

GW - 28

**Reuse
Recycling
Requests**

2018 - Present

Chavez, Carl J, EMNRD

From: Chavez, Carl J, EMNRD
Sent: Thursday, October 18, 2018 9:14 AM
To: Denton, Scott (Scott.Denton@HollyFrontier.com); Holder, Mike (Mike.Holder@hollyfrontier.com); Boans, Robert (Robert.Boans@HollyFrontier.com); Combs, Robert (Robert.Combs@hollyfrontier.com)
Cc: Griswold, Jim, EMNRD; Brancard, Bill, EMNRD
Subject: Artesia Refinery (GW-28 and UICI-8-1): Notification Letter for Equipment Changes Associated with Treated Waste Water Sales by HollyFrontier Navajo Refining LLC October 4, 2018

Scott, et al.:

The New Mexico Oil Conservation Division (OCD) has completed its review of the above subject notification letter (letter), which it considers to be a modification request from Navajo Refining, LLC (Navajo).

OCD comments and/or requirements based on the modification letter are as follows:

- 1) A Standard Operating Procedure(s) (SOP) is required for OCD approval to verify Navajo has proper control(s) to prevent and/or stop any and all hazardous fluids from leaving Navajo property. This has been conveyed to Navajo before.
- 2) A Contingency Plan(s) for releases of refinery wastewater under the control of Navajo.
- 3) An engineering design drawing(s) is required to assess any construction associated with the sale of refinery wastewater, i.e., at the refinery and WDW-1. OCD notices the sequence of Navajo disposal wells has changed to show WDW-4 as the first well to receive wastewater effluent from the refinery. There does not appear to be any planned construction at WDW-4 related to the sale of wastewater.
- 4) The third party shall comply with OCD 19.15.34 NMAC (Produced Water, Drilling Fluids and Liquid Oil Field Waste) permitting. By Part 34 Permit, OCD regards refinery wastewater to be waste fluids. However, the New Mexico Environment Department (NMED) may view the fluids to be a product used by the oil industry; therefore, releases by the third party could be subject to NMED Jurisdiction. OCD and NMED (agencies) are currently in communication on this matter and releases by the third party may be subject to communications between the agencies for the lead under the Water Quality Control Commission (WQCC) Regulations and/or oil and gas environmental regulations.

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
E-mail: CarlJ.Chavez@state.nm.us

“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”)

From: Griswold, Jim, EMNRD
Sent: Thursday, October 4, 2018 9:28 AM
To: Chavez, Carl J, EMNRD <CarlJ.Chavez@state.nm.us>
Subject: FW: Navajo Water Sales Letter to OCD

From: Aguilar, Susie <Suzanne.Aguilar@HollyFrontier.com>
Sent: Thursday, October 4, 2018 8:33 AM
To: Griswold, Jim, EMNRD <Jim.Griswold@state.nm.us>; Holder, Mike <Michael.Holder@hollyfrontier.com>; Boans, Robert <Robert.Boans@HollyFrontier.com>; Denton, Scott <Scott.Denton@HollyFrontier.com>; Combs, Robert <Robert.Combs@HollyFrontier.com>
Subject: [EXT] Navajo Water Sales Letter to OCD

Submitted on behalf of Scott Denton. Hard copy mailed to addressee only.

Thank you,
Susie

Susie Aguilar
Environmental Administrative Assistant, Lead
HollyFrontier Navajo Refining LLC
501 E. Main Street / P.O. Box 159
Artesia, NM 88210 / 88211-0159
Office: (575) 746-5488
Cell: (575) 703-4926
Fax: (575) 746-5451
Email: Suzanne.Aguilar@HollyFrontier.com

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October 4, 2018

Mr. Carl Chavez
Oil Conservation Division
New Mexico Energy, Minerals & Natural Resources Department
1220 South St. Francis Drive
Santa Fe, NM 87505

Certified Mail/Return Receipt
7015 0640 0006 6577 7104

RE: Notification Letter for Equipment Changes Associated with Treated Waste Water Sales
by HollyFrontier Navajo Refining LLC
Discharge Permit GW-028
Discharge Permit WDW-1, UICI-8-1

Dear Mr. Chavez:

As previously discussed by phone on August 28, 2018, the HollyFrontier Navajo Refining LLC (Navajo) is making changes to the piping near the WDW-1 wellhead. The purpose of the modifications is to allow Navajo to make the necessary equipment changes to divert some of its treated wastewater (WW) from the injection wells for reuse by a third party at oil and gas exploration and production facilities. As discussed separately with the New Mexico Oil Conservation Division (OCD), Navajo is currently in the process of soliciting interest for the sale of its treated effluent.

Pursuant to Condition 1.G of the Discharge Permit GW-028 and UICI-8-1, Navajo is required to notify the OCD of any facility expansion, production increase, or process modification that would result in any significant modification in the discharge of water contaminants. Though this planned modification will not change the quality or increase the quantity of the waste water effluent above permitted levels, Navajo is, per your request, hereby notifying OCD of the planned changes.

No equipment modifications will be made to the wastewater treatment facility at the refinery. Additional piping will be added to the existing pigging station near the WDW-1 wellhead. The piping equipment will include a totalizing flow meter and pressure controls. The meter will serve as the point of transfer of ownership of the water. Additional piping equipment will also be installed downstream of the new pressure controls, but will not be owned or installed by Navajo. This additional piping will allow transfer of the treated wastewater by the buyer to its oil and gas exploration and production customers. A simplified block flow diagram is provided in Attachment A and the location of the new equipment is provided in Attachment B.

Navajo Refining Company, L.L.C.
501 East Main • Artesia, NM 88210
(575) 748-3311 • <http://www.hollyfrontier.com>

Only the piping associated with WDW-1 will be physically modified. The operation of WDW-1, WDW-2 and WDW-3 will continue to meet the requirements of the UIC permits. No change in effluent contaminants or quality is expected due to the proposed modifications.

Historical effluent sampling shows that the two primary constituents of concern for potentially causing the effluent to exhibit a hazardous characteristic are benzene and selenium. Navajo has implemented, and will continue to implement, benzene and selenium operational monitoring and controls to ensure that discharged effluent does not meet the definition of hazardous waste. The benzene monitoring includes sampling to verify that the wastewater concentration in the effluent to be discharged is below 0.5 mg/L and therefore non-hazardous. Similarly, the selenium monitoring procedure includes sampling to ensure that discharged effluent has less than 1.0 mg/L of selenium present and is non-hazardous. In addition, the refinery will continue to follow the monitoring requirements contained in Section 2.A. of the UICI-8-1 Permit. No listed hazardous wastes are introduced to the Refinery's wastewater treatment system, thus the effluent is not a listed hazardous waste.

Navajo appreciates the continued cooperation of the OCD. Should you have questions, please do not hesitate to contact me at (575) 746-5487 or scott.denton@hollyfrontier.com. Thank you for your assistance in this matter.

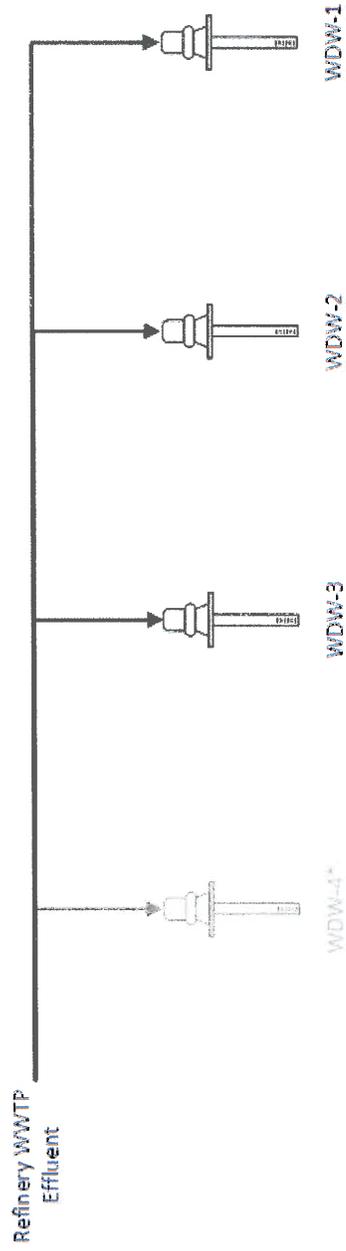
Sincerely,



Scott M. Denton
Environmental Manager
HollyFrontier Navajo Refining LLC

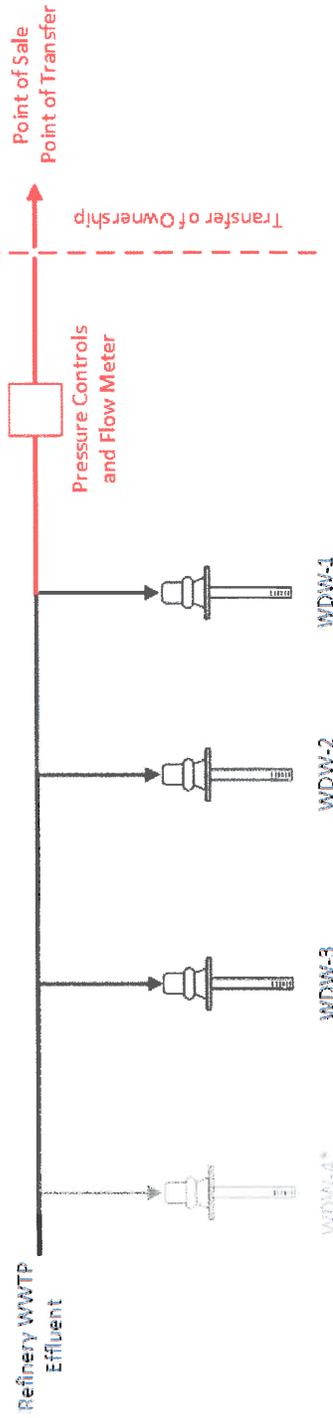
Attachment A
Process Schematic

Figure 1: Existing Wells Configuration



*Well constructed but not yet in service.

Figure 2: Modified Wells Configuration (modifications are shown in red)



*Well constructed but not yet in service.

Attachment B
Equipment Modifications Location

Meter Location, Delivery Point

Located east of 226/Hilltop Rd., south of Arco Rd.
AP# 30-015-27592

Legend

Feature 1

WDW-1 Wellhead

Mewbourne - $32^{\circ}47'6.82''N$, $104^{\circ}12'50.23''W$

Approximate Meter Location, Delivery Point

Current pigging station
(location of future equipment associated with water sales)

Google earth

© 2018 Google



80 ft

Chavez, Carl J, EMNRD

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Subject: FW: Navajo Water Sales Letter to OCD
Attachments: Navajo Water Sales Letter to OCD.pdf

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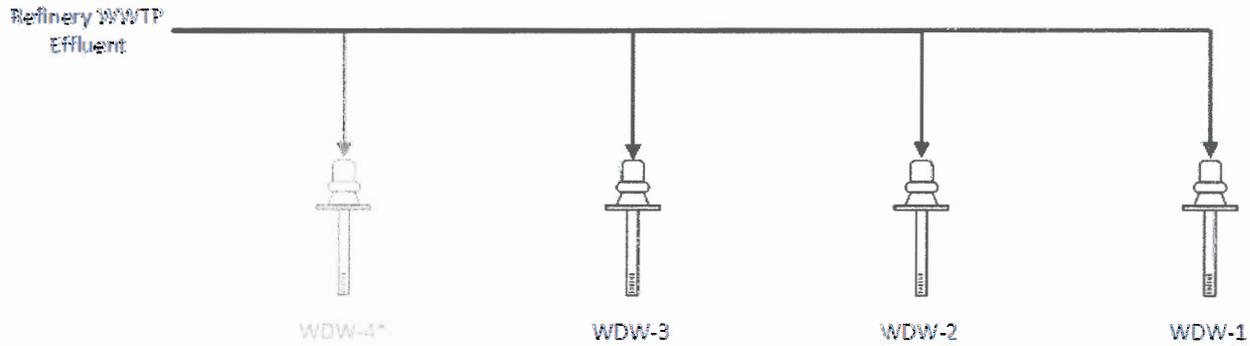
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Scott M. Denton
Environmental Manager
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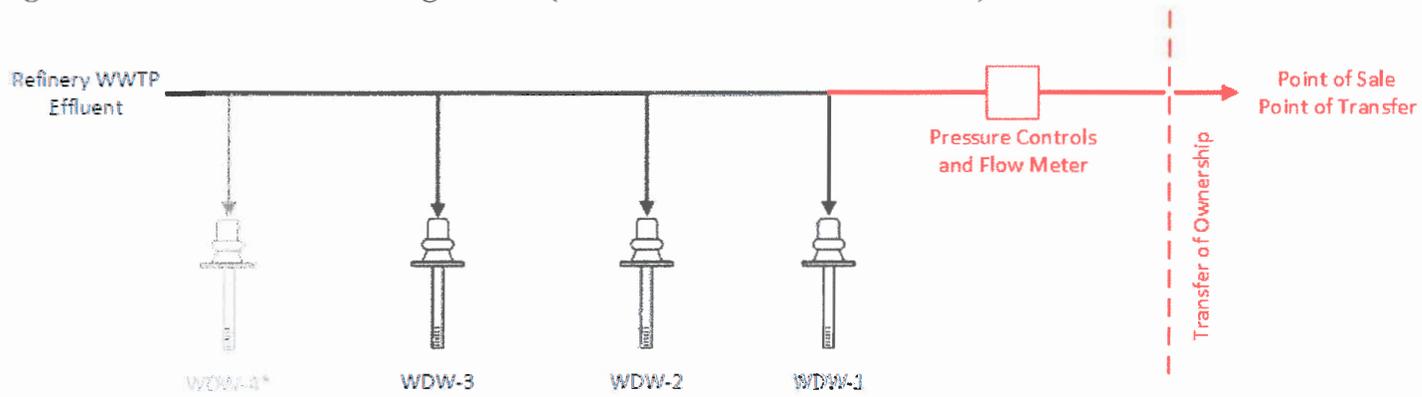
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Legend

★ Feature 1

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Approximate Meter Location, Delivery Point

Current pigging station
(location of future equipment associated with water sales)

Google earth

© 2018 Google



80 ft

Refinery Wastewater Reuse and Fresh Water Preservation in New Mexico to Support Oilfield Production

By

R. Combs, R. Boans – HFNR

C. Chavez, E.J.S. Graham – EMNRD OCD

GWPC

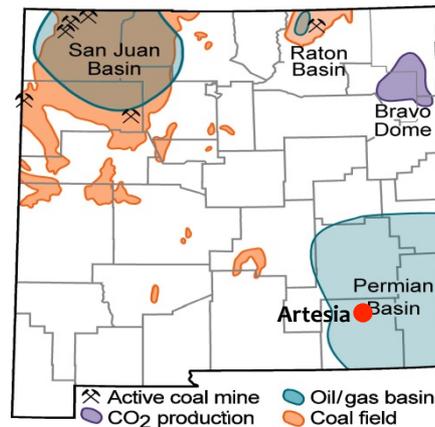
New Orleans, LA

September 12, 2018



HollyFrontier Navajo Refining

- * HollyFrontier Navajo Refining
 - * Began in 1920s
 - * Holly Corp 1969
- * HollyFrontier Corporation
 - * One of five HollyFrontier refineries
 - * Total refining capacity of 460,000 bpd
 - * Headquartered in Dallas, TX
- * Navajo – Artesia/Lovington
 - * 100,000 bpd crude capacity
 - * Local Permian gathering



Refinery Regulatory

- * Permitting
 - * POTW – Cities of Artesia & Lovington
 - * NM Environment Department
 - * NM Office of State Engineer
 - * Oil Conservation Division



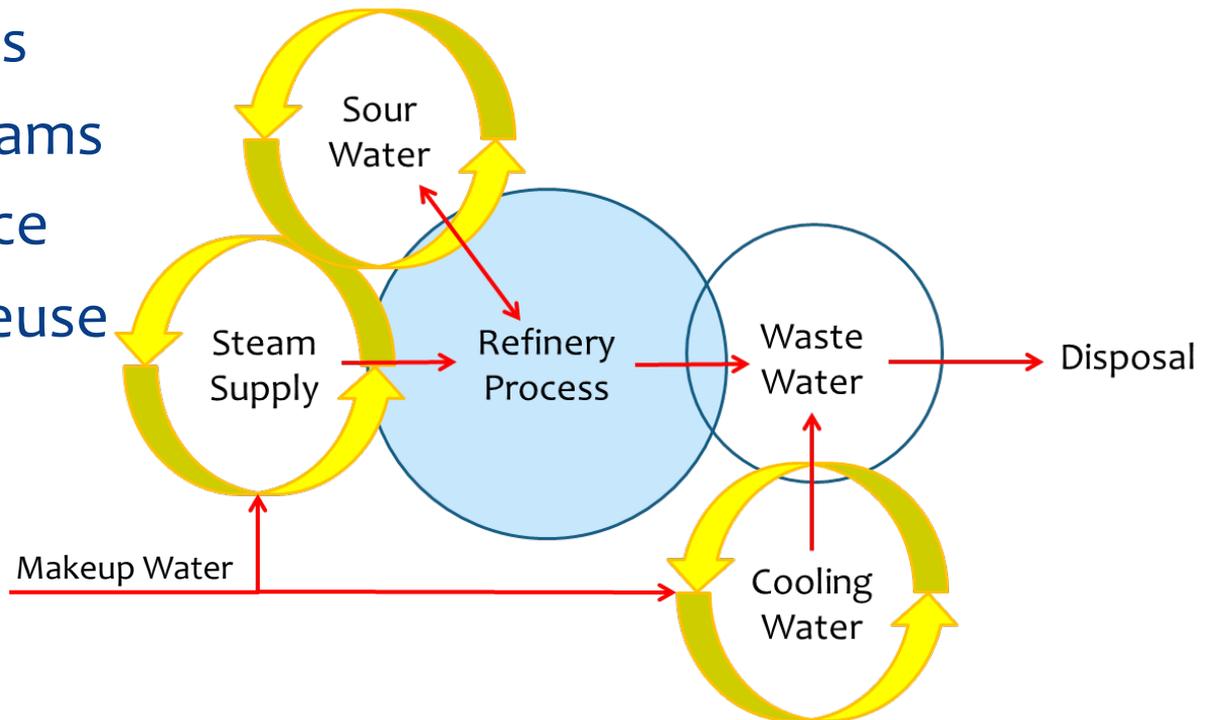
Refinery and Oilfield Activity Location

- * Arid location
 - * Annual Average Rainfall
 - * Limited surface water for demands
- * Limited fresh water rights
- * Competing demand for water
 - * Municipal
 - * Agriculture
 - * Oilfield

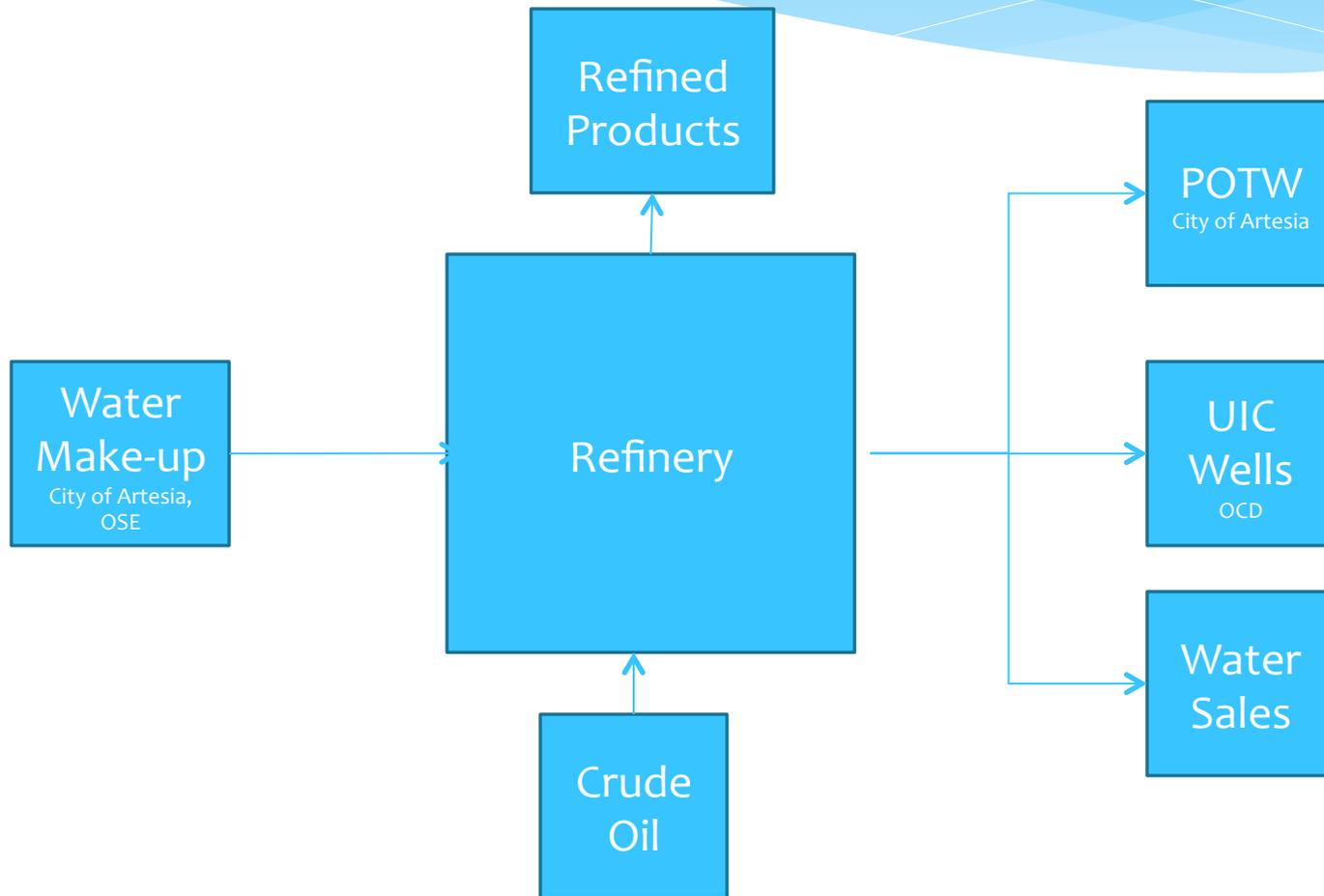


Refinery Water Use

- * Heavily dependent on water
- * Integrated processes
- * Internal recycle streams
- * Refinery Performance
- * Evaluating further reuse options to improve efficiency



Refinery Disposal Options



Benefits of Reuse

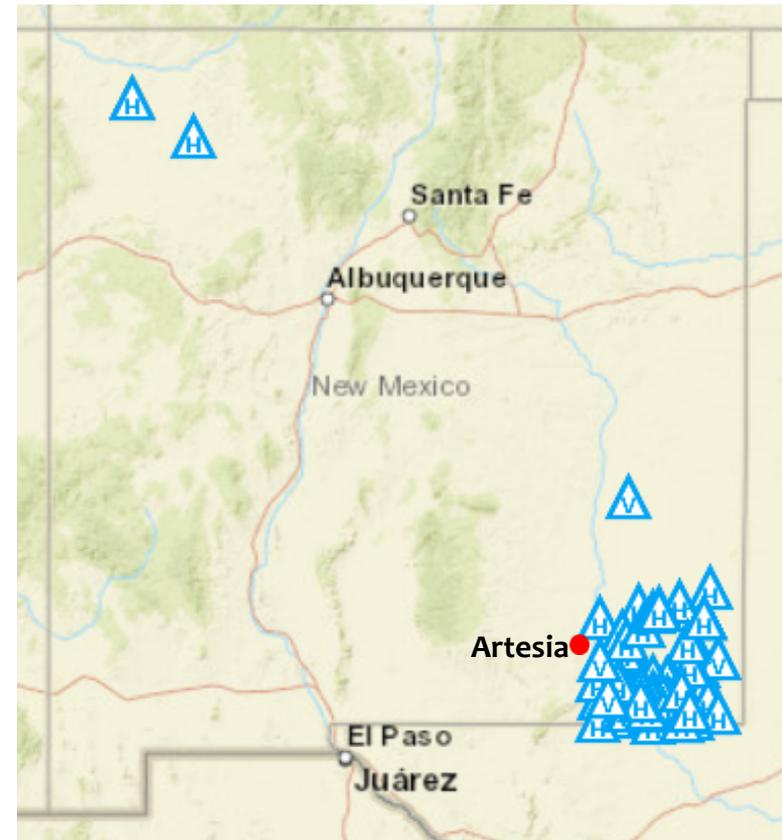
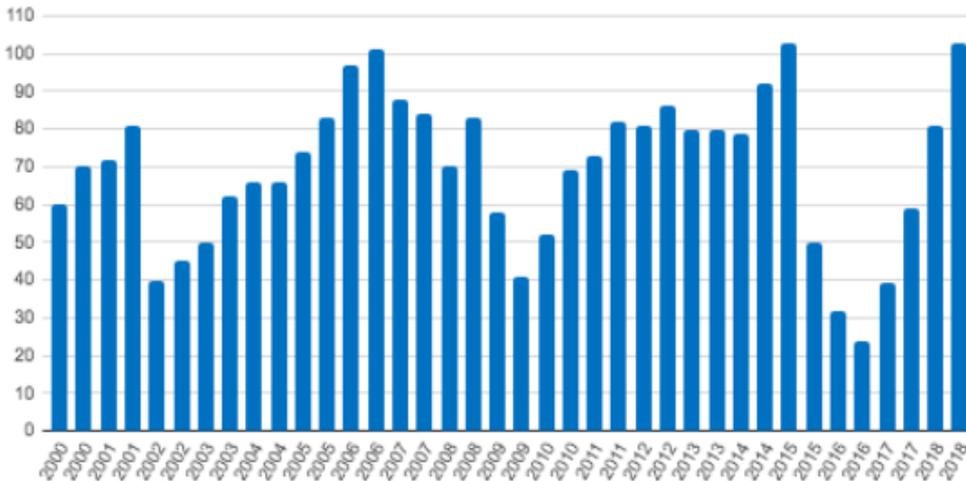


- * E&P
 - * Reduce costs
 - * Pipeline/Continuous Delivery
 - * Preserve freshwater resources
- * Refinery
 - * Longevity for refinery
 - * New partnerships
 - * Revenue

Oilfield Demand

- * Oil and Gas well drilling fluids
 - * Hydraulic fracturing
 - * Downhole operations
- * Volumes:
 - * 1.1 MG/well (Eddy Cty) – avg frac volume

New Mexico Oil & Gas Rigs Since 2000



OCD Online: <http://www.emnrd.state.nm.us/OCD/education.html>

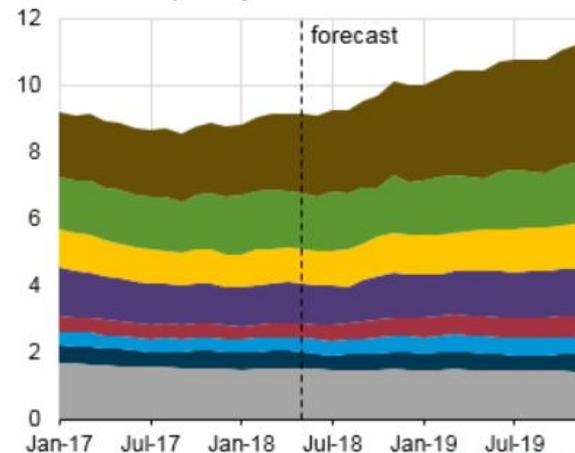
BakerHughes Rig Count: <http://phx.corporate-ir.net/phoenix.zhtml?c=79687&p=irol-reportsother>

Reuse Considerations

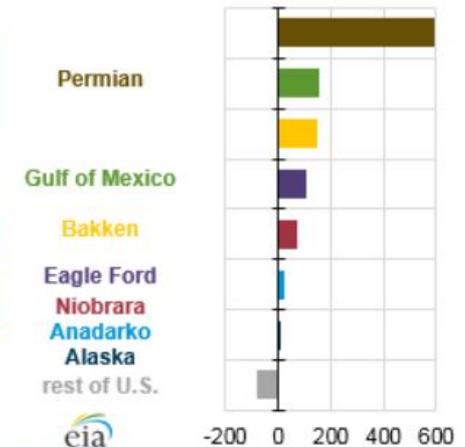
- * Demand – will the trend continue?
- * Refinery liability
 - * Water quality
 - * Very consistent
 - * Discharge – Batch operation
 - * Regular quality testing
 - * Delivery
 - * Plant upset, mechanical failure, etc.
 - * Weather
 - * Contracts and Procurement
 - * Define purchaser responsibilities
 - * Payment
- * Purchaser Responsibilities
 - * Partners with good practices and financials
 - * Broker to third parties
 - * Commitment

Permian region is expected to drive U.S. crude oil production growth through 2019

Monthly U.S. crude oil production (Jan 2017-Dec 2019)
million barrels per day



Projected change 2018-2019
thousand barrels per day



Source: U.S. Energy Information Administration, *Short-Term Energy Outlook*, August 2018

Refinery Evaluation and Tasks

- * Due diligence of purchaser
- * Regulatory
 - * NMOCD
 - * Permitting
 - * Oilfield non-exempt non-hazardous waste water stream
 - * City of Artesia
 - * OSE
- * Contracts



Purchaser Responsibilities

- * Regulatory - Purchaser
 - * Managing refinery waste stream
 - * NMOCD
 - * Permitting – Reuse/Recycling
 - * Reporting
 - * Release Notification
 - * Investigation/cleanup
 - * Disposal
- * Rights of way – surface access
- * Deconstruction/demobilization



In Summary

- * Beneficial reuse program
- * Pollution and waste minimization
- * Implementation

For more info, contact:

Robert Combs – HollyFrontier Navajo Refining LLC
robert.combs@hollyfrontier.com, 575-746-5382

Carl Chavez – EMNR – OCD
CarlJ.Chavez@state.nm.us, 505-476-3490