

**UIC - 1 - \_8-2\_**

**EPA FALL-OFF  
TEST  
WDW-2**

**2017**

## Chavez, Carl J, EMNRD

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**From:** Chavez, Carl J, EMNRD  
**Sent:** Thursday, July 27, 2017 11:38 AM  
**To:** 'Dade, Lewis (Randy)'; Denton, Scott; Combs, Robert; Holder, Mike; Romine, William (Bill); Newton, Kevin; Acosta, Jesus  
**Cc:** Sanchez, Daniel J., EMNRD; Griswold, Jim, EMNRD; Podany, Raymond, EMNRD  
**Subject:** RE: Fall Off Testing and Shutting in all Wells

Randy, et al.:

The New Mexico Oil Conservation Division (OCD) is in receipt of HollyFrontier Navajo Refining, LLC's (Navajo) request to stop shutting-in and monitoring its entire inventory of disposal wells seated in the same formation during each individual well Fall-Off Test (FOT) and to focus on each well FOT individually or independently from the others from now on.

Navajo had monitored the other wells to determine interconnection between its wells and the injection zone(s) in order to pursue a reduced and staggered well FOT schedule with OCD. However, EPA recently communicated with OCD on the Federal requirements that each Underground Injection Control (UIC) Class I (Non-hazardous) Injection Well shall undergo an annual FOT. While a FOT is not considered to be a MIT, it allows for the monitoring of the capacity of the injection zone to receive effluent for disposal, and other vital formation characteristics over time.

OCD hereby **approves** Navajo's request.

Please contact me if you have questions. Thank you.

Mr. Carl J. Chavez, CHMM (#13099)  
New Mexico Oil Conservation Division  
Energy Minerals and Natural Resources Department  
1220 South St Francis Drive  
Santa Fe, New Mexico 87505  
Ph. (505) 476-3490  
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**“Why not prevent pollution, minimize waste to reduce operating costs, reuse or recycle, and move forward with the rest of the Nation?” (To see how, go to: <http://www.emnrd.state.nm.us/OCD> and see “Publications”)**

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**From:** Dade, Lewis (Randy) [mailto:Lewis.Dade@HollyFrontier.com]  
**Sent:** Thursday, July 27, 2017 11:17 AM  
**To:** Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Romine, William (Bill) <William.Romine@HollyFrontier.com>; Newton, Kevin <Kevin.Newton@HollyFrontier.com>; Acosta, Jesus <Jesus.Acosta@HollyFrontier.com>  
**Cc:** Dade, Lewis (Randy) <Lewis.Dade@HollyFrontier.com>  
**Subject:** Fall Off Testing and Shutting in all Wells

Carl,

Regarding FOT on the HollyFrontier Injection System, HollyFrontier has been shutting in the whole injection system for 30 -36 hours. This practice was started to determine if there was interconnectivity between the wells and

formations. HollyFrontier has conducted Fall Off Tests on each well individually while the two wells not being tested are shut in. HollyFrontier asks that OCD approve FOT's that require only shutting in the well on which the FOT is occurring on. WDW-1 (30-015-27592), WDW-2 (30-015-20894), and WDW-3 (30-015-26575) are tested yearly following the UIC Guidelines set by EPA Region 6 and OCD. Your help in this matter is greatly appreciated. Thanks for the help.

Thanks again, Randy



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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

Form C-103  
Revised July 18, 2013

OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

WELL API NO. 30-015-20894
5. Indicate Type of Lease STATE <input checked="" type="checkbox"/> FEE <input type="checkbox"/>
6. State Oil & Gas Lease No. B-2071-28
7. Lease Name or Unit Agreement Name CHUKKA WDW-2
8. Well Number: WDW - 2
9. OGRID Number: 15694
10. Pool name or Wildcat Navajo Permo- Penn 96918

<b>SUNDRY NOTICES AND REPORTS ON WELLS</b> (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.)	
1. Type of Well: Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other: INJECTION WELL	
2. Name of Operator Hollyfrontier Navajo Refining LLC	
3. Address of Operator P.O.Box 159, Artesia, NM. 88210	
4. Well Location: Unit Letter: E : 1980 feet from the NORTH line and 660 feet from the WEST line Section 12 Township 18S Range 27E NMPM County	
11. Elevation (Show whether DR, RKB, RT, GR, etc.) 3678' GL	

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

NOTICE OF INTENTION TO:		SUBSEQUENT REPORT OF:	
PERFORM REMEDIAL WORK <input type="checkbox"/>	PLUG AND ABANDON <input type="checkbox"/>	REMEDIAL WORK <input type="checkbox"/>	ALTERING CASING <input type="checkbox"/>
TEMPORARILY ABANDON <input type="checkbox"/>	CHANGE PLANS <input type="checkbox"/>	COMMENCE DRILLING OPNS. <input type="checkbox"/>	P AND A <input type="checkbox"/>
PULL OR ALTER CASING <input type="checkbox"/>	MULTIPLE COMPL <input type="checkbox"/>	CASING/CEMENT JOB <input type="checkbox"/>	
DOWNHOLE COMMINGLE <input type="checkbox"/>			
CLOSED-LOOP SYSTEM <input type="checkbox"/>			
OTHER: CONDUCT PRESSURE FALLOFF TEST <input type="checkbox"/>		OTHER: <input type="checkbox"/>	

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

JULY 14, 2017 – Install bottomhole gauges into WDW-1, WDW-2, and WDW-3. Continue injection into all three (3) wells.  
JULY 15, 2017 – Continue injection into all three wells.  
JULY 16, 2017 – Offset wells WDW-1 and WDW-3 will be shut –in. A constant injection rate will be established for WDW-2 at 160 GPM and continue for a 30 – hour injection period. Do not exceed 1400 psig wellhead pressure.  
JULY 17, 2017 – WDW-2 will be shut in for a 30-hour falloff period. WDW-1 and WDW-3 will remain shut-in.  
JULY 18, 2017 - All three wells will continue to be shut in while monitoring falloff pressures in all three wells.  
JULY 19, 2017 – Acquire downhole pressure gauges from all three wells. Tag bottom of fill and come out of hole very slowly, making 7-minute gradient stops while coming out of WDW-2 every 1000 feet; (7000 ft, 6000 ft, 5000 ft, 4000 ft, 3000 ft, 2000 ft, 1000 ft, surface). Turn wells back over to Navajo personnel.

NOTES :

- (1) All Bottomhole gauges will be Calibrated
- (2) Pump rates and Injection pressures will be noted before pump shutdown.
- (3) OCD Falloff Test Guidelines for reporting results will be followed.
- (4) OCD District II, Artesia, will be notified to witness pump shut-off and pressure changes at start of Falloff Test.
- (5) Dates and times may need to be adjusted due to Refinery and Maintenance Issues.

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

SIGNATURE Lewis R. Dade TITLE: Environmental Spec. DATE 6/27/2017  
Type or print name: Lewis 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 6/29/17  
Conditions of Approval (if any):

**PRESSURE FALLOFF TESTING WORK PLAN**  
**HOLLY FRONTIER NAVAJO REFINING (NAVAJO)**  
**WDW-2 CHUKKA**  
**ARTESIA, NEW MEXICO**  
Date: 07/13/2017  
Page: 1 of 2

**INTRODUCTION**

The following work plan has been developed to conduct the annual pressure falloff testing on WDW-2 CHUKKA. The results of the falloff testing will confirm the validity of the reservoir model in the well permit with respect to permeability-thickness.

Note: This procedure follows the guidance in the approved 2016 Falloff Test Plan.

**WORK PROGRAM**

**Thursday, July 13, 2017**

WSP personnel travel to Artesia, NM

**Friday, July 14, 2017**

1. Install bottom hole memory gauges in the three wells given below and continue normal injection for 48 hours.

Downhole gauges need to be in wells by **4:50 PM (time subject to change)**. Install surface pressure recorder on CHUKKA Well No. 2. Downhole Gauges to be set at the top of the perforations in all three wells as follows:

Mewbourne Well No. 1 7924 feet

Chukka Well No. 2 7570 feet

Gaines Well No. 3 7660 feet

WSP personnel will return to Houston, TX.

**Saturday, July 15, 2017**

Continue normal injection into the wells.

**Sunday, July 16, 2017**

1. At 5:00 pm, Navajo personnel will shut-in offset wells, Mewbourne Well No. 1 and Gaines Well No. 3, and Start the 30-hour injection period for Chukka Well No. 2 at rate of approximately 160 GPM. MEWBOURNE Well No. 1 and Gaines Well No. 3 will have to be isolated at the wing valve, MOV, and at the main pipeline valve.

2. Navajo Refining is to maintain a constant injection rate of approximately 160 GPM into the Chukka Well WDW- 2 for a minimum of 30 hours prior to shutting in the well. The 30 hours was the agreed upon time interval by the OCD and Navajo in previous falloff tests.

3. The rate should be constant during the 30-hour injection period. This might be best accomplished by opening the pipe line and wellhead valves wide open allowing full flow to the well. Record the rate and wellhead pressure in the control room on a minimum of 15 second intervals during the injection period. **Do not exceed 1400 psig wellhead pressure.**

4. Plant personnel will record rate, volume, and pressure during the injection period for all wells to confirm that a constant pre-falloff injection rate is maintained.

5. Collect a grab sample of the injection fluid every 10 hours; analyze the fluid for pH and Specific Gravity.

**Monday, July 17, 2017**

6. At 11:00 pm, Navajo personnel will shut in Chukka Well No. 2 for the 30-hour falloff period.

Mewbourne Well No. 1 and Gaines Well No. 3 will remain shut-in during the 30-hour falloff period. The Chukka No. 2 will need to be isolated at the wing valve, MOV, and at the main pipeline valve.

**Tuesday, July 18, 2017**

7. Leave all three wells shut in and continue to monitor falloff pressures in all three wells. WSP personnel to return to site.

**Wednesday, July 19, 2017**

8. At 7:00 am, acquire downhole pressure memory gauges from all three wells.

9. Tag bottom of fill and come out of hole at 150-200 feet per minute, making 7-minute gradient stops while

coming out of Chukka Well No. 2 every 1000 feet (7000 feet, 6000 feet, 5000 feet, 4000 feet, 3000 feet, 2000 feet, 1000 feet, Surface).

10. Turn well over to Navajo personnel to resume injection operations. WSP personnel to return to Houston, TX.