April 12,

2023

2023 First Quarter (1st) Groundwater Monitoring Report (January–March)
DKL Energy - Cottonwood Facility (2RF-128) OGRID: 330291
(Formally 3 Bear Energy, LLC)
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 (DKL) for submittal to the New Mexico Oil Conservation Division (NMOCD) District 2 in Artesia and Santa Fe, New Mexico. The report presents the results of the 2023 first (1st) quarter (January-March) groundwater monitoring at the Cottonwood Facility (Site) performed on March 16, 2023. The Site is a produced water recycling facility permitted by the NMOCD (2RF-128) that was previously operated by 3 Bear Energy, LLC (3 Bear), until June 1, 2022, when DKL acquired operations. 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 March 16, 2023:

- 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-2, 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.

Due to the carrier failing to deliver the samples on time, the samples collected on March 9, 2023, were not within required preservation temperatures. The wells were resampled on March 16, 2023.

The following observations are documented in this report:

- Depth to groundwater ranged from 28.86 feet below ground surface (bgs) at MW-1 to 68.73 feet bgs at MW-4.
- Groundwater samples were not collected from monitoring well MW-3 due to insufficient water volume for sample collection.
- The groundwater potentiometric surface elevation ranged from 3,431.43 feet above mean sea level (MSL) at well MW-1 (up gradient) to 3,387.83 feet above MSL at MW-3 (cross gradient and down gradient).
- An apparent groundwater divide occurs in the area between monitoring wells MW-1 and MW-3 that causes groundwater to flow to the northeast towards well MW-2, east towards MW-3, and southeast towards well MW-4 at gradients between 0.031 and 0.191 feet per foot (ft/ft).
- No significant change in the groundwater elevation, flow direction, or gradient was observed during the first quarter 2023 groundwater monitoring event.
- BTEX was below the analytical method reporting limit (RL) in all samples.
- TPH as diesel range organics (>C12 to C28) was reported in the sample from MW-4 (0.167mg/L), consistent with results reported during previous monitoring events. There is no New Mexico Water Quality Control Commission (NMWQCC) human health or domestic water quality standard for TPH.

- Chloride exceeded the NMWQCC domestic water quality standard in the groundwater samples from MW-1 (275 mg/L) and MW-4 (23,600 mg/L).
- The Site does not appear to be the source for the 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 DKL Energy (DKL) for submittal to the NMOCD District 2 in Artesia and Santa Fe, New Mexico. The report presents the results of the 2023 first (1st) quarter (January - March) groundwater monitoring at the Cottonwood Facility (Site) performed on March 16, 2023. The Site is a produced water recycling facility permitted by the NMOCD (2RF-128) that was previously operated by 3 Bear Energy, until June 1, 2022, when DKL acquired operations. 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 March 16, 2023, 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 31.62 (MW-1), 56.32 (MW-2), 48.11 (MW-3) and 71.71 (MW-4) feet below top of casing (TOC). Depth to groundwater increased (lowering conditions) in monitoring wells MW-1 (1.2 feet), MW-3 (1.6 feet), and MW-4 (3.13 feet) and decreased (rising conditions) in MW-2 (0.3 feet) compared to the previous monitoring period on December 13, 2022.

The groundwater potentiometric surface elevation ranged from 3,431.43 feet above MSL at well MW-1 (upgradient) to 3,387.33 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 0.031 and 0.191 ft/ft. No significant change in the groundwater flow direction or gradient was observed on March 16, 2023.

The groundwater potentiometric surface in well MW-2 and MW-3 has steadily declined over time from 3,415.74 to 3,401.94 feet above MSL in well MW-2 and 3,416.17 to 3,401.94 feet above MSL in well MW-3, between December 12, 2018, and March 16, 2023.and the decline is likely due to decreased aquifer recharge in fractured bedrock. Table 1 presents the groundwater gauging summary. Figure 3 presents the groundwater potentiometric map for March 16, 2023. Appendix A presents a control chart for groundwater elevation over time.

4.0 GROUNDWATER SAMPLES AND ANALYSIS

On March 16, 2023, LAI personnel collected groundwater samples from monitoring wells MW-1, MW-2, and MW-4. Monitoring well MW-3 was not sampled due to insufficient water for sample collection. Notification of the groundwater sampling event was submitted to the NMOCD on February 28, 2023, and March 14, 2023. A duplicate sample was collected from monitoring well MW-1 for laboratory quality assurance and quality control (QA/QC). The groundwater samples were collected using dedicated disposable polyethylene bailers that were discarded after each use. 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 8021B, total petroleum hydrocarbon (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 NMOCD communications.
Appendix C presents the laboratory report.

4.1 Organic Analysis

BTEX concentrations were below the analytical method reporting limit (RL) in the groundwater samples from MW-1, MW-2, and MW-4. The laboratory reported TPH as diesel range organics (>C12 to C28) in the sample from MW-4 at 0.167 milligrams per liter (mg/L) which is consistent with TPH results reported during previous monitoring periods. There is no NMWQCC standard for TPH. The source for the TPH in unknown.

4.2 Inorganic Analysis

Chloride was reported above the NMWQCC domestic water quality standard of 250 mg/L in groundwater samples from monitoring wells MW-1 (275 mg/L) and MW-4 (23,600 mg/L). Chloride in MW-4 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, had a chloride concentration of 280 mg/L, a 1.78 percent difference of the initial chloride value of 275 mg/L reported for MW-1. No data quality exceptions were noted in DHL case narratives. Figure 4 presents a chloride concentration in groundwater map on March 16, 2023.

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 0.031 and 0.191 ft/ft.
- No significant changes in the groundwater flow direction and gradient were observed on March 16, 2022.
- BTEX concentrations were below the laboratory method RLs in all samples.
- TPH was reported as diesel range organics (>C12 to C28) in the sample from MW-4 (0.167 mg/L), which is consistent with results from previous groundwater monitoring events.
- Chloride was above the NMWQCC domestic water quality standard in samples MW-1 (275 mg/L) and MW-4 (23,600 mg/L).
- 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 Facilty
Eddy County, New Mexico

Well Information									Groundwater Information				
Well	Date	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surfaace Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Groundwater (Feet TOC)	Depth to Groundwater (Feet BGS)	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
									12/13/2022	30.42	27.66	61.98	3,432.63
									03/16/2023	31.62	28.86	60.78	3,431.43
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

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									02/18/2020		45.10	42.06	13.60	3,413.16
									05/07/2020		49.30	46.26	9.40	3,408.96
									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	3,401.38
									05/19/2022		56.93	53.89	1.77	3,401.33
									09/23/2022		56.44	53.40	2.26	3,401.82
									12/13/2022		56.62	53.58	2.08	3,401.64
									03/16/2023		56.32	53.28	2.38	3,401.94
MW-3	08/16/2018	52.9	49.90	2	3,455.52	34.90 - 49.90	3.00	3,458.33	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
									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

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									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
									12/13/2022	46.51	43.51	6.39	3,411.82
									03/16/2023	48.11	45.11	4.79	3,410.22
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 *	--	--	--	--
									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
									12/13/2022	68.58	65.60	9.52	3,390.46
									03/16/2023	71.71	68.73	6.39	3,387.33

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Monitoring Well Completion and Gauging Summary
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Well Information									Groundwater Information				
Well	Date	Well Depth (Feet TOC)	Drilled Depth (Feet BGS)	Well Diameter (Inches)	Surfaace Elevation (Feet AMSL)	Screen Interval (Feet BGS)	Casing Stickup (Feet)	TOC Elevation (Feet AMSL)	Date Gauged	Depth to Groundwater (Feet TOC)	Depth to Groundwater (Feet BGS)	Water Column (Feet)	Grounwater Elevation (Feet AMSL)

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
	12/13/2022		<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	**0.184**	<0.0988	**0.184**	196
	03/16/2023	***	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0778	<0.0778	<0.0778	**275**
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

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	<0.000800	<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
	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 ***	--	--	--	--	--	--	--	--	--
	12/13/2022 ***	--	--	--	--	--	--	--	--	--
	03/16/2023	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0808	<0.0808	<0.0808	128
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	<0.00800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0794	<0.0794	<0.2188	120
	05/07/2020	<0.00800	<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
	12/13/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.104	<0.104	<0.104	169
	03/16/2023 ***	--	--	--	--	--	--	--	--	--
MW-4	09/25/2018 ***	--	--	--	--	--	--	--	--	--
	11/13/2018 ***	--	--	--	--	--	--	--	--	--

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**
	01/29/2019	<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	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	<0.577	<0.577	<1.754	**25,800**
	05/07/2020	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	<0.110	<0.110	<0.820	**25,400**
	08/13/2020	<0.00800	<0.00200	<0.00200	<0.00200	<0.600	**0.137**	<0.0566	**0.137**	**19,800**
	10/06/2020	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	**0.251**	<0.0790	**0.251**	**21,000**
	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**
	12/13/2022	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	<0.106	<0.106	<0.106	**21,900**
	03/16/2023	<0.00800	<0.0200	<0.0200	<0.0200	<0.600	**0.167**	<0.0935	**0.167**	**23,600**
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
Dup-1 (MW-1)	12/13/2022	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	**0.128**	<0.0997	**0.128**	196
Dup-1 (MW-1)	03/20/2023	<0.000800	<0.00200	<0.00200	<0.00200	<0.0600	<0.0759	<0.0759	<0.0759	**280**

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**

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 (BTEX), 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

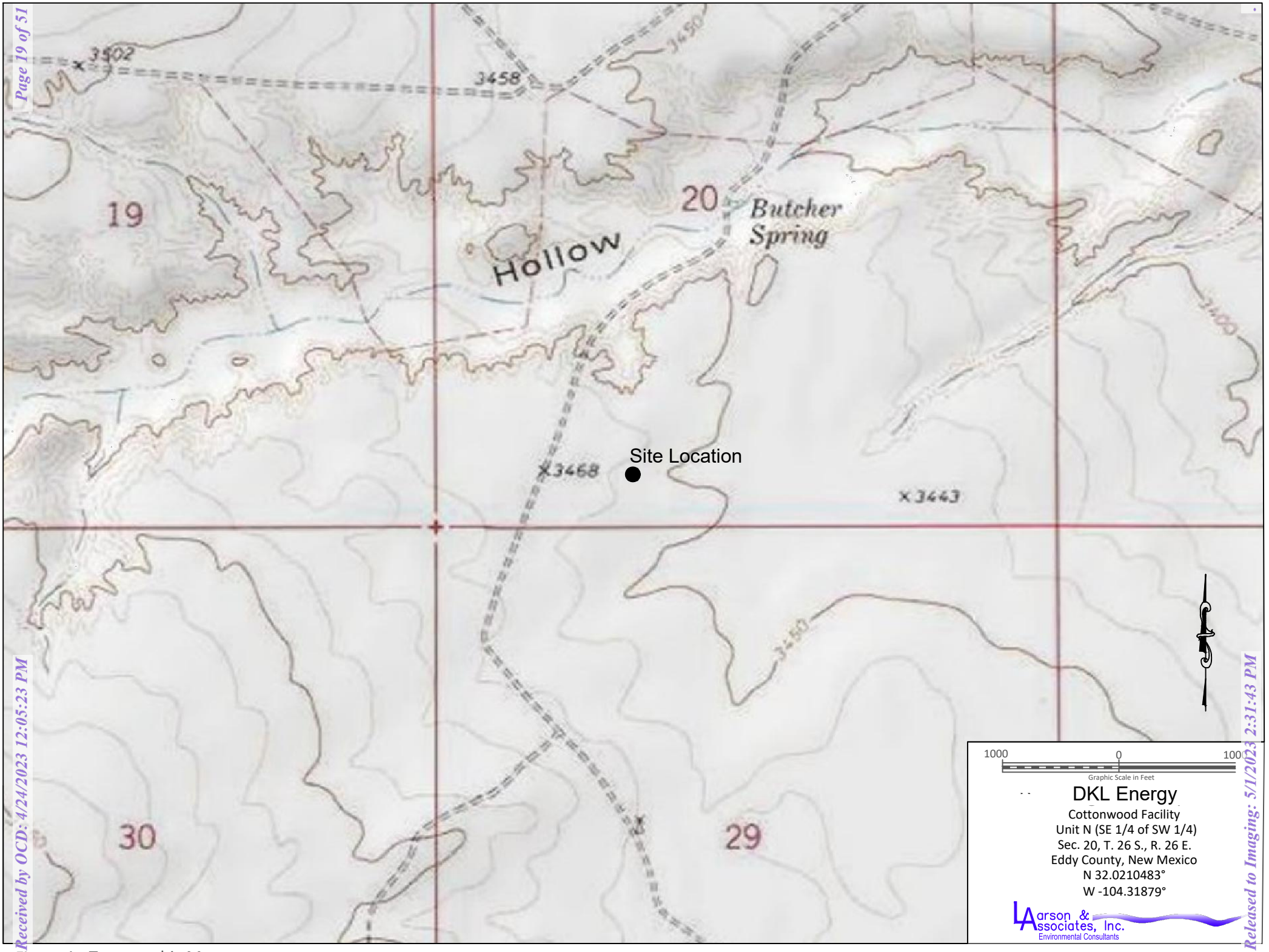


Figure 1 - Topographic Map

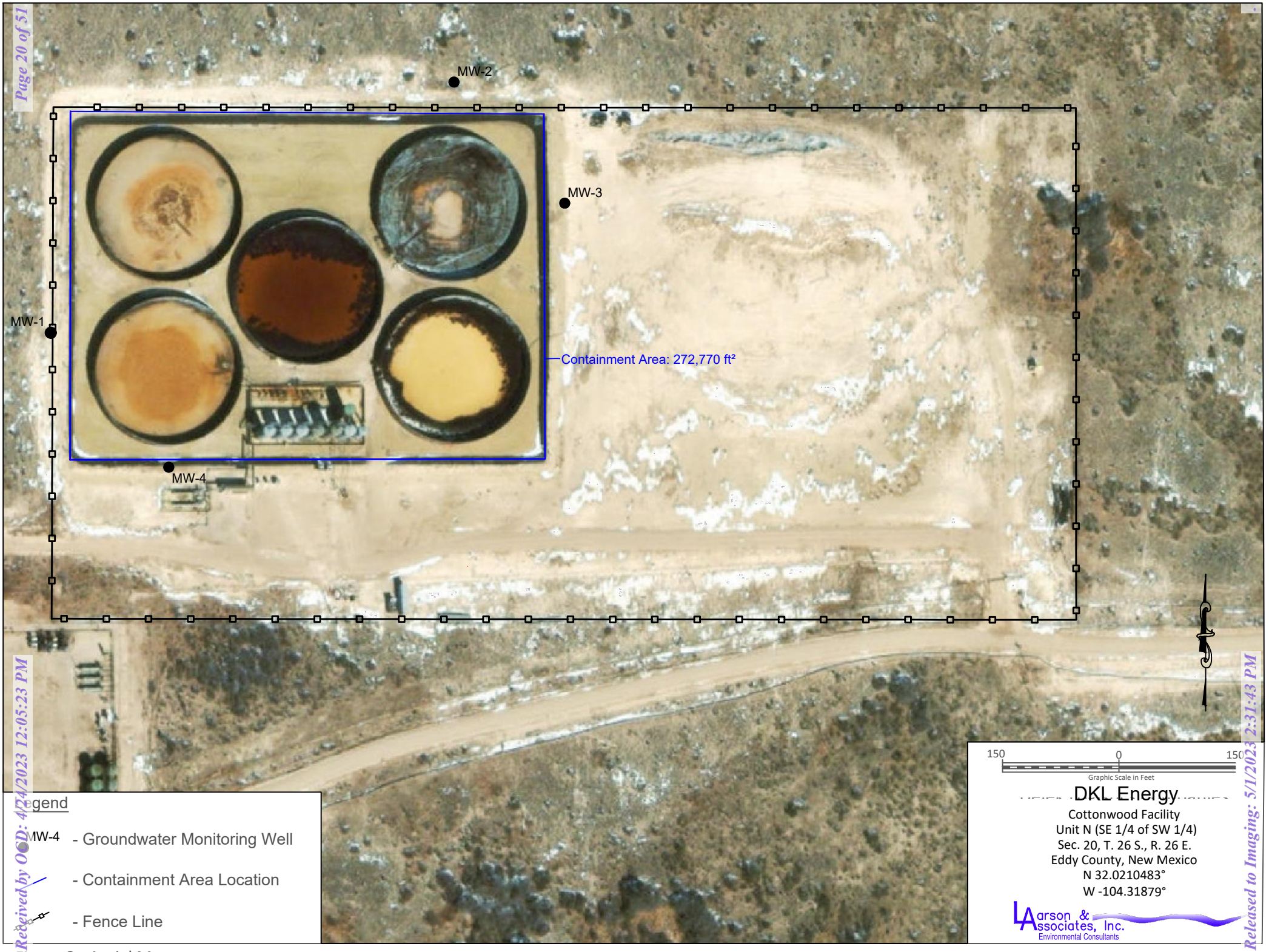
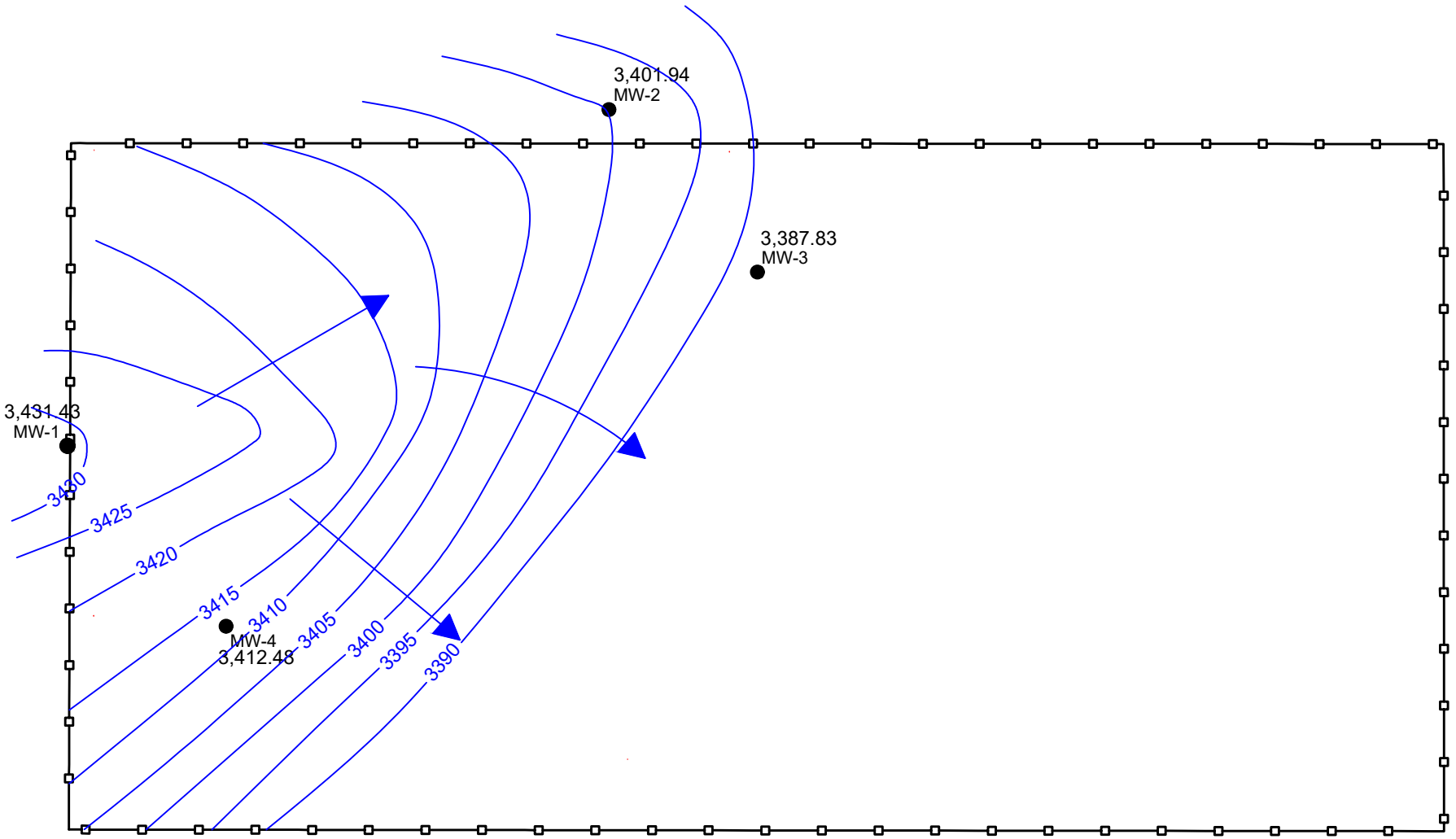


Figure 2 - Aerial Map



Legend

MW-4 - Monitoring Well Location and Groundwater Potentiometric Surface Elevation, Feet AMSL, March 22, 2023

3420 - Contour of Groundwater Potentiometric Surface Elevation, Feet AMSL, March 22, 2023

- Groundwater Flow Direction

- Fence

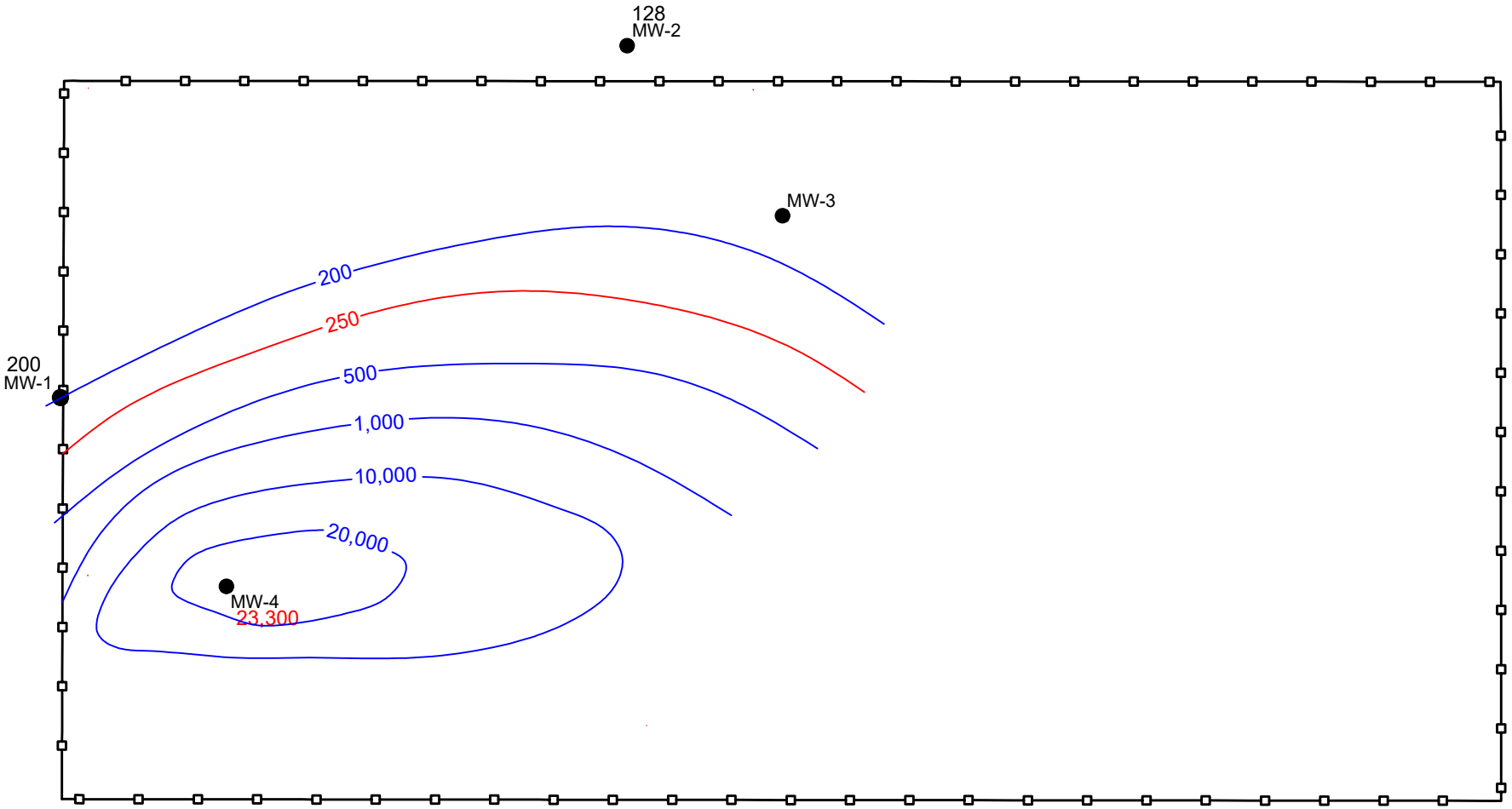
150 0 150

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 3a - Groundwater Potentiometric Map, March 22, 2023



Legend

- MW-4 (1900) - Monitoring Well Location and Chloride Concentration in Groundwater, mg/L, March 22, 2023
- 500 - Contour of Chloride Concentration Elevation, mg/L, March 22, 2023
- 250 - NMWQCC Downstream Water Quality Limit: 250 mg/L
- Fence
- Insufficient Water for Sample

150 0 150
Graphic Scale in Feet

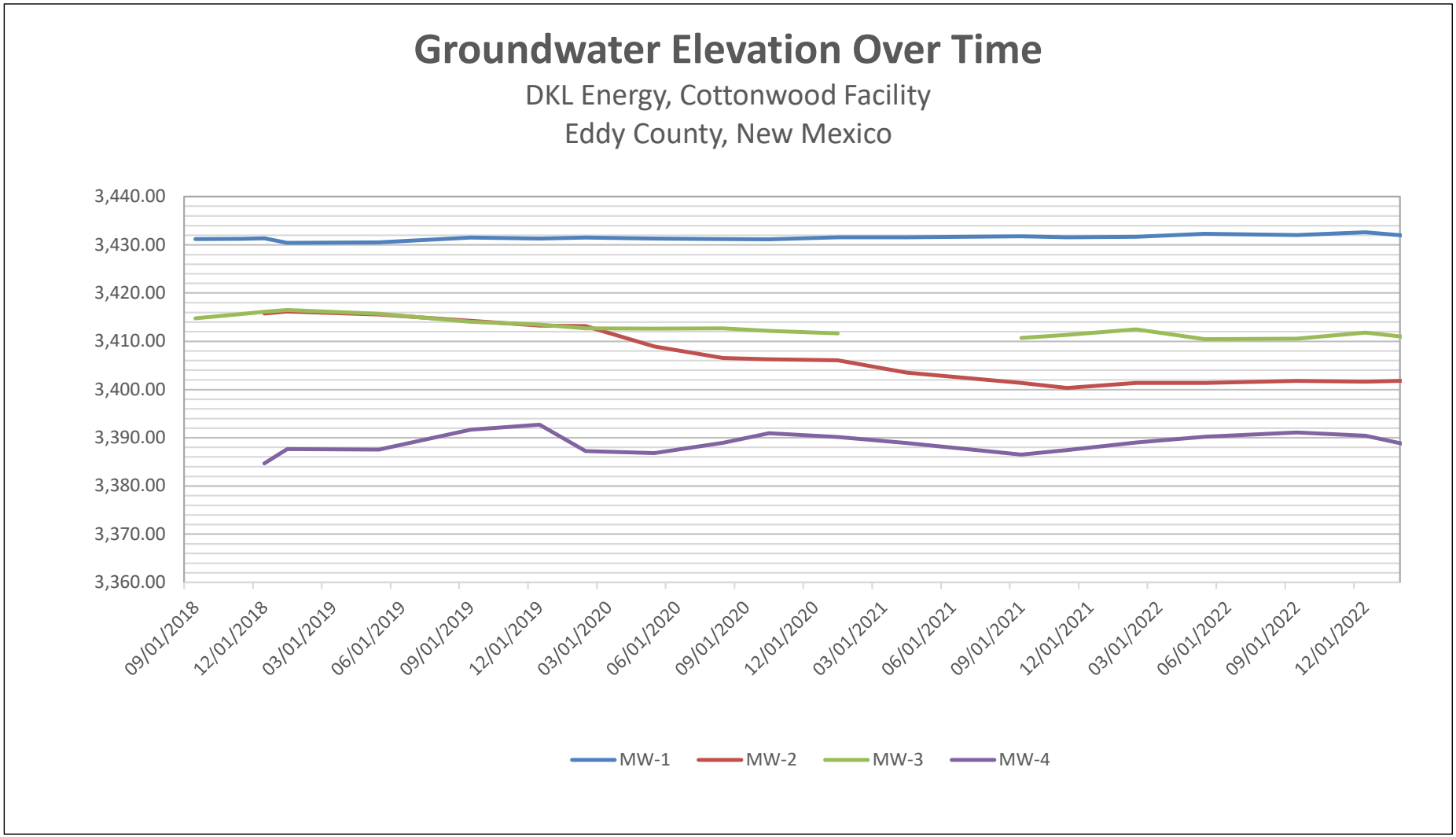
DKL Energy
Cottonwood Facility
Unit N (SE 1/4 of SW 1/4)
Sec. 20, T. 26 S., R. 26 E.
Eddy County, New Mexico
N 32.0210483°
W -104.31879°

Larson & Associates, Inc.
Environmental Consultants

Figure 4a - Chloride Concentration in Groundwater, March 22, 2023

Appendix A

Groundwater Elevation Over Time Control Chart



Appendix B

NMOCD Communications

Daniel St. Germain

From: Robert Nelson
Sent: Tuesday, March 14, 2023 4:43 PM
To: Nelson.Velez@emnrd.nm.gov
Cc: Harry Lewis; Kevin Adams; Mark Larson; Daniel St. Germain; Nobui, Jennifer, EMNRD; Brian ODell
Subject: Delek Logistics - Cottonwood Facility (2RF-128) Groundwater Resampling Notice

Hello Nelson,

On March 7th, LAI personnel collected the groundwater samples at the Cottonwood Facility (Site) in Eddy County, New Mexico. Due to an issue with shipping, the samples were received out of the required hold temperature for BTEX and TPH analysis. LAI personnel will be at the Site on Thursday March 16th, for the purpose of recollecting groundwater samples from four (4) monitor 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

Larson & Associates, Inc.
Environmental Consultants

From: Robert Nelson
Sent: Tuesday, February 28, 2023 1:17 PM
To: Nelson.Velez@emnrd.nm.gov
Cc: Harry Lewis <Harry.Lewis@deleklogistics.com>; Kevin Adams <Kevin.Adams@delekus.com>; Mark Larson <Mark@laenvironmental.com>; Daniel St. Germain <dstgermain@laenvironmental.com>; Nobui, Jennifer, EMNRD <Jennifer.Nobui@emnrd.nm.gov>
Subject: RE: Delek Logistics - Cottonwood Facility (2RF-128) Groundwater Sampling Notice

Hello Nelson,

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 March 7, 2023 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

Appendix C

Laboratory Analytical Report

March 29, 2023

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

Order No.: 2303244

RE: Cottonwood

Dear Mark Larson:

DHL Analytical, Inc. received 4 sample(s) on 3/22/2023 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,

John DuPont
General Manager

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

Table of Contents

No. 3018

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 202
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 3/20/2023 PAGE 1 OF 1
PO#: LAB WORK ORDER#: 2303244
PROJECT LOCATION OR NAME: Cottonwood
LAI PROJECT #: 22-0135-01 COLLECTOR: RN + DSG

TRRP report? ☐ Yes ☒ No

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

TIME ZONE: Time zone/State: MNT/NM

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl x #6	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESSERVED	ANALYSES: BTEX ☒ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	OIL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
MW-1	01	3/16/23	1157	W	9	X			X		X		X	X	X												X		
MW-2	02	"	1130	"	5	X			X		"		"	"	"												"		3 HCl, 1 poly, 1 AMBER
MW-4	03	"	1204	"	9	X			X		"		"	"	"												"		
Dup-1	04	"	1157	"	9	X			X		"		"	"	"												"		

TOTAL 4

RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)
Danuel Stafford	3/21/23 1550	Fedex
Fedex	3/22/23 0917	[signature]
RELINQUISHED BY:(Signature)	DATE/TIME	RECEIVED BY: (Signature)

LABORATORY: Xenco

3

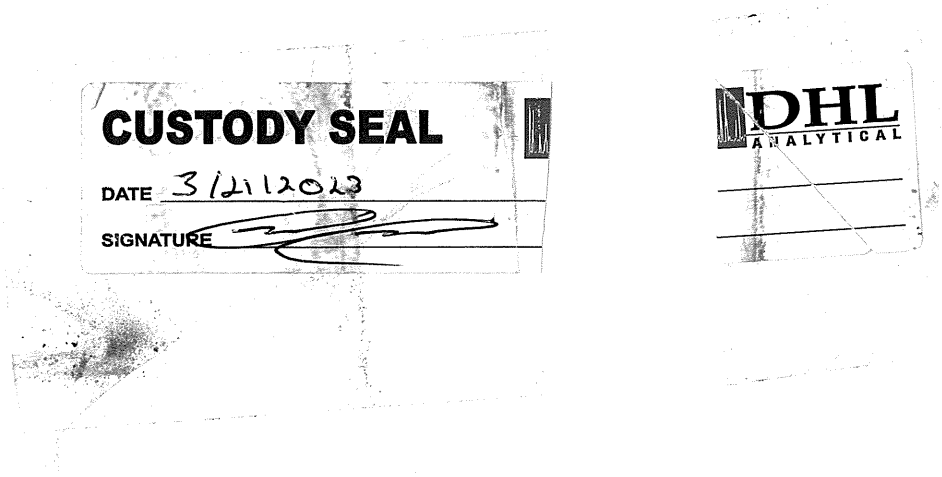
TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 5.5°C THERM#: 78
CUSTODY SEALS - ☐ BROKEN ☒ INTACT ☐ NOT USED
☐ CARRIER BILL # Fedex
☐ HAND DELIVERED

4

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.


CUSTODY SEAL
DATE 3/21/2023
SIGNATURE
DHL
ANALYTICAL

DHL Analytical, Inc.

Sample Receipt Checklist

Client Name: **Larson & Associates** Date Received: **3/22/2023**

Work Order Number: **2303244** Received by: **GLK**

Checklist completed by: _____ 3/22/2023 Reviewed by: SH 3/22/2023
Signature | Date | Initials | 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 ☐	
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
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	

Cooler # 1

Temp °C 5.5

Seal Intact Y

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

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

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action: _____

Page 1 of 1

DHL Analytical, Inc. **Date:** *29-Mar-23*

CLIENT: Larson & Associates
Project: Cottonwood
Lab Order: 2303244

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 3/22/2023. 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. All method blanks, laboratory spikes, and/or matrix spikes met quality assurance objectives.

DHL Analytical, Inc.

29-Mar-23

Lab Order: 2303244
Client: Larson & Associates
Project: Cottonwood

PREP DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Number	Test Name	Prep Date	Batch ID
2303244-01A	MW-1	03/16/23 11:57 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	03/23/23 09:22 AM	109393
2303244-01B	MW-1	03/16/23 11:57 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	03/28/23 09:45 AM	109409
2303244-01C	MW-1	03/16/23 11:57 AM	Aqueous	E300	Anion Preparation	03/23/23 09:26 AM	109395
2303244-01D	MW-1	03/16/23 11:57 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	03/23/23 08:56 AM	109392
2303244-02A	MW-2	03/16/23 11:30 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	03/23/23 09:22 AM	109393
2303244-02B	MW-2	03/16/23 11:30 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	03/28/23 09:45 AM	109409
2303244-02C	MW-2	03/16/23 11:30 AM	Aqueous	E300	Anion Preparation	03/23/23 09:26 AM	109395
2303244-02D	MW-2	03/16/23 11:30 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	03/23/23 08:56 AM	109392
2303244-03A	MW-4	03/16/23 12:04 PM	Aqueous	SW5030C	Purge and Trap Water GC/MS	03/23/23 09:22 AM	109393
2303244-03B	MW-4	03/16/23 12:04 PM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	03/28/23 09:45 AM	109409
2303244-03C	MW-4	03/16/23 12:04 PM	Aqueous	E300	Anion Preparation	03/23/23 09:26 AM	109395
2303244-03D	MW-4	03/16/23 12:04 PM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	03/23/23 08:56 AM	109392
2303244-04A	Dup-1	03/16/23 11:57 AM	Aqueous	SW5030C	Purge and Trap Water GC/MS	03/23/23 09:22 AM	109393
2303244-04B	Dup-1	03/16/23 11:57 AM	Aqueous	SW5030C	Purge and Trap Water GC-Gas	03/28/23 09:45 AM	109409
2303244-04C	Dup-1	03/16/23 11:57 AM	Aqueous	E300	Anion Preparation	03/23/23 09:26 AM	109395
2303244-04D	Dup-1	03/16/23 11:57 AM	Aqueous	SW3510C	Aq Prep Sep Funnel: DRO	03/23/23 08:56 AM	109392

DHL Analytical, Inc.

29-Mar-23

Lab Order: 2303244
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
2303244-01A	MW-1	Aqueous	SW8260D	Volatile Aromatics by GC/MS	109393	1	03/23/23 01:06 PM	GCMS3_230323A
2303244-01B	MW-1	Aqueous	M8015V	TPH Purgeable by GC - Water	109409	1	03/28/23 01:56 PM	GC4_230328A
2303244-01C	MW-1	Aqueous	E300	Anions by IC method - Water	109395	10	03/23/23 07:29 PM	IC4_230323A
2303244-01D	MW-1	Aqueous	M8015D	TPH Extractable by GC - Water	109392	1	03/24/23 11:11 AM	GC15_230324A
2303244-02A	MW-2	Aqueous	SW8260D	Volatile Aromatics by GC/MS	109393	1	03/23/23 01:32 PM	GCMS3_230323A
2303244-02B	MW-2	Aqueous	M8015V	TPH Purgeable by GC - Water	109409	1	03/28/23 02:19 PM	GC4_230328A
2303244-02C	MW-2	Aqueous	E300	Anions by IC method - Water	109395	10	03/23/23 07:48 PM	IC4_230323A
2303244-02D	MW-2	Aqueous	M8015D	TPH Extractable by GC - Water	109392	1	03/24/23 11:20 AM	GC15_230324A
2303244-03A	MW-4	Aqueous	SW8260D	Volatile Aromatics by GC/MS	109393	10	03/23/23 01:58 PM	GCMS3_230323A
2303244-03B	MW-4	Aqueous	M8015V	TPH Purgeable by GC - Water	109409	10	03/28/23 02:42 PM	GC4_230328A
2303244-03C	MW-4	Aqueous	E300	Anions by IC method - Water	109395	1000	03/23/23 01:28 PM	IC4_230323A
2303244-03D	MW-4	Aqueous	M8015D	TPH Extractable by GC - Water	109392	1	03/24/23 11:28 AM	GC15_230324A
2303244-04A	Dup-1	Aqueous	SW8260D	Volatile Aromatics by GC/MS	109393	1	03/23/23 02:25 PM	GCMS3_230323A
2303244-04B	Dup-1	Aqueous	M8015V	TPH Purgeable by GC - Water	109409	1	03/28/23 03:04 PM	GC4_230328A
2303244-04C	Dup-1	Aqueous	E300	Anions by IC method - Water	109395	10	03/23/23 08:07 PM	IC4_230323A
2303244-04D	Dup-1	Aqueous	M8015D	TPH Extractable by GC - Water	109392	1	03/24/23 11:37 AM	GC15_230324A

DHL Analytical, Inc.

Date: *29-Mar-23*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-1
Project:	Cottonwood	**Lab ID:**	2303244-01
Project No:	22-0135-01	**Collection Date:**	03/16/23 11:57 AM
Lab Order:	2303244	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<0.0778	0.0778	0.0972		mg/L	1	03/24/23 11:11 AM
TPH-ORO >C28-C35	<0.0778	0.0778	0.0972		mg/L	1	03/24/23 11:11 AM
Surr: Isopropylbenzene	55.2	0	25-124		%REC	1	03/24/23 11:11 AM
Surr: Octacosane	78.3	0	51-124		%REC	1	03/24/23 11:11 AM
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **JVR**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	03/23/23 01:06 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:06 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:06 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:06 PM
Surr: 1,2-Dichloroethane-d4	103	0	72-119		%REC	1	03/23/23 01:06 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	1	03/23/23 01:06 PM
Surr: Dibromofluoromethane	106	0	85-115		%REC	1	03/23/23 01:06 PM
Surr: Toluene-d8	102	0	81-120		%REC	1	03/23/23 01:06 PM
TPH PURGEABLE BY GC - WATER		**M8015V**					Analyst: **BTJ**
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	03/28/23 01:56 PM
Surr: Tetrachlorethene	108	0	74-138		%REC	1	03/28/23 01:56 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **RA**
Chloride	275	3.00	10.0		mg/L	10	03/23/23 07:29 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: *29-Mar-23*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-2
Project:	Cottonwood	**Lab ID:**	2303244-02
Project No:	22-0135-01	**Collection Date:**	03/16/23 11:30 AM
Lab Order:	2303244	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<0.0808	0.0808	0.101		mg/L	1	03/24/23 11:20 AM
TPH-ORO >C28-C35	<0.0808	0.0808	0.101		mg/L	1	03/24/23 11:20 AM
Surr: Isopropylbenzene	61.1	0	25-124		%REC	1	03/24/23 11:20 AM
Surr: Octacosane	82.9	0	51-124		%REC	1	03/24/23 11:20 AM
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **JVR**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	03/23/23 01:32 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:32 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:32 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 01:32 PM
Surr: 1,2-Dichloroethane-d4	103	0	72-119		%REC	1	03/23/23 01:32 PM
Surr: 4-Bromofluorobenzene	103	0	76-119		%REC	1	03/23/23 01:32 PM
Surr: Dibromofluoromethane	106	0	85-115		%REC	1	03/23/23 01:32 PM
Surr: Toluene-d8	102	0	81-120		%REC	1	03/23/23 01:32 PM
TPH PURGEABLE BY GC - WATER		**M8015V**					Analyst: **BTJ**
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	03/28/23 02:19 PM
Surr: Tetrachlorethene	107	0	74-138		%REC	1	03/28/23 02:19 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **RA**
Chloride	128	3.00	10.0		mg/L	10	03/23/23 07:48 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: *29-Mar-23*

CLIENT:	Larson & Associates	**Client Sample ID:**	MW-4
Project:	Cottonwood	**Lab ID:**	2303244-03
Project No:	22-0135-01	**Collection Date:**	03/16/23 12:04 PM
Lab Order:	2303244	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	0.167	0.0935	0.117		mg/L	1	03/24/23 11:28 AM
TPH-ORO >C28-C35	<0.0935	0.0935	0.117		mg/L	1	03/24/23 11:28 AM
Surr: Isopropylbenzene	44.2	0	25-124		%REC	1	03/24/23 11:28 AM
Surr: Octacosane	86.5	0	51-124		%REC	1	03/24/23 11:28 AM
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **JVR**
Benzene	<0.00800	0.00800	0.0200		mg/L	10	03/23/23 01:58 PM
Ethylbenzene	<0.0200	0.0200	0.0600		mg/L	10	03/23/23 01:58 PM
Toluene	<0.0200	0.0200	0.0600		mg/L	10	03/23/23 01:58 PM
Total Xylenes	<0.0200	0.0200	0.0600		mg/L	10	03/23/23 01:58 PM
Surr: 1,2-Dichloroethane-d4	104	0	72-119		%REC	10	03/23/23 01:58 PM
Surr: 4-Bromofluorobenzene	101	0	76-119		%REC	10	03/23/23 01:58 PM
Surr: Dibromofluoromethane	105	0	85-115		%REC	10	03/23/23 01:58 PM
Surr: Toluene-d8	102	0	81-120		%REC	10	03/23/23 01:58 PM
TPH PURGEABLE BY GC - WATER		**M8015V**					Analyst: **BTJ**
TPH-GRO (C6-C10)	<0.600	0.600	1.00		mg/L	10	03/28/23 02:42 PM
Surr: Tetrachlorethene	111	0	74-138		%REC	10	03/28/23 02:42 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **RA**
Chloride	23600	300	1000		mg/L	1000	03/23/23 01:28 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: *29-Mar-23*

CLIENT:	Larson & Associates	**Client Sample ID:**	Dup-1
Project:	Cottonwood	**Lab ID:**	2303244-04
Project No:	22-0135-01	**Collection Date:**	03/16/23 11:57 AM
Lab Order:	2303244	**Matrix:**	AQUEOUS

Analyses	Result	MDL	RL	Qual	Units	DF	Date Analyzed
TPH EXTRACTABLE BY GC - WATER		**M8015D**					Analyst: **BTJ**
TPH-DRO C10-C28	<0.0759	0.0759	0.0949		mg/L	1	03/24/23 11:37 AM
TPH-ORO >C28-C35	<0.0759	0.0759	0.0949		mg/L	1	03/24/23 11:37 AM
Surr: Isopropylbenzene	40.2	0	25-124		%REC	1	03/24/23 11:37 AM
Surr: Octacosane	65.4	0	51-124		%REC	1	03/24/23 11:37 AM
VOLATILE AROMATICS BY GC/MS		**SW8260D**					Analyst: **JVR**
Benzene	<0.000800	0.000800	0.00200		mg/L	1	03/23/23 02:25 PM
Ethylbenzene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 02:25 PM
Toluene	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 02:25 PM
Total Xylenes	<0.00200	0.00200	0.00600		mg/L	1	03/23/23 02:25 PM
Surr: 1,2-Dichloroethane-d4	104	0	72-119		%REC	1	03/23/23 02:25 PM
Surr: 4-Bromofluorobenzene	102	0	76-119		%REC	1	03/23/23 02:25 PM
Surr: Dibromofluoromethane	105	0	85-115		%REC	1	03/23/23 02:25 PM
Surr: Toluene-d8	102	0	81-120		%REC	1	03/23/23 02:25 PM
TPH PURGEABLE BY GC - WATER		**M8015V**					Analyst: **BTJ**
TPH-GRO (C6-C10)	<0.0600	0.0600	0.100		mg/L	1	03/28/23 03:04 PM
Surr: Tetrachlorethene	106	0	74-138		%REC	1	03/28/23 03:04 PM
ANIONS BY IC METHOD - WATER		**E300**					Analyst: **RA**
Chloride	280	3.00	10.0		mg/L	10	03/23/23 08:07 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:** *29-Mar-23*

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_230324A

The QC data in batch 109392 applies to the following samples: 2303244-01D, 2303244-02D, 2303244-03D, 2303244-04D

Sample ID: **MB-109392** Batch ID: **109392** TestNo: **M8015D** Units: **mg/L**
SampType: **MBLK** Run ID: **GC15_230324A** Analysis Date: **3/24/2023 10:26:54 AM** Prep Date: **3/23/2023**

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	0.0481		0.1000		48.1	25	124			
Surr: Octacosane	0.0724		0.1000		72.4	51	124			

Sample ID: **LCS-109392** Batch ID: **109392** TestNo: **M8015D** Units: **mg/L**
SampType: **LCS** Run ID: **GC15_230324A** Analysis Date: **3/24/2023 10:35:46 AM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	1.31	0.100	1.250	0	105	50	114			
Surr: Isopropylbenzene	0.0472		0.1000		47.2	25	124			
Surr: Octacosane	0.0763		0.1000		76.3	51	124			

Sample ID: **LCSD-109392** Batch ID: **109392** TestNo: **M8015D** Units: **mg/L**
SampType: **LCSD** Run ID: **GC15_230324A** Analysis Date: **3/24/2023 10:44:38 AM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	0.975	0.100	1.250	0	78.0	50	114	29.1	30	
Surr: Isopropylbenzene	0.0552		0.1000		55.2	25	124	0	0	
Surr: Octacosane	0.0785		0.1000		78.5	51	124	0	0	

Qualifiers:	B	Analyte detected in the associated Method Blank	DF	Dilution Factor	
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit	Page 1 of 9
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits	
	RL	Reporting Limit	S	Spike Recovery outside control limits	
	J	Analyte detected between SDL and RL	N	Parameter not NELAP certified	

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC15_230324A

Sample ID: **ICV-230324**	Batch ID: **R125878**	TestNo: **M8015D**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC15_230324A**	Analysis Date: **3/24/2023 9:49:35 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	512	0.100	500.0	0	102	80	120			
TPH-ORO >C28-C35	0.146	0.100	0							
Surr: Isopropylbenzene	23.9		25.00		95.7	80	120			
Surr: Octacosane	24.7		25.00		98.6	80	120			

Sample ID: **CCV1-230324**	Batch ID: **R125878**	TestNo: **M8015D**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC15_230324A**	Analysis Date: **3/24/2023 12:13:43 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-DRO C10-C28	224	0.100	250.0	0	89.8	80	120			
TPH-ORO >C28-C35	0.0801	0.100	0							
Surr: Isopropylbenzene	11.4		12.50		91.3	80	120			
Surr: Octacosane	12.1		12.50		96.5	80	120			

Qualifiers:				
	B	Analyte detected in the associated Method Blank	DF	Dilution Factor
	J	Analyte detected between MDL and RL	MDL	Method Detection Limit
	ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
	RL	Reporting Limit	S	Spike Recovery outside control limits
	J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_230328A

The QC data in batch 109409 applies to the following samples: 2303244-01B, 2303244-02B, 2303244-03B, 2303244-04B

Sample ID: **LCS-109409**	Batch ID: **109409**	TestNo: **M8015V**	Units: **mg/L**
SampType: **LCS**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 12:06:15 PM**	Prep Date: **3/28/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	2.99	0.100	2.500	0	119	67	136			
Surr: Tetrachlorethene	0.400		0.4000		100	74	138			

Sample ID: **LCSD-109409**	Batch ID: **109409**	TestNo: **M8015V**	Units: **mg/L**
SampType: **LCSD**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 12:27:44 PM**	Prep Date: **3/28/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	2.97	0.100	2.500	0	119	67	136	0.440	30	
Surr: Tetrachlorethene	0.420		0.4000		105	74	138	0	0	

Sample ID: **MB-109409**	Batch ID: **109409**	TestNo: **M8015V**	Units: **mg/L**
SampType: **MBLK**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 1:33:44 PM**	Prep Date: **3/28/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	<0.0600	0.100								
Surr: Tetrachlorethene	0.405		0.4000		101	74	138			

Sample ID: **2303244-04BMS**	Batch ID: **109409**	TestNo: **M8015V**	Units: **mg/L**
SampType: **MS**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 3:25:44 PM**	Prep Date: **3/28/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	2.83	0.100	2.500	0	113	67	136			
Surr: Tetrachlorethene	0.429		0.4000		107	74	138			

Sample ID: **2303244-04BMSD**	Batch ID: **109409**	TestNo: **M8015V**	Units: **mg/L**
SampType: **MSD**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 3:47:06 PM**	Prep Date: **3/28/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	3.06	0.100	2.500	0	122	67	136	7.60	30	
Surr: Tetrachlorethene	0.461		0.4000		115	74	138	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GC4_230328A

Sample ID: **ICV-230328**	Batch ID: **R125929**	TestNo: **M8015V**	Units: **mg/L**
SampType: **ICV**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 11:44:47 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	5.38	0.100	5.000	0	108	80	120			
Surr: Tetrachlorethene	0.418		0.4000		105	74	138			

Sample ID: **CCV1-230328**	Batch ID: **R125929**	TestNo: **M8015V**	Units: **mg/L**
SampType: **CCV**	Run ID: **GC4_230328A**	Analysis Date: **3/28/2023 4:09:02 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
TPH-GRO (C6-C10)	2.98	0.100	2.500	0	119	80	120			
Surr: Tetrachlorethene	0.494		0.4000		123	74	138			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_230323A

The QC data in batch 109393 applies to the following samples: 2303244-01A, 2303244-02A, 2303244-03A, 2303244-04A

Sample ID: **LCS-109393** Batch ID: **109393** TestNo: **SW8260D** Units: **mg/L**
SampType: **LCS** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 10:04:00 AM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0234	0.00200	0.0232	0	101	81	122			
Ethylbenzene	0.0230	0.00600	0.0232	0	99.2	73	127			
Toluene	0.0234	0.00600	0.0232	0	101	77	122			
Total Xylenes	0.0699	0.00600	0.0696	0	100	80	121			
Surr: 1,2-Dichloroethane-d4	205		200.0		102	72	119			
Surr: 4-Bromofluorobenzene	201		200.0		100	76	119			
Surr: Dibromofluoromethane	210		200.0		105	85	115			
Surr: Toluene-d8	203		200.0		102	81	120			

Sample ID: **MB-109393** Batch ID: **109393** TestNo: **SW8260D** Units: **mg/L**
SampType: **MBLK** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 10:30:00 AM** Prep Date: **3/23/2023**

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	205		200.0		103	72	119			
Surr: 4-Bromofluorobenzene	204		200.0		102	76	119			
Surr: Dibromofluoromethane	212		200.0		106	85	115			
Surr: Toluene-d8	205		200.0		102	81	120			

Sample ID: **2303246-02AMS** Batch ID: **109393** TestNo: **SW8260D** Units: **mg/L**
SampType: **MS** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 7:05:00 PM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0364	0.00200	0.0232	0.0139	96.9	81	122			
Ethylbenzene	0.0431	0.00600	0.0232	0.0206	97.0	73	127			
Toluene	0.0644	0.00600	0.0232	0.0417	98.0	77	122			
Total Xylenes	0.153	0.00600	0.0696	0.0842	99.6	80	121			
Surr: 1,2-Dichloroethane-d4	204		200.0		102	72	119			
Surr: 4-Bromofluorobenzene	202		200.0		101	76	119			
Surr: Dibromofluoromethane	209		200.0		104	85	115			
Surr: Toluene-d8	203		200.0		101	81	120			

Sample ID: **2303246-02AMSD** Batch ID: **109393** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 7:29:00 PM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0383	0.00200	0.0232	0.0139	105	81	122	5.03	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_230323A

Sample ID: **2303246-02AMSD** Batch ID: **109393** TestNo: **SW8260D** Units: **mg/L**
SampType: **MSD** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 7:29:00 PM** Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Ethylbenzene	0.0445	0.00600	0.0232	0.0206	103	73	127	3.34	20	
Toluene	0.0693	0.00600	0.0232	0.0417	119	77	122	7.32	20	
Total Xylenes	0.161	0.00600	0.0696	0.0842	110	80	121	4.78	20	
Surr: 1,2-Dichloroethane-d4	206		200.0		103	72	119	0	0	
Surr: 4-Bromofluorobenzene	202		200.0		101	76	119	0	0	
Surr: Dibromofluoromethane	210		200.0		105	85	115	0	0	
Surr: Toluene-d8	205		200.0		102	81	120	0	0	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: GCMS3_230323A

Sample ID: **ICV-230323** Batch ID: **R125865** TestNo: **SW8260D** Units: **mg/L**
SampType: **ICV** Run ID: **GCMS3_230323A** Analysis Date: **3/23/2023 9:38:00 AM** Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.0460	0.00200	0.0464	0	99.1	70	130			
Ethylbenzene	0.0461	0.00600	0.0464	0	99.4	70	130			
Toluene	0.0464	0.00600	0.0464	0	99.9	70	130			
Total Xylenes	0.141	0.00600	0.139	0	101	70	130			
Surr: 1,2-Dichloroethane-d4	203		200.0		102	72	119			
Surr: 4-Bromofluorobenzene	202		200.0		101	76	119			
Surr: Dibromofluoromethane	208		200.0		104	85	115			
Surr: Toluene-d8	202		200.0		101	81	120			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_230323A

The QC data in batch 109395 applies to the following samples: 2303244-01C, 2303244-02C, 2303244-03C, 2303244-04C

Sample ID: **MB-109395**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **MBLK**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 11:08:41 AM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	<0.300	1.00								

Sample ID: **LCS-109395**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **LCS**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 11:27:41 AM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.45	1.00	10.00	0	94.5	90	110			

Sample ID: **LCSD-109395**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **LCSD**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 11:46:41 AM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.45	1.00	10.00	0	94.5	90	110	0.011	20	

Sample ID: **2303225-07DMS**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **MS**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 3:03:58 PM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2710	100	2000	710.8	100	90	110			

Sample ID: **2303225-07DMSD**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **MSD**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 3:22:58 PM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2710	100	2000	710.8	100	90	110	0.091	20	

Sample ID: **2303226-07FMS**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **MS**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 4:57:58 PM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2700	100	2000	704.8	99.8	90	110			

Sample ID: **2303226-07FMSD**	Batch ID: **109395**	TestNo: **E300**	Units: **mg/L**
SampType: **MSD**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 5:16:58 PM**	Prep Date: **3/23/2023**

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	2700	100	2000	704.8	99.7	90	110	0.097	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

CLIENT: Larson & Associates
Work Order: 2303244
Project: Cottonwood

ANALYTICAL QC SUMMARY REPORT

RunID: IC4_230323A

Sample ID: **ICV-230323**	Batch ID: **R125853**	TestNo: **E300**	Units: **mg/L**
SampType: **ICV**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 10:30:41 AM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	24.8	1.00	25.00	0	99.0	90	110			

Sample ID: **CCV1-230323**	Batch ID: **R125853**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 6:32:58 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.53	1.00	10.00	0	95.3	90	110			

Sample ID: **CCV2-230323**	Batch ID: **R125853**	TestNo: **E300**	Units: **mg/L**
SampType: **CCV**	Run ID: **IC4_230323A**	Analysis Date: **3/23/2023 10:20:58 PM**	Prep Date:

Analyte	Result	RL	SPK value	Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	9.56	1.00	10.00	0	95.6	90	110			

Qualifiers:

B	Analyte detected in the associated Method Blank	DF	Dilution Factor
J	Analyte detected between MDL and RL	MDL	Method Detection Limit
ND	Not Detected at the Method Detection Limit	R	RPD outside accepted control limits
RL	Reporting Limit	S	Spike Recovery outside control limits
J	Analyte detected between SDL and RL	N	Parameter not NELAP certified

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

CONDITIONS

Action 210140

CONDITIONS

Operator: DKL Energy - Cottonwood, LLC 7102 Commerce Way Brentwood, TN 37027	OGRID: 330291
	Action Number: 210140
	Action Type: [C-147] Water Recycle Long (C-147L)

CONDITIONS

Created By	Condition	Condition Date
vvenegas	None	5/1/2023