



ENSOLUM

March 23, 2023

REVIEWED

By Mike Buchanan at 4:32 pm, Jul 24, 2023

New Mexico Oil Conservation Division

New Mexico Energy, Minerals, and Natural Resources Department
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: 2022 Annual Groundwater Monitoring Report

Florance M #047X
San Juan County, New Mexico
Harvest Four Corners, LLC
NMOCD Incident No: nAUTOfAB000185
Remediation Permit Number: 3RP-317-0

Review of the 2022 Groundwater Report:

Content Satisfactory

1. Continue with future work as stated within the 2022 Annual Groundwater Report
 - a. monthly site visits for O&M purposes and as necessary
 - b. groundwater monitoring through quarterly well gauging
 - c. annual groundwater sampling for lab analysis of BTEX compounds
 - d. Submit the Annual Monitoring Report to the OCD no later than April 1, 2024.

To Whom it May Concern:

Ensolum, LLC (Ensolum), on behalf of Harvest Four Corners, LLC (Harvest), has prepared this report detailing annual groundwater monitoring activities completed between January 2022 and December 2022 at the Florance M #047X (Site), Remediation Permit (RP) Number 3RP-317-0 and Incident Number nAUTOfAB000185. The purpose of this project was to continue phase-separated hydrocarbon (PSH) recovery and monitoring of petroleum hydrocarbon impacts to groundwater resulting from a release involving a former earthen dehydrator pit.

LOCATION

The site is located at latitude 36.8436 and longitude -107.8010 in Unit G, Section 5, Township 30 North, Range 9 West (Figure 1). The Site is located in Crow Canyon, a tributary to Pump Canyon, in the San Juan Basin in San Juan County, New Mexico.

SITE HISTORY

Groundwater at the Site is impacted by petroleum hydrocarbons due to a release from a former earthen dehydrator pit. In June 1996, source material was excavated to approximately 19 feet below ground surface (bgs). A subsequent borehole drilled in the excavation to approximately 115 feet bgs identified groundwater at approximately 97 feet bgs. Laboratory analytical results of groundwater collected from the borehole identified concentrations of dissolved benzene, toluene, ethylbenzene, and total xylenes (BTEX) exceeding New Mexico Water Quality Control Commission (NMWQCC) standards. As a result, five groundwater monitoring wells (MW-1 through MW-5) were installed.

Since installation of the five monitoring wells, groundwater elevations and groundwater quality have been monitored at the Site, with monitoring wells MW-2, MW-3, and MW-5 containing PSH during at least one sampling event. Historical records documenting monitoring activities and results can be found in previous annual reports submitted to the New Mexico Oil Conservation Division (NMOCD).

In October 2019, Harvest conducted drilling activities which included the installation of two new monitoring wells, MW-6, and MW-7, located downgradient of monitoring wells MW-3 and MW-5,

for use as point of compliance (POC) monitoring wells. On December 17, 2019, United Field Services in Farmington, New Mexico was contracted to survey top-of-casing elevations to accurately determine groundwater elevations in feet above mean sea level (AMSL).

SITE GROUNDWATER CLEANUP STANDARDS

The NMOCD requires groundwater-quality standards be met as presented by the NMWQCC and listed in Title 20, Chapter 6, Part 2, Section 3103 (20.6.2.3103) of the New Mexico Administrative Code (NMAC). The following standards are presented for the constituents of concern (COCs) at the Site in micrograms per liter ($\mu\text{g/L}$):

- Benzene: 5 $\mu\text{g/L}$
- Toluene: 1,000 $\mu\text{g/L}$
- Ethylbenzene: 700 $\mu\text{g/L}$
- Total Xylenes: 620 $\mu\text{g/L}$

GROUNDWATER AND PSH ELEVATIONS

Groundwater levels were monitored quarterly by recording depth to groundwater and depth to PSH measurements in the existing monitoring wells with an oil/water interface probe. The interface probe was decontaminated with AlconoxTM soap and rinsed with distilled water prior to each measurement. Top-of-casing elevations from the survey were used to calculate groundwater potentiometric elevations, draft groundwater contours, and determine groundwater flow direction, presented on Figures 2 through 5.

GROUNDWATER SAMPLING

On May 23, 2022, monitoring wells MW-2, MW-5, MW-6, and MW-7 were purged using disposable polyethylene bailers. As groundwater was purged from each monitoring well, pH, electrical conductance (EC), and temperature, were recorded for determining stabilization conditions prior to sampling. Monitoring wells were purged until a total of three casing volumes were removed or the well was purged dry, indicating that groundwater would be representative of aquifer conditions. Purged groundwater was containerized and disposed of at a nearby Harvest compressor station.

Groundwater samples were collected by filling three 40-milliliter (mL) glass vials from each well. The laboratory-supplied vials were filled and capped with zero headspace to prevent degradation of the sample. Samples were labeled with the date and time of collection, well designation, project name, sample collector's name, and parameters to be analyzed. They were immediately sealed, packed on ice, and submitted to Hall Environmental Analysis Laboratory (HEAL) in Albuquerque, New Mexico for analysis of BTEX following United States Environmental Protection Agency (EPA) Method 8021. Proper chain-of-custody procedures were followed documenting the date and time sampled, sample number, type of sample, sample collector's name, preservative used, analyses required, and sample collector's signature.

BTEX concentrations in monitoring wells MW-1 and MW-4 have been below NMWQCC standards for over 8 consecutive sampling events and were not sampled in 2022. Monitoring well MW-3 was not sampled in 2022 due to the presence of PSH.

PSH RECOVERY

In November 2019, Harvest installed a solar powered pneumatic pumping recovery system in monitoring MW-3. The pump utilizes a hydrophobic and oleophilic skimmer that floats on the water column to remove PSH from the water PSH interface. The system cycles between vacuum and

pressure to move PSH to the surface, where it is containerized. A delay between pumping cycles allows for recharge of fluids in the monitoring well and prevents over-pumping to efficiently use the power generated from the solar panels. Bi-weekly to monthly site visits were conducted in 2022 to monitor system performance, PSH recovery, and conduct system operations and maintenance (O&M).

RESULTS

Depth to groundwater information and analytical results are provided in Tables 1 and 2, respectively. Groundwater collection forms and analytical laboratory reports for the analyzed samples are included in Appendix A and Appendix B, respectively.

Depth to groundwater was collected on March 8, 2022, May 23, 2022, September 12, 2022, and November 7, 2022. Based on data collected during the four quarterly events, the interpreted groundwater-flow direction is to the southeast (contours shown on Figures 2 through 5). Contours were inferred based on groundwater elevations and physical characteristics at the Site (topography, proximity to irrigation ditches, etc.).

All wells on Site, except for MW-1, MW-3, and MW-4, were sampled on May 23, 2022. BTEX constituents in groundwater were detected in monitoring wells MW-2 and MW-5. Groundwater from wells MW-2 and MW-5 contained benzene concentrations of 1,800 µg/L and 210 µg/L, respectively, which exceeds the NMWQCC standards. Monitoring wells MW-6 and MW-7 did not contain detectable concentrations of BTEX compounds in groundwater and were compliant with the NMWQCC standards. BTEX results and approximate plume extent are presented on Figure 3 and summarized in Table 2.

Approximately 42.4 gallons of PSH have been recovered from monitoring well MW-3 through pneumatic pumping since PSH recovery installation on November 18, 2019, through December 30, 2022. A total of 8.1 gallons of PSH were recovered in 2022. At the time of the installation of the PSH recovery system in November 2019, the PSH thickness was 1.93 feet; in 2022, PSH ranged in thickness from 0.10 feet in December 2022 to 1.28 feet in November 2022. Operation data and system maintenance data are summarized in Table 3.

CONCLUSIONS

Impacted groundwater at the Site has been successfully delineated. BTEX concentrations in downgradient monitoring wells MW-6 and MW-7 are in compliance with NMWQCC standards. Additionally, groundwater data collected during this year, as well as historical groundwater data, indicate contaminant concentrations have declined over time. Despite the decline in contaminant concentrations in most wells, PSH remains in well MW-3.

To address residual PSH at the Site, Harvest installed a mechanical PSH pumping system in monitoring well MW-3 in November 2019. Approximately 42.4 gallons of PSH have been recovered from monitoring well MW-3 as of the last site visit on November 7, 2022.

With the installation of the PSH recovery system, Ensolum recommends monthly site visits for O&M purposes. Additional O&M visits may be necessary depending on product recovery rates and system maintenance requirements. In addition, Ensolum recommends groundwater monitoring through quarterly well gauging (depth-to-groundwater and depth-to-PSH measurements) and annual groundwater sampling for laboratory analysis of BTEX compounds.

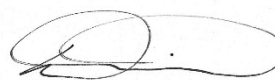
We appreciate the opportunity to provide this report to the NMOCD. If you should have any questions or comments regarding this document, please contact the undersigned.

Sincerely,

Ensolum, LLC



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Project Geologist
(303) 842-9578
ecarroll@ensolum.com



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Senior Managing Geologist
(303) 887-2946
dmoir@ensolum.com

Attachments:

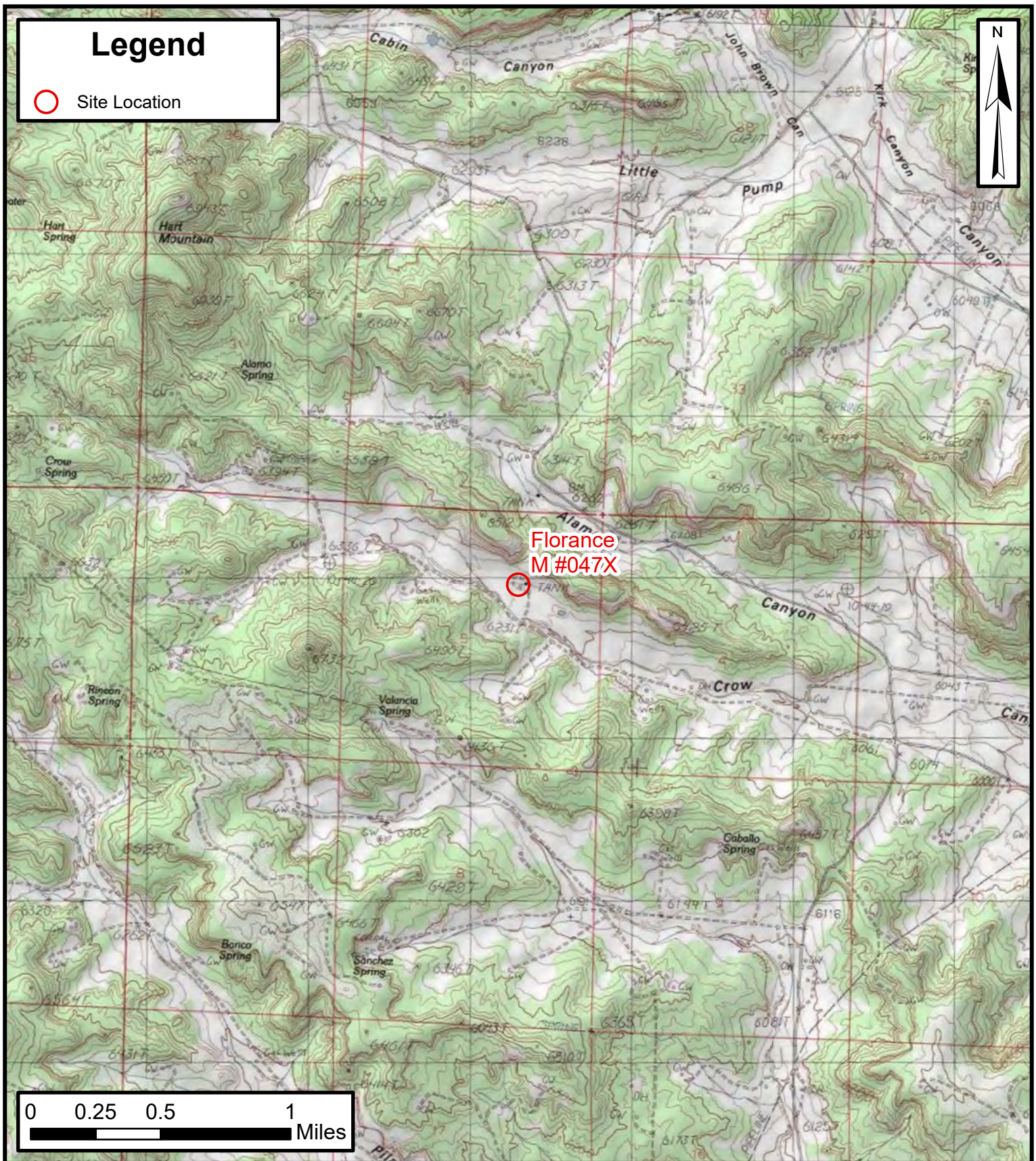
Figure 1: Site Location Map
Figure 2: Groundwater Elevation Map (March 2022)
Figure 3: Groundwater Elevation & Analytical Map (May 2022)
Figure 4: Groundwater Elevation Map (September 2022)
Figure 5: Groundwater Elevation Map (November 2022)

Table 1: Groundwater Elevations
Table 2: Groundwater Analytical Results
Table 3: Pneumatic Product Recovery System Data

Appendix A: Groundwater Collection Forms
Appendix B: Laboratory Analytical Reports



FIGURES



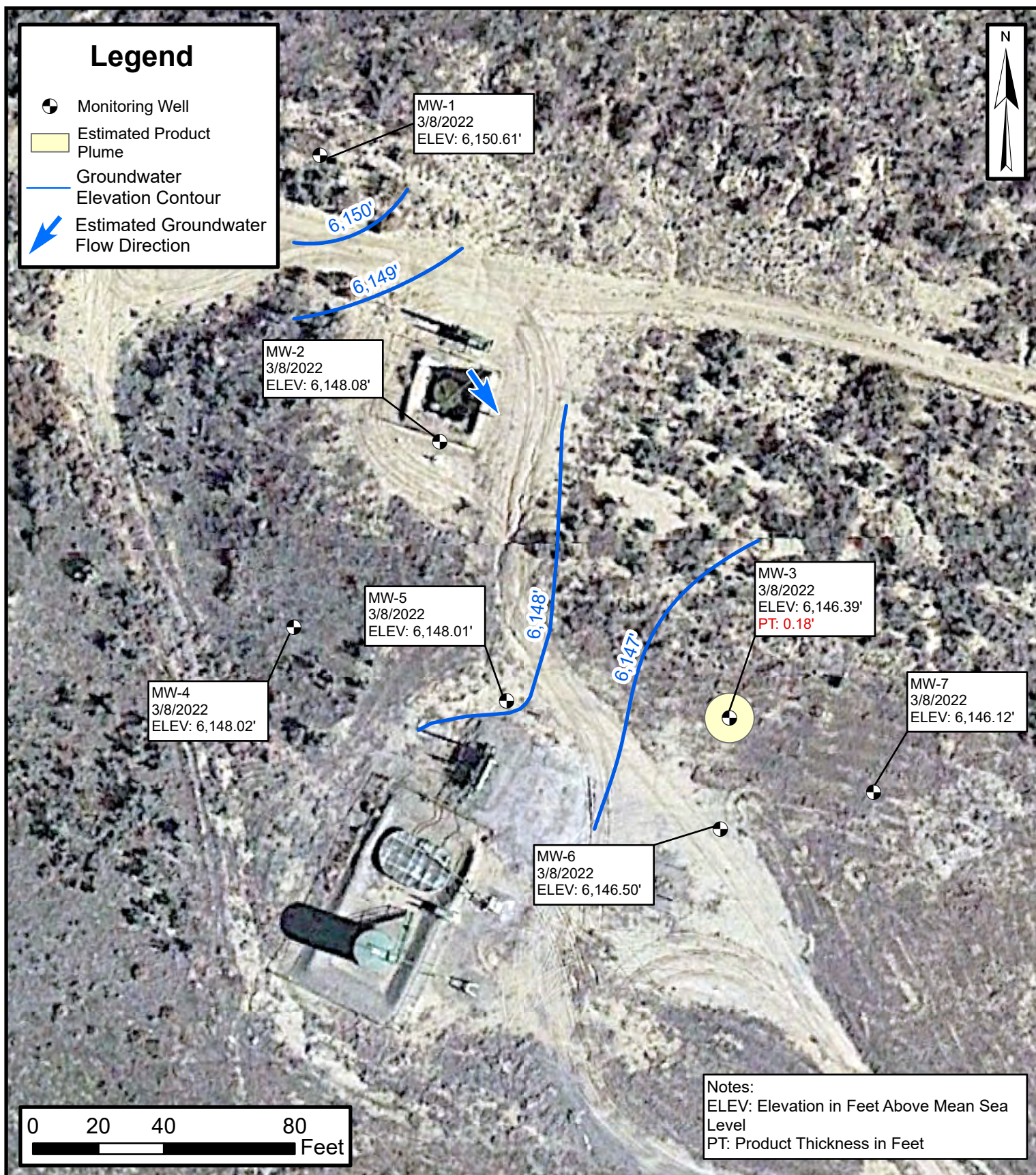
Site Location Map

Florance M 047X
 Harvest Four Corners, LLC
 36.8436, -107.8010
 SW/NE, Sec 5, T30N, R9W
 San Juan County, New Mexico

FIGURE

1



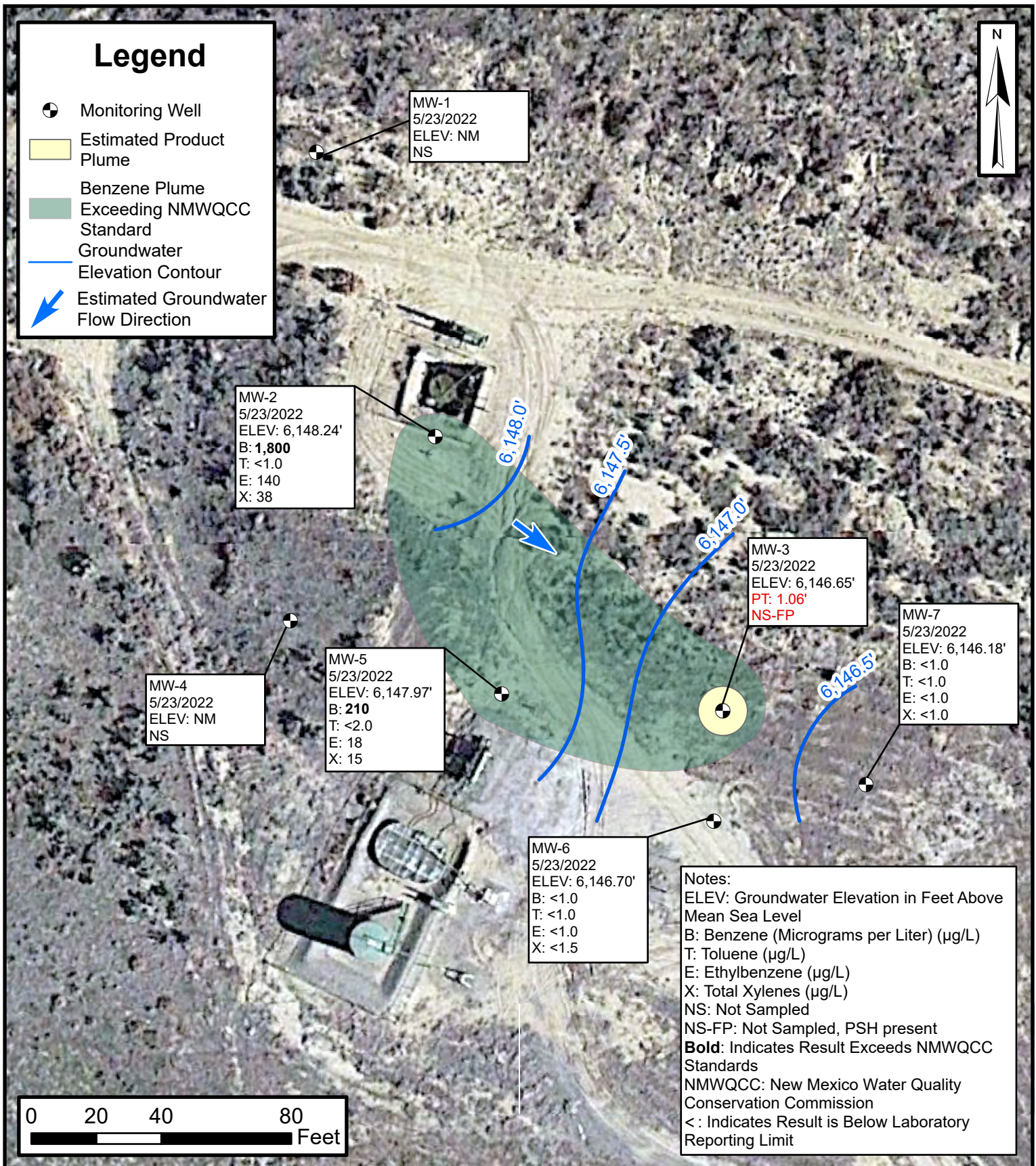


Groundwater Elevation (March 2022)

Florance M #047X
 Harvest Four Corners, LLC
 36.8436, -107.8010
 SW/NE, Sec 5, T30N, R9W
 San Juan County, New Mexico

FIGURE
2



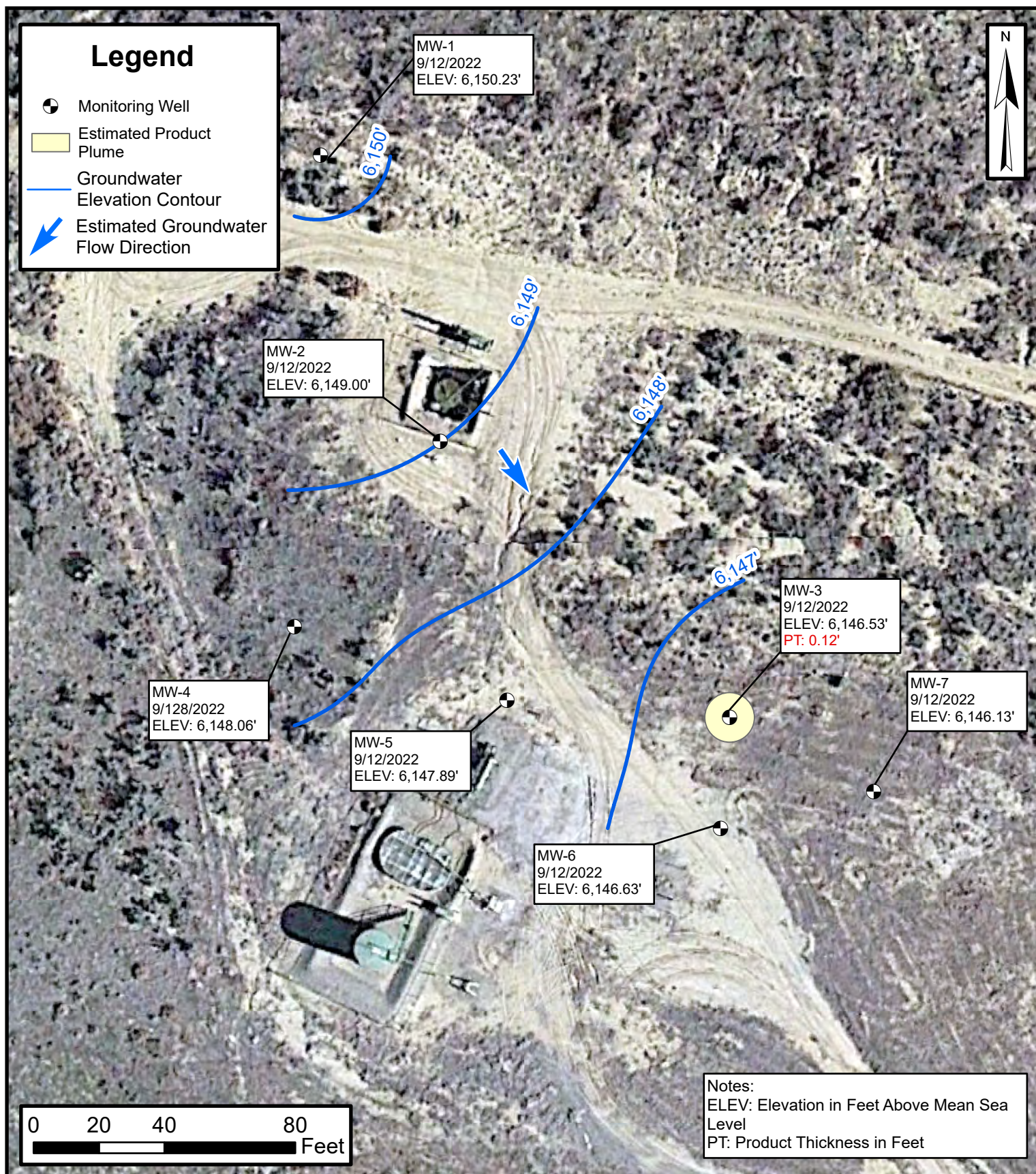


Groundwater Elevation and Analytical Results (May 2022)

Florance M #047X
 Harvest Four Corners, LLC
 36.8436, -107.8010
 SW/NE, Sec 5, T30N, R9W
 San Juan County, New Mexico

FIGURE
3

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 Environmental, Engineering and
 Hydrogeologic Consultants

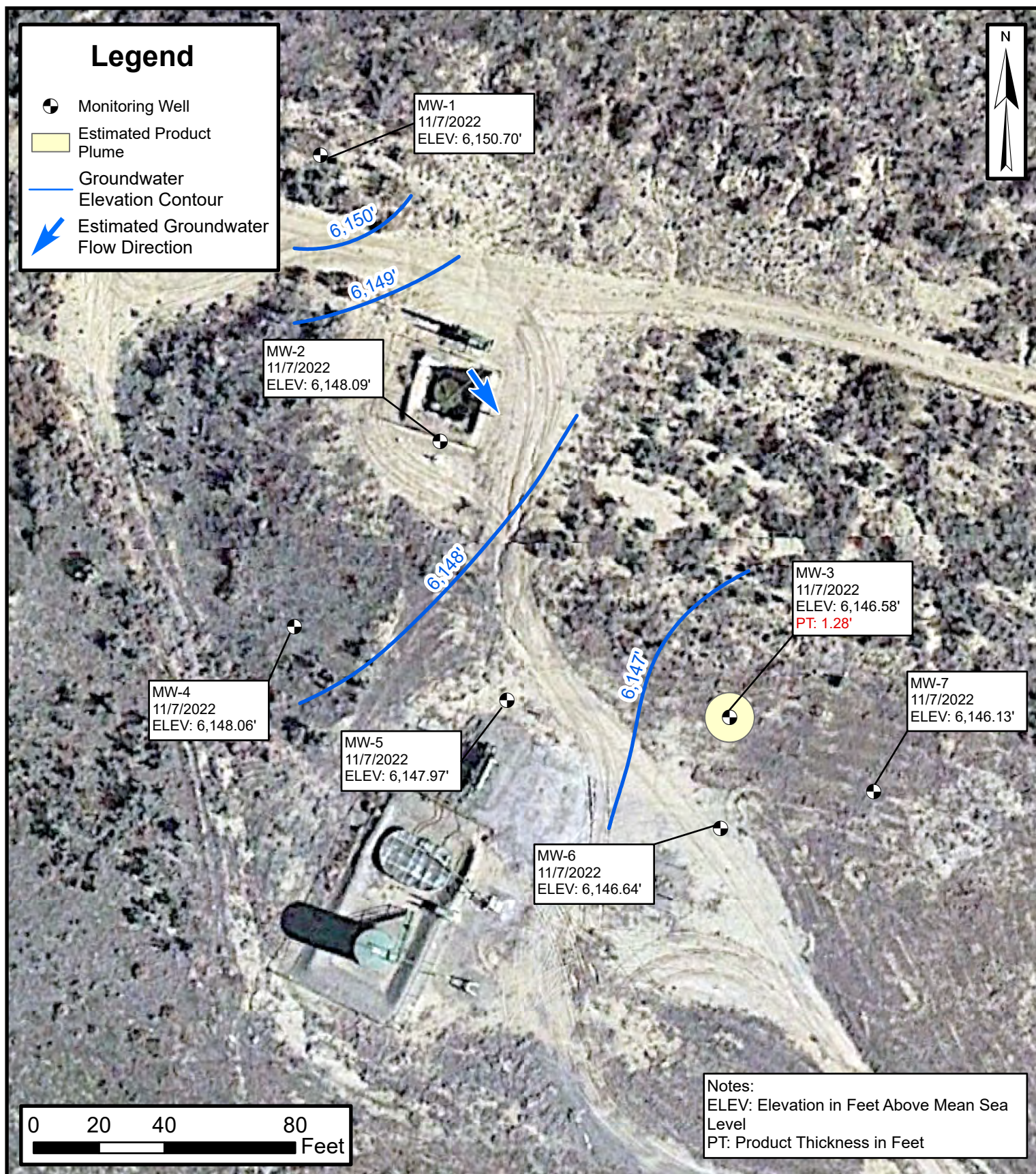


Groundwater Elevation (September 2022)

Florance M #047X
 Harvest Four Corners, LLC
 36.8436, -107.8010
 SW/NE, Sec 5, T30N, R9W
 San Juan County, New Mexico

FIGURE
4





Groundwater Elevation (November 2022)

Florance M #047X
 Harvest Four Corners, LLC
 36.8436, -107.8010
 SW/NE, Sec 5, T30N, R9W
 San Juan County, New Mexico

FIGURE
5





TABLES



TABLE 1
GROUNDWATER ELEVATIONS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-1	4/2/2012	6,229.61	UNK	UNK	UNK	UNK
	6/13/2012		UNK	UNK	UNK	UNK
	10/2/2012		UNK	UNK	UNK	UNK
	12/6/2012		UNK	UNK	UNK	UNK
	3/1/2013		99.52	NP	NP	6,130.09
	6/24/2013	6250.21*	99.41	NP	NP	6,150.80
	9/12/2013		98.90	NP	NP	6,151.31
	12/4/2013		98.79	NP	NP	6,151.42
	3/19/2014		99.08	NP	NP	6,151.13
	6/13/2014		99.02	NP	NP	6,151.19
	9/11/2014		99.01	NP	NP	6,151.20
	12/4/2014		99.18	NP	NP	6,151.03
	3/17/2015		99.14	NP	NP	6,151.07
	4/28/2016		99.17	NP	NP	6,151.04
	8/11/2016		99.28	NP	NP	6,150.93
	10/17/2016		99.20	NP	NP	6,151.01
	1/31/2017		99.24	NP	NP	6,150.97
	4/28/2017		99.24	NP	NP	6,150.97
	7/28/2017		99.31	NP	NP	6,150.90
	10/7/2019	6250.35**	99.54	NP	NP	6,150.81
	3/19/2020		99.52	NP	NP	6,150.83
	6/23/2020		99.57	NP	NP	6,150.78
	9/8/2020		99.31	NP	NP	6,151.04
	12/4/2020		99.59	NP	NP	6,150.76
	3/31/2021		99.81	NP	NP	6,150.54
	5/24/2021		99.61	NP	NP	6,150.74
	8/23/2021		100.09	NP	NP	6,150.26
	11/23/2021		100.02	NP	NP	6,150.33
	3/8/2022		99.74	NP	NP	6,150.61
	5/23/2022		NM	NM	NM	NM
	9/12/2022		100.12	NP	NP	6,150.23
	11/7/2022		99.65	NP	NP	6,150.70
MW-2	4/2/2012	6,226.30	UNK	UNK	UNK	UNK
	6/13/2012		UNK	UNK	UNK	UNK
	10/2/2012		UNK	UNK	UNK	UNK
	12/6/2012		UNK	UNK	UNK	UNK
	3/1/2013		98.47	NP	NP	6,127.83
	6/24/2013	6247.15*	98.45	NP	NP	6,148.70
	9/12/2013		98.60	NP	NP	6,148.55
	12/4/2013		98.41	NP	NP	6,148.74



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Well Identification	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-2	3/19/2014	6247.15*	98.54	NP	NP	6,148.61
	6/13/2014		98.53	NP	NP	6,148.62
	9/11/2014		98.60	NP	NP	6,148.55
	12/4/2014		98.56	NP	NP	6,148.59
	3/17/2015		98.63	NP	NP	6,148.52
	4/28/2016		98.73	NP	NP	6,148.42
	8/11/2016		98.76	NP	NP	6,148.39
	10/17/2016		98.73	NP	NP	6,148.42
	1/31/2017		98.77	NP	NP	6,148.38
	4/28/2017		98.76	NP	NP	6,148.39
	7/28/2017		98.82	NP	NP	6,148.33
	10/7/2019	6247.28**	99.03	NP	NP	6,148.25
	3/19/2020		99.03	NP	NP	6,148.25
	6/23/2020		99.07	NP	NP	6,148.21
	9/8/2020		98.96	NP	NP	6,148.32
	12/4/2020		99.10	NP	NP	6,148.18
	3/31/2021		99.22	NP	NP	6,148.06
	5/24/2021		99.14	NP	NP	6,148.14
	8/23/2021		99.11	NP	NP	6,148.17
	11/23/2021		99.15	NP	NP	6,148.13
	3/8/2022		99.20	NP	NP	6,148.08
	5/23/2022		99.04	NP	NP	6,148.24
	9/12/2022		98.28	NP	NP	6,149.00
	11/7/2022		99.19	NP	NP	6,148.09
MW-3	4/2/2012	6,217.53	UNK	UNK	UNK	UNK
	6/13/2012		UNK	UNK	UNK	UNK
	10/2/2012		UNK	UNK	UNK	UNK
	12/6/2012		UNK	UNK	UNK	UNK
	3/1/2013		92.48	91.51	0.97	6,125.83
	6/24/2013	6238.51*	91.71	90.86	0.85	6,147.48
	9/12/2013		91.69	90.89	0.80	6,147.46
	12/4/2013		91.23	90.83	0.40	6,147.60
	3/19/2014		91.59	91.03	0.56	6,147.37
	6/13/2014		91.38	91.08	0.30	6,147.37
	9/11/2014		91.47	91.20	0.27	6,147.26
	12/4/2014		91.15	91.15	0.01	6,147.37
	3/17/2015		91.53	91.22	0.31	6,147.23
	4/28/2016		92.00	91.20	0.80	6,147.15
	8/11/2016		92.54	91.18	1.36	6,147.06
	10/17/2016		92.54	91.56	0.98	6,146.75



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Well Identification	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-3	1/31/2017	6238.51*	92.59	91.09	1.50	6,147.12
	4/28/2017		92.10	91.21	0.89	6,147.12
	7/28/2017		92.28	91.26	1.02	6,147.05
	10/7/2019	6238.66**	93.46	91.31	2.15	6,146.92
	3/19/2020		92.85	91.62	1.23	6,146.79
	6/23/2020		92.41	91.83	0.58	6,146.71
	9/8/2020		91.71	91.66	0.05	6,146.99
	12/4/2020		92.90	91.72	1.18	6,146.70
	3/31/2021		92.60	92.08	0.52	6,146.48
	5/24/2021		92.91	91.68	1.23	6,146.73
	8/23/2021		93.62	91.59	2.03	6,146.66
	11/23/2021		92.94	91.81	1.13	6,146.62
	3/8/2022		92.41	92.23	0.18	6,146.39
	5/23/2022		92.86	91.80	1.06	6,146.65
	9/12/2022		92.23	92.11	0.12	6,146.53
	11/7/2022		93.10	91.82	1.28	6,146.58
	12/4/2022		92.07	91.97	0.10	6,146.67
MW-4	4/2/2012	6,219.93	UNK	UNK	UNK	UNK
	6/13/2012		UNK	UNK	UNK	UNK
	10/2/2012		UNK	UNK	UNK	UNK
	12/6/2012		UNK	UNK	UNK	UNK
	3/1/2013		92.02	NP	NP	6,127.91
	6/24/2013	6240.67*	91.98	NP	NP	6,148.69
	9/12/2013		92.00	NP	NP	6,148.67
	12/4/2013		91.96	NP	NP	6,148.71
	3/19/2014		92.09	NP	NP	6,148.58
	6/13/2014		92.06	NP	NP	6,148.61
	9/11/2014		92.13	NP	NP	6,148.54
	12/4/2014		92.10	NP	NP	6,148.57
	3/17/2015		92.17	NP	NP	6,148.50
	4/28/2016		92.25	NP	NP	6,148.42
	8/11/2016		92.32	NP	NP	6,148.35
	10/17/2016		92.29	NP	NP	6,148.38
	1/31/2017		92.31	NP	NP	6,148.36
	4/28/2017		92.31	NP	NP	6,148.36
	7/28/2017		92.36	NP	NP	6,148.31
	10/7/2019	6240.80**	92.60	NP	NP	6,148.20
	3/19/2020		92.58	NP	NP	6,148.22
	6/23/2020		92.63	NP	NP	6,148.17



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 San Juan County, New Mexico

Well Identification	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-4	9/8/2020	6240.80**	92.53	NP	NP	6,148.27
	12/4/2020		92.65	NP	NP	6,148.15
	3/31/2021		92.86	NP	NP	6,147.94
	5/24/2021		92.66	NP	NP	6,148.14
	8/23/2021		92.67	NP	NP	6,148.13
	11/23/2021		92.70	NP	NP	6,148.10
	3/8/2022		92.78	NP	NP	6,148.02
	5/23/2022		NM	NM	NM	NM
	9/12/2022		92.74	NP	NP	6,148.06
	11/7/2022		92.74	NP	NP	6,148.06
MW-5	4/2/2012	6,216.97	UNK	UNK	UNK	UNK
	6/13/2012		UNK	UNK	UNK	UNK
	10/2/2012		UNK	UNK	UNK	UNK
	12/6/2012		UNK	UNK	UNK	UNK
	3/1/2013		90.48	90.46	0.02	6,126.51
	6/24/2013	6,238.33*	89.78	NP	NP	6,148.55
	9/12/2013		89.98	NP	NP	6,148.35
	12/4/2013		89.86	NP	NP	6,148.47
	3/19/2014		89.91	NP	NP	6,148.42
	6/13/2014		89.95	NP	NP	6,148.38
	9/11/2014		90.02	NP	NP	6,148.31
	12/4/2014		90.02	NP	NP	6,148.31
	3/17/2015		89.98	NP	NP	6,148.35
	4/28/2016		90.11	NP	NP	6,148.22
	8/11/2016		90.20	NP	NP	6,148.13
	10/17/2016		90.18	NP	NP	6,148.15
	1/31/2017		90.11	NP	NP	6,148.22
	4/28/2017		90.13	NP	NP	6,148.20
	7/28/2017		90.17	90.16	0.01	6,148.16
	10/14/2019	6,236.47**	88.30	NP	NP	6,148.17
	3/19/2020		88.37	NP	NP	6,148.10
	6/23/2020		88.41	NP	NP	6,148.06
	9/8/2020		88.35	NP	NP	6,148.12
	12/4/2020		88.42	NP	NP	6,148.05
	3/31/2021		88.55	NP	NP	6,147.92
	5/24/2021		88.43	NP	NP	6,148.04
	8/23/2021		88.46	NP	NP	6,148.01
	11/23/2021		88.51	NP	NP	6,147.96
	3/8/2022		88.46	NP	NP	6,148.01



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Well Identification	Date	Top of Casing Elevation (feet AMSL)	Depth to Groundwater (feet BTOC)	Depth to Product (feet BTOC)	Product Thickness (feet)	Groundwater Elevation (feet AMSL)
MW-5	5/23/2022	6,236.47**	88.50	NP	NP	6,147.97
	9/12/2022		88.58	NP	NP	6,147.89
	11/7/2022		88.50	NP	NP	6,147.97
MW-6	10/14/2019	6,235.26**	88.42	NP	NP	6,146.84
	3/19/2020		88.51	NP	NP	6,146.75
	6/23/2020		88.52	NP	NP	6,146.74
	9/8/2020		88.30	NP	NP	6,146.96
	12/4/2020		88.53	NP	NP	6,146.73
	3/31/2021		88.74	NP	NP	6,146.52
	5/24/2021		88.60	NP	NP	6,146.66
	8/23/2021		88.58	NP	NP	6,146.68
	11/23/2021		88.48	NP	NP	6,146.78
	3/8/2022		88.76	NP	NP	6,146.50
	5/23/2022		88.56	NP	NP	6,146.70
	9/12/2022		88.63	NP	NP	6,146.63
	11/7/2022		88.62	NP	NP	6,146.64
MW-7	10/14/2019	6,237.28**	90.94	NP	NP	6,146.34
	3/19/2020		90.98	NP	NP	6,146.30
	6/23/2020		91.06	NP	NP	6,146.22
	9/8/2020		90.91	NP	NP	6,146.37
	12/4/2020		91.08	NP	NP	6,146.20
	3/31/2021		91.22	NP	NP	6,146.06
	5/24/2021		91.13	NP	NP	6,146.15
	8/23/2021		91.1	NP	NP	6,146.18
	11/23/2021		91.07	NP	NP	6,146.21
	3/8/2022		91.16	NP	NP	6,146.12
	5/23/2022		91.10	NP	NP	6,146.18
	9/12/2022		91.15	NP	NP	6,146.13
	11/8/2022		91.15	NP	NP	6,146.13

Notes:

< - less than

* - Top of casing elevation was resurveyed on 6/20/13

** - Top of casing elevation was resurveyed on 12/17/2019

Groundwater elevation calculation in wells with product: (Top of Casing Elevation - Depth to Water) + (Product Thickness * 0.8)

AMSL - above mean sea level

BTOC - below top of casing

NP - no free phase hydrocarbons are present the well

UNK - data is not known



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-1	1/8/1997	3,380	7,150	917	7,200
	7/13/1997	367	241	35	191
	10/1/1997	171	54	27	65
	1/6/1998	147	70	20	73.6
	3/9/1998	140	1.4	17	36
	6/11/1998	94	19	11	16.3
	8/12/1998	49	4.7	8.8	5.7
	12/15/1998	46	11	5.8	4.7
	2/9/1999	33	6.6	5.6	4.7
	4/21/1999	40	15	6.4	10.4
	7/28/1999	34	7.8	3	3.0
	11/3/1999	2.9	<0.5	<0.5	<1.5
	3/23/2000	10	1.1	<0.5	<1.5
	6/14/2000	4.1	1.4	0.6	<1.5
	11/17/2000	4.64	<1.0	<1.0	<1.0
	1/31/2001	3.67	1.44	<1.0	<1.0
	4/30/2001	5.44	1.90	<1.0	1.78
	10/10/2001	1.1	<2.0	<2.0	<2.0
	12/2/2003	<2.0	<2.0	<2.0	<5.0
	9/20/2004	3.4	<2.0	<2.0	<5.0
	12/3/2004	<2.0	<2.0	<2.0	<5.0
	3/10/2005	<2.0	<2.0	<2.0	<5.0
	6/18/2005	<2.0	<2.0	<2.0	<5.0
	7/13/2006	2.2	<1.0	<1.0	<3.0
	9/21/2006	4.9	<1.0	<1.0	<3.0
	3/29/2010	<1.0	<1.0	<1.0	<3.0
	6/18/2010	<1.0	<1.0	<1.0	<3.0
	9/10/2010	1.2	<1.0	<1.0	<3.0
	12/4/2010	<1.0	<1.0	<1.0	<3.0
	3/2/2011	<1.0	<1.0	<1.0	<3.0
	6/14/2011	3.6	<1.0	<1.0	<3.0
	9/12/2011	<1.0	<1.0	<1.0	<3.0
	1/3/2012	<1.0	<1.0	<1.0	<3.0



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-1	4/2/2012	<1.0	<1.0	<1.0	<3.0
	6/13/2012	<1.0	<1.0	<1.0	<3.0
	10/2/2012	1.1	<1.0	<1.0	<3.0
	12/6/2012	<1.0	<1.0	<1.0	<3.0
	3/1/2013	<1.0	<1.0	<1.0	<2.0
	11/1/2019	1.4	<1.0	<1.0	<1.5
	6/23/2020	NS	NS	NS	NS
	5/24/2021	NS	NS	NS	NS
	5/23/2022	NS	NS	NS	NS
MW-2	8/12/1998	9,800	14,000	920	9,200
	12/15/1998	12,000	17,000	870	8,700
	2/9/1999	11,000	16,000	720	7,300
	4/21/1999	14,000	20,000	850	8,500
	7/28/1999	11,000	15,000	740	6,800
	11/3/1999	11,000	14,000	770	8,100
	3/23/2000	12,000	15,000	810	8,200
	6/14/2000	6,400	7,000	570	5,800
	11/17/2000	5,980	3,240	600	4,780
	1/31/2001	6,300	2,790	458	5,490
	4/30/2001	7,160	2,200	404	7,060
	10/10/2001	4,500	1,000	390	3,800
	12/2/2003	11,000	<100	540	6,400
	9/20/2004	11,000	<200	600	5,800
	12/3/2004	11,000	<200	630	6,300
	3/10/2005	10,000	38	490	5,700
	6/18/2005	9,700	<100	640	6,000
	9/16/2005	8,900	31	370	4,800
	11/30/2005	<2.0	2.9	<2.0	12.2
	7/18/2006	16,900	<10.0	753	4,370
	3/29/2010	9,460	67	521	6,210
	6/18/2010	3,270	<1.0	260	3,530
	12/4/2010	1,470	26.3	599	2,720
	3/2/2011	2,530	1.4	764	3,700



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-2	6/14/2011	8,500	<20.0	537	4,490
	1/3/2012	9,400	<50.0	710	6,340
	4/2/2012	10,000	710	<100	6,390
	6/13/2012	11,200	716	<50.0	6,790
	10/2/2012	10,200	765	<100	7,260
	12/6/2012	8,280	722	<50.0	5,610
	3/4/2013	8,600	<10	<10	6,500
	6/24/2013	6,300	<10	600	5,800
	9/12/2013	NS	NS	NS	NS
	12/4/2013	39	72	<5.0	150
	3/19/2014	9,700	<10	760	7,000
	6/13/2014	8,600	<10	290	5,800
	9/11/2014	9,700	<10	490	7,200
	12/8/2014	9,400	<10	360	6,900
	3/17/2015	5,000	<20	340	3,000
	4/28/2017	5,100	<5	410	3,600
	11/1/2019	4,600	<1.0	270	190
	6/23/2020	8,200	<20	410	150
	5/24/2021	28	<1.0	5.1	6.7
	5/23/2022	1,800	<1.0	140	38.0
MW-3	4/2/2012	NS	NS	NS	NS
	6/13/2012	NS	NS	NS	NS
	10/2/2012	NS	NS	NS	NS
	12/6/2012	NS	NS	NS	NS
	3/1/2013	NS-FP	NS-FP	NS-FP	NS-FP
	6/24/2013	NS-FP	NS-FP	NS-FP	NS-FP
	9/12/2013	NS-FP	NS-FP	NS-FP	NS-FP
	12/4/2013	NS-FP	NS-FP	NS-FP	NS-FP
	3/19/2014	NS-FP	NS-FP	NS-FP	NS-FP
	6/13/2014	NS-FP	NS-FP	NS-FP	NS-FP
	9/11/2014	NS-FP	NS-FP	NS-FP	NS-FP
	12/4/2014	NS-FP	NS-FP	NS-FP	NS-FP
	3/17/2015	NS-FP	NS-FP	NS-FP	NS-FP



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-3	11/1/2019	NS-FP	NS-FP	NS-FP	NS-FP
	6/23/2020	NS-FP	NS-FP	NS-FP	NS-FP
	5/24/2021	NS-FP	NS-FP	NS-FP	NS-FP
	5/23/2022	NS-FP	NS-FP	NS-FP	NS-FP
MW-4	12/15/1998	44	11	5.8	4.8
	2/9/1999	11,000	16,000	730	7,300
	4/21/1999	68	25	9.3	13
	7/2/1999	11,000	14,000	700	6,700
	3/23/2000	11,000	13,000	770	7,800
	6/14/2000	28	42	7	135
	11/17/2000	59.9	104	2.94	98.3
	1/31/2001	30.3	81.0	5.20	156
	4/30/2001	36.1	56.1	1.32	73
	10/10/2001	24	28	<2.0	47
	12/2/2003	2.3	2.7	<2.0	6.5
	9/20/2004	3.6	3.2	<2.0	9.8
	12/3/2004	2.5	2.3	<2.0	8
	3/10/2005	3.0	3.5	<2.0	11
	6/18/2005	<2.0	3	<2.0	8.6
	9/16/2005	<2.0	2.3	<2.0	9.4
	11/30/2005	<2.0	<2.0	<2.0	10.4
	7/13/2006	2.9	<1.0	1.0	9.9
	9/21/2006	1.2	<1.0	<1.0	9.6
	3/29/2010	1.3	<1.0	<1.0	8.7
	6/18/2010	<1.0	<1.0	<1.0	6.8
	9/10/2010	<1.0	<1.0	<1.0	3.9
	12/4/2010	<1.0	<1.0	<1.0	5.6
	3/2/2011	<1.0	<1.0	<1.0	3
	6/14/2011	<1.0	<1.0	<1.0	6
	9/12/2011	<1.0	<1.0	<1.0	4.7
	1/3/2012	<1.0	<1.0	<1.0	5.4
	4/2/2012	<1.0	<1.0	<1.0	6.1
	6/13/2012	<1.0	<1.0	<1.0	3.7



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-4	10/2/2012	<1.0	<1.0	<1.0	4.5
	12/6/2012	<1.0	<1.0	<1.0	6
	3/1/2013	<1.0	<1.0	<1.0	<2.0
	11/1/2019	<1.0	<1.0	<1.0	<1.5
	6/23/2020	NS	NS	NS	NS
	5/24/2021	NS	NS	NS	NS
	5/23/2022	NS	NS	NS	NS
MW-5	6/14/2000	1,100	710	100	1,100
	6/14/2000	890	570	80	900
	11/17/2000	161	110	8.09	60.8
	4/30/2001	15.7	21.6	2.01	17.9
	10/10/2001	380	120	19	220
	12/2/2003	41	7.9	3.1	10
	9/20/2004	17	3.7	<2.0	9.9
	12/9/2004	13	3.3	<2.0	14
	3/10/2005	5.5	<2.0	<2.0	6.3
	7/13/2006	920	74	34.7	1,980
	9/21/2006	135	19.2	17.0	409
	4/2/2012	NS	NS	NS	NS
	6/13/2012	NS	NS	NS	NS
	10/2/2012	NS	NS	NS	NS
	12/6/2012	NS	NS	NS	NS
	3/1/2013	NS-FP	NS-FP	NS-FP	NS-FP
	6/24/2013	930	<50	98	1,100
	9/12/2013	2,400	40	250	3,800
	12/4/2013	410	46	51	1,000
	3/19/2014	920	3.1	100	660
	6/13/2014	4,000	<20	480	1,700
	9/11/2014	3,000	33	370	2,800
	12/4/2014	3,000	14	390	2,900
	3/17/2015	570	<10	52	660
	4/28/2016	270	<10	30	400
	4/28/2017	380	<2.0	55	560



TABLE 2
GROUNDWATER ANALYTICAL RESULTS
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Well Identification	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
NMWQCC Standards		5	1,000	700	620
MW-5	11/1/2019	2,200	<1.0	150	210
	6/23/2020	360	<2.0	2.4	210
	5/24/2021	58	<5.0	<5.0	21
	5/23/2022	210	<2.0	18	15
MW-6	11/1/2019	<1.0	<1.0	<1.0	<1.5
	6/23/2020	<1.0	<1.0	<1.0	<1.5
	5/4/2021	<1.0	<1.0	<1.0	<2.0
	5/23/2022	<1.0	<1.0	<1.0	<1.5
MW-7	11/1/2019	<1.0	<1.0	<1.0	<1.5
	6/23/2020	<1.0	<1.0	<1.0	<1.5
	5/4/2021	<1.0	<1.0	<1.0	<2.0
	5/23/2022	<1.0	<1.0	<1.0	<1.5

Notes:

< - indicates result is less than laboratory reporting detection limit

µg/L: milligrams per liter

NS - not sampled

NS-FP - not sampled due to the presence of free phase hydrocarbons (PSH) in the well

NMWQCC: New Mexico Water Quality Control Commission

--: not analyzed

<0.037: indicates result less than the stated laboratory reporting limit (RL)

Concentrations in **bold** and shaded exceed the New Mexico Water Quality Control Commission Standards, 20.6.2 of the New Mexico Administrative Code



TABLE 3
PNEUMATIC PRODUCT RECOVERY SYSTEM DATA
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Date	Runtime Cycles	Run Time	Lifetime Cycles	Lifetime Run Time	Estimated Product Recovered (gallons)	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Faults	Notes/Maintenance Completed
11/18/2019	0	0:00:00	1,809	160:07:11	0.0	91.26	93.19	1.93	12.7	ON	NO	Installed sipper at MW-3 vac: 18s, press: 40s, delay: 8 hours
12/3/2019	47	13:23:00	1,856	6:16:10	0.9	91.55	93.49	1.94	12.7	ON	NO	2.5 ounces per cycle
2020 Data												
1/9/2020	158	2:23:03	1,967	19:06:13	2.7	91.5	93.01	1.51	12.7	ON	NO	2 oz. per cycle, 5 inches of product in barrel
1/30/2020	221	71:23:46	2,030	232:06:56	4.1	91.59	93.12	1.53	12.8	ON	NO	3 oz. product per cycle delay set to 6 hours.
2/26/2020	303	99:04:18	2,112	0003:11:28	5.4	91.8	93.1	1.3	12.8	ON	NO	2 oz per cycle, changed delay to 6 hours.
3/19/2020	390	120:22:41	2,199	0025:05:52	6.8	91.62	92.85	1.23	12.8	ON	NO	2 oz per cycle, ~4.5 inches of product in barrel
4/1/2020	391	120:23:13	2,200	0025:06:23	6.8	91.46	92.95	1.49	12.7	ON	NO	~ 1 oz per cycle, changed solar panel to 26 degrees from 0.
4/20/2020	467	139:23:28	2,276	0044:06:38	7.4	91.7	92.49	0.79	12.7	ON	NO	Cleaned panel/pump, ~ 5" inches of product in barrel
5/4/2020	523	154:00:04	2,332	0058:04:15	7.8	91.83	92.4	0.57	12.7	ON	NO	Cleaned panel/pump, 6" inches of product in barrel. 1 oz recovered in cycle.
6/23/2020	727	204:01:16	2,536	108:08:27	12.6	91.83	92.41	0.58	12.9	ON	NO	Clean pump, 9" of product in barrel 3 oz. recovered per cycle.
7/24/2020	861	235:00:56	2,670	139:08:07	17.8	91.84	92.44	0.6	12.9	ON	NO	Clean pump/solar panel, 9" of product in barrel, bailed 5 oz of product from well
8/6/2020	918	248:02:02	2,727	152:09:12	18.3	91.84	91.87	0.03	12.9	ON	NO	Clean pump/solar panel, 9" of product in barrel



TABLE 3
PNEUMATIC PRODUCT RECOVERY SYSTEM DATA
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Date	Runtime Cycles	Run Time	Lifetime Cycles	Lifetime Run Time	Estimated Product Recovered (gallons)	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Faults	Notes/Maintenance Completed
9/8/2020	1,061	25:00:01	2,870	185:07:11	20.5	91.66	91.71	0.05	12.9	ON	NO	Change vacuum to 10 seconds and delay to 10 hours
9/25/2020	1,070	28:08:15	2,879	188:15:26	20.6	91.72	92.69	0.97	13.3	ON	Intake Override	Clean pump/solar panel, 16" of product in barrel, Repair cracked intake lines
10/14/2020	1,098	40:00:58	2,907	200:08:08	21.1	91.87	92.5	0.63	12.7	ON	Intake Override	Clean pump/solar panel, 20" of product in barrel, Repair cracked intake lines. Polytube needs to be replaced with vinyl.
10/26/2020	1,110	44:05:25	2,912	204:12:36	21.3	91.72	92.69	0.97	12.6	ON	Intake Override	21" of product in barrel, replace intake lines. Clean snow of solar Panel.
11/4/2020	1,118	44:05:25	2,927	204:12:36	21.4	91.7	92.66	0.96	12.6	ON	Intake Override	22" of product in barrel.
11/24/2020	1,121	48:19:28	2,930	209:02:39	21.4	91.59	92.71	1.12	13	ON	Intake Override	21" of product in barrel. Clean solar Panel.
12/4/2020	1,140	58:17:47	2,949	219:00:57	21.7	91.72	92.90	1.18	12.6	ON	NO	Increase pressure cycle to 2:15 to clear intake. Delay set to 10 hours
12/18/2020	1,173	72:16:37	2,982	232:23:47	22.2	91.69	92.90	1.21	12.7	ON	NO	~ 6" in barrel, 1 oz recovered in cycle
12/30/2020	1,180	75:05:06	2,989	235:12:16	22.3	91.7	93.02	1.32	12.7	ON	Intake Override	Cleaned pump, attached white tubing from pump back to solar sipper control box, changed solar panel angle to 51 degrees for winter, 1 oz PSH recovered in cycle, ~6" in barrel.
2021 Data												
1/13/2021	1,214	89:05:49	3,023	249:13:00	22.8	91.78	92.48	0.7	12.7	ON	NO	~6.5" PSH in bbl. Cleaned solar panel. 2 oz yellow/brown PSH recovered in cycle.
2/1/2021	1,256	106:19:27	3,065	11:02:37	23.5	92.07	92.64	0.57	12.8	ON	Intake Override	~18" PSH in bbl. Cleaned solar panel. 3 oz yellow/brown PSH recovered in cycle. Intake line cracked, repair and system returned to normal operation
2/16/2021	1,295	121:18:34	3,104	26:01:44	24.1	91.64	92.69	1.05	13.6	ON	Intake Override	~19" PSH in bbl. Air line frozen at well head, Warmed with hand and ran 2 cycles to clear condensation in line.



TABLE 3
PNEUMATIC PRODUCT RECOVERY SYSTEM DATA
 Florance M #047X
 Harvest Four Corners, LLC
 San Juan County, New Mexico

Date	Runtime Cycles	Run Time	Lifetime Cycles	Lifetime Run Time	Estimated Product Recovered (gallons)	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Faults	Notes/Maintenance Completed
3/12/2021	1,330	135:06:54	3,139	39:14:04	24.6	91.54	92.89	1.35	12.7	ON	Intake Override	Cleaned out air lines
3/31/2021	1,402	152:16:33	3,211	56:23:43	25.8	92.08	92.6	0.52	12.8	ON	Intake Override	~19" PSH in bbl. Replaced Discharge line.
4/15/2021	1,437	163:09:42	3,246	67:16:52	26.0	92.00	92.70	0.70	14.3	ON	No	Angle solar panel to 54 degrees for summer sun.
5/24/2021	1,448	166:23:46	3,257	71:06:56	26.1	91.68	92.91	1.23	12.8	ON	Intake Overload	Attached air supply line back to panel side.
6/21/2021	1,461	170:06:08	3,270	74:13:18	26.2	91.64	93.11	1.47	13.4	ON	NO	Adjust pump depth
7/27/2021	1,464	170:20:14	3,273	75:03:24	26.2	NP	92.61	NP	12.8	ON	Intake Override	Clear fault and air lines reset pump
8/23/2021	1,464	170:20:14	3,274	75:03:24	26.2	NP	93.61	NP	13.8	ON	Intake Override	Clear fault and air lines reset pump. Need to replace cable for Intake alarm.
8/27/2021	1,464	170:20:14	3,273	75:03:24	26.2	91.58	93.52	1.94	12.7	Off	Off	Panel off in setup mode. Directional solenoid broken.
10/27/2021	1,479	170:21:39	3,288	75:04:49	26.4	91.57	93.55	1.98	12.8	ON	Intake Override	Replace cable at intake float.
11/10/2021	1,562	184:22:51	3,371	89:06:01	28.3	—	—	—	12.7	ON	NO	
11/23/2021	1,641	197:23:12	3,450	102:06:22	30.2	91.81	92.94	1.13	12.8	ON	NO	Clean and reset pump.
12/17/2021	1,816	220:05:20	3,625	124:01:30	34.3	—	91.47	—	12.7	ON	Intake Override	~17" PSH in bbl. Reset pump. Ran 2 cycles, ice in discharge line, ~ 2 oz water and oily product recovered on 2nd cycle.



TABLE 3
PNEUMATIC PRODUCT RECOVERY SYSTEM DATA
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 Harvest Four Corners, LLC
 San Juan County, New Mexico

Date	Runtime Cycles	Run Time	Lifetime Cycles	Lifetime Run Time	Estimated Product Recovered (gallons)	Depth to Product (feet BTOC)	Depth to Water (feet BTOC)	PSH Thickness (feet)	Battery Voltage	System ON/OFF	Faults	Notes/Maintenance Completed
2022 Data												
1/12/2022	1821	220:17:30	3630	125:00:41	34.3	92.23	93.31	1.08	12.8	On	Intake Override	Clear fault and reset pump depth.
3/4/2022	1842	220:23:22	3651	125:06:32	34.4	91.8	92.60	0.8	12.7	ON	Intake Override	Clear fault and reset pump depth.
3/8/2022	1869	224:21:51	3678	129:05:01	34.6	92.23	92.41	0.18	12.8	ON	NO	Clean solar panel clean float intake.
3/22/2022	1952	238:22:47	3761	143:05:57	35.3	92.01	92.42	0.41	12.8	ON	NO	15" of product in recovery barrel. 1 oz. per cycle.
6/10/2022	2083	4:12:55	3892	164:20:05	37.3	91.87	93.01	1.14	13	ON	Intake Override	Clear fault. Clean solar panel. Set pump depth. Recovery barrel 19".
7/18/2022	2218	24:01:44	4027	184:08:54	39.5	91.86	92.05	0.19	12.8	ON	Intake Override	19" of product, cleared fault, set pump depth, could not get system to discharge product after ~20 cycles of troubleshooting
9/12/2022	2280	55:02:31	4089	215:09:41	40.4	92.11	92.23	0.12	13.4	ON	NO	Clean and reset pump depth. Clear solar panel.
11/8/2022	2343	111:07:26	4152	3:14:36:20	41.4	91.82	93.1	1.28	12.9	ON	NO	22" of product in drum, set top of pump to 89.5' Vac 10s, press 1:30, decreased delay to 18 hours
11/17/2022	2345	111:07:31	4154	15:14:41	40.9	92.00	93.13	1.13	13	OFF	NO	Sipper control off upon arrival. Reset pump depth and return system to service.
12/30/2022	2473	154:04:55	4282	58:12:05	42.4	92.01	92.1	0.09	12.9	ON	NO	Run 2 cycles no recovery, Set pump depth to ~89.10', Run cycle, ~1oz recovered per cycle

Notes:

PSH: phase separated hydrocarbons

O&M: operations and maintenance

BTOC: below top of casing

NA: not applicable

NM: not measured


NP: no product observed



APPENDIX A

Groundwater Collection Forms

Client <u>Harvest</u>		LOW-FLOW-GROUNDWATER SAMPLING FORM										
Project Name <u>Fluorance 412X</u>												
Project Location <u>ST. LOUIS</u>												
Project Manager <u>Brook Herb</u>												
SAMPLING INFORMATION												
Date Completed <u>5/23/22</u>		Soil Boring / Monitor Well Number <u>MW-2</u>										
Total Depth of Monitor Well <u>109.14</u>		Project # <u>07B2002009</u>										
Screen Interval <u>NR</u>		Type of Water Quality Meter <u>Aqua Troll 500</u>										
Sample Tubing Intake Depth <u>NR</u>		Date Calibrated <u>5/23/22</u>										
Geologist <u>Reece Hanson</u>		Other Notes <u>NR</u>										
		DTW: <u>99.04</u> 3 casing volumes = ~5 gal										
		TD: <u>109.14</u>										
Time (minutes)	Tubing Placement	Vol Removed (GW Depth (static))	Total Removed After Purge	Time (minutes)	Purge Rate (L/min)	Temp. (°C)	pH (unitless)	DO (mg/L)	ORP (mV)	5700-92 ICP MS ANALYSIS	GW Depth (feet)	Comments:
		1	1	1202		7.29	7.31	2.70	-195.6	750.5		NR = Not Recorded
		1	2	1209		16.52	7.41	1.42	-225	1969		
		1	3	1215		17.11	7.35	4.5	-243	2222		
		1	4	1221		16.65	7.34	8.41	-228	2334		
		1	5	1226		16.39	7.38	3.80	-215	2494		
												Time Sampled! 1230



[illegible]

[illegible]

Client: <u>Hornst</u> Project Name: <u>Fluore 47x</u> Project Location: <u>SJ County</u> Project Manager: <u>Brooke Herb</u>			LOW-FLOW GROUNDWATER SAMPLING FORM									
SAMPLING INFORMATION Date Completed: <u>5/27/22</u> Total Depth of Monitor Well: <u>101.28</u> Screen Interval: <u>NR</u> Sample Tubing Intake Depth: <u>NR</u> Geologist: <u>Reece Hanson</u>			Soil Boring / Monitor Well Number: <u>MW-7</u> Project #: <u>07B2002009</u> Type of Water Quality Meter: <u>Aquation 500</u> Date Calibrated: <u>5/23/23</u> Other Notes: <u>NR</u> DTW: <u>71.10</u> 3 casing volume = ~ 5 gal TD: <u>101.28</u>									
1	Tubing Placement	Vol. removed <small>(H₂O sample collection)</small>	Total removed <small>(H₂O sample collection)</small>	Time <small>(mm:ss)</small>	Purge Rate <small>(L/min)</small>	Temp. <small>(°C)</small>	pH <small>(unitless)</small>	DO <small>(mg/L)</small>	ORP <small>(mV)</small>	Cond. <small>(µS/cm)</small>	GW Depth <small>(feet)</small>	Comments: NR = Not Recorded Sample Time: 1625
		1	1	1603		15.16	7.21	5.83	256	2045		
		1	2	1607		15.13	7.10	5.81	240	2047		
		1	3	1612		15.15	7.05	5.23	235	2059		
		1	4	1617		14.87	7.14	5.40	273	2061		
		1	5	1622		14.71	7.03	5.21	226	2058		

 **ENSOLUM**

37228



APPENDIX B

Laboratory Analytical Rports



Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 02, 2022

Oakley Hayes

Harvest

1755 Arroyo Dr.

Bloomfield, NM 87413

TEL: (505) 632-4475

FAX:

RE: Florance 47X

OrderNo.: 2205A35

Dear Oakley Hayes:

Hall Environmental Analysis Laboratory received 4 sample(s) on 5/24/2022 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a light blue horizontal line.

Andy Freeman

Laboratory Manager

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order: 2205A35

Date Reported: 6/2/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Lab Order: 2205A35

Project: Florance 47X

Lab ID: 2205A35-001

Collection Date: 5/23/2022 12:30:00 PM

Client Sample ID: MW-2

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: CCM
Benzene	1800	100		µg/L	100	5/31/2022 3:35:00 PM	SL8836
Toluene	ND	1.0		µg/L	1	5/29/2022 6:37:00 AM	SL8835
Ethylbenzene	140	100		µg/L	100	5/31/2022 3:35:00 PM	SL8836
Xylenes, Total	38	1.5		µg/L	1	5/29/2022 6:37:00 AM	SL8835
Surr: 1,2-Dichloroethane-d4	85.3	70-130		%Rec	1	5/29/2022 6:37:00 AM	SL8835
Surr: Dibromofluoromethane	93.7	70-130		%Rec	1	5/29/2022 6:37:00 AM	SL8835
Surr: Toluene-d8	113	70-130		%Rec	1	5/29/2022 6:37:00 AM	SL8835

Lab ID: 2205A35-002

Collection Date: 5/23/2022 2:05:00 PM

Client Sample ID: MW-5

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: CCM
Benzene	210	20		µg/L	20	5/31/2022 4:22:00 PM	SL8836
Toluene	ND	2.0		µg/L	2	5/29/2022 7:00:00 AM	SL8835
Ethylbenzene	18	2.0		µg/L	2	5/29/2022 7:00:00 AM	SL8835
Xylenes, Total	15	3.0		µg/L	2	5/29/2022 7:00:00 AM	SL8835
Surr: 1,2-Dichloroethane-d4	88.1	70-130		%Rec	2	5/29/2022 7:00:00 AM	SL8835
Surr: Dibromofluoromethane	92.0	70-130		%Rec	2	5/29/2022 7:00:00 AM	SL8835
Surr: Toluene-d8	104	70-130		%Rec	2	5/29/2022 7:00:00 AM	SL8835

Lab ID: 2205A35-003

Collection Date: 5/23/2022 3:35:00 PM

Client Sample ID: MW-6

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: CCM
Benzene	ND	1.0		µg/L	1	5/29/2022 7:23:00 AM	SL8835
Toluene	ND	1.0		µg/L	1	5/29/2022 7:23:00 AM	SL8835
Ethylbenzene	ND	1.0		µg/L	1	5/29/2022 7:23:00 AM	SL8835
Xylenes, Total	ND	1.5		µg/L	1	5/29/2022 7:23:00 AM	SL8835
Surr: 1,2-Dichloroethane-d4	90.7	70-130		%Rec	1	5/29/2022 7:23:00 AM	SL8835
Surr: Dibromofluoromethane	97.4	70-130		%Rec	1	5/29/2022 7:23:00 AM	SL8835
Surr: Toluene-d8	103	70-130		%Rec	1	5/29/2022 7:23:00 AM	SL8835

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Analytical Report

Lab Order: 2205A35

Date Reported: 6/2/2022

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Harvest

Lab Order: 2205A35

Project: Florance 47X

Lab ID: 2205A35-004

Collection Date: 5/23/2022 4:25:00 PM

Client Sample ID: MW-7

Matrix: AQUEOUS

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8260: VOLATILES SHORT LIST							Analyst: CCM
Benzene	ND	1.0		µg/L	1	5/29/2022 7:46:00 AM	SL8835
Toluene	ND	1.0		µg/L	1	5/29/2022 7:46:00 AM	SL8835
Ethylbenzene	ND	1.0		µg/L	1	5/29/2022 7:46:00 AM	SL8835
Xylenes, Total	ND	1.5		µg/L	1	5/29/2022 7:46:00 AM	SL8835
Surr: 1,2-Dichloroethane-d4	91.4	70-130		%Rec	1	5/29/2022 7:46:00 AM	SL8835
Surr: Dibromofluoromethane	98.2	70-130		%Rec	1	5/29/2022 7:46:00 AM	SL8835
Surr: Toluene-d8	100	70-130		%Rec	1	5/29/2022 7:46:00 AM	SL8835

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Estimated value
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quantitative Limit	RL	Reporting Limit
	S	% Recovery outside of range due to dilution or matrix interference		

Page 2 of 4

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2205A35

02-Jun-22

Client: Harvest
Project: Florance 47X

Sample ID: 100ng lcs	SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: LCSW	Batch ID: SL88350		RunNo: 88350							
Prep Date:	Analysis Date: 5/28/2022		SeqNo: 3134214		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	96.2	70	130			
Toluene	20	1.0	20.00	0	102	70	130			
Surr: 1,2-Dichloroethane-d4	9.3		10.00		92.9	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		102	70	130			
Surr: Dibromofluoromethane	9.7		10.00		96.8	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: mb	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: PBW	Batch ID: SL88350		RunNo: 88350							
Prep Date:	Analysis Date: 5/28/2022		SeqNo: 3134215		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.2		10.00		91.8	70	130			
Surr: 4-Bromofluorobenzene	9.9		10.00		98.7	70	130			
Surr: Dibromofluoromethane	9.9		10.00		99.2	70	130			
Surr: Toluene-d8	10		10.00		102	70	130			

Sample ID: 100ng lcs 2	SampType: LCS		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: LCSW	Batch ID: SL88350		RunNo: 88350							
Prep Date:	Analysis Date: 5/28/2022		SeqNo: 3134227		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	95.9	70	130			
Toluene	21	1.0	20.00	0	104	70	130			
Surr: 1,2-Dichloroethane-d4	9.1		10.00		90.7	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	10		10.00		100	70	130			
Surr: Toluene-d8	10		10.00		99.8	70	130			

Sample ID: mb 2	SampType: MBLK		TestCode: EPA Method 8260: Volatiles Short List							
Client ID: PBW	Batch ID: SL88350		RunNo: 88350							
Prep Date:	Analysis Date: 5/28/2022		SeqNo: 3134228		Units: µg/L					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Toluene	ND	1.0								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		

QC SUMMARY REPORT**Hall Environmental Analysis Laboratory, Inc.**

WO#: 2205A35

02-Jun-22

Client: Harvest
Project: Florance 47X

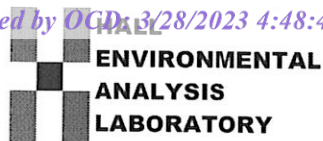
Sample ID: mb 2	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: PBW	Batch ID: SL88350			RunNo: 88350						
Prep Date:	Analysis Date: 5/28/2022			SeqNo: 3134228			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.0								
Xylenes, Total	ND	1.5								
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.0	70	130			
Surr: 4-Bromofluorobenzene	9.7		10.00		97.4	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.0	70	130			
Surr: Toluene-d8	10		10.00		100	70	130			

Sample ID: MB	SampType: MBLK			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: PBW	Batch ID: SL88361			RunNo: 88361						
Prep Date:	Analysis Date: 5/31/2022			SeqNo: 3135273			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
Surr: 1,2-Dichloroethane-d4	9.3		10.00		93.3	70	130			
Surr: 4-Bromofluorobenzene	9.6		10.00		96.3	70	130			
Surr: Dibromofluoromethane	10		10.00		99.8	70	130			
Surr: Toluene-d8	10		10.00		99.9	70	130			

Sample ID: 100ng lcs	SampType: LCS			TestCode: EPA Method 8260: Volatiles Short List						
Client ID: LCSW	Batch ID: SL88361			RunNo: 88361						
Prep Date:	Analysis Date: 5/31/2022			SeqNo: 3135274			Units: µg/L			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	19	1.0	20.00	0	93.8	70	130			
Surr: 1,2-Dichloroethane-d4	9.0		10.00		90.1	70	130			
Surr: 4-Bromofluorobenzene	10		10.00		101	70	130			
Surr: Dibromofluoromethane	9.6		10.00		96.3	70	130			
Surr: Toluene-d8	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Estimated value
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quantitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix interference		



Sample Log-In Check List

Client Name: Harvest

Work Order Number: 2205A35

RcptNo: 1

Received By: Juan Rojas

5/24/2022 7:00:00 AM

Juan Rojas

Completed By: Tracy Casarrubias

5/24/2022 8:22:32 AM

Reviewed By:

*5/24/22***Chain of Custody**

1. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
4. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to 6.0°C ? Yes ☒ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☒ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
8. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
9. Received at least 1 vial with headspace $<1/4"$ for AQ VOA? Yes ☒ No ☐ NA ☐
10. Were any sample containers received broken? Yes ☐ No ☒
11. Does paperwork match bottle labels?
(Note discrepancies on chain of custody) Yes ☒ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
13. Is it clear what analyses were requested? Yes ☒ No ☐
14. Were all holding times able to be met?
(If no, notify customer for authorization.) Yes ☒ No ☐

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

Adjusted?

Checked by:

*KPG 5.24.22***Special Handling (if applicable)**

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.5	Good	Not Present			

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

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

CONDITIONS

Action 201682

CONDITIONS

Operator: Harvest Four Corners, LLC 1755 Arroyo Dr Bloomfield, NM 87413	OGRID:	373888
	Action Number:	201682
	Action Type:	[UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Review of the 2022 Groundwater Report: Content Satisfactory 1. Continue with future work as stated within the 2022 Annual Groundwater Report a. monthly site visits for O&M purposes and as necessary b. groundwater monitoring through quarterly well gauging c. annual groundwater sampling for lab analysis of BTEX compounds d. Submit the Annual Monitoring Report to the OCD no later than April 1, 2024.	7/24/2023