07/27/21	13:52:18	0.00500		4188.51	-1.08	105.77	
07/27/21	13:52:19	0.00528		4188.44	-1.15	105.77	
07/27/21	13:52:20	0.00556		4188.42	-1.17	105.77	
07/27/21	13:52:21	0.00583		4188.33	-1.26	105.77	
07/27/21	13:52:22	0.00611		4188.30	-1.29	105.77	
07/27/21	13:52:23	0.00639		4187.98	-1.61	105.77	
07/27/21	13:52:24	0.00667		4187.91	-1.68	105.77	
07/27/21	13:52:25	0.00694		4187.81	-1.78	105.77	
07/27/21	13:52:26	0.00722		4187.81	-1.78	105.77	
07/27/21	13:52:27	0.00750		4187.67	-1.92	105.77	
07/27/21	13:52:28	0.00778		4187.63	-1.96	105.77	
07/27/21	13:52:29	0.00806		4187.47	-2.12	105.77	
07/27/21	13:52:30	0.00833		4187.42	-2.17	105.77	
07/27/21	13:52:31	0.00861		4187.29	-2.30	105.77	
07/27/21	13:52:32	0.00889		4187.23	-2.36	105.77	
07/27/21	13:52:33	0.00917		4187.06	-2.53	105.77	
07/27/21	13:52:34	0.00944		4187.02	-2.57	105.77	
07/27/21	13:52:35	0.00972		4186.88	-2.71	105.77	
07/27/21	13:52:37	0.01028		4186.69	-2.90	105.77	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	13:52:38	0.01056		4186.65	-2.94	105.77	
07/27/21	13:52:39	0.01083		4186.53	-3.06	105.77	
07/27/21	13:52:40	0.01111		4186.48	-3.11	105.77	
07/27/21	13:52:41	0.01139		4186.32	-3.27	105.77	
07/27/21	13:52:42	0.01167		4186.28	-3.31	105.77	
07/27/21	13:52:43	0.01194		4186.15	-3.44	105.77	
07/27/21	13:52:45	0.01250		4185.97	-3.62	105.77	
07/27/21	13:52:46	0.01278		4185.92	-3.67	105.77	
07/27/21	13:52:47	0.01306		4185.81	-3.78	105.77	
07/27/21	13:52:49	0.01361		4185.65	-3.94	105.77	
07/27/21	13:52:50	0.01389		4185.59	-4.00	105.77	
07/27/21	13:52:51	0.01417		4185.49	-4.10	105.77	
07/27/21	13:52:53	0.01472		4185.33	-4.26	105.77	
07/27/21	13:52:54	0.01500		4185.27	-4.32	105.77	
07/27/21	13:52:56	0.01556		4185.12	-4.47	105.77	
07/27/21	13:52:58	0.01611		4184.97	-4.62	105.77	
07/27/21	13:52:59	0.01639		4184.87	-4.72	105.77	
07/27/21	13:53:01	0.01694		4184.73	-4.86	105.77	
07/27/21	13:53:03	0.01750		4184.60	-4.99	105.77	
07/27/21	13:53:05	0.01806		4184.46	-5.13	105.77	
07/27/21	13:53:06	0.01833		4184.41	-5.18	105.77	
07/27/21	13:53:08	0.01889		4184.27	-5.32	105.77	
07/27/21	13:53:10	0.01944		4184.14	-5.45	105.77	
07/27/21	13:53:12	0.02000		4184.02	-5.57	105.77	
07/27/21	13:53:14	0.02056		4183.90	-5.69	105.77	
07/27/21	13:53:17	0.02139		4183.70	-5.89	105.77	
07/27/21	13:53:19	0.02194		4183.56	-6.03	105.77	
07/27/21	13:53:21	0.02250		4183.48	-6.11	105.77	
07/27/21	13:53:23	0.02306		4183.39	-6.20	105.77	
07/27/21	13:53:26	0.02389		4183.21	-6.38	105.77	
07/27/21	13:53:28	0.02444		4183.06	-6.53	105.77	
07/27/21	13:53:31	0.02528		4182.95	-6.64	105.77	
07/27/21	13:53:34	0.02611		4182.79	-6.80	105.77	
07/27/21	13:53:36	0.02667		4182.70	-6.89	105.77	
07/27/21	13:53:39	0.02750		4182.56	-7.03	105.77	
07/27/21	13:53:42	0.02833		4182.43	-7.16	105.77	
07/27/21	13:53:45	0.02917		4182.28	-7.31	105.77	
07/27/21	13:53:48	0.03000		4182.15	-7.44	105.77	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	13:53:51	0.03083		4181.72	-7.87	105.77	
07/27/21	13:53:54	0.03167		4181.56	-8.03	105.77	
07/27/21	13:53:58	0.03278		4181.18	-8.41	105.78	
07/27/21	13:54:01	0.03361		4180.86	-8.73	105.78	
07/27/21	13:54:05	0.03472		4180.48	-9.11	105.78	
07/27/21	13:54:08	0.03556		4180.24	-9.35	105.78	
07/27/21	13:54:12	0.03667		4179.89	-9.70	105.78	
07/27/21	13:54:16	0.03778		4179.54	-10.05	105.78	
07/27/21	13:54:20	0.03889		4179.18	-10.41	105.78	
07/27/21	13:54:24	0.04000		4178.86	-10.73	105.78	
07/27/21	13:54:28	0.04111		4178.54	-11.05	105.78	
07/27/21	13:54:32	0.04222		4178.24	-11.35	105.78	
07/27/21	13:54:37	0.04361		4177.89	-11.70	105.78	
07/27/21	13:54:41	0.04472		4177.34	-12.25	105.78	
07/27/21	13:54:46	0.04611		4176.93	-12.66	105.78	
07/27/21	13:54:51	0.04750		4176.28	-13.31	105.78	
07/27/21	13:54:56	0.04889		4175.78	-13.81	105.79	
07/27/21	13:55:01	0.05028		4175.15	-14.44	105.79	
07/27/21	13:55:06	0.05167		4174.64	-14.95	105.79	
07/27/21	13:55:12	0.05333		4173.99	-15.60	105.79	
07/27/21	13:55:17	0.05472		4173.41	-16.18	105.79	
07/27/21	13:55:23	0.05639		4172.82	-16.77	105.79	
07/27/21	13:55:29	0.05806		4172.23	-17.36	105.79	
07/27/21	13:55:35	0.05972		4171.65	-17.94	105.80	
07/27/21	13:55:41	0.06139		4171.12	-18.47	105.80	
07/27/21	13:55:48	0.06333		4170.56	-19.03	105.80	
07/27/21	13:55:54	0.06500		4170.06	-19.53	105.80	
07/27/21	13:56:01	0.06694		4169.46	-20.13	105.80	
07/27/21	13:56:08	0.06889		4168.97	-20.62	105.81	
07/27/21	13:56:15	0.07083		4168.45	-21.14	105.81	
07/27/21	13:56:23	0.07306		4167.89	-21.70	105.81	
07/27/21	13:56:30	0.07500		4167.44	-22.15	105.82	
07/27/21	13:56:38	0.07722		4166.91	-22.68	105.82	
07/27/21	13:56:46	0.07944		4166.41	-23.18	105.82	
07/27/21	13:56:55	0.08194		4165.83	-23.76	105.83	
07/27/21	13:57:03	0.08417		4164.94	-24.65	105.83	
07/27/21	13:57:12	0.08667		4163.98	-25.61	105.83	
07/27/21	13:57:21	0.08917		4162.87	-26.72	105.84	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	07/27 - 07/29/2021
Well:	Navajo Refining Waste Disposal-Chukka WDW No.	Gauge Depth:	7557 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	SP-220992
Perfs:	7570 - 7736; 7826 - 8399 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
07/27/21	13:57:31	0.09194		4161.74	-27.85	105.84	
07/27/21	13:57:40	0.09444		4160.83	-28.76	105.84	
07/27/21	13:57:50	0.09722		4159.79	-29.80	105.85	
07/27/21	13:58:01	0.10028		4158.73	-30.86	105.85	
07/27/21	13:58:11	0.10306		4157.80	-31.79	105.85	
07/27/21	13:58:22	0.10611		4156.86	-32.73	105.86	
07/27/21	13:58:32	0.10889		4155.69	-33.90	105.86	SIBHP decreased suddenly.
07/27/21	13:58:33	0.10917		4154.17	-35.42	105.86	
07/27/21	13:58:44	0.11222		4142.76	-46.83	105.86	
07/27/21	13:58:53	0.11472		4136.73	-52.86	105.86	SIBHP increased.
07/27/21	13:58:56	0.11556		4143.29	-46.30	105.86	
07/27/21	13:59:08	0.11889		4139.43	-50.16	105.86	
07/27/21	13:59:21	0.12250		4137.65	-51.94	105.86	
07/27/21	13:59:34	0.12611		4136.46	-53.13	105.86	
07/27/21	13:59:47	0.12972		4135.35	-54.24	105.86	
07/27/21	14:00:01	0.13361		4133.30	-56.29	105.86	
07/27/21	14:00:15	0.13750		4131.33	-58.26	105.86	
07/27/21	14:00:29	0.14139		4129.48	-60.11	105.86	
07/27/21	14:00:44	0.14556		4127.66	-61.93	105.86	
07/27/21	14:00:59	0.14972		4125.91	-63.68	105.86	
07/27/21	14:01:15	0.15417		4124.10	-65.49	105.87	
07/27/21	14:01:31	0.15861		4122.30	-67.29	105.87	
07/27/21	14:01:48	0.16333		4120.45	-69.14	105.87	
07/27/21	14:02:05	0.16806		4118.69	-70.90	105.87	
07/27/21	14:02:23	0.17306		4116.87	-72.72	105.87	
07/27/21	14:02:41	0.17806		4115.09	-74.50	105.87	
07/27/21	14:02:59	0.18306		4113.36	-76.23	105.87	
07/27/21	14:03:19	0.18861		4111.50	-78.09	105.87	
07/27/21	14:03:38	0.19389		4109.78	-79.81	105.88	
07/27/21	14:03:59	0.19972		4107.92	-81.67	105.88	
07/27/21	14:04:20	0.20556		4106.10	-83.49	105.88	
07/27/21	14:04:41	0.21139		4104.34	-85.25	105.88	
07/27/21	14:05:04	0.21778		4102.47	-87.12	105.88	
07/27/21	14:05:26	0.22389		4100.71	-88.88	105.89	
07/27/21	14:05:50	0.23056		4098.85	-90.74	105.89	
07/27/21	14:06:14	0.23722		4097.04	-92.55	105.89	
07/27/21	14:06:39	0.24417		4095.19	-94.40	105.89	
07/27/21	14:07:05	0.25139		4093.32	-96.27	105.90	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	14:07:31	0.25861		4091.50	-98.09	105.90	
07/27/21	14:07:58	0.26611		4089.66	-99.93	105.91	
07/27/21	14:08:26	0.27389		4087.79	-101.80	105.91	
07/27/21	14:08:55	0.28194		4085.90	-103.69	105.91	
07/27/21	14:09:25	0.29028		4084.00	-105.59	105.92	
07/27/21	14:09:55	0.29861		4082.14	-107.45	105.92	
07/27/21	14:10:27	0.30750		4080.23	-109.36	105.92	
07/27/21	14:10:59	0.31639		4078.34	-111.25	105.92	
07/27/21	14:11:32	0.32556		4076.47	-113.12	105.93	
07/27/21	14:12:06	0.33500		4074.57	-115.02	105.93	
07/27/21	14:12:42	0.34500		4072.61	-116.98	105.94	
07/27/21	14:13:18	0.35500		4070.71	-118.88	105.94	
07/27/21	14:13:55	0.36528		4068.81	-120.78	105.95	
07/27/21	14:14:34	0.37611		4066.85	-122.74	105.95	
07/27/21	14:15:13	0.38694		4064.95	-124.64	105.95	
07/27/21	14:15:54	0.39833		4063.00	-126.59	105.96	
07/27/21	14:16:36	0.41000		4061.06	-128.53	105.96	
07/27/21	14:17:19	0.42194		4059.12	-130.47	105.97	
07/27/21	14:18:03	0.43417		4057.20	-132.39	105.97	
07/27/21	14:18:49	0.44694		4055.25	-134.34	105.98	
07/27/21	14:19:36	0.46000		4053.30	-136.29	105.98	
07/27/21	14:20:24	0.47333		4051.38	-138.21	105.99	
07/27/21	14:21:14	0.48722		4049.43	-140.16	106.00	
07/27/21	14:22:05	0.50139		4047.50	-142.09	106.00	
07/27/21	14:22:57	0.51583		4045.58	-144.01	106.01	
07/27/21	14:23:52	0.53111		4043.62	-145.97	106.01	
07/27/21	14:24:47	0.54639		4041.73	-147.86	106.02	
07/27/21	14:25:45	0.56250		4039.78	-149.81	106.02	
07/27/21	14:26:44	0.57889		4037.86	-151.73	106.03	
07/27/21	14:27:45	0.59583		4035.94	-153.65	106.04	
07/27/21	14:28:48	0.61333		4034.02	-155.57	106.05	
07/27/21	14:29:52	0.63111		4032.13	-157.46	106.05	
07/27/21	14:30:58	0.64944		4030.26	-159.33	106.06	
07/27/21	14:32:07	0.66861		4028.37	-161.22	106.07	
07/27/21	14:33:17	0.68806		4026.50	-163.09	106.08	
07/27/21	14:34:29	0.70806		4024.66	-164.93	106.08	
07/27/21	14:35:44	0.72889		4022.80	-166.79	106.09	
07/27/21	14:37:00	0.75000		4020.99	-168.60	106.10	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	14:38:19	0.77194		4019.18	-170.41	106.11	
07/27/21	14:39:40	0.79444		4017.39	-172.20	106.12	
07/27/21	14:41:04	0.81778		4015.61	-173.98	106.13	
07/27/21	14:42:30	0.84167		4013.85	-175.74	106.13	
07/27/21	14:43:58	0.86611		4012.13	-177.46	106.14	
07/27/21	14:45:29	0.89139		4010.41	-179.18	106.15	
07/27/21	14:47:03	0.91750		4008.72	-180.87	106.16	
07/27/21	14:48:39	0.94417		4007.07	-182.52	106.17	
07/27/21	14:50:18	0.97167		4005.43	-184.16	106.18	
07/27/21	14:52:01	1.00028		4003.81	-185.78	106.19	
07/27/21	14:53:46	1.02944		4002.23	-187.36	106.20	
07/27/21	14:55:34	1.05944		4000.68	-188.91	106.21	
07/27/21	14:57:25	1.09028		3999.16	-190.43	106.22	
07/27/21	14:59:20	1.12222		3997.67	-191.92	106.23	
07/27/21	15:01:18	1.15500		3996.21	-193.38	106.25	
07/27/21	15:03:19	1.18861		3994.79	-194.80	106.25	
07/27/21	15:05:24	1.22333		3993.38	-196.21	106.26	
07/27/21	15:07:33	1.25917		3992.02	-197.57	106.28	
07/27/21	15:09:45	1.29583		3990.69	-198.90	106.29	
07/27/21	15:12:01	1.33361		3989.41	-200.18	106.30	
07/27/21	15:14:21	1.37250		3988.16	-201.43	106.31	
07/27/21	15:16:46	1.41278		3986.94	-202.65	106.33	
07/27/21	15:19:14	1.45389		3985.77	-203.82	106.34	
07/27/21	15:21:47	1.49639		3984.63	-204.96	106.35	
07/27/21	15:24:24	1.54000		3983.53	-206.06	106.36	
07/27/21	15:27:06	1.58500		3982.46	-207.13	106.38	
07/27/21	15:29:53	1.63139		3981.44	-208.15	106.39	
07/27/21	15:32:44	1.67889		3980.45	-209.14	106.40	
07/27/21	15:35:41	1.72806		3979.50	-210.09	106.42	
07/27/21	15:38:42	1.77833		3978.59	-211.00	106.43	
07/27/21	15:41:49	1.83028		3977.73	-211.86	106.45	
07/27/21	15:45:02	1.88389		3976.89	-212.70	106.46	
07/27/21	15:48:20	1.93889		3976.10	-213.49	106.47	
07/27/21	15:51:43	1.99528		3975.34	-214.25	106.49	
07/27/21	15:55:13	2.05361		3974.61	-214.98	106.50	
07/27/21	15:58:49	2.11361		3973.94	-215.65	106.52	
07/27/21	16:02:31	2.17528		3973.29	-216.30	106.54	
07/27/21	16:06:20	2.23889		3972.67	-216.92	106.55	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	16:10:15	2.30417		3972.08	-217.51	106.56	
07/27/21	16:14:17	2.37139		3971.53	-218.06	106.58	
07/27/21	16:18:27	2.44083		3971.02	-218.57	106.59	
07/27/21	16:22:43	2.51194		3970.52	-219.07	106.61	
07/27/21	16:27:07	2.58528		3970.07	-219.52	106.63	
07/27/21	16:31:39	2.66083		3969.65	-219.94	106.64	
07/27/21	16:36:19	2.73861		3969.24	-220.35	106.66	
07/27/21	16:41:07	2.81861		3968.86	-220.73	106.68	
07/27/21	16:46:03	2.90083		3968.51	-221.08	106.69	
07/27/21	16:51:08	2.98556		3968.18	-221.41	106.71	
07/27/21	16:56:22	3.07278		3967.86	-221.73	106.72	
07/27/21	17:01:45	3.16250		3967.58	-222.01	106.74	
07/27/21	17:07:17	3.25472		3967.30	-222.29	106.76	
07/27/21	17:12:59	3.34972		3967.05	-222.54	106.78	
07/27/21	17:18:51	3.44750		3966.82	-222.77	106.79	
07/27/21	17:24:54	3.54833		3966.61	-222.98	106.81	
07/27/21	17:31:07	3.65194		3966.40	-223.19	106.83	
07/27/21	17:37:31	3.75861		3966.22	-223.37	106.84	
07/27/21	17:44:06	3.86833		3966.05	-223.54	106.86	
07/27/21	17:50:52	3.98111		3965.89	-223.70	106.88	
07/27/21	17:57:51	4.09750		3965.74	-223.85	106.89	
07/27/21	18:05:02	4.21722		3965.60	-223.99	106.91	
07/27/21	18:12:25	4.34028		3965.47	-224.12	106.93	
07/27/21	18:20:01	4.46694		3965.35	-224.24	106.95	
07/27/21	18:27:55	4.59861		3965.23	-224.36	106.96	
07/27/21	18:35:55	4.73194		3965.12	-224.47	106.98	
07/27/21	18:44:15	4.87083		3965.02	-224.57	106.99	
07/27/21	18:52:45	5.01250		3964.93	-224.66	107.01	
07/27/21	19:01:30	5.15833		3964.84	-224.75	107.03	
07/27/21	19:10:35	5.30972		3964.76	-224.83	107.04	
07/27/21	19:19:50	5.46389		3964.67	-224.92	107.06	
07/27/21	19:29:25	5.62361		3964.59	-225.00	107.07	
07/27/21	19:39:20	5.78889		3964.50	-225.09	107.09	
07/27/21	19:49:25	5.95694		3964.42	-225.17	107.11	
07/27/21	19:59:55	6.13194		3964.34	-225.25	107.12	
07/27/21	20:10:35	6.30972		3964.25	-225.34	107.14	
07/27/21	20:21:40	6.49444		3964.17	-225.42	107.15	
07/27/21	20:33:05	6.68472		3964.09	-225.50	107.17	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/27/21	20:44:45	6.87917		3964.02	-225.57	107.18	
07/27/21	20:56:50	7.08056		3963.96	-225.63	107.20	
07/27/21	21:09:15	7.28750		3963.90	-225.69	107.21	
07/27/21	21:22:00	7.50000		3963.84	-225.75	107.23	
07/27/21	21:35:05	7.71806		3963.79	-225.80	107.24	
07/27/21	21:48:40	7.94444		3963.75	-225.84	107.26	
07/27/21	22:02:35	8.17639		3963.71	-225.88	107.27	
07/27/21	22:16:55	8.41528		3963.67	-225.92	107.29	
07/27/21	22:31:35	8.65972		3963.64	-225.95	107.30	
07/27/21	22:46:50	8.91389		3963.60	-225.99	107.31	SIBHP stabilized.
07/27/21	23:02:25	9.17361		3963.58	-226.01	107.33	
07/27/21	23:18:30	9.44167		3963.57	-226.02	107.35	
07/27/21	23:35:00	9.71667		3963.56	-226.03	107.37	
07/27/21	23:52:05	10.00139		3963.55	-226.04	107.38	
07/28/21	00:09:35	10.29306		3963.55	-226.04	107.39	
07/28/21	00:27:35	10.59306		3963.57	-226.02	107.41	
07/28/21	00:46:10	10.90278		3963.59	-226.00	107.43	
07/28/21	01:05:15	11.22083		3963.61	-225.98	107.44	
07/28/21	01:24:55	11.54861		3963.64	-225.95	107.45	
07/28/21	01:45:10	11.88611		3963.66	-225.93	107.47	
07/28/21	02:06:00	12.23333		3963.69	-225.90	107.48	
07/28/21	02:27:25	12.59028		3963.70	-225.89	107.49	
07/28/21	02:49:25	12.95694		3963.69	-225.90	107.50	
07/28/21	03:12:10	13.33611		3963.69	-225.90	107.52	
07/28/21	03:35:30	13.72500		3963.67	-225.92	107.53	
07/28/21	03:59:35	14.12639		3963.66	-225.93	107.54	
07/28/21	04:24:20	14.53889		3963.64	-225.95	107.55	
07/28/21	04:49:45	14.96250		3963.63	-225.96	107.56	
07/28/21	05:16:00	15.40000		3963.62	-225.97	107.57	
07/28/21	05:43:00	15.85000		3963.60	-225.99	107.58	
07/28/21	06:10:45	16.31250		3963.60	-225.99	107.60	
07/28/21	06:39:20	16.78889		3963.59	-226.00	107.61	
07/28/21	07:08:45	17.27917		3963.60	-225.99	107.62	SIBHP began increasing.
07/28/21	07:39:00	17.78333		3963.63	-225.96	107.63	
07/28/21	08:10:10	18.30278		3963.69	-225.90	107.64	
07/28/21	08:42:15	18.83750		3963.76	-225.83	107.65	
07/28/21	09:15:15	19.38750		3963.83	-225.76	107.66	
07/28/21	09:49:10	19.95278		3963.91	-225.68	107.67	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/28/21	10:24:10	20.53611		3963.96	-225.63	107.68	
07/28/21	11:00:10	21.13611		3964.02	-225.57	107.69	
07/28/21	11:37:10	21.75278		3964.07	-225.52	107.70	SIBHP began decreasing.
07/28/21	12:15:15	22.38750		3964.05	-225.54	107.71	
07/28/21	12:54:30	23.04167		3963.99	-225.60	107.72	
07/28/21	13:34:50	23.71389		3963.85	-225.74	107.73	
07/28/21	14:16:25	24.40694		3963.70	-225.89	107.74	
07/28/21	14:59:10	25.11944		3963.58	-226.01	107.75	
07/28/21	15:43:10	25.85278		3963.51	-226.08	107.76	
07/28/21	16:28:30	26.60833		3963.51	-226.08	107.76	SIBHP began increasing.
07/28/21	17:15:05	27.38472		3963.54	-226.05	107.77	
07/28/21	18:03:05	28.18472		3963.59	-226.00	107.79	
07/28/21	18:52:25	29.00694		3963.69	-225.90	107.79	
07/28/21	19:43:15	29.85417		3963.76	-225.83	107.80	
07/28/21	20:35:35	30.72639		3963.75	-225.84	107.81	
07/28/21	21:29:25	31.62361		3963.80	-225.79	107.82	
07/28/21	22:24:50	32.54722		3963.89	-225.70	107.83	
07/28/21	23:21:50	33.49722		3963.96	-225.63	107.84	
07/29/21	00:20:30	34.47500		3964.05	-225.54	107.85	
07/29/21	01:20:55	35.48194		3964.12	-225.47	107.86	
07/29/21	02:23:05	36.51806		3964.18	-225.41	107.87	
07/29/21	03:27:05	37.58472		3964.24	-225.35	107.87	
07/29/21	04:32:55	38.68194		3964.31	-225.28	107.89	
07/29/21	05:40:40	39.81111		3964.37	-225.22	107.89	
07/29/21	06:50:25	40.97361		3964.44	-225.15	107.91	
07/29/21	08:02:15	42.17083		3964.52	-225.07	107.91	
07/29/21	08:35:15	42.72083		3964.54	-225.05	107.92	Ended falloff test.
07/29/21	08:35:20	42.72222		3962.61		107.92	POOH making static gradient stops.
07/29/21	08:35:25	42.72361		3959.12		107.93	
07/29/21	08:35:30	42.72500		3955.07		108.01	
07/29/21	08:35:35	42.72639		3950.50		108.18	
07/29/21	08:35:40	42.72778		3945.44		108.44	
07/29/21	08:35:45	42.72917		3940.47		108.79	
07/29/21	08:35:50	42.73056		3936.06		109.22	
07/29/21	08:35:55	42.73194		3932.19		109.65	
07/29/21	08:36:00	42.73333		3928.25		110.03	
07/29/21	08:37:00	42.75000		3861.54		113.13	
07/29/21	08:38:00	42.76667		3791.93		113.95	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/29/21	08:39:00	42.78333		3727.54		112.19	
07/29/21	08:39:20	42.78889		3722.12		111.73	Arrived at 7000 ft stop.
07/29/21	08:40:00	42.80000		3721.55		111.67	
07/29/21	08:41:00	42.81667		3721.48		111.65	
07/29/21	08:42:00	42.83333		3721.46		111.64	
07/29/21	08:43:00	42.85000		3721.47		111.64	
07/29/21	08:44:00	42.86667		3721.47		111.63	
07/29/21	08:44:15	42.87083		3721.47		111.63	Left 7000 ft stop.
07/29/21	08:45:00	42.88333		3672.25		112.64	
07/29/21	08:46:00	42.90000		3600.93		111.61	
07/29/21	08:47:00	42.91667		3525.35		109.60	
07/29/21	08:48:00	42.93333		3440.82		109.15	
07/29/21	08:49:00	42.95000		3359.05		107.89	
07/29/21	08:50:00	42.96667		3287.45		106.43	Arrived at 6000 ft stop.
07/29/21	08:51:00	42.98333		3286.28		106.28	
07/29/21	08:52:00	43.00000		3286.26		106.27	
07/29/21	08:53:00	43.01667		3286.25		106.27	
07/29/21	08:54:00	43.03333		3286.25		106.27	
07/29/21	08:55:00	43.05000		3286.25		106.27	Left 6000 ft stop.
07/29/21	08:56:00	43.06667		3212.31		105.44	
07/29/21	08:57:00	43.08333		3131.56		104.46	
07/29/21	08:58:00	43.10000		3048.65		103.19	
07/29/21	08:59:00	43.11667		2966.45		102.05	
07/29/21	09:00:00	43.13333		2883.91		100.95	
07/29/21	09:00:30	43.14167		2851.20		100.46	Arrived at 5000 ft stop.
07/29/21	09:01:00	43.15000		2850.64		100.38	
07/29/21	09:02:00	43.16667		2850.62		100.37	
07/29/21	09:03:00	43.18333		2850.63		100.37	
07/29/21	09:04:00	43.20000		2850.64		100.37	
07/29/21	09:05:00	43.21667		2850.62		100.37	
07/29/21	09:05:30	43.22500		2850.62		100.38	Left 5000 ft stop.
07/29/21	09:06:00	43.23333		2824.02		100.20	
07/29/21	09:07:00	43.25000		2765.52		99.53	
07/29/21	09:08:00	43.26667		2699.81		98.82	
07/29/21	09:09:00	43.28333		2626.22		98.05	
07/29/21	09:10:00	43.30000		2552.40		97.51	
07/29/21	09:11:00	43.31667		2479.36		96.70	
07/29/21	09:12:00	43.33333		2415.15		95.88	Arrived at 4000 ft stop.

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/29/21	09:13:00	43.35000		2414.92		95.82	
07/29/21	09:14:00	43.36667		2414.92		95.81	
07/29/21	09:15:00	43.38333		2414.91		95.81	
07/29/21	09:16:00	43.40000		2414.90		95.81	
07/29/21	09:16:55	43.41528		2414.89		95.82	Left 4000 ft stop.
07/29/21	09:17:00	43.41667		2414.36		95.82	
07/29/21	09:18:00	43.43333		2340.47		95.16	
07/29/21	09:19:00	43.45000		2263.19		94.54	
07/29/21	09:20:00	43.46667		2184.59		93.74	
07/29/21	09:21:00	43.48333		2106.60		93.15	
07/29/21	09:22:00	43.50000		2028.23		92.53	
07/29/21	09:22:45	43.51250		1979.40		92.05	Arrived at 3000 ft stop.
07/29/21	09:23:00	43.51667		1979.12		92.01	
07/29/21	09:24:00	43.53333		1979.09		92.00	
07/29/21	09:25:00	43.55000		1979.11		92.00	
07/29/21	09:26:00	43.56667		1979.11		92.00	
07/29/21	09:27:00	43.58333		1979.10		92.00	
07/29/21	09:27:40	43.59444		1979.11		92.00	Left 3000 ft stop.
07/29/21	09:28:00	43.60000		1963.05		91.95	
07/29/21	09:29:00	43.61667		1886.02		91.41	
07/29/21	09:30:00	43.63333		1808.53		90.70	
07/29/21	09:31:00	43.65000		1730.58		90.14	
07/29/21	09:32:00	43.66667		1652.85		89.49	
07/29/21	09:33:00	43.68333		1574.61		89.18	
07/29/21	09:33:30	43.69167		1543.78		88.86	Arrived at 2000 ft stop.
07/29/21	09:34:00	43.70000		1543.66		88.89	
07/29/21	09:35:00	43.71667		1543.69		88.89	
07/29/21	09:36:00	43.73333		1543.71		88.90	
07/29/21	09:37:00	43.75000		1543.71		88.89	
07/29/21	09:38:00	43.76667		1543.72		88.89	
07/29/21	09:38:30	43.77500		1543.69		88.89	Left 2000 ft stop.
07/29/21	09:39:00	43.78333		1505.62		88.67	
07/29/21	09:40:00	43.80000		1417.05		87.61	
07/29/21	09:41:00	43.81667		1328.48		86.59	
07/29/21	09:42:00	43.83333		1239.91		86.15	
07/29/21	09:43:00	43.85000		1152.43		85.08	
07/29/21	09:43:35	43.85972		1109.23		84.32	Arrived at 1000 ft stop.
07/29/21	09:44:00	43.86667		1108.52		84.22	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company: Petrotek Engineering Corporation
Well: Navajo Refining Waste Disposal-Chukka WDW No.
Field: Davonia
Location: Eddy County, NM
Perfs: 7570 - 7736; 7826 - 8399 ft (MD)
Formation: Unavailable

Test Date: 07/27 - 07/29/2021
Gauge Depth: 7557 ft
Gauge Type: Electronic
Gauge SN: SP-220992
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
07/29/21	09:45:00	43.88333		1108.38		84.20	
07/29/21	09:46:00	43.90000		1108.36		84.20	
07/29/21	09:47:00	43.91667		1108.36		84.20	
07/29/21	09:48:00	43.93333		1108.37		84.21	
07/29/21	09:48:35	43.94306		1108.29		84.21	Left 1000 ft stop.
07/29/21	09:49:00	43.95000		1083.02		84.15	
07/29/21	09:50:00	43.96667		1005.62		83.78	
07/29/21	09:51:00	43.98333		926.12		83.20	
07/29/21	09:52:00	44.00000		846.72		83.18	
07/29/21	09:53:00	44.01667		769.24		87.09	
07/29/21	09:54:00	44.03333		688.22		88.10	
07/29/21	09:54:40	44.04444		675.20		83.65	Gauge at surface.
07/29/21	09:55:00	44.05000		674.28		83.59	
07/29/21	09:56:00	44.06667		673.84		83.49	
07/29/21	09:57:00	44.08333		673.78		83.34	
07/29/21	09:58:00	44.10000		673.79		83.17	
07/29/21	09:59:00	44.11667		673.78		83.01	
07/29/21	09:59:50	44.13056		673.75		82.87	Surface stop.
07/29/21	10:00:00	44.13333		665.59		82.76	
07/29/21	10:01:00	44.15000		669.08		85.56	
07/29/21	10:02:00	44.16667		665.70		85.70	
07/29/21	10:02:20	44.17222		665.22		85.75	Pressured down lubricator.
07/29/21	10:03:00	44.18333		19.11		85.81	
07/29/21	10:03:20	44.18889		15.02		85.82	Test complete.
07/29/21	10:05:00	44.21667		8.81		86.36	
07/29/21	10:10:00	44.30000		15.98		81.94	
07/29/21	10:15:00	44.38333		15.03		79.36	
07/29/21	10:15:15	44.38750		15.10		79.43	Powered down gauge.

Remarks: MIRU slickline. RIH with electronic gauge making injecting gradient stops to 7557 ft. Continued injection for 1 hr. SI well for 42.7 hr falloff test. POOH making static gradient stops to surface. RDMO.

Certified: FESCO, Ltd. - Midland, TX

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

Job No.: J202107291401.001A

Attachment 5
Falloff Test Summary

Petrotek

Attachment 6
AOR Well List

Petrotek

Operator	Well Name	API	Type	Well Status	Latitude	Longitude	Spud Date	P&A Date
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #131	30-015-00866	Oil	Plugged (site released)	32.76371	-104.25556	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #133B	30-015-22833	Oil	Plugged (site released)	32.76791	-104.25384	23-May-79	22-Jun-17
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #132	30-015-21807	Oil	Plugged (site released)	32.76991	-104.25361	31-Dec-99	22-Jun-09
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #131	30-015-22556	Oil	Plugged (site released)	32.76612	-104.25378	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-20510	Oil	Plugged (site released)	32.76461	-104.25232	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #014	30-015-00865	Oil	Plugged (site released)	32.76461	-104.25126	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #014	30-015-00864	Oil	Plugged (site released)	32.76733	-104.25122	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #143	30-015-22609	Oil	Active	32.77245	-104.25152	26-Nov-78	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #141B	30-015-22834	Oil	Plugged (site released)	32.76852	-104.25023	21-May-79	22-Jun-17
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #152B	30-015-22569	Oil	Plugged (site released)	32.7676	-104.24901	31-Dec-99	2-Oct-08
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #142	30-015-22608	Oil	Plugged (site released)	32.76942	-104.2513	31-Dec-99	9-Sep-09
APACHE CORPORATION	EMPIRE ABO UNIT #014	30-015-00730	Oil	Active	32.77096	-104.25123	21-Sep-58	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #143A	30-015-22896	Oil	Active	32.77415	-104.24943	15-Apr-79	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #152	30-015-21825	Oil	Plugged (site released)	32.77002	-104.24905	31-Dec-99	27-Dec-11
APACHE CORPORATION	EMPIRE ABO UNIT #155	30-015-22885	Oil	Plugged (site released)	32.772	-104.24721	29-Mar-79	3-Jan-12
APACHE CORPORATION	EMPIRE ABO UNIT #015	30-015-00716	Oil	Active	32.77458	-104.24662	11-Feb-59	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #141A	30-015-22051	Oil	Plugged (site released)	32.77291	-104.24975	31-Dec-99	21-Dec-11
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #154	30-015-22669	Oil	Plugged (site released)	32.77134	-104.24874	31-Dec-99	30-Jun-09
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015C	30-015-00868	Oil	Plugged (site released)	32.76733	-104.24703	31-Dec-99	16-Jul-04
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00870	Oil	Plugged (site released)	32.76018	-104.24712	1-Jan-00	1-Jan-00
APACHE CORPORATION	SCBP STATE #001	30-015-32946	Oil	Active	32.77522	-104.24604	13-Mar-05	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153	30-015-22013	Oil	Plugged (site released)	32.76939	-104.24532	31-Dec-99	30-Oct-08
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015A	30-015-00731	Oil	Plugged (site released)	32.77095	-104.24705	31-Dec-99	12-Feb-09
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #151B	30-015-22568	Oil	Plugged (site released)	32.76804	-104.2453	31-Dec-99	16-Aug-06
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153B	30-015-22838	Oil	Plugged (site released)	32.76859	-104.24684	31-Dec-99	22-Dec-08
APACHE CORPORATION	EMPIRE ABO UNIT #151	30-015-21544	Oil	Plugged (site released)	32.77219	-104.24493	31-Dec-99	6-Jan-12
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #156	30-015-22808	Oil	Plugged (site released)	32.77079	-104.24493	31-Dec-99	7-Oct-09
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00726	Oil	Plugged (site released)	32.77467	-104.2428	1-Jan-00	1-Jan-00
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016C	30-015-00869	Oil	Plugged (site released)	32.76823	-104.24271	31-Dec-99	24-Jan-07
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016A	30-015-00722	Oil	Plugged (site released)	32.77095	-104.24275	31-Dec-99	23-Feb-09
APACHE CORPORATION	EMPIRE ABO UNIT #161	30-015-22914	Oil	Temporary Abandonment	32.77274	-104.24255	21-Jun-79	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #016	30-015-00717	Oil	Active	32.77458	-104.24281	29-Mar-59	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #003	30-015-00894	Oil	Plugged (site released)	32.75195	-104.2418	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00891	Oil	Plugged (site released)	32.75195	-104.2418	1-Jan-00	1-Jan-00
ROVER OPERATING, LLC	ARTESIA STATE UNIT #301	30-015-00895	Oil	Active	32.75014	-104.24178	8-Feb-45	N/A
Redwood Operating LLC	STATE H #002	30-015-35814	Oil	Active	32.77771	-104.24215	31-Oct-07	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #003	30-015-23115	Oil	Plugged (site released)	32.76821	-104.23934	1-Jan-00	1-Jan-00
RHONDA OPERATING CO	FEDERAL EA #001	30-015-00871	Oil	Plugged (site released)	32.76821	-104.23951	31-Dec-99	12-Apr-94
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00695	Oil	Plugged (site released)	32.77365	-104.23957	1-Jan-00	1-Jan-01
APACHE CORPORATION	EMPIRE ABO UNIT #171	30-015-22815	Oil	Plugged (site released)	32.77096	-104.23952	22-May-79	24-Oct-19
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #017	30-015-00704	Oil	Plugged (site released)	32.77792	-104.23857	1-Jan-00	1-Jan-00
APACHE CORPORATION	AAO FEDERAL #009	30-015-34387	Oil	Active	32.77455	-104.23861	7-Nov-05	N/A
APACHE CORPORATION	AAO FEDERAL #030	30-015-42360	Oil	Active	32.77259	-104.23972	20-Jul-14	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017A	30-015-00703	Oil	Plugged (site released)	32.77455	-104.23851	31-Dec-99	19-Mar-09
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #002	30-015-20535	Oil	Plugged (site released)	32.76821	-104.2391	1-Jan-00	1-Jan-00
APACHE CORPORATION	AAO FEDERAL #011	30-015-34555	Oil	Active	32.77155	-104.23846	15-Feb-06	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017B	30-015-00705	Oil	Plugged (site released)	32.77183	-104.23847	31-Dec-99	21-Jul-04
APACHE CORPORATION	AAO FEDERAL #020	30-015-42036	Oil	Active	32.77734	-104.23775	10-Apr-14	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00872	Oil	Plugged (site released)	32.75547	-104.23752	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #001	30-015-00880	Oil	Plugged (site released)	32.75008	-104.23749	1-Jan-00	1-Jan-00
APACHE CORPORATION	AAO FEDERAL #025	30-015-42361	Oil	Active	32.77459	-104.23734	23-Jun-14	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #008	30-015-25649	Oil	Plugged (site released)	32.75916	-104.23747	1-Jan-00	1-Jan-00
ROVER OPERATING, LLC	ARTESIA STATE UNIT #802	30-015-25370	Oil	Active	32.7533	-104.23768	27-Aug-85	N/A
ROVER OPERATING, LLC	ARTESIA STATE UNIT #801	30-015-00883	Oil	Active	32.7519	-104.2375	11-Dec-44	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #181	30-015-21554	Oil	Plugged (site released)	32.77283	-104.23595	31-Dec-99	17-Apr-03
APACHE CORPORATION	EMPIRE ABO UNIT #183	30-015-22096	Oil	Plugged (not released)	32.77559	-104.23576	23-Jun-77	27-Apr-21
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #003	30-015-00884	Oil	Plugged (site released)	32.75187	-104.23536	1-Jan-00	1-Jan-00
LLJ VENTURES, LLC DBA MARKER OIL & GA	ARTESIA STATE #001	30-015-25241	Oil	Active	32.75368	-104.23537	12-Apr-85	N/A
APACHE CORPORATION	AAO FEDERAL #029	30-015-42339	Oil	Active	32.77008	-104.23737	16-Jun-14	N/A
EASTLAND OIL CO	COMSTOCK FEDERAL #010	30-015-26017	Oil	Plugged (site released)	32.75731	-104.23534	31-Dec-99	23-Jan-03
APACHE CORPORATION	AAO FEDERAL #006	30-015-34071	Oil	Active	32.77736	-104.23432	6-Jul-05	N/A
BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #018D	30-015-00713	Oil	Plugged (site released)	32.7718	-104.23527	31-Dec-99	27-Sep-03
APACHE CORPORATION	AAO FEDERAL #012	30-015-34998	Oil	Active	32.77151	-104.23524	13-Aug-06	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #018A	30-015-00706	Oil	Plugged (site released)	32.77697	-104.23426	23-Apr-59	20-Sep-19
APACHE CORPORATION	EMPIRE ABO UNIT #018B	30-015-00707	Oil	Plugged (site released)	32.7745	-104.23421	22-Apr-59	7-Jun-17
APACHE CORPORATION	AAO FEDERAL #026	30-015-42338	Oil	Active	32.77531	-104.23531	10-Jun-14	N/A
APACHE CORPORATION	AAO FEDERAL #027	30-015-42359	Oil	Active	32.77444	-104.23395	3-Jul-14	N/A
APACHE CORPORATION	AAO FEDERAL #010	30-015-34576	Oil	Active	32.77471	-104.23363	2-Jun-06	N/A
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #003	30-015-25545	Oil	Active	32.75734	-104.2375	19-May-86	N/A
BILL L MILLER	CHUKKA FEDERAL #001	30-015-25270	Oil	Active	32.76269	-104.23313	22-Apr-85	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #184	30-015-22559	Oil	Plugged (site released)	32.77533	-104.23272	31-Dec-99	18-Jul-13
APACHE CORPORATION	AAO FEDERAL #028	30-015-42358	Oil	Active	32.76954	-104.23245	12-Jul-14	N/A
APACHE CORPORATION	AAO FEDERAL #019	30-015-42051	Oil	Active	32.77695	-104.23318	2-Apr-14	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #005	30-015-20388	Oil	Plugged (site released)	32.77174	-104.23103	1-Jan-00	1-Jan-01
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #019	30-015-20394	Oil	Plugged (site released)	32.77163	-104.23071	1-Jan-00	1-Jan-00
APACHE CORPORATION	EMPIRE ABO UNIT #194	30-015-22658	Oil	Plugged (not released)	32.77313	-104.23049	18-Oct-78	19-Apr-21
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #002	30-015-25201	Oil	Active	32.75912	-104.23493	15-Mar-85	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #193	30-015-22657	Oil	Plugged (not released)	32.77586	-104.23072	29-Sep-78	29-Apr-21
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #001	30-015-25100	Oil	Active	32.7555	-104.23537	10-Dec-84	N/A

APACHE CORPORATION	EMPIRE ABO UNIT #182	30-015-21792	Oil	Plugged (not released)	32.77325	-104.23293	6-May-76	14-Apr-21
APACHE CORPORATION	AAO FEDERAL SWD #001	30-015-42549	SWD	Active	32.7765	-104.2313	24-Oct-14	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #191	30-015-21552	Oil	Plugged (site released)	32.77642	-104.2317	31-Dec-99	23-Jul-13
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #009	30-015-25738	Oil	Active	32.76266	-104.23108	25-Apr-87	N/A
LU VENTURES, LLC DBA MARKER OIL & GA	ARTESIA STATE #002	30-015-25394	Oil	Active	32.75365	-104.23322	28-Sep-85	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #191A	30-015-21873	Oil	Plugged (site released)	32.77318	-104.22835	27-Aug-76	19-May-17
APACHE CORPORATION	EMPIRE ABO UNIT #019Q	30-015-00696	Oil	Plugged (site released)	32.77445	-104.23	31-Dec-99	12-Jul-13
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #005	30-015-25202	Oil	Active	32.75544	-104.23109	18-Apr-85	N/A
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #007	30-015-00874	Oil	Active	32.76088	-104.23123	27-Jul-48	N/A
APACHE CORPORATION	EMPIRE ABO UNIT #192	30-015-22560	Oil	Plugged (not released)	32.77451	-104.22807	30-May-78	22-Apr-21
APACHE CORPORATION	EMPIRE ABO UNIT #020B	30-015-00699	Oil	Active	32.77152	-104.22463	16-Nov-61	N/A
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #003	30-015-06171	Oil	Plugged (site released)	32.75738	-104.22439	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #005	30-015-00876	Oil	Plugged (site released)	32.75473	-104.2252	1-Jan-00	1-Jan-00
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #002	30-015-06137	Oil	Plugged (site released)	32.75378	-104.22679	1-Jan-00	1-Jan-01
PRE-ONGARD WELL OPERATOR	PRE-ONGARD WELL #004	30-015-00875	Oil	Plugged (site released)	32.75535	-104.22465	1-Jan-00	1-Jan-00
Redwood Operating LLC	FEDERAL T SWD #001	30-015-26404	SWD	Active	32.76715	-104.22678	28-Jun-90	N/A
LU VENTURES, LLC DBA MARKER OIL & GA	LAUREL STATE #003	30-015-31319	Oil	Active	32.76258	-104.2225	2-Oct-00	N/A
NAVAJO REFINING COMPANY, L.L.C.	WDW #003	30-015-26575	SWD	Active	32.77121	-104.23328	22-Dec-90	N/A
NAVAJO REFINING COMPANY, L.L.C.	WDW #002	30-015-20894	SWD	Active	32.76366	-104.23849	5-May-99	N/A
HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #006	30-015-25099	Oil	Active	32.76399	-104.22678	18-Aug-85	N/A
ARCO PERMIAN	EMPIRE ABO UNIT #191	30-015-00698	SWD	Plugged (site released)	32.77082	-104.23	6-Oct-59	8-Dec-89

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 82494

COMMENTS

Operator: NAVAJO REFINING COMPANY, L.L.C. P.O. Box 159 Artesia, NM 88211	OGRID: 15694
	Action Number: 82494
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

COMMENTS

Created By	Comment	Comment Date
cchavez	WDW-2 Fall Off Test (FOT) December 2021	5/10/2022

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CONDITIONS

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	Action Number: 82494
	Action Type: [UF-DP] Discharge Permit (DISCHARGE PERMIT)

CONDITIONS

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