

October 18,
2022

**Third Quarter (3rd) Groundwater Monitoring Report (July- September)
DKL Energy-Cottonwood Facility (2RF-128) OGRID: 330291
(Formally 3 Bear-Cottonwood Facility)
Eddy County, New Mexico**

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1.0 EXECUTIVE SUMMARY

Larson & Associates, Inc. (LAI) has prepared this report on behalf of DKL Energy, LLC (DKL) for submittal to the New Mexico Oil Conservation Division (NMOCD). The report presents the results of the 2022 third (3rd) quarter (July - September) groundwater monitoring event at the Cottonwood Facility (Site or Facility) on September 23, 2022. The Site is a produced water recycling facility permitted by the NMOCD (2RF-128) and was previously operated by 3 Bear Energy, LLC (3 Bear), until June 1, 2022, when DKL acquired the Facility. The Site is located in Unit N (SE/4, SW/4), Section 20, Township 26 South, and Range 26 East in Eddy County, New Mexico. The geodetic position is North 32.02104° and West -104.31879°. The surface and mineral owner is the U.S. Government administered by the Bureau of Land Management (BLM).

The following activities occurred on September 23, 2022:

- Gauged four (4) monitoring wells (MW-1 through MW-4) for light non-aqueous phase liquid (LNAPL) and depth to groundwater.
- Collected groundwater samples from three (3) wells (MW-1, MW-3, and MW-4).
- Analyzed samples for benzene, toluene, ethylbenzene, xylenes (BTEX) and total petroleum hydrocarbons (TPH) by EPA SW-846 Methods 8021B and 8015, respectively, and chloride by EPA Method 300.0.

The following observations are documented in this report:

- Depth to groundwater ranged from 28.26 feet below ground surface (bgs) at MW-1 to 64.97 feet bgs at MW-4.
- Depth to groundwater increased (lowering conditions) in monitoring well MW-1 (0.28 feet) and decreased (rising conditions) in MW-2 (0.49 feet), MW-3 (0.12 feet), and MW-4 (0.87 feet) compared to the second quarter monitoring period on May 19, 2022.
- Groundwater samples were not collected from monitoring well MW-2, due to insufficient water volume for sample collection.
- The groundwater potentiometric surface elevation ranged from 3,432.03 feet above mean sea level (MSL) at well MW-1 (up gradient) to 3,391.09 feet above MSL at MW-4 (cross gradient and down gradient).
- An apparent groundwater divide occurs in the area between monitoring well MW-1 and monitoring well MW-3 that causes groundwater to flow to the northeast towards wells MW-2, east towards MW-3, and southeast towards well MW-4 at gradients between 0.093 and 0.178 feet per foot (ft/ft).
- No significant change in the groundwater elevation, flow direction, or gradient was observed during the 3rd quarter 2022 monitoring event.
- BTEX concentrations were below the analytical method reporting limits (RL) in all samples.
- TPH reported as diesel range organics (>C12 to C28) was reported in the sample from MW-4 (0.272 mg/L) with similar results reported during earlier events. There is no NMWQCC human health or domestic water quality standard for TPH.
- Chloride was below the NMWQCC domestic water quality standard (250 mg/L) in groundwater samples from monitoring wells MW-1 and MW-3, consistent with previous monitoring periods.
- Chloride exceeded the NMWQCC domestic water quality standard in the groundwater sample from MW-4 (19,300 mg/L), consistent with the previous monitoring periods.
- The Site does not appear to be the source for the TPH, and chloride reported in samples from monitoring well MW-4 based on the initial laboratory results from the groundwater samples collected on January 29, 2019.

- DKL routinely monitors the leak detection system and has found no fluid to indicate a leak from the pond.

DKL will continue to monitor the leak detection system, as required by the permit conditions, and immediately report any changes to the NMOCD. DKL will also continue monitoring groundwater on a quarterly (4 times per year) schedule. Notification will be provided to the NMOCD at least 7 working days prior to each monitoring event, and as soon as possible upon any significant change in analyte concentrations.

2.0 INTRODUCTION

LAI has prepared this report on behalf of DKL for submittal to the NMOCD. The report presents the results of the 2022 third (3rd) quarter (July - September) groundwater monitoring event at the Cottonwood Facility (Site or Facility) on September 23, 2022. The Site is a produced water recycling facility permitted by the NMOCD (2RF-128) and previously operated by 3 Bear, until June 1, 2022, when DKL acquired the Facility. The Site is located in Unit N (SE/4, SW/4), Section 20, Township 26 South, and Range 26 East in Eddy County, New Mexico. The geodetic position is North 32.02104° and West -104.31879°. The surface and mineral owner is the U.S. Government administered by the Bureau of Land Management (BLM).

2.1 Background

The Site is permitted by the NMOCD as a produced water recycle facility (2RF-128) located in Unit N (SE 1/4, SW 1/4), Section 20, Township 26 South, and Range 26 East, in Eddy County, New Mexico. The surface and mineral owner is the U.S. Government administered by the Bureau of Land Management (BLM). The geodetic position is North 32.02104° and West -104.31879°. Figure 1 presents a location and topographic map. Figure 2 presents an aerial map.

3.0 DEPTH TO GROUNDWATER AND GROUNDWATER ELEVATION

On September 23, 2022, LAI personnel gauged monitoring wells MW-1 through MW-4 for LNAPL and depth to groundwater. LNAPL was not present in the monitoring wells. Groundwater was gauged at 31.02 (MW-1), 56.44 (MW-2), 44.76 (MW-3) and 67.95 (MW-4) feet below top of casing (TOC). Depth to groundwater increased (lowering conditions) in monitoring well MW-1 (0.28 feet) and decreased (rising conditions) in MW-2 (0.49 feet), MW-3 (0.12 feet), and MW-4 (0.87 feet) compared to the second quarter monitoring period on May 19, 2022.

The groundwater surface in well MW-2 and MW-3 has steadily declined over time from 42.52 and 43.55-feet below TOC, respectively, on December 12, 2018, to 56.44 and 47.76 below feet TOC, respectively, on September 23, 2022, and is likely due to recharge in fractured bedrock. Monitoring well MW-2 had insufficient water for sample collection during the 3rd quarter monitoring event.

The groundwater potentiometric surface elevation ranged from 3,432.03 feet above MSL at well MW-1 (upgradient) to 3,391.09 feet above MSL at MW-4 (cross and down gradient). An apparent groundwater divide occurs in the area that causes groundwater to flow to the northeast and east towards wells MW-2 and MW-3, respectively, and southeast towards well MW-4 at gradients between 0.093 and 0.178 ft/ft. No significant change in the groundwater flow direction or gradient was observed on September 23, 2022. Table 1 presents the groundwater gauging summary. Figure 3 presents the groundwater potentiometric map for September 23, 2022. Appendix A presents a control chart for groundwater elevation over time.

4.0 GROUNDWATER SAMPLES AND ANALYSIS

On September 23, 2022, LAI personnel collected groundwater samples from monitoring wells MW-1, MW-3, and MW-4. Notification of the groundwater sampling event was submitted to the NMOCD prior to sample collection. The samples were collected using the low stress or low flow method, according to EPA protocol (EQASOP-GW4, Revision 4, September 19, 2017). The low stress or low flow method uses an environmental pump that is submerged near the middle of the water column and the well is pumped at a low rate until environmental parameters stabilize. Groundwater samples were collected from the discharge of the dedicated disposable Tygon tubing.

The tubing was discarded after each use and the pump was thoroughly cleaned with a solution potable water and laboratory grade detergent (Alconox®) and rinsed with distilled water. A duplicate sample was collected from well MW-1 for laboratory quality assurance and quality control (QA/QC). Groundwater samples were not collected from well MW-2 due to insufficient water column (2.26 feet). A Waterra mechanical pump was used in monitoring well MW-3 to remove sediment and improve the water volume in the well.

The samples were carefully transferred to labeled laboratory containers and delivered under preservation and chain of custody to DHL Analytical, Inc. (DHL), a National Environmental Laboratory Accreditation Conference (NELAC) accredited laboratory, located in Round Rock, Texas. DHL analyzed the samples BTEX according to EPA SW-846 Method SW-8021B, TPH according to EPA SW-846 Method 8015M, including gasoline range organics (C6 to C10), diesel range organics (>C10 to C28) and oil range organics (>C28 to C35), and chloride by EPA Method 300. Table 2 presents the laboratory analytical data summary. Appendix B presents the laboratory report. Appendix C presents NMOCD communications.

4.1 Organic Analysis

BTEX was not detected at concentrations above the analytical method RL in the groundwater samples from MW-1 and MW-3. TPH reported as diesel range organics was reported in the sample collected from MW-4 (0.264 mg/L) and is consistent with the results reported during previous monitoring periods. There is no NMWQCC human health or domestic water quality standard for TPH.

4.2 Inorganic Analysis

Chloride concentrations were reported above the NMWQCC domestic water quality standard (250 mg/L) in the groundwater sample from monitoring well MW-4 (19,300 mg/L) which is consistent with the initial chloride concentration of 22,300 mg/L reported on January 29, 2019. DKL monitors the leak detection system and has not found any leaks in the system, therefore the source for the chloride is unknown. The QA/QC sample (Dup-1) collected from monitoring well MW-1 is within 0.5 percent (194 mg/L) of the original chloride value (195 mg/L) reported for sample MW-1. No data quality exceptions were noted in DHL case narratives. Figure 4 presents a map showing chloride concentrations in groundwater on September 23, 2022.

On January 29, 2019, and May 15, 2019, the laboratory analyzed a precipitate layer that was observed in the groundwater samples from monitoring well MW-4. DHL reported chloride at 87,700 mg/L and 25,900 mg/L, from the precipitate layer on January 29, 2019, and May 15, 2019, respectively. The precipitate is considered naturally occurring and is likely associated with naturally elevated chloride in the formation. Table 3 presents the precipitate sample analytical data summary.

5.0 CONCLUSIONS

The following observations are documented in this report:

- A hydrologic divide in the vicinity of monitoring well MW-1 causing groundwater to flow to the northeast, east and southeast at gradients between 0.093 and 0.178 ft/ft.
- No significant changes in the groundwater flow direction and gradient were observed on September 23, 2022.
- BTEX compounds were below the laboratory method RLs in all samples.
- TPH reported as diesel range organics was reported in the sample from MW-4 (0.264 mg/L), consistent with results from previous groundwater monitoring events.

- Chloride was below the NMWQCC domestic water quality standard in all samples except well MW-4 (19,300 mg/L), consistent with results from previous groundwater monitoring events.
- The Site does not appear to be the source for the chloride reported in samples from monitoring well MW-4 based on laboratory results that are consistent with the initial groundwater sample results on January 29, 2019.
- DKL continues to monitor the leak detection system and has found no leaks in the system.

6.0 RECOMMENDATIONS

DKL will continue quarterly (4 times per year) groundwater monitoring at the Site. LAI will gauge and sample monitoring wells in the following order: MW-2, MW-3, MW-1, and MW-4. Groundwater samples will be collected using the low stress or low flow method and dedicated Tygon® tubing. Wells demonstrating insufficient water volume will not be sampled. Notification will be provided to the NMOCD at least 7 working days prior to each monitoring event, and as soon as possible upon any significant change in analyte concentrations.

Tables

Table 1
Monitoring Well Completion and Gauging Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well Information									Groundwater Information				
Well	Date	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Groundwater (Feet TOC)	Depth to Groundwater (FeetBGS)	Water Column (Feet)	Grounwater Elevation (Feet AMSL)
MW-1	08/15/2018	92.40	89.40	2	3,460.29	74.40 - 89.40	2.76	3,463.05	09/25/2018	31.85	29.09	60.55	3,431.20
									11/13/2018	31.81	29.05	60.59	3,431.24
									12/12/2018	31.69	28.93	60.71	3,431.36
									01/29/2019	32.62	29.86	59.78	3,430.43
									05/15/2019	32.50	29.74	59.90	3,430.55
									09/12/2019	31.51	28.75	60.89	3,431.54
									09/20/2019	32.40	29.64	60.00	3,430.65
									12/04/2019	31.73	28.97	60.67	3,431.32
									02/18/2020	31.50	28.74	60.90	3,431.55
									05/07/2020	31.72	28.96	60.68	3,431.33
									08/13/2020	31.82	29.06	60.58	3,431.23
									10/06/2020	31.89	29.13	60.51	3,431.16
									01/05/2021	31.47	28.71	60.93	3,431.58
									04/29/2021	31.45	28.69	60.95	3,431.60
									06/25/2021	31.84	29.08	60.56	3,431.21
									09/01/2021	31.31	28.55	61.09	3,431.74
									11/18/2021	31.48	28.72	60.92	3,431.57
									02/24/2022	31.40	28.64	61.00	3,431.65
									05/19/2022	30.74	27.98	61.66	3,432.31
									09/23/2022	31.02	28.26	61.38	3,432.03
MW-2	08/16/2018	58.7	61.70	2	3,455.22	40.70 - 55.70	3.04	3,458.26	09/25/2018 *	--	--	--	--
									11/13/2018 *	--	--	--	--
									12/12/2018	42.52	39.48	16.18	3,415.74
									01/29/2019	42.07	39.03	16.63	3,416.19
									05/15/2019	42.70	39.66	16.00	3,415.56
									09/12/2019	43.98	40.94	14.72	3,414.28
									09/20/2019	44.78	41.74	13.92	3,413.48
									12/04/2019	45.01	41.97	13.69	3,413.25
									02/18/2020	45.10	42.06	13.60	3,413.16
									05/07/2020	49.30	46.26	9.40	3,408.96

Table 1
Monitoring Well Completion and Gauging Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well Information									Groundwater Information				
Well	Date	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Groundwater (Feet TOC)	Depth to Groundwater (FeetBGS)	Water Column (Feet)	Grounwater Elevation (Feet AMSL)
									08/13/2020	51.69	48.65	7.01	3,406.57
									10/06/2020	52.00	48.96	6.70	3,406.26
									01/05/2021	52.21	49.17	6.49	3,406.05
									04/29/2021	54.75	51.71	3.95	3,403.51
									09/01/2021	56.93	53.89	1.77	3,401.33
									11/18/2021	57.94	54.90	0.76	3,400.32
									02/24/2022	56.88	53.84	1.82	3401.38
									05/19/2022	56.93	53.89	1.77	3401.33
									09/23/2022	56.44	53.40	2.26	3401.82
									09/25/2018	43.55	40.55	9.40	3,414.78
									11/13/2018	42.65	39.65	10.25	3,415.68
									12/12/2018	42.16	39.16	10.74	3,416.17
									01/29/2019	41.85	38.85	11.05	3,416.48
MW-3	08/16/2018	52.9	49.90	2	3,455.52	34.90 - 49.90	3.00	3,458.33	05/15/2019	42.61	39.61	10.29	3,415.72
									09/12/2019	44.3	41.30	8.60	3,414.03
									09/20/2019	44.1	41.10	8.80	3,414.23
									12/04/2019	44.83	41.83	8.07	3,413.50
									02/18/2020	45.6	42.60	7.30	3,412.73
									05/07/2020	45.68	42.68	7.22	3,412.65
									08/13/2020	45.64	42.64	7.26	3,412.69
									10/06/2020	46.19	43.19	6.71	3,412.14
									01/05/2021	46.66	43.66	6.24	3,411.67
									04/29/2021 *	--	--	--	--
									09/01/2021	47.59	44.59	5.31	3,410.74
									11/18/2021	46.98	43.98	5.92	3,411.35
									02/24/2022	45.85	42.85	7.05	3,412.48
									05/19/2022	47.88	44.88	5.02	3,410.45
									09/23/2022	47.76	44.76	5.14	3,410.57
MW-4	08/14/2018	78.1	75.10	2	3,456.06	60.10 - 75.00	2.98	3,459.04	09/25/2018 *	--	--	--	--

Table 1
Monitoring Well Completion and Gauging Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well Information									Groundwater Information				
Well	Date	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surface Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Groundwater (Feet TOC)	Depth to Groundwater (FeetBGS)	Water Column (Feet)	Grounwater Elevation (Feet AMSL)
									11/13/2018 *	--	--	--	--
									12/12/2018	74.36	71.38	3.74	3,384.68
									01/29/2019	71.34	68.36	6.76	3,387.70
									05/15/2019	71.50	68.52	6.60	3,387.54
									09/12/2019	67.38	64.40	10.72	3,391.66
									09/20/2019	71.41	68.43	6.69	3,387.63
									12/04/2019	66.31	63.33	11.79	3,392.73
									02/18/2020	71.80	68.82	6.30	3,387.24
									05/07/2020	72.20	69.22	5.90	3,386.84
									08/13/2020	70.10	67.12	8.00	3,388.94
									10/06/2020	68.09	65.11	10.01	3,390.95
									01/05/2021	68.88	65.90	9.22	3,390.16
									04/29/2021	70.14	67.16	7.96	3,388.90
									06/25/2021	69.92	66.94	8.18	3,389.12
									09/01/2021	72.55	69.57	5.55	3,386.49
									11/18/2021	71.61	68.63	6.49	3,387.43
									02/24/2022	70.05	67.07	8.05	3,388.99
									05/19/2022	68.82	65.84	9.28	3,390.22
									09/23/2022	67.95	64.97	10.15	3,391.09

Notes: monitoring wells installed by Environ-Drill, Albuquerque, New Mexico with 2 inch schedule 40 PVC casing and screen

bgs - below ground surface

TOC - top of casing

AMSL - denotes elevation in feet above mean sea level

* - Well bore dry

Table 2
Groundwater Sample Organic and Inorganic Analytical Data Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well	Collection Date	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (mg/L)	GRO C6 - C10 (mg/L)	DRO >C10 - C28 (mg/L)	ORO >C28 - C35 (mg/L)	TPH C6 - C35 (mg/L)	Chloride (mg/L)
NMWQCC Standard:		*0.001	*0.75	*0.75	*0.62					**250
MW-1	09/25/2018	<0.000800	<0.00200	<0.00200	<0.00200	<0.556	<0.556	<0.556	<0.556	210
	11/13/2018	0.00124	<0.00200	<0.00200	<0.00200	<0.527	<0.527	<0.527	<0.527	1,220
	12/12/2018	0.0013	<0.00200	<0.00200	<0.00200	<0.537	<0.537	<0.537	<0.537	677
	01/29/2019	0.00489	<0.00400	<0.00400	<0.00400	<0.0600	<0.0789	<0.0789	<0.2178	1,750
	05/15/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0749	<0.0749	<0.7498	214
	09/20/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0730	<0.0730	<0.206	248
	12/04/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0739	<0.0739	<0.2078	224
	02/18/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0772	<0.0772	<0.2144	214
	05/07/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0787	<0.0787	<0.2174	246
	08/13/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	0.107	<0.0758	0.107	228
	10/06/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0782	<0.0782	<0.2164	218
	01/05/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0785	<0.0785	<0.2170	192
	04/29/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	2.33	0.783	3.113	201
	06/25/2021	--	--	--	--	<0.0600	<0.0790	<0.0790	<0.218	--
	09/01/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.149	<0.149	<0.358	202
	11/18/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0836	<0.0836	<0.0836	182
	02/24/2022	<0.008000	<0.00200	<0.00200	<0.00200	<0.0600	<0.0789	<0.0789	<0.0789	228
	05/19/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0787	<0.0787	<0.0787	194
	09/23/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0742	<0.0742	<0.0742	195
MW-2	09/25/2018 ***	--	--	--	--	--	--	--	--	--
	11/13/2018 ***	--	--	--	--	--	--	--	--	--
	01/29/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0767	<0.0767	<0.0767	136
	05/15/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0744	<0.0744	<0.2088	106
	09/20/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0748	<0.0748	<0.2096	117
	12/04/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0751	<0.0751	<0.2102	105
	02/18/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0766	<0.0766	<0.2132	120
	05/07/2020	<0.00800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0823	<0.0823	<0.2246	121
	08/13/2020	<0.00800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0841	<0.0841	<0.2282	124
	10/06/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0789	<0.0789	<0.2178	137
	01/05/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0874	<0.0874	<0.2348	130
	04/29/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0946	<0.0946	<0.24.92	132

Table 2
Groundwater Sample Organic and Inorganic Analytical Data Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well	Collection Date	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (mg/L)	GRO C6 - C10 (mg/L)	DRO >C10 - C28 (mg/L)	ORO >C28 - C35 (mg/L)	TPH C6 - C35 (mg/L)	Chloride (mg/L)
NMWQCC Standard:		*0.001	*0.75	*0.75	*0.62					**250
	09/01/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.150	<0.150	<0.360	142
	11/18 & 22/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.00600	1.07	<0.494	1.07	149
	02/24/2022 ***	--	--	--	--	--	--	--	--	--
	05/19/2022 ***	--	--	--	--	--	--	--	--	--
	09/23/2022 ***	--	--	--	--	--	--	--	--	--
MW-3	09/25/2018	<0.000800	<0.00200	<0.00200	<0.00200	<0.554	<0.554	<0.554	<0.554	101
	11/13/2018	<0.000800	<0.00200	<0.00200	<0.00200	<0.574	<0.574	<0.574	<0.574	103
	01/29/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0780	<0.0780	<0.0780	140
	05/15/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0758	<0.0758	<0.2116	121
	09/20/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0737	<0.0737	<0.2074	130
	12/04/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0752	<0.0752	<0.2104	111
	02/18/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0794	<0.0794	<0.2188	120
	05/07/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0997	<0.0997	<0.2594	305
	08/13/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0822	<0.0822	<0.2244	125
	10/06/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0787	<0.0787	<0.2174	111
	01/05/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0858	<0.0858	<0.2316	112
	04/29/2021 ***	--	--	--	--	--	--	--	--	--
	09/01/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.150	<0.150	<0.360	123
	11/18/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0878	<0.0878	<0.0878	120
	02/24/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0783	<0.0783	<0.0783	147
	05/19/2022 ***	--	--	--	--	--	--	--	--	--
	09/23/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0880	<0.0880	<0.0880	146
MW-4	09/25/2018 ***	--	--	--	--	--	--	--	--	--
	11/13/2018 ***	--	--	--	--	--	--	--	--	--
	01/29/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	0.216	<0.110	0.216	22,300
	05/15/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.762	<0.762	<0.2114	22,900
	09/20/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.741	<0.741	<0.082	26,000
	12/04/2019	<0.000800	<0.00200	<0.00200	<0.00200	<0.600	<0.752	<0.752	<2.104	24,400
	02/18/2020	<0.000800	<0.0200	<0.0200	<0.0200	<0.600	<0.577	<0.577	<1.754	25,800
	05/07/2020	<0.000800	<0.0200	<0.0200	<0.0200	<0.600	<0.110	<0.110	<0.820	25,400
	08/13/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.600	0.137	<0.0566	0.137	19,800
	10/06/2020	<0.000800	<0.0200	<0.0200	<0.0200	<0.600	0.251	<0.0790	0.251	21,000

Table 2
Groundwater Sample Organic and Inorganic Analytical Data Summary
DKL Energy, Cottonwood Facility
Eddy County, New Mexico

Well	Collection Date	Benzene (mg/L)	Ethylbenzene (mg/L)	Toluene (mg/L)	Xylenes (mg/L)	GRO C6 - C10 (mg/L)	DRO >C10 - C28 (mg/L)	ORO >C28 - C35 (mg/L)	TPH C6 - C35 (mg/L)	Chloride (mg/L)
NMWQCC Standard:		*0.001	*0.75	*0.75	*0.62					**250
	01/05/2021	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	0.126	<0.0880	0.126	16,200
	04/29/2021	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	0.377	<0.0906	0.377	16,100
	06/25/2021	--	--	--	--	<0.600	<0.0900	<0.0900	<0.2400	--
	09/01/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.149	<0.149	<0.358	23,600
	11/18/2021	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	0.118	<0.0840	0.118	17,500
	02/24/2022	<0.00800	<0.0200	<0.0200	<0.0200	<0.0600	<0.0853	<0.0853	<0.0853	20,400
	05/19/2022	<0.00800	<0.0200	<0.0200	<0.0200	<0.6000	0.264	<0.0787	0.264	13,400
	09/23/2022	<0.00800	<0.0200	<0.0200	<0.0200	<0.0600	0.272	<0.0745	0.272	19,300
QA/QC (Duplicate) Samples										
Dup-1 (MW-1)	02/18/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0802	<0.0802	<0.2204	210
Dup-1 (MW-1)	05/07/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0800	<0.0800	<0.2200	221
Dup-1 (MW-1)	08/13/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0747	<0.0747	<0.2094	213
Dup-1 (MW-1)	10/06/2020	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0785	<0.0785	<0.2170	196
Dup-1 (MW-1)	01/05/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0751	<0.0751	<0.2102	194
Dup-1 (MW-1)	04/29/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0918	<0.0918	<0.2436	199
Dup-1 (MW-1)	06/25/2021	--	--	--	--	<0.0600	<0.0775	<0.0775	<0.2150	--
Dup-1 (MW-1)	09/01/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.1490	<0.1490	<0.898	204
Dup-1 (MW-1)	11/18/2021	<0.000800	<0.00200	<0.00200	<0.00200	<0.00600	<0.0816	<0.0816	<0.0816	183
Dup-1 (MW-1)	02/24/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0832	<0.0832	<0.0832	198
Dup-1 (MW-1)	05/19/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0786	<0.0786	<0.0786	236
Dup-1 (MW-1)	09/23/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0768	<0.0768	<0.0768	194

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTEX), Method 8015M (TPH) and Method 300 (chloride)

All values reported in milligrams per liter (mg/L) equivalent to parts per million (ppm)

-- No data available

< - denotes concentration is less than analytical method reporting limit (RL).

* - Human health standard

** - Domestic water quality standard

*** - Insufficient water for sample collection

⁽¹⁾ - resampled on June 25, 2021 due to sample being collected from polyethylene tubing.

Table 3
Groundwater Precipitate Sample Analytical Data Summary
DKL Energy, LLC Cottonwood Facility
Eddy County, New Mexico

Well No.	Collection Date	Barium (mg/L)	Calcium (mg/L)	Iron (mg/L)	Magnesium (mg/L)	Potassium (mg/L)	Sodium (mg/L)	Strontium (mg/L)
MW-4	1/29/2019	<0.463	347	46.9	20,500	894	87,700	8.87
	5/15/2019	--	333	--	50,500	2,370	25,900	--
Well No.	Collection Date	Bicarbonate mg/L	Carbonate mg/L	Hydroxide mg/L	Total mg/L			
MW-4	1/29/2019	--	--	--	--			
	5/15/2019	5140	<	<	5140			
MW-2	5/15/2019	116	<	<	116			

Notes: Analysis performed by DHL Analytical, Round Rock, Texas, by EPA SW-846 Method 8021B (BTX), Method 8015M (TPH) and Method 300 (chloride)

Values reported in milligrams per liter (mg/L); equivalent to parts per million (ppm)

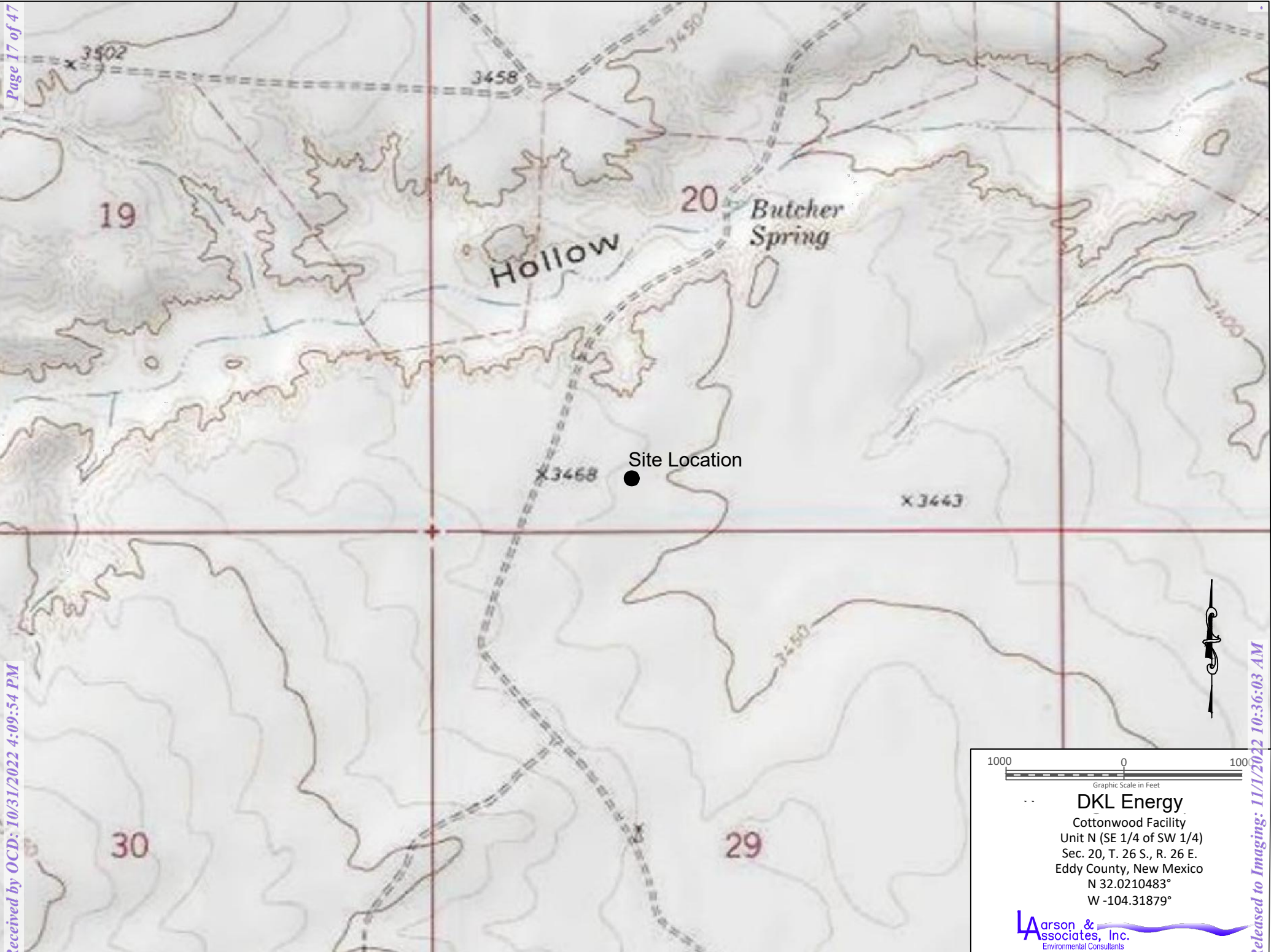
-- No data available

< - indicates parameter concentration is less than method reporting limit (RL).

* - Human health standard

** - Domestic water quality standard

Figures



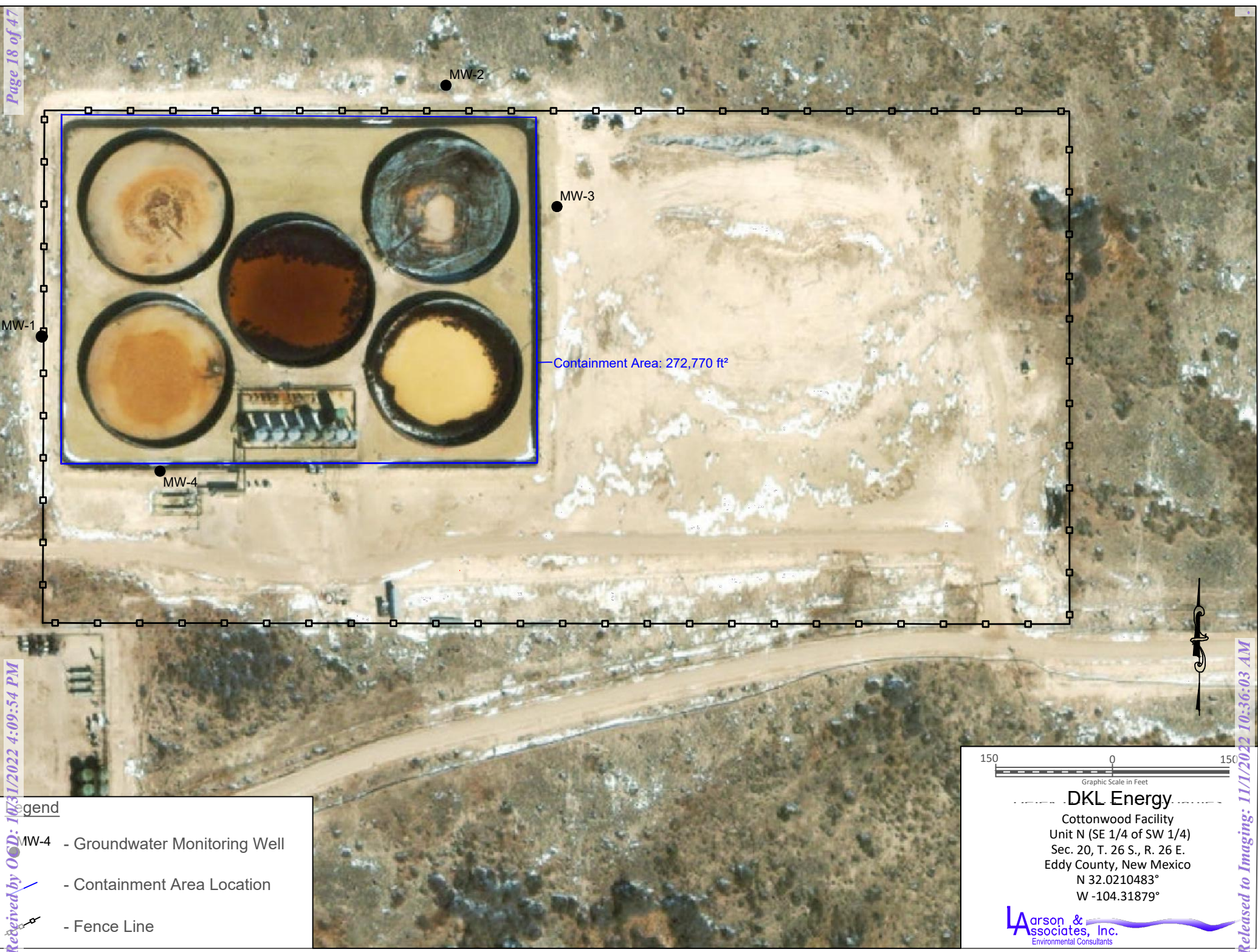
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Graphic Scale in Feet

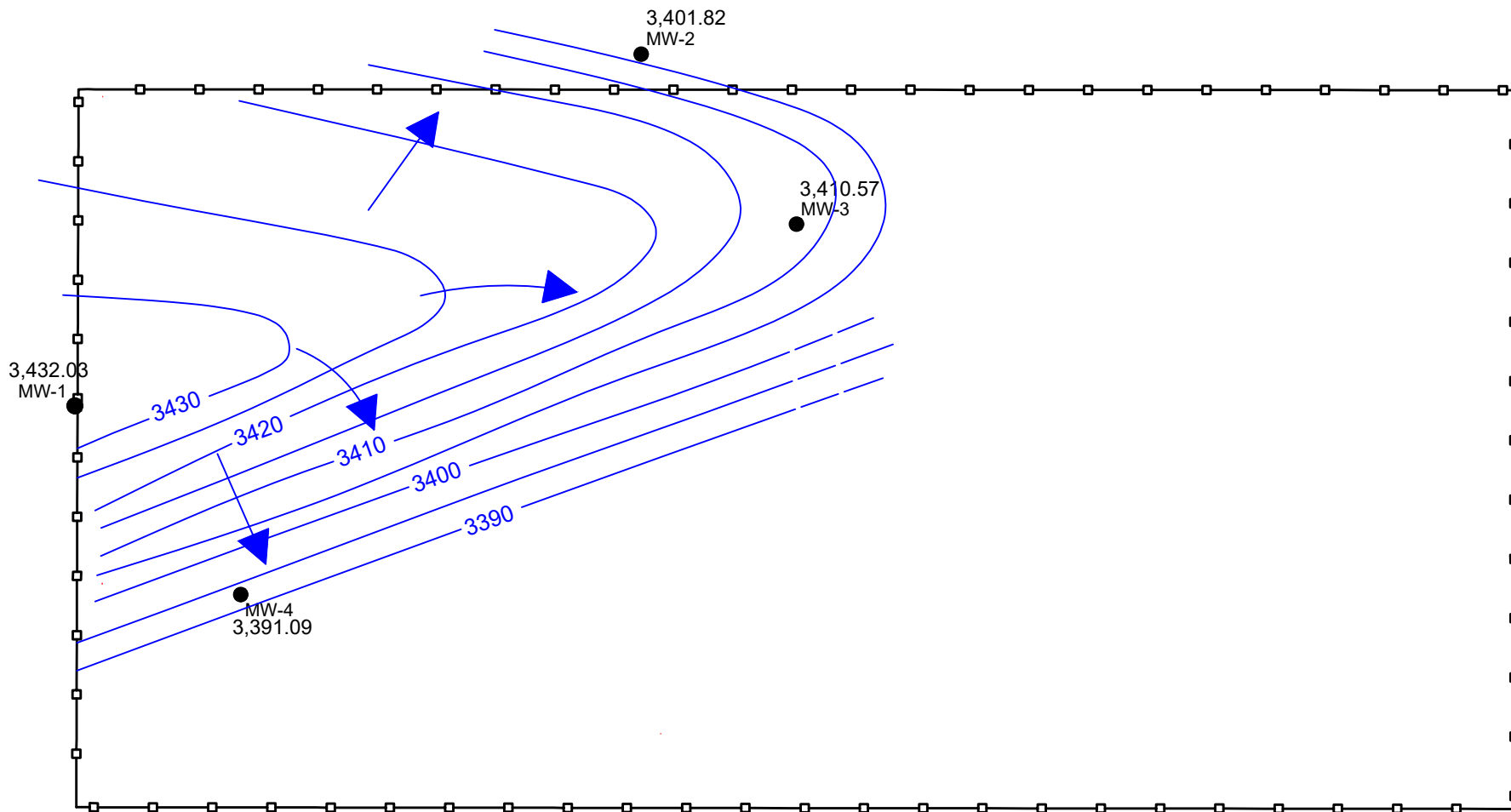
DKL Energy
Cottonwood Facility
Unit N (SE 1/4 of SW 1/4)
Sec. 20, T. 26 S., R. 26 E.
Eddy County, New Mexico
N 32.0210483°
W -104.31879°

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

Figure 2 - Aerial Map





Legend

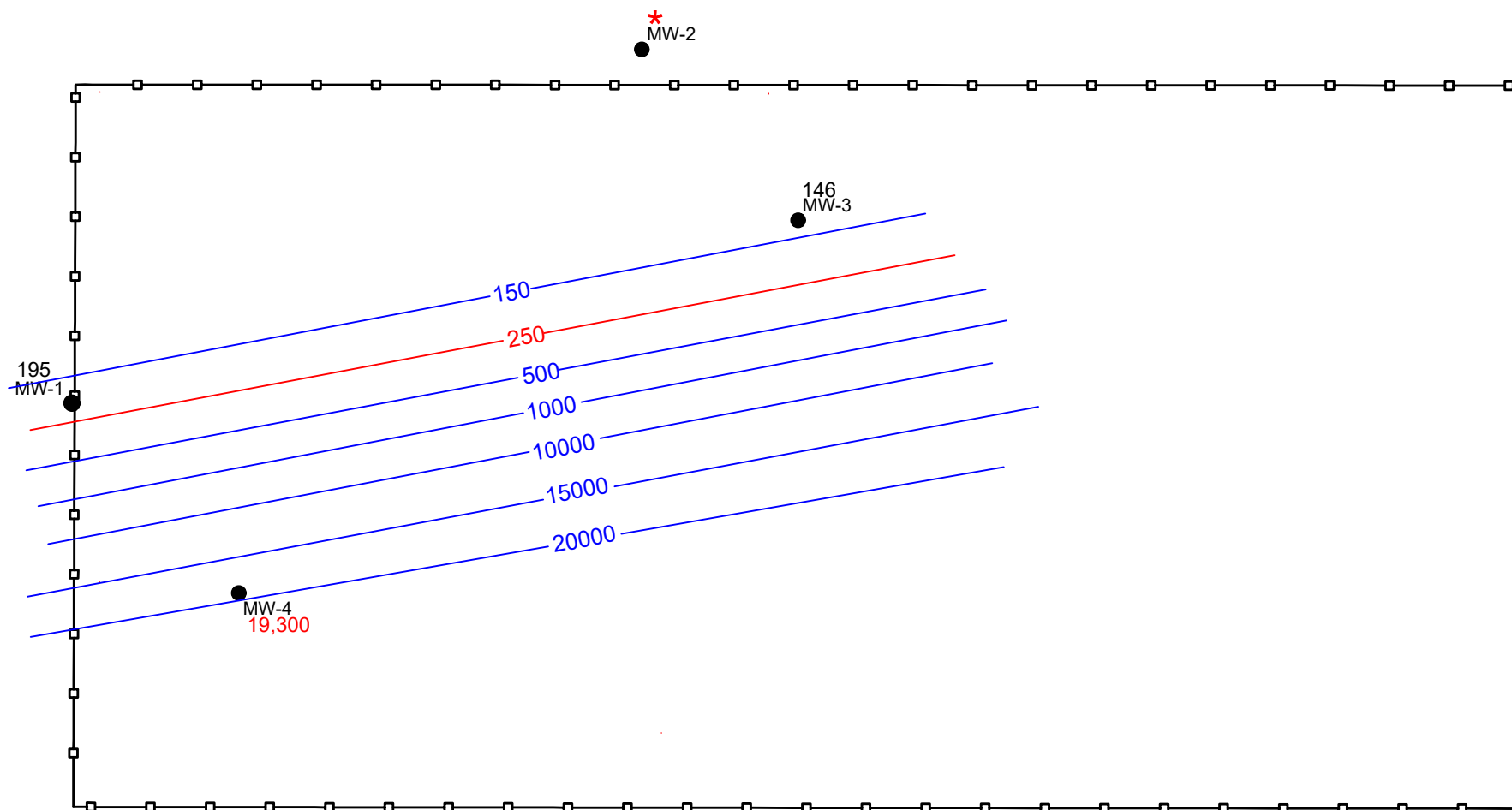
- MW-4 - Monitoring Well Location and Groundwater Potentiometric Surface Elevation, Feet AMSL, September 23, 2022
- 3420 - Contour of Groundwater Potentiometric Surface Elevation, Feet AMSL, September 23, 2022
- Blue Arrow - Groundwater Flow Direction
- Fence - Fence



DKL Energy
Cottonwood Facility
Unit N (SE 1/4 of SW 1/4)
Sec. 20, T. 26 S., R. 26 E.
Eddy County, New Mexico
N 32.0210483°
W -104.31879°



Figure 3 - Groundwater Potentiometric Map, September 23, 2022



- Legend
- Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, September 23, 2022
 - Contour of Chloride Concentration Elevation, mg/L, September 23, 2022
 - NMWQCC Downstream Water Quality Limit: 250 mg/L
 - Fence
 - Insufficient Water for Sample

150 0 150
Graphic Scale in Feet

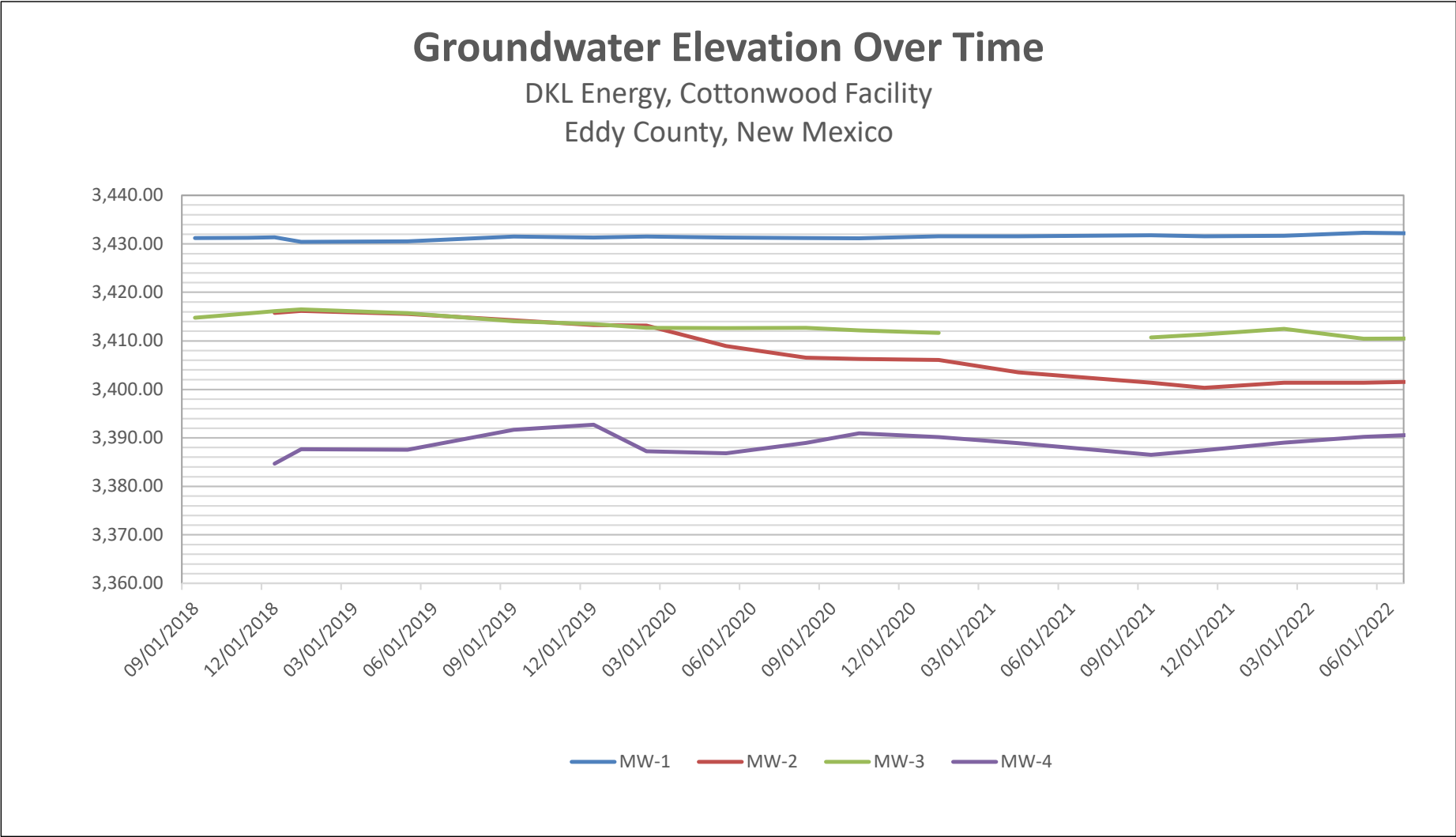
DKL Energy
Cottonwood Facility
Unit N (SE 1/4 of SW 1/4)
Sec. 20, T. 26 S., R. 26 E.
Eddy County, New Mexico
N 32.0210483°
W -104.31879°

Larson & Associates, Inc.
Environmental Consultants

Figure 4 - Chloride Concentration in Groundwater, September 23, 2022

Appendix A

Groundwater Elevation Overtime



Appendix B
Laboratory Analytical Report



October 04, 2022

Mark Larson
Larson & Associates
507 N. Marienfeld #205
Midland, TX 79701
TEL: (432) 687-0901
FAX (432) 687-0456
RE: Cottonwood

Order No.: 2209215

Dear Mark Larson:

DHL Analytical, Inc. received 4 sample(s) on 9/27/2022 for the analyses presented in the following report.

There were no problems with the analyses and all data met requirements of NELAP except where noted in the Case Narrative. All non-NELAP methods will be identified accordingly in the case narrative and all estimated uncertainties of test results are within method or EPA specifications.

If you have any questions regarding these tests results, please feel free to call. Thank you for using DHL Analytical.

Sincerely,

A handwritten signature in red ink, appearing to read "John DuPont".

John DuPont
General Manager

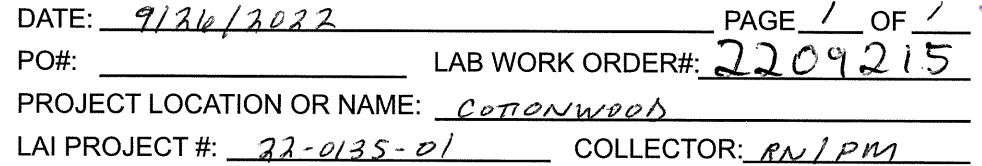
This report was performed under the accreditation of the State of Texas Laboratory Certification
Number: T104704211-22-28



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Analytical Report 2209215	10
AnalyticalQCSummaryReport 2209215	14

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[illegible]

RELINQUISHED BY: (Signature) <i>Samuel O. Gorman</i>	DATE/TIME <i>9/16/2022 1530</i>	RECEIVED BY: (Signature) <i>Fedex</i>
RELINQUISHED BY: (Signature) <i>Fedex</i>	DATE/TIME <i>9/27/22 0844</i>	RECEIVED BY: (Signature) <i>Sam. O. Gorman</i>
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
LABORATORY: <i>DHL</i>		<i>3</i>

RECEIVING TEMP: 0.3°C THERM#: 78
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

ORIGIN ID:MAFA (432) 687-0901
JOHN WHITE
LARSON & ASSOCIATES INC
507 N MARIENFELD ST STE 202

SHIP DATE: 26SEP22
ACTWGT: 40.00 LB
CAD: 7074331/INET4530
DIMS: 25x14x14 IN

MIDLAND, TX 79701
UNITED STATES US

BILL SENDER

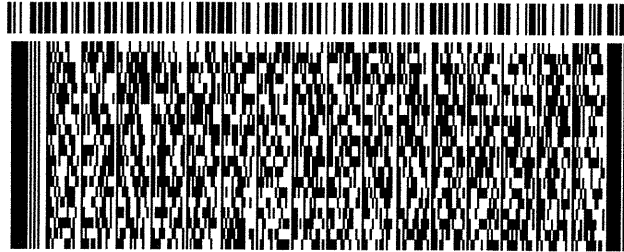
TO **JOHN DUPONT**
DHL ANALYTICAL, INC
2300 DOUBLE CREEK DRIVE

ROUND ROCK TX 78664

(512) 388-8222
INV:
PO:

REF: 6-0141

DEPT:



FedEx
Express



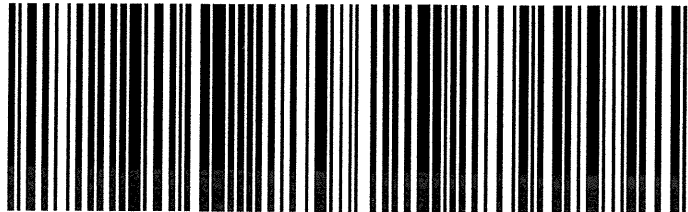
581J1/E080/FE2D

TUE - 27 SEP 10:30A
PRIORITY OVERNIGHT

TRK#
0201 **7700 3854 2786**

A8 BSMA

78664
TX-US AUS



CUSTODY SEAL

DATE 9/26/2022

SIGNATURE Samuel R. Lerner



CUSTODY SEAL

DATE 9/26/2022

SIGNATURE Samuel R. Lerner



DHL Analytical, Inc.

Sample Receipt Checklist

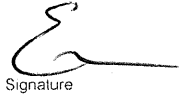
Client Name Larson & Associates

Date Received: 9/27/2022

Work Order Number 2209215

Received by: KAO

Checklist completed by:


Signature

9/27/2022

Date

Reviewed by


Initials

9/27/2022

Date

Carrier name: FedEx 1day

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 ☐	0.3 °C
Water - VOA vials have zero headspace?	Yes ☒	No ☐	No VOA vials submitted ☐ NA ☐
Water - pH<2 acceptable upon receipt?	Yes ☐	No ☐	NA ☒ LOT #
	Adjusted? _____	Checked by _____	
Water - pH>9 (S) or pH>10 (CN) acceptable upon receipt?	Yes ☐	No ☐	NA ☒ LOT #
	Adjusted? _____	Checked by _____	

Any No response must be detailed in the comments section below.

Client contacted: _____ Date contacted: _____ Person contacted: _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

DHL Analytical, Inc.**Date:** 04-Oct-22**CLIENT:** Larson & Associates**Project:** Cottonwood**Lab Order:** 2209215**CASE NARRATIVE**

Samples were analyzed using the methods outlined in the following references:

Method SW8260D - Volatile Aromatics Analysis

Method E300 - Anions Analysis

Method M8015D - DRO Analysis

Method M8015V - GRO Analysis

LOG IN

The samples were received and log-in performed on 9/27/2022. A total of 4 samples were received and analyzed. The samples arrived in good condition and were properly packaged. The samples were collected in Mountain Standard Time.

ANIONS ANALYSIS

For Anions Analysis, the recovery of Chloride for the Matrix Spike and Matrix Spike Duplicate (2209215-03 MS/MSD) was slightly below the method control limits. This is flagged accordingly in the QC Summary Report. This anion was within method control limits in the associated LCS/LCSD. No further corrective action was taken.

DHL Analytical, Inc.**Date:** 04-Oct-22

CLIENT: Larson & Associates
Project: Cottonwood
Lab Order: 2209215**Work Order Sample Summary**

Lab Smp ID	Client Sample ID	Tag Number	Date Collected	Date Recved
2209215-01	MW-3		09/23/22 09:30 AM	9/27/2022
2209215-02	MW-1		09/23/22 10:02 AM	9/27/2022
2209215-03	MW-4		09/23/22 10:50 AM	9/27/2022
2209215-04	DUP-1		09/23/22	9/27/2022

DHL Analytical, Inc.

04-Oct-22

Lab Order: 2209215
Client: Larson & Associates
Project: Cottonwood

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2209215-01A	MW-3	09/23/22 09:30 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	09/27/22 08:29 AM	107143
2209215-01B	MW-3	09/23/22 09:30 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	09/30/22 10:33 AM	107210
2209215-01C	MW-3	09/23/22 09:30 AM	Aqueous	E300	Anion Preparation	09/27/22 09:48 AM	107149
2209215-01D	MW-3	09/23/22 09:30 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	09/29/22 08:29 AM	107179
2209215-02A	MW-1	09/23/22 10:02 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	09/27/22 08:29 AM	107143
2209215-02B	MW-1	09/23/22 10:02 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	09/30/22 10:33 AM	107210
2209215-02C	MW-1	09/23/22 10:02 AM	Aqueous	E300	Anion Preparation	09/27/22 09:48 AM	107149
2209215-02D	MW-1	09/23/22 10:02 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	09/29/22 08:29 AM	107179
2209215-03A	MW-4	09/23/22 10:50 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	09/27/22 08:29 AM	107143
2209215-03B	MW-4	09/23/22 10:50 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	09/30/22 10:33 AM	107210
2209215-03C	MW-4	09/23/22 10:50 AM	Aqueous	E300	Anion Preparation	09/27/22 09:48 AM	107149
2209215-03D	MW-4	09/23/22 10:50 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	09/29/22 08:29 AM	107179
2209215-04A	DUP-1	09/23/22	Aqueous	SW5030C	Purge and Trap Water GC/MS	09/27/22 08:29 AM	107143
2209215-04B	DUP-1	09/23/22	Aqueous	SW5030C	Purge and Trap Water GC-Gas	09/30/22 10:33 AM	107210
2209215-04C	DUP-1	09/23/22	Aqueous	E300	Anion Preparation	09/27/22 09:48 AM	107149
2209215-04D	DUP-1	09/23/22	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	09/29/22 08:29 AM	107179

DHL Analytical, Inc.

04-Oct-22

Lab Order: 2209215
Client: Larson & Associates
Project: Cottonwood

ANALYTICAL DATES REPORT

Sample ID	Client Sample ID	Matrix	Test Number	Test Name	Batch ID	Dilution	Analysis Date	Run ID
2209215-01A	MW-3	Aqueous	SW8260D	Volatile Aromatics by GC/MS	107143	1	09/27/22 12:07 PM	GCMS3_220927A
2209215-01B	MW-3	Aqueous	M8015V	TPH Purgeable by GC - Water	107210	1	09/30/22 02:03 PM	GC4_220930A
2209215-01C	MW-3	Aqueous	E300	Anions by IC method - Water	107149	10	09/28/22 02:14 AM	IC2_220927B
2209215-01D	MW-3	Aqueous	M8015D	TPH Extractable by GC - Water	107179	1	09/30/22 11:35 AM	GC15_220930A
2209215-02A	MW-1	Aqueous	SW8260D	Volatile Aromatics by GC/MS	107143	1	09/27/22 12:32 PM	GCMS3_220927A
2209215-02B	MW-1	Aqueous	M8015V	TPH Purgeable by GC - Water	107210	1	09/30/22 02:26 PM	GC4_220930A
2209215-02C	MW-1	Aqueous	E300	Anions by IC method - Water	107149	10	09/28/22 02:31 AM	IC2_220927B
2209215-02D	MW-1	Aqueous	M8015D	TPH Extractable by GC - Water	107179	1	09/30/22 11:45 AM	GC15_220930A
2209215-03A	MW-4	Aqueous	SW8260D	Volatile Aromatics by GC/MS	107143	10	09/27/22 01:21 PM	GCMS3_220927A
2209215-03B	MW-4	Aqueous	M8015V	TPH Purgeable by GC - Water	107210	1	09/30/22 02:48 PM	GC4_220930A
2209215-03C	MW-4	Aqueous	E300	Anions by IC method - Water	107149	1000	09/27/22 04:53 PM	IC2_220927B
2209215-03D	MW-4	Aqueous	M8015D	TPH Extractable by GC - Water	107179	1	09/30/22 11:54 AM	GC15_220930A
2209215-04A	DUP-1	Aqueous	SW8260D	Volatile Aromatics by GC/MS	107143	1	09/27/22 12:56 PM	GCMS3_220927A
2209215-04B	DUP-1	Aqueous	M8015V	TPH Purgeable by GC - Water	107210	1	09/30/22 03:11 PM	GC4_220930A
2209215-04C	DUP-1	Aqueous	E300	Anions by IC method - Water	107149	10	09/28/22 02:48 AM	IC2_220927B
2209215-04D	DUP-1	Aqueous	M8015D	TPH Extractable by GC - Water	107179	1	09/30/22 12:03 PM	GC15_220930A

DHL Analytical, Inc.

Date: 04-Oct-22

CLIENT: Larson & Associates
Project: Cottonwood
Project No: 22-0135-01
Lab Order: 2209215

Client Sample ID: MW-3
Lab ID: 2209215-01
Collection Date: 09/23/22 09:30 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		M8015D		Analyst: BTJ			
TPH-DRO C10-C28	<0.0880	0.0880	0.110		mg/L	1	09/30/22 11:35 AM
TPH-ORO >C28-C35	<0.0880	0.0880	0.110		mg/L	1	09/30/22 11:35 AM
Surr: Isopropylbenzene	77.1	0	25-124		%REC	1	09/30/22 11:35 AM
Surr: Octacosane	89.2	0	51-124		%REC	1	09/30/22 11:35 AM
VOLATILE AROMATICS BY GC/MS		SW8260D		Analyst: JVR			
Benzene	<0.000800	0.000800	0.00200		mg/L	1	09/27/22 12:07 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:07 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:07 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:07 PM
Surr: 1,2-Dichloroethane-d4	102	0	72-119		%REC	1	09/27/22 12:07 PM
Surr: 4-Bromofluorobenzene	105	0	76-119		%REC	1	09/27/22 12:07 PM
Surr: Dibromofluoromethane	108	0	85-115		%REC	1	09/27/22 12:07 PM
Surr: Toluene-d8	106	0	81-120		%REC	1	09/27/22 12:07 PM
TPH PURGEABLE BY GC - WATER		M8015V		Analyst: BTJ			
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	09/30/22 02:03 PM
Surr: Tetrachlorethene	97.4	0	74-138		%REC	1	09/30/22 02:03 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: RA			
Chloride	146	3.00	10.0		mg/L	10	09/28/22 02:14 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: 04-Oct-22

CLIENT: Larson & Associates
Project: Cottonwood
Project No: 22-0135-01
Lab Order: 2209215

Client Sample ID: MW-1
Lab ID: 2209215-02
Collection Date: 09/23/22 10:02 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		M8015D		Analyst: BTJ			
TPH-DRO C10-C28	<0.0742	0.0742	0.0928		mg/L	1	09/30/22 11:45 AM
TPH-ORO >C28-C35	<0.0742	0.0742	0.0928		mg/L	1	09/30/22 11:45 AM
Surr: Isopropylbenzene	66.6	0	25-124		%REC	1	09/30/22 11:45 AM
Surr: Octacosane	87.7	0	51-124		%REC	1	09/30/22 11:45 AM
VOLATILE AROMATICS BY GC/MS		SW8260D		Analyst: JVR			
Benzene	<0.000800	0.000800	0.00200		mg/L	1	09/27/22 12:32 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:32 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:32 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:32 PM
Surr: 1,2-Dichloroethane-d4	102	0	72-119		%REC	1	09/27/22 12:32 PM
Surr: 4-Bromofluorobenzene	105	0	76-119		%REC	1	09/27/22 12:32 PM
Surr: Dibromofluoromethane	108	0	85-115		%REC	1	09/27/22 12:32 PM
Surr: Toluene-d8	106	0	81-120		%REC	1	09/27/22 12:32 PM
TPH PURGEABLE BY GC - WATER		M8015V		Analyst: BTJ			
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	09/30/22 02:26 PM
Surr: Tetrachlorethene	98.8	0	74-138		%REC	1	09/30/22 02:26 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: RA			
Chloride	195	3.00	10.0		mg/L	10	09/28/22 02:31 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: 04-Oct-22

CLIENT: Larson & Associates
Project: Cottonwood
Project No: 22-0135-01
Lab Order: 2209215

Client Sample ID: MW-4
Lab ID: 2209215-03
Collection Date: 09/23/22 10:50 AM
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		M8015D		Analyst: BTJ			
TPH-DRO C10-C28	0.272	0.0745	0.0932		mg/L	1	09/30/22 11:54 AM
TPH-ORO >C28-C35	<0.0745	0.0745	0.0932		mg/L	1	09/30/22 11:54 AM
Surr: Isopropylbenzene	69.2	0	25-124		%REC	1	09/30/22 11:54 AM
Surr: Octacosane	98.7	0	51-124		%REC	1	09/30/22 11:54 AM
VOLATILE AROMATICS BY GC/MS		SW8260D		Analyst: JVR			
Benzene	<0.00800	0.00800	0.0200		mg/L	10	09/27/22 01:21 PM
Ethylbenzene	<0.0200	0.0200	0.0600		mg/L	10	09/27/22 01:21 PM
Toluene	<0.0200	0.0200	0.0600		mg/L	10	09/27/22 01:21 PM
Total Xylenes	<0.0200	0.0200	0.0600		mg/L	10	09/27/22 01:21 PM
Surr: 1,2-Dichloroethane-d4	105	0	72-119		%REC	10	09/27/22 01:21 PM
Surr: 4-Bromofluorobenzene	106	0	76-119		%REC	10	09/27/22 01:21 PM
Surr: Dibromofluoromethane	109	0	85-115		%REC	10	09/27/22 01:21 PM
Surr: Toluene-d8	106	0	81-120		%REC	10	09/27/22 01:21 PM
TPH PURGEABLE BY GC - WATER		M8015V		Analyst: BTJ			
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	09/30/22 02:48 PM
Surr: Tetrachlorethene	91.2	0	74-138		%REC	1	09/30/22 02:48 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: RA			
Chloride	19300	300	1000		mg/L	1000	09/27/22 04:53 PM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: 04-Oct-22

CLIENT: Larson & Associates
Project: Cottonwood
Project No: 22-0135-01
Lab Order: 2209215

Client Sample ID: DUP-1
Lab ID: 2209215-04
Collection Date: 09/23/22
Matrix: AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		M8015D		Analyst: BTJ			
TPH-DRO C10-C28	<0.0768	0.0768	0.0960		mg/L	1	09/30/22 12:03 PM
TPH-ORO >C28-C35	<0.0768	0.0768	0.0960		mg/L	1	09/30/22 12:03 PM
Surr: Isopropylbenzene	71.6	0	25-124		%REC	1	09/30/22 12:03 PM
Surr: Octacosane	85.3	0	51-124		%REC	1	09/30/22 12:03 PM
VOLATILE AROMATICS BY GC/MS		SW8260D		Analyst: JVR			
Benzene	<0.000800	0.000800	0.00200		mg/L	1	09/27/22 12:56 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:56 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:56 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	09/27/22 12:56 PM
Surr: 1,2-Dichloroethane-d4	102	0	72-119		%REC	1	09/27/22 12:56 PM
Surr: 4-Bromofluorobenzene	106	0	76-119		%REC	1	09/27/22 12:56 PM
Surr: Dibromofluoromethane	108	0	85-115		%REC	1	09/27/22 12:56 PM
Surr: Toluene-d8	107	0	81-120		%REC	1	09/27/22 12:56 PM
TPH PURGEABLE BY GC - WATER		M8015V		Analyst: BTJ			
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	09/30/22 03:11 PM
Surr: Tetrachlorethene	103	0	74-138		%REC	1	09/30/22 03:11 PM
ANIONS BY IC METHOD - WATER		E300		Analyst: RA			
Chloride	194	3.00	10.0		mg/L	10	09/28/22 02:48 AM

Qualifiers:	*	Value exceeds TCLP Maximum Concentration Level	C	Sample Result or QC discussed in the Case Narrative
	DF	Dilution Factor	E	TPH pattern not Gas or Diesel Range Pattern
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	RL	Reporting Limit
	S	Spike Recovery outside control limits	N	Parameter not NELAP certified

DHL Analytical, Inc.

Date: 04-Oct-22

CLIENT: Larson & Associates
Work Order: 2209215
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT**RunID: GC15_220930A**

The QC data in batch 107179 applies to the following samples: 2209215-01D, 2209215-02D, 2209215-03D, 2209215-04D

Sample ID: MB-107179	Batch ID: 107179	TestNo: M8015D	Units: mg/L							
SampType: MBLK	Run ID: GC15_220930A	Analysis Date: 9/30/2022 11:08:02 AM	Prep Date: 9/29/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-DRO C10-C28 <0.0800 0.100

TPH-ORO >C28-C35 <0.0800 0.100

Surr: Isopropylbenzene 0.0737 0.1000 73.7 25 124

Surr: Octacosane 0.0871 0.1000 87.1 51 124

Sample ID: LCS-107179	Batch ID: 107179	TestNo: M8015D	Units: mg/L							
SampType: LCS	Run ID: GC15_220930A	Analysis Date: 9/30/2022 11:17:06 AM	Prep Date: 9/29/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-DRO C10-C28 1.18 0.100 1.250 0 94.7 50 114

Surr: Isopropylbenzene 0.0728 0.1000 72.8 25 124

Surr: Octacosane 0.0862 0.1000 86.2 51 124

Sample ID: LCSD-107179	Batch ID: 107179	TestNo: M8015D	Units: mg/L							
SampType: LCSD	Run ID: GC15_220930A	Analysis Date: 9/30/2022 11:26:09 AM	Prep Date: 9/29/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-DRO C10-C28 1.18 0.100 1.250 0 94.7 50 114 0.017 30

Surr: Isopropylbenzene 0.0772 0.1000 77.2 25 124 0 0

Surr: Octacosane 0.0896 0.1000 89.6 51 124 0 0

Qualifiers: B Analyte detected in the associated Method Blank
 J Analyte detected between MDL and RL
 ND Not Detected at the Method Detection Limit
 RL Reporting Limit
 J Analyte detected between SDL and RL

DF Dilution Factor
 MDL Method Detection Limit
 R RPD outside accepted control limits
 S Spike Recovery outside control limits
 N Parameter not NELAP certified

Page 1 of 8

CLIENT: Larson & Associates

Work Order: 2209215

Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_220930A

Sample ID: ICV-220930	Batch ID: R123317	TestNo: M8015D	Units: mg/L							
SampType: ICV	Run ID: GC15_220930A	Analysis Date: 9/30/2022 10:52:43 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	533	0.100	500.0	0	107	80	120			
TPH-ORO >C28-C35	0.143	0.100	0							
Surr: Isopropylbenzene	26.0		25.00		104	80	120			
Surr: Octacosane	24.5		25.00		97.9	80	120			

Sample ID: CCV1-220930	Batch ID: R123317	TestNo: M8015D	Units: mg/L							
SampType: CCV	Run ID: GC15_220930A	Analysis Date: 9/30/2022 1:41:31 PM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	237	0.100	250.0	0	94.8	80	120			
TPH-ORO >C28-C35	0.881	0.100	0							
Surr: Isopropylbenzene	13.1		12.50		105	80	120			
Surr: Octacosane	13.0		12.50		104	80	120			

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

CLIENT: Larson & Associates

Work Order: 2209215

Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_220930A

The QC data in batch 107210 applies to the following samples: 2209215-01B, 2209215-02B, 2209215-03B, 2209215-04B

Sample ID: LCS-107210	Batch ID: 107210	TestNo: M8015V	Units: mg/L							
SampType: LCS	Run ID: GC4_220930A	Analysis Date: 9/30/2022 12:08:09 PM	Prep Date: 9/30/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-GRO (C6-C10)	2.52	0.100	2.500	0	101	67	136			
Surr: Tetrachlorethene	0.338		0.4000		84.6	74	138			

Sample ID: LCSD-107210	Batch ID: 107210	TestNo: M8015V	Units: mg/L							
SampType: LCSD	Run ID: GC4_220930A	Analysis Date: 9/30/2022 12:30:39 PM	Prep Date: 9/30/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-GRO (C6-C10)	2.59	0.100	2.500	0	104	67	136	2.93	30	
Surr: Tetrachlorethene	0.388		0.4000		96.9	74	138	0	0	

Sample ID: MB-107210	Batch ID: 107210	TestNo: M8015V	Units: mg/L							
SampType: MBLK	Run ID: GC4_220930A	Analysis Date: 9/30/2022 1:41:12 PM	Prep Date: 9/30/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-GRO (C6-C10)	<0.0600	0.100								
Surr: Tetrachlorethene	0.356		0.4000		88.9	74	138			

Sample ID: 2209215-04BMS	Batch ID: 107210	TestNo: M8015V	Units: mg/L							
SampType: MS	Run ID: GC4_220930A	Analysis Date: 9/30/2022 3:34:51 PM	Prep Date: 9/30/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-GRO (C6-C10)	2.51	0.100	2.500	0	101	67	136			
Surr: Tetrachlorethene	0.384		0.4000		96.1	74	138			

Sample ID: 2209215-04BMSD	Batch ID: 107210	TestNo: M8015V	Units: mg/L							
SampType: MSD	Run ID: GC4_220930A	Analysis Date: 9/30/2022 3:58:28 PM	Prep Date: 9/30/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

TPH-GRO (C6-C10)	2.20	0.100	2.500	0	88.2	67	136	13.1	30	
Surr: Tetrachlorethene	0.339		0.4000		84.9	74	138	0	0	

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

CLIENT: Larson & Associates

Work Order: 2209215

Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_220930A

Sample ID: ICV-220930	Batch ID: R123305	TestNo: M8015V	Units: mg/L							
SampType: ICV	Run ID: GC4_220930A	Analysis Date: 9/30/2022 11:43:40 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	4.69	0.100	5.000	0	93.8	80	120			
Surr: Tetrachlorethene	0.345		0.4000		86.3	74	138			

Sample ID: CCV1-220930	Batch ID: R123305	TestNo: M8015V	Units: mg/L							
SampType: CCV	Run ID: GC4_220930A	Analysis Date: 9/30/2022 4:21:23 PM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	2.31	0.100	2.500	0	92.4	80	120			
Surr: Tetrachlorethene	0.348		0.4000		86.9	74	138			

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

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CLIENT: Larson & Associates
Work Order: 2209215
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_220927A

The QC data in batch 107143 applies to the following samples: 2209215-01A, 2209215-02A, 2209215-03A, 2209215-04A

Sample ID: LCS-107143	Batch ID: 107143	TestNo: SW8260D	Units: mg/L							
SampType: LCS	Run ID: GCMS3_220927A	Analysis Date: 9/27/2022 10:03:00 AM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0266	0.00200	0.0232	0	115	81	122			
Ethylbenzene	0.0258	0.00600	0.0232	0	111	73	127			
Toluene	0.0275	0.00600	0.0232	0	119	77	122			
Total Xylenes	0.0788	0.00600	0.0696	0	113	80	121			
Surr: 1,2-Dichloroethane-d4	202		200.0		101	72	119			
Surr: 4-Bromofluorobenzene	213		200.0		107	76	119			
Surr: Dibromofluoromethane	215		200.0		107	85	115			
Surr: Toluene-d8	210		200.0		105	81	120			

Sample ID: MB-107143	Batch ID: 107143	TestNo: SW8260D	Units: mg/L							
SampType: MBLK	Run ID: GCMS3_220927A	Analysis Date: 9/27/2022 10:28:00 AM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	<0.000800	0.00200								
Ethylbenzene	<0.00200	0.00600								
Toluene	<0.00200	0.00600								
Total Xylenes	<0.00200	0.00600								
Surr: 1,2-Dichloroethane-d4	202		200.0		101	72	119			
Surr: 4-Bromofluorobenzene	210		200.0		105	76	119			
Surr: Dibromofluoromethane	214		200.0		107	85	115			
Surr: Toluene-d8	209		200.0		105	81	120			

Qualifiers: B Analyte detected in the associated Method Blank
 J Analyte detected between MDL and RL
 ND Not Detected at the Method Detection Limit
 RL Reporting Limit
 J Analyte detected between SDL and RL

DF Dilution Factor
 MDL Method Detection Limit
 R RPD outside accepted control limits
 S Spike Recovery outside control limits
 N Parameter not NELAP certified

CLIENT: Larson & Associates

Work Order: 2209215

Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_220927A

Sample ID: ICV-220927	Batch ID: R123215	TestNo: SW8260D	Units: mg/L							
SampType: ICV	Run ID: GCMS3_220927A	Analysis Date: 9/27/2022 9:39:00 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0484	0.00200	0.0464	0	104	70	130			
Ethylbenzene	0.0482	0.00600	0.0464	0	104	70	130			
Toluene	0.0505	0.00600	0.0464	0	109	70	130			
Total Xylenes	0.146	0.00600	0.139	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	202		200.0		101	72	119			
Surr: 4-Bromofluorobenzene	212		200.0		106	76	119			
Surr: Dibromofluoromethane	214		200.0		107	85	115			
Surr: Toluene-d8	208		200.0		104	81	120			

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

Page 6 of 8

CLIENT: Larson & Associates

Work Order: 2209215

Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_220927B

The QC data in batch 107149 applies to the following samples: 2209215-01C, 2209215-02C, 2209215-03C, 2209215-04C

Sample ID: MB-107149	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: MBLK	Run ID: IC2_220927B	Analysis Date: 9/27/2022 11:22:05 AM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride <0.300 1.00

Sample ID: LCS-107149	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: LCS	Run ID: IC2_220927B	Analysis Date: 9/27/2022 11:39:05 AM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 9.91 1.00 10.00 0 99.1 90 110

Sample ID: LCSD-107149	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: LCSD	Run ID: IC2_220927B	Analysis Date: 9/27/2022 11:56:05 AM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 9.87 1.00 10.00 0 98.7 90 110 0.413 20

Sample ID: 2209215-03CMS	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: MS	Run ID: IC2_220927B	Analysis Date: 9/27/2022 5:10:32 PM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 36400 1000 20000 19350 85.1 90 110 S

Sample ID: 2209215-03CMSD	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: MSD	Run ID: IC2_220927B	Analysis Date: 9/27/2022 5:27:32 PM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 35900 1000 20000 19350 82.8 90 110 1.30 20 S

Sample ID: 2209187-06BMS	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: MS	Run ID: IC2_220927B	Analysis Date: 9/27/2022 6:52:32 PM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 2150 100 2000 85.04 103 90 110

Sample ID: 2209187-06BMSD	Batch ID: 107149	TestNo: E300	Units: mg/L							
SampType: MSD	Run ID: IC2_220927B	Analysis Date: 9/27/2022 7:09:32 PM	Prep Date: 9/27/2022							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Chloride 2140 100 2000 85.04 103 90 110 0.177 20

Qualifiers:

B Analyte detected in the associated Method Blank

J Analyte detected between MDL and RL

ND Not Detected at the Method Detection Limit

RL Reporting Limit

J Analyte detected between SDL and RL

DF Dilution Factor

MDL Method Detection Limit

R RPD outside accepted control limits

S Spike Recovery outside control limits

N Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2209215
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: IC2_220927B

Sample ID: ICV-220927	Batch ID: R123230	TestNo: E300	Units: mg/L							
SampType: ICV	Run ID: IC2_220927B	Analysis Date: 9/27/2022 10:48:05 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	25.4	1.00	25.00	0	102	90	110			

Sample ID: CCV1-220927	Batch ID: R123230	TestNo: E300	Units: mg/L							
SampType: CCV	Run ID: IC2_220927B	Analysis Date: 9/27/2022 8:17:32 PM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			

Sample ID: CCV2-220927	Batch ID: R123230	TestNo: E300	Units: mg/L							
SampType: CCV	Run ID: IC2_220927B	Analysis Date: 9/28/2022 12:15:32 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.98	1.00	10.00	0	99.8	90	110			

Sample ID: CCV3-220927	Batch ID: R123230	TestNo: E300	Units: mg/L							
SampType: CCV	Run ID: IC2_220927B	Analysis Date: 9/28/2022 4:13:31 AM	Prep Date:							
Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	10.0	1.00	10.00	0	100	90	110			

Qualifiers: B Analyte detected in the associated Method Blank
 J Analyte detected between MDL and RL
 ND Not Detected at the Method Detection Limit
 RL Reporting Limit
 J Analyte detected between SDL and RL

DF Dilution Factor
 MDL Method Detection Limit
 R RPD outside accepted control limits
 S Spike Recovery outside control limits
 N Parameter not NELAP certified

Appendix C
NMOCD Communications

From: [Billings, Bradford, EMNRD](#)
To: [Robert Nelson](#)
Subject: RE: [EXTERNAL] Delek Logistics - Cottonwood Facility (2RF-128) Groundwater Sampling Notice
Date: Monday, September 12, 2022 10:35:03 AM
Attachments: [image001.png](#)

Hello,

Thank you for the notification. Please include a copy of this communication with allied report(s).

Yours

Bradford Billings
EMNRD/OCD

From: Robert Nelson <rnelson@laenvironmental.com>
Sent: Monday, September 12, 2022 9:25 AM
To: Billings, Bradford, EMNRD <Bradford.Billings@state.nm.us>
Cc: Harry Lewis <Harry.Lewis@deleklogistics.com>; Kevin Adams <Kevin.Adams@delekus.com>; Mark Larson <Mark@laenvironmental.com>
Subject: [EXTERNAL] Delek Logistics - Cottonwood Facility (2RF-128) Groundwater Sampling Notice

CAUTION: This email originated outside of our organization. Exercise caution prior to clicking on links or opening attachments.

Hello Bradford,

This message is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Delek Logistics Companies (Delek) to provide notification that personnel from Larson & Associates, Inc. (LAI) will be at the Cottonwood Facility (2RF-128) on September 19, 2022 at approximately 10:00am MST for the purpose of collecting groundwater samples from four (4) monitoring wells. Please feel free to contact Harry Lewis with Delek at (469)704-7379 or Harry.Lewis@deleklogistics.com, Mark Larson at (432)687-0901 or mark@laenvironmental.com or me if you have any questions.

Thank you,

Robert Nelson
Sr. Geologist
Office – 432-687-0901
Cell – 432-664-4804
rnelson@laenvironmental.com



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 155060

CONDITIONS

Operator: 3 Bear Energy-Cottonwood, LLC 7102 Commerce Way Brentwood, TN 37027	OGRID: 330291
	Action Number: 155060
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	Accepted. Filed in the facility file	11/1/2022