UICI - 8 - 2

WDW-2
FOT

2020

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 ☒ 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

8. Well Number: WDW-2

2. Name of Operator
HOLLYFRONTIER NAVAJO REFINERY LLC

9. OGRID Number: 15694

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

10. Pool name or Wildcat
PENN 9681

4. Well Location
Unit Letter_E_____1,980___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 FALLOFF TEST / MIT	☒			OTHER:	☐		

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

June 1, **2020; Day 1:** Begin constant-rate injection (+/- 10%) 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.
June **2, 2020; Day 2:** Continue constant-rate injection into all four (4) wells.
June 3, **2020; 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.
June 4, **2020; Day 4:** WDW-2 will remain shut-in while collecting falloff pressure data using downhole memory gauges.
June 5, **2020; 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 Env. Spec. DATE 5/28/2020

Type or print name L.R. 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 6/2/2020
Conditions of Approval (if any):

SUBSURFACE TECHNOLOGY

FIGURE 5

WELL: NAVAJO REFINING WDW #2

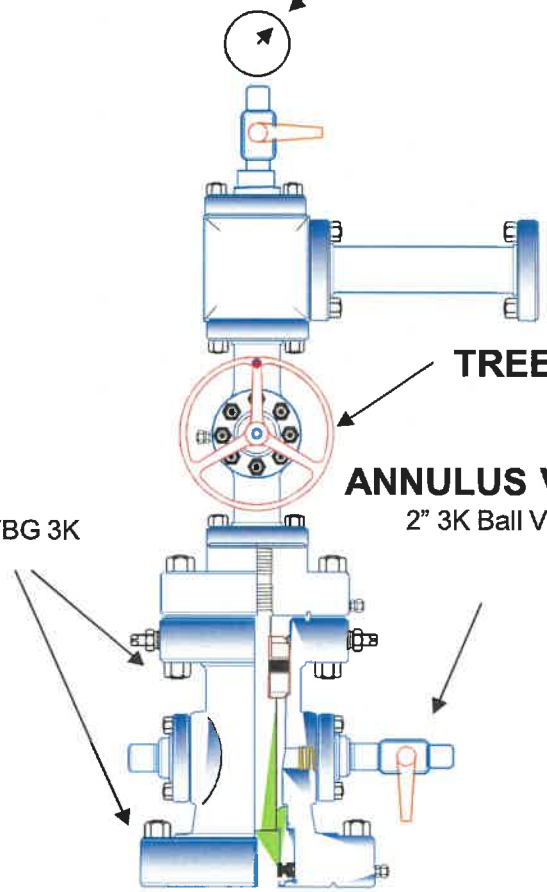
TOP CONNECTION
2-3/8" 8rd x 4-1/16" 3K
2" x 2-3/8" Ball Valve
2-3/8" Bull Plug 1/2" NPT
5000 LB Pressure Guage

UPPER TREE ASSEMBLY
A5PP,4-1/2" 3K X 4-1/16" 3K

TREE GATE VALVE
4-1/16" 3K

FLANGE
7-1/16", 3-1/2" 3K X 4-1/16" UPTBG 3K

ANNULUS VALVE
2" 3K Ball Valve



SUPERIOR WELLHEAD

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

September 2020

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

MECHANICAL INTEGRITY AND RESERVOIR TESTING
CLASS I NON-HAZARDOUS DEEPWELL
OCD UIC Permit: UICI-008-2
API Number: 30-015-20894

HollyFrontier Navajo Refining Company
Artesia, New Mexico

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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, provided 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 activities were supervised by Wes Janes (Petrotek), Holt Tilton (HFNR), and Domingo Torres (Austin).

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. 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 recorded bottom hole temperature in conjunction with industry standard correlations. These correlations were taken 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 will be 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 provided 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 estimate fluid viscosity at atmospheric conditions (equations L-84, 85, and 86), which is converted to viscosity at bottom hole conditions (equation L-87) by using a correction factor. These equations can call be found on page 336. 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:

$$\mu_{w1} = AT_F^B \quad \text{(L-84)}$$

$$A = 109.574 - 8.40564 * S + 0.313314 * S^2 + 8.72213 * 10^{-3} * S^3 \quad \text{(L-85)}$$

$$B = -1.12166 + 2.63951 * 10^{-2} * S - 6.749461 * 10^{-4} * S^2 \quad \text{(L-86)}$$

$$\frac{\mu_w}{\mu_{w1}} = 0.9994 + 4.0295 * 10^{-5} * P + 3.1062 * 10^{-9} * P^2 \quad \text{(L-87)}$$

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 0.63 centipoise is calculated for the formation fluid viscosity.

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

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

Where,

a = 0.8535
b = 1.075
c = 2.303 E06
Φ = 0.10

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

Fluid compressibility was estimated using figures L-30 and L-31 on page 338. 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 HISOTRY FOR A MINIMUM OF ONE MONTH PRECEDING THE FALLOFF TEST

The following table summarizes data acquired with HFNR well monitoring equipment.

TABLE 2
MAY AND JUNE INJECTION DATA

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
5/1/2020	1050.541	55.14	761.031
5/2/2020	1037.764	44.82	763.037
5/3/2020	1039.403	42.64	781.115
5/4/2020	1037.750	42.47	796.569
5/5/2020	1035.408	40.91	799.438
5/6/2020	1060.809	44.49	811.770
5/7/2020	1118.492	56.36	845.456
5/8/2020	1075.153	50.79	761.675
5/9/2020	1043.074	44.74	657.391
5/10/2020	1125.023	57.27	718.963
5/11/2020	1112.741	54.78	737.625
5/12/2020	1041.863	41.17	669.138
5/13/2020	1039.155	44.21	663.973
5/14/2020	1031.557	43.27	671.549
5/15/2020	1121.591	51.53	787.375
5/16/2020	1057.271	42.07	789.151
5/17/2020	1102.322	58.05	803.894
5/18/2020	1140.768	62.24	859.092
5/19/2020	1020.883	44.04	786.238
5/20/2020	1030.995	44.61	788.852
5/21/2020	1040.266	47.99	819.111
5/22/2020	1041.538	46.34	885.783
5/23/2020	1000.450	41.13	819.004
5/24/2020	1025.046	45.94	813.105
5/25/2020	1025.027	46.20	782.940
5/26/2020	1027.198	46.39	759.994
5/27/2020	1018.794	44.45	710.469
5/28/2020	1000.226	42.15	698.317
5/29/2020	999.193	41.76	719.404
5/30/2020	988.720	40.07	678.779
5/31/2020	1022.760	46.40	706.092
6/1/2020	1046.484	49.73	745.742
6/2/2020	1010.154	43.73	463.436
6/3/2020	1000.017	41.50	345.262
6/4/2020	921.145	22.06	400.580

Date	Injection Pressure (psi)	Injection Rate (gpm)	Annulus Pressure (psi)
6/5/2020	821.023	0.00	441.278

8. CUMULATIVE INJECTION INTO THE FORMATION FROM TEST WELL

The cumulative volume of waste injected into this well since operations began, based on HFNR records, is 28,638,373 barrels (1,202,811,666 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 2/7/2019 (Gauge #242117) and 5/15/2019 (Gauge #242560). Attempts have been made to recertify these gauges, but due to logistical issues related to the coronavirus pandemic, attempts have been unsuccessful. However, these gauges have had limited hours of use since they were last certified. The most recent calibration certificates are provided in Attachment 2. The data collected using the two gauges is in close agreement, indicating that the gauges continue to function properly.

   The bottom gauge (Serial Number - 242117) was utilized for analysis. The bottom gauge was hung at 7,570 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 3. 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 17.

There are two wells within the AOR that were plugged and abandoned within the past year. These wells are identified in Table 3 below. The IDs referenced in this table refer to the list of wells provided in Attachment 3. No new wells have been drilled within the AOR in the last year.

TABLE 3
WELLS PLUGGED WITHIN AOR

ID	Operator	Well Name	API	Well Type	Section	Township	Range	Lat Long	Date Plugged
4	APACHE CORPORATION	EMPIRE ABO UNIT #018A	30-015-00706	Oil	1	18S	27E	32.7769661 -104.2342606	9/20/2019
26	APACHE CORPORATION	EMPIRE ABO UNIT #171	30-015-22815	Oil	1	18S	27E	32.7709618 -104.2395248	10/24/2019

a. **Wells Located Within the One-mile AOR -** The wells located within the one-mile AOR are provided as Attachment 3. 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 3, 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 (ID - 6) operated by Apache Corporation, and the Federal T SWD #1 (ID - 76) 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.

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, two of which are completed in the same interval, WDW-1 and WDW-3. Only WDW-3 is listed in Attachment 3 since WDW-1 is not within the 1-mile AOR surrounding WDW-2. WDW-3 is AOR number 36 in Attachment 3. No changes have occurred to either of these wells since testing last year.

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 high permeability system, and are not considered to have had a significant 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.

c. **Describe the impact, if any, of the offset wells during both the injection and shut-in portions of the test -** There was no significant impact on the character of the falloff test and the development of a useful test from these offset injectors. 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 June 3 through 5, 2020.

b. **Time of the injection period -** Constant-rate injection occurred for approximately 52 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 4,181.9 psia (at 7,570 feet BGL) and the injection rate was 41.2 gpm (1,412.6 bpd) with a measured bottom hole temperature of 102.2 °F.

e. **Total shut-in time -** The well was shut-in for approximately 42 hours for testing.

f. **Final static pressure and temperature at the end of the falloff portion of the test -** At the conclusion of the test, the final bottom hole pressure was 4,043.7 psia and the final bottom hole temperature was 107.8 °F. Following the conclusion of the test, the gauges were pulled out of the hole, and sinker bars were run in on wireline to find the top of fill. Fill was tagged at 8,355 feet BGL (8,342 feet KB). Positive wellhead pressure was present throughout the test.

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.

a. **Radius of test investigation -** The radius of investigation for this test was determined to be 6,487 feet.

b. **Time to beginning of the infinite acting portion of the test -** The time at which the test began to display attributes of radial flow was approximately 18.3 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 this radial period, as determined by the semi-log plot, was 1.00178 psi/cycle.

d. **Transmissibility (kh/μ) -** The transmissibility was determined to be 229,281 md-ft/cp.

e. **Permeability (k) -** The permeability was determined to be 825 md.

f. **Skin Factor (s) -** The skin factor was determined to be 149.4 units.

g. **Pressure drop due to skin (ΔP_{skin}) -** The pressure drop due to skin was determined to be 130.1 psi

h. **Flow efficiency -** The flow efficiency was determined to be 0.06.

i. **Flow capacity (kh) -** The flow capacity (permeability-thickness) was determined to be 144,447 md-ft.

j. **P_{1hr} -** The extrapolated pressure at 1-hr was determined to be 4,045.3 psi.

TABLE 5
FALLOFF TEST ANALYSIS INPUT VALUES

Parameter	Value	Unit
Formation Thickness, h	175	feet
Porosity, Φ	10	percent
Viscosity, μ	0.63	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}	4,181.9	psia
Final Injection Rate, q_{final}	1,412.6 41.2	bwpd (gpm)
Horner Straight Line Slope, m	1.00178	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 the end of May (28,632,989 barrels) by the final injection rate (41.2 gpm). This resulted in a value of 486,482.8 hours. This value of 486,482.8 hours of injection at 41.2 gpm was used in conjunction with the injection data collected from the beginning of June through the end of testing. The total waste volume injected up to the time of shut-in utilized for calculations was 1,202,811,666 gallons (28,638,373 bbls).

To determine the mobility-thickness (transmissibility), the following equation was utilized. The resulting transmissibility was 229,281 md-ft/cp.

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

Where,

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

and 162.6 is a units conversion constant

$$\frac{kh}{\mu} = Transmissibility = 162.6\frac{1{,}412.6 * 1.0}{1.00178} = 229{,}281\frac{md-ft}{cp}$$

The transmissibility was then used to determine the permeability thickness. The resulting permeability-thickness was 144,447 md-ft.

$$kh = \left(\frac{kh}{\mu}\right)\mu = 229{,}280\left(\frac{md-ft}{cp}\right)0.63\ cp = 144{,}447\ md-ft$$

The permeability thickness was then used to determine the permeability of the reservoir. The resulting permeability was 825 md.

$$k = \frac{kh}{h} = \frac{144{,}447 md-ft}{175\ ft} = 825\ md$$

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 1,710 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

$$r_{waste} = \sqrt{\frac{0.13368 * (1{,}202{,}811{,}666)}{\pi * 175 * 0.10}} = 1{,}710\ feet$$

Based on this radius, the time for a pressure transient to travel through this fluid can be calculated. The resulting time was 2.65 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

$$t_{waste} = 948\frac{0.10 * 0.71 * 11.10E-06 * (1{,}710)^2}{825} = 2.65\ hours$$

Based on this result, and the time it took for radial flow to be reached (18.3 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 149.4 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

$$s = 1.151\left(\frac{4{,}181.9 - 4045.3}{1.00178} - log\left(\frac{825}{0.10 * 0.63 * 10.90E-06 * 0.3281^2}\right) + 3.23\right)$$
$$= 149.4$$

The change in pressure, due to skin, in the wellbore can be calculated using the following equation. The result of this calculation was 130.1 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

$$\Delta P_{skin} = 0.869 * 1.00178 * 149.4 = 130.1\ psi$$

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 0.06.

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

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

$$FE = \frac{4{,}181.9 - 130.1 - 4{,}043.7}{4{,}181.9 - 4{,}043.7} = 0.06$$

The test radius of investigation (r_{inv}) can be determined using the following equation. The result of this calculation was 6,487 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

$$r_{inv} = 0.029\sqrt{\frac{850 * 41.65}{0.1 * 0.63 * 10.90E-06}} = 6{,}487\ feet$$

No pressure or temperature anomalies were observed during testing. Based on examination of the log-log diagnostic plot the test reached middle-time with what appears to be radial flow approximately 18.3 hours after shutting the well in. Early-time data was dominated by wellbore storage for more than the first hour of the test. The test has been analyzed based on the reasonable assumption that a period of radial flow exists in the data. Figures 9, 10 and 11 present a simple analysis consistent with the pseudo straight-line analysis equations presented in the preceding text. Figures 12 through 14 present a simulation analysis generated for a homogenous isotropic radial flow system using the average pseudo-rate discussed earlier in this report up until May 1 to account for historical injection and actual rate data from May 1 until test shut-in. The simulation analysis generally supports the more simplistic graphical analysis that relies upon the semi-log slope.

There is noise evident in the log-log plots (Figures 9 and 13), and it is possible that multi-layer effects and cross-flow may be impacting the data toward the end of the test. Toward the end of the test it is possible that a late-time period may be developing where the effects of heterogeneity or offset injection may be starting to influence the test. However, the substantial permeability-thickness of this injection zone yield small pressure changes during both middle- and late-time periods of the test that generate a somewhat noisy derivative even with the high-resolution gauges used to collect the pressure-transient data. The character of the fall-off data and the derivative are similar to the patterns evident in previous testing of this well.

The following figures are provided:

- Figure 6 - Cartesian Plot of Pressure, Temperature and Rate vs. Time
- Figure 7 - Full Rate History Plot
- Figure 8 - Cartesian Plot of Pressure Falloff
- Figure 9 - Log-log Derivative Plot
- Figure 10 - Semi-log Horner Plot
- Figure 11 - Semi-log Horner Plot, Radial Zoom
- Figure 12 - Cartesian Plot of Pressure Falloff with Model Match
- Figure 13 - Log-log Derivative Plot with Model Match
- Figure 14 - Semi-log Horner Plot with Model Match
- Figure 15 - Daily Injection Rate History for Month Prior to Test Plot
- Figure 16 - Hall Plot

As specified by OCD requirements, a Hall Plot (Figure 16) 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 (May of 2020). The slope of the data is fairly linear, and this linearity is consistent with no significant changes in well condition taking place during this time period. Based on this observed linear trend, there are no current concerns noted with regard to well or reservoir performance.

Table 6 contains all historical well test analysis results, including the results from the test this year.

TABLE 6
HISTORICAL AMBIENT RESERVOIR TESTING

Year	Fill Depth (feet)	Permeability (md)	Mobility-thickness (md-ft/cp)	Skin (units)	P* (psia)
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 June 5, the annulus was pressured to 480.6 psi. The well had been shut in for approximately 44 hours prior to the test, ensuring thermal equilibrium. A calibrated digital pressure gauge (Crystal XP2i 5,000 psi, SN - 901241) supplied by Petrotek was installed on the annulus at the wellhead. The well and test gauge were then isolated from the rest of the system and annulus pressure was then monitored for a period of thirty minutes at 5-minute intervals. During the test the pressure decreased by 0.5 psi. Since a change of 10% (48.1 psi) of the test pressure is allowable, this test is within acceptable specifications.

Attachment 6 presents a copy of the gauge certification. Attachment 4 contains the digital data collected during the APT. Pressures were observed as follows during testing.

TABLE 7
ANNULUS PRESSURE TEST MEASUREMENTS

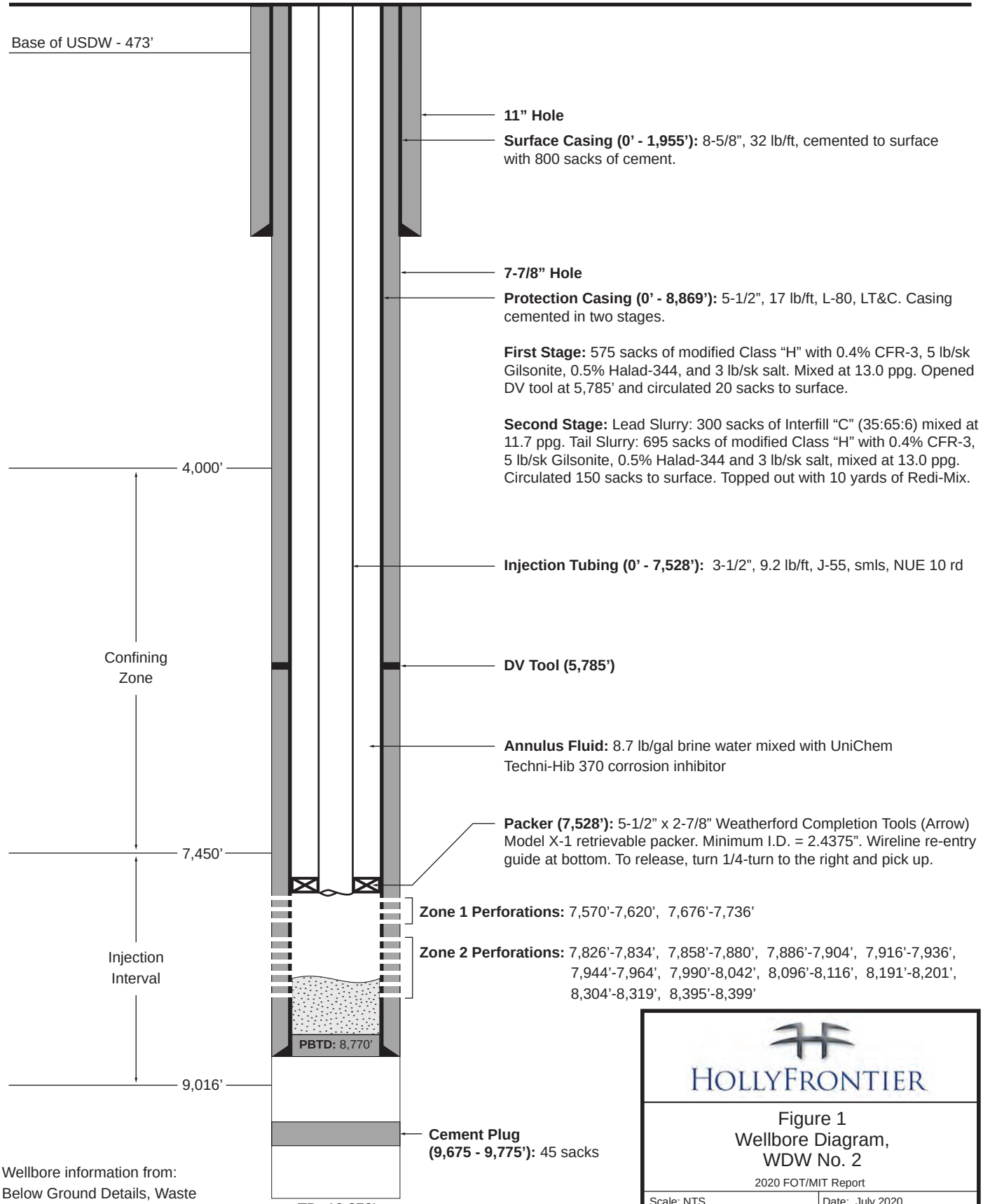
Time, Minutes	0	5	10	15	20	25	30
Pressure, Psi	480.6	480.5	480.4	480.3	480.3	480.2	480.1

FIGURES

Petrotek

OCD UIC Permit: UICI-008-2
Well API Number: 30-015-20894
Sec. 12, T18S, R27E - Eddy County, New Mexico
SHL: Lat. 32.763772°, Long. -104.238508°

All depths are referenced to the Kelly bushing elevation 13' above ground level. Ground level elevation is 3,610' above mean sea level.



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

NOT TO SCALE

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Figure 1
Wellbore Diagram,
WDW No. 2

2020 FOT/MIT Report

Scale: NTS	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_01.pdf	By: WEK	Checked: RW

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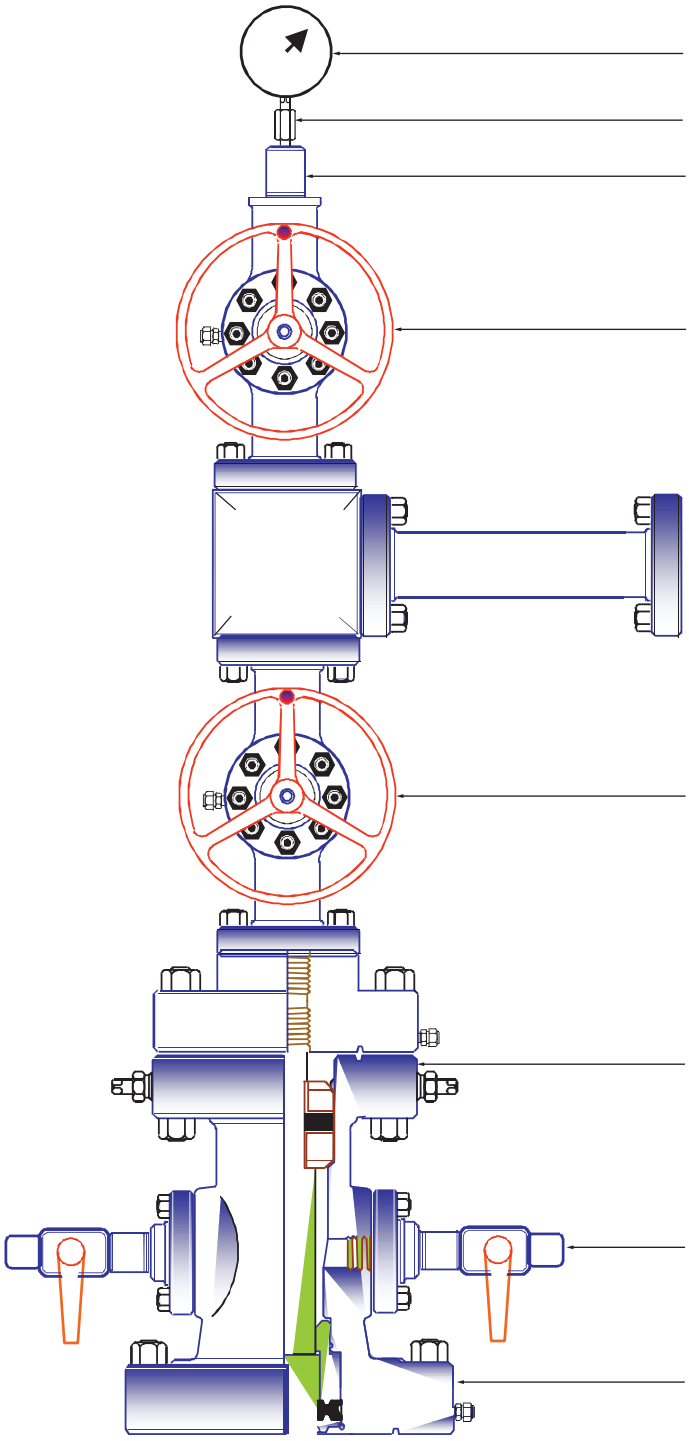
Well API Number: 30-015-20894
Sec. 12, T18S, R27E - Eddy County, New Mexico
SHL: Lat. 32.763772°, Long. -104.238508°



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

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Figure 2
Wellhead Diagram,
WDW No. 2

2020 FOT/MIT Report

Scale: NTS	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_02.pdf	By: WEK	Checked: RW

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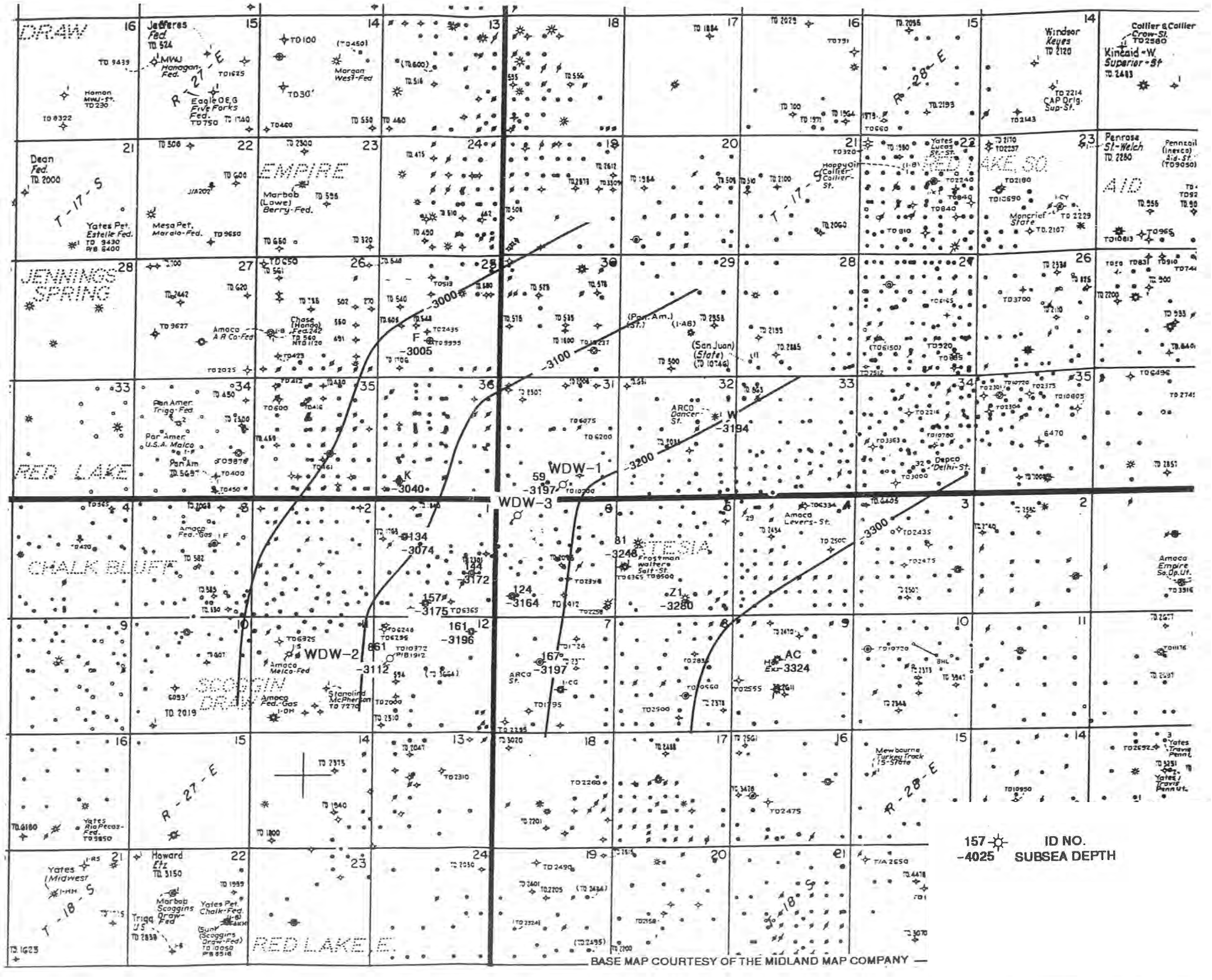

Adapted from Navajo Refining Co., Attachment VIII-12,
Structure - Top of Wolfcamp Formation, Envirocorp, 1998.

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Figure 3
Wolfcamp Formation Structure Map

2020 FOT/MIT Report

Contour Interval = 100'	Date: June 2020	
2020_HF_Artesia_FOT_MIT_Fig_03.pdf	By: WEK	Checked: RW

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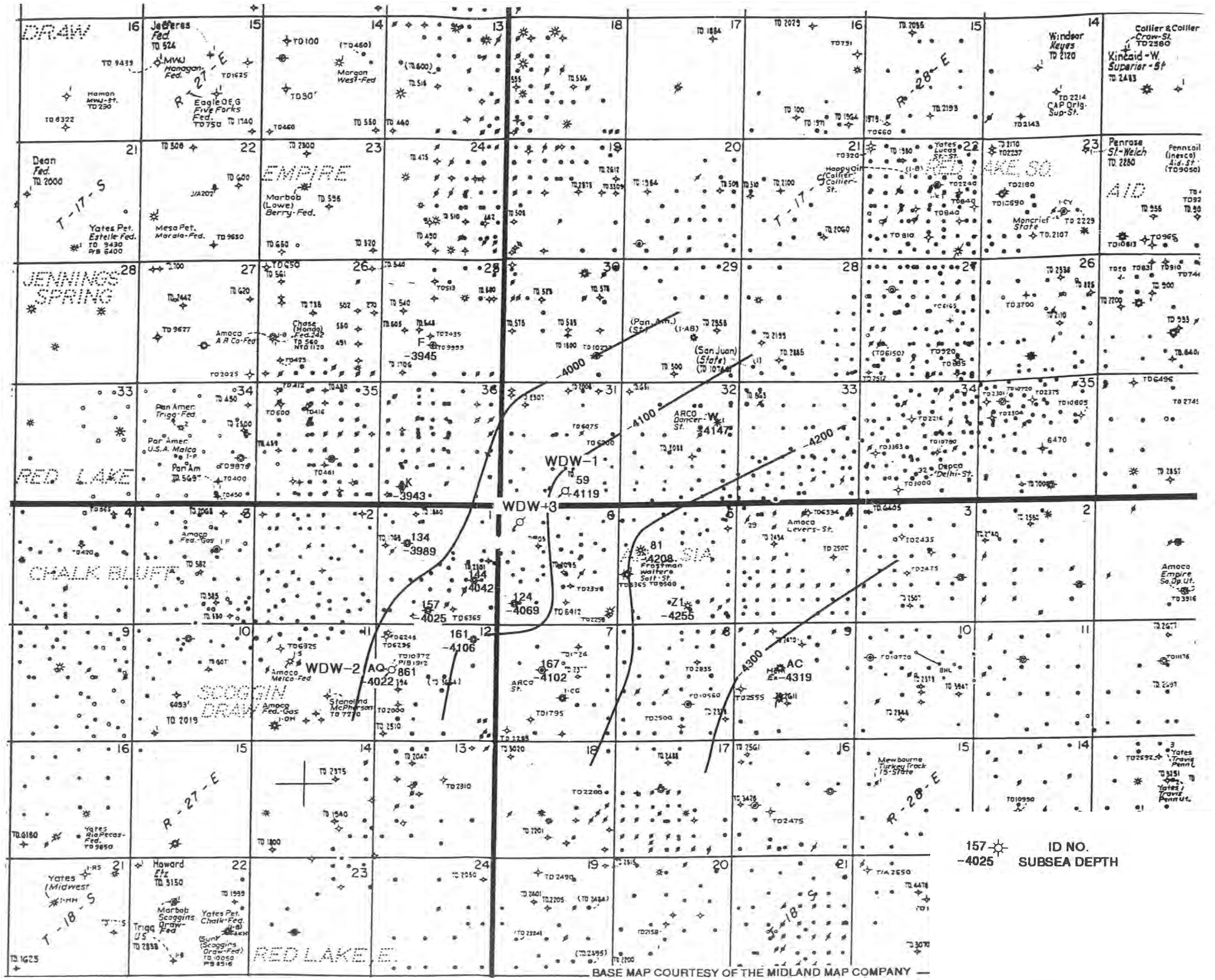

Adapted from Navajo Refining Co., Attachment VIII-13, Structure - Top of Cisco Formation, Envirocorp, 1998.

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Figure 4
Cisco Formation Structure Map

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Contour Interval = 100'	Date: June 2020	
2020_HF_Artesia_FOT_MIT_Fig_04.pdf	By: WEK	Checked: RW

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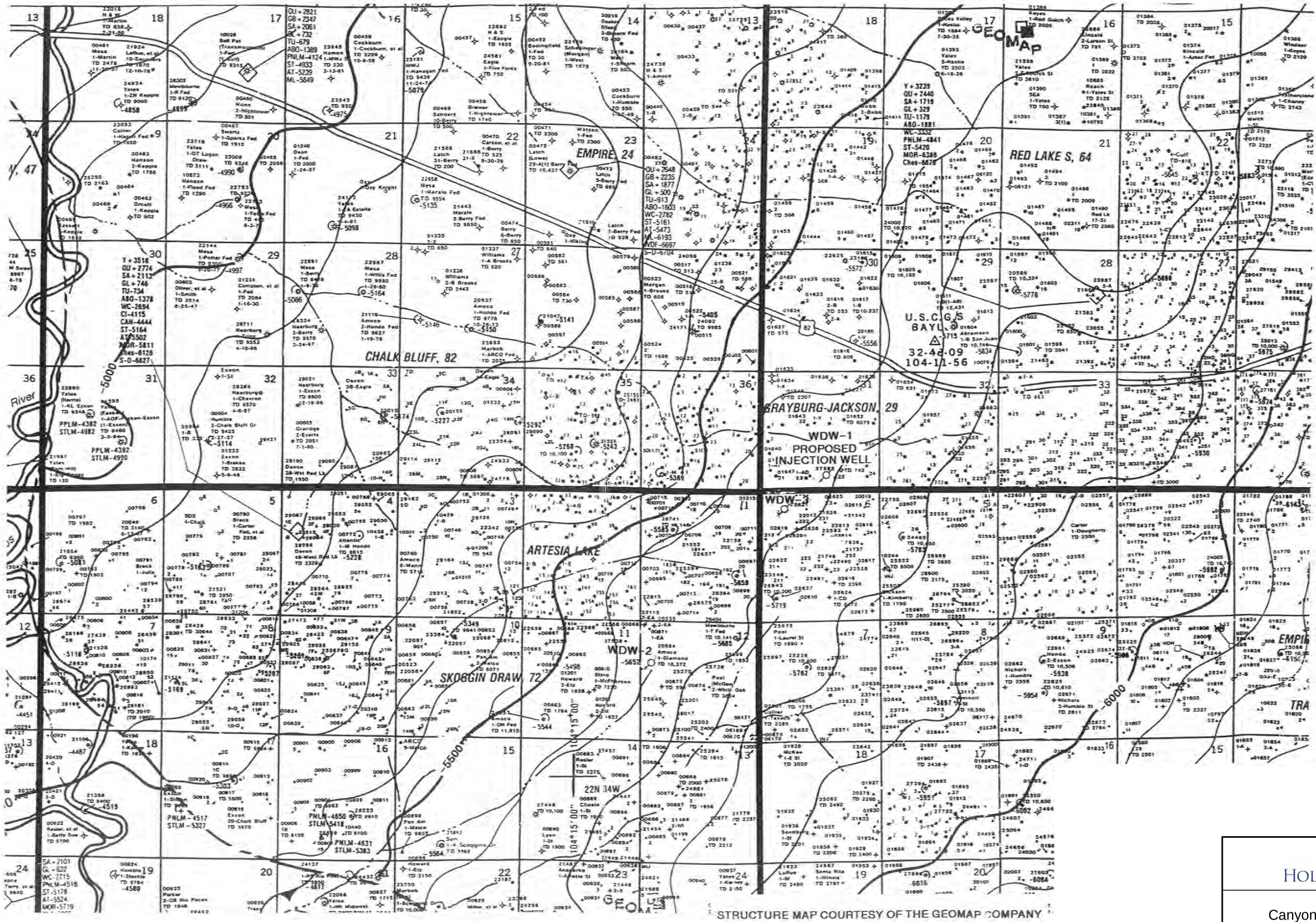

STRUCTURE MAP COURTESY OF THE GEOMAP COMPANY
Poster July 1997

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

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Figure 5
Canyon/Strawn Formation
Structure Map
2020 FOT/MIT Report

Contour Interval = 100'	Date: June 2020	
2020_HF_Artesia_FOT_MIT_Fig_05.pdf	By: WEK	Checked: RW

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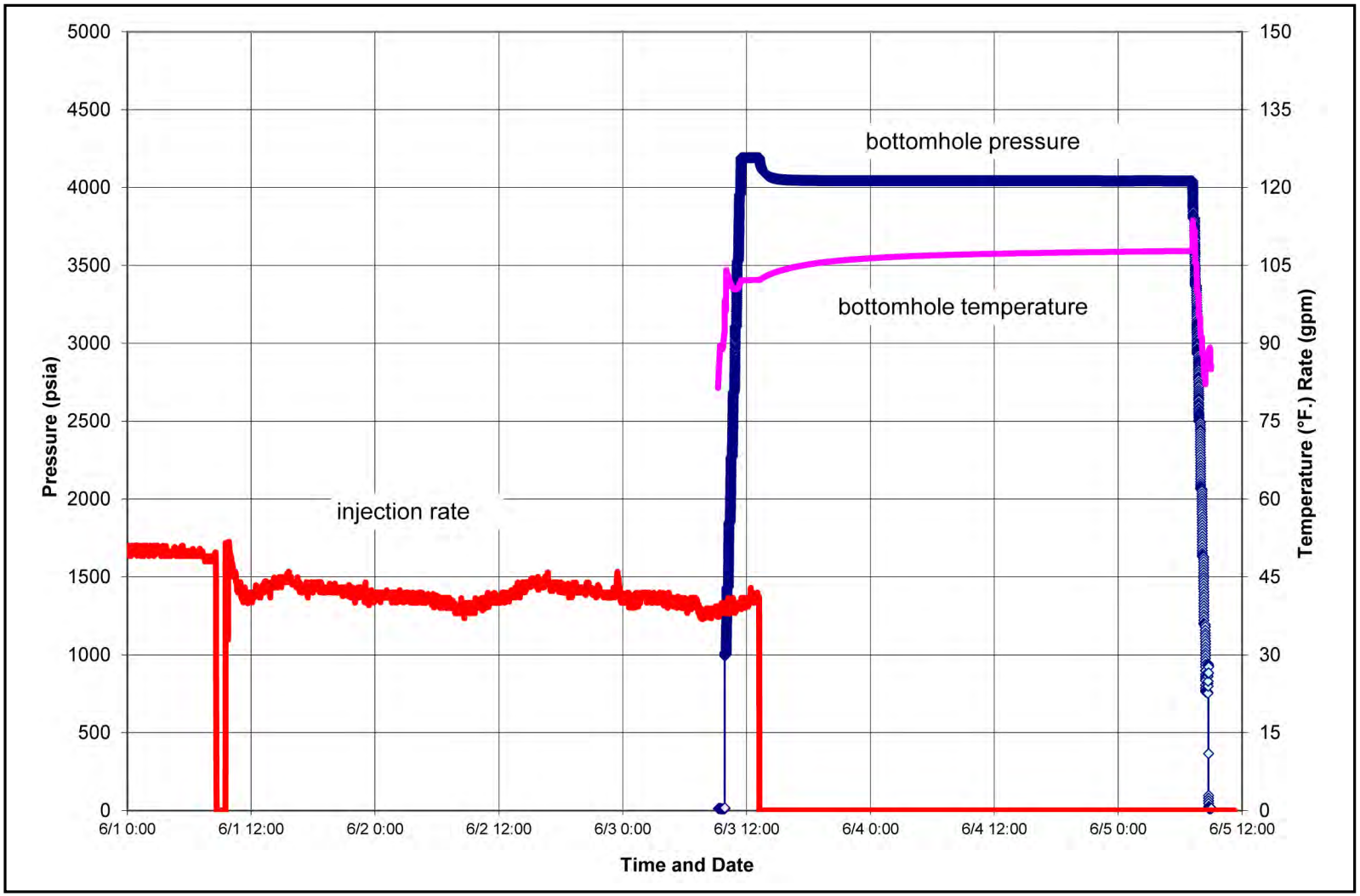

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Figure 6
Cartesian Plot of Pressure, Temperature and Rate vs. Time
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Scale: See Figure Scale	Date: June 2020	
2020_HF_Artesia_FOT_MIT_Fig_06.pdf	By: RW	Checked: KC

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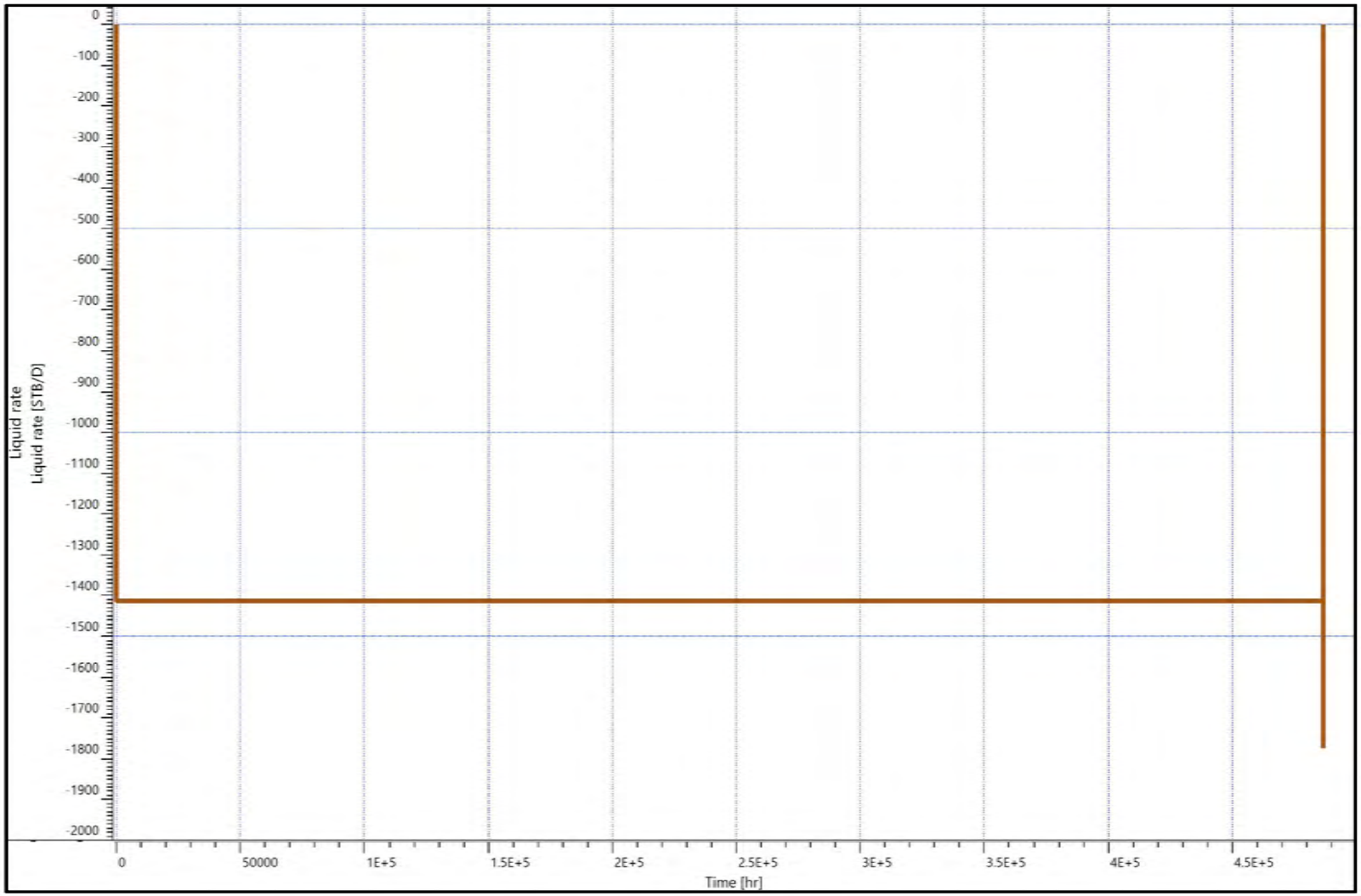

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Figure 7
Full Rate History Plot

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Scale: See Figure Scale	Date: June 2020	
2020_HF_Artesia_FOT_MIT_Fig_07.pdf	By: RW	Checked: KC

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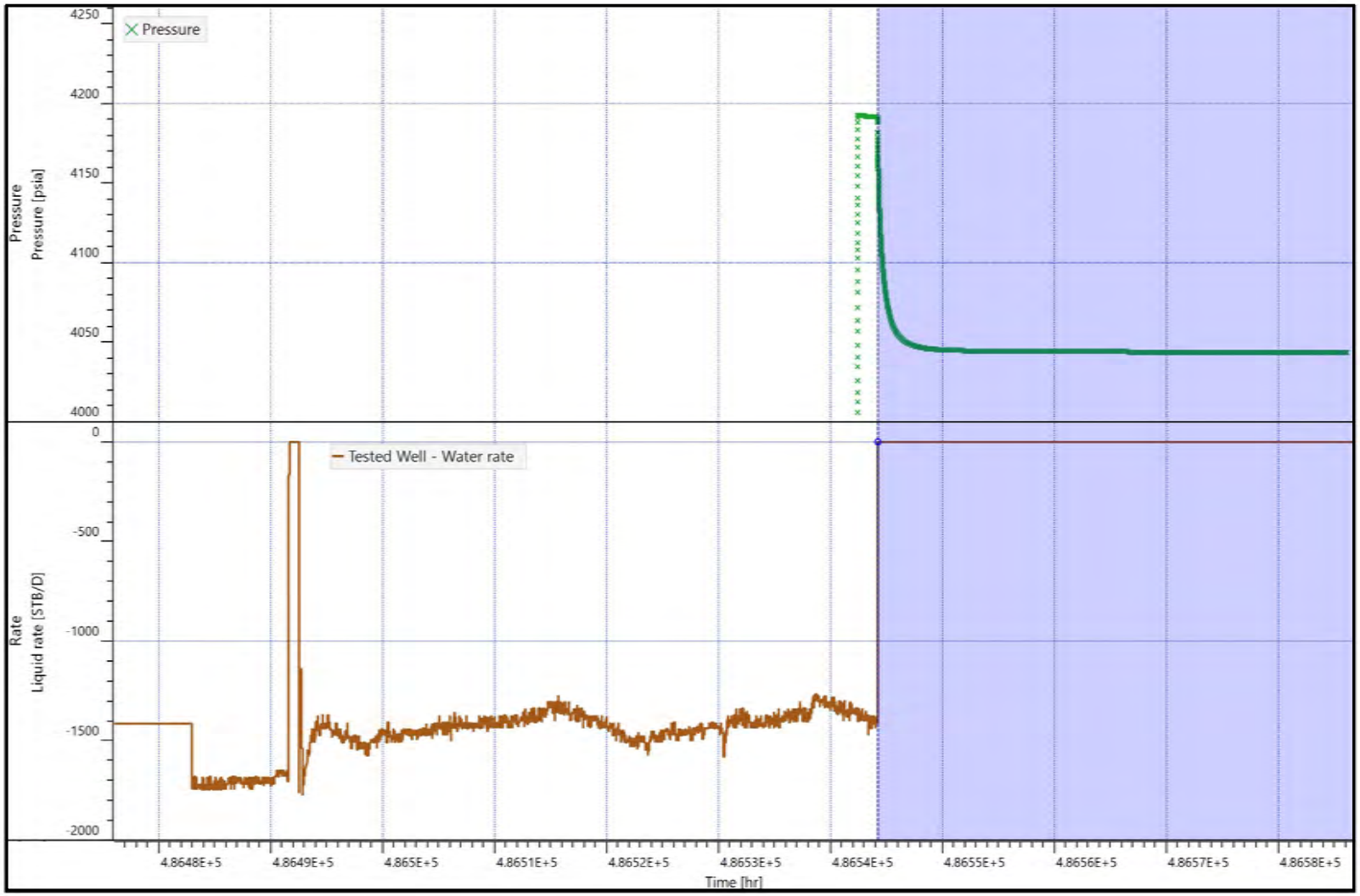

Reservoir and Test Information		
Pwf =	4181.97	psia
Thickness =	175	ft
Porosity =	10	Percent
Viscosity =	0.63	centipoise
Compressibility =	10.90E-06	psi-1
Final Injection Rate =	1412.6 (41.2)	bwpd (gpm)
Po (at 7,570' BGL) =	3379.40	psia
P* =	4039.62	psia

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Figure 8
Cartesian Plot of Pressure Falloff

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Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_08.pdf	By: RW	Checked: KC

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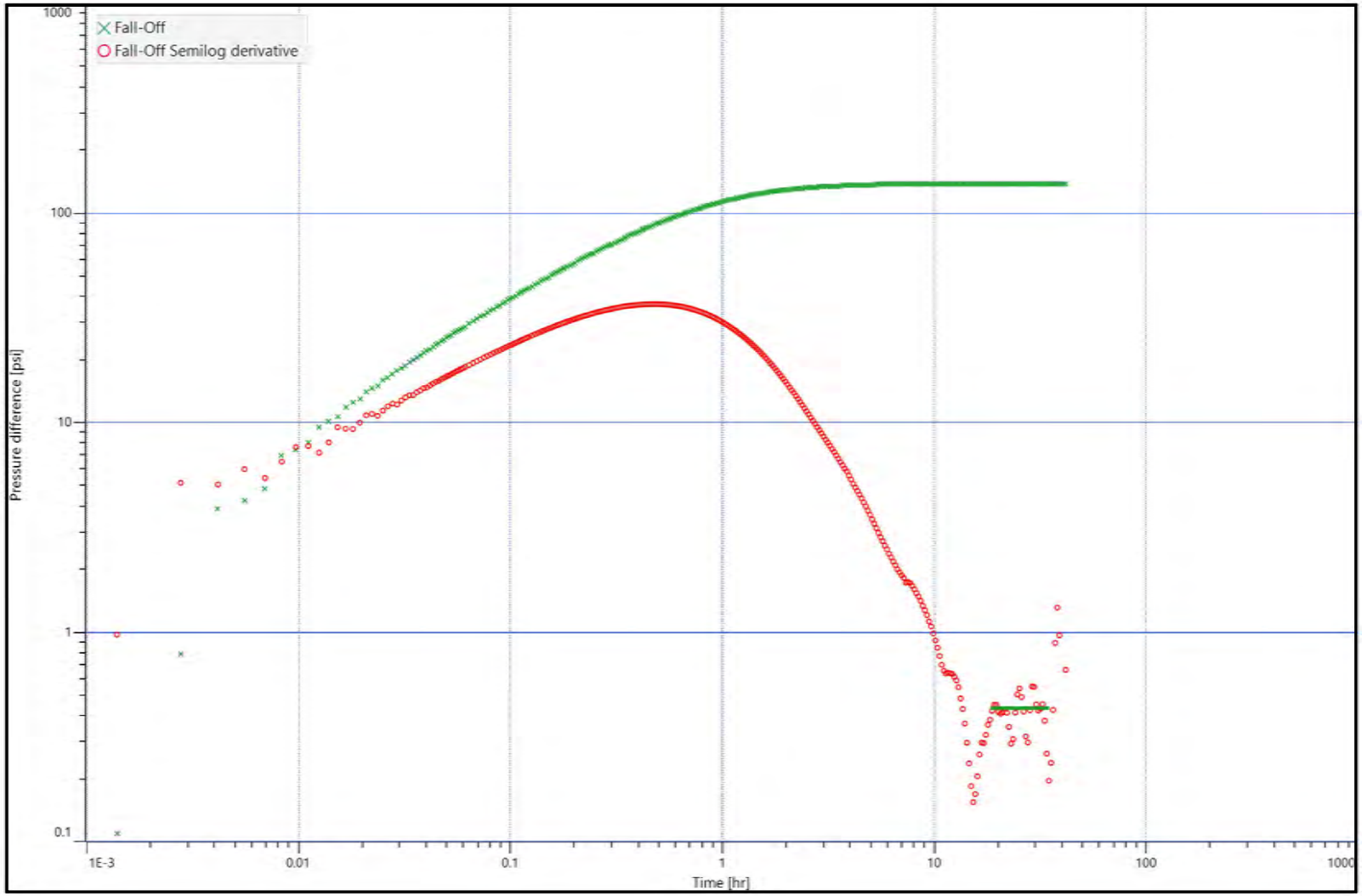

Analysis Information		
Pwf =	4181.97	psia
P* =	4039.62	psia
Thickness =	175	ft
Transmissibility =	144,447	md-ft
Mobility =	229,281	md-ft/cp
Permeability =	825	md
Skin =	149.4	

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Figure 9
Log-Log Derivative Plot

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Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_09.pdf	By: RW	Checked: KC

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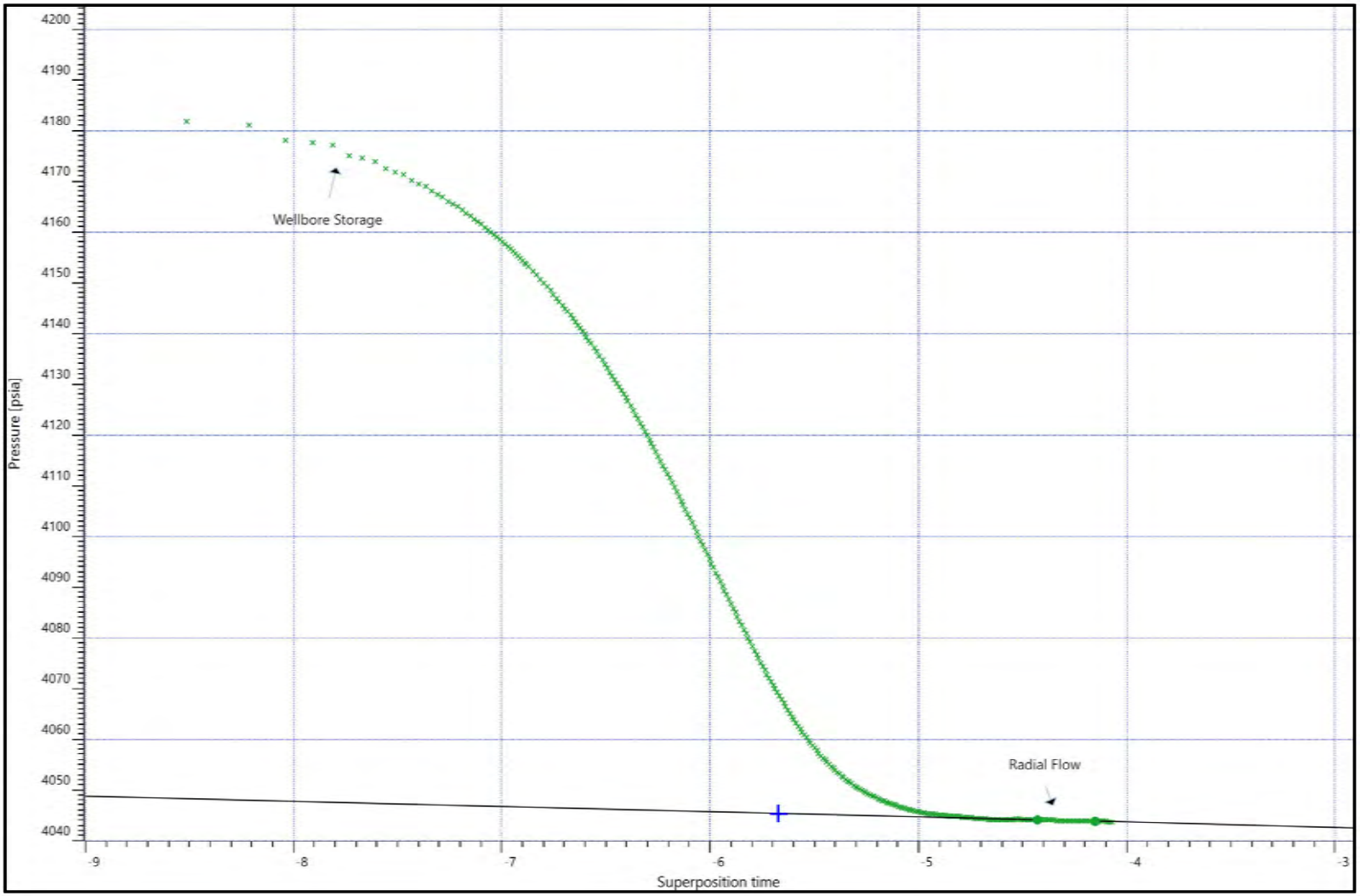

Analysis Information		
Pwf =	4181.97	psia
Start Time of Line =	18.3111	hr
End Time of Line =	34.7014	hr
Slope of Line =	1.00178	psi
P at 1 hour, line =	4045.3	psia
P at 1 hour, raw =	4068.65	psia
P end of Radial =	4043.78	psia
P* =	4039.62	psia
Thickness =	175	ft
Transmissibility =	144,447	md-ft
Mobility =	229,281	md/cp
Permeability =	825	md
Skin =	149.4	

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Figure 10
Semi-Log Horner Plot

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Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_10.pdf	By: RW	Checked: KC

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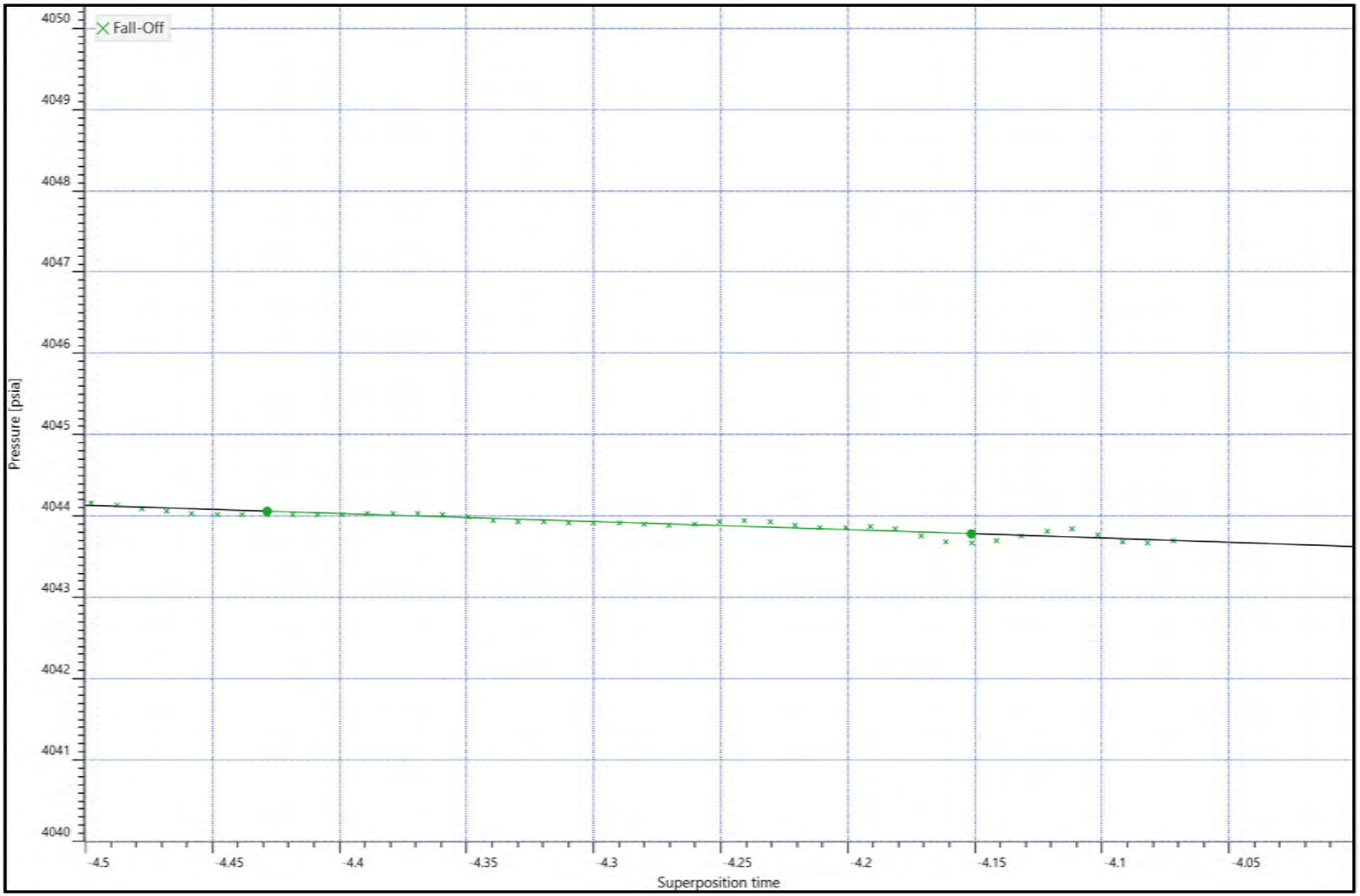

Analysis Information		
Pwf =	4181.97	psia
Start Time of Line =	18.3111	hr
End Time of Line =	34.7014	hr
Slope of Line =	1.00178	psi
P at 1 hour, line =	4045.3	psia
P at 1 hour, raw =	4068.65	psia
P end of Radial =	4043.78	psia
P* =	4039.62	psia
Thickness =	175	ft
Transmissibility =	144,447	md-ft
Mobility =	229,281	md/cp
Permeability =	825	md
Skin =	149.4	

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Figure 11
Semi-Log Horner Plot, Radial Zoom

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Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_11.pdf	By: RW	Checked: KC

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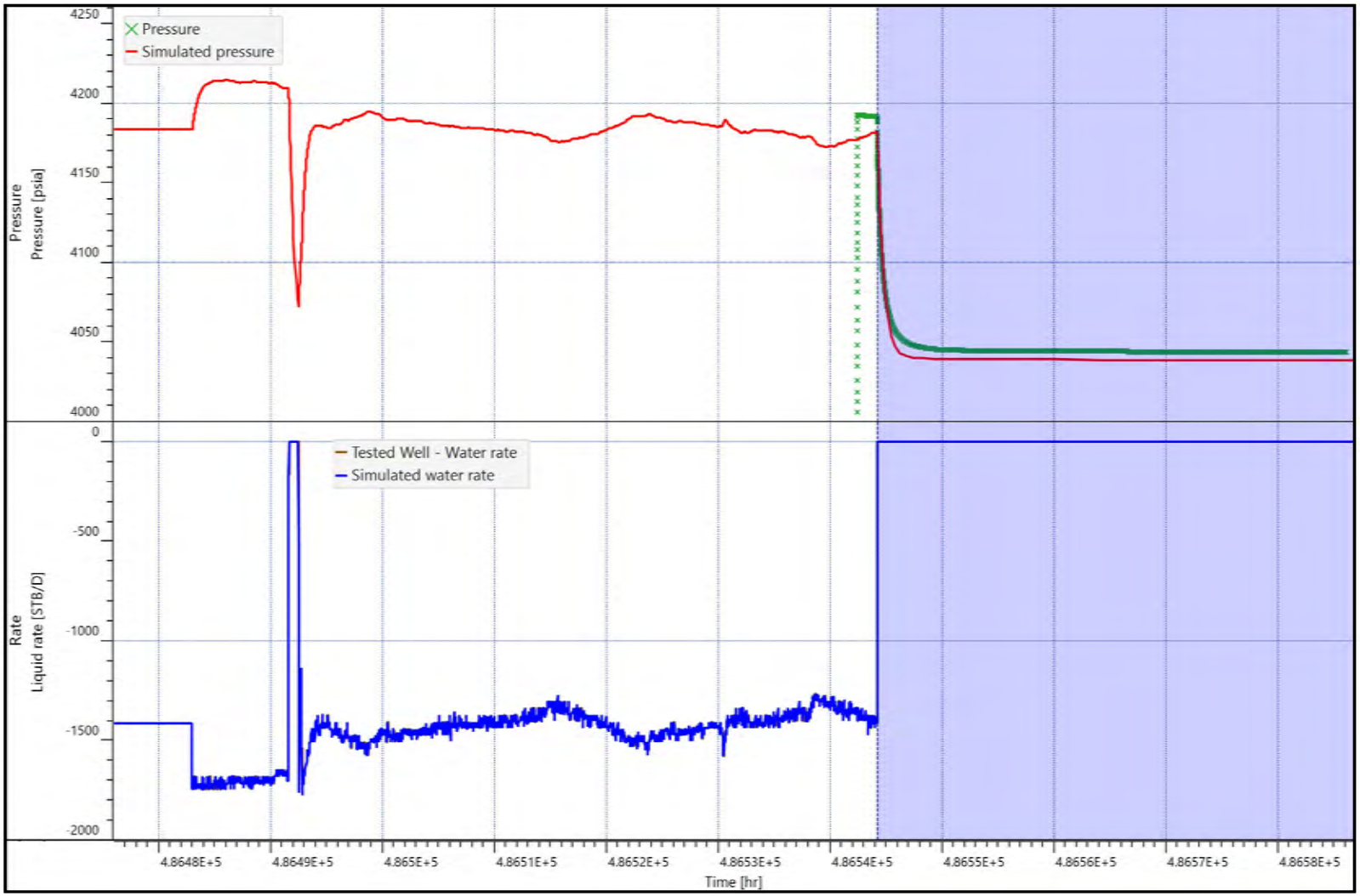

Reservoir and Test Information		
Pwf =	4181.97	psia
Thickness =	175	ft
Porosity =	10	Percent
Viscosity =	0.63	centipoise
Compressibility =	10.90E-06	psi-1
Final Flow Rate =	1412.6 (41.2)	bwpd (gpm)
Po (at 7,570' BGL) =	3379.40	psia
Pi =	4034.40	psia

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Figure 12
Cartesian Plot of Pressure Falloff with Model Match
2020 FOT/MIT Report

Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_12.pdf	By: RW	Checked: KC

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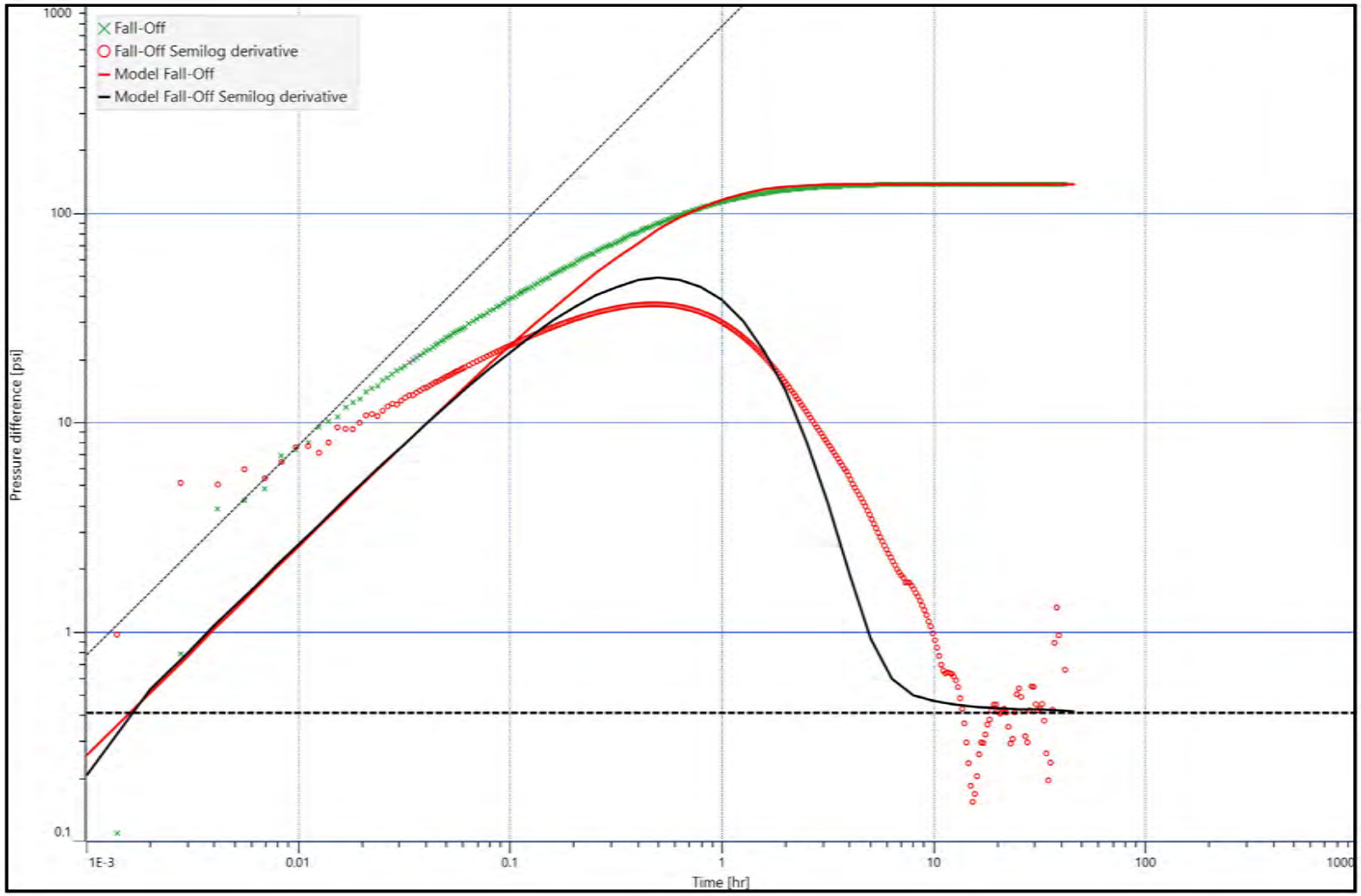

Analysis Information		
Pwf =	4181.97	psia
Pi =	4034.40	psia
Thickness =	175	ft
Transmissibility =	153,326	md-ft
Mobility =	243,375	md-ft/cp
Permeability =	876	md
Skin =	175.0	

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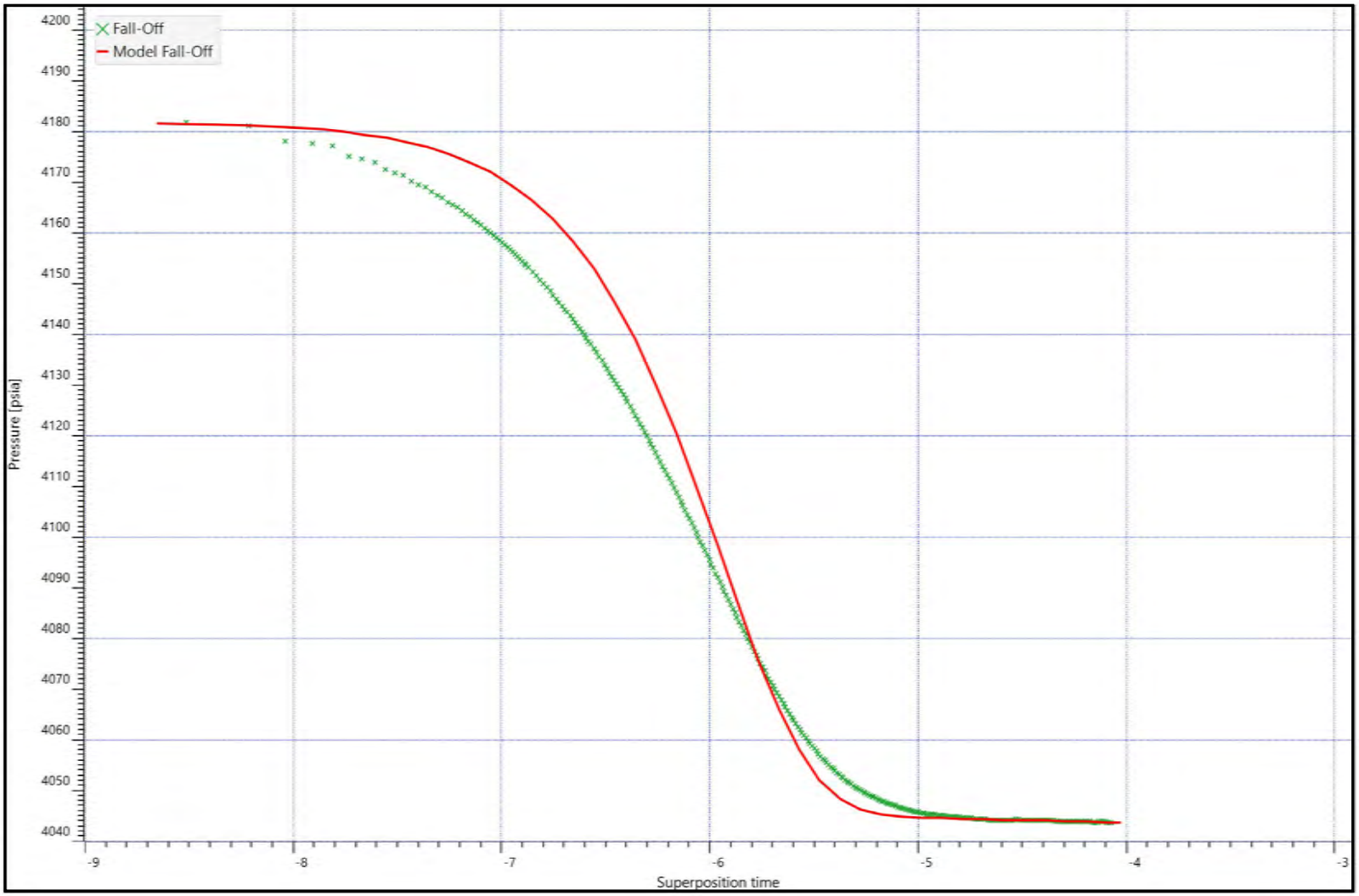
Figure 13
Log-Log Derivative Plot
with Model Match
2020 FOT/MIT Report

Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_13.pdf	By: RW	Checked: KC

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



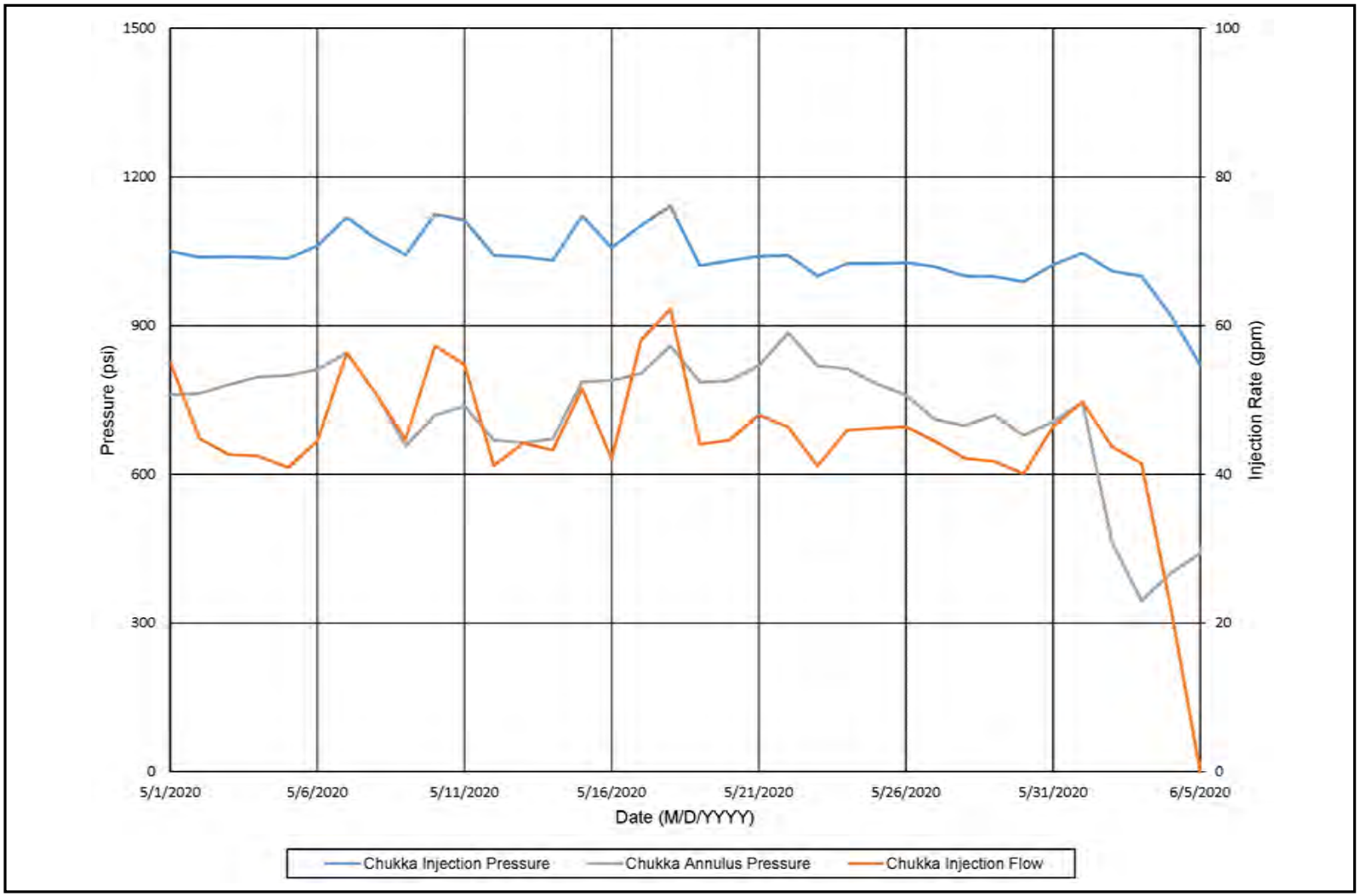
Analysis Information		
Pwf =	4181.97	psia
Pi =	4034.40	psia
Thickness =	175	ft
Transmissibility =	153,326	md-ft
Mobility =	243,375	md/cp
Permeability =	876	md
Skin =	175	

HOLLYFRONTIER

Figure 14
Semi-Log Horner Plot
with Model Match
2020 FOT/MIT Report

Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_14.pdf	By: RW	Checked: KC

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

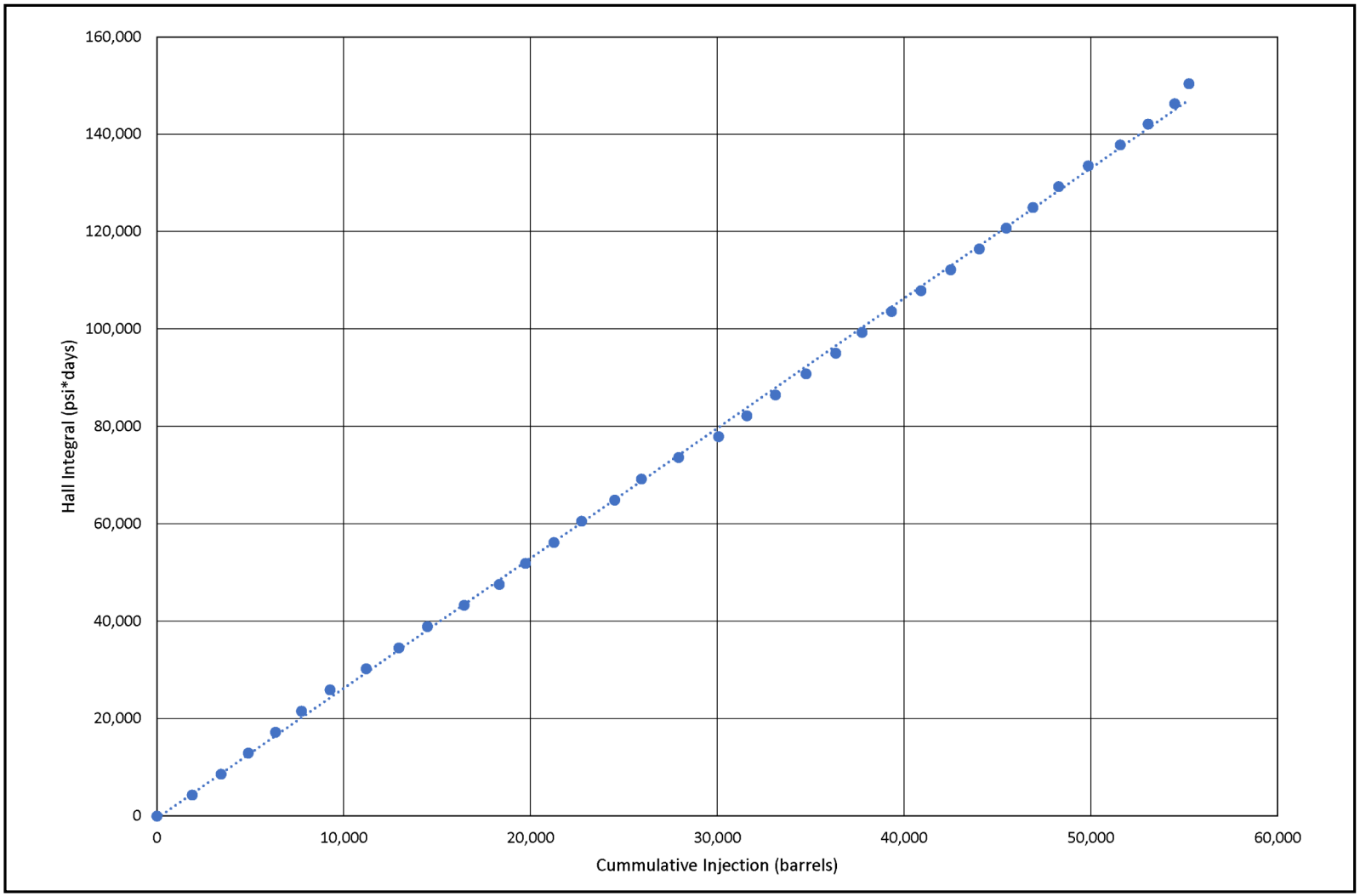


HOLLYFRONTIER

Figure 15
Daily Injection Rate History
for Month Prior to Test Plot
2020 FOT/MIT Report

Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_15.pdf	By: RW	Checked: KC

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



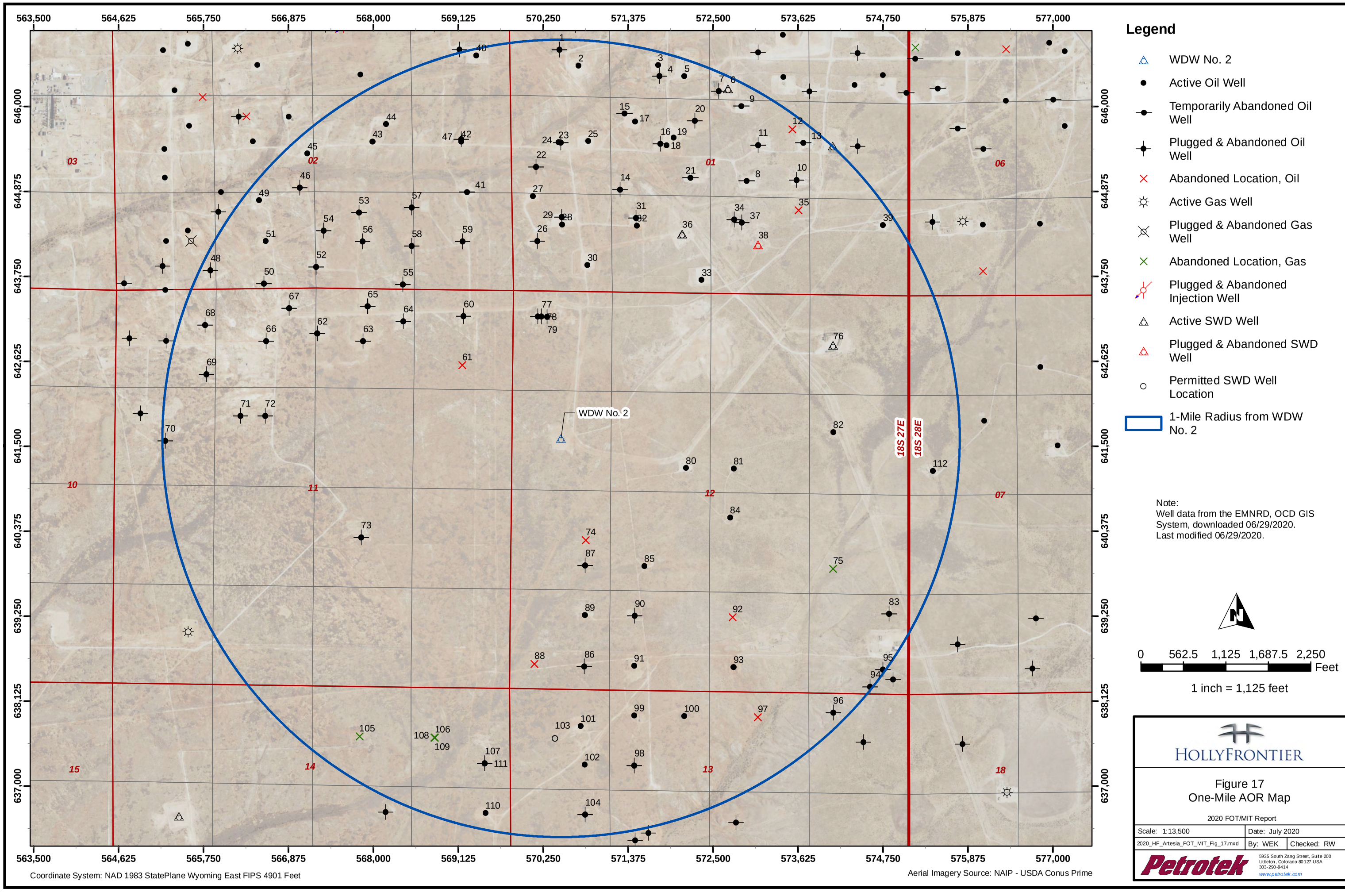
HOLLYFRONTIER

Figure 16
Hall Plot

2020 FOT/MIT Report

Scale: See Figure Scale	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_16_REV_071320.pdf	By: RW	Checked: KC

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



Legend

- WDW No. 2
- Active Oil Well
- Temporarily Abandoned Oil Well
- Plugged & Abandoned Oil Well
- Abandoned Location, Oil
- Active Gas Well
- Plugged & Abandoned Gas Well
- Abandoned Location, Gas
- Plugged & Abandoned Injection Well
- Active SWD Well
- Plugged & Abandoned SWD Well
- Permitted SWD Well Location
- 1-Mile Radius from WDW No. 2

Note:
Well data from the EMNRD, OCD GIS System, downloaded 06/29/2020.
Last modified 06/29/2020.

N

0 562.5 1,125 1,687.5 2,250 Feet

1 inch = 1,125 feet

Coordinate System: NAD 1983 StatePlane Wyoming East FIPS 4901 Feet

Aerial Imagery Source: NAIP - USDA Conus Prime

HOLLYFRONTIER

Figure 17
One-Mile AOR Map

2020 FOT/MIT Report

Scale: 1:13,500	Date: July 2020	
2020_HF_Artesia_FOT_MIT_Fig_17.mxd	By: WEK	Checked: RW

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

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 ☒ 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

8. Well Number: WDW-2

2. Name of Operator
HOLLYFRONTIER NAVAJO REFINERY LLC

9. OGRID Number: 15694

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

10. Pool name or Wildcat
PENN 9681

4. Well Location
Unit Letter_E_____1,980____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 FALLOFF TEST / MIT	☒			OTHER:			☐

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

May 24, 2020; Day 1: Begin constant-rate injection (+/- 10%) 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.
M**ay 25, 2020; Day 2:** Continue constant-rate injection into all four (4) wells.
May 26, 2020; 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.
May 27, 2020; Day 4: WDW-2 will remain shut-in while collecting falloff pressure data using downhole memory gauges.
May 28, 2020; 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_____ TITLE__Env. Spec._____DATE_____5/18/2020_____

Type or print name _____L.R. Dade_____ E-mail address: _Lewis.Dade@hollyfrontier.com_ PHONE: 575-746-5281__

For State Use Only

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

Attachment 2
Downhole Pressure Gauge Certification

Petrotek

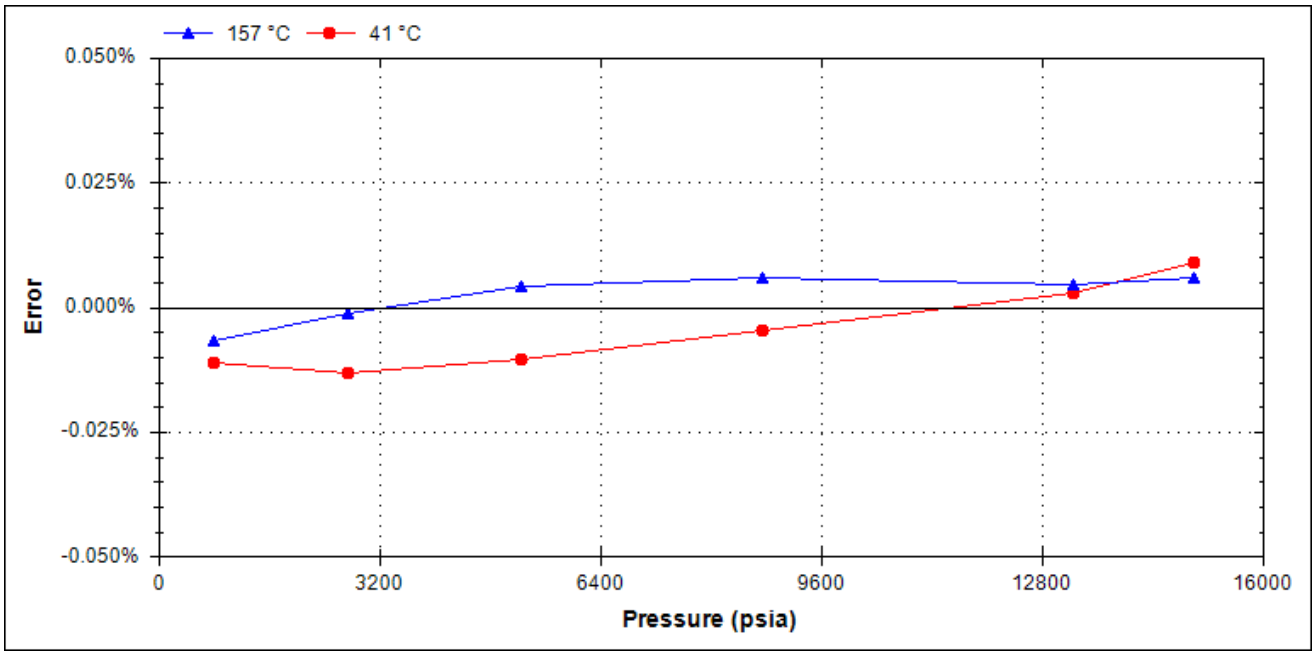
DataCan

"The Next Generation of Down Hole Tools"

Calibration Date:	07-Feb-19	**Calibration System:**	CALIBRATION02
Max Pressure Error:	0.013% F.S.	**Batch Number:**	20190204.163024
Max Temperature Error:	0.194 °C		
Part Number:	100229		
Serial Number:	242117		

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

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



Working Standards

Sun Electronic Systems Environmental Chamber, Model: EC127, Serial: EC0063
DHI Instruments Pressure Controller, Model: PPCH-200M (30,000psi Reference), Serial: 1894

Traceability Statement

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

Approved By:
DataCan Services Corp.

Calibrated By:
Angelo Pulido

DataCan

Quartz Transducer

SO 53177 Shipping Date Feb 7, 2019

Cal Certificate

Certificate Date: Feb 7, 2019

Serial Number: 242117

Max P: 16000 Pressure Error: 0.013 % FS

Max T: 177 Temperature Error: 0.194 °C

- ☐ Flash Drive Loaded
- ☒ Calibration files
- ☒ USB cable functions

Tool Info

- ☒ Serial Number
- ☒ Max P
- ☒ Max T

Calibration Date: Feb 7, 2019

Part Marking

- ☒ Serial Number
- ☒ Max P
- ☒ Max T

Utilities - Diagnostics - Start Sampling

Pressure: 12.251 psia

Temperature: 21.304 degC

Current Draw: mA

☒ Checked By: Renato Herrera Feb 7, 2019

7465 45 Avenue Close | Red Deer, AB | Canada T4P 4C2

www.datacan.ca P 1.403.352.2245 E info@datacan.ca

Gauge Parts

Arrived	Left
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

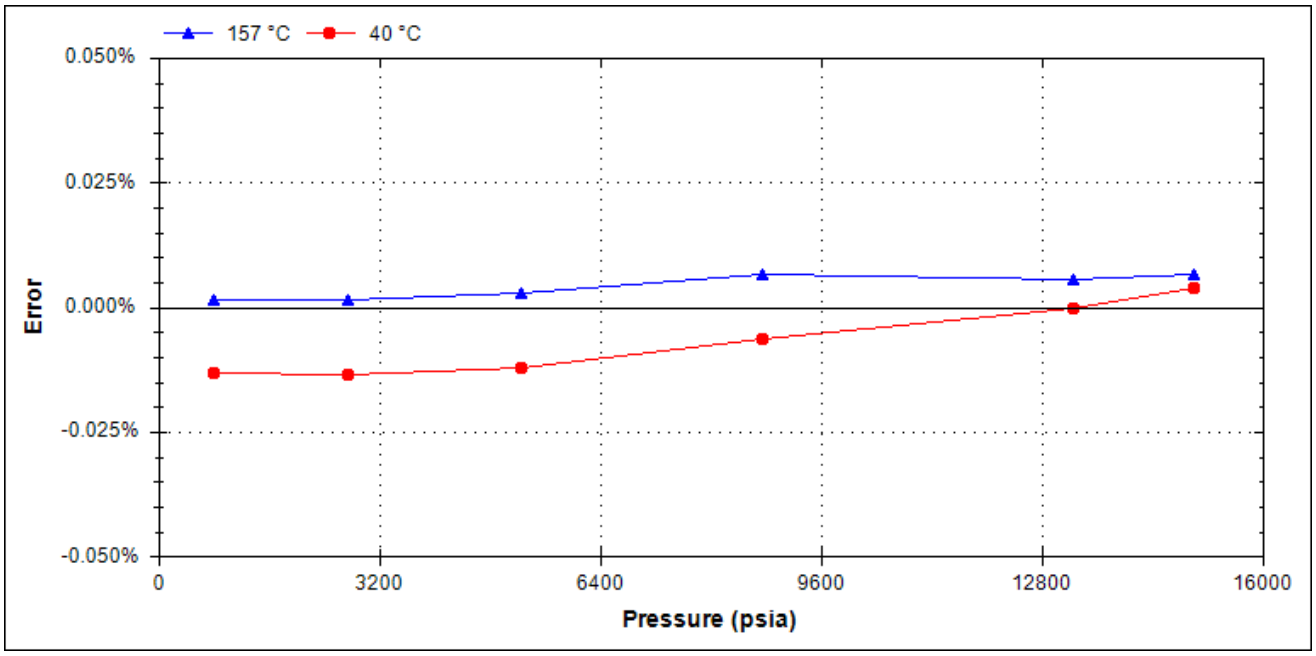
DataCan

"The Next Generation of Down Hole Tools"

Calibration Date:	15-May-19	**Calibration System:**	CALIBRATION03
Max Pressure Error:	0.014% F.S.	**Batch Number:**	20190412.085316
Max Temperature Error:	0.104 °C		
Part Number:	100229		
Serial Number:	242560		

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

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



Working Standards

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

Traceability Statement

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

Approved By:
DataCan Services Corp.

Calibrated By:
Angelo Pulido

DataCan

Quartz Transducer

SO 54250 Shipping Date May 15, 2019

Cal Certificate

Certificate Date: May 15, 2019

Serial Number: 242560

Max P: 16000 Pressure Error: 0.014 % FS

Max T: 177 Temperature Error: 0.104 °C

- ☐ Flash Drive Loaded
- ☒ Calibration files
- ☒ USB cable functions

Tool Info

- ☒ Serial Number
- ☒ Max P
- ☒ Max T

Calibration Date: May 15, 2019

Part Marking

- ☒ Serial Number
- ☒ Max P
- ☒ Max T

Utilities - Diagnostics - Start Sampling

Pressure: 19.231 psia

Temperature: 20.468 degC

Current Draw: mA

☒ Checked By: Renato Herrera May 15, 2019

7465 45 Avenue Close | Red Deer, AB | Canada T4P 4C2

www.datacan.ca P 1.403.352.2245 E info@datacan.ca

Gauge Parts

Arrived	Left
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐
☐	☐

Attachment 3
AOR Well List

Petrotek

ID	Operator	Well Name	API	Well Type	Well Status	Section	Township	Range	Quarter	Lat	Long	Date Comp or Plug
1	ARCO OIL & GAS	EMPIRE UNIT J NO. 17	30-015-00704	Oil	P&A	1	18S	27E	E	32.7779198	-104.2385712	2/18/1987
2	APACHE CORPORATION	AAO FEDERAL #020	30-015-42036	Oil	Active	1	18S	27E	E	32.7773361	-104.2377472	4/10/2014
3	APACHE CORPORATION	AAO FEDERAL #006	30-015-34071	Oil	Active	1	18S	27E	F	32.7773552	-104.2343216	7/6/2005
4	APACHE CORPORATION	EMPIRE ABO UNIT #018A	30-015-00706	Oil	P&A	1	18S	27E	F	32.7769661	-104.2342606	9/20/2019
5	APACHE CORPORATION	AAO FEDERAL #019	30-015-42051	Oil	Active	1	18S	27E	F	32.7769547	-104.2331848	4/2/2014
6	APACHE CORPORATION	AAO FEDERAL SWD #001	30-015-42549	SWD	Active	1	18S	27E	G	32.7764969	-104.2313004	10/24/2014
7	APACHE CORPORATION	EMPIRE ABO UNIT #191	30-015-21552	Oil	P&A	1	18S	27E	G	32.7764168	-104.2316971	7/23/2013
8	APACHE CORPORATION	EMPIRE ABO UNIT #194	30-015-22658	Oil	TA	1	18S	27E	J	32.7731323	-104.2304916	1/11/2011
9	APACHE CORPORATION	EMPIRE ABO UNIT #193	30-015-22657	Oil	TA	1	18S	27E	J	32.775856	-104.2307205	1/11/2011
10	APACHE CORPORATION	EMPIRE ABO UNIT #191A	30-015-21873	Oil	P&A	1	18S	27E	J	32.7731781	-104.2283478	5/19/2017
11	APACHE CORPORATION	EMPIRE ABO UNIT #019Q	30-015-00696	Oil	P&A	1	18S	27E	J	32.7744484	-104.2300034	7/12/2013
12	MACK ENERGY CORP	SUN DEVILS FEDERAL #001	30-015-36281	Oil	AL	1	18S	27E	J	32.77501396	-104.2285288	8/23/2012
13	APACHE CORPORATION	EMPIRE ABO UNIT #192	30-015-22560	Oil	TA	1	18S	27E	J	32.77451	-104.22807	1/11/2011
14	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #181	30-015-21554	Oil	P&A	1	18S	27E	K	32.7728348	-104.2359467	4/17/2003
15	APACHE CORPORATION	EMPIRE ABO UNIT #183	30-015-22096	Oil	TA	1	18S	27E	K	32.775589	-104.2357635	1/11/2011
16	APACHE CORPORATION	EMPIRE ABO UNIT #018B	30-015-00707	Oil	P&A	1	18S	27E	K	32.774498	-104.2342148	6/7/2017
17	APACHE CORPORATION	AAO FEDERAL #026	30-015-42338	Oil	Active	1	18S	27E	K	32.7753067	-104.2353058	6/10/2014
18	APACHE CORPORATION	AAO FEDERAL #027	30-015-42359	Oil	Active	1	18S	27E	K	32.7744408	-104.2339478	7/3/2014
19	APACHE CORPORATION	AAO FEDERAL #010	30-015-34576	Oil	Active	1	18S	27E	K	32.7747116	-104.2336349	6/2/2006
20	APACHE CORPORATION	EMPIRE ABO UNIT #184	30-015-22559	Oil	P&A	1	18S	27E	K	32.7753334	-104.2327194	7/18/2013
21	APACHE CORPORATION	EMPIRE ABO UNIT #182	30-015-21792	Oil	TA	1	18S	27E	K	32.7732544	-104.2329254	1/11/2011
22	WILLIAM 7 EDWARD HUDSON	HILL NO. 1	30-015-00695	Oil	P&A	1	18S	27E	L	32.7736549	-104.2395706	NA
23	APACHE CORPORATION	AAO FEDERAL #009	30-015-34387	Oil	Active	1	18S	27E	L	32.7745514	-104.2386093	11/7/2005
24	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017A	30-015-00703	Oil	P&A	1	18S	27E	L	32.7745476	-104.2385101	3/19/2009
25	APACHE CORPORATION	AAO FEDERAL #025	30-015-42361	Oil	Active	1	18S	27E	L	32.7745895	-104.2373352	6/23/2014
26	APACHE CORPORATION	EMPIRE ABO UNIT #171	30-015-22815	Oil	P&A	1	18S	27E	M	32.7709618	-104.2395248	10/24/2019
27	APACHE CORPORATION	AAO FEDERAL #030	30-015-42360	Oil	Active	1	18S	27E	M	32.7725868	-104.2397156	7/20/2014
28	APACHE CORPORATION	AAO FEDERAL #011	30-015-34555	Oil	Active	1	18S	27E	M	32.771553	-104.2384644	2/15/2006
29	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #017B	30-015-00705	Oil	P&A	1	18S	27E	M	32.7718277	-104.238472	7/21/2004
30	APACHE CORPORATION	AAO FEDERAL #029	30-015-42339	Oil	Active	1	18S	27E	M	32.7700844	-104.2373657	6/16/2014
31	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #018D	30-015-00713	Oil	P&A	1	18S	27E	N	32.771801	-104.2352676	9/27/2003
32	APACHE CORPORATION	AAO FEDERAL #012	30-015-34998	Oil	Active	1	18S	27E	N	32.7715149	-104.2352448	8/13/2006
33	APACHE CORPORATION	AAO FEDERAL #028	30-015-42358	Oil	Active	1	18S	27E	N	32.7695351	-104.2324524	7/12/2014
34	ARCO OIL & GAS	EMPIRE ABO #5	30-015-20388	Oil	P&A	1	18S	27E	N	32.7717361	-104.2310333	NA
35	ARCO OIL & GAS	EMPIRE ABO UNIT L #192	30-015-22816	Oil	AL	1	18S	27E	N	32.77206135	-104.228269	5/17/1979
36	NAVAJO REFINING COMPANY, L.L.C.	WDW #003	30-015-26575	SWD	Active	1	18S	27E	N	32.7712135	-104.233284	12/22/1990
37	ARCO OIL & GAS	EMPIRE ABO Unit L #19	30-015-20394	Oil	P&A	1	18S	27E	O	32.7716331	-104.2307129	1/2/1992
38	ARCO PERMIAN	EMPIRE ABO UNIT #191	30-015-00698	SWD	P&A	1	18S	27E	O	32.7708168	-104.2300034	12/8/1989
39	APACHE CORPORATION	EMPIRE ABO UNIT #020B	30-015-00699	Oil	Active	1	18S	27E	P	32.7715225	-104.2246323	11/16/1961
40	LIME ROCK RESOURCES II-A, L.P.	STATE H #002	30-015-35814	Oil	Active	2	18S	27E	H	32.77771	-104.2421494	10/31/2007
41	APACHE CORPORATION	EMPIRE ABO UNIT #161	30-015-22914	Oil	TA	2	18S	27E	I	32.7727356	-104.2425537	1/11/2011
42	APACHE CORPORATION	EMPIRE ABO UNIT #016	30-015-00717	Oil	Active	2	18S	27E	I	32.7745781	-104.2428055	3/29/1959
43	APACHE CORPORATION	EMPIRE ABO UNIT #015	30-015-00716	Oil	Active	2	18S	27E	J	32.7745819	-104.2466202	2/11/1959
44	APACHE CORPORATION	SCBP STATE #001	30-015-32946	Oil	Active	2	18S	27E	J	32.7752151	-104.2460403	3/13/2005
45	APACHE CORPORATION	EMPIRE ABO UNIT #143A	30-015-22896	Oil	Active	2	18S	27E	K	32.774147	-104.2494278	4/15/1979
46	APACHE CORPORATION	EMPIRE ABO UNIT #141A	30-015-22051	Oil	P&A	2	18S	27E	K	32.7729111	-104.2497482	12/21/2011
47	ARCO OIL & GAS	HUDSON "B" STATE 1	30-015-00726	Oil	P&A	2	18S	27E	L	32.77467	-104.2428	8/18/1980
48	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #132	30-015-21807	Oil	P&A	2	18S	27E	M	32.7699051	-104.2536087	6/22/2009
49	APACHE CORPORATION	EMPIRE ABO UNIT #143	30-015-22609	Oil	Active	2	18S	27E	N	32.7724457	-104.2515182	11/26/1978

ID	Operator	Well Name	API	Well Type	Well Status	Section	Township	Range	Quarter	Lat	Long	Date Comp or Plug
50	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #142	30-015-22608	Oil	P&A	2	18S	27E	N	32.7694206	-104.2513046	9/9/2009
51	APACHE CORPORATION	EMPIRE ABO UNIT #014	30-015-00730	Oil	Active	2	18S	27E	N	32.7709618	-104.2512283	9/21/1958
52	APACHE CORPORATION	EMPIRE ABO UNIT #152	30-015-21825	Oil	P&A	2	18S	27E	O	32.7700233	-104.249054	12/27/2011
53	APACHE CORPORATION	EMPIRE ABO UNIT #155	30-015-22885	Oil	P&A	2	18S	27E	O	32.7719994	-104.2472076	1/3/2012
54	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #154	30-015-22669	Oil	P&A	2	18S	27E	O	32.7713432	-104.2487411	6/30/2009
55	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153	30-015-22013	Oil	P&A	2	18S	27E	O	32.7693863	-104.2453156	10/30/2008
56	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015A	30-015-00731	Oil	P&A	2	18S	27E	O	32.7709541	-104.2470474	2/12/2009
57	APACHE CORPORATION	EMPIRE ABO UNIT #151	30-015-21544	Oil	P&A	2	18S	27E	O	32.7721901	-104.2449265	1/6/2012
58	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #156	30-015-22808	Oil	P&A	2	18S	27E	O	32.7707863	-104.2449265	10/7/2009
59	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016A	30-015-00722	Oil	P&A	2	18S	27E	P	32.7709503	-104.2427521	2/23/2009
60	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #016C	30-015-00869	Oil	P&A	11	18S	27E	A	32.7682266	-104.2427063	1/24/2007
61	MEWBOURNE OIL CO	CHALK BLUFF "11" FEDERAL #1	30-015-27538	Oil	AL	11	18S	27E	A	32.76643631	-104.2427608	11/7/1994
62	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #152B	30-015-22569	Oil	P&A	11	18S	27E	B	32.7676048	-104.2490082	10/2/2008
63	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #015C	30-015-00868	Oil	P&A	11	18S	27E	B	32.7673264	-104.2470322	7/16/2004
64	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #151B	30-015-22568	Oil	P&A	11	18S	27E	B	32.7680397	-104.2453003	8/16/2006
65	BP AMERICA PRODUCTION COMPANY	EMPIRE ABO UNIT #153B	30-015-22838	Oil	P&A	11	18S	27E	B	32.768589	-104.2468414	12/22/2008
66	ARCO OIL & GAS	EMPIRE ABO UNIT M NO. 14	30-015-00864	Oil	P&A	11	18S	27E	C	32.7673302	-104.2512207	7/31/1980
67	APACHE CORPORATION	EMPIRE ABO UNIT #141B	30-015-22834	Oil	P&A	11	18S	27E	C	32.7685242	-104.2502289	6/22/2017
68	APACHE CORPORATION	EMPIRE ABO UNIT #133B	30-015-22833	Oil	P&A	11	18S	27E	D	32.7679138	-104.2538376	6/22/2017
69	ARCO OIL & GAS	EMPIRE ABO UNIT M NO. 131	30-015-22556	Oil	P&A	11	18S	27E	D	32.7661247	-104.2537766	5/11/1985
70	ARCO OIL & GAS	EMPIRE ABO UNIT N NO. 131	30-015-00866	Oil	P&A	11	18S	27E	E	32.7637062	-104.2555618	12/3/1988
71	ARCO OIL & GAS	MALCO S FEDERAL NO. 1	30-015-20510	Oil	P&A	11	18S	27E	F	32.7646103	-104.2523193	12/5/1985
72	ARCO OIL & GAS	EMPIRE ABO UNIT N NO. 14	30-015-00865	Oil	P&A	11	18S	27E	F	32.7646103	-104.2512589	6/5/1990
73	AMOCO PRODUCTION COMPANY	SMITH MCPHERSON NO. 1	30-015-00870	Oil	P&A	11	18S	27E	J	32.7601814	-104.2471237	6/15/1973
74	MEWBOURNE OIL CO	CHALK BLUFF 12 FED #002	30-015-27727	Oil	AL	12	18S	27E	1	32.76006091	-104.2374456	11/7/1994
75	MEWBOURNE OIL CO	CHALK BLUFF 12 FED #001	30-015-27719	Gas	AL	12	18S	27E	1	32.75900903	-104.2268048	10/12/1993
76	LIME ROCK RESOURCES II-A, L.P.	FEDERAL T SWD #001	30-015-26404	SWD	Active	12	18S	27E	A	32.7671509	-104.2267838	6/28/1990
77	RHONDA OPERATING CO	FEDERAL EA #003	30-015-23115	Oil	P&A	12	18S	27E	D	32.7682114	-104.2393417	12/10/1982
78	RHONDA OPERATING CO	FEDERAL EA #001	30-015-00871	Oil	P&A	12	18S	27E	D	32.7682114	-104.2395096	4/12/1994
79	ROBERT G COX	FEDERAL EA #002	30-015-20535	Oil	P&A	12	18S	27E	D	32.7682076	-104.2390976	8/7/1973
80	BILL L MILLER	CHUKKA FEDERAL #001	30-015-25270	Oil	Active	12	18S	27E	F	32.7626915	-104.2331314	4/22/1985
81	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #009	30-015-25738	Oil	Active	12	18S	27E	G	32.7626648	-104.2310791	4/25/1987
82	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #006	30-015-25099	Oil	Active	12	18S	27E	H	32.7639923	-104.2267838	8/18/1985
83	PICHER 7 GAS	MICHAEL CRONIN NO. 3	30-015-06171	Oil	P&A	12	18S	27E	I	32.7573776	-104.2243881	2/15/1932
84	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #007	30-015-00874	Oil	Active	12	18S	27E	J	32.7608833	-104.2312317	7/27/1948
85	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #002	30-015-25201	Oil	Active	12	18S	27E	K	32.7591209	-104.2349319	3/15/1985
86	JONES & MCKEE	MAGRUDER NO. 1	30-015-00872	Oil	P&A	12	18S	27E	L	32.7554703	-104.2375183	2/16/1943
87	FRED POOL DRILLING, INC.	COMSTOCK FEDERAL NO. 8	30-015-25649	Oil	P&A	12	18S	27E	L	32.7591553	-104.2374725	1/1/1987
88	FRED POOL DRILLING, INC.	COMSTOCK FEDERAL NO. 4	30-015-00873	Oil	AL	12	18S	27E	M	32.75555535	-104.2396583	3/27/1987
89	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #003	30-015-25545	Oil	Active	12	18S	27E	M	32.7573395	-104.2374954	5/19/1986
90	EASTLAND OIL CO	COMSTOCK FEDERAL #010	30-015-26017	Oil	P&A	12	18S	27E	N	32.7573128	-104.2353439	1/23/2003
91	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #001	30-015-25100	Oil	Active	12	18S	27E	N	32.755497	-104.2353668	12/10/1984
92	FRED POOL DRILLING, INC.	COMSTOCK FEDERAL NO. 11	30-015-26018	Oil	AL	12	18S	27E	O	32.75725347	-104.2311203	NA
93	HARLOW ENTERPRISES LLC	COMSTOCK FEDERAL #005	30-015-25202	Oil	Active	12	18S	27E	O	32.7554398	-104.2310867	4/18/1985
94	ROBERT E. MCKEE	MAGRUDER NO. 5	30-015-00876	Oil	P&A	12	18S	27E	P	32.7547264	-104.2251968	8/2/1962
95	CITIES SERVICE OIL COMPANY	MAGRUBER B NO. 4	30-015-00875	Oil	P&A	12	18S	27E	P	32.755352	-104.2246475	6/15/1966
96	EASTLAND OIL CO	STATE NO. 2	30-015-06137	Oil	P&A	13	18S	27E	A	32.7537842	-104.2267914	NA
97	CASA PETROLEUM, INC.	ANADARKO 13 FEDERAL NO. 2	30-015-25111	Oil	AL	13	18S	27E	B	32.7536103	-104.2300415	8/25/1986
98	DALE RESLER	STATE NO. 3	30-015-00884	Oil	P&A	13	18S	27E	C	32.7518692	-104.2353592	3/7/1945

ID	Operator	Well Name	API	Well Type	Well Status	Section	Township	Range	Quarter	Lat	Long	Date Comp or Plug
99	LLJ VENTURES, LLC DBA MARKER OIL & GAS	ARTESIA STATE #001	30-015-25241	Oil	Active	13	18S	27E	C	32.7536812	-104.2353745	4/12/1985
100	LLJ VENTURES, LLC DBA MARKER OIL & GAS	ARTESIA STATE #002	30-015-25394	Oil	Active	13	18S	27E	C	32.7536545	-104.233223	9/28/1985
101	ROVER OPERATING, LLC	ARTESIA STATE UNIT #802	30-015-25370	Oil	Active	13	18S	27E	D	32.7533035	-104.2376785	8/27/1985
102	ROVER OPERATING, LLC	ARTESIA STATE UNIT #801	30-015-00883	Oil	Active	13	18S	27E	D	32.7518959	-104.2375031	12/11/1944
103	LIME ROCK RESOURCES II-A, L.P.	CHOATE DAVIS 13 STATE #003	30-015-45444	SWD	Permitted	13	18S	27E	D	32.7528547	-104.2387836	NA
104	DALE RESLER	JONES STATE NO. 1	30-015-00880	Oil	P&A	13	18S	27E	E	32.7500839	-104.2374878	3/7/1945
106	EOG Y RESOURCES, INC.	VIOLET BIV STATE COM #001	30-015-40187	Gas	AL	14	18S	27E	A	32.7528839	-104.2439575	4/18/2012
107	ANADARKO PETROLEUM CORP	ARTESIA STATE UNIT TRACT 4 NO. 1	30-015-00891	Oil	P&A	14	18S	27E	A	32.7519531	-104.2417984	12/11/1992
108	EOG Y RESOURCES, INC.	VIOLET BIV STATE COM #001A	30-015-34632	Gas	AL	14	18S	27E	A	32.75288478	-104.2439693	2/20/2009
109	EOG Y RESOURCES, INC.	VIOLET BIV STATE COM #001C	30-015-36939	Gas	AL	14	18S	27E	A	32.75288478	-104.2439693	2/23/2012
105	EOG Y RESOURCES, INC.	BEAUREGARD ANP STATE COM #001	30-015-27437	Gas	AL	14	18S	27E	B	32.75292085	-104.2472051	9/17/1993
110	ROVER OPERATING, LLC	ARTESIA STATE UNIT #301	30-015-00895	Oil	Active	14	18S	27E	H	32.7501373	-104.2417831	2/8/1945
111	ANADARKO PETROLEUM CORP	ARTESIA STATE UNIT TRACT 10 NO. 3	30-015-00894	Oil	P&A	14	18S	27E	P	32.7519531	-104.2417984	8/22/1975
112	LLJ VENTURES, LLC DBA MARKER OIL & GAS	LAUREL STATE #003	30-015-31319	Oil	Active	7	18S	28E	E	32.7625771	-104.222496	10/2/2000

Attachment 4
Digital Data

Petrotek

Attachment 5
FESCO Injection Falloff Test Report

Petrotek

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

FLOWING GRADIENT SURVEY

Company:	Petrotek Engineering Corporation	Test Date:	6/3/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Location:	Eddy County, NM
Field:	Davonia	Status:	Injecting
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	242117
	Tubing: 3" Set at 7528 ft (Packer)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8770 ft (PBTD)	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	1017	96.36	1014.38	0.00	0.0000	
1000	1000	1000		103.14	1432.73	418.35	0.4184	
2000	2000	1000		101.92	1851.41	418.68	0.4187	
3000	3000	1000		100.99	2269.84	418.43	0.4184	
4000	4000	1000		100.49	2687.85	418.01	0.4180	
5000	5000	1000		100.40	3108.20	420.35	0.4203	
6000	6000	1000		100.72	3530.70	422.50	0.4225	
7000	7000	1000		101.57	3955.90	425.20	0.4252	
7570	7570	570	1017	102.12	4192.34	236.44	0.4148	

BHT at Test Depth:	102.10 °F	Oil Level:	Injecting	Previous BHP: U/A
Extrapolated BHP at Datum:	4364.00 psia	Water Level:	Injecting	BHP Change: U/A
BHP Gradient at Datum :	0.4148 psi/ft	Csg Press:	230 psig	

Remarks: MIRU slickline. RIH with 1.25" weight bar. Tagged obstruction at 8355 ft. POOH. RIH with electronic gauges making injecting gradient stops to 7570 ft. Operaor SI well for 42 hr falloff test. POOH making static gradient stops to surface. RDMO.

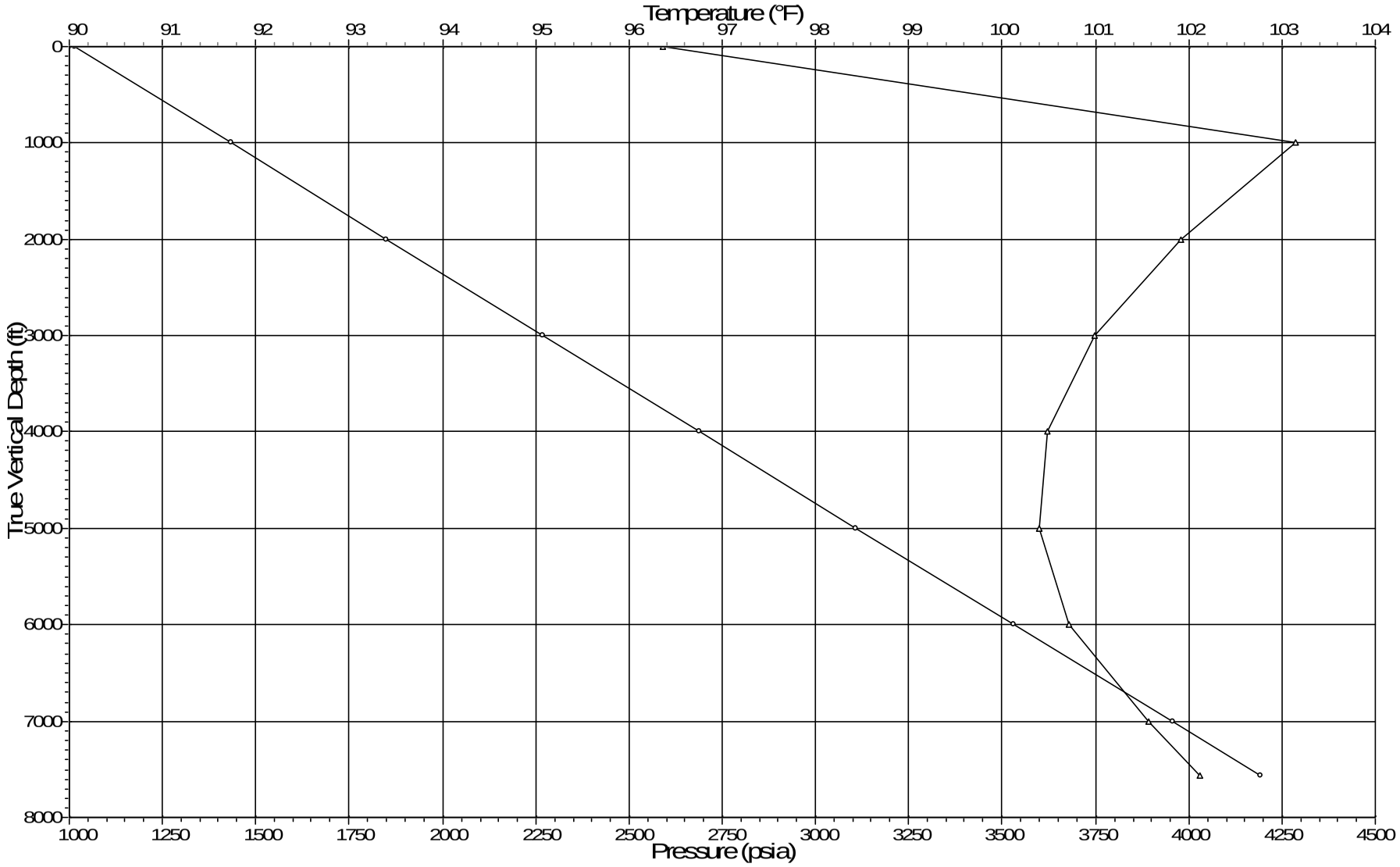
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

Petrotek Engineering Corporation

Flowing Gradient Plot

Well: Navajo Refining Waste Disposal Well No. 2 Gauge Type: Electronic
Field: Davonia Gauge Range: 15000 psi
Test Date: 06/03/2020 Gauge SN: 242117



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FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

STATIC GRADIENT SURVEY

Company:	Petrotek Engineering Corporation	Test Date:	6/5/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Location:	Eddy County, NM
Field:	Davonia	Status:	SI for 42 hrs
Formation:	Unavailable		

Well Data:	Wellhead Connection: 2" EUE	Gauge Type:	Electronic
	Elevation: 13 ft above GL	Gauge SN:	242117
	Tubing: 3" Set at 7528 ft (Packer)	Gauge Range:	15000 psi
	Casing: 5.5" Set at 8770 ft (PBTD)	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	760	85.52	762.15	0.00	0.0000	Water level at surface.
1000	1000	1000		83.37	1195.81	433.66	0.4337	
2000	2000	1000		88.00	1629.45	433.64	0.4336	
3000	3000	1000		91.17	2063.89	434.44	0.4344	
4000	4000	1000		95.06	2498.10	434.21	0.4342	
5000	5000	1000		99.76	2932.31	434.21	0.4342	
6000	6000	1000		105.29	3367.53	435.22	0.4352	
7000	7000	1000		110.76	3802.37	434.84	0.4348	
7570	7570	570	760	107.78	4043.70	241.33	0.4234	

BHT at Test Depth:	107.80 °F	Oil Level: None	Previous BHP: U/A
Extrapolated BHP at Datum:	4219.00 psia	Water Level: Surface	BHP Change: U/A
BHP Gradient at Datum :	0.4234 psi/ft	Csg Press: 300 psig	

Remarks: POOH after 42 hr falloff test making static gradient stops to surface. RDMO.

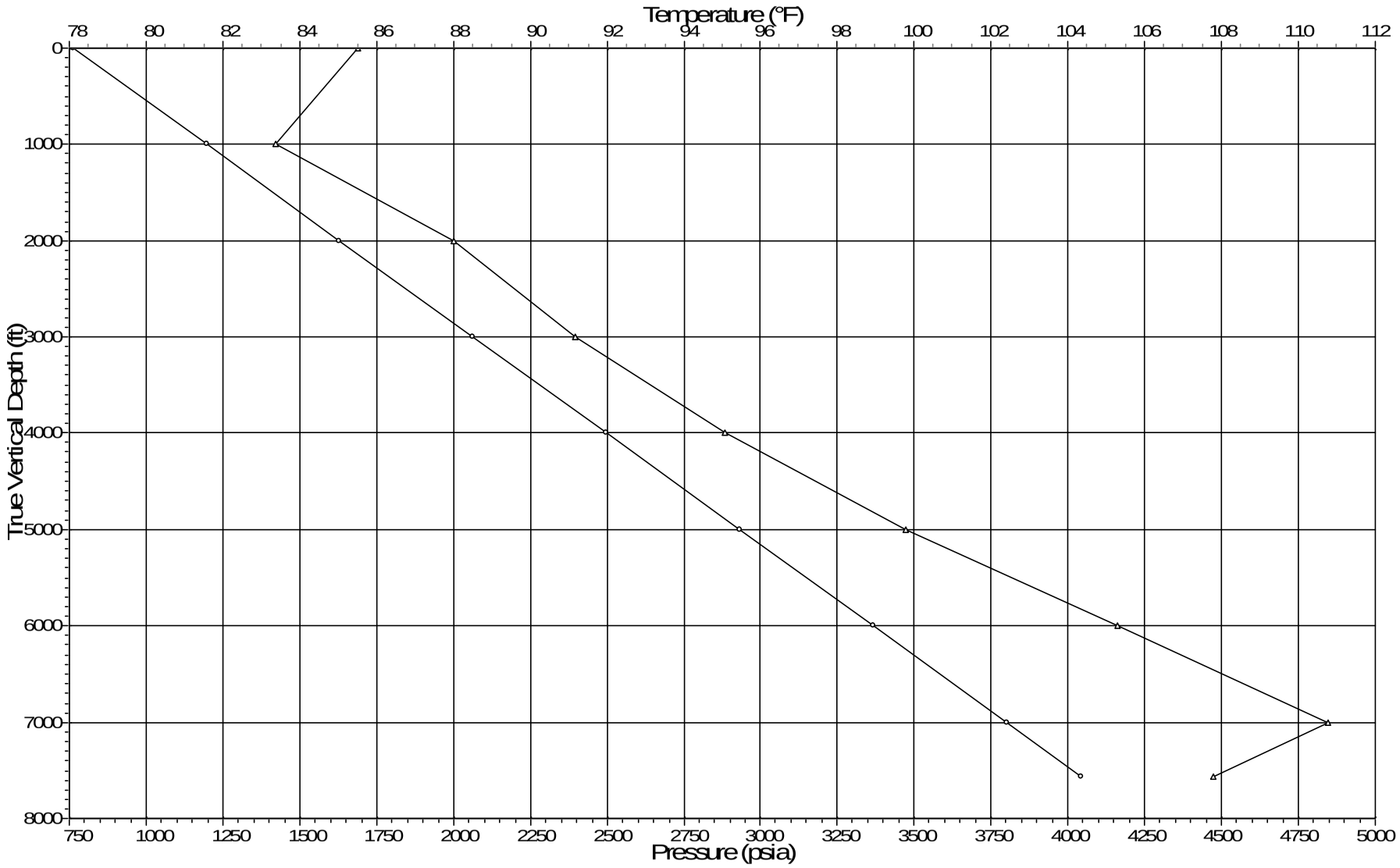
Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

Petrotek Engineering Corporation

Static Gradient Plot

Well: Navajo Refining Waste Disposal Well No. 2
Field: Davonia
Test Date: 06/05/2020
Gauge Type: Electronic
Gauge Range: 15000 psi
Gauge SN: 242117



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FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	09:14:26	-3.99278		13.22		81.41	Powered up gauge.
06/03/20	09:15:00	-3.98333		13.46		81.83	
06/03/20	09:30:00	-3.73333		11.57		88.83	
06/03/20	09:45:00	-3.48333		12.06		90.03	
06/03/20	09:52:00	-3.36667		12.44		92.11	
06/03/20	09:52:40	-3.35556		992.13		92.40	Pressured up lubricator.
06/03/20	09:53:00	-3.35000		1010.26		97.40	
06/03/20	09:54:00	-3.33333		1014.34		97.93	
06/03/20	09:55:00	-3.31667		1014.10		97.31	
06/03/20	09:56:00	-3.30000		1013.78		96.96	
06/03/20	09:57:00	-3.28333		1013.87		96.72	
06/03/20	09:58:00	-3.26667		1014.01		96.56	
06/03/20	09:59:00	-3.25000		1014.06		96.47	
06/03/20	10:00:00	-3.23333		1014.05		96.40	
06/03/20	10:00:15	-3.22917		1013.90		96.37	Casing Pressure = 230 psig.
06/03/20	10:00:20	-3.22778	1017	1014.38		96.36	RIH making injecting gradient stops.
06/03/20	10:01:00	-3.21667		1040.87		103.42	
06/03/20	10:02:00	-3.20000		1111.70		104.09	
06/03/20	10:03:00	-3.18333		1169.67		104.07	
06/03/20	10:04:00	-3.16667		1268.37		103.79	
06/03/20	10:05:00	-3.15000		1363.61		103.43	
06/03/20	10:05:50	-3.13611		1432.69		103.18	Arrived at 1000 ft stop.
06/03/20	10:06:00	-3.13333		1432.78		103.14	
06/03/20	10:07:00	-3.11667		1433.13		103.13	
06/03/20	10:08:00	-3.10000		1433.30		103.13	
06/03/20	10:09:00	-3.08333		1432.58		103.13	
06/03/20	10:10:00	-3.06667		1432.35		103.13	
06/03/20	10:11:00	-3.05000		1432.73		103.13	
06/03/20	10:12:00	-3.03333		1433.06		103.14	
06/03/20	10:12:45	-3.02083		1432.73		103.14	Left 1000 ft stop.
06/03/20	10:13:00	-3.01667		1446.97		103.14	
06/03/20	10:14:00	-3.00000		1552.57		102.88	
06/03/20	10:15:00	-2.98333		1659.95		102.55	
06/03/20	10:16:00	-2.96667		1761.21		102.26	
06/03/20	10:17:00	-2.95000		1843.00		102.02	
06/03/20	10:17:10	-2.94722		1851.00		101.98	Arrived at 2000 ft stop.
06/03/20	10:18:00	-2.93333		1851.15		101.93	
06/03/20	10:19:00	-2.91667		1851.56		101.92	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	10:20:00	-2.90000		1851.76		101.92	
06/03/20	10:21:00	-2.88333		1851.64		101.92	
06/03/20	10:22:00	-2.86667		1851.19		101.92	
06/03/20	10:23:00	-2.85000		1851.43		101.92	
06/03/20	10:24:00	-2.83333		1851.61		101.92	
06/03/20	10:24:10	-2.83056		1851.41		101.92	Left 2000 ft stop.
06/03/20	10:25:00	-2.81667		1912.80		101.84	
06/03/20	10:26:00	-2.80000		1982.84		101.64	
06/03/20	10:27:00	-2.78333		2057.99		101.47	
06/03/20	10:28:00	-2.76667		2152.72		101.27	
06/03/20	10:29:00	-2.75000		2256.80		101.08	
06/03/20	10:29:10	-2.74722		2269.75		101.05	Arrived at 3000 ft stop.
06/03/20	10:30:00	-2.73333		2270.11		100.99	
06/03/20	10:31:00	-2.71667		2270.00		100.98	
06/03/20	10:32:00	-2.70000		2268.91		100.98	
06/03/20	10:33:00	-2.68333		2269.58		100.98	
06/03/20	10:34:00	-2.66667		2269.77		100.98	
06/03/20	10:35:00	-2.65000		2270.05		100.98	
06/03/20	10:36:00	-2.63333		2269.64		100.98	
06/03/20	10:36:10	-2.63056		2269.84		100.99	Left 3000 ft stop.
06/03/20	10:37:00	-2.61667		2311.07		100.95	
06/03/20	10:38:00	-2.60000		2384.62		100.84	
06/03/20	10:39:00	-2.58333		2461.88		100.73	
06/03/20	10:40:00	-2.56667		2534.62		100.65	
06/03/20	10:41:00	-2.55000		2612.66		100.57	
06/03/20	10:42:00	-2.53333		2685.20		100.51	
06/03/20	10:42:05	-2.53194		2687.61		100.50	Arrived at 4000 ft stop.
06/03/20	10:43:00	-2.51667		2687.33		100.49	
06/03/20	10:44:00	-2.50000		2687.78		100.49	
06/03/20	10:45:00	-2.48333		2687.76		100.49	
06/03/20	10:46:00	-2.46667		2687.85		100.49	
06/03/20	10:47:00	-2.45000		2688.14		100.49	
06/03/20	10:48:00	-2.43333		2687.76		100.49	
06/03/20	10:49:00	-2.41667		2687.99		100.49	
06/03/20	10:49:20	-2.41111		2687.85		100.49	Left 4000 ft stop.
06/03/20	10:50:00	-2.40000		2733.41		100.48	
06/03/20	10:51:00	-2.38333		2808.29		100.43	
06/03/20	10:52:00	-2.36667		2911.34		100.40	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	10:53:00	-2.35000		3038.54		100.39	
06/03/20	10:53:50	-2.33611		3108.50		100.39	Arrived at 5000 ft stop.
06/03/20	10:54:00	-2.33333		3108.72		100.40	
06/03/20	10:55:00	-2.31667		3108.39		100.40	
06/03/20	10:56:00	-2.30000		3108.50		100.40	
06/03/20	10:57:00	-2.28333		3108.31		100.40	
06/03/20	10:58:00	-2.26667		3108.20		100.40	
06/03/20	10:59:00	-2.25000		3108.30		100.40	
06/03/20	11:00:00	-2.23333		3108.38		100.40	
06/03/20	11:01:00	-2.21667		3108.20		100.40	Left 5000 ft stop.
06/03/20	11:02:00	-2.20000		3218.44		100.43	
06/03/20	11:03:00	-2.18333		3329.99		100.49	
06/03/20	11:04:00	-2.16667		3430.56		100.56	
06/03/20	11:05:00	-2.15000		3528.46		100.67	
06/03/20	11:05:10	-2.14722		3530.99		100.69	Arrived at 6000 ft stop.
06/03/20	11:06:00	-2.13333		3530.90		100.71	
06/03/20	11:07:00	-2.11667		3530.88		100.71	
06/03/20	11:08:00	-2.10000		3530.83		100.71	
06/03/20	11:09:00	-2.08333		3530.73		100.72	
06/03/20	11:10:00	-2.06667		3530.74		100.72	
06/03/20	11:11:00	-2.05000		3530.68		100.72	
06/03/20	11:12:00	-2.03333		3530.72		100.72	
06/03/20	11:12:05	-2.03194		3530.70		100.72	Left 6000 ft stop.
06/03/20	11:13:00	-2.01667		3577.71		100.76	
06/03/20	11:14:00	-2.00000		3666.32		100.89	
06/03/20	11:15:00	-1.98333		3735.21		101.03	
06/03/20	11:16:00	-1.96667		3817.34		101.17	
06/03/20	11:17:00	-1.95000		3907.90		101.36	
06/03/20	11:17:35	-1.94028		3955.76		101.50	Arrived at 7000 ft stop.
06/03/20	11:18:00	-1.93333		3956.13		101.55	
06/03/20	11:19:00	-1.91667		3956.05		101.56	
06/03/20	11:20:00	-1.90000		3955.99		101.56	
06/03/20	11:21:00	-1.88333		3955.92		101.57	
06/03/20	11:22:00	-1.86667		3955.89		101.57	
06/03/20	11:23:00	-1.85000		3955.92		101.57	
06/03/20	11:24:00	-1.83333		3955.83		101.57	
06/03/20	11:24:35	-1.82361		3955.90		101.57	Left 7000 ft stop.
06/03/20	11:25:00	-1.81667		3977.41		101.58	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	11:26:00	-1.80000		4063.47		101.76	
06/03/20	11:27:00	-1.78333		4140.93		101.98	
06/03/20	11:27:50	-1.76944	1017	4192.40		102.10	Gauge at TD=7570 ft (MD).
06/03/20	11:28:00	-1.76667		4192.43		102.11	
06/03/20	11:29:00	-1.75000		4192.40		102.12	
06/03/20	11:30:00	-1.73333		4192.36		102.12	
06/03/20	11:31:00	-1.71667		4192.32		102.12	
06/03/20	11:32:00	-1.70000		4192.34		102.12	
06/03/20	11:33:00	-1.68333	1017	4192.34		102.12	7570 ft stop.
06/03/20	11:34:00	-1.66667		4192.19		102.13	
06/03/20	11:35:00	-1.65000		4192.19		102.13	
06/03/20	11:40:00	-1.56667		4192.15		102.13	
06/03/20	11:45:00	-1.48333		4192.16		102.14	
06/03/20	11:50:00	-1.40000		4192.13		102.14	
06/03/20	11:55:00	-1.31667		4192.11		102.14	
06/03/20	12:00:00	-1.23333		4192.08		102.15	
06/03/20	12:05:00	-1.15000		4192.06		102.15	
06/03/20	12:10:00	-1.06667		4192.02		102.16	
06/03/20	12:15:00	-0.98333		4192.02		102.16	
06/03/20	12:20:00	-0.90000		4191.98		102.16	
06/03/20	12:25:00	-0.81667		4191.99		102.17	
06/03/20	12:30:00	-0.73333		4191.95		102.17	
06/03/20	12:35:00	-0.65000		4191.96		102.18	
06/03/20	12:40:00	-0.56667		4191.96		102.18	
06/03/20	12:45:00	-0.48333		4191.94		102.18	
06/03/20	12:50:00	-0.40000		4191.93		102.19	
06/03/20	12:55:00	-0.31667		4191.92		102.19	
06/03/20	13:00:00	-0.23333		4191.90		102.19	
06/03/20	13:05:00	-0.15000		4191.89		102.20	
06/03/20	13:10:00	-0.06667		4191.88		102.20	
06/03/20	13:11:00	-0.05000		4191.88		102.20	
06/03/20	13:12:00	-0.03333		4191.89		102.20	
06/03/20	13:13:00	-0.01667		4191.91		102.20	
06/03/20	13:13:50	-0.00278		4191.88		102.21	Casing Pressure = 230 psig.
06/03/20	13:13:55	-0.00139		4191.88		102.21	Injection Rate = Unavailable.
06/03/20	13:14:00	0.00000	1017	4191.88	0.00	102.21	Shut in well for 42 hr BHP Falloff Test.
06/03/20	13:14:05	0.00139		4191.04	-0.84	102.21	
06/03/20	13:14:10	0.00278		4190.15	-1.73	102.21	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	13:14:15	0.00417		4189.38	-2.50	102.21	
06/03/20	13:14:20	0.00556		4188.82	-3.06	102.21	
06/03/20	13:14:25	0.00694		4188.40	-3.48	102.21	
06/03/20	13:14:30	0.00833		4187.80	-4.08	102.21	
06/03/20	13:14:35	0.00972		4181.87	-10.01	102.21	
06/03/20	13:14:40	0.01111		4181.76	-10.12	102.21	
06/03/20	13:14:45	0.01250		4181.09	-10.79	102.21	
06/03/20	13:14:50	0.01389		4178.00	-13.88	102.21	
06/03/20	13:14:55	0.01528		4177.60	-14.28	102.21	
06/03/20	13:15:00	0.01667		4177.05	-14.83	102.21	
06/03/20	13:15:05	0.01806		4174.95	-16.93	102.21	
06/03/20	13:15:10	0.01944		4174.43	-17.45	102.21	
06/03/20	13:15:15	0.02083		4173.88	-18.00	102.21	
06/03/20	13:15:20	0.02222		4172.33	-19.55	102.21	
06/03/20	13:15:25	0.02361		4171.77	-20.11	102.21	
06/03/20	13:15:30	0.02500		4171.21	-20.67	102.21	
06/03/20	13:15:35	0.02639		4170.02	-21.86	102.21	
06/03/20	13:15:40	0.02778		4169.45	-22.43	102.22	
06/03/20	13:15:45	0.02917		4168.90	-22.98	102.22	
06/03/20	13:15:50	0.03056		4167.93	-23.95	102.22	
06/03/20	13:15:55	0.03194		4167.37	-24.51	102.22	
06/03/20	13:16:00	0.03333		4166.82	-25.06	102.22	
06/03/20	13:16:05	0.03472		4166.01	-25.87	102.22	
06/03/20	13:16:10	0.03611		4165.46	-26.42	102.22	
06/03/20	13:16:15	0.03750		4164.93	-26.95	102.22	
06/03/20	13:16:20	0.03889		4164.21	-27.67	102.22	
06/03/20	13:16:25	0.04028		4163.68	-28.20	102.22	
06/03/20	13:16:30	0.04167		4163.17	-28.71	102.23	
06/03/20	13:16:35	0.04306		4162.53	-29.35	102.23	
06/03/20	13:16:40	0.04444		4162.02	-29.86	102.23	
06/03/20	13:16:45	0.04583		4161.51	-30.37	102.23	
06/03/20	13:16:50	0.04722		4160.93	-30.95	102.23	
06/03/20	13:16:55	0.04861		4160.43	-31.45	102.23	
06/03/20	13:17:05	0.05139		4159.41	-32.47	102.23	
06/03/20	13:17:10	0.05278		4158.93	-32.95	102.23	
06/03/20	13:17:15	0.05417		4158.46	-33.42	102.23	
06/03/20	13:17:20	0.05556		4157.95	-33.93	102.24	
06/03/20	13:17:30	0.05833		4157.04	-34.84	102.24	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	13:17:35	0.05972		4156.55	-35.33	102.24	
06/03/20	13:17:40	0.06111		4156.11	-35.77	102.24	
06/03/20	13:17:50	0.06389		4155.22	-36.66	102.24	
06/03/20	13:17:55	0.06528		4154.78	-37.10	102.24	
06/03/20	13:18:05	0.06806		4153.92	-37.96	102.25	
06/03/20	13:18:15	0.07083		4153.09	-38.79	102.25	
06/03/20	13:18:20	0.07222		4152.67	-39.21	102.25	
06/03/20	13:18:30	0.07500		4151.86	-40.02	102.25	
06/03/20	13:18:40	0.07778		4151.06	-40.82	102.25	
06/03/20	13:18:50	0.08056		4150.28	-41.60	102.26	
06/03/20	13:19:00	0.08333		4149.50	-42.38	102.26	
06/03/20	13:19:10	0.08611		4148.76	-43.12	102.26	
06/03/20	13:19:20	0.08889		4148.03	-43.85	102.27	
06/03/20	13:19:30	0.09167		4147.31	-44.57	102.27	
06/03/20	13:19:40	0.09444		4146.60	-45.28	102.28	
06/03/20	13:19:50	0.09722		4145.91	-45.97	102.28	
06/03/20	13:20:00	0.10000		4145.23	-46.65	102.28	
06/03/20	13:20:15	0.10417		4144.21	-47.67	102.29	
06/03/20	13:20:25	0.10694		4143.56	-48.32	102.29	
06/03/20	13:20:40	0.11111		4142.58	-49.30	102.30	
06/03/20	13:20:55	0.11528		4141.63	-50.25	102.30	
06/03/20	13:21:05	0.11806		4141.01	-50.87	102.31	
06/03/20	13:21:20	0.12222		4140.10	-51.78	102.31	
06/03/20	13:21:35	0.12639		4139.20	-52.68	102.32	
06/03/20	13:21:50	0.13056		4138.32	-53.56	102.33	
06/03/20	13:22:05	0.13472		4137.46	-54.42	102.33	
06/03/20	13:22:25	0.14028		4136.33	-55.55	102.34	
06/03/20	13:22:40	0.14444		4135.49	-56.39	102.34	
06/03/20	13:22:55	0.14861		4134.69	-57.19	102.35	
06/03/20	13:23:15	0.15417		4133.62	-58.26	102.35	
06/03/20	13:23:35	0.15972		4132.58	-59.30	102.36	
06/03/20	13:23:50	0.16389		4131.82	-60.06	102.36	
06/03/20	13:24:10	0.16944		4130.82	-61.06	102.37	
06/03/20	13:24:30	0.17500		4129.84	-62.04	102.38	
06/03/20	13:24:55	0.18194		4128.64	-63.24	102.39	
06/03/20	13:25:15	0.18750		4127.70	-64.18	102.39	
06/03/20	13:25:40	0.19444		4126.56	-65.32	102.41	
06/03/20	13:26:00	0.20000		4125.66	-66.22	102.41	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	13:26:25	0.20694		4124.57	-67.31	102.42	
06/03/20	13:26:50	0.21389		4123.49	-68.39	102.43	
06/03/20	13:27:15	0.22083		4122.44	-69.44	102.44	
06/03/20	13:27:40	0.22778		4121.42	-70.46	102.45	
06/03/20	13:28:10	0.23611		4120.23	-71.65	102.46	
06/03/20	13:28:40	0.24444		4119.06	-72.82	102.47	
06/03/20	13:29:05	0.25139		4118.10	-73.78	102.48	
06/03/20	13:29:35	0.25972		4116.98	-74.90	102.49	
06/03/20	13:30:10	0.26944		4115.71	-76.17	102.50	
06/03/20	13:30:40	0.27778		4114.65	-77.23	102.51	
06/03/20	13:31:15	0.28750		4113.44	-78.44	102.52	
06/03/20	13:31:50	0.29722		4112.27	-79.61	102.53	
06/03/20	13:32:25	0.30694		4111.11	-80.77	102.54	
06/03/20	13:33:00	0.31667		4110.00	-81.88	102.56	
06/03/20	13:33:40	0.32778		4108.76	-83.12	102.57	
06/03/20	13:34:20	0.33889		4107.55	-84.33	102.59	
06/03/20	13:35:00	0.35000		4106.37	-85.51	102.60	
06/03/20	13:35:40	0.36111		4105.23	-86.65	102.61	
06/03/20	13:36:25	0.37361		4103.97	-87.91	102.63	
06/03/20	13:37:10	0.38611		4102.76	-89.12	102.65	
06/03/20	13:37:55	0.39861		4101.59	-90.29	102.66	
06/03/20	13:38:45	0.41250		4100.31	-91.57	102.68	
06/03/20	13:39:35	0.42639		4099.08	-92.80	102.69	
06/03/20	13:40:25	0.44028		4097.88	-94.00	102.71	
06/03/20	13:41:15	0.45417		4096.73	-95.15	102.72	
06/03/20	13:42:10	0.46944		4095.49	-96.39	102.74	
06/03/20	13:43:10	0.48611		4094.18	-97.70	102.76	
06/03/20	13:44:05	0.50139		4093.01	-98.87	102.77	
06/03/20	13:45:05	0.51806		4091.79	-100.09	102.79	
06/03/20	13:46:10	0.53611		4090.53	-101.35	102.81	
06/03/20	13:47:15	0.55417		4089.30	-102.58	102.83	
06/03/20	13:48:20	0.57222		4088.12	-103.76	102.85	
06/03/20	13:49:30	0.59167		4086.89	-104.99	102.86	
06/03/20	13:50:40	0.61111		4085.71	-106.17	102.89	
06/03/20	13:51:55	0.63194		4084.49	-107.39	102.91	
06/03/20	13:53:10	0.65278		4083.31	-108.57	102.93	
06/03/20	13:54:30	0.67500		4082.11	-109.77	102.95	
06/03/20	13:55:50	0.69722		4080.95	-110.93	102.97	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	13:57:15	0.72083		4079.77	-112.11	103.00	
06/03/20	13:58:40	0.74444		4078.64	-113.24	103.02	
06/03/20	14:00:10	0.76944		4077.49	-114.39	103.05	
06/03/20	14:01:40	0.79444		4076.39	-115.49	103.07	
06/03/20	14:03:20	0.82222		4075.22	-116.66	103.10	
06/03/20	14:04:55	0.84861		4074.17	-117.71	103.12	
06/03/20	14:06:40	0.87778		4073.05	-118.83	103.15	
06/03/20	14:08:25	0.90694		4071.99	-119.89	103.17	
06/03/20	14:10:15	0.93750		4070.94	-120.94	103.20	
06/03/20	14:12:05	0.96806		4069.93	-121.95	103.23	
06/03/20	14:14:00	1.00000		4068.94	-122.94	103.25	
06/03/20	14:16:05	1.03472		4067.91	-123.97	103.28	
06/03/20	14:18:05	1.06806		4066.98	-124.90	103.31	
06/03/20	14:20:15	1.10417		4066.02	-125.86	103.34	
06/03/20	14:22:30	1.14167		4065.08	-126.80	103.37	
06/03/20	14:24:45	1.17917		4064.19	-127.69	103.40	
06/03/20	14:27:10	1.21944		4063.29	-128.59	103.43	
06/03/20	14:29:35	1.25972		4062.44	-129.44	103.46	
06/03/20	14:32:05	1.30139		4061.62	-130.26	103.50	
06/03/20	14:34:45	1.34583		4060.80	-131.08	103.53	
06/03/20	14:37:25	1.39028		4060.02	-131.86	103.56	
06/03/20	14:40:10	1.43611		4059.28	-132.60	103.59	
06/03/20	14:43:05	1.48472		4058.54	-133.34	103.63	
06/03/20	14:46:05	1.53472		4057.82	-134.06	103.67	
06/03/20	14:49:10	1.58611		4057.14	-134.74	103.70	
06/03/20	14:52:20	1.63889		4056.49	-135.39	103.73	
06/03/20	14:55:35	1.69306		4055.85	-136.03	103.77	
06/03/20	14:59:00	1.75000		4055.25	-136.63	103.80	
06/03/20	15:02:30	1.80833		4054.66	-137.22	103.84	
06/03/20	15:06:10	1.86944		4054.10	-137.78	103.88	
06/03/20	15:09:55	1.93194		4053.56	-138.32	103.92	
06/03/20	15:13:45	1.99583		4053.05	-138.83	103.96	
06/03/20	15:17:45	2.06250		4052.56	-139.32	104.00	
06/03/20	15:21:55	2.13194		4052.10	-139.78	104.04	
06/03/20	15:26:10	2.20278		4051.66	-140.22	104.08	
06/03/20	15:30:35	2.27639		4051.24	-140.64	104.12	
06/03/20	15:35:10	2.35278		4050.84	-141.04	104.17	
06/03/20	15:39:55	2.43194		4050.46	-141.42	104.21	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	15:44:45	2.51250		4050.11	-141.77	104.25	
06/03/20	15:49:50	2.59722		4049.77	-142.11	104.29	
06/03/20	15:55:00	2.68333		4049.45	-142.43	104.34	
06/03/20	16:00:25	2.77361		4049.14	-142.74	104.38	
06/03/20	16:05:55	2.86528		4048.86	-143.02	104.42	
06/03/20	16:11:40	2.96111		4048.59	-143.29	104.47	
06/03/20	16:17:40	3.06111		4048.29	-143.59	104.52	
06/03/20	16:23:45	3.16250		4048.04	-143.84	104.57	
06/03/20	16:30:05	3.26806		4047.81	-144.07	104.62	
06/03/20	16:36:40	3.37778		4047.59	-144.29	104.66	
06/03/20	16:43:25	3.49028		4047.37	-144.51	104.71	
06/03/20	16:50:25	3.60694		4047.16	-144.72	104.76	
06/03/20	16:57:40	3.72778		4046.96	-144.92	104.81	
06/03/20	17:05:10	3.85278		4046.77	-145.11	104.86	
06/03/20	17:12:55	3.98194		4046.58	-145.30	104.91	
06/03/20	17:20:55	4.11528		4046.40	-145.48	104.95	
06/03/20	17:29:10	4.25278		4046.24	-145.64	105.00	
06/03/20	17:37:40	4.39444		4046.07	-145.81	105.05	
06/03/20	17:46:30	4.54167		4045.93	-145.95	105.10	
06/03/20	17:55:35	4.69306		4045.79	-146.09	105.16	
06/03/20	18:05:00	4.85000		4045.67	-146.21	105.20	
06/03/20	18:14:45	5.01250		4045.56	-146.32	105.25	
06/03/20	18:24:50	5.18056		4045.45	-146.43	105.31	
06/03/20	18:35:10	5.35278		4045.38	-146.50	105.36	
06/03/20	18:45:55	5.53194		4045.31	-146.57	105.43	
06/03/20	18:57:00	5.71667		4045.20	-146.68	105.47	
06/03/20	19:08:30	5.90833		4045.12	-146.76	105.52	
06/03/20	19:20:20	6.10556		4045.06	-146.82	105.57	
06/03/20	19:32:35	6.30972		4044.99	-146.89	105.61	
06/03/20	19:45:15	6.52083		4044.93	-146.95	105.67	
06/03/20	19:58:20	6.73889		4044.89	-146.99	105.71	
06/03/20	20:11:55	6.96528		4044.84	-147.04	105.76	
06/03/20	20:25:50	7.19722		4044.79	-147.09	105.81	
06/03/20	20:40:15	7.43750		4044.74	-147.14	105.86	
06/03/20	20:55:15	7.68750		4044.69	-147.19	105.91	
06/03/20	21:10:40	7.94444		4044.64	-147.24	105.95	
06/03/20	21:26:35	8.20972		4044.58	-147.30	106.00	
06/03/20	21:43:05	8.48472		4044.52	-147.36	106.05	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/03/20	22:00:05	8.76806		4044.47	-147.41	106.10	
06/03/20	22:17:40	9.06111		4044.42	-147.46	106.14	
06/03/20	22:35:50	9.36389		4044.38	-147.50	106.19	
06/03/20	22:54:35	9.67639		4044.32	-147.56	106.23	
06/03/20	23:14:00	10.00000		4044.27	-147.61	106.28	
06/03/20	23:34:05	10.33472		4044.22	-147.66	106.32	
06/03/20	23:54:50	10.68056		4044.17	-147.71	106.37	
06/04/20	00:16:15	11.03750		4044.14	-147.74	106.41	
06/04/20	00:38:25	11.40694		4044.12	-147.76	106.45	
06/04/20	01:01:20	11.78889		4044.12	-147.76	106.50	
06/04/20	01:24:55	12.18194		4044.12	-147.76	106.54	
06/04/20	01:49:25	12.59028		4044.12	-147.76	106.58	
06/04/20	02:14:40	13.01111		4044.14	-147.74	106.63	
06/04/20	02:40:45	13.44583		4044.16	-147.72	106.67	
06/04/20	03:07:45	13.89583		4044.18	-147.70	106.71	
06/04/20	03:35:35	14.35972		4044.20	-147.68	106.75	
06/04/20	04:04:25	14.84028		4044.21	-147.67	106.79	
06/04/20	04:34:10	15.33611		4044.19	-147.69	106.83	
06/04/20	05:05:00	15.85000		4044.14	-147.74	106.86	
06/04/20	05:36:45	16.37917		4044.09	-147.79	106.90	
06/04/20	06:09:40	16.92778		4044.05	-147.83	106.94	
06/04/20	06:43:35	17.49306		4044.03	-147.85	106.97	
06/04/20	07:18:40	18.07778		4044.01	-147.87	107.00	
06/04/20	07:55:00	18.68333		4044.02	-147.86	107.04	
06/04/20	08:32:25	19.30694		4044.02	-147.86	107.07	
06/04/20	09:11:10	19.95278		4044.03	-147.85	107.11	
06/04/20	09:51:15	20.62083		4044.04	-147.84	107.14	
06/04/20	10:32:35	21.30972		4044.03	-147.85	107.17	
06/04/20	11:15:20	22.02222		4043.98	-147.90	107.20	
06/04/20	11:59:30	22.75833		4043.94	-147.94	107.23	
06/04/20	12:45:10	23.51944		4043.93	-147.95	107.27	
06/04/20	13:32:25	24.30694		4043.92	-147.96	107.30	
06/04/20	14:21:10	25.11944		4043.91	-147.97	107.33	
06/04/20	15:11:35	25.95972		4043.90	-147.98	107.36	
06/04/20	16:03:40	26.82778		4043.90	-147.98	107.39	
06/04/20	16:57:30	27.72500		4043.94	-147.94	107.42	
06/04/20	17:53:05	28.65139		4043.94	-147.94	107.45	
06/04/20	18:50:35	29.60972		4043.89	-147.99	107.48	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/04/20	19:50:00	30.60000		4043.86	-148.02	107.51	
06/04/20	20:51:25	31.62361		4043.87	-148.01	107.54	
06/04/20	21:54:50	32.68056		4043.81	-148.07	107.57	
06/04/20	23:00:25	33.77361		4043.70	-148.18	107.59	
06/05/20	00:08:10	34.90278		4043.68	-148.20	107.62	
06/05/20	01:18:10	36.06944		4043.74	-148.14	107.65	
06/05/20	02:30:35	37.27639		4043.83	-148.05	107.68	
06/05/20	03:45:20	38.52222		4043.81	-148.07	107.70	
06/05/20	05:02:40	39.81111		4043.69	-148.19	107.73	
06/05/20	06:22:30	41.14167		4043.68	-148.20	107.76	
06/05/20	07:11:20	41.95556		4043.70	-148.18	107.78	Casing Pressure = 300 psig.
06/05/20	07:11:25	41.95694	760	4043.70	-148.18	107.78	POOH from 7570 making gradient stops.
06/05/20	07:11:30	41.95833		4043.93		107.78	
06/05/20	07:11:35	41.95972		4043.40		107.77	
06/05/20	07:11:40	41.96111		4040.01		107.78	
06/05/20	07:11:45	41.96250		4035.02		107.82	
06/05/20	07:11:50	41.96389		4030.05		107.92	
06/05/20	07:11:55	41.96528		4025.70		108.11	
06/05/20	07:12:00	41.96667		4026.53		108.40	
06/05/20	07:13:00	41.98333		3985.84		111.28	
06/05/20	07:14:00	42.00000		3890.21		113.24	
06/05/20	07:15:00	42.01667		3814.64		112.12	
06/05/20	07:15:40	42.02778		3802.32		110.93	Arrived at 7000 ft stop.
06/05/20	07:16:00	42.03333		3801.96		110.87	
06/05/20	07:17:00	42.05000		3801.88		110.84	
06/05/20	07:18:00	42.06667		3801.87		110.83	
06/05/20	07:19:00	42.08333		3801.86		110.82	
06/05/20	07:20:00	42.10000		3801.86		110.81	
06/05/20	07:21:00	42.11667		3801.86		110.80	
06/05/20	07:22:00	42.13333		3801.86		110.80	
06/05/20	07:23:00	42.15000		3801.86		110.79	
06/05/20	07:24:00	42.16667		3802.60		110.76	
06/05/20	07:24:10	42.16944		3802.37		110.76	Left 7000 ft stop.
06/05/20	07:25:00	42.18333		3706.87		111.44	
06/05/20	07:26:00	42.20000		3579.60		109.08	
06/05/20	07:27:00	42.21667		3443.82		107.72	
06/05/20	07:28:00	42.23333		3374.44		105.75	
06/05/20	07:28:15	42.23750		3368.15		105.50	Arrived at 6000 ft stop.

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/05/20	07:29:00	42.25000		3367.68		105.35	
06/05/20	07:30:00	42.26667		3367.59		105.33	
06/05/20	07:31:00	42.28333		3367.57		105.31	
06/05/20	07:32:00	42.30000		3367.56		105.30	
06/05/20	07:33:00	42.31667		3367.55		105.30	
06/05/20	07:34:00	42.33333		3367.54		105.29	
06/05/20	07:35:00	42.35000		3367.54		105.29	
06/05/20	07:35:25	42.35694		3367.53		105.29	Left 6000 ft stop.
06/05/20	07:36:00	42.36667		3277.03		104.75	
06/05/20	07:37:00	42.38333		3119.84		102.51	
06/05/20	07:38:00	42.40000		2989.51		100.74	
06/05/20	07:38:50	42.41389		2933.22		99.90	Arrived at 5000 ft stop.
06/05/20	07:39:00	42.41667		2932.37		99.84	
06/05/20	07:40:00	42.43333		2932.36		99.80	
06/05/20	07:41:00	42.45000		2932.36		99.78	
06/05/20	07:42:00	42.46667		2932.33		99.77	
06/05/20	07:43:00	42.48333		2932.33		99.77	
06/05/20	07:44:00	42.50000		2932.32		99.76	
06/05/20	07:45:00	42.51667		2932.32		99.76	
06/05/20	07:45:45	42.52917		2932.31		99.76	Left 5000 ft stop.
06/05/20	07:46:00	42.53333		2909.93		99.75	
06/05/20	07:47:00	42.55000		2766.37		98.24	
06/05/20	07:48:00	42.56667		2606.20		96.70	
06/05/20	07:49:00	42.58333		2505.40		95.35	
06/05/20	07:49:10	42.58611		2499.28		95.25	Arrived at 4000 ft stop.
06/05/20	07:50:00	42.60000		2498.20		95.10	
06/05/20	07:51:00	42.61667		2498.04		95.08	
06/05/20	07:52:00	42.63333		2498.09		95.07	
06/05/20	07:53:00	42.65000		2498.08		95.07	
06/05/20	07:54:00	42.66667		2498.07		95.06	
06/05/20	07:55:00	42.68333		2498.07		95.06	
06/05/20	07:56:00	42.70000		2498.06		95.06	
06/05/20	07:56:45	42.71250		2498.10		95.06	Left 4000 ft stop.
06/05/20	07:57:00	42.71667		2461.85		94.99	
06/05/20	07:58:00	42.73333		2266.82		93.33	
06/05/20	07:59:00	42.75000		2072.17		91.65	
06/05/20	07:59:20	42.75556		2064.25		91.32	Arrived at 3000 ft stop.
06/05/20	08:00:00	42.76667		2063.89		91.22	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/05/20	08:01:00	42.78333		2063.86		91.20	
06/05/20	08:02:00	42.80000		2063.86		91.19	
06/05/20	08:03:00	42.81667		2063.85		91.18	
06/05/20	08:04:00	42.83333		2063.85		91.17	
06/05/20	08:05:00	42.85000		2063.84		91.17	
06/05/20	08:06:00	42.86667		2063.84		91.17	
06/05/20	08:06:35	42.87639		2063.89		91.17	Left 3000 ft stop.
06/05/20	08:07:00	42.88333		2003.34		91.04	
06/05/20	08:08:00	42.90000		1796.95		89.46	
06/05/20	08:09:00	42.91667		1635.10		88.08	
06/05/20	08:09:20	42.92222		1629.11		88.01	Arrived at 2000 ft stop.
06/05/20	08:10:00	42.93333		1629.08		88.02	
06/05/20	08:11:00	42.95000		1629.12		88.02	
06/05/20	08:12:00	42.96667		1629.49		88.01	
06/05/20	08:13:00	42.98333		1629.48		88.01	
06/05/20	08:14:00	43.00000		1629.47		88.00	
06/05/20	08:15:00	43.01667		1629.46		88.00	
06/05/20	08:16:00	43.03333		1629.45		88.00	Left 2000 ft stop.
06/05/20	08:17:00	43.05000		1441.60		86.36	
06/05/20	08:18:00	43.06667		1222.76		84.54	
06/05/20	08:18:30	43.07500		1196.20		83.59	Arrived at 1000 ft stop.
06/05/20	08:19:00	43.08333		1195.75		83.44	
06/05/20	08:20:00	43.10000		1195.83		83.41	
06/05/20	08:21:00	43.11667		1195.83		83.40	
06/05/20	08:22:00	43.13333		1195.83		83.38	
06/05/20	08:23:00	43.15000		1195.83		83.38	
06/05/20	08:24:00	43.16667		1195.82		83.37	
06/05/20	08:25:00	43.18333		1195.82		83.37	
06/05/20	08:26:00	43.20000		1195.82		83.37	
06/05/20	08:26:05	43.20139		1195.81		83.37	Left 1000 ft stop.
06/05/20	08:27:00	43.21667		1013.19		82.63	
06/05/20	08:28:00	43.23333		786.09		84.51	
06/05/20	08:28:40	43.24444		762.44		84.96	Gauge at surface.
06/05/20	08:29:00	43.25000		762.34		85.26	
06/05/20	08:30:00	43.26667		762.46		85.38	
06/05/20	08:31:00	43.28333		762.42		85.44	
06/05/20	08:32:00	43.30000		762.43		85.48	
06/05/20	08:33:00	43.31667		762.42		85.51	

FESCO, Ltd.

1000 Fesco Ave. - Alice, Texas 78332

RESERVOIR PRESSURE FALLOFF TEST

Company:	Petrotek Engineering Corporation	Test Date:	06/03 - 06/05/2020
Well:	Navajo Refining Waste Disposal Well No. 2	Gauge Depth:	7570 ft
Field:	Davonia	Gauge Type:	Electronic
Location:	Eddy County, NM	Gauge SN:	242117
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
06/05/20	08:34:00	43.33333		762.40		85.52	
06/05/20	08:35:00	43.35000		762.38		85.53	
06/05/20	08:36:00	43.36667		762.38		85.51	
06/05/20	08:36:30	43.37500	760	762.15		85.52	Surface stop.
06/05/20	08:37:00	43.38333		761.72		85.71	
06/05/20	08:38:00	43.40000		756.86		86.24	
06/05/20	08:39:00	43.41667		758.10		87.72	
06/05/20	08:40:00	43.43333		758.20		87.86	
06/05/20	08:41:00	43.45000		757.91		88.10	
06/05/20	08:41:20	43.45556		754.32		88.13	Pressure increased.
06/05/20	08:42:00	43.46667		938.61		88.23	Pressure stabilized.
06/05/20	08:43:00	43.48333		934.39		88.06	
06/05/20	08:44:00	43.50000		930.49		88.16	
06/05/20	08:45:00	43.51667		924.68		88.35	
06/05/20	08:45:15	43.52083		922.46		88.39	Pressured down lubricator.
06/05/20	08:46:00	43.53333		19.80		88.42	
06/05/20	08:46:40	43.54444		12.91		88.55	Test complete.
06/05/20	08:50:00	43.60000		14.25		88.79	
06/05/20	08:55:00	43.68333		15.01		87.75	
06/05/20	09:00:00	43.76667		13.93		85.63	
06/05/20	09:01:20	43.78889		14.26		85.78	Powered down gauge.

Remarks: MIRU slickline. RIH with 1.25" weight bar. Tagged obstruction at 8355 ft. POOH. RIH with electronic gauges making injecting gradient stops to 7570 ft. Operaor SI well for 42 hr falloff test. POOH making static gradient stops to surface. RDMO.

Certified: FESCO, Ltd. - Ozona, Texas

By: Tom Anderson
District Manager - (325) 392-3773

Job No.: J202006060801.001A

Attachment 6
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 0-5000PSIG ITEM NO. 5035-2

TRUE VALUE	INDICATED VALUE	
PSIG	INCREASING READINGS	DECREASING READINGS
0.00	0	
500.00	499.5	499.6
1000.00	999.3	999.5
1500.00	1498.9	1498.9
2000.00	1999.2	1998.8
2500.00	2497.9	2497.5
3000.00	2997.7	2997.4
3500.00	3496.5	3495.7
4000.00	3995.8	3994.2
4500.00	4495.4	4494.0
5000.00	4995.3	4995.3

Tested On: Deadweight Tester S/N# 1GA4474

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

Tested By: BMZ Date 17 January 2020

Remarks:

Crystal	XP2i	SN 901241
Accuracy is +/-		% of Full Scale or Better
Test Conditions	70 °F; 612	mmHg Atm. Pressure