June 5, 2020

Spill Closure Report: NM Main Header (Section 28, Township 26 South, Range 30 East)
FacilityID: NM MAIN HEADER [fMAP1828359790]
Incident Number: 2RP-5001 IncidentID: nMAP1828463427

Prepared For: WPX Energy Inc.
5315 Buena Vista Drive
Carlsbad, New Mexico 88220

New Mexico Oil Conservation Division – District 2 – Artesia
811 South 1st Street
Artesia, NM 87410

Mr. James Raley,

RKI Exploration, LLC, a subsidiary of WPX Energy Inc. (WPX) retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release that occurred at the NM Main Header, API 30-015-29308 (hereafter referred to as "site"). The release was caused by corrosion on the header at the pipeline riser. Production water was release under the riser and surrounding vicinity. This letter provides a description of the Spill Assessment, and is intended to serve as the request for Spill Closure.

Incident Description

Eight barrels of produced water were released on September 25, 2018, from the header at the main pipeline riser and impacted the adjacent pipeline Right-of-Way. The release was caused by corrosion buildup on the header A vacuum truck was immediately dispatched to remove all free-standing liquids. A total of five barrels were recovered from the impacted area. WPX provided notification to New Mexico Oil Conservation Division (NM OCD) and to the Bureau of Land Management (BLM) on September 26, 2018. The initial C-141 Report is included in Attachment 1.

Site Characterization

The release at NM Main Header occurred on BLM-owned land, N 32.006624, W 103.877828, approximately 23 miles southeast of Loving, New Mexico. The legal description for the site is Unit P, Section 28, Township 26 South and Range 30 East in Eddy County, New Mexico. This location is within the Permian Basin in southeast New Mexico and has historically been used for oil and gas exploration and production, and rangeland. An aerial photograph and site schematic are included in Attachment 2.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2014-2017) indicates the site's surface geology is lithological unit Qoa, which are alluvial deposits of upland plains and piedmont areas, calcic soils and eolian cover sediment. The United States Department of Agriculture, Natural Resource Conservation Services, identifies the local soils as Simona gravelly fine sandy loam, 0 to 3 percent slopes, occurring on the plains

east of the Pecos River. The soil is slightly eroded by wind with Hummocks 6 to 12 inches high. Runoff is slow and occurs only when the soil is saturated by prolonged rainfall.

There is no surface water located at the release site. The nearest significant watercourse, as defined in Subsection P of 19.15.17.7 NMAC, is located approximately four miles southwest of the site (United States Fish and Wildlife Service, 2020). There are no continuously flowing watercourses, lakebeds, sinkholes, playa lakes, or other critical water or community features as outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

The nearest active wells to the site include a *United States Geologic Survey* (USGS)-identified well from 1987, located approximately 1.5 miles northeast of the site, and a New Mexico Office of the State Engineer (NM OSE) well from 1988, located approximately 2.95 miles northeast of the site (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Depth to groundwater at the USGS well is 117 feet below ground surface (bgs; United States Department of the Interior, United States Geological Survey, 2020) and depth to groundwater at the NM OSE well is 180 feet bgs (New Mexico Office of the State Engineer, New Mexico Water Rights Reporting System, 2020). Documentation pertaining to site characterization and depth to groundwater determination is included in Attachment 3.

Closure Criteria Determination

Using site characterization information, a closure criteria determination worksheet (Attachment 3) was completed to determine if the release was subject to any of the special case scenarios outlined in Paragraph (4) of Subsection C of 19.15.29.12 NMAC.

Based on data included in the closure criteria determination worksheet, the release at NM Main Header is not subject to the requirements of Paragraph (4) of Subsection C of 19.15.29.12 NMAC and the closure criteria for the site are determined to be associated with the following constituent concentration limits.

Table 1: Closure Criteria for Soils Impacted by a Release

Depth to Groundwater	Constituent	Limit
Greater than 100 feet	Chloride	20,000 mg/kg
	TPH[1] (GRO + DRO + MRO)	2,500 mg/kg
	GRO + DRO	1,000 mg/kg
	BTEX[2]	50 mg/kg
	Benzene	10 mg/kg

[1] Total petroleum hydrocarbons (TPH) = gasoline range organics (GRO) + diesel range organics (DRO) + motor oil range organics (MRO)

[2] Benzene, toluene, ethyl benzene and xylenes (BTEX)

Remedial Action

On October 12, 2018, initial remediation efforts included the excavation of impacted soils. Soils were removed as close to the existing infrastructure as possible in compliance with WPX safety guidelines. The transportation of impacted soil was completed by a licensed waste hauler and disposed of at an approved waste management facility. A total of eight test pits were completed to delineate the vertical and horizontal impacts to the spill.

Field screening was completed with field equipment (PID and Quantab); the results of the field screening for

hydrocarbons (volatile and extractable) were not within the NMAC Closure Criteria for Soils Impacted by a Release. Chloride screening was completed using the standardized saturated paste method with Quantabs which identified high concentrations at the North 1, East 1 and Base 1 locations (Figure 1).

Additional excavation was completed on October 15 and -16, 2018 at the North 1, East 1 and Base 1 sample locations. Field samples were collected again at the North 1, East 1, and Base 1, showing chlorides to be within the NMAC Closure Criteria for Soils Impacted by a Release. The total depth of the excavation ranged from one to seven feet bgs. Field notes are included as Attachment 4.

On November 7, 2018, a total of eight five-point composite confirmatory samples were collected from the base and side walls of the excavation, at depths ranging between one to seven feet bgs. Each composite sample was representative of no more than 200 square feet per the alternate sampling method outlined in Subparagraph (c) of Paragraph (1) of Subsection D 19.15.29.12 NMAC, which does not require prior NM OCD approval. The composite samples were placed into laboratory-provided containers, preserved on ice, and submitted to a National Environmental Laboratory Accreditation Program (NELAP)-approved laboratory for chemical analysis. The analytical data results summary and the raw analytical laboratory report are included as Attachment 5 and Attachment 6 respectively.

A GeoExplorer 7000 Series Trimble global positioning system (GPS) unit was used to map the approximate center of each of the five-point composite samples. The confirmatory sample locations are presented on Figure 1 (Attachment 2).

Closure Request

Vertex recommends no additional remediation action to address the release at NM Main Header. Laboratory analyses of the final confirmatory samples showed constituent of concern concentration levels below NM OCD closure criteria for areas where depth to groundwater is greater than 100 feet bgs as shown in Table 1. There are no anticipated risks to human, ecological or hydrological receptors associated with the release site.

Vertex requests that this incident (2RP-5001) be closed as all closure requirements set forth in Subsection E of 19.15.29.12 NMAC have been met. WPX certifies that all information in this report and the attachments is correct, and that they have complied with all applicable closure requirements and conditions specified in Division rules and directives to meet NM OCD requirements to obtain closure on the September 25, 2018, release at NM Main Header.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 575.988.0871 or ksmith@vertex.ca.

Sincerely,

Kevin Smith
Environmental Technician

Attachments

Attachment 1. NM OCD C-141 Report
Attachment 2. Site Schematic and Confirmatory Sample Locations
Attachment 3. Closure Criteria for Soils Impacted by a Release Research Determination Documentation
Attachment 4. Daily Field Report(s) with Photographs
Attachment 5. Confirmatory Sample Laboratory Results Summary
Attachment 6. Laboratory Data Report and Chain of Custody Form

References

New Mexico Bureau of Geology and Mineral Resources. (2020). *Interactive Geologic Map.* Retrieved from http://geoinfo.nmt.edu

New Mexico Energy, Mineral and Natural Resources Department. (2020) retrieved mine data from http://www.emnrd.state.nm.us/MMD/gismapminedata.html

New Mexico Oil Conservation Division. (2018). Natural Resources and Wildlife Oil and Gas Releases. Santa Fe, New Mexico.

New Mexico Water Rights Reporting System. (2020). *Water Column/Average Depth to Water Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/waterColumn.html

New Mexico Water Rights Reporting System. (2020). *Point of Diversion Location Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/wellSurfaceDiversion.html

New Mexico Water Rights Reporting System. (2020). *Well Log/Meter Information Report.* Retrieved from http://nmwrrs.ose.state.nm.us/nmwrrs/meterReport.html

United States Department of Agriculture, Soil Conservation Service in Cooperation with New Mexico Agricultural Experiment Station. (1971). Soil Survey Eddy Area, New Mexico. Retrieved from http://www.wipp.energy.gov/library/Information_Repository_A/Supplemental_Information/Chugg%20et%20al%201971%20w-map.pdf

United States Department of Homeland Security. (2020) FEMA Flood Map Service Center. Flood Map Number 35015C1875D, effective on 6/4/2010. Retrieved from https://msc.fema.gov/portal/search?AddressQuery=malaga%20new%20mexico#searchresultsanchor

United State Fish and Wildlife Service, National Wetland Inventory Surface Waters and Wetland.(2020) Retrieved from https://www.fws.gov/wetlands/data/mapper.html

United States Geological Survey. (1992). *Inventory of Springs in the State of New Mexico.* Albuquerque, New Mexico. Retrieved from https://pubs.usgs.gov/of/1992/0118/report.pdf

Limitations

This report has been prepared for the sole benefit of WPX Energy Inc. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and WPX Energy Inc. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	nMAP1828463427
District RP	2RP-5001
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party: WPX Energy/RKI Exploration	OGRID: 246289
Contact Name: Karolina Blaney	Contact Telephone: 970-589-0743
Contact email: Karolina.blaney@wpxenergy.com	Incident # *(assigned by OCD)*
Contact mailing address 5315 Buena Vista Dr.	

Location of Release Source

Latitude 32.00647 Longitude -103.87806
(NAD 83 in decimal degrees to 5 decimal places)

Site Name: NM Main Header	Site Type: Pipeline/Header ROW
Date Release Discovered: 9/25/18	API# *(if applicable)* N/A

Unit Letter	Section	Township	Range	County
P	28	26S	30E	Eddy

Surface Owner: ☐ State ☒ Federal ☐ Tribal ☐ Private (*Name:* _____)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☒ Produced Water	Volume Released (bbls) 8	Volume Recovered (bbls) 5
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☐ Other (describe)	Volume/Weight Released (provide units)	Volume/Weight Recovered (provide units)

Cause of Release
The spill was caused by corrosion of the header.

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?

If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?
On 9-26-18, Karolina Blaney gave a courtesy notification to Maria Pruett (OCD) and Shelly Tucker (BLM) via email.

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: _Karolina Blaney_____ Title: _Environmental Specialist_____

Signature: __Karolina Blaney ____ Date: __10/8/18__

email: __karolina.blaney@wpxenergy.com_____ Telephone: __970-589-0743_____

OCD Only

Received by: _____ Date: _____

State of New Mexico
Oil Conservation Division

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	180 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☒ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
☒ Field data
☒ Data table of soil contaminant concentration data
☒ Depth to water determination
☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
☒ Boring or excavation logs
☒ Photographs including date and GIS information
☒ Topographic/Aerial maps
☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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Oil Conservation Division

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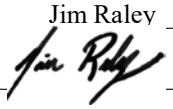
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Jim Raley _____ Title: ____Environmental Specialist_____

Signature:____  _____ Date: ___12/12/2018_____

email: _____james.raley@wpxenergy.com_____ Telephone: _____575-689-7597_____

OCD Only

Received by: _____ Date: _____

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State of New Mexico
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Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☒ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☒ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☒ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☒ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: Jim Raley Title: Environmental Specialist

Signature: Jim Raley Date: 12/12/2018

email: jim@jraley.com Telephone: 575-689-7597

OCD Only

Received by: Date:

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Date:

Printed Name: Title:

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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

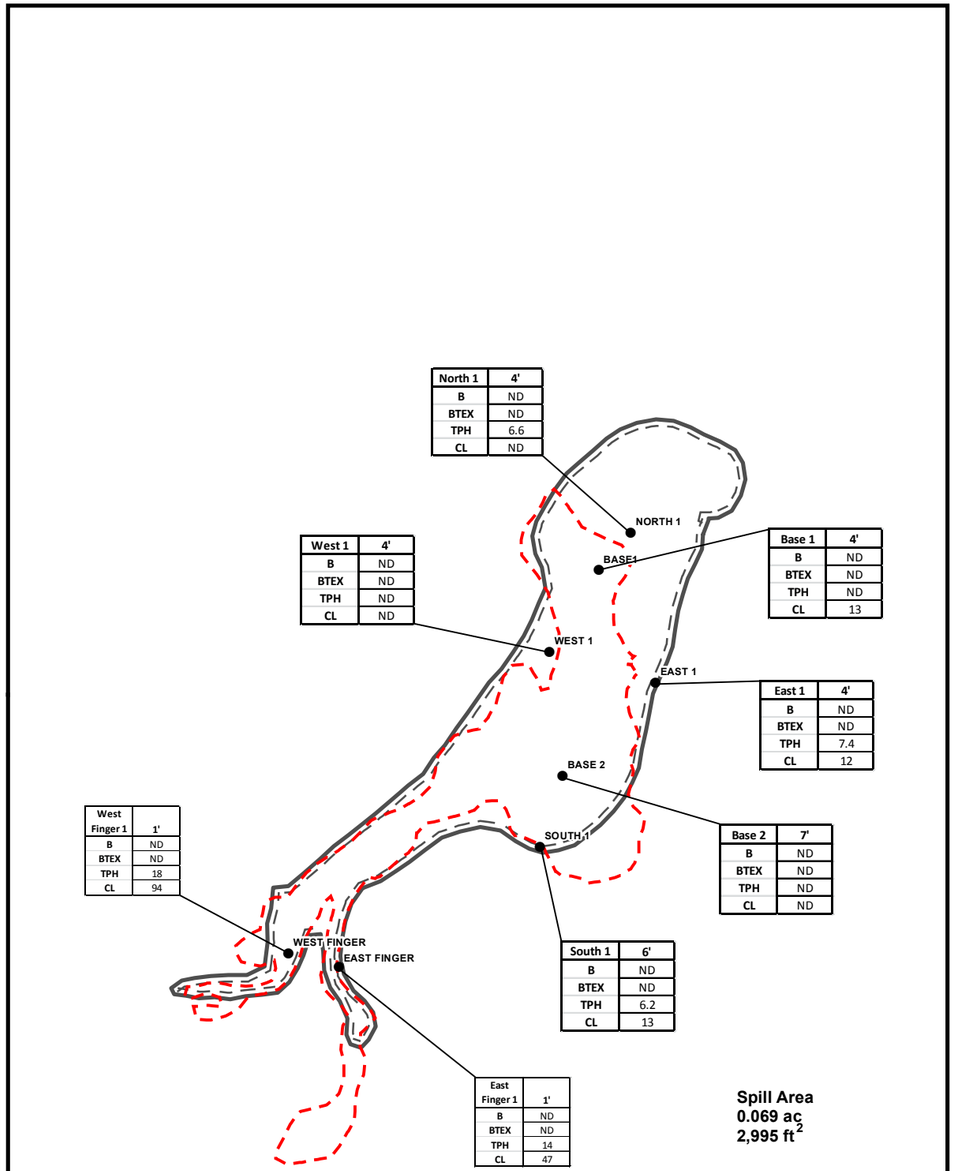
Printed Name: Jim Raley Title: Environmental Specialist

Signature: Jim Raley Date: 12/12/2018

email: james.raley@wpxenergy.com Telephone: 575-689-7597

OCD Only

Received by: Date:



Recommended Remediation Action Level (mg/kg)			
Benzene	BTEX	TPH	Chlorides
10 mg/kg	50 mg/kg	100 mg/kg	600 mg/kg

Legend

- Testpit
- Sample Location
- Spill Area
- Excavation

NOTE: Image from Bing, 2017

WPXENERGY

NM Main Header
November 7, 2018

VERTEX

DRAWN:	PS
APPROVED:	KM
DATE:	SEP 26/18

FIGURE: 1

VERSATILITY. EXPERTISE.

Document Path: G:\1-Projects_US PROJECTS\WPX\17E-00043 Spill\Figure 1 Site Schematic Mainline Excavation L (17E-00043).mxd

Table 1.				
Site Name: NM Main Header Stateline Road				
Spill Coordinates:		**X: 32.006636**	**Y: -103.878188**	
Site Specific Conditions		**Value**	**Unit**	**Reference**
1	Depth to Groundwater	117	feet	1
2	Within 300 feet of any continuously flowing watercourse or any other significant watercourse	30971	feet	2
3	Within 200 feet of any lakebed, sinkhole or playa lake (measured from the ordinary high-water mark)	24729	feet	3
4	Within 300 feet from an occupied residence, school, hospital, institution or church	30193	feet	4
5	i) Within 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes, **or**	11075	feet	5
	ii) Within 1000 feet of any fresh water well or spring	11075	feet	5
6	Within incorporated municipal boundaries or within a defined municipal fresh water field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended, unless the municipality specifically approves	No	(Y/N)	6
7	Within 300 feet of a wetland	20806	feet	7
8	Within the area overlying a subsurface mine	No	(Y/N)	8
9	Within an unstable area (Karst Map)	**High**	Critical High Medium Low	9
10	Within a 100-year Floodplain	>500	year	10
	NMAC 19.15.29.12 E (Table 1) Closure Criteria	>100'	<50' 51-100' >100'	
	Additional Information			
	USGS Soil Survey	Yes	Completed Y/N	
	Ecological Site Assessment	SG- Simona gravelly fine sandy loam	Completed Y/N	

National Water Information System: Web Interface

USGS Water Resources

Data Category: Groundwater ▼ Geographic Area: United States ▼ GO

Click to hideNews Bulletins

- **Notice** - The USGS Water Resources Mission Area's priority is to maintain the safety and well-being of our communities, including providing critical situational awareness in times of flooding in all 50 U.S. states and additional territories. Our hydrologic monitoring stations continue to send data in near real-time to NWISWeb, and we are continuing critical water monitoring activities to protect life and property on a case-by-case basis. The health and safety of the public and our employees are our highest priorities, and we continue to follow guidance from the White House, the CDC, and state and local authorities.

- Introducing The Next Generation of USGS Water Data for the Nation
- Full News

Groundwater levels for the Nation

Search Results -- 1 sites found

Agency code = usgs

site_no list =

- 320125103514701

Minimum number of levels = 1

Save file of selected sites to local disk for future upload

USGS 320125103514701 26S.30E.22.44124

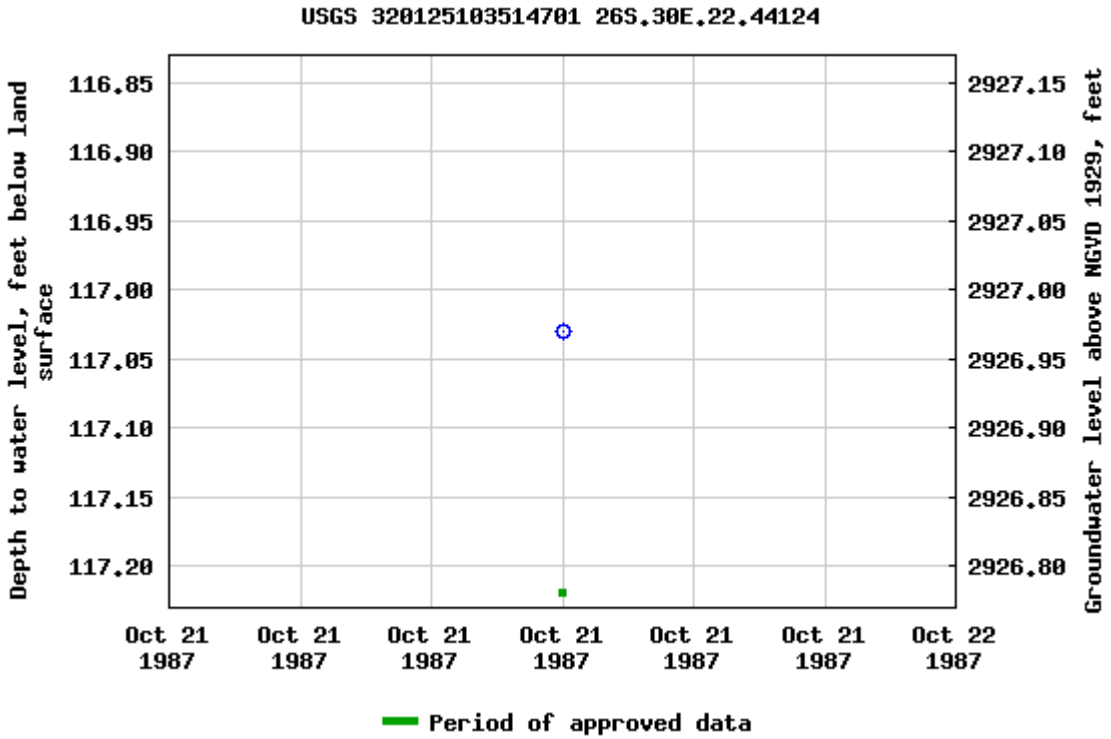
Groundwater: Field measurements ▼ GO

Eddy County, New Mexico
Hydrologic Unit Code 13070001

Latitude 32°01'25", Longitude 103°51'47" NAD27
Land-surface elevation 3,044 feet above NGVD29

Output formats

Table of data
Tab-separated data
Graph of data
Reselect period



Breaks in the plot represent a gap of at least one year between field measurements.
Download a presentation-quality graph

Questions about sites/data?
Feedback on this web site
Automated retrievals
Help

Data Tips
Explanation of terms
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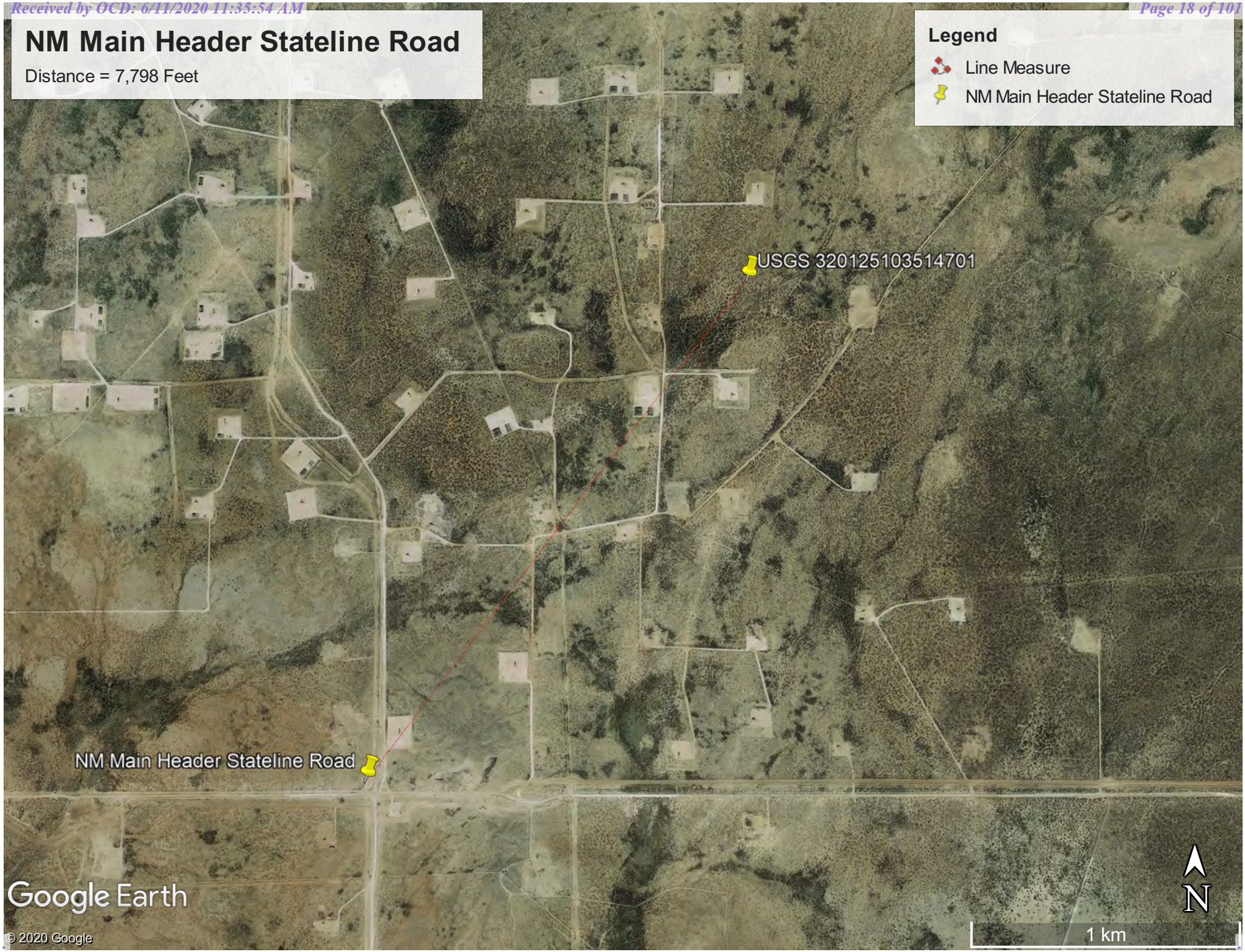
Title: Groundwater for USA: Water Levels
URL: https://nwis.waterdata.usgs.gov/nwis/gwlevels?

Page Contact Information: USGS Water Data Support Team
Page Last Modified: 2020-05-15 09:05:08 EDT
0.68 0.57 nadww01


NM Main Header Stateline Road
Distance = 7,798 Feet
Legend
Line Measure
NM Main Header Stateline Road
USGS 320125103514701
NM Main Header Stateline Road
Google Earth
© 2020 Google
N
1 km

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 04068 POD1	CUB	ED	1	3	1	16	26S	30E	604397	3546018	4579			
C 02165	C	ED				24	26S	30E	610036	3544121*	4771	440	180	260

Average Depth to Water: **180 feet**

Minimum Depth: **180 feet**

Maximum Depth: **180 feet**

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 605923.17 **Northing (Y):** 3541701 **Radius:** 5000

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Point of Diversion Summary

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters)

Well Tag	POD Number	Q64	Q16	Q4	Sec	Tws	Rng	X	Y
	C 02165				24	26S	30E	610036	3544121*

Driller License:	421	**Driller Company:**	GLENN'S WATER WELL SERVICE		
Driller Name:	CORKY GLENN				
Drill Start Date:	05/02/1988	**Drill Finish Date:**	05/02/1988	**Plug Date:**	
Log File Date:	05/05/1988	**PCW Rcv Date:**		**Source:**	Shallow
Pump Type:		**Pipe Discharge Size:**		**Estimated Yield:**	75 GPM
Casing Size:	6.63	**Depth Well:**	440 feet	**Depth Water:**	180 feet

Water Bearing Stratifications:	Top	Bottom	Description
	318	432	Other/Unknown

Casing Perforations:	Top	Bottom
	296	440

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)

(R=POD has been replaced and no longer serves this file, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Well Tag	Code	Grant	Source	q q q 6416 4	Sec	Tws	Rng	X	Y	Distance
C 03792	C	STK	3	BECKHAM RANCH INC	ED	C 03792 POD1			NON		1 1 1	29	26S	30E	602879	3543094	3366
C 03793	C	STK	3	BECKHAM RANCH INC	ED	C 03793 POD1			NON		1 4 2	30	26S	30E	602348	3542716	3739
C 03686	CUB	CPS	0	C P MASTERS INC	ED	C 03686 POD1					1 1 4	16	26S	30E	605257	3545585	3926
C 04068	CUB	EXP	0	RKI EXPLORATION & PROD., LLC	ED	C 04068 POD1			NON		1 3 1	16	26S	30E	604397	3546018	4570
C 02165	C	PRO	0	GRACE OIL	ED	C 02165				Shallow		24	26S	30E	610036	3544121*	4735

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 605953.34 **Northing (Y):** 3541721 **Radius:** 5000

Sorted by: Distance

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Right Summary

WR File Number: C 03792 **Subbasin:** C **Cross Reference:** -

Primary Purpose: STK 72-12-1 LIVESTOCK WATERING

Primary Status: PMT PERMIT

Total Acres: **Subfile:** - **Header:** -

Total Diversion: 3 **Cause/Case:** -

Agent: BECKHAM RANCH INC

Contact: M STAPLETON LLC

Current Points of Diversion

(NAD83 UTM in meters)

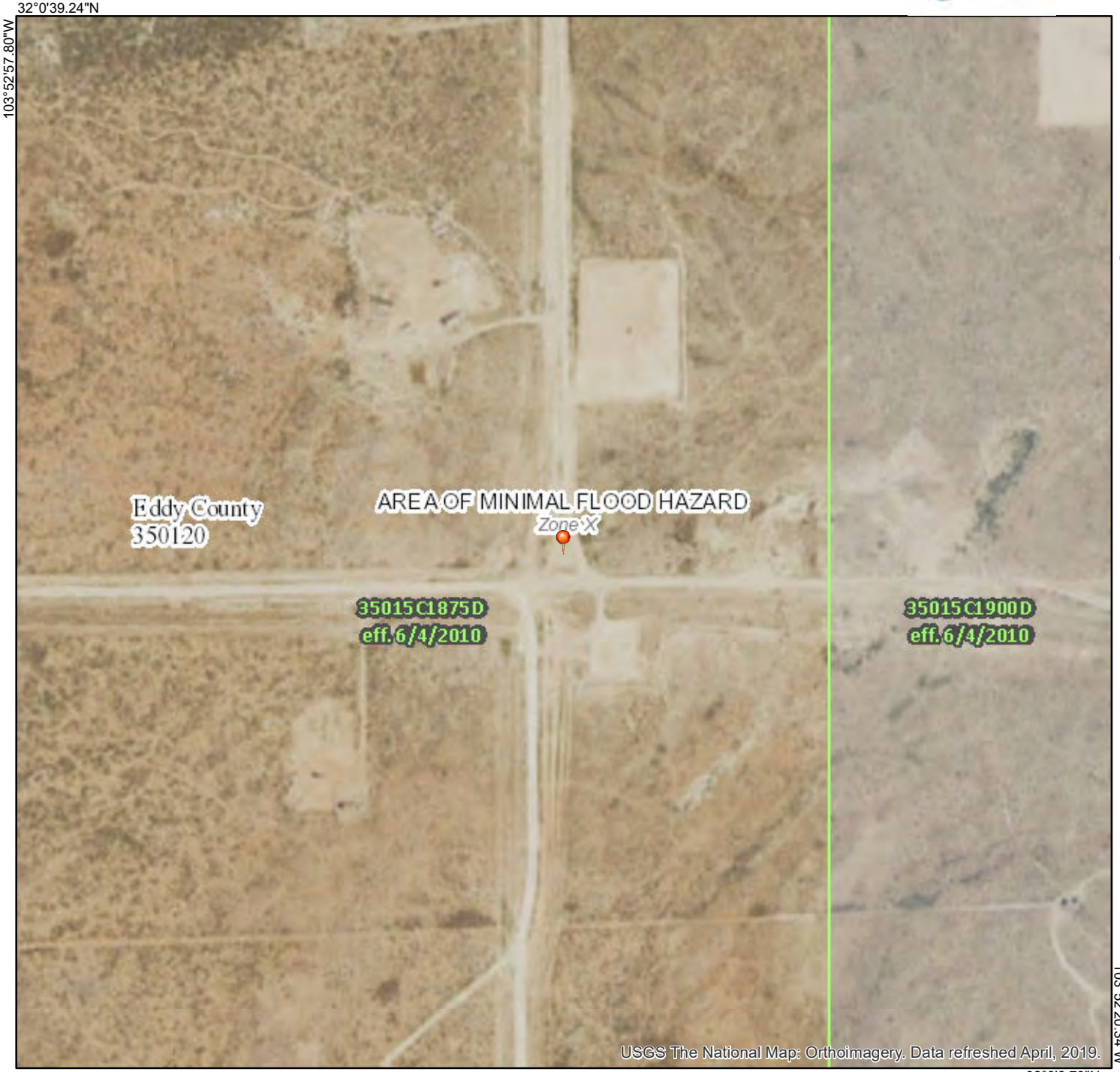
POD Number	Well Tag	Source	Q 64	Q16	Q4	Sec	Tws	Rng	X	Y	Other Location Desc
C 03792 POD1			1	1	1	29	26S	30E	602880	3543094	

National Flood Hazard Layer FIRMette

FEMA

32°0'39.24"N

103°52'57.80"W



103°52'20.34"W

32°0'8.73"N

Feet

0 250 500 1,000 1,500 2,000

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance / Water Surface Elevation
- Coastal Transect
- Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

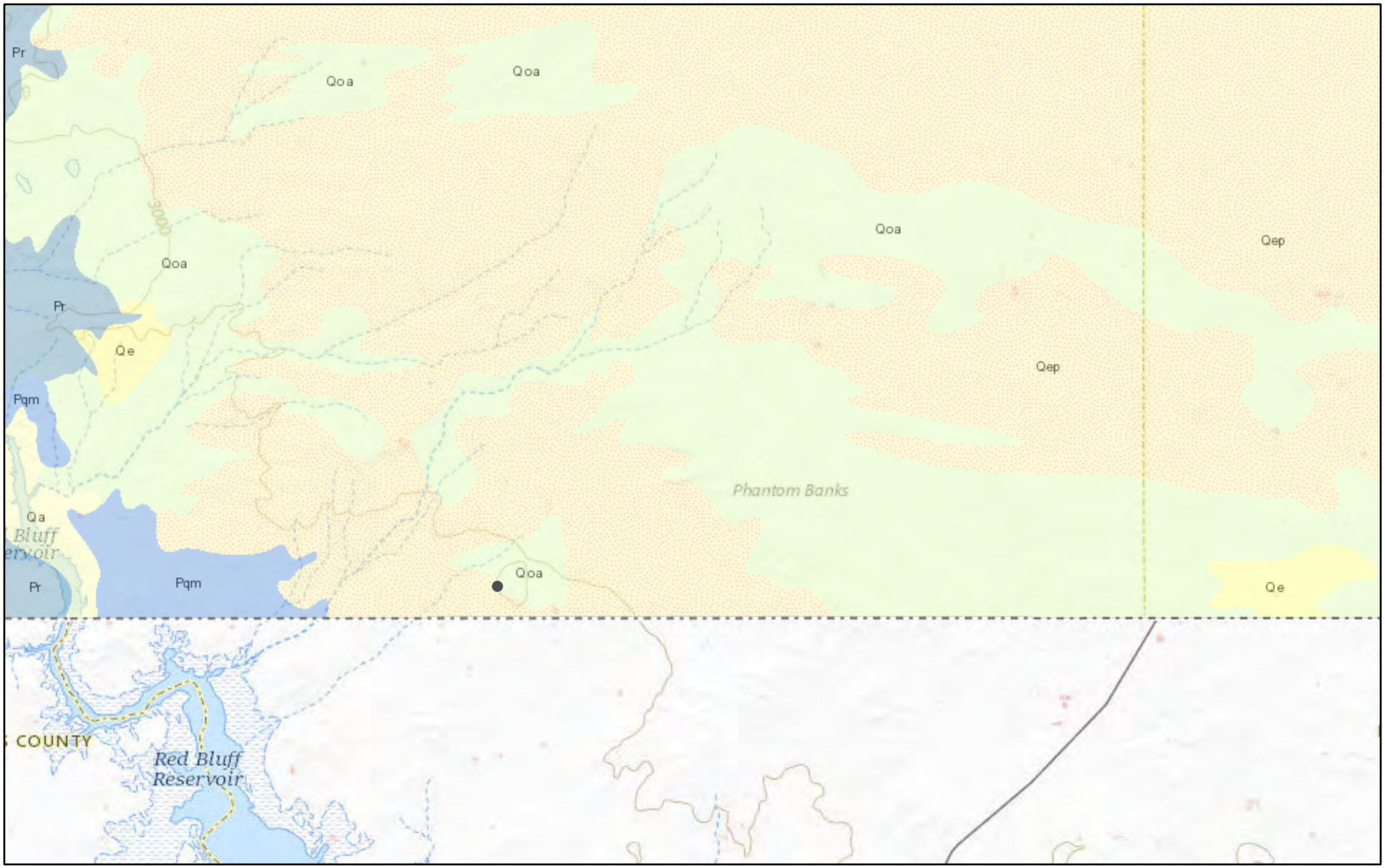
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 5/26/2020 at 4:45:28 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

ArcGIS Web Map



6/5/2020, 3:17:35 PM

1:144,448

0 1 2 4 mi

0 1.5 3 6 km

USGS The National Map: National Boundaries Dataset, 3DEP Elevation

Web AppBuilder for ArcGIS

USGS The National Map: National Boundaries Dataset, 3DEP Elevation Program, Geographic Names Information System, National Hydrography Dataset, National Land Cover Database, National Structures Dataset, and National Transportation Dataset; USGS Global

Active Mines in New Mexico

5/15/2020, 9:17:56 AM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

NM Main Header Stateline Road

Distance to Nearest Livestock Well = 11,075 Feet

U.S. Fish and Wildlife Service
National Wetlands Inventory

NM Main Header - Distance = 20,806'

May 15, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service
National Wetlands Inventory

NM Main Header - Distance =24,729'

May 15, 2020

Wetlands

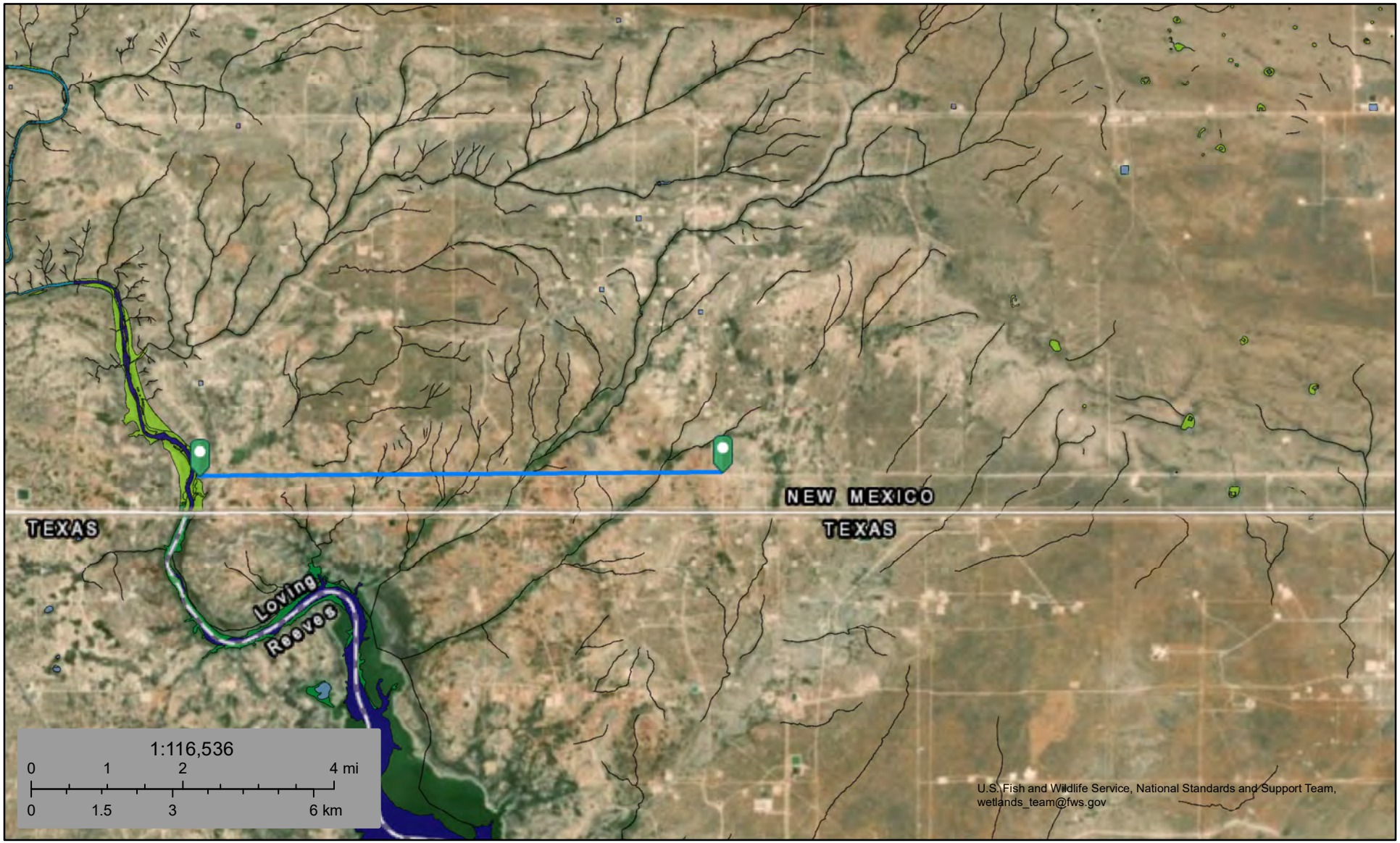
- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

U.S. Fish and Wildlife Service

National Wetlands Inventory

NM Main Header - Distance = 30,971'



May 15, 2020

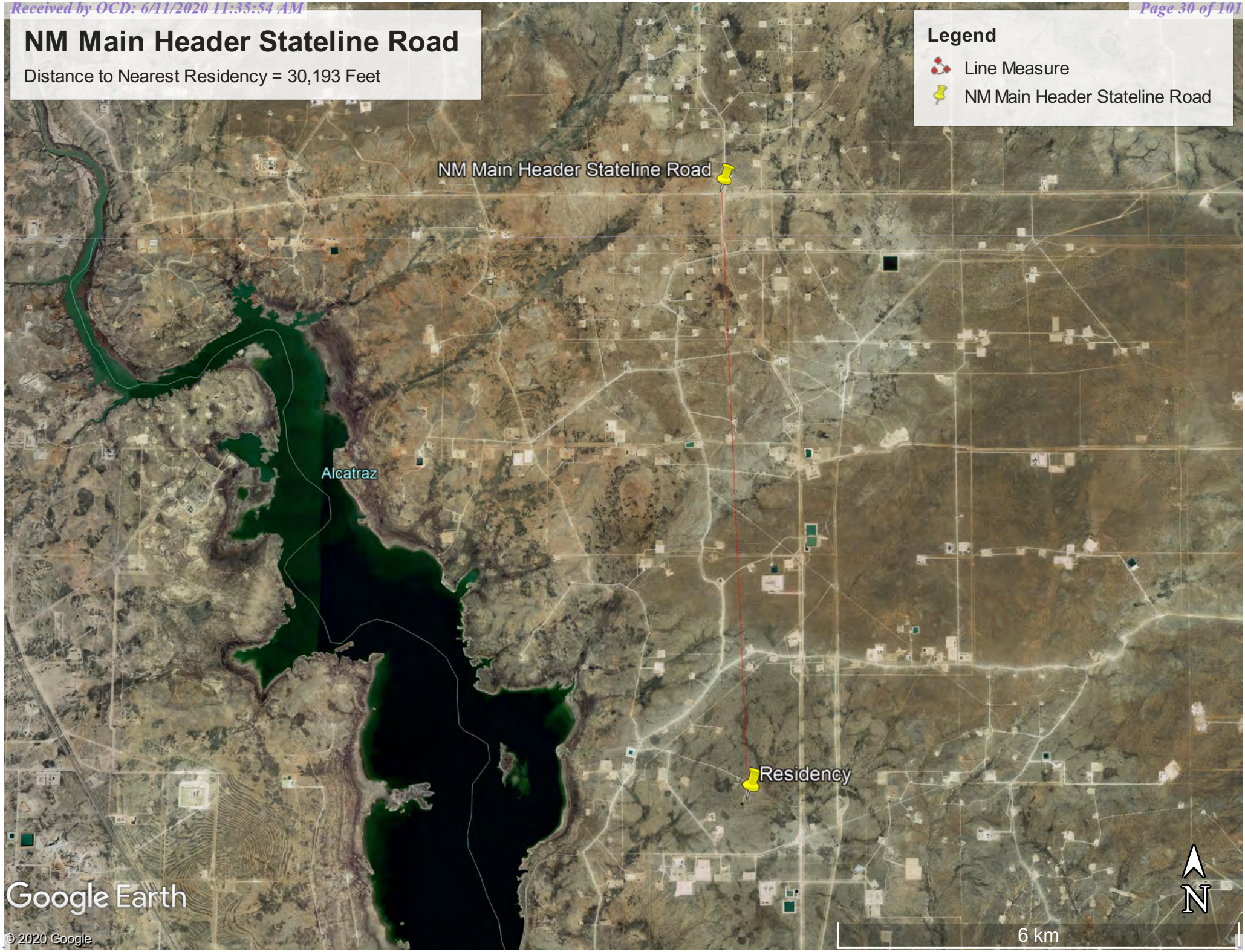
Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

NM Main Header Stateline Road

Distance to Nearest Residency = 30,193 Feet



United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Eddy Area, New Mexico

May 15, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

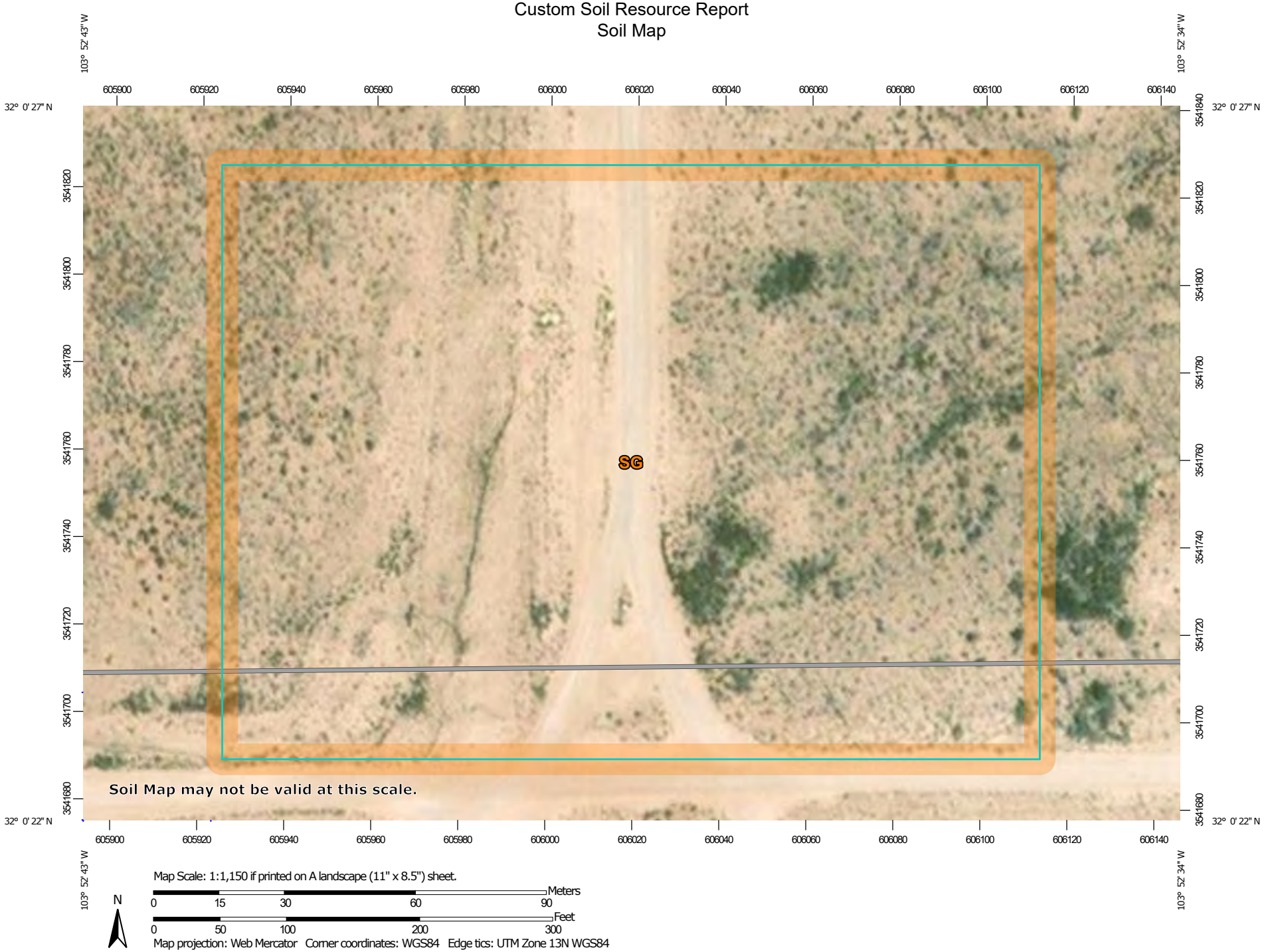
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Eddy Area, New Mexico
Survey Area Data: Version 15, Sep 15, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Sep 17, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
SG	Simona gravelly fine sandy loam, 0 to 3 percent slopes	6.3	100.0%
Totals for Area of Interest		**6.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Eddy Area, New Mexico

SG—Simona gravelly fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1w5w
Elevation: 2,750 to 5,000 feet
Mean annual precipitation: 8 to 16 inches
Mean annual air temperature: 57 to 70 degrees F
Frost-free period: 180 to 230 days
Farmland classification: Not prime farmland

Map Unit Composition

Simona and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Simona

Setting

Landform: Plains, alluvial fans
Landform position (three-dimensional): Rise
Down-slope shape: Convex, linear
Across-slope shape: Linear
Parent material: Mixed alluvium and/or eolian sands

Typical profile

H1 - 0 to 19 inches: gravelly fine sandy loam
H2 - 19 to 23 inches: indurated

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 7 to 20 inches to petrocalcic
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Very low (about 2.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Shallow Sandy (R042XC002NM)
Hydric soil rating: No

Minor Components

Simona

Percent of map unit: 4 percent
Ecological site: Shallow Sandy (R042XC002NM)
Hydric soil rating: No

Playa

Percent of map unit: 1 percent
Landform: Playas
Landform position (three-dimensional): Talf
Down-slope shape: Concave, convex
Across-slope shape: Concave, linear
Ecological site: Bottomland (R042XC017NM)
Hydric soil rating: Yes

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Photo 1. Overview of spill area facing west.

Photo Date: October 12, 2018 GPS: N: 32.00642 W: -130.8779

Photo 2. Overview of spill area facing South.

Photo Date: October 12, 2018 GPS: N: 32.006567 W: -103.8781

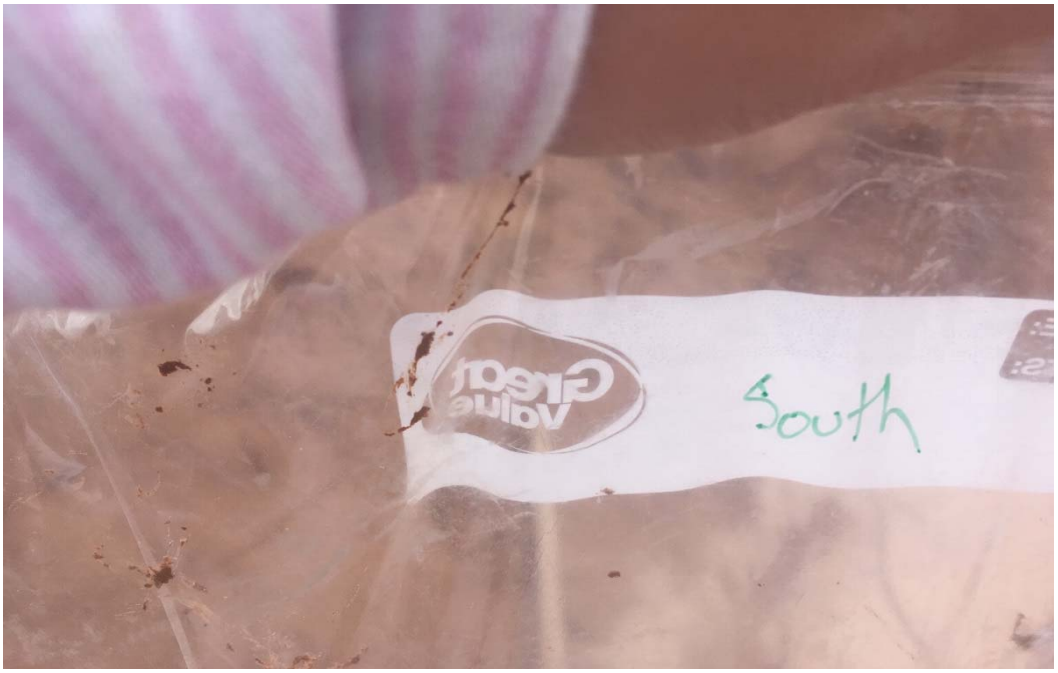


Photo 3. South soil sample.

Photo Date: October 12, 2018

Photo 4. South soil sampl location.

Photo Date: October 12, 2018 GPS: N: 32.006443 W: -103.8783

Photo 5. Base 2 soil sample.

Photo Date: October 12, 2018

Photo 6. Base 2 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.006443 W: -103.8783

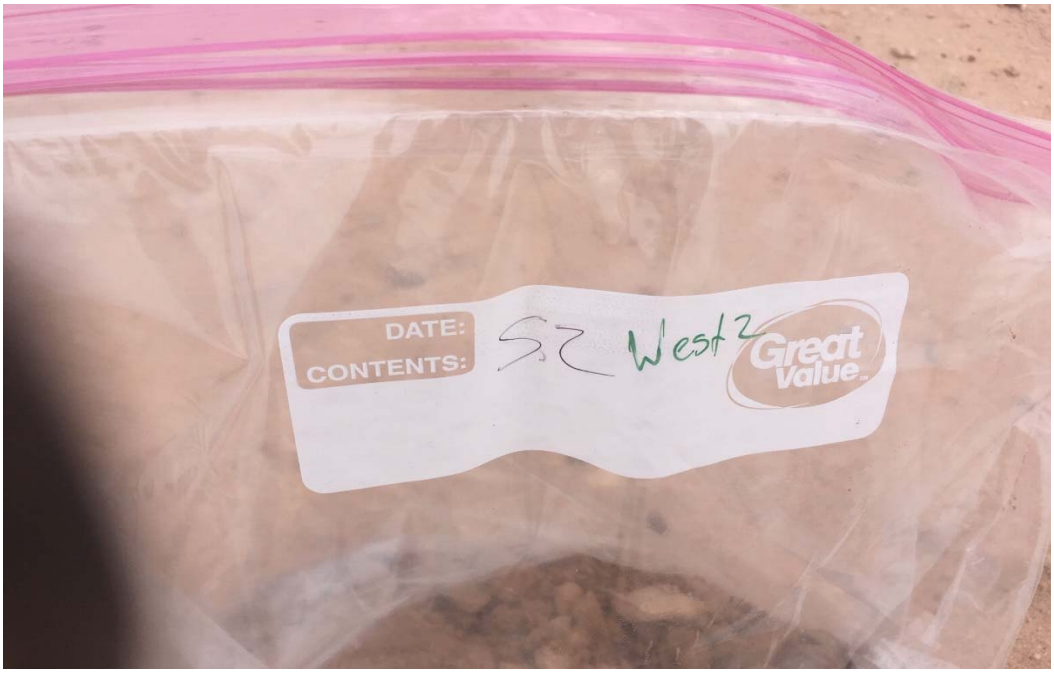


Photo 7. West 2 soil sample.

Photo Date: October 12, 2018

Photo 8. West 2 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00658 W: -103.8781

Photo 9. East 2 soil sample.

Photo Date: October 12, 2018

Photo 10. East 2 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00652 W: -103.8779

Photo 11. Base 1 soil sample.

Photo Date: October 12, 2018

Photo 12. Base 1 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00646 W: -103.878

Photo 13. West 1 soil sample.

Photo Date: October 12, 2018

Photo 14. West 1 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00657 W: -103.8779

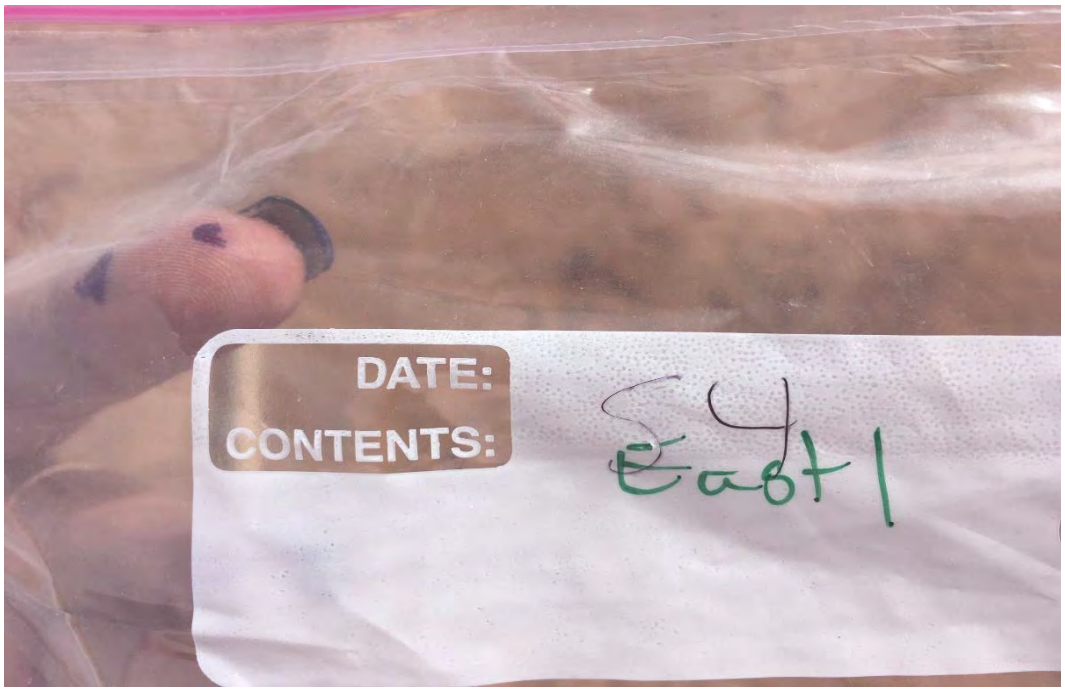


Photo 15. East 1 soil sample.

Photo Date: October 12, 2018

Photo 16. East 1 soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00656 W: -103.878

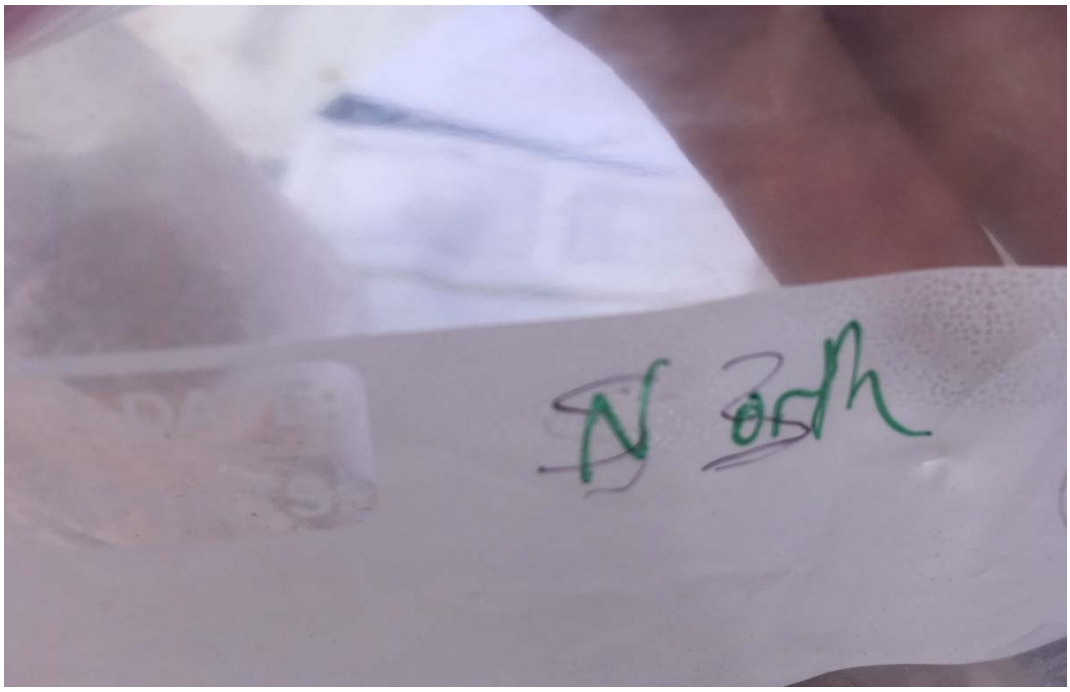


Photo 17. North soil sample.

Photo Date: October 12, 2018

Photo 18. North soil sample location.

Photo Date: October 12, 2018 GPS: N: 32.00670 W: -103.8779

Photo 1. Overview of spill cleanup, facing south.

Photo Date: October 15, 2018 GPS: N: 32.00642 W: -103.8779

Photo 2. Overview of spill cleanup, facing west.

Photo Date: October 15, 2018 GPS: N: 32.00647 W: -103.878

Photo 3. Overview of spill cleanup, facing west.

Photo Date: October 15, 2018 GPS N: 32.00647 W: -103.878

Photo 4. Overview of spill cleanup, facing south.

Photo Date: October 15, 2018 GPS: N: 32.00647 W: -103.878

Photo 1. Soil sample East 1-1.

Photo Date: October 16, 2018

Photo 2. Location of East 1 soil sample.

Photo Date: October 16, 2018

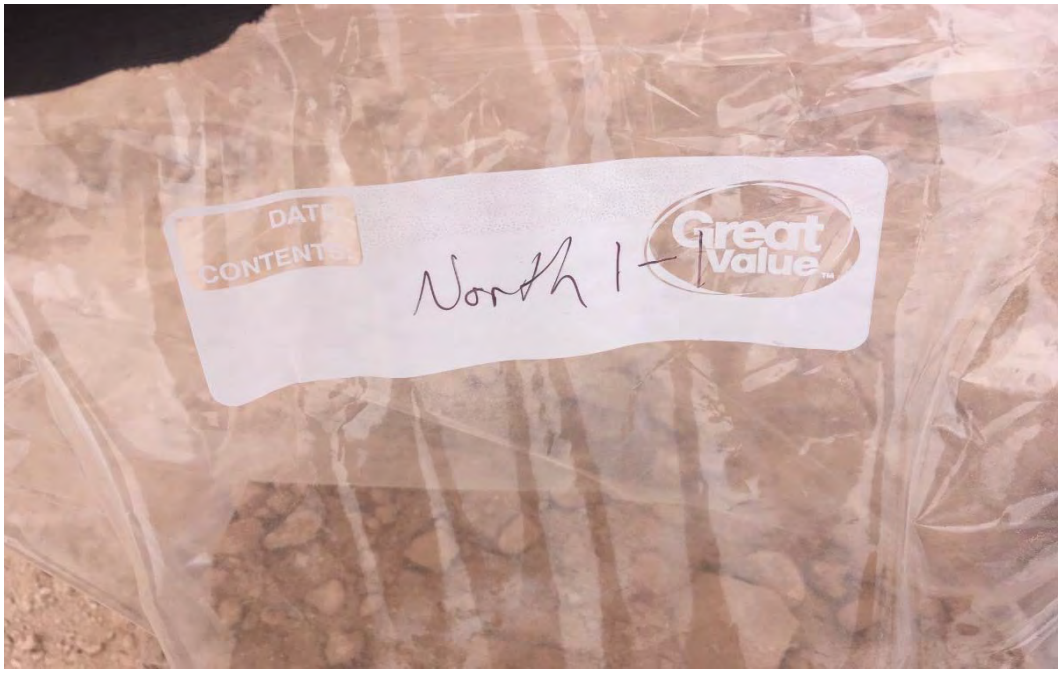


Photo 3. Soil sample North 1-1.

Photo Date: October 16, 2018

Photo 4. Location of soil sample North 1-1.

Photo Date: October 16, 2018 GPS: N: 32.006727 W: -103.87794

Photo 5. Soil sample Base 1-1.

Photo Date: October 16, 2018

Photo 6. Location of soil sample Base 1-1.

Photo Date: October 16, 2018 GPS N: 32.6638 W: -103.878

Photo 1. East 1 soil sample.

Photo Date: November 7, 2018

Photo 2. Location of East 1 soil sample.

Photo Date: November 7, 2018 GPS N: 32.00656 W: -103.878

Photo 3. West 1 soil sample.

Photo Date: November 7, 2018

Photo 4. West 1 soil sampl location.

Photo Date: November 7, 2018 GPS N: 32.00657 W: -103.8779

Photo 5. Base 1 soil sample.

Photo Date: November 7, 2018

Photo 6. Base 2 soil sample location.

Photo Date: November 7, 2018 GPS N: 32.00646 W: -103.878

Photo 7. West Finger soil sample.

Photo Date: November 7, 2018

Photo 8. West Finger soil sample location.

Photo Date: November 7, 2018 GPS N: 32.006401 W: -103.8782

Photo 9. East Finger soil sample.

Photo Date: November 7, 2018

Photo 10. East Finger soil sample location.

Photo Date: November 7, 2018 GPS N: 32.006402 W: -103.8782

Photo 11. South 1 soil sample.

Photo Date: November 7, 2018

Photo 12. South 1 soil sample location.

Photo Date: November 7, 2018 GPS N: 32.006443 W: -103.8783

Photo 13. North 1 soil sample.

Photo Date: November 12, 2018

Photo 14. North 1 soil sample location.

Photo Date: November 7, 2018 GPS N: 32.0067 W: -103.8779

Daily Field Report

VERTEX

Client:	WPX	Date:	10/12/2018
Site Location:	NM Main Header	Project #:	17E-00043
Project Owner:	Robyn Fisher	API:	30-015-29308
Project Manager:	Dhugal Hanton		

Summary of Daily Operations

- Got a call from Karolina Blaney to Field screen the cleaned up area.
- Took the samples, pictures and GPS'd the sample locations.
- Drove back to Carlsbad.

Planned Activites and Recommendations

No Plans at this time

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1107	N/A	South Wall
IMG_1108	South	South Wall
IMG_1109	N/A	Base 2
IMG_1110	N/A	Base 2
IMG_1111	South	South Wall
IMG_1112	N/A	West 2
IMG_1113	N/A	West 2

Cont'd on Page 2

Photo Log		
Picture Number (Camera Label)	**Viewing Direction**	**Description**
IMG_1114	N/A	East 2
IMG_1115	N/A	East 2
IMG_1116	North	Excavation looking North
IMG_1117	N/A	Base 1
IMG_1118	N/A	Base 1
IMG_1119	South	Excavation Looking south
IMG_1120	N/A	West 1
IMG_1121	West	West 1
IMG_1122	N/A	East 1
IMG_1123	N/A	East 1
IMG_1124	N/A	North
IMG_1125	North	North

Spill Response and Sampling

VERTEX

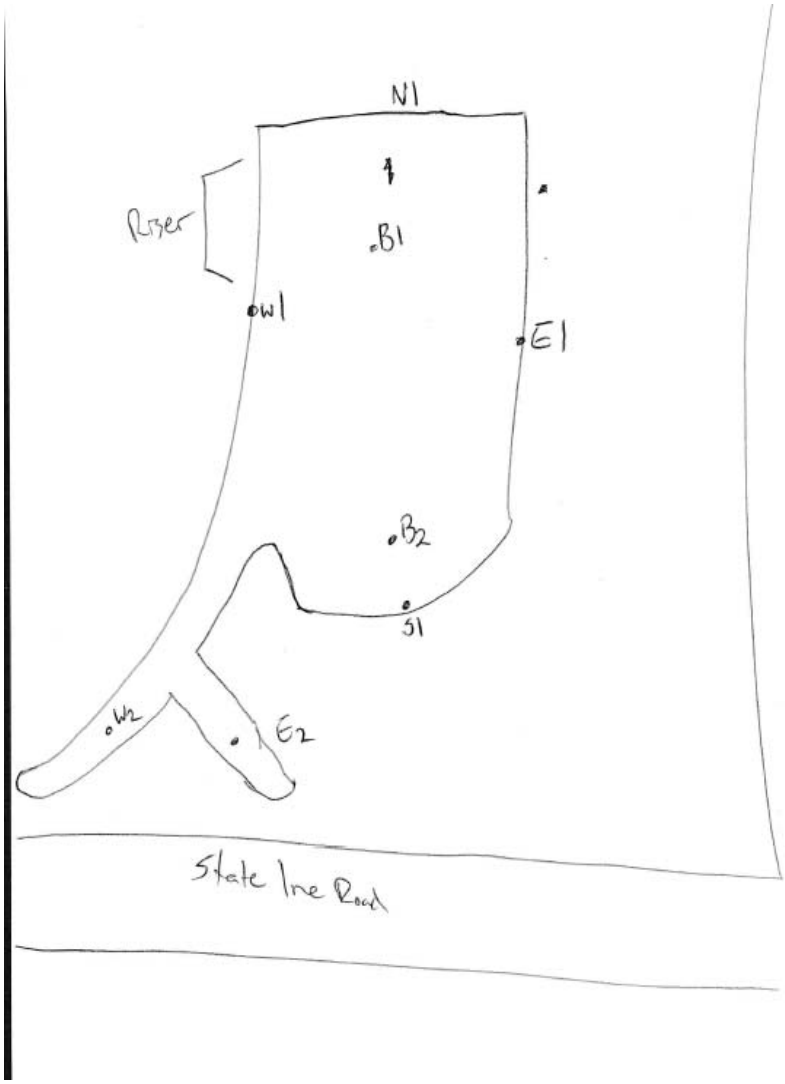
Page _____ of _____

Client:	WPX
Date:	October 12, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043
API:	30-015-29308

Initial Spill Information - Record on First Visit

Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck
On Lease/Off Lease	

Site Sketch



Approx. Total Spill Area _____

Site Wide Picture **Yes/No** Circle Site Placard Picture **Yes/No** Circle

VERTEX

Spill Response and Sampling

Client:	WPX
Date:	October 12, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043

Initial Spill Information - Record on First Visit	
Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck

Sampling

		Field Screening		Data Collection (Check for Yes)			
Sample ID	**Depth (ft)**	**VOC (PID)**	**Quantab (High/Low) + or -**	**Lab Analysis**	**Picture**	**Trimble Coordinates**	**Marked on Site Sketch**
East 1	4		High 6198	N/A	Yes	Yes	Yes
West 1	4		Low 98	N/A	Yes	Yes	Yes
North	2		High 2262	N/A	Yes	Yes	Yes
South	6		Low 128	N/A	Yes	Yes	Yes
Base 1	3		High 2262	N/A	Yes	Yes	Yes
Base 2	7		Low 114	N/A	Yes	Yes	Yes
East 2	1		Low ND	N/A	Yes	Yes	Yes
West 2	1		Low ND	N/A	Yes	Yes	Yes

Daily Field Report

VERTEX

Client:	WPX	Date:	10/15/2018
Site Location:	Stateline Road Spill	Project #:	17E-00043
Project Owner:	Robyn Fisheer	API:	30-015-29308
Project Manager:	Dhugal Hanton		

Summary of Daily Operations

- Got a call from Karolina Blaney to inform Gama where to dig more on site.
- Took the pictures.
- Drove back to Carlsbad.

Planned Activites and Recommendations

No Plans at this time

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1199	South	Excavation
IMG_1200	West	Excavation
IMG_1201	South	Excavation
IMG_1202	Southwest	Excavation

Cont'd on Page 2

Daily Field Report

VERTEX

Client:	WPX	Date:	10/16/2018
Site Location:	NM Main Header	Project #:	17E-00043
Project Owner:	Robyn Fisher	API:	30-015-29308
Project Manager:	Dhugal Hanton		

Summary of Daily Operations

- Got a call from Karolina Blaney to Field screen the cleaned up area.
- Took the samples, pictures and GPS'd the sample locations.
- Drove back to Carlsbad.

Planned Activites and Recommendations

No Plans at this time

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1203	N/A	West 1-1
IMG_1204	N/A	West 1-1
IMG_1205	N/A	North 1-1
IMG_1206	N/A	North 1-1
IMG_1207	N/A	Base 1-1
IMG_1208	N/A	Base 1-1

Cont'd on Page 2

Spill Response and Sampling

VERTEX

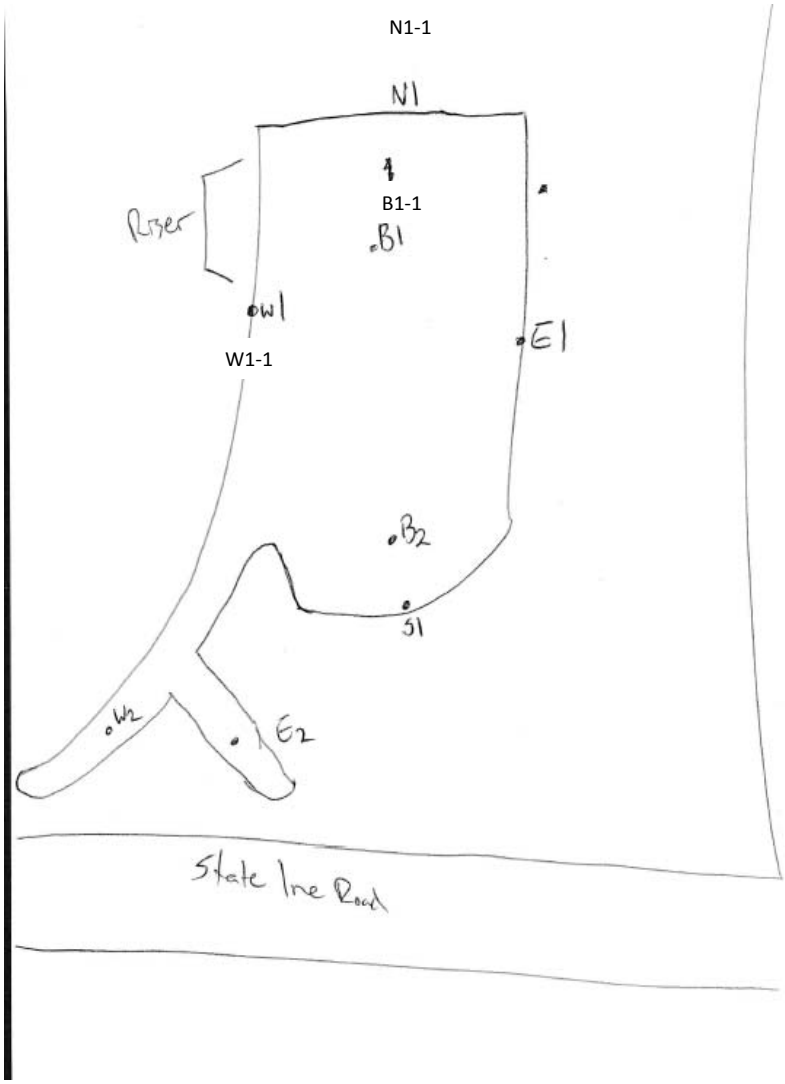
Page _____ of _____

Client:	WPX
Date:	October 16, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043
API:	30-015-29308

Initial Spill Information - Record on First Visit

Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck
On Lease/Off Lease	

Site Sketch



Approx. Total Spill Area _____

Site Wide Picture **Yes/No** Circle Site Placard Picture **Yes/No** Circle

VERTEX

Spill Response and Sampling

Client:	WPX
Date:	October 16, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043

Initial Spill Information - Record on First Visit	
Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck

Sampling

		Field Screening		Data Collection (Check for Yes)			
Sample ID	**Depth (ft)**	**VOC (PID)**	**Quantab (High/Low) + or -**	**Lab Analysis**	**Picture**	**Trimble Coordinates**	**Marked on Site Sketch**
East 1-1	4		Low 64	N/A	Yes	Yes	Yes
Base 1-1	3		Low 848	N/A	Yes	Yes	Yes
North 1-1	2		Low 136	N/A	Yes	Yes	Yes

Daily Field Report

VERTEX

Client:	WPX	Date:	11/07/2018
Site Location:	NM Main Header	Project #:	17E-00043
Project Owner:	Robyn Fisher	API:	30-015-29308
Project Manager:	Dhugal Hanton		

Summary of Daily Operations

- Drove to spill area to do Final Sampling.
- Took samples, field screen and jarred samples.
- Drove back to Carlsbad.

Planned Activites and Recommendations

Fill in excavation when closure approved.

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1304	N/A	East Wall Sample
IMG_1305	East	East Wall Sample
IMG_1306	East	East Wall Sample
IMG_1307	N/A	West Wall Sample
IMG_1308	West	West Wall Sample
IMG_1309	N/A	base sample 1
IMG_1310	N/A	base sample 1
IMG_1311	N/A	West Finger Sample
IMG_1312	N/A	West Finger Sample
IMG_1313	N/A	West Finger Sample
IMG_1314	N/A	East Finger Sample
IMG_1315	N/A	East Finger Sample

Cont'd on Page 2

Photo Log		
Picture Number (Camera Label)	**Viewing Direction**	**Description**
IMG_1316	N/A	East Finger Sample
IMG_1317	N/A	base 2
IMG_1318	N/A	base 3
IMG_1319	N/A	South Wall Sample
IMG_1320	South	South Wall Sample
IMG_1321	South	South Wall Sample
IMG_1322	N/A	North Wall Sample
IMG_1323	N/A	North Wall Sample

Spill Response and Sampling

VERTEX

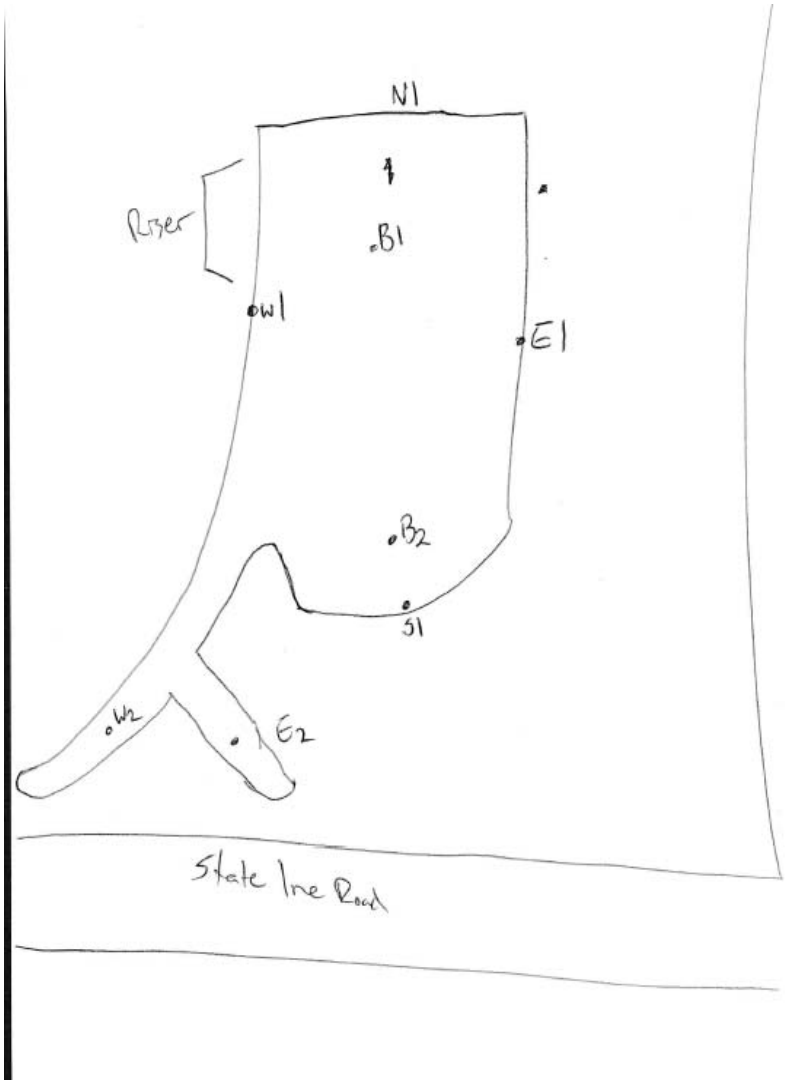
Page _____ of _____

Client:	WPX
Date:	November 7, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043
API:	30-015-29308

Initial Spill Information - Record on First Visit

Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck
On Lease/Off Lease	

Site Sketch



Approx. Total Spill Area _____

Site Wide Picture **Yes/No** Circle Site Placard Picture **Yes/No** Circle

VERTEX

Spill Response and Sampling

Client:	WPX
Date:	November 7, 2018
Site Name:	NM Main Header
Site Location:	32.00647, -103.87806
Project Owner:	Robyn Fisher
Project Manager:	Dhugal Hanton
Project #:	17E-00043

Initial Spill Information - Record on First Visit

Spill Date:	9/25/18
Spill Volume:	8 bbls
Spill Cause:	corrosion on the header
Spill Product:	Production water
Recovered Spill Volume:	5 bbls
Recovery Method:	Vac truck

Sampling

		Field Screening		Data Collection (Check for Yes)			
Sample ID	**Depth (ft)**	**VOC (PID)**	**Quantab (High/Low) + or -**	**Lab Analysis**	**Picture**	**Trimble Coordinates**	**Marked on Site Sketch**
East 1	4		ND		Yes	Yes	Yes
West 1	4		ND		Yes	Yes	Yes
North 1	4		ND		Yes	Yes	Yes
South 1	6		ND		Yes	Yes	Yes
Base 1	4		ND		Yes	Yes	Yes
Base 2	7		ND		Yes	Yes	Yes
East Finger 1	1		ND		Yes	Yes	Yes
West Finger 1	1		ND		Yes	Yes	Yes

Client Name: WPX Energy
Site Name: NM Main Header
NM OCD Incident Tracking Numbers: 2RP-5001
Project #: 20E-01076
Lab Report: 1811789

Table 2. Characterization Sampling Laboratory Results - Depth to Groundwater >100 ft

Sample Description			Field Screening			Petroleum Hydrocarbons							Inorganic
						Volatile		Extractable					
Sample ID	Depth (ft)	Sample Date	Volatile Organic Compounds (PID)	Extractable Organic Compounds (Petro Flag)	Inorganics (Electroconductivity)	Benzene	BTEX (Total)	Gasoline Range Organics (GRO)	Diesel Range Organics (DRO)	Motor Oil Range Organics (MRO)	(GRO + DRO)	Total Petroleum Hydrocarbons (TPH)	Chloride
			(ppm)	(ppm)	(ppm)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
North 1	4	November 7, 2018	-	-	-	<0.035	<0.209	<5.8	<5.4	6.6	<11.2	<17.8	<11
East Finger	1	November 7, 2018	-	-	-	<0.036	<0.216	<6.0	<5.3	14	<11.3	<25.3	47
West 1	4	November 7, 2018	-	-	-	<0.036	<0.215	<5.9	<5.2	<5.2	<11.1	<16.3	<11
East 1	4	November 7, 2018	-	-	-	<0.035	<0.21	<5.8	<5.3	7.4	<11.1	<18.5	12
Base 1	4	November 7, 2018	-	-	-	<0.036	<0.215	<6.0	<5.4	<5.4	<11.4	<16.8	13
Base 2	7	November 7, 2018	-	-	-	<0.048	<0.288	<8.0	<6.1	<6.1	<14.1	<20.2	<13
West Finger	1	November 7, 2018	-	-	-	<0.037	<0.221	<6.1	<5.4	18	<11.5	<29.5	94
South 1	6	November 7, 2018	-	-	-	<0.041	<0.245	<6.8	<5.7	6.2	<12.5	<18.7	13

"-" - Not applicable/assessed

Bold and shaded indicates exceedance outside of applied action level

28-Nov-2018

Karolina Blaney
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **Stateline Header** Work Order: **1811789**

Dear Karolina,

ALS Environmental received 8 samples on 10-Nov-2018 10:00 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland and for only the analyses requested.

Sample results are compliant with industry accepted practices and Quality Control results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 21.

If you have any questions regarding this report, please feel free to contact me:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

ALS Group, USA

Date: 28-Nov-18

Client: WPX Energy
Project: Stateline Header
Work Order: **1811789**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1811789-01	North 1 4'	Soil		11/7/2018 09:00	11/10/2018 10:00	☐
1811789-02	East Finger 1'	Soil		11/7/2018 09:10	11/10/2018 10:00	☐
1811789-03	West 1 4'	Soil		11/7/2018 09:15	11/10/2018 10:00	☐
1811789-04	East 1 4'	Soil		11/7/2018 09:20	11/10/2018 10:00	☐
1811789-05	Base 1 4'	Soil		11/7/2018 09:40	11/10/2018 10:00	☐
1811789-06	Base 2 7'	Soil		11/7/2018 09:25	11/10/2018 10:00	☐
1811789-07	West Finger 1'	Soil		11/7/2018 09:30	11/10/2018 10:00	☐
1811789-08	South 1 6'	Soil		11/7/2018 09:35	11/10/2018 10:00	☐

ALS Group, USA

Date: 28-Nov-18

Client: WPX Energy
Project: Stateline Header
WorkOrder: 1811789

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
J	Analyte is present at an estimated concentration between the MDL and Report Limit
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

Units Reported	Description
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: North 1 4'
Collection Date: 11/7/2018 09:00 AM

Work Order: 1811789
Lab ID: 1811789-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	11/15/2018 11:52 PM
ORO (C28-C40)	**6.6**		**5.4**	**mg/Kg-dry**	1	11/15/2018 11:52 PM
Surr: 4-Terphenyl-d14	*97.1*		*34-130*	*%REC*	1	11/15/2018 11:52 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	11/16/2018 04:30 PM
Surr: Toluene-d8	*88.0*		*71-123*	*%REC*	1	11/16/2018 04:30 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.035	mg/Kg-dry	1	11/17/2018 08:15 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	11/17/2018 08:15 AM
m,p-Xylene	ND		0.069	mg/Kg-dry	1	11/17/2018 08:15 AM
o-Xylene	ND		0.035	mg/Kg-dry	1	11/17/2018 08:15 AM
Toluene	ND		0.035	mg/Kg-dry	1	11/17/2018 08:15 AM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	11/17/2018 08:15 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 08:15 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 08:15 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 08:15 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 08:15 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 14:50		Analyst: **RLM**
Chloride	ND		11	mg/Kg-dry	1	11/15/2018 04:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**7.3**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: East Finger 1'
Collection Date: 11/7/2018 09:10 AM

Work Order: 1811789
Lab ID: 1811789-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.3	mg/Kg-dry	1	11/16/2018 12:21 PM
ORO (C28-C40)	**14**		**5.3**	**mg/Kg-dry**	1	11/16/2018 12:21 PM
Surr: 4-Terphenyl-d14	*92.6*		*34-130*	*%REC*	1	11/16/2018 12:21 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		6.0	mg/Kg-dry	1	11/16/2018 04:59 PM
Surr: Toluene-d8	*92.8*		*71-123*	*%REC*	1	11/16/2018 04:59 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:30 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:30 AM
m,p-Xylene	ND		0.072	mg/Kg-dry	1	11/17/2018 08:30 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:30 AM
Toluene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:30 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	11/17/2018 08:30 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 08:30 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 08:30 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 08:30 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 08:30 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 14:50		Analyst: **RLM**
Chloride	**47**		**11**	**mg/Kg-dry**	1	11/15/2018 04:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**9.1**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: West 1 4'
Collection Date: 11/7/2018 09:15 AM

Work Order: 1811789
Lab ID: 1811789-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.2	mg/Kg-dry	1	11/16/2018 12:50 PM
ORO (C28-C40)	ND		5.2	mg/Kg-dry	1	11/16/2018 12:50 PM
Surr: 4-Terphenyl-d14	*80.1*		*34-130*	*%REC*	1	11/16/2018 12:50 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		5.9	mg/Kg-dry	1	11/16/2018 05:28 PM
Surr: Toluene-d8	*107*		*71-123*	*%REC*	1	11/16/2018 05:28 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:46 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:46 AM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	11/17/2018 08:46 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:46 AM
Toluene	ND		0.036	mg/Kg-dry	1	11/17/2018 08:46 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	11/17/2018 08:46 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 08:46 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 08:46 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 08:46 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 08:46 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 14:50		Analyst: **RLM**
Chloride	ND		11	mg/Kg-dry	1	11/15/2018 04:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**8.4**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: East 1 4'
Collection Date: 11/7/2018 09:20 AM

Work Order: 1811789
Lab ID: 1811789-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.3	mg/Kg-dry	1	11/16/2018 01:20 AM
ORO (C28-C40)	**7.4**		**5.3**	**mg/Kg-dry**	1	11/16/2018 01:20 AM
Surr: 4-Terphenyl-d14	*90.1*		*34-130*	*%REC*	1	11/16/2018 01:20 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	11/16/2018 05:57 PM
Surr: Toluene-d8	*88.6*		*71-123*	*%REC*	1	11/16/2018 05:57 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.035	mg/Kg-dry	1	11/17/2018 09:01 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	11/17/2018 09:01 AM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	11/17/2018 09:01 AM
o-Xylene	ND		0.035	mg/Kg-dry	1	11/17/2018 09:01 AM
Toluene	ND		0.035	mg/Kg-dry	1	11/17/2018 09:01 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	11/17/2018 09:01 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 09:01 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 09:01 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 09:01 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 09:01 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 19:05		Analyst: **RLM**
Chloride	**12**		**11**	**mg/Kg-dry**	1	11/15/2018 08:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**7.7**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: Base 1 4'
Collection Date: 11/7/2018 09:40 AM

Work Order: 1811789
Lab ID: 1811789-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	11/16/2018 02:18 AM
ORO (C28-C40)	ND		5.4	mg/Kg-dry	1	11/16/2018 02:18 AM
Surr: 4-Terphenyl-d14	*58.6*		*34-130*	*%REC*	1	11/16/2018 02:18 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		6.0	mg/Kg-dry	1	11/16/2018 06:26 PM
Surr: Toluene-d8	*92.0*		*71-123*	*%REC*	1	11/16/2018 06:26 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.036	mg/Kg-dry	1	11/17/2018 09:16 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	11/17/2018 09:16 AM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	11/17/2018 09:16 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	11/17/2018 09:16 AM
Toluene	ND		0.036	mg/Kg-dry	1	11/17/2018 09:16 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	11/17/2018 09:16 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 09:16 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 09:16 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 09:16 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 09:16 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 19:05		Analyst: **RLM**
Chloride	**13**		**11**	**mg/Kg-dry**	1	11/15/2018 08:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**8.7**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: Base 2 7'
Collection Date: 11/7/2018 09:25 AM

Work Order: 1811789
Lab ID: 1811789-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		6.1	mg/Kg-dry	1	11/16/2018 02:47 AM
ORO (C28-C40)	ND		6.1	mg/Kg-dry	1	11/16/2018 02:47 AM
Surr: 4-Terphenyl-d14	*80.1*		*34-130*	*%REC*	1	11/16/2018 02:47 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		8.0	mg/Kg-dry	1	11/16/2018 07:24 PM
Surr: Toluene-d8	*93.2*		*71-123*	*%REC*	1	11/16/2018 07:24 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.048	mg/Kg-dry	1	11/17/2018 09:32 AM
Ethylbenzene	ND		0.048	mg/Kg-dry	1	11/17/2018 09:32 AM
m,p-Xylene	ND		0.096	mg/Kg-dry	1	11/17/2018 09:32 AM
o-Xylene	ND		0.048	mg/Kg-dry	1	11/17/2018 09:32 AM
Toluene	ND		0.048	mg/Kg-dry	1	11/17/2018 09:32 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	11/17/2018 09:32 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 09:32 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 09:32 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 09:32 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 09:32 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 19:05		Analyst: **RLM**
Chloride	ND		13	mg/Kg-dry	1	11/15/2018 08:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**23**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: West Finger 1'
Collection Date: 11/7/2018 09:30 AM

Work Order: 1811789
Lab ID: 1811789-07
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	11/16/2018 03:16 AM
ORO (C28-C40)	**18**		**5.4**	**mg/Kg-dry**	1	11/16/2018 03:16 AM
Surr: 4-Terphenyl-d14	*95.6*		*34-130*	*%REC*	1	11/16/2018 03:16 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		6.1	mg/Kg-dry	1	11/16/2018 07:53 PM
Surr: Toluene-d8	*90.8*		*71-123*	*%REC*	1	11/16/2018 07:53 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.037	mg/Kg-dry	1	11/17/2018 09:47 AM
Ethylbenzene	ND		0.037	mg/Kg-dry	1	11/17/2018 09:47 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	11/17/2018 09:47 AM
o-Xylene	ND		0.037	mg/Kg-dry	1	11/17/2018 09:47 AM
Toluene	ND		0.037	mg/Kg-dry	1	11/17/2018 09:47 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	11/17/2018 09:47 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 09:47 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 09:47 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 09:47 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 09:47 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 19:05		Analyst: **RLM**
Chloride	**94**		**11**	**mg/Kg-dry**	1	11/15/2018 08:00 PM
MOISTURE			**SW3550C**			Analyst: **RBS**
Moisture	**10**		**0.050**	**% of sample**	1	11/19/2018 01:39 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: *28-Nov-18*

Client: WPX Energy
Project: Stateline Header
Sample ID: South 1 6'
Collection Date: 11/7/2018 09:35 AM

Work Order: 1811789
Lab ID: 1811789-08
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015C**	Prep: SW3546 11/15/18 13:34		Analyst: **RP**
DRO (C10-C28)	ND		5.7	mg/Kg-dry	1	11/16/2018 03:46 AM
ORO (C28-C40)	**6.2**		**5.7**	**mg/Kg-dry**	1	11/16/2018 03:46 AM
Surr: 4-Terphenyl-d14	*78.1*		*34-130*	*%REC*	1	11/16/2018 03:46 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015D**	Prep: SW5035 11/13/18 16:03		Analyst: **RP**
GRO (C6-C10)	ND		6.8	mg/Kg-dry	1	11/16/2018 08:22 PM
Surr: Toluene-d8	*88.8*		*71-123*	*%REC*	1	11/16/2018 08:22 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260C**	Prep: SW5035 11/13/18 16:03		Analyst: **AK**
Benzene	ND		0.041	mg/Kg-dry	1	11/17/2018 10:02 AM
Ethylbenzene	ND		0.041	mg/Kg-dry	1	11/17/2018 10:02 AM
m,p-Xylene	ND		0.081	mg/Kg-dry	1	11/17/2018 10:02 AM
o-Xylene	ND		0.041	mg/Kg-dry	1	11/17/2018 10:02 AM
Toluene	ND		0.041	mg/Kg-dry	1	11/17/2018 10:02 AM
Xylenes, Total	ND		0.12	mg/Kg-dry	1	11/17/2018 10:02 AM
Surr: 1,2-Dichloroethane-d4	*0*		*70-130*	*%REC*	1	11/17/2018 10:02 AM
Surr: 4-Bromofluorobenzene	*0*		*70-130*	*%REC*	1	11/17/2018 10:02 AM
Surr: Dibromofluoromethane	*0*		*70-130*	*%REC*	1	11/17/2018 10:02 AM
Surr: Toluene-d8	*0*		*70-130*	*%REC*	1	11/17/2018 10:02 AM
CHLORIDE			**A4500-CL E-11**	Prep: EXTRACT 11/15/18 19:05		Analyst: **RLM**
Chloride	**13**		**12**	**mg/Kg-dry**	1	11/15/2018 08:00 PM
MOISTURE			**SW3550C**			Analyst: **RLM**
Moisture	**15**		**0.050**	**% of sample**	1	11/19/2018 08:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group, USA

Date: 28-Nov-18

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **127984** Instrument ID **GC8** Method: **SW8015C**

MBLK Sample ID: **SBLKS1-127984-127984** Units: **mg/Kg** Analysis Date: **11/15/2018 03:37 PM**
Client ID: Run ID: **GC8_181115D** SeqNo: **5389892** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	*2.867*	0	*3.33*	0	*86.1*	*34-130*	0			

LCS Sample ID: **SLCSS1-127984-127984** Units: **mg/Kg** Analysis Date: **11/15/2018 04:06 PM**
Client ID: Run ID: **GC8_181115D** SeqNo: **5389893** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	375.2	5.0	333	0	113	65-122	0			
ORO (C28-C40)	381.3	5.0	333	0	114	81-116	0			
Surr: 4-Terphenyl-d14	*3.583*	0	*3.33*	0	*108*	*34-130*	0			

MS Sample ID: **1811785-05A MS** Units: **mg/Kg** Analysis Date: **11/15/2018 04:35 PM**
Client ID: Run ID: **GC8_181115D** SeqNo: **5389894** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	343.9	4.9	326.6	0	105	65-122	0			
ORO (C28-C40)	356.4	4.9	326.6	23.48	102	81-116	0			
Surr: 4-Terphenyl-d14	*3.269*	0	*3.266*	0	*100*	*34-130*	0			

MSD Sample ID: **1811785-05A MSD** Units: **mg/Kg** Analysis Date: **11/15/2018 05:04 PM**
Client ID: Run ID: **GC8_181115D** SeqNo: **5389895** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	367.8	5.0	333	0	110	65-122	343.9	6.69	30	
ORO (C28-C40)	389.8	5.0	333	23.48	110	81-116	356.4	8.95	30	
Surr: 4-Terphenyl-d14	*3.4*	0	*3.33*	0	*102*	*34-130*	3.269	*3.93*	*30*	

The following samples were analyzed in this batch:

1811789-01A	1811789-02A	1811789-03A
1811789-04A	1811789-05A	1811789-06A
1811789-07A	1811789-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **127914** Instrument ID **GC9** Method: **SW8015D**

MBLK Sample ID: **MBLK-127914-127914** Units: **µg/Kg-dry** Analysis Date: **11/15/2018 07:12 PM**
Client ID: Run ID: **GC9_181115A** SeqNo: **5389778** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	*4489*	0	*5000*	0	*89.8*	*71-123*	0			

LCS Sample ID: **LCS-127914-127914** Units: **µg/Kg-dry** Analysis Date: **11/15/2018 04:47 PM**
Client ID: Run ID: **GC9_181115A** SeqNo: **5389774** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	513500	5,000	500000	0	103	71-123	0			
Surr: Toluene-d8	*5476*	0	*5000*	0	*110*	*71-123*	0			

MS Sample ID: **1811787-03A MS** Units: **µg/Kg-dry** Analysis Date: **11/17/2018 02:09 A**
Client ID: Run ID: **GC9_181115A** SeqNo: **5393605** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	656700	6,100	611100	0	107	71-123	0			
Surr: Toluene-d8	*6280*	0	*6111*	0	*103*	*71-123*	0			

MSD Sample ID: **1811787-03A MSD** Units: **µg/Kg-dry** Analysis Date: **11/17/2018 02:39 A**
Client ID: Run ID: **GC9_181115A** SeqNo: **5393607** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	669600	6,100	611100	0	110	71-123	656700	1.96	30	
Surr: Toluene-d8	*6273*	0	*6111*	0	*103*	*71-123*	6280	*0.107*	*30*	

The following samples were analyzed in this batch:

1811789-01A	1811789-02A	1811789-03A
1811789-04A	1811789-05A	1811789-06A
1811789-07A	1811789-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **127913** Instrument ID **VMS7** Method: **SW8260C**

MBLK Sample ID: **MBLK-127913-127913** Units: **µg/Kg-dry** Analysis Date: **11/17/2018 05:56 A**
Client ID: Run ID: **VMS7_181116C** SeqNo: **5392350** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30	0	0	0	0-0	0			
Ethylbenzene	ND	30	0	0	0	0-0	0			
m,p-Xylene	ND	60	0	0	0	0-0	0			
o-Xylene	ND	30	0	0	0	0-0	0			
Toluene	ND	30	0	0	0	0-0	0			
Xylenes, Total	ND	90	0	0	0	0-0	0			
Surr: 1,2-Dichloroethane-d4	*994.5*	0	*1000*	0	*0*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1002*	0	*1000*	0	*0*	*70-130*	0			
Surr: Dibromofluoromethane	*942.5*	0	*1000*	0	*0*	*70-130*	0			
Surr: Toluene-d8	*927.5*	0	*1000*	0	*0*	*70-130*	0			

LCS Sample ID: **LCS-127913-127913** Units: **µg/Kg-dry** Analysis Date: **11/17/2018 05:10 A**
Client ID: Run ID: **VMS7_181116C** SeqNo: **5392348** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	894.5	30	1000	0	0	75-125	0			
Ethylbenzene	857.5	30	1000	0	0	75-125	0			
m,p-Xylene	1686	60	2000	0	0	80-125	0			
o-Xylene	863	30	1000	0	0	75-125	0			
Toluene	834.5	30	1000	0	0	70-125	0			
Xylenes, Total	2548	90	3000	0	0	75-125	0			
Surr: 1,2-Dichloroethane-d4	*995*	0	*1000*	0	*0*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1012*	0	*1000*	0	*0*	*70-130*	0			
Surr: Dibromofluoromethane	*1028*	0	*1000*	0	*0*	*70-130*	0			
Surr: Toluene-d8	*941*	0	*1000*	0	*0*	*70-130*	0			

MS Sample ID: **1811787-03A MS** Units: **µg/Kg-dry** Analysis Date: **11/19/2018 09:07 PM**
Client ID: Run ID: **VMS7_181119A** SeqNo: **5395553** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1255	37	1222	0	103	75-125	0			
Ethylbenzene	1189	37	1222	0	97.2	75-125	0			
m,p-Xylene	2383	73	2444	0	97.5	80-125	0			
o-Xylene	1231	37	1222	0	101	75-125	0			
Toluene	1167	37	1222	0	95.5	70-125	0			
Xylenes, Total	3615	110	3667	0	98.6	75-125	0			
Surr: 1,2-Dichloroethane-d4	*1223*	0	*1222*	0	*100*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1296*	0	*1222*	0	*106*	*70-130*	0			
Surr: Dibromofluoromethane	*1249*	0	*1222*	0	*102*	*70-130*	0			
Surr: Toluene-d8	*1107*	0	*1222*	0	*90.6*	*70-130*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **127913** Instrument ID **VMS7** Method: **SW8260C**

MSD Sample ID: **1811787-03A MSD** Units: **µg/Kg-dry** Analysis Date: **11/19/2018 09:23 PM**
Client ID: Run ID: **VMS7_181119A** SeqNo: **5395554** Prep Date: **11/13/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1431	37	1222	0	117	75-125	1255	13.2	30	
Ethylbenzene	1373	37	1222	0	112	75-125	1189	14.4	30	
m,p-Xylene	2657	73	2444	0	109	80-125	2383	10.9	30	
o-Xylene	1358	37	1222	0	111	75-125	1231	9.82	30	
Toluene	1266	37	1222	0	104	70-125	1167	8.14	30	
Xylenes, Total	4016	110	3667	0	110	75-125	3615	10.5	30	
Surr: 1,2-Dichloroethane-d4	*1220*	0	*1222*	0	*99.8*	*70-130*	1223	*0.25*	*30*	
Surr: 4-Bromofluorobenzene	*1306*	0	*1222*	0	*107*	*70-130*	1296	*0.799*	*30*	
Surr: Dibromofluoromethane	*1245*	0	*1222*	0	*102*	*70-130*	1249	*0.343*	*30*	
Surr: Toluene-d8	*1120*	0	*1222*	0	*91.6*	*70-130*	1107	*1.1*	*30*	

The following samples were analyzed in this batch:

1811789-01A	1811789-02A	1811789-03A
1811789-04A	1811789-05A	1811789-06A
1811789-07A	1811789-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **128069** Instrument ID **GALLERY** Method: **A4500-Cl E-11**

MBLK Sample ID: **MBLK-128069-128069** Units: **mg/Kg** Analysis Date: **11/15/2018 04:00 PM**
Client ID: Run ID: **GALLERY_181115B** SeqNo: **5390655** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	10								

MS Sample ID: **1811773-08AMS** Units: **mg/Kg** Analysis Date: **11/15/2018 04:00 PM**
Client ID: Run ID: **GALLERY_181115B** SeqNo: **5390749** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	491.7	9.9	494.1	54.14	88.6	75-125	0			

MSD Sample ID: **1811773-08AMSD** Units: **mg/Kg** Analysis Date: **11/15/2018 04:00 PM**
Client ID: Run ID: **GALLERY_181115B** SeqNo: **5390750** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	497.1	9.9	493.1	54.14	89.8	75-125	491.7	1.1	25	

LCS1 Sample ID: **LCS1-128069-128069** Units: **mg/Kg** Analysis Date: **11/15/2018 04:00 PM**
Client ID: Run ID: **GALLERY_181115B** SeqNo: **5390708** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	105.7	10	100	0	106	80-120	0			

LCS2 Sample ID: **LCS2-128069-128069** Units: **mg/Kg** Analysis Date: **11/15/2018 04:00 PM**
Client ID: Run ID: **GALLERY_181115B** SeqNo: **5390742** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	529.5	10	500	0	106	80-120	0			

The following samples were analyzed in this batch: 1811789-01A 1811789-02A 1811789-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **128082** Instrument ID **GALLERY** Method: **A4500-Cl E-11**

MBLK Sample ID: **MBLK-128082-128082** Units: **mg/Kg** Analysis Date: **11/15/2018 08:00 PM**
Client ID: Run ID: **GALLERY_181115C** SeqNo: **5390793** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	ND	10								

MS Sample ID: **18111127-01AMS** Units: **mg/Kg** Analysis Date: **11/15/2018 08:00 PM**
Client ID: Run ID: **GALLERY_181115C** SeqNo: **5390843** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	7448	98	4902	1877	114	75-125	0			H

MSD Sample ID: **18111127-01AMSD** Units: **mg/Kg** Analysis Date: **11/15/2018 08:00 PM**
Client ID: Run ID: **GALLERY_181115C** SeqNo: **5390844** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	7584	96	4808	1877	119	75-125	7448	1.8	25	H

LCS1 Sample ID: **LCS1-128082-128082** Units: **mg/Kg** Analysis Date: **11/15/2018 08:00 PM**
Client ID: Run ID: **GALLERY_181115C** SeqNo: **5390799** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	105.4	10	100	0	105	80-120	0			

LCS2 Sample ID: **LCS2-128082-128082** Units: **mg/Kg** Analysis Date: **11/15/2018 08:00 PM**
Client ID: Run ID: **GALLERY_181115C** SeqNo: **5390846** Prep Date: **11/15/2018** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	552.2	10	500	0	110	80-120	0			

The following samples were analyzed in this batch:

1811789-04A	1811789-05A	1811789-06A
1811789-07A	1811789-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **R249680** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R249680** Units: **% of sample** Analysis Date: **11/19/2018 01:39 PM**
Client ID: Run ID: **MOIST_181119A** SeqNo: **5395846** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R249680** Units: **% of sample** Analysis Date: **11/19/2018 01:39 PM**
Client ID: Run ID: **MOIST_181119A** SeqNo: **5395845** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **18111269-01A DUP** Units: **% of sample** Analysis Date: **11/19/2018 01:39 PM**
Client ID: Run ID: **MOIST_181119A** SeqNo: **5395823** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.23	0.050	0	0	0	0-0	16.82	2.41	10	

DUP Sample ID: **18111269-02A DUP** Units: **% of sample** Analysis Date: **11/19/2018 01:39 PM**
Client ID: Run ID: **MOIST_181119A** SeqNo: **5395825** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	16.52	0.050	0	0	0	0-0	15.73	4.9	10	

The following samples were analyzed in this batch:

1811789-01A	1811789-02A	1811789-03A
1811789-04A	1811789-05A	1811789-06A
1811789-07A	1811789-08A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 1811789
Project: Stateline Header

QC BATCH REPORT

Batch ID: **R249697** Instrument ID **MOIST** Method: **SW3550C**

MBLK Sample ID: **WBLKS-R249697** Units: **% of sample** Analysis Date: **11/19/2018 08:00 PM**
Client ID: Run ID: **MOIST_181119G** SeqNo: **5396024** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R249697** Units: **% of sample** Analysis Date: **11/19/2018 08:00 PM**
Client ID: Run ID: **MOIST_181119G** SeqNo: **5396023** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1811773-08A DUP** Units: **% of sample** Analysis Date: **11/19/2018 08:00 PM**
Client ID: Run ID: **MOIST_181119G** SeqNo: **5396020** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.69	0.050	0	0	0	0-0	3.81	3.2	10	

DUP Sample ID: **1811789-08A DUP** Units: **% of sample** Analysis Date: **11/19/2018 08:00 PM**
Client ID: **South 1 6'** Run ID: **MOIST_181119G** SeqNo: **5396022** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	14.68	0.050	0	0	0	0-0	14.84	1.08	10	

The following samples were analyzed in this batch: 1811789-08A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

Houston TX

Chain-of-Custody

Form 202r8

WORKORDER # 1811789

PAGE 1 of 1

PROJECT NAME	Stateline Header	SAMPLER		DATE	11/9/2018
PROJECT No.		SITE ID	Stateline Header	TURNAROUND	5 day
		EDD FORMAT		DISPOSAL	Lab or Return to Client
COMPANY NAME	WPX Energy	PURCHASE ORDER			
SEND REPORT TO	Blaney	BILL TO COMPANY	WPX Energy		
ADDRESS		INVOICE ATTN TO	Karolina Blaney		
CITY / STATE / ZIP		ADDRESS	5315 Buena Vista Dr		
PHONE		CITY / STATE / ZIP	Carlsbad, NM 88220		
FAX		PHONE	970 589 0743		
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com	FAX			
		E-MAIL	Karolina.blaney@wpxenergy.com; James.Raley@wpxenergy.com		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO GRO ORO	BTEX	Chrlorides
	North 1 4'		11/7/2018	9:00	2	8	x	x	x	x
	East Finger 1'		11/7/2018	9:10	2	8	x	x	x	x
	West 1 4'		11/7/2018	9:15	2	8	x	x	x	x
	East 1 4'		11/7/2018	9:20	2	8	x	x	x	x
	Base 1 4'		11/7/2018	9:40	2	8	x	x	x	x
	Base 2 7'		11/7/2018	9:25	2	8	x	x	x	x
	West Finger 1'		11/7/2018	9:30	2	8	x	x	x	x
	South 1 6'		11/7/2018	9:35	2	8	x	x	x	x

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: SLZ 4-8c

QC PACKAGE (check below)	
X	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	Karolina Blaney	Karolina Blaney	11/9/2018	15:00
RECEIVED BY		Nina Fallace	11/12-18	10:30
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Group, USA

Sample Receipt Checklist

Client Name: **WPX - NM** Date/Time Received: **10-Nov-18 10:00**

Work Order: **1811789** Received by: **BNF**

Checklist completed by Bernina France eSignature 12-Nov-18 Date Reviewed by: Chad Whelton eSignature 12-Nov-18 Date

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Sample(s) received on ice?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	4.8/4.8 C	SR2	
Cooler(s)/Kit(s):	1		
Date/Time sample(s) sent to storage:	11/12/2018 10:38:41 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	_		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction: