EQUUS
Environmental, LLC

May 1, 2024

Michael Buchanan
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Re: Tenth Annual Groundwater Monitoring Report
State M Lease (AP-72)
Incident Number: NCS2215955789
Lea County, New Mexico

Mr. Buchanan

Equus Environmental, LLC (Equus), on behalf of our client Chesapeake Energy Corporation (Chesapeake), is pleased to submit to the New Mexico Oil Conservation Division (NMOCD) in electronic format the ***Tenth Annual Groundwater Monitoring Report*** (Report) detailing the tenth year of groundwater monitoring and remediation activities conducted at the State M Lease (AP-72) located in the SE-SW-SE of Section 18, Township 17 South, Range 36 East, Lea County, New Mexico. These activities were conducted in accordance with the Stage 2 Abatement Plan for the Site approved by the NMOCD on June 27, 2013.

If you have any questions or comments regarding this Report, please do not hesitate to contact me at (918) 289-1405.

Sincerely,
Equus Environmental, LLC

Matthew N. Mugavero, P.G.
Senior Hydrogeologist/Project Manager

Enclosure: Tenth Annual Groundwater Monitoring Report

xc: Patrick McMahon - Heidel, Samberson, Newell, Cox & McMahon
Dana Drury - Chesapeake Energy

TENTH ANNUAL GROUNDWATER MONITORING REPORT
CHESAPEAKE ENERGY CORPORATION
STATE M LEASE (AP-72)
LEA COUNTY, NEW MEXICO

Prepared for:

Chesapeake Energy Corporation
6100 North Western Avenue
Oklahoma City, Oklahoma 73118
(405) 935-3938

Prepared by:

Equus Environmental, LLC
1923 South 44th West Avenue
Tulsa, Oklahoma 74107
(918) 921-5331

May 1, 2024

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CHESAPEAKE ENERGY CORPORATION
STATE M LEASE (AP-72)
LEA COUNTY, NEW MEXICO
MAY 1, 2024

1.0 INTRODUCTION

Chesapeake Energy Corporation (Chesapeake) has retained Equus Environmental, LLC (Equus), to perform impacted groundwater monitoring and light non-aqueous phase liquid (LNAPL) hydrocarbon remediation at Chesapeake's former State M Lease site (Site) located in Lea County, New Mexico. The Site is located approximately 8 miles south-southwest of Lovington, New Mexico in the SE-SW-SE of Section 18, Township 17 South, Range 36 East, Lea County, New Mexico (coordinates 32.828061º latitude, -103.391012º longitude). The Site location and topographic features are shown on **Figure 1**. A production tank battery for oil and gas was formerly located at the Site. Chesapeake purchased the Site in 2004, but never operated the tank battery. Chesapeake began abandonment and environmental investigation activities at the Site in 2007.

Initial Site investigation activities were conducted in May 2007. These investigation activities consisted of conducting EM-31 and EM-34 ground conductivity surveys, the collection of soil samples from nine boreholes, and the installation and sampling of seven groundwater monitoring wells. Following the investigation in August 2007, Chesapeake submitted to the New Mexico Oil Conservation Division (NMOCD) a Stage 1 Abatement Plan for the Site. In May 2010, the NMOCD responded to Chesapeake that the agency was not adequately staffed to review the abatement plan in a timely manner and advised Chesapeake that they could proceed with abatement operations at risk. In July 2010, Chesapeake notified the NMOCD of their intent to proceed with the Stage 1 Abatement activities. On March 20, 2012, following implementation of these activities, Chesapeake submitted the Stage 1 Abatement Report for the Site.

On March 27, 2012, Chesapeake submitted to the NMOCD the ***Stage 2 Abatement Plan*** (Plan) for the Site. A copy of the Plan is provided in **Appendix A**. In this Plan, Chesapeake proposed the following abatement activities at the Site:

- Excavate and remove the near-surface soils at the Site containing concentrations of chloride exceeding 1,000 milligrams per kilogram (mg/kg),

- Excavate and remove the near-surface soils at the Site containing concentrations of TPH exceeding 1,000 mg/kg,
- Install clay liners in areas where chloride and/or TPH concentrations exceed 1,000 mg/kg at depths greater than five feet below ground level (BGL),
- Install one additional groundwater monitoring well downgradient of the Site,
- Monitor the groundwater at the Site until the concentrations of chloride and benzene are below the New Mexico Water Quality Control Commission standards.

On March 7, 2013, NMOCD notified Chesapeake that the Plan was administratively complete and that Chesapeake should proceed with public notice of the Plan. On March 30, 2013, Chesapeake published a notice of the proposed activities in the Albuquerque Journal, the Hobbs-Daily News Sun and the Lovington Leader. In addition, written notification of the Plan submittal was sent to all surface owners of record within a 1-mile radius of the Site. On June 27, 2013 upon completion of the notification activities, the NMOCD approved the Plan for the Site. A copy of the NMOCD correspondence approving the Plan is included in **Appendix B**.

The soil remediation activities outlined in the Plan were conducted at the Site during the period January 15, 2014 through March 27, 2014. The soil remediation activities were summarized in the document titled ***Soil Remediation Summary Report***, submitted to the NMOCD on August 6, 2014.

This ***Tenth Annual Groundwater Monitoring Report*** (Report) summarizes the groundwater monitoring activities conducted at the Site during the following quarterly sampling events:

- Thirty-Seventh Event - June 13, 2023,
- Thirty-Eighth - September 6, 2023,
- Thirty-Ninth Event - December 12, 2023,
- Fortieth Event - March 14, 2024.

2.0 REMEDIATION

2.1 SVE SYSTEM

As documented in the ***First Annual Groundwater Monitoring Report***, dated May 19, 2015, during the period May 12-14, 2014, a soil vapor extraction (SVE) remediation system (System) was installed and made operational at the Site. The System is comprised of 8 SVE wells connected through a manifold system constructed of two- and three-inch Schedule 80 PVC piping and plumbed to a 10-horsepower 3-phase SVE Regenerative Blower housed within the System Building. The location of the SVE wells and the System Building are shown on attached **Figure 2**. Within the System, soil vapor from the SVE wells is drawn through a moisture knock out/separator and a particulate filter prior to reaching the blower. An air-flow meter is installed downstream of the blower in the air-exhaust line and an air sample port is located on the air-exhaust line at a location upstream of its exit from the System Building.

System start-up was conducted on June 6, 2014. Routine checks of the System are conducted to record the blower run times, discharge rate and volatile organic compounds (VOC) concentration of the discharge-air stream. VOC concentrations are measured with a photo-ionization detector (PID) data in the field. These PID data are then entered into to a spreadsheet to calculate both the VOC discharge rate and approximate total pounds of VOCs removed by the System. The approximate total VOC discharges for each quarter are then summed to provide a cumulative VOC discharge total. These data are summarized in **Table 1**. Through March 7, 2023, the field PID data suggest that approximately 9,210 pounds of VOCs have been removed from the subsurface and discharged from the System.

In addition to the collection of field data, discharged-air samples are collected quarterly using laboratory provided Suma canisters and shipped under chain-of-custody control to Eurofins TestAmerica, Pittsburgh, Pennsylvania. Discharged-air samples are then analyzed for VOC compounds and total VOCs as hexane by Method TO-15. The discharged-air analytical data are used to compute a correlation factor for the field PID readings to more accurately calculate the total VOCs discharged.

During the thirty-seventh quarter, discharge-air sample 20230613 M-1 was collected on June 13, 2023. On this date, the System had been running for a total of 75,641 hours, was operating at 471 ACFM and had a field reading of 23.7 PPM from the discharge air stream. Laboratory analytical results for this discharge-air sample indicated a total VOC as Hexane concentration of 13,000 PPB V/V (13.0 PPM V/V).

During the thirty-eighth quarter, discharge-air sample 20230906 M-1 was collected on September 6, 2023. On this date, the System had been running for a total of 77,660 hours, was operating at 465 ACFM and had a field reading of 4.2 PPM from the discharge air stream. Laboratory analytical results for this discharge-air sample indicated a total VOC as Hexane concentration of 3,400 PPB V/V (3.4 PPM V/V).

During the thirty-ninth quarter, discharge-air sample 20231212 M-1 was collected on December 12, 2023. On this date, the System had been running for approximately 79,989 hours, was operating at 462 ACFM and had a field reading of 4.7 PPM from the discharge air stream. Laboratory analytical results for this discharge-air sample indicated a total VOC as Hexane concentration of 3,800 PPB V/V (3.8 PPM V/V).

During the fortieth thirty-sixth quarter, discharge-air sample 20240312 M-1 was collected on March 12, 2024. On this date, the System had been running for a total of 82,173 hours, was operating at 408 ACFM and had a field reading of 6.2 PPM from the discharge air stream. Laboratory analytical results for this discharge-air sample indicated a total VOC as Hexane concentration of 4,200 PPB V/V (4.2 PPM V/V).

A summary of the laboratory analytical results for the discharged-air samples is presented in **Table 2**, and complete copies of the laboratory analytical reports and chain-of-custody documentation are provided in **Appendix C**.

Field PID instrument readings are typically lower than laboratory analysis for total VOCs. To compensate for the low field PID readings, a correlation factor is calculated based upon the ratio of the laboratory analytical value versus the field PID value. The correlation factor is then used to multiply the field PID readings and calculate the total pounds of VOCs discharged from the System. To accurately reflect the total pounds of VOCs discharged from the System during a given period, **Table 1** also includes the unique correlation factor calculated for each quarterly air-discharge sampling event. This unique correlation factor is then utilized to calculate the total pounds of VOCs discharged from the System for the period in which that particular air-discharge sample was collected. Utilizing the noted correlation factors, approximately 15,054 pounds (7.62 tons) of VOCs have been removed from the subsurface at the Site.

Figure 3 presents a graph of the VOC concentrations observed in the discharge air stream versus time. As can be seen on this figure, the levels of VOC observed in the air discharge stream have decreased dramatically since startup. These data indicate that the System is effective at

removing hydrocarbon vapors from the subsurface. Removal of hydrocarbon vapors coupled with the influx of oxygen drawn into the impacted area by the System enhances biodegradation of the hydrocarbon impacts observed in this area.

2.2 MW-1R LNAPL RECOVERY

As documented in the ***First Annual Groundwater Monitoring Report***, dated May 19, 2015, to enhance LNAPL recovery in the MW-1R area, 2-inch diameter monitoring well MW-1 was plugged and replaced with 4-inch diameter monitoring well MW-1R. On June 5, 2014, a QED Environmental Genie LNAPL recovery pump was placed and made operational in monitoring well MW-1R.

The observed LNAPL thicknesses in MW-1R during this reporting period ranged from 0.00-feet to 0.05-feet. The volume of LNAPL observed within monitoring well MW-1R is well outside of the recovery range for the LNAPL recovery pump. To facilitate LNAPL recovery, Chesapeake began deploying hydrophobic LNAPL absorption socks within MW-1R on June 21, 2022. These socks are changed out as necessary.

During the operation of the Genie LNAPL recovery pump, a total of approximately 15 drums (822.5 gallons) of LNAPL have been removed from the subsurface.

3.0 QUARTERLY GROUNDWATER MONITORING

This Report describes the findings from four quarterly groundwater sampling events conducted at the Site from June 13, 2023 through March 14, 2024. As specified in the Plan, chloride is the primary constituent of concern (COC) at the Site until the LNAPL has been adequately eliminated from monitoring well MW-1R. When the LNAPL has been adequately eliminated from monitoring well MW-1R, the groundwater within this well will be monitored for benzene, toluene, ethylbenzene and total xylenes (BTEX). Each of the four BTEX constituents will be considered as separate COCs.

It should be noted that Chesapeake did collect BTEX groundwater samples from monitoring well MW-1R during each of the quarterly monitoring events during this reporting period. As noted in **Section 2.2** above, the apparent LNAPL thicknesses measured in monitoring well MW-1R indicate either no presence of LNAPL or a thin film of LNAPL.

3.1 DEPTH-TO-GROUNDWATER MEASUREMENTS

Prior to collecting groundwater samples during each quarterly event, Equus gauged all 8 monitoring wells (MW-1R through MW-8) at the Site using an electronic interface probe to determine the depth-to-water (DTW) and LNAPL thickness within each well. The locations of these monitoring wells are shown on **Figure 2**. DTWs were measured from the surveyed top-of-casing (TOC) of each well and converted to elevations relative to mean sea level. These data are presented in **Table 3**. A potentiometric surface map was constructed utilizing groundwater elevation data from the March 12, 2024 monitoring event to illustrate the groundwater flow direction within the shallow groundwater system beneath the Site. This potentiometric surface map is presented on **Figure 4**. As can be seen on **Figure 4**, groundwater flow at the Site is, in general, from the northwest to the southeast.

3.2 GROUNDWATER SAMPLING METHODS

Upon completion of DTW measurement activities, Equus field personnel collected groundwater samples per the Plan. Groundwater samples were collected from monitoring wells MW-4 for chloride and MW-1R for BTEX utilizing EPA approved low-flow purging/sampling methodologies. Field parameters consisting of pH, specific conductivity, temperature, and dissolved oxygen (DO) were measured during field activities utilizing a multi-parameter meter and air-tight flow-through cell. Upon stabilization of the field parameters, the groundwater sample was collected into laboratory prepared containers, labeled as to source and contents, placed on ice for preservation, placed under chain-of-custody control and shipped via overnight courier to the analytical

laboratory (Eurofins, Edison, New Jersey). As per the Plan, groundwater samples collected from these monitoring wells were analyzed for chloride by EPA Method 300.0. A summary of the laboratory analytical results for chloride and BTEX analyses are presented in **Tables 4** and **5**, respectively. Complete copies of the laboratory analytical reports and chain-of-custody documentation are provided in **Appendix C**.

3.3 GROUNDWATER LABORATORY ANALYTICAL RESULTS

The laboratory analytical results for chloride and BTEX from these sampling events are screened against *the* ***New Mexico Administrative Code (NMAC) 20.6.2, Standards for Groundwater of 10,000 mg/L TDS Concentration or Less***. The applicable cleanup standards presented in ***NMAC 20.6.2*** consists of the following: chloride (250 mg/L), benzene (5 µg/L), toluene (1,000 µg/L), ethylbenzene (700 µg/L), and total xylenes (620 µg/L), herein referenced to as the Limit(s). According to the remediation goals set in the Plan, each Site monitoring well is required to exhibit eight consecutive monitoring events where chloride is below the Limit. In addition, the same applies for BTEX constituents in monitoring well MW-1R, only. When these remediation goals are met, Chesapeake will cease groundwater sampling activities for all groundwater COCs.

3.4 THIRTY-SEVENTH QUARTERLY GROUNDWATER SAMPLING RESULTS

The thirty-seventh groundwater sampling event was conducted at the Site on June 13, 2023. As can be seen in **Table 4**, the groundwater sample collected from monitoring well MW-4 exhibited a concentration of chloride (356 mg/L) that exceeds the Limit of 250 mg/L. As can be seen in **Table 5**, the groundwater sample collected from monitoring well MW-1R exhibited concentrations of benzene (0.885 µg/L), toluene (<0.500 µg/L), ethylbenzene (12.7 µg/L), and total xylenes (3.62 µg/L) that were less than the Limits. During the thirty-seventh quarterly groundwater sampling event, LNAPL was not observed in monitoring well MW-1R.

3.5 THIRTY-EIGHTH QUARTERLY GROUNDWATER SAMPLING RESULTS

The thirty-eighth quarterly groundwater sampling event was conducted at the Site from September 6, 2023. As can be seen in **Table 4**, the groundwater sample collected from monitoring well MW-4 exhibited a concentration of chloride (402 mg/L) that exceeds the Limit of 250 mg/L. As can be seen in **Table 5**, the groundwater sample collected from monitoring well MW-1R exhibited concentrations of benzene (0.637 µg/L), toluene (<0.500 µg/L), ethylbenzene (2.63 µg/L), and total xylenes (<1.00 µg/L) that were less than the Limits. During the thirty-eighth quarterly groundwater sampling event, LNAPL was not observed in monitoring well MW-1R.

3.6 THIRTY-NINTH QUARTERLY GROUNDWATER SAMPLING RESULTS

The thirty-ninth quarterly groundwater sampling event was conducted at the Site on December 12, 2023. As can be seen in **Table 4**, the groundwater sample collected from monitoring well MW-4 exhibited a concentration of chloride (362 mg/L) that exceeds the Limit of 250 mg/L. As can be seen in **Table 5**, the groundwater sample collected from monitoring well MW-1R exhibited concentrations of benzene (0.632 µg/L), toluene (<0.500 µg/L), ethylbenzene (2.68 µg/L), and total xylenes (1.17 µg/L) that were less than the Limits. During the thirty-ninth quarterly groundwater sampling event, LNAPL was observed in monitoring well MW-1R at a thickness of 0.01 feet.

3.7 FORTIETH QUARTERLY GROUNDWATER SAMPLING RESULTS

The fortieth quarterly groundwater sampling event was conducted at the Site on March 12, 2024. As can be seen in **Table 4**, the groundwater sample collected from monitoring well MW-4 exhibited a chloride concentration (339 mg/L) that exceeds the Limit of 250 mg/L. As can be seen in **Table 5**, the groundwater sample collected from monitoring well MW-1R exhibited concentrations of benzene (1.50 µg/L), toluene (<0.500 µg/L), ethylbenzene (113 µg/L), and total xylenes (128 µg/L) that were less than the Limits. During the fortieth quarterly groundwater sampling event, LNAPL was observed in monitoring well MW-1R at a thickness of 0.05 feet.

Figure 5 presents an isopleth map depicting chloride concentrations in groundwater at the Site. The data used to prepare this isopleth map includes the most recent chloride concentration detected in monitoring well MW-4 (March 12, 2024), and chloride concentrations from the last reported sampling date for each of the remaining site monitoring wells. As can be seen in **Figure 5**, a relatively small footprint of chloride impacted groundwater remains at concentrations greater than 250 mg/L cleanup level.

Figure 6 presents chloride concentration trend graphs for each of the monitoring wells sampled at the Site. A review of this figure and the decreasing indicates that the soil remediation activities conducted in the first quarter of 2014 have removed the continuing source of chloride impacts to the groundwater at the Site. Source removal has facilitated the physical natural attenuation mechanisms of dispersion and dilution on remnant chloride concentrations present in Site groundwater.

4.0 CONCLUSIONS

Based upon the data presented herein, the following conclusions are presented:

- Groundwater beneath the Site is encountered at depths ranging from approximately 48 to 50 feet from the surveyed top-of-casing of the Site monitoring wells.
- The direction of groundwater flow at the Site is, in general, from the northwest to the southeast.
- The SVE System is operating as designed and has removed approximately 15,054 pounds of VOCs since start-up on June 6, 2014.
- Monitoring well MW-4 is the only remaining well exhibiting concentrations of chloride greater than the Limit of 250 mg/L. During this latest reporting period, chloride concentrations in monitoring well MW-4 ranged from 339 mg/L to 402 mg/L.
- During the reporting period, LNAPL continues to be removed from monitoring well MW-1R with hydrophobic absorbent socks. Apparent LNAPL thicknesses measured in monitoring well MW-1R have been on a decreasing trend, and ranged from 0.00-feet to 0.05-feet during this reporting period.
- Monitoring well MW-1R has exhibited BTEX concentrations less than the applicable cleanup Limits for eight straight quarterly monitoring events.

5.0 RECOMMENDATIONS

Based upon a review of the data presented within this report, the following recommendations have been developed:

- Operation of the LNAPL skimmer-pump within monitoring well MW-1R has been stopped as the apparent LNAPL thickness observed within this well is too thin to be recovered utilizing this technology. Hydrophobic absorption socks should continue to be placed in MW-1R to remove intermittent, thin films of LNAPL, when present. These socks should continue to be changed out during each quarterly event.

- The SVE system should continue to be operated for volatile organic vapor removal from the vadose zone.

- The collection of groundwater samples from monitoring well MW-1R can be ceased, as dissolved-phase BTEX constituents have been reported to be below the New Mexico Water Quality Control Commission Limits of 5 µg/L, 1,000 µg/L, 700 µg/L, and 620 µg/L, respectively, for eight consecutive quarters.

- The groundwater within monitoring well MW-4 should continue to be monitored on a quarterly basis for chloride until eight consecutive quarterly sampling events result in chloride levels less than the New Mexico Water Quality Control Commission standards. The next groundwater monitoring event at the Site is scheduled to be conducted in June 2024.

TABLES

Table 1 : Summary of SVE System Field Readings
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Date	Time	Run Time Reading	Operating Hours		Discharge Readings		VOC Discharge				Calculated Correlation Factor
			since last reading	Total	PPM	CFM	lbs/Hr	lbs since last Reading	Total lbs	Total Tons	
06/07/14	8:00	4131.73	19.73	20	596	519	2.281	44.99	44.99	0.02	
06/08/14	7:10	4154.69	22.96	43	398	483	1.416	32.50	77.50	0.04	
06/08/14	9:15	4156.94	2.25	45	5000	489	18.021	40.55	118.05	0.06	
06/12/14	12:40	4256.45	99.51	144	1817	120	1.607	159.92	277.96	0.14	
06/12/14	12:43	4259.65	3.20	148	1561	117	1.346	4.31	282.27	0.14	
06/13/14	7:15	4274.90	18.45	163	1804	122	1.622	29.93	307.89	0.15	
06/13/14	7:17	4276.27	1.37	164	3390	121	3.023	4.14	312.03	0.16	
06/13/14	7:18	4277.08	0.81	165	2301	120	2.035	1.65	313.68	0.16	
06/19/14	12:05	4422.02	144.94	310	1153	120	1.020	147.81	461.49	0.23	
06/19/14	13:30	4423.74	1.72	312	1117	107	0.881	1.52	463.00	0.23	
06/19/14	16:00	4426.00	2.26	314	1448	121	1.291	2.92	465.92	0.23	
06/24/14	12:05	4543.27	117.27	431	*1440*	*120*	1.274	149.36	615.28	0.31	0.98
06/26/14	12:40	4591.01	165.01	479	1970	127	1.844	304.28	919.56	0.46	
06/26/14	12:42	4593.20	2.19	481	1968	120	1.741	3.81	923.37	0.46	
07/03/14	9:35	4755.92	162.72	644	1650	126	1.532	249.34	1172.71	0.59	
07/03/14	9:37	4757.95	2.03	646	1318	126	1.224	2.48	1175.20	0.59	
07/09/14	11:40	4901.77	143.82	790	875	126	0.812	116.80	1292.00	0.65	
07/09/14	11:42	4903.69	1.92	792	795	124	0.727	1.40	1293.39	0.65	
07/17/14	12:33	5094.48	190.79	982	*790*	124	0.722	137.75	1431.15	0.72	
07/17/14	12:34	5095.13	0.65	983	*790*	127	0.739	0.48	1431.63	0.72	
07/17/14	12:36	5097.75	2.62	986	*790*	127	0.739	1.94	1433.56	0.72	
08/01/14	11:00	5452.10	354.35	1,340	1078	139	1.104	391.35	1824.91	0.91	
08/01/14	11:42	5454.03	1.93	1,342	938	150	1.037	2.00	1826.91	0.91	
08/01/14	11:44	5456.32	2.29	1,344	2314	14	0.239	0.55	1827.46	0.91	
10/10/14	13:00	7118.38	1662.06	3,006	130	51	0.049	81.70	1909.16	0.95	
10/10/14	13:02	7120.15	1.77	3,008	216	58	0.093	0.16	1909.32	0.95	1.86
10/31/14	13:00	7622.85	502.70	3,511	161	48	0.057	28.63	1937.95	0.97	
10/31/14	13:04	7624.49	1.64	3,512	78	54	0.031	0.05	1938.00	0.97	
12/11/14	13:50	8607.53	983.04	4,496	352	***131***	0.340	334.10	2272.11	1.14	
01/15/15	10:11	9441.32	833.79	5,329	47	131	0.045	37.60	2309.70	1.15	
01/15/15	10:12	9442.31	0.99	5,330	173	152	0.194	0.19	2309.89	1.15	
01/15/15	10:15	9445.26	2.95	5,333	388	136	0.389	1.15	2311.04	1.16	
01/29/15	11:50	9778.04	332.78	5,666	240	54	0.095	31.49	2342.53	1.17	
01/29/15	11:52	9780.13	2.09	5,668	239	50	0.088	0.18	2342.72	1.17	0.21
02/26/15	11:00	10448.98	668.85	6,337	72	137	0.073	48.63	2391.35	1.20	
02/26/15	11:02	10450.10	1.12	6,338	178	155	0.204	0.23	2391.57	1.20	
03/12/15	10:15	10780.66	330.56	6,669	483	***155***	0.552	182.40	2573.97	1.29	
04/28/15	8:30	11901.34	1120.68	7,789	126	114	0.106	118.86	2692.84	1.35	
04/28/15	8:36	11907.42	6.08	7,795	132	126	0.123	0.75	2693.58	1.35	
05/14/15	9:05	12285.12	377.70	8,173	96	55	0.039	14.68	2708.26	1.35	
05/14/15	9:10	12290.05	4.93	8,178	105	58	0.045	0.22	2708.48	1.35	1.10
05/28/15	11:30	12623.70	333.65	8,512	6	150	0.006	2.07	2710.55	1.36	
06/11/15	10:39	12650.70	27.00	8,539	318	172	0.403	10.88	2721.43	1.36	
07/02/15	11:00	13154.04	503.34	9,042	85	112	0.070	35.32	2756.75	1.38	
09/03/15	8:00	14662.17	1508.13	10,550	249	104	0.191	287.85	3044.60	1.52	0.76
12/10/15	13:00	17015.28	2353.11	12,903	162	95	0.113	266.92	3311.52	1.66	0.86

Table 1 : Summary of SVE System Field Readings
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Date	Time	Run Time Reading	Operating Hours		Discharge Readings		VOC Discharge				Calculated Correlation Factor
			since last reading	Total	PPM	CFM	lbs/Hr	lbs since last Reading	Total lbs	Total Tons	
03/10/16	12:00	17899.58	884.30	13,788	209	105	0.162	143.03	3454.55	1.73	1.78
06/29/16	8:00	20558.59	2659.01	16,447	156	101	0.116	309.58	3764.13	1.88	3.77
07/27/16	12:30	21232.43	673.84	17,120	126	103	0.095	64.20	3828.33	1.91	
08/25/16	11:00	21927.96	695.53	17,816	115	270	0.229	159.45	3987.78	1.99	1.55
09/22/16	10:20	22596.81	668.85	18,485	169	220	0.274	183.07	4170.85	2.09	
12/08/16	9:30	24443.73	1846.92	20,332	109	220	0.177	327.03	4497.88	2.25	6.59
01/10/17	12:23	24758.20	314.47	20,646	173	233	0.297	93.37	4591.25	2.30	
01/25/17	10:56	25115.43	357.23	21,003	206	179	0.271	96.95	4688.20	2.34	3.06
02/22/17	10:35	25786.27	670.84	21,674	248	214	0.391	262.30	4950.50	2.48	
03/09/17	11:04	26146.82	360.55	22,035	321	209	0.495	178.51	5129.01	2.56	
04/05/17	11:55	26792.33	645.51	22,680	454	113	0.378	244.08	5373.09	2.69	
05/16/17	7:00	26967.77	175.44	22,856	61	198	0.089	15.69	5388.79	2.69	5.78
06/07/17	13:00	27495.83	528.06	23,384	54	221	0.087	46.02	5434.80	2.72	
09/07/17	11:36	29698.50	2202.67	25,587	62	200	0.091	201.31	5636.11	2.82	
09/22/17	11:30	30057.43	358.93	25,945	56	211	0.087	31.26	5667.37	2.83	
10/04/17	10:15	30344.40	286.97	26,232	57	198	0.083	23.87	5691.24	2.85	0.81
11/02/17	13:00	31042.78	698.38	26,931	58	185	0.079	55.23	5746.48	2.87	
12/01/17	12:30	31739.31	696.53	27,627	59	192	0.083	58.16	5804.63	2.90	
12/06/17	12:40	31859.62	120.31	27,748	6	270	0.011	1.36	5806.00	2.90	
12/18/17	15:00	32149.36	289.74	28,037	60	208	0.092	26.65	5832.65	2.92	
01/09/18	10:00	32672.25	522.89	28,560	52	189	0.072	37.88	5870.52	2.94	
01/26/18	10:15	33080.48	408.23	28,968	48	172	0.061	24.84	5895.36	2.95	
02/09/18	13:10	33416.85	336.37	29,305	32	220	0.052	17.45	5912.82	2.96	0.19
02/23/18	11:15	33753.60	336.75	29,642	34	186	0.047	15.70	5928.51	2.96	
03/07/18	10:55	34040.75	287.15	29,929	52	227	0.087	24.98	5953.50	2.98	
03/16/18	13:03	34251.67	210.92	30,140	48	195	0.069	14.55	5968.05	2.98	
04/13/18	9:15	34970.90	719.23	30,859	46	200	0.068	48.77	6016.82	3.01	
04/30/18	13:16	35332.87	361.97	31,221	46	200	0.068	24.54	6041.36	3.02	
05/15/18	13:34	35692.17	359.30	31,580	48	200	0.071	25.42	6066.78	3.03	
05/29/18	14:20	36028.04	335.87	31,916	48	200	0.071	23.77	6090.55	3.05	0.65
06/04/18	16:30	36169.50	141.46	32,058	71	200	0.105	14.81	6105.35	3.05	
06/20/18	14:30	36556.30	386.80	32,444	48	200	0.071	27.37	6132.72	3.07	
07/03/18	10:30	36865.13	308.83	32,753	56	520	0.215	66.28	6199.01	3.10	
07/19/18	10:40	37249.27	384.14	33,137	46	486	0.165	63.30	6262.30	3.13	
08/09/18	12:30	37754.97	505.70	33,643	58	386	0.165	83.45	6345.75	3.17	2.13
09/06/18					36						
09/19/18	12:00	38730.31	975.34	34,618	46	405	0.137	133.93	6479.67	3.24	
10/04/18	15:30	39093.45	363.14	34,981	73	425	0.227	82.47	6562.14	3.28	
10/18/18	13:00	39428.14	334.69	35,316	42	261	0.081	27.04	6589.19	3.29	
10/31/18	13:40	39716.90	288.76	35,605	52	317	0.121	35.08	6624.27	3.31	
11/16/18	8:00	39983.80	266.90	35,872	68	156	0.078	20.87	6645.14	3.32	1.19
11/16/18	9:54	39985.70	1.90	35,874	77	264	0.149	0.28	6645.42	3.32	
12/11/18	14:20	40585.95	600.25	36,474	90	150	0.099	59.53	6704.95	3.35	
12/27/18	13:40	40965.57	379.62	36,854	72	310	0.165	62.45	6767.40	3.38	

Table 1 : Summary of SVE System Field Readings
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Date	Time	Run Time Reading	Operating Hours		Discharge Readings		VOC Discharge				Calculated Correlation Factor
			since last reading	Total	PPM	CFM	lbs/Hr	lbs since last Reading	Total lbs	Total Tons	
01/24/19	14:58	41636.05	670.48	37,524	63	275	0.128	85.62	6853.01	3.43	
02/05/19	12:02	41919.95	283.90	37,808	48	251	0.088	25.08	6878.09	3.44	
02/21/19	12:00	42303.95	384.00	38,192	26	218	0.042	16.10	6894.20	3.45	
03/07/19	7:00	42632.85	328.90	38,521	80	208	0.122	40.29	6934.48	3.47	0.97
03/22/19	11:09	42986.51	353.66	38,875	47	177	0.062	21.78	6956.26	3.48	
04/03/19	15:00	43277.65	291.14	39,166	58	440	0.186	54.29	7010.55	3.51	
04/18/19	12:00	43634.32	356.67	39,522	105	450	0.348	124.21	7134.76	3.57	
05/17/19	13:30	44330.99	696.67	40,219	39	365	0.104	72.34	7207.11	3.60	
06/12/19	17:00	44952.75	621.76	40,841	6	170	0.008	4.67	7211.78	3.61	
06/25/19	11:00	45283.69	330.94	41,172	23	445	0.075	24.97	7236.75	3.62	
07/09/19	13:30	45573.87	290.18	41,462	27	360	0.072	20.79	7257.53	3.63	
07/22/19	14:00	45906.56	332.69	41,795	27	425	0.083	27.62	7285.15	3.64	0.87
08/05/19	11:30	46239.45	332.89	42,127	37	462	0.126	41.94	7327.09	3.66	
08/19/19	11:00	46575.01	335.56	42,463	23	533	0.090	30.32	7357.41	3.68	
09/03/19	15:15	46937.77	362.76	42,826	31	455	0.104	37.71	7395.12	3.70	
09/05/19	7:30	46980.41	42.64	42,868	79	227	0.133	5.65	7400.77	3.70	
09/16/19	11:30	47242.95	262.54	43,131	21	372	0.058	15.12	7415.89	3.71	
09/30/19	11:00	47576.43	333.48	43,464	24	355	0.063	20.94	7436.83	3.72	
10/16/19	12:00	47958.94	382.51	43,847	22	280	0.045	17.37	7454.20	3.73	
10/28/19	11:45	48246.61	287.67	44,135	16	326	0.038	11.06	7465.26	3.73	
11/11/19	11:00	48581.38	334.77	44,469	35	488	0.127	42.56	7507.82	3.75	
11/11/19	12:10	48582.46	1.08	44,470	27	188	0.037	0.04	7507.86	3.75	0.88
11/26/19	11:20	48916.78	334.32	44,805	16	284	0.033	10.95	7518.82	3.76	
11/26/19	11:50	48917.34	0.56	44,805	26	472	0.089	0.05	7518.87	3.76	
12/11/19	10:30	49294.17	376.83	45,182	30	214	0.047	17.79	7536.65	3.77	
12/22/19	11:00	49558.50	264.33	45,447	16	462	0.054	14.40	7551.05	3.78	
12/30/19	14:00	49631.20	72.70	45,519	30	462	0.102	7.43	7558.48	3.78	
01/12/20	13:00	49682.50	51.30	45,571	19	282	0.039	2.01	7560.49	3.78	
02/10/20	11:00	49806.20	123.70	45,694	19	145	0.021	2.55	7563.04	3.78	
03/05/20	12:40	50000.00	193.80	45,888	38	197	0.055	10.66	7573.71	3.79	0.69
03/09/20	12:10	50070.44	70.44	45,958	23	250	0.041	2.92	7576.62	3.79	
03/23/20	11:45	50083.25	12.81	45,971	25	323	0.060	0.76	7577.39	3.79	
04/06/20	10:30	50139.34	56.09	46,027	26	316	0.060	3.34	7580.73	3.79	
04/20/20	10:30	50225.20	85.86	46,113	19	408	0.056	4.84	7585.57	3.79	
05/05/20	11:00	50540.55	315.35	46,429	61	311	0.140	44.17	7629.74	3.81	1.06
05/18/20	12:30	50840.55	300.00	46,729	36	506	0.132	39.72	7669.46	3.83	
06/06/20	10:10	51279.56	439.01	47,168	47	340	0.118	51.71	7721.16	3.86	
06/20/20	13:20	51616.41	336.85	47,504	34	322	0.081	27.18	7748.35	3.87	
07/06/20	10:44	51998.22	381.81	47,886	0.5	425	0.002	0.60	7748.94	3.87	
07/19/20	11:10	52309.12	310.90	48,197	29	470	0.099	30.80	7779.75	3.89	0.51
08/09/20	17:30	52819.74	510.62	48,708	28	428	0.087	44.46	7824.20	3.91	
09/14/20	18:30	53480.00	660.26	49,368	25	421	0.076	50.19	7874.40	3.94	
09/24/20	13:20	53703.31	223.31	49,591	47	410	0.143	31.85	7906.25	3.95	
11/15/20	13:00	54664.23	960.92	50,552	38	418	0.116	111.61	8017.86	4.01	
12/11/20	8:27	55250.13	585.90	51,138	67	380	0.187	109.62	8127.48	4.06	1.36

Table 1 : Summary of SVE System Field Readings
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Date	Time	Run Time Reading	Operating Hours		Discharge Readings		VOC Discharge				Calculated Correlation Factor
			since last reading	Total	PPM	CFM	lbs/Hr	lbs since last Reading	Total lbs	Total Tons	
02/28/21	10:00	56876.10	1625.97	52,764	37	410	0.112	181.80	8309.28	4.15	0.36
03/02/21	14:05	56926.31	50.21	52,814	6.4	355	0.017	0.84	8310.12	4.16	
04/21/21	14:11	58101.61	1175.30	53,990	2.9	391	0.008	9.82	8319.94	4.16	0.07
05/13/21	13:42	58654.06	552.45	54,542	3.2	490	0.012	6.38	8326.32	4.16	
06/08/21	12:30	59275.70	621.64	55,164	31.0	460	0.105	65.34	8391.66	4.20	
09/09/21	12:50	60240.17	964.47	56,128	91.7	422	0.285	275.08	8666.74	4.33	1.53
09/24/21	12:30	60600.84	360.67	56,489	28.4	415	0.087	31.33	8698.07	4.35	
10/24/21	14:20	61323.92	723.08	57,212	23.7	312	0.055	39.41	8737.48	4.37	0.27
11/19/21	14:11	61946.79	622.87	57,835	26.1	402	0.077	48.17	8785.65	4.39	
12/07/21	12:30	62377.93	431.14	58,266	6.0	350	0.015	6.67	8792.32	4.40	
01/23/22	10:49	63503.18	1125.25	59,391	15.4	295	0.033	37.68	8830.00	4.42	1.38
02/16/22	11:30	64080.45	577.27	59,968	17.2	396	0.050	28.98	8858.98	4.43	
03/09/22	12:01	64561.31	480.86	60,449	16.7	383	0.047	22.67	8881.65	4.44	
03/27/22	9:05	65012.44	451.13	60,900	17.4	372	0.048	21.52	8903.17	4.45	
04/24/22	11:59	65684.16	671.72	61,572	14.1	317	0.033	22.13	8925.30	4.46	0.42
05/23/22	7:45	66388.40	704.24	62,276	17.1	205	0.026	18.20	8943.50	4.47	
06/21/22	12:15	67077.58	689.18	62,966	23.7	261	0.046	31.42	8974.92	4.49	
07/28/22	7:45	67970.01	892.43	63,858	16.5	217	0.026	23.55	8998.47	4.50	0.0002
08/28/22	9:11	68705.43	735.42	64,593	18.3	248	0.033	24.60	9023.07	4.51	
09/13/22	9:26	69088.00	382.57	64,976	60.0	233	0.103	39.42	9062.49	4.53	
09/15/22	8:23	69135.64	47.64	65,024	14.2	241	0.025	1.20	9063.69	4.53	0.51
10/29/22	11:02	70194.13	1058.49	66,082	19.2	240	0.034	35.95	9099.64	4.55	
11/27/22	11:11	70889.70	695.57	66,778	18.2	265	0.036	24.73	9124.37	4.56	
12/07/22	11:40	71129.09	239.39	67,017	17.2	224	0.028	6.80	9131.16	4.57	
01/29/23	11:00	72398.93	1509.23	68,287	16.5	255	0.031	46.80	9177.97	4.59	0.72
03/07/23	11:15	73288.13	889.20	69,176	23.7	250	0.044	38.83	9216.80	4.61	
04/22/23	11:24	74390.53	1102.40	70,279	12.4	488	0.045	49.17	9265.97	4.63	0.55
05/28/23	10:00	75276.92	886.39	71,165	12.3	453	0.041	36.40	9302.37	4.65	
06/13/23	15:05	75641.00	364.08	71,529	23.7	471	0.082	29.95	9332.32	4.67	
07/20/23	16:52	76531.81	890.81	72,420	14.8	489	0.053	47.52	9379.84	4.69	0.81
08/20/23	11:00	77271.00	739.19	73,159	14.8	425	0.046	34.27	9414.11	4.71	
09/06/23	12:30	77660.23	389.23	73,548	4.2	465	0.014	5.60	9419.71	4.71	
10/22/23	11:08	78783.33	1123.10	74,671	16.2	460	0.055	61.69	9481.40	4.74	0.81
11/12/23	10:15	79266.48	483.15	75,154	13.1	441	0.043	20.57	9501.97	4.75	
12/12/23	13:10	79989.39	722.91	75,877	4.7	462	0.016	11.57	9513.54	4.76	
01/13/24	11:00	80755.57	766.18	76,644	13.3	389	0.038	29.22	9542.76	4.77	0.68
02/17/24	10:00	81595.21	839.64	77,483	13.5	427	0.042	35.67	9578.43	4.79	
03/12/24	13:45	82172.95	577.74	78,061	6.2	408	0.019	10.77	9589.20	4.79	
								Corrected Total:	15,054.23	7.62	

Notes:

1. Color shading indicates air sampling period with a unique correlation factor.
2. During the June 24 & July 17, 2014 site visit the field readings were not recorded. The italicized values presented above for these dates are conservative estimated values based upon last known readings.

Table 2 : Summary of Laboratory Analytical Results for Discharge Air Samples
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Parameters	Sample ID: / Sample Date:	SVE 1-Aug-14	Canister #34000823 Serial C8528 2014-12-11 11-Dec-14	CANISTER #C8522 12-Mar-15	Canister #8408 2015-06-11 Air Sample 11-Jun-15	Canister #5451 Batch #320-14155 9-3-15 3-Sep-15	CANISTER #34000512 BATCH ID #320-15930 10-Dec-15	STATE M-1 LEASE 10-Mar-16	20160629 M SVE 29-Jun-16	20160922 M SVE 22-Sep-16	20161208 M SVE 8-Dec-16	20170309 M SVE 9-Mar-17	20170607M SVE 7-Jun-17	20170907 M SVE 7-Sep-17	20171206 -M-SVE 6-Dec-17	20180307-M-SVE 7-Mar-18	20180604-M-SVE 4-Jun-18	20180906-M-SVE 6-Sep-18
Volatile Organic Compounds by TO-15																		
Acetone	ppb v/v	<2000	<615	<965	<860	<615	<370	<915	<280	<175	<106	<203	<76.0	<116	<20.0	**5.67**	<78.0	<124
Benzene	ppb v/v	**8,820**	**2,960**	**533**	**3,630**	**312**	**194**	**1,070**	**2,600**	**853**	**373**	**550**	**180**	**143**	**1.77**	**24.5**	**87.9**	**112**
Benzyl chloride	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
Bromodichloromethane	ppb v/v	<120	<36.9	<57.9	<51.6	<36.9	<22.2	<54.9	<16.8	103.5	<6.33	<12.2	<4.56	<6.93	<1.20	<0.300	<4.68	<7.43
Bromoform	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Bromomethane	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
2-Butanone (MEK)	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	**178**	<3.20	<0.800	<12.5	<19.8
Carbon disulfide	ppb v/v	**1,800**	**272**	<154	<138	<98.4	<59.2	<146	**177**	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
Carbon tetrachloride	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
Chlorobenzene	ppb v/v	<120	<36.9	<57.9	<51.6	<36.9	<22.2	<54.9	<16.8	<10.5	<6.33	<12.2	<4.56	<6.93	<1.20	<0.300	<4.68	<7.43
Dibromochloromethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Chloroethane	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
Chloroform	ppb v/v	<120	<36.9	<57.9	<51.6	<36.9	<22.2	<54.9	<16.8	<10.5	<6.33	<12.2	<4.56	<6.93	<1.20	<0.300	<4.68	<7.43
Chloromethane	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
1,2-Dibromoethane	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
1,2-Dichlorobenzene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,3-Dichlorobenzene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,4-Dichlorobenzene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Dichlorodifluoromethane	ppb v/v	**1,980**	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,1-Dichloroethane	ppb v/v	<120	<36.9	<57.9	<51.6	<36.9	<22.2	<54.9	<16.8	<10.5	<6.33	<12.2	<4.56	<6.93	<1.20	<0.300	<4.68	<7.43
1,2-Dichloroethane	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	**0.881**	<12.5	<19.8
1,1-Dichloroethene	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
cis-1,2-Dichloroethene	ppb v/v	<160	<49.2	**84.5**	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
trans-1,2-Dichloroethene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,2-Dichloropropane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
cis-1,3-Dichloropropene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
trans-1,3-Dichloropropene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Ethylbenzene	ppb v/v	**13,500**	**3,830**	**799**	**2,890**	**731**	**723**	**446**	**2,530**	**1,390**	**531**	**908**	**229**	**219**	**4.75**	**25.4**	**250**	**334**
4-Ethyltoluene	ppb v/v	**974**	**533**	**164**	**299**	**256**	**186**	<73.2	**660**	**497**	**135**	**263**	**58.5**	**45.1**	**2.38**	**3.74**	**42.7**	**89.2**
Hexachlorobutadiene	ppb v/v	<800	<246	<386	<344	<246	<148	<366	<112	<69.8	<42.2	<81.0	<30.4	<46.2	<8.00	<2.00	<31.2	<49.5
2-Hexanone	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<4.68	<9.91
Methylene Chloride	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	**0.540**	<6.24	<9.91
4-Methyl-2-pentanone	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Styrene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,1,2,2-Tetrachloroethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	**41.1**	<14.0	<8.44	**20.0**	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Tetrachloroethene	ppb v/v	<160	**71.9**	<77.2	<68.8	<49.2	<29.6	**92.9**	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Toluene	ppb v/v	**4,020**	**1,040**	**228**	**1,480**	<49.2	<29.6	**120**	**975**	**380**	**164**	**193**	**68.4**	**49.2**	<1.60	**6.92**	**34.4**	**44.3**
1,2,4-Trichlorobenzene	ppb v/v	<800	<246	<386	<344	<246	<148	<366	<112	<69.8	<42.2	<81.0	<30.4	<46.2	<8.00	<2.00	<31.2	<49.5
1,1,1-Trichloroethane	ppb v/v	<120	<36.9	<57.9	<51.6	<36.9	<22.2	<54.9	<16.8	<10.5	<6.33	<12.2	<4.56	<6.93	<1.20	<0.300	<4.68	<7.43
1,1,2-Trichloroethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Trichloroethene	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
Trichlorofluoromethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,1,2-Trichloro-1,2,2-trifluoroethane	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.4	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
1,2,4-Trimethylbenzene	ppb v/v	**2,020**	**648**	**299**	**774**	<98.4	**355**	<146	**968**	**740**	**228**	**411**	**85.9**	**50.3**	**7.35**	**9.05**	**71.3**	**134**
1,3,5-Trimethylbenzene	ppb v/v	**821**	**385**	**172**	**353**	**73.0**	**247**	<73.2	**727**	**541**	**192**	**397**	**53.6**	**45.5**	**6.18**	**5.81**	**46.2**	**88.6**
Vinyl acetate	ppb v/v	<320	<98.4	<154	<138	<98.4	<59.2	<146	<44.8	<27.9	<16.9	<32.4	<12.2	<18.5	<3.20	<0.800	<12.5	<19.8
Vinyl chloride	ppb v/v	<160	<49.2	<77.2	<68.8	<49.2	<29.6	<73.2	<22.8	<14.0	<8.44	<16.2	<6.08	<9.24	<1.60	<0.400	<6.24	<9.91
m,p-Xylene	ppb v/v	**12,700**	**4,680**	**1,110**	**3,920**	**1,140**	**1,380**	**609**	**5,050**	**2,550**	**870**	**1,510**	**322**	**330**	**10.3**	**48.7**	**376**	**501**
o-Xylene	ppb v/v	**4,520**	**1,190**	**286**	**1,120**	**164**	**194**	**107**	**720**	**419**	**177**	**337**	**98.4**	**96.4**	**2.54**	**15.6**	**107**	**133**
Total VOC as Hexane (C6-C12)	ppb v/v	**1,060,000**	**655,000**	**99,400**	**351,000**	**190,000**	**140,000**	**371,000**	**590,000**	**262,000**	**117,000**	**167,000**	**54,500**	**40,900**	**4,630**	**9,930**	**46,500**	**76,600**

Table 2 : Summary of Laboratory Analytical Results for Discharge Air Samples
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Parameters	Sample ID:	2018121-M-SVE	20190307 M SVE	20190905 M SVE	20200122 M1-SVE	20200305 M SVE	20200606-M-SVE	20200924M1SVE	20201211 M-1	20210302 M-1	20210608 M-1	20210908 M-1	20211207M-1	20220308 M-1	20220621 M-1	202209_ _M-1	20221207 M-1	20230307 M-1	20230613M-1	20230906M-1	20231212 M-1	20240312M-1
	Sample Date:	11-Dec-18	7-Mar-19	5-Sep-19	22-Jan-20	5-Mar-20	6-Jun-20	24-Sep-20	11-Dec-20	2-Mar-21	8-Jun-21	9-Sep-21	7-Dec-21	8-Mar-22	21-Jun-22	13-Sep-22	7-Dec-22	7-Mar-23	13-Jun-23	6-Sep-23	12-Dec-23	12-Mar-24
Volatile Organic Compounds by TO-15																						
Acetone	ppb v/v	<178	<22.3	<84	<17	<78	<34	<29	<110	<7.8	**16**	**92**	**8.6**	**30**	<74	<7.1	<7.0	<32	**16**	**9.3**	**9.9**	**10**
Benzene	ppb v/v	**137**	**40.1**	**140**	**3.7**	**42**	**48**	**18**	**80**	<0.78	<0.71	**71**	<0.75	<1.6	<7.4	<0.71	**1.1**	<3.2	<1.6	<0.85	**1.8**	<0.76
Benzyl chloride	ppb v/v	<28.4	<3.56	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Bromodichloromethane	ppb v/v	<10.7	<1.34	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Bromoform	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Bromomethane	ppb v/v	<28.4	<3.56	<84	<17	<78	<34	<29	<110	<7.8	<7.1	<8.0	<7.5	<16	<74	<7.1	<7.0	<32	<16	<8.5	<8.0	<7.6
2-Butanone (MEK)	ppb v/v	<28.4	**5.97**	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	**11**	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
Carbon disulfide	ppb v/v	<28.4	<3.56	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	**11**	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
Carbon tetrachloride	ppb v/v	<28.4	<3.56	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Chlorobenzene	ppb v/v	<10.7	<1.34	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Dibromochloromethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Chloroethane	ppb v/v	<28.4	<3.56	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	<3.2	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
Chloroform	ppb v/v	<10.7	<1.34	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Chloromethane	ppb v/v	<28.4	<3.56	<84	<17	<78	<34	<29	<110	<7.8	<7.1	<8.0	<7.5	<16	<74	<7.1	<7.0	<32	<16	<8.5	<8.0	<7.6
1,2-Dibromoethane	ppb v/v	<28.4	<3.56	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,2-Dichlorobenzene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,3-Dichlorobenzene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,4-Dichlorobenzene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Dichlorodifluoromethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,1-Dichloroethane	ppb v/v	<10.7	<1.34	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,2-Dichloroethane	ppb v/v	<28.4	<3.56	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,1-Dichloroethene	ppb v/v	<28.4	<3.56	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
cis-1,2-Dichloroethene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
trans-1,2-Dichloroethene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,2-Dichloropropane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
cis-1,3-Dichloropropene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
trans-1,3-Dichloropropene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,2-Dichloro-1,1,2,2-tetrafluoroethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Ethylbenzene	ppb v/v	**363**	**284**	**270**	**33**	**120**	**150**	**56**	**180**	<0.78	<0.71	**88**	<0.75	**5.2**	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	**0.82**	<0.76
4-Ethyltoluene	ppb v/v	**76.7**	**167**	**180**	**25**	**100**	**130**	**64**	**170**	**0.82**	<0.71	**140**	<0.75	**27**	**31**	<0.71	**7.9**	**18**	**10**	**3.7**	**1.9**	**2.0**
Hexachlorobutadiene	ppb v/v	<71.0	<8.90	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	<3.2	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
2-Hexanone	ppb v/v	<14.2	<1.78	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	<3.2	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
Methylene Chloride	ppb v/v	<14.2	<1.78	<84	<17	<78	<34	<29	<110	<7.8	<7.1	<8.0	<7.5	<16	<74	<7.1	<7.0	<32	<16	<8.5	<8.0	<7.6
4-Methyl-2-pentanone	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Styrene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,1,2,2-Tetrachloroethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Tetrachloroethene	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Toluene	ppb v/v	**41.0**	**38.8**	**30**	**3.1**	<7.8	**11**	**3.1**	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	**0.94**	<6.5	<3.2	<1.7	**2.6**	<1.5
1,2,4-Trichlorobenzene	ppb v/v	<71.0	<8.90	<34	<6.7	<31	<34	<11	<43	<3.1	<2.8	<3.2	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
1,1,1-Trichloroethane	ppb v/v	<10.7	<1.34	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,1,2-Trichloroethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Trichloroethene	ppb v/v	<14.2	<1.78	<8.4	<1.7	**20**	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Trichlorofluoromethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,1,2-Trichloro-1,2,2-trifluoroethane	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
1,2,4-Trimethylbenzene	ppb v/v	**124**	**83.0**	**75**	**10**	**59**	**60**	**38**	**79**	<0.78	<0.71	**100**	**0.80**	**9.7**	**19**	<0.71	**6.1**	**11**	**6.2**	**2.6**	**1.1**	**1.2**
1,3,5-Trimethylbenzene	ppb v/v	**102**	**67.0**	**69**	**9.1**	**43**	**50**	**31**	**77**	**1.0**	**1.3**	**110**	**1.3**	**14**	**16**	<0.71	**6.5**	**17**	**9.3**	**4.3**	**1.6**	**2.0**
Vinyl acetate	ppb v/v	<28.4	<3.56	<8.4	<6.7	<31	<34	<11	<43	<3.1	<2.8	<3.2	<3.0	<6.2	<29	<2.8	<2.8	<13	<6.5	<3.4	<3.2	<3.0
Vinyl chloride	ppb v/v	<14.2	<1.78	<8.4	<1.7	<7.8	<8.4	<2.9	<11	<0.78	<0.71	<0.80	<0.75	<1.6	<7.4	<2.8	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
m,p-Xylene	ppb v/v	**544**	**442**	**440**	**66**	**210**	**280**	**110**	**380**	<0.78	<0.71	**260**	<0.75	**20**	**7.9**	<0.71	**2.1**	**5.8**	**3.6**	**1.2** J	**2.0**	<1.5
o-Xylene	ppb v/v	**158**	**137**	**120**	**55**	**50**	**63**	**25**	**83**	<0.78	<0.71	**55**	<0.75	**4.0**	<7.4	<0.71	<0.70	<3.2	<1.6	<0.85	<0.80	<0.76
Total VOC as Hexane (C6-C12)	ppb v/v	**107,000**	**77,900**	**69,000**	**14,000**	**26,000**	**50,000**	**24,000**	**91,000**	**2,300**	**2,100**	**140,000**	**1,600**	**24,000**	**10,000**	**14**	**8,800**	**17,000**	**13,000**	**3,400**	**3,800**	**4,200**

Table 3 : Summary of Liquid Level Measurements
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Monitoring Well	Top of Casing Elevation (AMSL-Feet)	Depth to Liquid Measurement Date	Depth to LNAPL (Feet-TOC)	Depth to Groundwater (Feet-TOC)	LNAPL Thickness (Feet)	Groundwater Elevation (AMSL-Feet)
MW-1R	3888.97	06/03/14	44.57	49.89	5.32	3839.08
	3888.97	09/22/14	44.87	48.91	4.04	3840.06
	3888.97	12/10/14	45.80	46.30	0.50	3842.67
	3888.97	03/11/15	45.12	46.83	1.71	3842.14
	3888.97	06/10/15	45.54	46.31	0.77	3842.66
	3888.97	09/02/15	45.81	47.37	1.56	3841.60
	3888.97	12/09/15	45.22	49.07	3.85	3839.90
	3888.97	03/09/16	45.30	47.18	1.88	3841.79
	3888.97	06/28/16	45.75	47.02	1.27	3841.95
	3888.97	09/21/16	46.10	46.38	0.28	3842.59
	3888.97	12/07/16	46.13	46.88	0.75	3842.09
	3888.97	03/08/17	46.14	46.57	0.43	3842.40
	3888.97	06/06/17	45.82	48.86	3.04	3840.11
	3888.97	09/08/17	46.30	46.63	0.33	3842.34
	3888.97	12/04/17	46.36	46.77	0.41	3842.20
	3888.97	03/05/18	46.47	46.81	0.34	3842.16
	3888.97	06/05/18	46.56	46.93	0.37	3842.04
	3888.97	09/05/18	46.31	48.81	2.50	3840.16
	3888.97	12/11/18	46.34	49.11	2.77	3839.86
	3888.97	03/06/19	46.48	49.20	2.72	3839.77
	3888.97	06/04/19	46.58	48.84	2.26	3840.13
	3888.97	09/04/19	47.88	48.67	0.79	3840.30
	3888.97	12/06/19	47.13	47.43	0.30	3841.54
	3888.97	03/05/20	47.11	47.68	0.57	3841.29
	3888.97	06/06/20	47.21	47.45	0.24	3841.52
	3888.97	09/24/20	47.44	47.60	0.16	3841.37
	3888.97	12/10/20	47.51	47.69	0.18	3841.28
	3888.97	03/02/21	47.48	47.58	0.10	3841.39
	3888.97	06/08/21	47.52	48.30	0.78	3840.67
	3888.97	09/08/21	47.73	48.00	0.27	3840.97
	3888.97	12/07/21	47.87	48.03	0.16	3840.94
	3888.97	03/08/22	47.84	47.98	0.14	3840.99
	3888.97	06/21/22	48.06	48.11	0.05	3840.86
	3888.97	09/13/22	48.23	48.53	0.30	3840.44
	3888.97	12/07/22	48.38	48.52	0.14	3840.45
	3888.97	03/07/23	48.44	48.52	0.08	3840.45
	3888.97	06/13/23	---	48.45	0.00	3840.52
	3888.97	09/06/23	---	48.66	0.00	3840.31
	3888.97	12/12/23	48.98	48.99	0.01	3839.98
	3888.97	03/12/24	49.18	49.23	0.05	3839.74
MW-2	3890.51	06/03/14	--	47.23	--	3843.28
	3890.51	09/22/14	--	46.37	--	3844.14
	3890.51	12/10/14	--	45.91	--	3844.60
	3890.51	03/11/15	--	46.03	--	3844.48
	3890.51	06/10/15	--	46.38	--	3844.13
	3890.51	09/02/15	--	46.44	--	3844.07
	3890.51	12/09/15	--	46.51	--	3844.00
	3890.51	03/09/16	--	46.61	--	3843.90
	3890.51	06/28/16	--	46.70	--	3843.81
	3890.51	09/21/16	--	46.80	--	3843.71
	3890.51	12/07/16	--	46.82	--	3843.69
	3890.51	03/08/17	--	46.88	--	3843.63
	3890.51	06/06/17	--	46.98	--	3843.53
	3890.51	09/08/17	--	47.06	--	3843.45
	3890.51	12/04/17	--	47.11	--	3843.40
	3890.51	03/05/18	--	47.22	--	3843.29

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Lea County, New Mexico

Monitoring Well	Top of Casing Elevation (AMSL-Feet)	Depth to Liquid Measurement Date	Depth to LNAPL (Feet-TOC)	Depth to Groundwater (Feet-TOC)	LNAPL Thickness (Feet)	Groundwater Elevation (AMSL-Feet)
MW-2 (con't)	3890.51	06/05/18	--	47.31	--	3843.20
	3890.51	09/05/18	--	47.36	--	3843.15
	3890.51	12/11/18	--	47.46	--	3843.05
	3890.51	03/06/19	--	47.51	--	3843.00
	3890.51	06/04/19	--	47.61	--	3842.90
	3890.51	09/04/19	--	47.76	--	3842.75
	3890.51	12/06/19	--	47.81	--	3842.70
	3890.51	03/05/20	--	47.91	--	3842.60
	3890.51	06/06/20	--	49.98	--	3840.53
	3890.51	09/24/20	--	48.14	--	3842.37
	3890.51	12/10/20	--	48.21	--	3842.30
	3890.51	03/02/21	--	48.25	--	3842.26
	3890.51	06/08/21	--	48.31	--	3842.20
	3890.51	09/08/21	--	48.41	--	3842.10
	3890.51	12/07/21	--	48.51	--	3842.00
	3890.51	03/08/22	--	48.58	--	3841.93
	3890.51	06/21/22	--	48.72	--	3841.79
	3890.51	09/13/22	--	48.82	--	3841.69
	3890.51	12/07/22	--	48.90	--	3841.61
	3890.51	03/07/23	--	49.00	--	3841.51
	3890.51	06/13/23	--	49.18	--	3841.33
	3890.51	09/06/23	--	49.23	--	3841.28
	3890.51	12/12/23	--	49.53	--	3840.98
	3890.51	03/12/24	--	49.74	--	3840.77
MW-3	3889.34	06/03/14	--	46.35	--	3842.99
	3889.34	09/22/14	--	46.49	--	3842.85
	3889.34	12/10/14	--	46.08	--	3843.26
	3889.34	03/11/15	--	46.28	--	3843.06
	3889.34	06/10/15	--	46.51	--	3842.83
	3889.34	09/02/15	--	46.60	--	3842.74
	3889.34	12/09/15	--	46.68	--	3842.66
	3889.34	03/09/16	--	46.72	--	3842.62
	3889.34	06/28/16	--	46.85	--	3842.49
	3889.34	09/21/16	--	46.96	--	3842.38
	3889.34	12/07/16	--	47.02	--	3842.32
	3889.34	03/08/17	--	47.11	--	3842.23
	3889.34	06/06/17	--	47.13	--	3842.21
	3889.34	09/08/17	--	47.23	--	3842.11
	3889.34	12/04/17	--	47.28	--	3842.06
	3889.34	03/05/18	--	47.44	--	3841.90
	3889.34	06/05/18	--	47.48	--	3841.86
	3889.34	09/05/18	--	47.55	--	3841.79
	3889.34	12/11/18	--	47.60	--	3841.74
	3889.34	03/06/19	--	47.68	--	3841.66
	3889.34	06/04/19	--	47.80	--	3841.54
	3889.34	09/04/19	--	47.95	--	3841.39
	3889.34	12/06/19	--	48.00	--	3841.34
	3889.34	03/05/20	--	48.03	--	3841.31
	3889.34	06/06/20	--	48.16	--	3841.18
	3889.34	09/24/20	--	48.34	--	3841.00
	3889.34	12/10/20	--	48.42	--	3840.92
	3889.34	03/02/21	--	48.42	--	3840.92
	3889.34	06/08/21	--	48.50	--	3840.84
	3889.34	09/08/21	--	48.60	--	3840.74
	3889.34	12/07/21	--	48.71	--	3840.63
	3889.34	03/08/22	--	48.74	--	3840.60
	3889.34	06/21/22	--	48.89	--	3840.45
	3889.34	09/13/22	--	49.02	--	3840.32

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Monitoring Well	Top of Casing Elevation (AMSL-Feet)	Depth to Liquid Measurement Date	Depth to LNAPL (Feet-TOC)	Depth to Groundwater (Feet-TOC)	LNAPL Thickness (Feet)	Groundwater Elevation (AMSL-Feet)
MW-3 (con't)	3889.34	12/07/22	--	49.10	--	3840.24
	3889.34	03/07/23	--	49.22	--	3840.12
	3889.34	06/13/23	--	49.27	--	3840.07
	3889.34	09/06/23	--	49.45	--	3839.89
	3889.34	12/12/23	--	49.77	--	3839.57
	3889.34	03/12/24	--	50.00	--	3839.34
MW-4	3888.90	06/03/14	--	46.38	--	3842.52
	3888.90	09/22/14	--	46.50	--	3842.40
	3888.90	12/10/14	--	46.14	--	3842.76
	3888.90	03/11/15	--	46.35	--	3842.55
	3888.90	06/10/15	--	46.49	--	3842.41
	3888.90	09/02/15	--	46.57	--	3842.33
	3888.90	12/09/15	--	46.68	--	3842.22
	3888.90	03/09/16	--	46.75	--	3842.15
	3888.90	06/28/16	--	46.87	--	3842.03
	3888.90	09/21/16	--	46.94	--	3841.96
	3888.90	12/07/16	--	47.03	--	3841.87
	3888.90	03/08/17	--	47.08	--	3841.82
	3888.90	06/06/17	--	47.15	--	3841.75
	3888.90	09/08/17	--	47.24	--	3841.66
	3888.90	12/04/17	--	47.29	--	3841.61
	3888.90	03/05/18	--	47.38	--	3841.52
	3888.90	06/05/18	--	47.50	--	3841.40
	3888.90	09/05/18	--	47.53	--	3841.37
	3888.90	12/11/18	--	47.62	--	3841.28
	3888.90	03/06/19	--	47.72	--	3841.18
	3888.90	06/04/19	--	47.80	--	3841.10
	3888.90	09/04/19	--	47.98	--	3840.92
	3888.90	12/06/19	--	48.00	--	3840.90
	3888.90	03/05/20	--	48.07	--	3840.83
	3888.90	06/06/20	--	48.20	--	3840.70
	3888.90	09/24/20	--	48.32	--	3840.58
	3888.90	12/10/20	--	48.39	--	3840.51
	3888.90	03/02/21	--	48.44	--	3840.46
	3888.90	06/08/21	--	48.55	--	3840.35
	3888.90	09/08/21	--	48.60	--	3840.30
	3888.90	12/07/21	--	48.72	--	3840.18
	3888.90	03/08/22	--	48.80	--	3840.10
	3888.90	06/21/22	--	48.92	--	3839.98
	3888.90	09/13/22	--	49.02	--	3839.88
	3888.90	12/07/22	--	49.06	--	3839.84
	3888.90	03/07/23	--	49.17	--	3839.73
	3888.90	06/13/23	--	49.27	--	3839.63
	3888.90	09/06/23	--	49.43	--	3839.47
	3888.90	12/12/23	--	50.02	--	3838.88
	3888.90	03/12/24	--	50.09	--	3838.81
MW-5	3890.41	06/03/14	--	46.56	--	3843.85
	3890.41	09/22/14	--	46.70	--	3843.71
	3890.41	12/10/14	--	46.29	--	3844.12
	3890.41	03/11/15	--	46.44	--	3843.97
	3890.41	06/10/15	--	46.69	--	3843.72
	3890.41	09/02/15	--	46.79	--	3843.62
	3890.41	12/09/15	--	46.85	--	3843.56
	3890.41	03/09/16	--	46.90	--	3843.51
	3890.41	06/28/16	--	47.08	--	3843.33
	3890.41	09/21/16	--	47.13	--	3843.28
	3890.41	12/07/16	--	47.14	--	3843.27

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MW-5 (con't)	3890.41	03/08/17	--	47.23	--	3843.18
	3890.41	06/06/17	--	47.32	--	3843.09
	3890.41	09/08/17	--	47.40	--	3843.01
	3890.41	12/04/17	--	47.27	--	3843.14
	3890.41	03/05/18	--	47.54	--	3842.87
	3890.41	06/05/18	--	47.66	--	3842.75
	3890.41	09/05/18	--	47.72	--	3842.69
	3890.41	12/11/18	--	47.80	--	3842.61
	3890.41	03/06/19	--	47.85	--	3842.56
	3890.41	06/04/19	--	47.98	--	3842.43
	3890.41	09/04/19	--	48.15	--	3842.26
	3890.41	12/06/19	--	48.17	--	3842.24
	3890.41	03/05/20	--	48.23	--	3842.18
	3890.41	06/06/20	--	48.33	--	3842.08
	3890.41	09/24/20	--	48.51	--	3841.90
	3890.41	12/10/20	--	48.60	--	3841.81
	3890.41	03/02/21	--	48.60	--	3841.81
	3890.41	06/08/21	--	48.66	--	3841.75
	3890.41	09/08/21	--	48.76	--	3841.65
	3890.41	12/07/21	--	48.90	--	3841.51
	3890.41	03/08/22	--	48.90	--	3841.51
	3890.41	06/21/22	--	49.09	--	3841.32
	3890.41	09/13/22	--	49.19	--	3841.22
	3890.41	12/07/22	--	49.28	--	3841.13
	3890.41	03/07/23	--	49.38	--	3841.03
	3890.41	06/13/23	--	49.43	--	3840.98
	3890.41	09/06/23	--	49.64	--	3840.77
	3890.41	12/12/23	--	49.84	--	3840.57
	3890.41	03/12/24	--	50.12	--	3840.29
MW-6	3888.25	06/03/14	--	46.25	--	3842.00
	3888.25	09/22/14	--	46.39	--	3841.86
	3888.25	12/10/14	--	46.09	--	3842.16
	3888.25	03/11/15	--	46.23	--	3842.02
	3888.25	06/10/15	--	46.32	--	3841.93
	3888.25	09/02/15	--	46.48	--	3841.77
	3888.25	12/09/15	--	46.57	--	3841.68
	3888.25	03/09/16	--	46.62	--	3841.63
	3888.25	06/28/16	--	46.74	--	3841.51
	3888.25	09/21/16	--	46.81	--	3841.44
	3888.25	12/07/16	--	46.90	--	3841.35
	3888.25	03/08/17	--	46.93	--	3841.32
	3888.25	06/06/17	--	47.08	--	3841.17
	3888.25	09/08/17	--	47.12	--	3841.13
	3888.25	12/04/17	--	47.21	--	3841.04
	3888.25	03/05/18	--	47.30	--	3840.95
	3888.25	06/05/18	--	47.36	--	3840.89
	3888.25	09/05/18	--	47.43	--	3840.82
	3888.25	12/11/18	--	47.52	--	3840.73
	3888.25	03/06/19	--	47.60	--	3840.65
	3888.25	06/04/19	--	47.71	--	3840.54
	3888.25	09/04/19	--	47.81	--	3840.44
	3888.25	12/06/19	--	47.90	--	3840.35
	3888.25	03/05/20	--	47.98	--	3840.27
	3888.25	06/06/20	--	48.08	--	3840.17
	3888.25	09/24/20	--	48.23	--	3840.02
	3888.25	12/10/20	--	48.28	--	3839.97
	3888.25	03/02/21	--	48.33	--	3839.92

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Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Monitoring Well	Top of Casing Elevation (AMSL-Feet)	Depth to Liquid Measurement Date	Depth to LNAPL (Feet-TOC)	Depth to Groundwater (Feet-TOC)	LNAPL Thickness (Feet)	Groundwater Elevation (AMSL-Feet)
MW-6 (con't)	3888.25	06/08/21	--	48.48	--	3839.77
	3888.25	09/08/21	--	48.50	--	3839.75
	3888.25	12/07/21	--	48.60	--	3839.65
	3888.25	03/08/22	--	48.67	--	3839.58
	3888.25	06/21/22	--	48.82	--	3839.43
	3888.25	09/13/22	--	48.91	--	3839.34
	3888.25	12/07/22	--	49.01	--	3839.24
	3888.25	03/07/23	--	49.06	--	3839.19
	3888.25	06/13/23	--	49.17	--	3839.08
	3888.25	09/06/23	--	49.30	--	3838.95
	3888.25	12/12/23	--	50.21	--	3838.04
	3888.25	03/12/24	--	50.07	--	3838.18
MW-7	3889.23	06/03/14	--	45.94	--	3843.29
	3889.23	09/22/14	--	46.08	--	3843.15
	3889.23	12/10/14	--	45.70	--	3843.53
	3889.23	03/11/15	--	45.36	--	3843.87
	3889.23	06/10/15	--	46.08	--	3843.15
	3889.23	09/02/15	--	46.14	--	3843.09
	3889.23	12/09/15	--	46.24	--	3842.99
	3889.23	03/09/16	--	46.30	--	3842.93
	3889.23	06/28/16	--	46.42	--	3842.81
	3889.23	09/21/16	--	46.52	--	3842.71
	3889.23	12/07/16	--	46.59	--	3842.64
	3889.23	03/08/17	--	46.65	--	3842.58
	3889.23	06/06/17	--	46.73	--	3842.50
	3889.23	09/08/17	--	46.80	--	3842.43
	3889.23	12/04/17	--	46.88	--	3842.35
	3889.23	03/05/18	--	46.96	--	3842.27
	3889.23	06/05/18	--	47.04	--	3842.19
	3889.23	09/05/18	--	47.11	--	3842.12
	3889.23	12/11/18	--	47.20	--	3842.03
	3889.23	03/06/19	--	47.27	--	3841.96
	3889.23	06/04/19	--	47.37	--	3841.86
	3889.23	09/04/19	--	47.50	--	3841.73
	3889.23	12/06/19	--	47.58	--	3841.65
	3889.23	03/05/20	--	47.66	--	3841.57
	3889.23	06/06/20	--	47.72	--	3841.51
	3889.23	09/24/20	--	47.90	--	3841.33
	3889.23	12/10/20	--	47.96	--	3841.27
	3889.23	03/02/21	--	48.02	--	3841.21
	3889.23	06/08/21	--	48.06	--	3841.17
	3889.23	09/08/21	--	48.14	--	3841.09
	3889.23	12/07/21	--	48.26	--	3840.97
	3889.23	03/08/22	--	48.33	--	3840.90
	3889.23	06/21/22	--	48.44	--	3840.79
	3889.23	09/13/22	--	48.58	--	3840.65
	3889.23	12/07/22	--	48.70	--	3840.53
	3889.23	03/07/23	--	48.75	--	3840.48
	3889.23	06/13/23	--	48.83	--	3840.40
	3889.23	09/06/23	--	48.97	--	3840.26
	3889.23	12/12/23	--	49.55	--	3839.68
	3889.23	03/12/24	--	49.64	--	3839.59
MW-8	3887.06	06/03/14	--	44.94	--	3842.12
	3887.06	09/22/14	--	45.11	--	3841.95
	3887.06	12/10/14	--	44.79	--	3842.27
	3887.06	03/11/15	--	44.94	--	3842.12
	3887.06	06/10/15	--	45.22	--	3841.84

Table 3 : Summary of Liquid Level Measurements
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

Monitoring Well	Top of Casing Elevation (AMSL-Feet)	Depth to Liquid Measurement Date	Depth to LNAPL (Feet-TOC)	Depth to Groundwater (Feet-TOC)	LNAPL Thickness (Feet)	Groundwater Elevation (AMSL-Feet)
MW-8 (con't)	3887.06	09/02/15	--	45.21	--	3841.85
	3887.06	12/09/15	--	45.29	--	3841.77
	3887.06	03/09/16	--	45.35	--	3841.71
	3887.06	06/28/16	--	45.56	--	3841.50
	3887.06	09/21/16	--	45.67	--	3841.39
	3887.06	12/07/16	--	45.64	--	3841.42
	3887.06	03/08/17	--	45.68	--	3841.38
	3887.06	06/06/17	--	45.78	--	3841.28
	3887.06	09/08/17	--	45.82	--	3841.24
	3887.06	12/04/17	--	45.91	--	3841.15
	3887.06	03/05/18	--	46.03	--	3841.03
	3887.06	06/05/18	--	46.12	--	3840.94
	3887.06	09/05/18	--	46.16	--	3840.90
	3887.06	12/11/18	--	46.26	--	3840.80
	3887.06	03/06/19	--	46.33	--	3840.73
	3887.06	06/04/19	--	46.42	--	3840.64
	3887.06	09/04/19	--	46.53	--	3840.53
	3887.06	12/06/19	--	46.62	--	3840.44
	3887.06	03/05/20	--	46.71	--	3840.35
	3887.06	06/06/20	--	46.79	--	3840.27
	3887.06	09/24/20	--	46.95	--	3840.11
	3887.06	12/10/20	--	47.02	--	3840.04
	3887.06	03/02/21	--	47.06	--	3840.00
	3887.06	06/08/21	--	47.21	--	3839.85
	3887.06	09/08/21	--	47.25	--	3839.81
	3887.06	12/07/21	--	47.36	--	3839.70
	3887.06	03/08/22	--	47.41	--	3839.65
	3887.06	06/21/22	--	47.55	--	3839.51
	3887.06	09/13/22	--	47.66	--	3839.40
	3887.06	12/07/22	--	47.75	--	3839.31
	3887.06	03/07/23	--	47.82	--	3839.24
	3887.06	06/13/23	--	47.92	--	3839.14
	3887.06	09/06/23	--	48.11	--	3838.95
	3887.06	12/12/23	--	48.75	--	3838.31
	3887.06	03/12/24	--	48.80	--	3838.26

Notes:
1. TOC : Measured from top of casing.
2. LNAPL : Light non-aqueous phase liquid.
3. -- : Denotes not measured.
4. AMSL : Denotes above mean sea level (AMSL).

Table 4 : Summary of Laboratory Analytical Results for Chloride in Groundwater Samples
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

	Chloride (mg/L)																			
	June 2014	Sept. 2014	Dec. 2014	March 2015	June 2015	Sept. 2015	Dec. 2015	March 2016	June 2016	Sept. 2016	Dec. 2016	March 2017	June 2017	Sept. 2017	Dec. 2017	March 2018	June 2018	Sept. 2018	Dec. 2018	March 2019
MW-1R	---	51.4	116	39.0	24.6	21.6	23.5	34.8	24.9	28.5	44.8	32.0	28.6	29.3	29.0	33.7	---	---	---	---
MW-2	17.7	17.4	18.3	16.6	16.8	16.6	15.4 *	13.5	18.9	17.6	18.2	15.0	15.9	15.2	16.2	16.6	---	---	---	---
MW-3	59.7	59.7	58.9	57.0	57.1	56.3	50.5 *	49.3	51.5	52.0	55.1	50.0	53.7	49.5	58.1	64.3	---	---	---	---
MW-4	**586**	**534**	**535**	**543**	**556**	**567**	**546 ***	**525**	**527**	**569**	**605**	**500**	**493**	**465**	**492**	**484**	**413**	**387**	**373**	**617**
MW-5	28.6	27.3	27.9	26.1	26.2	25.8	22.4 *	22.4	26.1	26.2	27.8	23.1	24.7	20.4	25.4	25.9	---	---	---	---
MW-6	**282**	**263**	**268**	**261**	**253**	**277**	197 *	150	128	128	125	94.4	86.3	79.3	71.8	64.7	---	---	---	---
MW-7	42.7	29.6	36.0	39.7	36.2	35.2	28.8 *	27.7	36.0	38.2	39.6	24.2	23.8	24.0	27.7	31.6	---	---	---	---
MW-8	**409**	**442**	**463**	**485**	**558**	**327**	**499**	**504**	**539**	**490**	**768**	**489**	**531**	**573**	**570**	**587**	**539**	**398**	**474**	**308**

Notes:

1. mg/L : milligrams per liter.
2. < : Analyte not detected at the laboratory reporting limit.
3. All analyses performed by TestAmerica Laboratories in Nashville, Tennessee.
4. Cells shaded in blue indicate results that are above the laboratory Reporting Limit (RL).
5. Cells with text **bolded** indicate results that exceed the New Mexico Administrative Code (NMAC) 20.6.2.3103, Standards for Groundwater of 10,000 milligrams per liter (mg/L) total dissolved solids (TDS) Concentration or Less: chloride (250.0 mg/L).
6. --- : Analysis not performed.
7. * : Analysis performed outside of holding time.
8. December 2016 results for MW-1R and MW-8 were confirmed by laboratory reanalysis.
9. Sample MW-1R was collected in December 2017 under sample ID MW-R1 as shown on the COC and in the field book.
10. Beginning with the September 2019 sampling event, Eurofins (Edison, NJ) became the Project Laboratory.

Table 4 : Summary of Laboratory Analytical Results for Chloride in Groundwater Samples
Chesapeake Energy Corporation, State M Lease (AP-72)
Lea County, New Mexico

	Chloride (mg/L)																			
	June 2019	Sept. 2019	Dec. 2019	March 2020	June 2020	Sept. 2020	Dec. 2020	March 2021	June 2021	Sept. 2021	Dec. 2021	March 2022	June 2022	Sept. 2022	Dec. 2022	March 2023	June 2023	Sept. 2023	Dec. 2023	March 2024
MW-1R	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	**392**	**404**	**421**	**443**	**429**	**430**	**475**	**437**	**528**	**438**	**404**	**387**	**414**	**412**	**398**	**376**	**356**	**402**	**362**	**339**
MW-5	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-8	**283**	223	198	118	97.4	88.8	73.5	63.9	92.5	65.4	56.2	29.6	---	---	---	---	---	---	---	---

Notes:

1. mg/L : milligrams per liter.
2. < : Analyte not detected at the laboratory reporting limit.
3. All analyses performed by TestAmerica Laboratories in Nashville, Tennessee.
4. Cells shaded in blue indicate results that are above the laboratory reporting limit.
5. Cells with text bolded indicate results that exceed the New Mexico Administrative Code (NMAC) 20.6.2.3103, Standards for Groundwater of 10,000 milligrams per liter (mg/L) total dissolved solids (TDS) Concentration or Less: chloride (250.0 mg/L).
6. --- : Analysis not performed.
7. * : Analysis performed outside of holding time.
8. December 2016 results for MW-1R and MW-8 were confirmed by laboratory. reanalysis.
9. Sample MW-1R was collected in December 2017 under sample ID MW-R1 as shown on the COC and in the field book.
10. Beginning with the September 2019 sampling event, Eurofins TestAmerica (Edison, NJ) became the Project Laboratory.

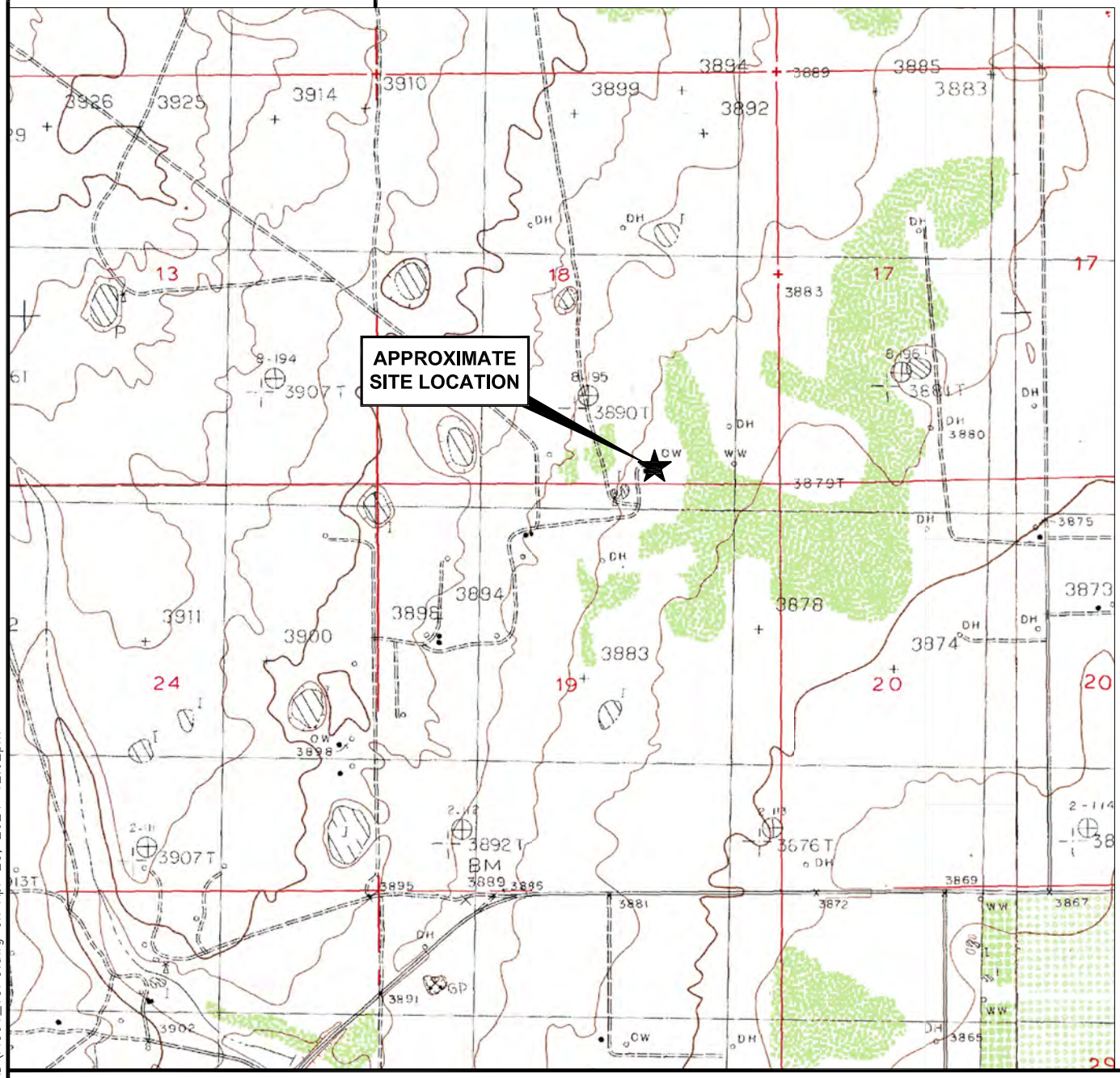
Table 5 : Summary of Laboratory Analytical Results for Groundwater Samples
Chesapeake Energy Corporation, State M Lease
Lea County, New Mexico

Parameters	*Cleanup Levels*	Sample Date:	MW-1R 21-Jun-22	MW-1R 13-Sep-22	MW-1R 7-Dec-22	MW-1R 7-Mar-23	MW-1R 13-Jun-23	MW-1R 6-Sep-23	MW-1R 12-Dec-23	MW-1R 12-Mar-24
Volatile Organic Compounds (VOCs)		***Units***								
Benzene	5	µg/L	3.71	3.80	2.55	1.59	0.885	0.637	0.632	1.50
Toluene	1000	µg/L	0.902	0.955	<0.500	<0.500	<0.500	<0.500	<0.500	<0.500
Ethylbenzene	700	µg/L	215	211	75.4	23.0	12.7	2.63	2.68	113
Xylenes, Total	620	µg/L	261	235	76.0	18.2	3.62	<1.00	1.17	128

Notes:

1. µg/L : micrograms per liter.
2. All analyses performed by Eurofins (formerly TestAmerica Laboratories).
3. < : Analyte not detected at the laboratory Reporting Limit (RL).
4. Cells shaded in blue indicate results that are above the laboratory Reporting Limit (RL).
5. Cleanup Criteria obtained from New Mexico Administrative Code (NMAC) 20.6.2.3103, Standards for Groundwater of 10,000 milligrams per liter (mg/L) Concentration or Less: benzene (5 µg/L), toluene (1000 mg/L), ethylbenzene (700 mg/L), and xylenes (620 mg/L).

FIGURES



SOURCE: U.S.G.S. 7.5 MINUTE TOPOGRAPHIC QUADRANGLES
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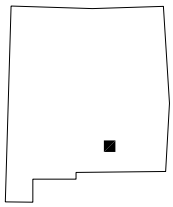
LOVINGTON SE, NEW MEXICO - PROVISIONAL EDITION 1985

NEW MEXICO



SCALE
0 1/2 1 MILE

CLIENT CHESAPEAKE ENERGY CORPORATION, LLC OKLAHOMA CITY, OKLAHOMA	FIGURE TITLE **SITE LOCATION AND TOPOGRAPHIC FEATURES**
LOCATION STATE M LEASE (AP-72) SEC. 18, T17S, R36E, LEA COUNTY, NEW MEXICO	DOCUMENT TITLE TENTH ANNUAL GROUNDWATER MONITORING REPORT

EQUUS Environmental, LLC

Equus Environmental, LLC
1923 South 44th West Avenue
Tulsa, Oklahoma 74107-3450
918.921.5331
www.EQUUSENV.com

		DESIGNED BY	MM
DATE	4/25/2024	APPROVED BY	MM
SCALE	AS SHOWN	DRAWN BY	SK
PROJECT NUMBER		FIGURE NUMBER	
CHKSTATM:24001		1	

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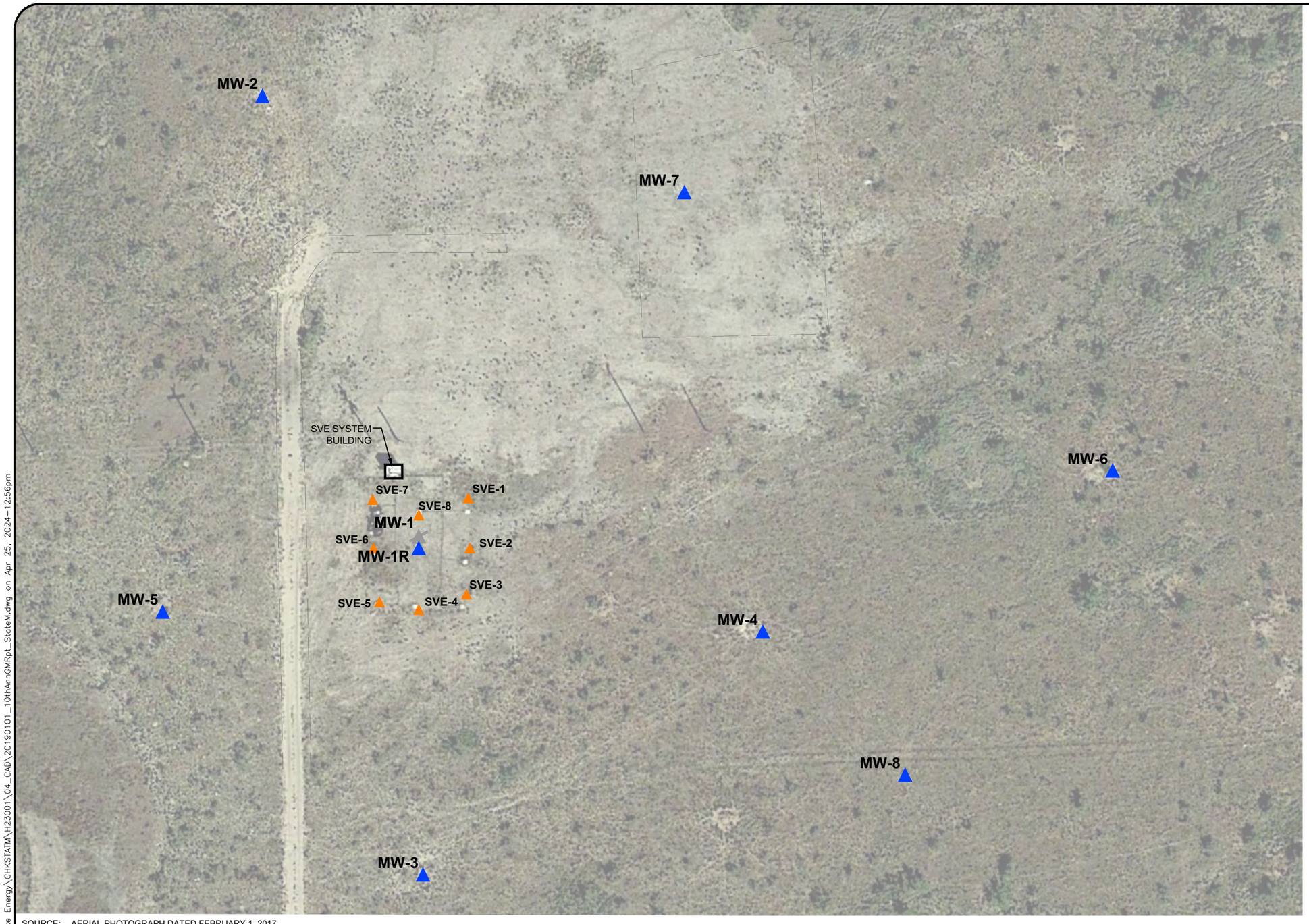

LEGEND

- MW-5 — LOCATION OF MONITORING WELL
- MW-1 — LOCATION OF PLUGGED AND ABANDONED MONITORING WELL
- SVE-1 — LOCATION OF SVE SYSTEM WELL

30 0 30 60
SCALE FEET

SOURCE: AERIAL PHOTOGRAPH DATED FEBRUARY 1, 2017, GOOGLE EARTH PRO SCREEN CAPTURE

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EQUUS Environmental, LLC
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Tulsa, Oklahoma 74107-3450
918.921.5331
www.EQUUSENV.com

DOCUMENT TITLE: TENTH ANNUAL GROUNDWATER MONITORING REPORT

FIGURE TITLE: **SITE BASE MAP**

CLIENT: CHESAPEAKE ENERGY CORPORATION, OKLAHOMA CITY, OKLAHOMA

LOCATION: STATE M LEASE (AP-72), SEC. 18, T17S, R36E, LEA COUNTY, NEW MEXICO

DESIGNED BY	MM		
APPROVED BY	MM	SCALE	1"=60'
DRAWN BY	SK	DATE	4/25/2024

PROJECT NUMBER	FIGURE NUMBER
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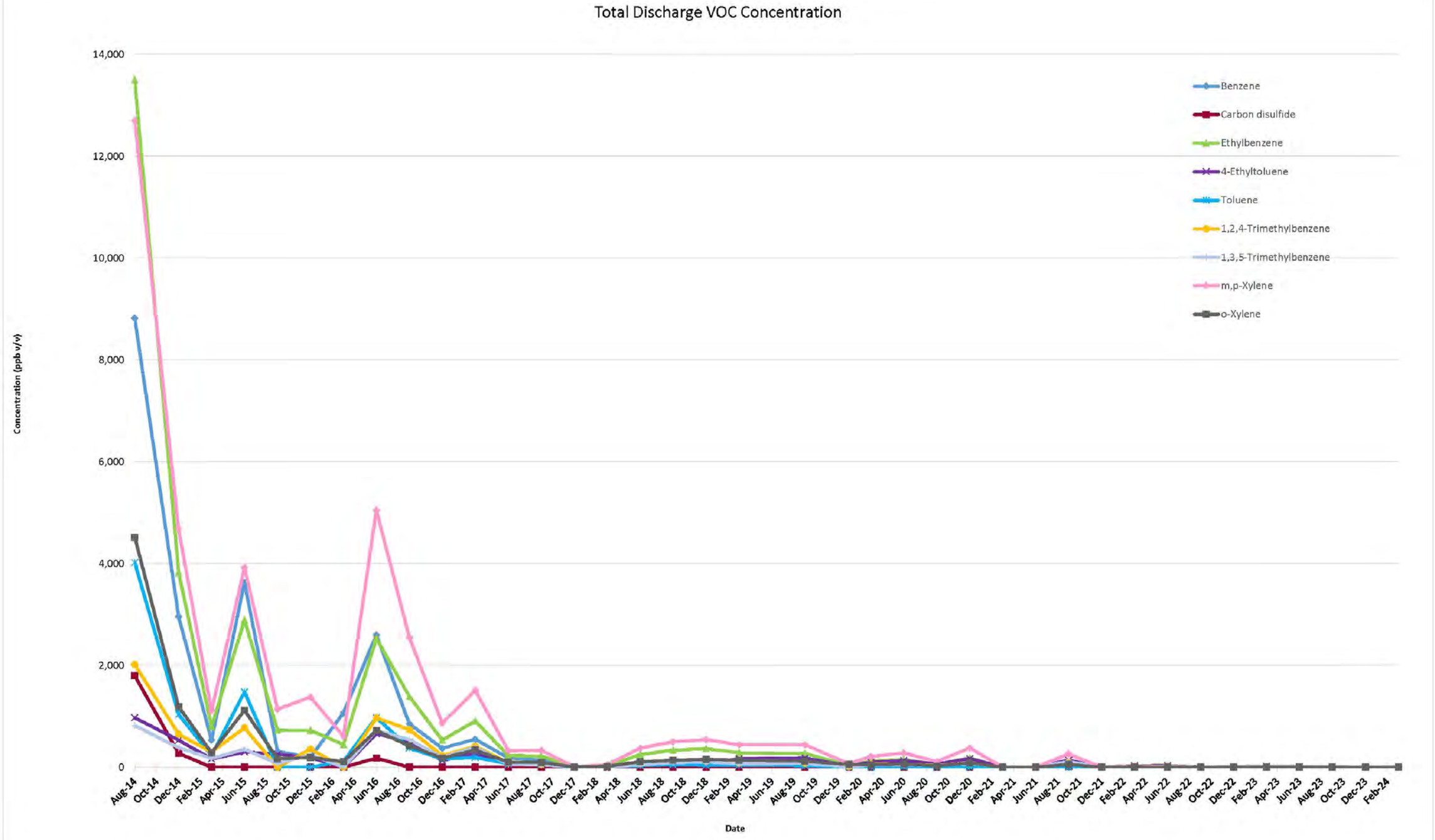

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DOCUMENT TITLE
TENTH ANNUAL GROUNDWATER MONITORING REPORT

FIGURE TITLE
SVE SYSTEM VOC DISCHARGE CONCENTRATIONS VERSUS TIME

CLIENT
CHESAPEAKE ENERGY CORPORATION
OKLAHOMA CITY, OKLAHOMA

LOCATION
STATE M LEASE (AP-72)
SEC. 18, T17S, R36E, LEA COUNTY, NEW MEXICO

DESIGNED BY	CA		
APPROVED BY	MM	SCALE	NTS
DRAWN BY	JC	DATE	4/25/2024

PROJECT NUMBER	FIGURE NUMBER
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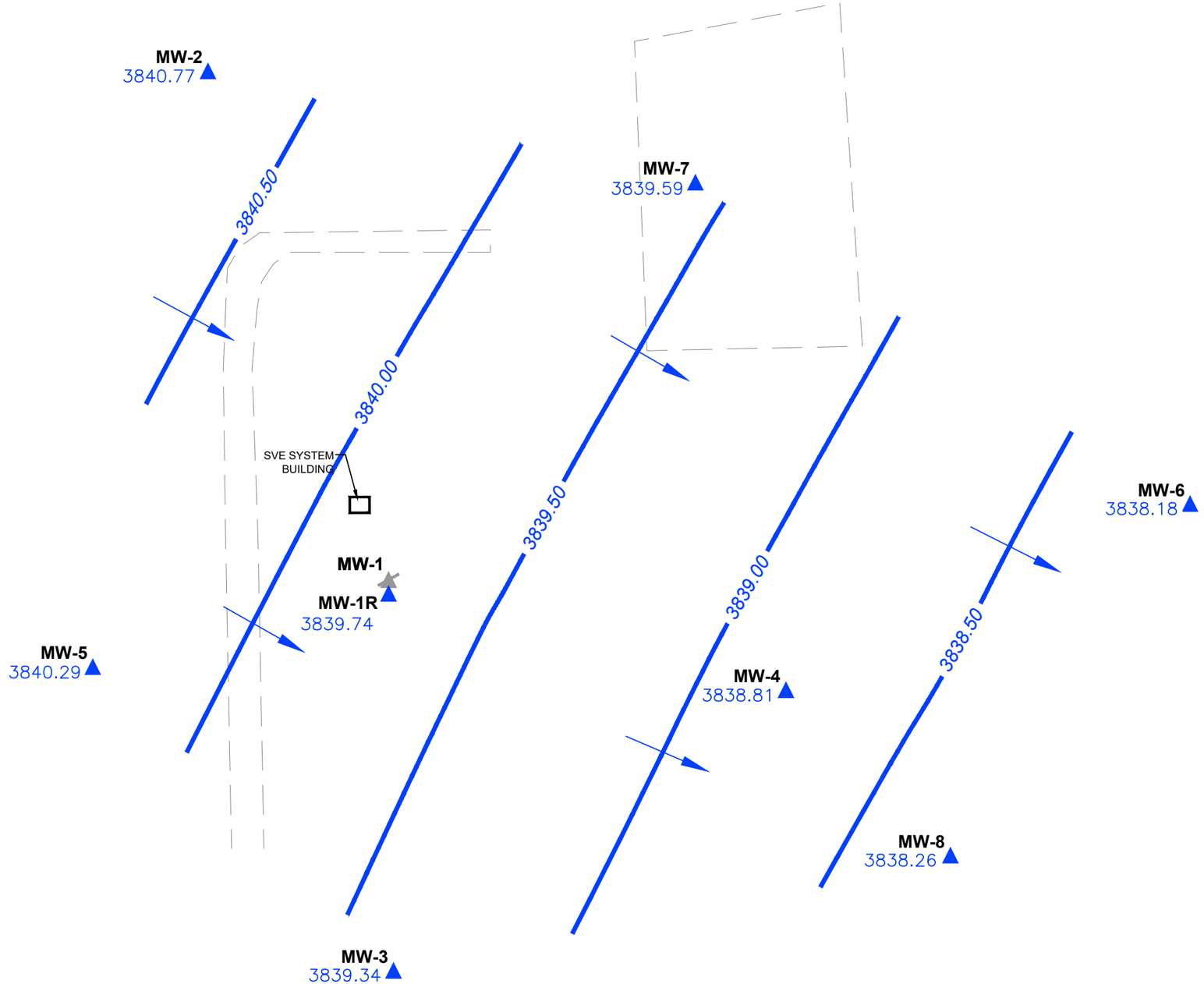

LEGEND

- **MW-5** 3838.18 — LOCATION OF MONITORING WELL AND GROUNDWATER ELEVATION 3/12/2024, FEET AMSL
- MW-1 — LOCATION OF PLUGGED AND ABANDONED MONITORING WELL
- 3838.50 — GROUNDWATER POTENTIOMETRIC SURFACE

30 0 30 60
SCALE FEET

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1923 South 44th West Avenue
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DOCUMENT TITLE: TENTH ANNUAL GROUNDWATER MONITORING REPORT

FIGURE TITLE: **GROUNDWATER POTENTIOMETRIC SURFACE, MARCH 12, 2024**

CLIENT: CHESAPEAKE ENERGY CORPORATION
OKLAHOMA CITY, OKLAHOMA

LOCATION: STATE M LEASE (AP-72)
SEC. 18, T17S, R36E, LEA COUNTY, NEW MEXICO

DESIGNED BY	MM		
APPROVED BY	MM	SCALE	1"= 60'
DRAWN BY	SK	DATE	4/25/2024

PROJECT NUMBER	FIGURE NUMBER
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(3/5/2018)

MW-7
31.6
(3/5/2018)

MW-6
64.7
(3/5/2018)

MW-1

MW-1R
33.7
(3/5/2018)

MW-5
25.9
(3/5/2018)

250

MW-4
~~33.8~~

MW-8
29.6
(3/7/2022)

MW-3
64.3
(3/5/2018)

LEGEND

MW-4 LOCATION OF MONITORING WELL AND CONCENTRATION OF CHLORIDE IN GROUNDWATER 3/12/2024, mg/L

MW-1 LOCATION OF PLUGGED AND ABANDONED MONITORING WELL

250 CONTOUR LINE SHOWING EQUAL CONCENTRATIONS OF CHLORIDE IN GROUNDWATER, mg/L. (DASHED WHERE INFERRED)

N

30 0 30 60
SCALE FEET

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EQUUS Environmental, LLC
1923 South 44th West Avenue
Tulsa, Oklahoma 74107-3450
918.921.5331
www.EQUUSENV.com

DOCUMENT TITLE
TENTH ANNUAL GROUNDWATER MONITORING REPORT

FIGURE TITLE
ISOPLETH OF CHLORIDE CONCENTRATIONS IN GROUNDWATER, MARCH 12, 2024

CLIENT CHESAPEAKE ENERGY CORPORATION
OKLAHOMA CITY, OKLAHOMA

LOCATION STATE M LEASE (AP-72)
SEC. 18, T17S, R36E, LEA COUNTY, NEW MEXICO

DESIGNED BY	MM		
APPROVED BY	MM	SCALE	1"= 60'
DRAWN BY	SK	DATE	4/25/2024

PROJECT NUMBER	FIGURE NUMBER
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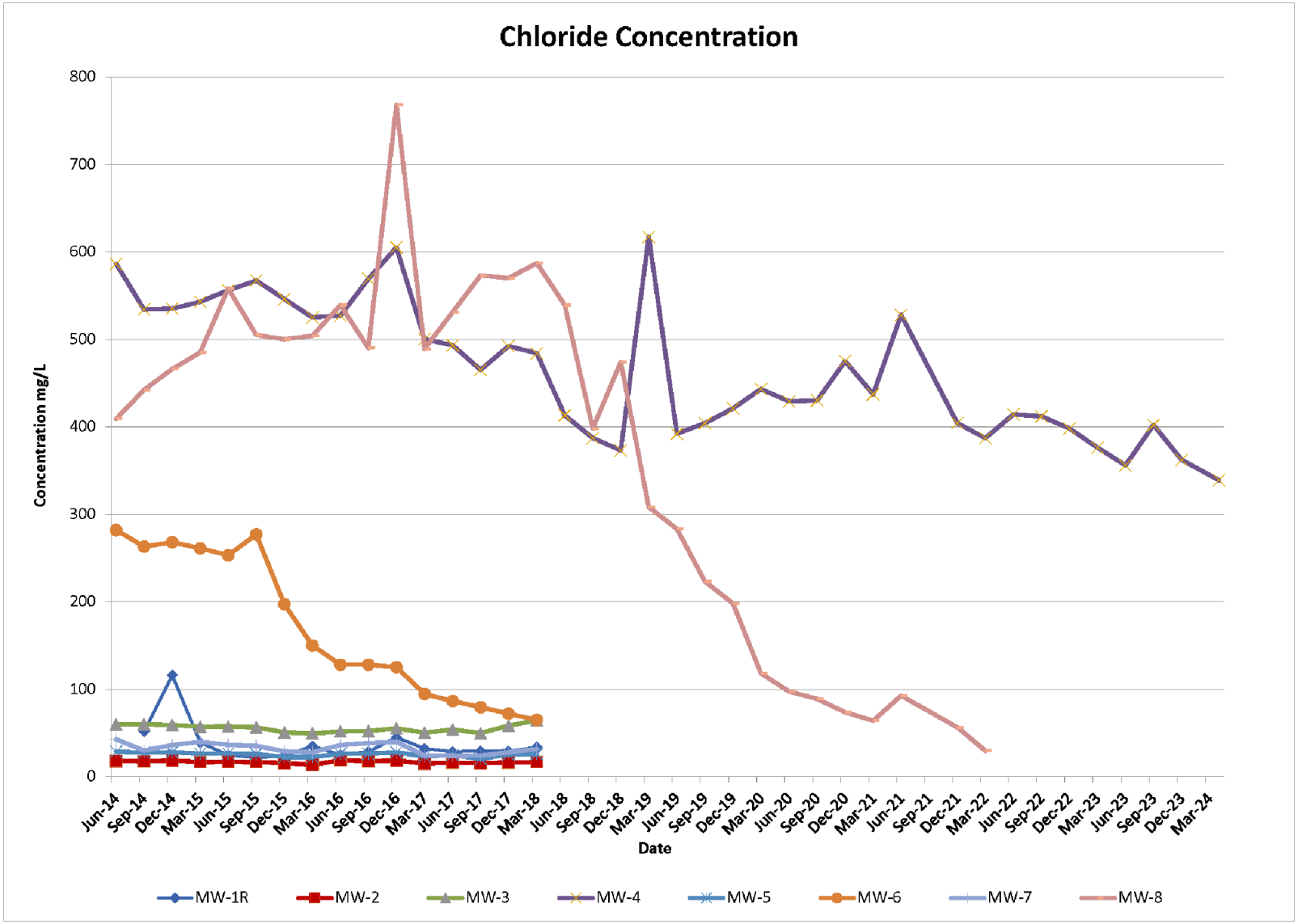

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1923 South 44th West Avenue
Tulsa, Oklahoma 74107-3450
918.921.5331
www.EQUUSENV.com

DOCUMENT TITLE
TENTH ANNUAL GROUNDWATER MONITORING REPORT

FIGURE TITLE
CHLORIDE CONCENTRATION TREND GRAPH

CLIENT
CHESAPEAKE ENERGY CORPORATION
OKLAHOMA CITY, OKLAHOMA

LOCATION
STATE M LEASE (AP-72)
SEC. 18, T17S, R36E LEA COUNTY, NEW MEXICO

DESIGNED BY	CA		
APPROVED BY	MM	SCALE	NTS
DRAWN BY	JC	DATE	4/25/2024

PROJECT NUMBER	FIGURE NUMBER
CHKSTATM:24001	6

APPENDICES

A Stage 2 Abatement Plan

B NMOCD Approval of Stage 2 Abatement Plan

C Laboratory Analytical Reports and Chain-of-Custody Documentation

APPENDIX A

STAGE 2 ABATEMENT PLAN

ARCADIS
Infrastructure · Water · Environment · Buildings

ARCADIS U.S., Inc.
1004 North Big Spring Street
Suite 300
Midland
Texas 79701
Tel 432 687 5400
Fax 432 687 5401
www.arcadis-us.com

ENVIRONMENT

Mr. Glenn Von Gonten
New Mexico Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505

Subject:
State M-1 AP-072
Stage 2 Abatement Plan

Date:
March 27, 2012

Dear Mr. Von Gonten:

On behalf of Chesapeake Energy Corporation, ARCCADIS U.S. Inc. respectfully submits the enclosed Stage 2 Abatement plan for the State M-1 site (AP-072). A Stage 1 Abatement Plan Report was submitted on March 20, 2012. Your review and approval of this Abatement Plan will be appreciated. The landowner, Darr Angell, is anxious for us to complete soil remediation at this site.

If you have any questions please do not hesitate to contact Bradley Blevins at (575) 391-1462 or via e-mail at bblevins@chkenergy or me at (432) 687-5400, e-mail address shall@aracdis-us.com.

Contact:
Sharon Hall

Phone:
432 687-5400

Email:
shall@aracdis-us.com

Our ref:
MT001088

ARCADIS U.S., Inc.
TX Engineering License # F-533

Sincerely,

ARCADIS U.S., Inc.

Sharon E. Hall

Sharon E. Hall
Associate Vice President

Copies:
Bradley Blevins- Chesapeake, Hobbs

Imagine the result

g:\aproject\chesapeake\m-1 stage 2 plan\transmitall letter.doc

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Chesapeake Energy Corporation

State M-1 AP-072
Stage 2 Abatement
Plan Proposal

Hobbs, New Mexico

March 27, 2012

ARCADIS

Sharon Hall
Associate Vice President

State M-1 AP-072

Stage 2 Abatement
Plan Proposal

Prepared for:
Chesapeake Energy
Corporation
Hobbs, New Mexico

Prepared by:
ARCADIS U.S., Inc.
1004 North Big Spring Street
Suite 300
Midland
Texas 79701
Tel 432 687 5400
Fax 432 687 5401

Our Ref.:
MT001088.0001.00001

Date:
March 27, 2012

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Figures

Appendices

ARCADIS

1. INTRODUCTION

The subject site is a former tank battery site located east of Buckeye, New Mexico. The site was purchased by Chesapeake Energy Corporation (Chesapeake) in April 2004. Chesapeake did not operate the tank battery or the associated well field and began the process of facility abandonment in 2007.

Seven monitor wells and nine soil borings have been drilled at the site. Elevated chloride concentrations and limited hydrocarbon compounds were detected in soil samples collected from soil borings and monitoring wells. Elevated chlorides were detected in the down gradient monitor wells and light non-aqueous phase liquid (LNAPL) occurs in monitoring well MW-1. LNAPL recovery activities have been piloted at the site and will commence again upon completion of surface reclamation activities.

2. SUMMARY OF STAGE 1 ABATEMENT ACTIVITIES

Initial site investigation activities were conducted in May of 2007 following abandonment of the tank battery. Stage 1 Abatement activities were conducted during the period of May 2007 through September 2011. Stage 1 Abatement activities included drilling and soil sampling of nine boreholes, drilling and sampling of seven monitor wells, EM 31 and EM 34 surveys, conversion of one monitoring well into a recovery well and recovery of phase-separated hydrocarbons from the recovery well.

New Mexico Oil Conservation Division (NMOCD) was notified of impacts to groundwater at the site via e-mail on May 30, 2007. NMOCD notified Chesapeake in a letter dated June 19, 2007 that a Stage 1 Abatement Plan was required for the site in accordance with Rule 19.

The Stage 1 Abatement Plan was submitted to NMOCD on August 22, 2007. The plan summarized site activities taken to date. The plan proposed the drilling and sampling of a minimum of three additional soil borings and installation and sampling of nine groundwater monitoring wells.

BBC contacted NMOCD via email on April 24, 2010 to inquire about the status of the Stage 1 Abatement Plan approval and Chesapeake's desire to conduct the proposed Stage 1 Abatement Plan activities. On May 27, 2010, NMOCD responded via email that the State was not staffed to review the Abatement Plans (APs) in a timely manner. On June 23, 2010, BBC contacted NMOCD via email to request a waiver of the Public Notice requirement and inform NMOCD that Chesapeake and the landowner were

anxious to move forward with the proposed AP activities. NMOCD replied via email on June 23, 2010 stating they were still understaffed to review the AP and could not waive the Public Notice requirement. They advised BBC that Chesapeake could proceed "at risk." On July 12, 2010 BBC informed NMOCD by registered letter that Chesapeake was planning to start the Stage 1 Assessment on or about August 23, 2010. They further informed NMOCD they would be submitting the required Public Notices, a copy of which was attached to the letter. NMOCD did not respond to the registered letter.

The public notices were published in the Hobbs News-Sun and Lovington Leader on July 22, 2010 and the Albuquerque Journal on July 24, 2010. No comments were received from the public or NMOCD during the 30-day comment period and Chesapeake proceeded with the proposed Stage 1 Abatement Plan activities on August 26, 2010. Copies of correspondence and Public Notice are included in Appendix A.

A detailed description of site activities and results can be found in the report submitted to NMOCD dated March 20, 2012 entitled State M-1 AP-072, Stage 1 Abatement Report (Site Assessment Investigation). Analytical results for soil and groundwater sampling are summarized on Figure 1.

3. STAGE 2 ABATEMENT PLAN PROPOSAL

After review of various remedial options, we propose the following Stage 2 Abatement Plan. The plan addresses soil and groundwater remediation.

3.1 Soil Remediation

The selected remedial option will be the excavation of near-surface soils and installation of clay liners. The anticipated extent and depth of excavation is based on assessment activities (laboratory analysis and visual observation) and is shown in Figure 2. Near surface soils (to a depth of 5 feet below ground surface) with chloride concentrations in excess of 1,000 milligrams per kilogram (mg/kg) and a Total Petroleum Hydrocarbons (TPH) concentration in excess of 1,000 mg/kg will be excavated and disposed. Excavated soils will be disposed at Lea Land Landfill.

Areas where chloride or TPH concentrations are expected to exceed 1,000 mg/kg at depths greater than 5 feet below ground surface soils will be excavated to a depth of 5

feet below ground surface. Soils will be screened in the field for chlorides using chloride field test kits and for TPH using a photoionization. Critical samples (samples used to delineate the excavations) will be submitted for laboratory analysis of chlorides and/or TPH. Following excavation, a 12-inch compacted clay layer that meets or exceeds a permeability of equal to or less than 1×10^{-8} centimeters per second will be installed in the excavations. The lined excavations will be backfilled with four feet of locally obtained native soil. All of the excavated areas will be re-seeded with native vegetation. Areas that are supporting vegetation will not be disturbed.

Use of the USEPA Multi-Med model demonstrates that the clay liners will mitigate the leaching of chlorides to groundwater. The model predicts that after 7000 years of infiltration through the liner the maximum concentration of chlorides in groundwater will be 221.8 milligrams per liter (mg/L). The Multi-Med inputs and outputs are included in Appendix A.

3.2 Groundwater Remediation and Monitoring

One additional groundwater monitoring well will be installed downgradient of the site. The monitoring well will be designated MW-8.

Groundwater samples will be collected from all of the monitoring wells and analyzed for chlorides using USEPA method 9056 for each of four quarters. Based on sample results for one year (four quarters), sampling frequency will be reviewed and may be revised.

Sampling will be discontinued when eight quarters of sample results indicate chloride concentrations are below New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 standards. Sample results will be submitted to the NMOCD annually on June 15.

Following removal of LNAPL from MW-1, groundwater samples will be collected from MW-1 and analyzed for benzene, toluene ethylbenzene and xylenes (BTEX) using USEPA method 8260B for each of four quarters. Based on sample results for one year (four quarters), sampling frequency will be reviewed and may be revised.

Sampling of MW-1 for BTEX will be discontinued when eight quarters of sample results indicate BTEX concentrations are below New Mexico Water Quality Control Commission, Title 20, Chapter 6, Part 2 standards. Sample results will be submitted to

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the NMOCD annually on June 15. Proposed groundwater remediation is presented in Sections 3.2.1 and 3.2.2.

3.2.1 Chlorides

Chloride concentrations in groundwater exceed New Mexico Water Quality Control Commission standards in two wells (MW-1 411mg/L and MW-4 472mg/L).

Removal of near-surface soils that are a potential source of chlorides and BTEX in groundwater and lining of excavations with chloride and TPH concentrations in excess of 1,000 mg/kg will mitigate leaching of chlorides to groundwater. Considering the relatively low concentrations of chlorides in groundwater and the fact that soil removal and clay liner infiltration barrier installation will be conducted at this site, we propose monitoring the site for a period of two years before considering pumping of groundwater at this site. With the proposed source removal and mitigation and the severe drought conditions being experienced in this area, we believe it prudent to evaluate if chloride mass removal by pumping is warranted at this site.

3.2.2 Hydrocarbons

A pilot LNAPL recovery test will take place over a three week period and will be used to develop long-term recovery procedures. LNAPL will be recovered from MW-1 and disposed in a NMOCD approved facility. Additionally, two soil vent borings equipped with wind turbines will be installed in the area near MW-1.

4. PUBLIC NOTIFICATION

Written notification of submittal of the Stage 2 Abatement Plan Proposal and site activities will be sent to all surface owners of record within a one-mile radius of the site. NMOCD will be supplied with a list of parties to be notified. Publication of notice of activities will be published in a state-wide circulated newspaper, the Albuquerque Journal, and two county newspapers, the Hobbs-Daily News Sun and the Lovington Leader.

5. REMEDIATION WORK SCHEDULE

Soil remediation activities are expected to be completed in 15 working days (Monday through Friday). Groundwater remediation activities will be ongoing. An estimated completion date for groundwater remediation is not available.

6. REFERENCES

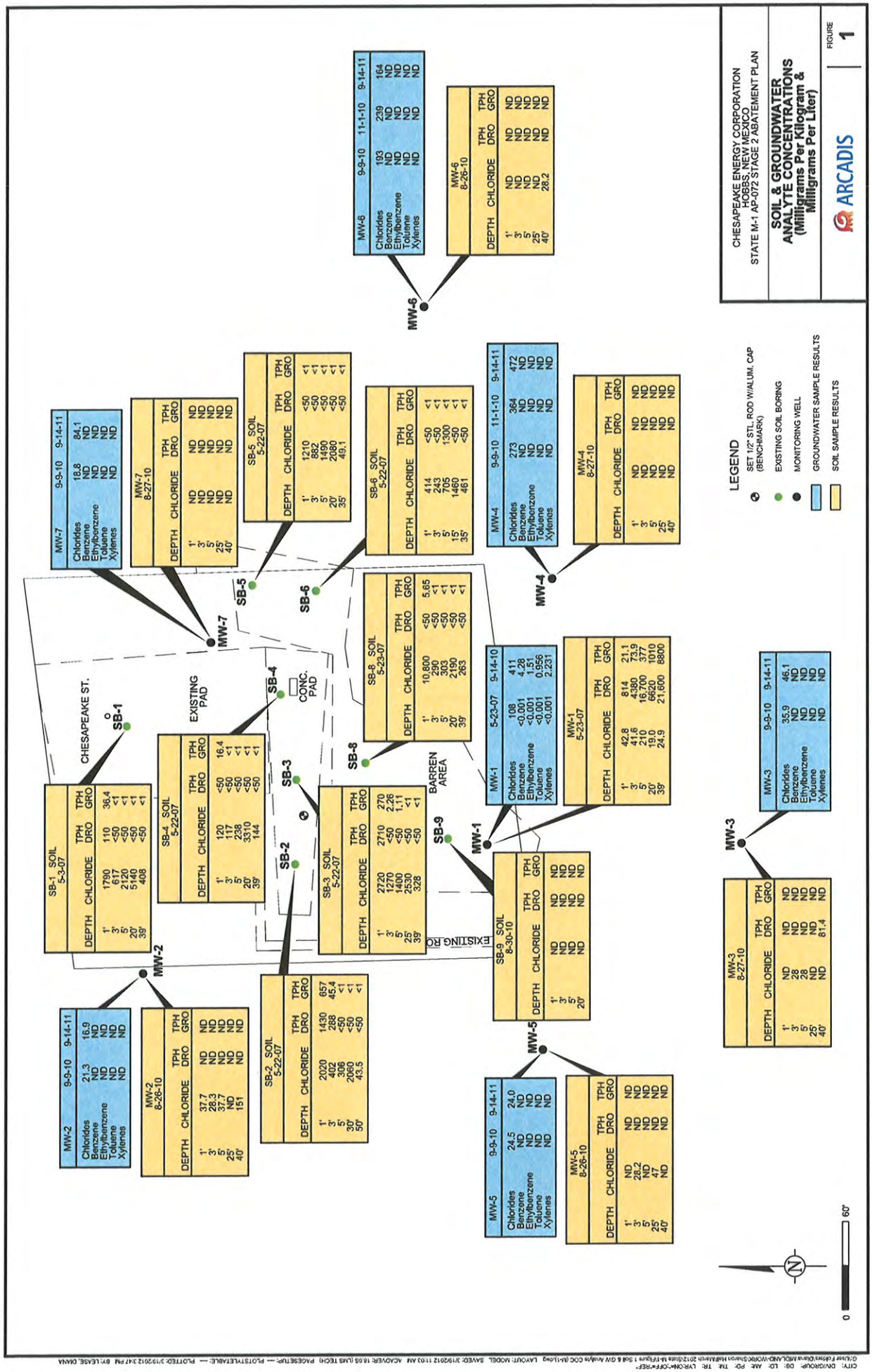
Groundwater Handbook; United States Environmental Protection Agency, Office of Research and Development, Center for Environmental Research Information; 1992

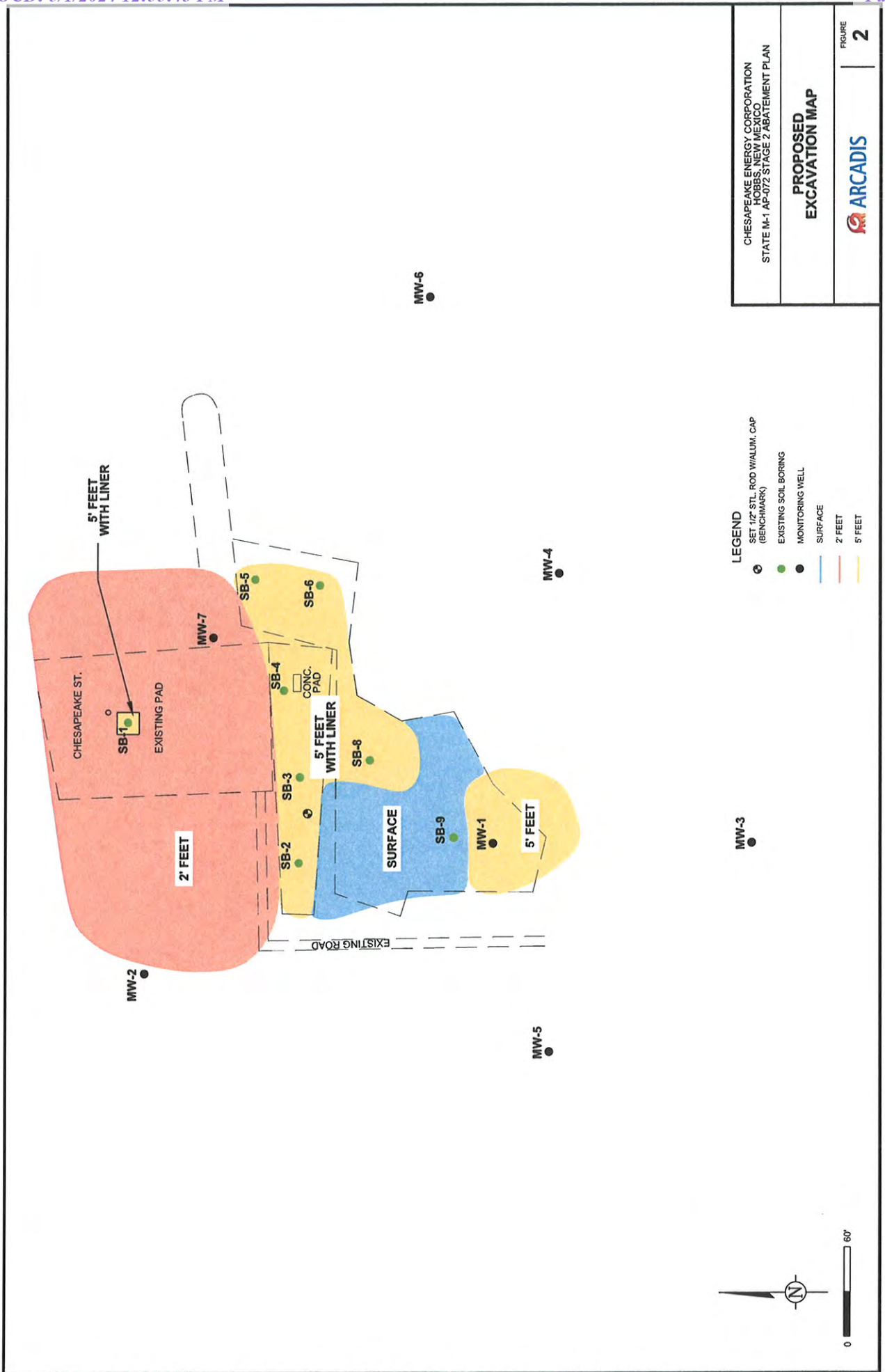
New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I

State M-1 AP-072 Stage 1 Abatement Report (Site Assessment Investigation); ARCADIS; March 2012

State M-1Salt Water Disposal Tank Battery, Stage 1 Abatement Plan (Ap-072), BBC International; August 2007

New Mexico Water Quality Control Commission, Title 20 Chapter 6, Part 2, Subpart I


CHESAPEAKE ENERGY CORPORATION
HOBBS, NEW MEXICO
STATE M-1 AP-072 STAGE 2 ABATEMENT PLAN
SOIL & GROUNDWATER ANALYTE CONCENTRATIONS (Milligrams Per Kilogram & Milligrams Per Liter)
FIGURE 1
ARCADIS
LEGEND
SET 1/2" STL. ROD W/ALUM. CAP (BENCHMARK)
EXISTING SOIL BORING
MONITORING WELL
GROUNDWATER SAMPLE RESULTS
SOIL SAMPLE RESULTS
CHESAPEAKE ST.
EXISTING PAD
CONC. PAD
BARREN AREA
EXISTING ROAD
SB-1
SB-2
SB-3
SB-4
SB-5
SB-6
SB-8
SB-9
MW-1
MW-2
MW-3
MW-4
MW-5
MW-6
MW-7
SB-1 SOIL 5-3-07
SB-2 SOIL 5-22-07
SB-3 SOIL 5-22-07
SB-4 SOIL 5-22-07
SB-5 SOIL 5-22-07
SB-6 SOIL 5-22-07
SB-8 SOIL 5-23-07
SB-9 SOIL 8-30-10
MW-1 5-23-07 9-14-11
MW-2 8-26-10 9-9-10 9-14-11
MW-3 8-27-10 9-9-10 9-14-11
MW-4 8-27-10 9-9-10 11-1-10 9-14-11
MW-5 8-26-10 9-9-10 9-14-11
MW-6 8-26-10 9-9-10 11-1-10 9-14-11
MW-7 8-27-10 9-9-10 9-14-11
0
60'
N


CHESAPEAKE ENERGY CORPORATION
HOBBS, NEW MEXICO
STATE M-1 AP-072 STAGE 2 ABATEMENT PLAN
PROPOSED
EXCAVATION MAP
ARCADIS
FIGURE
2
LEGEND
SET 1/2" STL. ROD W/ALUM. CAP (BENCHMARK)
EXISTING SOIL BORING
MONITORING WELL
SURFACE
2' FEET
5' FEET
5' FEET WITH LINER
CHESAPEAKE ST.
EXISTING PAD
SB-1
MW-7
SB-5
SB-6
SB-4
CONC. PAD
SB-8
SB-3
SB-2
SURFACE
SB-9
MW-1
5' FEET
2' FEET
EXISTING ROAD
MW-2
MW-3
MW-4
MW-5
MW-6
N
0
60'

ARCADIS

Appendix A

Multi-Med Model Inputs and Outputs

Chesapeake State M-1
Chesapeake Energy Corporation
Buckeye, Lea County, New Mexico
Multimed Model Input and Output (With Liner)

MODEL INPUT AND OUTPUT						MODEL RANGE	
INPUT PARAMETERS						Minimum	Maximum
Unsaturated Zone Flow Parameters							
Depth of Unsaturated Zone	m	45	feet	13.7	m	0.000000001	None
Hydraulic Conductivity	cm/hr	2	ft/day	2.54	cm/hr	0.00000000001	10,000
Unsaturated Zone Porosity	fraction	0.05	fraction	0.05	fraction	0.000000001	0.99
Residual Water Content	fraction	0.01	fraction	0.010	fraction	0.000000001	1
Unsaturated Zone Transport Parameters							
Thickness of Layer	m	45	feet	13.7	m	0.000000001	None
Percent of Organic Matter	%	2.6	%	2.6	%	0	100
Bulk Density	g/cm^3	1.35	g/cm^3	1.35	g/cm^3	0.01	5
Biological Decay Coefficient	1/yr	0	1/yr	0	1/yr	0	None
Aquifer Parameters							
Aquifer Porosity	fraction	0.25	fraction	0.25	fraction	0.000000001	0.99
Bulk Density	g/cm^3	1.35	g/cm^3	1.35	g/cm^3	0.01	5
Aquifer Thickness	m	50	ft	15.24	m	0.000000001	100,000
Hydraulic Conductivity	m/yr	2	ft/day	223	m/yr	0.0000001	100,000,000
Hydraulic Gradient	m/m	0.007	m/m	0.007	m/m	0.00000001	None
Organic Carbon Content	fraction	0.00315	fraction	0.00315	fraction	0.000001	1
Temperature of Aquifer	°C	14.4	°C	14.4	°C	0.00000001	None
pH		6.2		6.2		0.3	14
x-distance Radial Distance from Site to Receptor	m	1	m	1	m	1	None
Source Parameters							
Infiltration Rate from the Facility	m/yr	0.124	in/yr	0.00315	m/yr	0.0000000001	10,000,000,000
Area of Waste Disposal Unit	m^2	46,800	ft^2	4348	m^2	0.01	None
Length Scale of Facility	m	240	feet	73.2	m	0.000000001	10,000,000,000
Width Scale of Facility	m	195	feet	59.4	m	0.000000001	10,000,000,000
Recharge Rate into the Plume	m/yr	16.71	in/yr	0.4244	m/yr	0	10,000,000,000
Duration of Pulse	yr	8,000	yr	8000	yr	0.000000001	None
Initial Concentration at Landfill	mg/L	6,000	mg/L	6,000	mg/L	0	None
Additional Parameters							
Method				Gaussian		Gaussian	Patch
Name of Chemical Specified				Chloride			

MODEL OUTPUT			
Final Concentration at Landfill	mg/L	221.8	mg/L

MODEL OUTPUT				
Concentration at Landfill	0.0 mg/L	Time	1 yr
	0.0 mg/L		10 yr
	0.0 mg/L		20 yr
	18.9 mg/L		50 yr
	36.6 mg/L		70 yr
	45.4 mg/L		80 yr
	61.8 mg/L		100 yr
	123.4 mg/L		200 yr
	154.1 mg/L		300 yr
	166.3 mg/L		400 yr
	178.5 mg/L		500 yr
	190.7 mg/L		600 yr
	204.8 mg/L		800 yr
	211.1 mg/L		1,000 yr
	220.4 mg/L		2,000 yr
	221.6 mg/L		3,000 yr
	221.8 mg/L		4,000 yr
	221.8 mg/L		5,000 yr
	221.8 mg/L		6,000 yr
	221.8 mg/L		7,000 yr

Chesapeake State M-1
Chesapeake Energy Corporation
Buckeye, Lea County, New Mexico

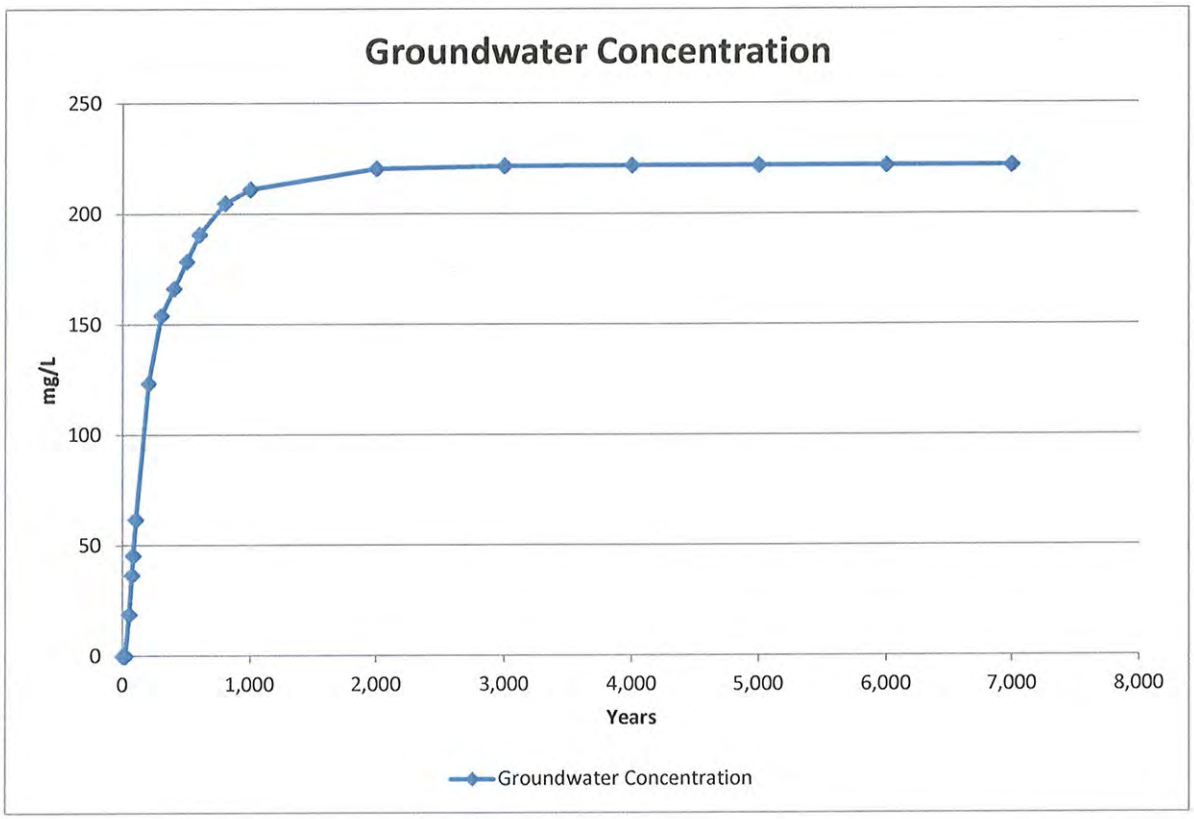


TABLE 6-3. TOTAL POROSITY OF VARIOUS MATERIALS

Material	No. of Analyses	Range	Arithmetic Mean
Igneous Rocks			
Weathered granite	8	0.34-0.57	0.45
Weathered gabbro	4	0.42-0.45	0.43
Basalt	94	0.03-0.35	0.17
Sedimentary Materials			
Sandstone	65	0.14-0.49	0.34
Siltstone	7	0.21-0.41	0.35
Sand (fine)	243	0.26-0.53	0.43
Sand (coarse)	26	0.31-0.46	0.39
Gravel (fine)	38	0.25-0.38	0.34
Gravel (coarse)	15	0.24-0.36	0.28
Silt	281	0.34-0.61	0.46
Clay	74	0.34-0.57	0.42
Limestone	74	0.07-0.56	0.3
Metamorphic Rocks			
Schist	18	0.04-0.49	0.38

Sources: From Mercer et al. (1982),
McWhorter and Sunada (1977),
Original reference Morris and Johnson, (1967).

Texture	Bulk Density g/cm^3	Average Wilting Point	Plant Available Water Inches/Ft
Sandy loam	1.6	0.057	1.66
Silt Loam	1.45	0.119	2
Loam	1.5	0.097	2.4
Sandy clay loam	1.45	0.137	1.66
Clay loam	1.45	0.157	1.9

TABLE 6-8. MEAN BULK DENSITY (g/cm3) FOR FIVE SOIL TEXTURAL CLASSIFICATIONSa,b

Soil Texture	Mean Value	Range Reported
Silt Loams	1.32	0.86 - 1.67
Clay and Clay Loams	1.3	0.94 - 1.54
Sandy Loams	1.49	1.25 - 1.76
Gravelly Silt Loams	1.22	1.02 - 1.58
Loams	1.42	1.16 - 1.58
All Soils	1.35	0.86 - 1.76

a Baes, C.F., III and R.D. Sharp. 1983. A Proposal for Estimation of Soil Leaching Constants for Use in Assessment Models. J. Environ. Qual. 12(1):17-28 (Original reference).

b From Dean et al. (1989)

TABLE 6-2. DESCRIPTIVE STATISTICS FOR SATURATED HYDRAULIC CONDUCTIVITY (cm hr-1)

Soil Type	Hydraulic Conductivity (Ks)* x	s	CV	n		
Clay**	0.2	0.42	210.3	114	cm/hr	17.52
Clay Loam	0.26	0.7	267.2	345	cm/hr	22.776
Loam	1.04	1.82	174.6	735	cm/hr	91.104
Loamy Sand	14.59	11.36	77.9	315	cm/hr	1278.084
Silt	0.25	0.33	129.9	88	cm/hr	21.9
Silt Loam	0.45	1.23	275.1	1093	cm/hr	39.42
Silty Clay	0.02	0.11	453.3	126	cm/hr	1.752
Silty Clay Loam	0.07	0.19	288.7	592	cm/hr	6.132
Sand	29.7	15.6	52.4	246	cm/hr	2601.72
Sandy Clay	0.12	0.28	234.1	46	cm/hr	10.512
Sandy Clay Loam	1.31	2.74	208.6	214	cm/hr	114.756
Sandy Loam	4.42	5.63	127	1183	cm/hr	387.192

* n = Sample size, = Mean, s = Standard deviation, CV = Coefficient of variation (percent)

** Agricultural soil, less than 60 percent clay

Sources: From Dean et al. (1989),
Original reference Carsel and Parrish (1988).

Saturated water content is the maximum volumetric amount of water in the soil when all pores are filled with water. Very often it is assumed that saturated water content equals the porosity n . However, in many cases qS is smaller than n due to the fact that small amounts of air will be trapped in very small pores. Residual water content can be defined as the asymptote of the pF-curve when h gets very high negative values. Usually qR is very small - on the order of 0.001--0.02 for coarse soils but gets as high values as 0.15..0.25 for heavy clay soils. Air entry point ha is

Soil texture. Fine-textured soils can hold much more organic matter than sandy soils for two reasons. First, clay particles form electrochemical bonds that hold organic compounds. Second, decomposition occurs faster in well-aerated sandy soils. A sandy loam rarely holds more than 2% organic matter.

The recharge rate in this model is the net amount of water that percolates directly into the aquifer system outside of the land disposal facility. The recharge is assumed to have no contamination and hence dilutes the groundwater contaminant plume. The recharge rate into the plume can be calculated in a variety of ways. One possibility is to use a model, such as HELP (Hydrologic Evaluation of Landfill Performance) (Schroeder et al., 1984), without any engineering controls (leachate collection system or a liner) to simulate the water balance for natural conditions.

The infiltration rate is the net amount of leachate that percolates into the aquifer system from a land disposal facility. Because of the use of engineering controls and the presence of non-native porous materials in the landfill facility, the infiltration rate will typically be different than the recharge rate. However, it can be estimated by similar

Most soils contain 2-10 percent organic matter. *The Importance of Soil Organic Matter: Key to Drought-Resistant Soil and Sustained Food Production. http://www.fao.org*

APPENDIX B

NMOCD APPROVAL OF STAGE 2 ABATEMENT PLAN

From:	Chase Acker
To:	Bruce McKenzie
Subject:	FW: Stage 2 Abatement Plan Approval: AP-72 Former State M-1 Tank Battery located in Unit Letter O of Section 18 in Township 17 South, Range 36 East, NMPM in Lea County, NM
Date:	Monday, April 14, 2014 1:56:01 PM

From: Griswold, Jim, EMNRD [mailto:Jim.Griswold@state.nm.us]
Sent: Thursday, June 27, 2013 5:14 PM
To: Larry Wooten
Cc: Hall, Sharon; Chase Acker
Subject: Stage 2 Abatement Plan Approval: AP-72 Former State M-1 Tank Battery located in Unit Letter O of Section 18 in Township 17 South, Range 36 East, NMPM in Lea County, NM

Mr. Wooten,

The Oil Conservation Division (OCD) has reviewed the Stage 2 Abatement Plan for the above-referenced site submitted on your behalf by Arcadis and dated 3/27/12. That plan has substantially met the requirements of 19.15.30 NMAC and is hereby approved. Please proceed with field activities.

Be advised this approval does not relieve Chesapeake of responsibility should the situation continue to pose a threat to groundwater, surface water, human health, or the environment. Furthermore, this approval does not relieve your responsibility for compliance with any federal, state, or local laws and/or regulations. Please retain a copy of this email for your files, as no hardcopy will be sent. If you have any questions, please feel free to contact me at any time.

Jim Griswold
Senior Hydrologist
EMNRD/Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, New Mexico 87505
505.476.3465
email: jim.griswold@state.nm.us

APPENDIX C

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Chase Acker
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 6/30/2023 12:38:27 PM

JOB DESCRIPTION

CHK STATE M
SDG NUMBER Property ID: 891077

JOB NUMBER

180-158312-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

my EOL

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
6/30/2023 12:38:27 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 180-158312-1
SDG: Property ID: 891077

Table of Contents

Case Narrative

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-158312-1
SDG: Property ID: 891077

Job ID: 180-158312-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-158312-1

Comments
No additional comments.

Receipt
The sample was received on 6/16/2023 9:50 AM. Unless otherwise noted below, the sample arrived in good condition, and where required, properly preserved and on ice.

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract Work
Method TO 15: This method was subcontracted to Eurofins Air Toxics. The subcontract laboratory certification is different from that of the facility issuing the final report.

Definitions/Glossary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-158312-1
SDG: Property ID: 891077

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-158312-1
SDG: Property ID: 891077

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-158312-1	20230613M-1	Air	06/13/23 15:00	06/16/23 09:50

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-158312-1
SDG: Property ID: 891077

Method	Method Description	Protocol	Laboratory
TO-15	TO-15	EPA	Eurofins

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Eurofins = Eurofins Air Toxics, 180 Blue Ravine Road, Suite B, Folsom, CA 95630

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6/30/2023
Mr. Ken Hayes
Eurofins Environment Testing
500 Wilson Pike Circle Suite 100

Brentwood TN 37027

Project Name: CHK STATE M
Project #: CHKSTATM
Workorder #: 2306418

Dear Mr. Ken Hayes

The following report includes the data for the above referenced project for sample(s) received on 6/16/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Brian Whittaker

Project Manager

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WORK ORDER #: 2306418

Work Order Summary

CLIENT:	Mr. Ken Hayes Eurofins Environment Testing 500 Wilson Pike Circle Suite 100 Brentwood, TN 37027	**BILL TO:**	Accounts Payable Eurofins Environment Testing 180 S Van Buren Ave. Barberton, OH 44203
PHONE:	800-765-0980	**P.O. #**	180-158312-1
FAX:	615-726-3404	**PROJECT #**	CHKSTATM CHK STATE M
DATE RECEIVED:	06/16/2023	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	06/30/2023		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	20230613M-1	TO-15	9.2 "Hg	1.8 psi
02A	Lab Blank	TO-15	NA	NA
03A	CCV	TO-15	NA	NA
04A	LCS	TO-15	NA	NA
04AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 06/30/23

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

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LABORATORY NARRATIVE
EPA Method TO-15
Eurofins Environment Testing
Workorder# 2306418

One 6 Liter Summa Canister sample was received on June 16, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TVOC (Total Volatile Organic Compounds) referenced to Hexane was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

TVOC (Total Volatile Organic Compounds) referenced to Hexane includes area counts for peaks that elute from Hexane minus 0.08 minutes to Naphthalene plus 0.08 minutes and quantitating the area based on the response factor of Hexane.

Dilution was performed on sample 20230613M-1 due to the presence of high level target species.

The presence of a closely eluting non-target peak in sample 20230613M-1 is interfering with the quantitation mass ion for 4-Ethyltoluene. The reported 4-Ethyltoluene concentration is flagged with a "CN" flag to indicate a high bias due to matrix contribution.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 20230613M-1

Lab ID#: 2306418-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	16	16	38	39
4-Ethyltoluene	1.6	10 CN	8.0	50 CN
1,2,4-Trimethylbenzene	1.6	6.2	8.0	30
1,3,5-Trimethylbenzene	1.6	9.3	8.0	46
m,p-Xylene	3.2	3.6	14	16
TVOC Ref. to Hexane	32	13000	110	46000

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Client Sample ID: 20230613M-1

Lab ID#: 2306418-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062917**	**Date of Collection:**	**6/13/23 3:00:00 PM**
Dil. Factor:	**3.24**	**Date of Analysis:**	**6/29/23 07:26 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	16	16	38	39
Benzene	1.6	Not Detected	5.2	Not Detected
alpha-Chlorotoluene	1.6	Not Detected	8.4	Not Detected
Bromodichloromethane	1.6	Not Detected	11	Not Detected
Bromoform	1.6	Not Detected	17	Not Detected
Bromomethane	16	Not Detected	63	Not Detected
2-Butanone (Methyl Ethyl Ketone)	6.5	Not Detected	19	Not Detected
Carbon Disulfide	6.5	Not Detected	20	Not Detected
Carbon Tetrachloride	1.6	Not Detected	10	Not Detected
Chlorobenzene	1.6	Not Detected	7.4	Not Detected
Dibromochloromethane	1.6	Not Detected	14	Not Detected
Chloroethane	6.5	Not Detected	17	Not Detected
Chloroform	1.6	Not Detected	7.9	Not Detected
Chloromethane	16	Not Detected	33	Not Detected
1,2-Dibromoethane (EDB)	1.6	Not Detected	12	Not Detected
1,2-Dichlorobenzene	1.6	Not Detected	9.7	Not Detected
1,3-Dichlorobenzene	1.6	Not Detected	9.7	Not Detected
1,4-Dichlorobenzene	1.6	Not Detected	9.7	Not Detected
1,1-Dichloroethane	1.6	Not Detected	6.6	Not Detected
Freon 12	1.6	Not Detected	8.0	Not Detected
1,2-Dichloroethane	1.6	Not Detected	6.6	Not Detected
1,1-Dichloroethene	1.6	Not Detected	6.4	Not Detected
cis-1,2-Dichloroethene	1.6	Not Detected	6.4	Not Detected
trans-1,2-Dichloroethene	1.6	Not Detected	6.4	Not Detected
1,2-Dichloropropane	1.6	Not Detected	7.5	Not Detected
cis-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
trans-1,3-Dichloropropene	1.6	Not Detected	7.4	Not Detected
Freon 114	1.6	Not Detected	11	Not Detected
Ethyl Benzene	1.6	Not Detected	7.0	Not Detected
4-Ethyltoluene	1.6	10 CN	8.0	50 CN
Hexachlorobutadiene	6.5	Not Detected	69	Not Detected
2-Hexanone	6.5	Not Detected	26	Not Detected
Methylene Chloride	16	Not Detected	56	Not Detected
4-Methyl-2-pentanone	1.6	Not Detected	6.6	Not Detected
Styrene	1.6	Not Detected	6.9	Not Detected
1,1,2,2-Tetrachloroethane	1.6	Not Detected	11	Not Detected
Tetrachloroethene	1.6	Not Detected	11	Not Detected
Toluene	3.2	Not Detected	12	Not Detected
1,2,4-Trichlorobenzene	6.5	Not Detected	48	Not Detected
1,1,1-Trichloroethane	1.6	Not Detected	8.8	Not Detected
1,1,2-Trichloroethane	1.6	Not Detected	8.8	Not Detected
Trichloroethene	1.6	Not Detected	8.7	Not Detected

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Client Sample ID: 20230613M-1

Lab ID#: 2306418-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062917**	**Date of Collection: 6/13/23 3:00:00 PM**	
Dil. Factor:	**3.24**	**Date of Analysis: 6/29/23 07:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	1.6	Not Detected	9.1	Not Detected
Freon 113	1.6	Not Detected	12	Not Detected
1,2,4-Trimethylbenzene	1.6	6.2	8.0	30
1,3,5-Trimethylbenzene	1.6	9.3	8.0	46
Vinyl Acetate	6.5	Not Detected	23	Not Detected
Vinyl Chloride	1.6	Not Detected	4.1	Not Detected
m,p-Xylene	3.2	3.6	14	16
o-Xylene	1.6	Not Detected	7.0	Not Detected
TVOC Ref. to Hexane	32	13000	110	46000

CN =See Case Narrative explanation

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	90	70-130
1,2-Dichloroethane-d4	106	70-130
4-Bromofluorobenzene	103	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2306418-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062906e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 01:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	5.0	Not Detected	12	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Freon 12	0.50	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2306418-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062906e**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 01:23 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TVOC Ref. to Hexane	10	Not Detected	35	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	119	70-130

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Client Sample ID: CCV

Lab ID#: 2306418-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:03 PM**	

Compound	%Recovery
Acetone	96
Benzene	95
alpha-Chlorotoluene	89
Bromodichloromethane	91
Bromoform	110
Bromomethane	100
2-Butanone (Methyl Ethyl Ketone)	91
Carbon Disulfide	104
Carbon Tetrachloride	88
Chlorobenzene	86
Dibromochloromethane	84
Chloroethane	106
Chloroform	92
Chloromethane	110
1,2-Dibromoethane (EDB)	82
1,2-Dichlorobenzene	102
1,3-Dichlorobenzene	100
1,4-Dichlorobenzene	90
1,1-Dichloroethane	92
Freon 12	105
1,2-Dichloroethane	86
1,1-Dichloroethene	105
cis-1,2-Dichloroethene	94
trans-1,2-Dichloroethene	100
1,2-Dichloropropane	86
cis-1,3-Dichloropropene	86
trans-1,3-Dichloropropene	84
Freon 114	118
Ethyl Benzene	92
4-Ethyltoluene	95
Hexachlorobutadiene	111
2-Hexanone	88
Methylene Chloride	100
4-Methyl-2-pentanone	90
Styrene	92
1,1,2,2-Tetrachloroethane	83
Tetrachloroethene	110
Toluene	88
1,2,4-Trichlorobenzene	108
1,1,1-Trichloroethane	90
1,1,2-Trichloroethane	86
Trichloroethene	89

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Client Sample ID: CCV

Lab ID#: 2306418-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:03 PM**	

Compound	%Recovery
Freon 11	90
Freon 113	110
1,2,4-Trimethylbenzene	89
1,3,5-Trimethylbenzene	84
Vinyl Acetate	90
Vinyl Chloride	114
m,p-Xylene	91
o-Xylene	89
TVOC Ref. to Hexane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	94	70-130
4-Bromofluorobenzene	118	70-130

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Client Sample ID: LCS

Lab ID#: 2306418-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:30 PM**	

Compound	%Recovery	Method Limits
Acetone	95	70-130
Benzene	92	70-130
alpha-Chlorotoluene	89	70-130
Bromodichloromethane	91	70-130
Bromoform	107	70-130
Bromomethane	99	70-130
2-Butanone (Methyl Ethyl Ketone)	89	70-130
Carbon Disulfide	104	70-130
Carbon Tetrachloride	88	70-130
Chlorobenzene	86	70-130
Dibromochloromethane	83	70-130
Chloroethane	105	70-130
Chloroform	88	70-130
Chloromethane	108	70-130
1,2-Dibromoethane (EDB)	91	70-130
1,2-Dichlorobenzene	101	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	89	70-130
1,1-Dichloroethane	91	70-130
Freon 12	99	70-130
1,2-Dichloroethane	84	70-130
1,1-Dichloroethene	100	70-130
cis-1,2-Dichloroethene	97	70-130
trans-1,2-Dichloroethene	99	70-130
1,2-Dichloropropane	83	70-130
cis-1,3-Dichloropropene	85	70-130
trans-1,3-Dichloropropene	86	70-130
Freon 114	115	70-130
Ethyl Benzene	92	70-130
4-Ethyltoluene	93	70-130
Hexachlorobutadiene	110	70-130
2-Hexanone	84	70-130
Methylene Chloride	95	70-130
4-Methyl-2-pentanone	85	70-130
Styrene	93	70-130
1,1,2,2-Tetrachloroethane	84	70-130
Tetrachloroethene	108	70-130
Toluene	85	70-130
1,2,4-Trichlorobenzene	106	70-130
1,1,1-Trichloroethane	90	70-130
1,1,2-Trichloroethane	87	70-130
Trichloroethene	90	70-130

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Client Sample ID: LCS

Lab ID#: 2306418-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:30 PM**	

Compound	%Recovery	Method Limits
Freon 11	88	70-130
Freon 113	104	70-130
1,2,4-Trimethylbenzene	90	70-130
1,3,5-Trimethylbenzene	86	70-130
Vinyl Acetate	114	70-130
Vinyl Chloride	112	70-130
m,p-Xylene	90	70-130
o-Xylene	90	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	101	70-130
1,2-Dichloroethane-d4	95	70-130
4-Bromofluorobenzene	118	70-130

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Client Sample ID: LCSD

Lab ID#: 2306418-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:57 PM**	

Compound	%Recovery	Method Limits
Acetone	92	70-130
Benzene	90	70-130
alpha-Chlorotoluene	89	70-130
Bromodichloromethane	89	70-130
Bromoform	112	70-130
Bromomethane	96	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
Carbon Disulfide	102	70-130
Carbon Tetrachloride	86	70-130
Chlorobenzene	86	70-130
Dibromochloromethane	81	70-130
Chloroethane	102	70-130
Chloroform	87	70-130
Chloromethane	104	70-130
1,2-Dibromoethane (EDB)	90	70-130
1,2-Dichlorobenzene	100	70-130
1,3-Dichlorobenzene	99	70-130
1,4-Dichlorobenzene	89	70-130
1,1-Dichloroethane	87	70-130
Freon 12	96	70-130
1,2-Dichloroethane	83	70-130
1,1-Dichloroethene	100	70-130
cis-1,2-Dichloroethene	88	70-130
trans-1,2-Dichloroethene	96	70-130
1,2-Dichloropropane	85	70-130
cis-1,3-Dichloropropene	86	70-130
trans-1,3-Dichloropropene	86	70-130
Freon 114	112	70-130
Ethyl Benzene	92	70-130
4-Ethyltoluene	91	70-130
Hexachlorobutadiene	108	70-130
2-Hexanone	84	70-130
Methylene Chloride	92	70-130
4-Methyl-2-pentanone	85	70-130
Styrene	92	70-130
1,1,2,2-Tetrachloroethane	83	70-130
Tetrachloroethene	108	70-130
Toluene	85	70-130
1,2,4-Trichlorobenzene	110	70-130
1,1,1-Trichloroethane	86	70-130
1,1,2-Trichloroethane	87	70-130
Trichloroethene	87	70-130

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Client Sample ID: LCSD

Lab ID#: 2306418-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91062905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 6/29/23 12:57 PM**	

Compound	%Recovery	Method Limits
Freon 11	85	70-130
Freon 113	102	70-130
1,2,4-Trimethylbenzene	88	70-130
1,3,5-Trimethylbenzene	85	70-130
Vinyl Acetate	111	70-130
Vinyl Chloride	109	70-130
m,p-Xylene	88	70-130
o-Xylene	89	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	91	70-130
4-Bromofluorobenzene	117	70-130

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Eurofins Air Toxics Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

eurofins | Air Toxics

SAMPLE RECEIPT SUMMARY

WORKORDER 2306418

Client

Mr. Ken Hayes
Eurofins Environment Testing
500 Wilson Pike Circle Suite 100
Brentwood, TN 37027

Phone

800-765-0980

Fax

615-726-3404

Sales Rep: TA

Date Promised: 06/29/23
Date Completed:
Date Received: 6/16/23
PO#:
Project#: CHKSTATM CHK STATE M

Total $: $ 170.00
Logged By: BJC

Fraction	Sample #	Analysis	Collected	Amount$
01A	20230613M-1	TO-15	6/13/2023	$150.00

Misc. Charges 6 Liter Summa Canister (1) @ $20.00 each., Shipment 154869 $20.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: EQUUS/23738

BILL TO: Accounts Payable
Eurofins Environment Testing
180 S Van Buren Ave.
Barberton, OH 44203

Analysis Code: TO-14A

TERMS:

Reporting Method: TO-15 (Sp)-Eurofins TA (CEC, OK)

CHAIN OF CUSTODY RECORD

2306418

No. 2733

EQUUS Environmental, LLC
(918) 921-5331

PROJECT NUMBER: CHKSTATM
PROJECT NAME: CHK STATE M
COC 1 of 1
SHIPPED TO: AIR TOXICS
PROJECT MANAGER: DAVID BRADY
TAT: STANDARD
PO# —
WO# —

SAMPLER'S PRINTED NAME: Riley Bowman
SAMPLERS SIGNATURE:

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	TO-15	*TVOC w/ HEXANE
—	—	202303 M-1 RE2				DR
6/13/23	1508	20230613M-1	Gas	1	X	X

* TVOC = C6 - C12

REMARKS
TAG# —
TAG #: Serial# N1831

Custody Seal Intact?
Yes No None Temp °C NA
Carrier: FedEx

TOTAL NUMBER OF CONTAINERS: 1

RELINQUISHED BY: — DATE 6/15/23 TIME 1700
RECEIVED BY: Armin D. EATL — DATE 6/16/23 TIME 0950
RELINQUISHED BY: — DATE — TIME —
RECEIVED BY: — DATE — TIME —

METHOD OF SHIPMENT: FEDEX
AIRBILL NUMBER: 6411 6733 3433
RECEIVED IN LABORATORY BY: — DATE — TIME —
Send PDF, EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com
LABORATORY CONTACT: KEN HAYES 615-301-5035
LABORATORY ADDRESS: 180 BLUE RAVINE RD STE B FOLSOM, CA 95630

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

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Method : TO-15 (Sp)-Eurofins TA (CEC, OK)

CAS Number	Compound	Rpt. Limit (ppbv)
67-64-1	Acetone	5.0
71-43-2	Benzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
75-27-4	Bromodichloromethane	0.50
75-25-2	Bromoform	0.50
74-83-9	Bromomethane	5.0
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
75-15-0	Carbon Disulfide	2.0
56-23-5	Carbon Tetrachloride	0.50
108-90-7	Chlorobenzene	0.50
124-48-1	Dibromochloromethane	0.50
75-00-3	Chloroethane	2.0
67-66-3	Chloroform	0.50
74-87-3	Chloromethane	5.0
106-93-4	1,2-Dibromoethane (EDB)	0.50
95-50-1	1,2-Dichlorobenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50
106-46-7	1,4-Dichlorobenzene	0.50
75-34-3	1,1-Dichloroethane	0.50
75-71-8	Freon 12	0.50
107-06-2	1,2-Dichloroethane	0.50
75-35-4	1,1-Dichloroethene	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
156-60-5	trans-1,2-Dichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
10061-02-6	trans-1,3-Dichloropropene	0.50
76-14-2	Freon 114	0.50
100-41-4	Ethyl Benzene	0.50
622-96-8	4-Ethyltoluene	0.50
87-68-3	Hexachlorobutadiene	2.0
591-78-6	2-Hexanone	2.0
75-09-2	Methylene Chloride	5.0
108-10-1	4-Methyl-2-pentanone	0.50
100-42-5	Styrene	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
127-18-4	Tetrachloroethene	0.50
108-88-3	Toluene	1.0
120-82-1	1,2,4-Trichlorobenzene	2.0
71-55-6	1,1,1-Trichloroethane	0.50

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Method : TO-15 (Sp)-Eurofins TA (CEC, OK)

CAS Number	Compound	Rpt. Limit (ppbv)
79-00-5	1,1,2-Trichloroethane	0.50
79-01-6	Trichloroethene	0.50
75-69-4	Freon 11	0.50
76-13-1	Freon 113	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
108-05-4	Vinyl Acetate	2.0
75-01-4	Vinyl Chloride	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
9999-9999-500	TVOC Ref. to Hexane	10

CAS Number	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation

Job Number: 180-158312-1
SDG Number: Property ID: 891077

Login Number: 158312
List Number: 1
Creator: Hayes, Ken

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Drury
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 6/27/2023 5:02:20 PM

JOB DESCRIPTION

CHK STATE M

JOB NUMBER

460-282888-1

Eurofins Edison
777 New Durham Road
Edison NJ 08817

See page two for job notes and contact information.

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization

Generated
6/27/2023 5:02:20 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 460-282888-1

Table of Contents

Definitions/Glossary

Client: Chesapeake Energy Corporation Job ID: 460-282888-1
Project/Site: CHK STATE M

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Chesapeake Energy Corporation Job ID: 460-282888-1
Project/Site: CHK STATE M

Job ID: 460-282888-1

Laboratory: Eurofins Edison

Narrative

Job Narrative
460-282888-1

Receipt
The samples were received on 6/16/2023 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.5°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Client Sample ID: DUP-1 — Lab Sample ID: 460-282888-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	335		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: DUP-2 — Lab Sample ID: 460-282888-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.939		0.500		ug/L	1		8260D	Total/NA
Ethylbenzene	15.3		0.500		ug/L	1		8260D	Total/NA
Xylenes, Total	4.71		1.00		ug/L	1		8260D	Total/NA

Client Sample ID: MW-1R — Lab Sample ID: 460-282888-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.885		0.500		ug/L	1		8260D	Total/NA
Ethylbenzene	12.7		0.500		ug/L	1		8260D	Total/NA
Xylenes, Total	3.62		1.00		ug/L	1		8260D	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 460-282888-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	356		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: Equipment Blank — Lab Sample ID: 460-282888-5

No Detections.

Client Sample ID: Trip Blank — Lab Sample ID: 460-282888-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-282888-1
Project/Site: CHK STATE M

Client Sample ID: DUP-1 Lab Sample ID: 460-282888-1
Date Collected: 06/14/23 00:00 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	335		10.0		mg/L			06/25/23 04:02	10

Client Sample ID: DUP-2 Lab Sample ID: 460-282888-2
Date Collected: 06/13/23 00:00 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.939		0.500		ug/L			06/24/23 17:31	1
Ethylbenzene	15.3		0.500		ug/L			06/24/23 17:31	1
Toluene	ND		0.500		ug/L			06/24/23 17:31	1
Xylenes, Total	4.71		1.00		ug/L			06/24/23 17:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*114*		*76 - 120*		*06/24/23 17:31*	*1*
Dibromofluoromethane (Surr)	*110*		*77 - 132*		*06/24/23 17:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 128*		*06/24/23 17:31*	*1*
Toluene-d8 (Surr)	*108*		*80 - 120*		*06/24/23 17:31*	*1*

Client Sample ID: MW-1R Lab Sample ID: 460-282888-3
Date Collected: 06/13/23 16:35 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.885		0.500		ug/L			06/24/23 17:53	1
Ethylbenzene	12.7		0.500		ug/L			06/24/23 17:53	1
Toluene	ND		0.500		ug/L			06/24/23 17:53	1
Xylenes, Total	3.62		1.00		ug/L			06/24/23 17:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*112*		*76 - 120*		*06/24/23 17:53*	*1*
Dibromofluoromethane (Surr)	*106*		*77 - 132*		*06/24/23 17:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 128*		*06/24/23 17:53*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/24/23 17:53*	*1*

Client Sample ID: MW-4 Lab Sample ID: 460-282888-4
Date Collected: 06/14/23 13:30 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	356		10.0		mg/L			06/25/23 05:02	10

Client Sample ID: Equipment Blank Lab Sample ID: 460-282888-5
Date Collected: 06/13/23 14:00 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			06/24/23 16:28	1
Ethylbenzene	ND		0.500		ug/L			06/24/23 16:28	1

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-282888-1
Project/Site: CHK STATE M

Client Sample ID: Equipment Blank
Lab Sample ID: 460-282888-5
Date Collected: 06/13/23 14:00 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	ND		0.500		ug/L			06/24/23 16:28	1
Xylenes, Total	ND		1.00		ug/L			06/24/23 16:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*113*		*76 - 120*		*06/24/23 16:28*	*1*
Dibromofluoromethane (Surr)	*113*		*77 - 132*		*06/24/23 16:28*	*1*
1,2-Dichloroethane-d4 (Surr)	*114*		*70 - 128*		*06/24/23 16:28*	*1*
Toluene-d8 (Surr)	*106*		*80 - 120*		*06/24/23 16:28*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			06/25/23 05:46	1

Client Sample ID: Trip Blank
Lab Sample ID: 460-282888-6
Date Collected: 06/13/23 00:00 **Matrix: Water**
Date Received: 06/16/23 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			06/24/23 16:49	1
Ethylbenzene	ND		0.500		ug/L			06/24/23 16:49	1
Toluene	ND		0.500		ug/L			06/24/23 16:49	1
Xylenes, Total	ND		1.00		ug/L			06/24/23 16:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*111*		*76 - 120*		*06/24/23 16:49*	*1*
Dibromofluoromethane (Surr)	*105*		*77 - 132*		*06/24/23 16:49*	*1*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 128*		*06/24/23 16:49*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/24/23 16:49*	*1*

Surrogate Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(76-120)	(77-132)	(70-128)	(80-120)
460-282888-2	DUP-2	114	110	109	108
460-282888-3	MW-1R	112	106	105	103
460-282888-5	Equipment Blank	113	113	114	106
460-282888-6	Trip Blank	111	105	105	103
LCS 460-917400/4	Lab Control Sample	99	95	94	92
LCSD 460-917400/5	Lab Control Sample Dup	101	97	92	100
MB 460-917400/8	Method Blank	102	98	97	99

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-917400/8
Matrix: Water
Analysis Batch: 917400

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			06/24/23 10:29	1
Ethylbenzene	ND		0.500		ug/L			06/24/23 10:29	1
Toluene	ND		0.500		ug/L			06/24/23 10:29	1
Xylenes, Total	ND		1.00		ug/L			06/24/23 10:29	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*102*		*76 - 120*		*06/24/23 10:29*	*1*
Dibromofluoromethane (Surr)	*98*		*77 - 132*		*06/24/23 10:29*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 128*		*06/24/23 10:29*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*06/24/23 10:29*	*1*

Lab Sample ID: LCS 460-917400/4
Matrix: Water
Analysis Batch: 917400

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	17.95		ug/L		90	71 - 126
Ethylbenzene	20.0	18.33		ug/L		92	78 - 120
Toluene	20.0	18.26		ug/L		91	78 - 120
Xylenes, Total	40.0	37.68		ug/L		94	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*99*		*76 - 120*
Dibromofluoromethane (Surr)	*95*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*94*		*70 - 128*
Toluene-d8 (Surr)	*92*		*80 - 120*

Lab Sample ID: LCSD 460-917400/5
Matrix: Water
Analysis Batch: 917400

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	20.0	19.73		ug/L		99	71 - 126	9	30
Ethylbenzene	20.0	19.89		ug/L		99	78 - 120	8	30
Toluene	20.0	19.38		ug/L		97	78 - 120	6	30
Xylenes, Total	40.0	39.90		ug/L		100	80 - 120	6	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*101*		*76 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*92*		*70 - 128*
Toluene-d8 (Surr)	*100*		*80 - 120*

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 460-917460/3
Matrix: Water
Analysis Batch: 917460

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			06/24/23 20:36	1

Lab Sample ID: LCS 460-917460/5
Matrix: Water
Analysis Batch: 917460

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			3.20	3.323		mg/L		104	90 - 110		

Lab Sample ID: LCSD 460-917460/6
Matrix: Water
Analysis Batch: 917460

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			3.20	3.478		mg/L		109	90 - 110	5	15

QC Association Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

GC/MS VOA

Analysis Batch: 917400

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-282888-2	DUP-2	Total/NA	Water	8260D	
460-282888-3	MW-1R	Total/NA	Water	8260D	
460-282888-5	Equipment Blank	Total/NA	Water	8260D	
460-282888-6	Trip Blank	Total/NA	Water	8260D	
MB 460-917400/8	Method Blank	Total/NA	Water	8260D	
LCS 460-917400/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-917400/5	Lab Control Sample Dup	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 917460

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-282888-1	DUP-1	Total/NA	Water	300.0	
460-282888-4	MW-4	Total/NA	Water	300.0	
460-282888-5	Equipment Blank	Total/NA	Water	300.0	
MB 460-917460/3	Method Blank	Total/NA	Water	300.0	
LCS 460-917460/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 460-917460/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Client Sample ID: DUP-1
Date Collected: 06/14/23 00:00
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	917460	OXG	EET EDI	06/25/23 04:02

Client Sample ID: DUP-2
Date Collected: 06/13/23 00:00
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	917400	KLB	EET EDI	06/24/23 17:31

Client Sample ID: MW-1R
Date Collected: 06/13/23 16:35
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	917400	KLB	EET EDI	06/24/23 17:53

Client Sample ID: MW-4
Date Collected: 06/14/23 13:30
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	917460	OXG	EET EDI	06/25/23 05:02

Client Sample ID: Equipment Blank
Date Collected: 06/13/23 14:00
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	917400	KLB	EET EDI	06/24/23 16:28
Total/NA	Analysis	300.0		1	917460	OXG	EET EDI	06/25/23 05:46

Client Sample ID: Trip Blank
Date Collected: 06/13/23 00:00
Date Received: 06/16/23 10:00

Lab Sample ID: 460-282888-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	917400	KLB	EET EDI	06/24/23 16:49

Laboratory References:
EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Chesapeake Energy Corporation Job ID: 460-282888-1
Project/Site: CHK STATE M

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-23
Massachusetts	State	M-NJ312	06-30-23
New Jersey	NELAP	12028	06-30-23
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
300.0	Anions, Ion Chromatography	EPA	EET EDI
5030C	Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-282888-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-282888-1	DUP-1	Water	06/14/23 00:00	06/16/23 10:00
460-282888-2	DUP-2	Water	06/13/23 00:00	06/16/23 10:00
460-282888-3	MW-1R	Water	06/13/23 16:35	06/16/23 10:00
460-282888-4	MW-4	Water	06/14/23 13:30	06/16/23 10:00
460-282888-5	Equipment Blank	Water	06/13/23 14:00	06/16/23 10:00
460-282888-6	Trip Blank	Water	06/13/23 00:00	06/16/23 10:00

CHAIN OF CUSTODY RECORD

No. 1857

EQUUS

PROJECT NUMBER: CHK SEATM	PROJECT NAME: CHK STATE M	COC 1 of 1	
SHIPPED TO:	PROJECT MANAGER: David Brady	TAT: Standard	
SAMPLER'S PRINTED NAME: Riley O'Bannon		ASOW: 282888	
SAMPLER'S SIGNATURE:			

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	300 Chloride	8260 BTEX	Temp	REMARKS
6/14/23	0000	DUP-1	w	1	X			
6/13/23	0000	DUP-2	w	3		X		
6/13/23	1635	MW-1R	w	3		X		
6/14/23	1330	MW-4	w	1	X			
6/13/23	1400	Equipment Blank	w	4	X	X		
6/13/23	0000	Trip Blank	w	2		X		
6/13/23	0000	Temp Blank	w	1			X	

460-282888 Chain of Custody

TOTAL NUMBER OF CONTAINERS →			
RELINQUISHED BY	DATE 6/15/23	RECEIVED BY: Angela Casilla via FEDEX	DATE 6/16/23
	TIME 1300		TIME 10:00
RELINQUISHED BY	DATE	RECEIVED BY:	DATE
	TIME		TIME
METHOD OF SHIPMENT: FedEx		AIRBILL NUMBER: 5881 4557 0890	
RECEIVED IN LABORATORY BY:	DATE	Send PDF EDD, and INVOICE (if applicable) to:	2.5/25 IR#9
	TIME		
LABORATORY CONTACT: Ken Hayes (615) 301 5035		LABORATORY ADDRESS: 777 New Durkham rd, Edison, NJ 08817	

POINT OF ORIGIN:

CJ: 2183630

Job Number: 182888

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	2.5 °C	2.8 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below.

Sample No(s). adjusted _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s) _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

Initials: AC Date: 6/16/23

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation Job Number: 460-282888-1

Login Number: 282888 **List Source: Eurofins Edison**
List Number: 1
Creator: Rivera, Kenneth

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	2183630
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chase Acker
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 9/27/2023 9:18:11 AM

JOB DESCRIPTION

CHK STATE M
SDG NUMBER Property ID: 891077

JOB NUMBER

180-162480-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
9/27/2023 9:18:11 AM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 180-162480-1
SDG: Property ID: 891077

Table of Contents

Case Narrative

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-162480-1
SDG: Property ID: 891077

Job ID: 180-162480-1

Laboratory: Eurofins Pittsburgh

Narrative

Job Narrative
180-162480-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 9/8/2023 10:45 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

Subcontract Work
Method TO 15: This method was subcontracted to Eurofins Air Toxics, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

Definitions/Glossary

Client: Chesapeake Energy Corporation Job ID: 180-162480-1
Project/Site: CHK STATE M SDG: Property ID: 891077

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-162480-1
SDG: Property ID: 891077

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-162480-1	20230906M-1	Air	09/06/23 12:43	09/08/23 10:45

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-162480-1
SDG: Property ID: 891077

Method	Method Description	Protocol	Laboratory
TO-15	TO-15	EPA	Eurofins

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Eurofins = Eurofins Air Toxics, 180 Blue Ravine Road, Suite B, Folsom, CA 95630

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9/22/2023
Mr. Ken Hayes
Eurofins Environment Testing
500 Wilson Pike Circle Suite 100

Brentwood TN 37027

Project Name: CHK STATE M
Project #: CHKSTATM
Workorder #: 2309184

Dear Mr. Ken Hayes

The following report includes the data for the above referenced project for sample(s) received on 9/8/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Brian Whittaker

Project Manager

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WORK ORDER #: 2309184

Work Order Summary

CLIENT:	Mr. Ken Hayes Eurofins Environment Testing 500 Wilson Pike Circle Suite 100 Brentwood, TN 37027	**BILL TO:**	Accounts Payable Eurofins Environment Testing 180 S Van Buren Ave. Barberton, OH 44203
PHONE:	800-765-0980	**P.O. #**	180-162480-1
FAX:	615-726-3404	**PROJECT #**	CHKSTATM CHK STATE M
DATE RECEIVED:	09/08/2023	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	09/22/2023		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	20230906M-1	TO-15	10.0 "Hg	2 psi
02A	Lab Blank	TO-15	NA	NA
03A	CCV	TO-15	NA	NA
04A	LCS	TO-15	NA	NA
04AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 09/22/23

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

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LABORATORY NARRATIVE
EPA Method TO-15
Eurofins Environment Testing
Workorder# 2309184

One 6 Liter Summa Canister sample was received on September 08, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TVOC (Total Volatile Organic Compounds) referenced to Hexane was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

TVOC (Total Volatile Organic Compounds) referenced to Hexane includes area counts for peaks that elute from Hexane minus 0.08 minutes to Naphthalene plus 0.08 minutes and quantitating the area based on the response factor of Hexane.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 20230906M-1

Lab ID#: 2309184-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	8.5	9.3	20	22
4-Ethyltoluene	0.85	3.7	4.2	18
1,2,4-Trimethylbenzene	0.85	2.6	4.2	13
1,3,5-Trimethylbenzene	0.85	4.3	4.2	21
m,p-Xylene	1.7	1.2 J	7.4	5.3 J
TVOC Ref. to Hexane	17	3400	60	12000

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Client Sample ID: 20230906M-1

Lab ID#: 2309184-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091918**	**Date of Collection:**	**9/6/23 12:43:00 PM**
Dil. Factor:	**1.70**	**Date of Analysis:**	**9/19/23 08:57 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	8.5	9.3	20	22
Benzene	0.85	Not Detected	2.7	Not Detected
alpha-Chlorotoluene	0.85	Not Detected	4.4	Not Detected
Bromodichloromethane	0.85	Not Detected	5.7	Not Detected
Bromoform	0.85	Not Detected	8.8	Not Detected
Bromomethane	8.5	Not Detected	33	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.4	Not Detected	10	Not Detected
Carbon Disulfide	3.4	Not Detected	10	Not Detected
Carbon Tetrachloride	0.85	Not Detected	5.3	Not Detected
Chlorobenzene	0.85	Not Detected	3.9	Not Detected
Dibromochloromethane	0.85	Not Detected	7.2	Not Detected
Chloroethane	3.4	Not Detected	9.0	Not Detected
Chloroform	0.85	Not Detected	4.2	Not Detected
Chloromethane	8.5	Not Detected	18	Not Detected
1,2-Dibromoethane (EDB)	0.85	Not Detected	6.5	Not Detected
1,2-Dichlorobenzene	0.85	Not Detected	5.1	Not Detected
1,3-Dichlorobenzene	0.85	Not Detected	5.1	Not Detected
1,4-Dichlorobenzene	0.85	Not Detected	5.1	Not Detected
1,1-Dichloroethane	0.85	Not Detected	3.4	Not Detected
Freon 12	0.85	Not Detected	4.2	Not Detected
1,2-Dichloroethane	0.85	Not Detected	3.4	Not Detected
1,1-Dichloroethene	0.85	Not Detected	3.4	Not Detected
cis-1,2-Dichloroethene	0.85	Not Detected	3.4	Not Detected
trans-1,2-Dichloroethene	0.85	Not Detected	3.4	Not Detected
1,2-Dichloropropane	0.85	Not Detected	3.9	Not Detected
cis-1,3-Dichloropropene	0.85	Not Detected	3.8	Not Detected
trans-1,3-Dichloropropene	0.85	Not Detected	3.8	Not Detected
Freon 114	0.85	Not Detected	5.9	Not Detected
Ethyl Benzene	0.85	Not Detected	3.7	Not Detected
4-Ethyltoluene	0.85	3.7	4.2	18
Hexachlorobutadiene	3.4	Not Detected	36	Not Detected
2-Hexanone	3.4	Not Detected	14	Not Detected
Methylene Chloride	8.5	Not Detected	30	Not Detected
4-Methyl-2-pentanone	0.85	Not Detected	3.5	Not Detected
Styrene	0.85	Not Detected	3.6	Not Detected
1,1,2,2-Tetrachloroethane	0.85	Not Detected	5.8	Not Detected
Tetrachloroethene	0.85	Not Detected	5.8	Not Detected
Toluene	1.7	Not Detected	6.4	Not Detected
1,2,4-Trichlorobenzene	3.4	Not Detected	25	Not Detected
1,1,1-Trichloroethane	0.85	Not Detected	4.6	Not Detected
1,1,2-Trichloroethane	0.85	Not Detected	4.6	Not Detected
Trichloroethene	0.85	Not Detected	4.6	Not Detected

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Client Sample ID: 20230906M-1

Lab ID#: 2309184-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091918**	**Date of Collection: 9/6/23 12:43:00 PM**	
Dil. Factor:	**1.70**	**Date of Analysis: 9/19/23 08:57 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.85	Not Detected	4.8	Not Detected
Freon 113	0.85	Not Detected	6.5	Not Detected
1,2,4-Trimethylbenzene	0.85	2.6	4.2	13
1,3,5-Trimethylbenzene	0.85	4.3	4.2	21
Vinyl Acetate	3.4	Not Detected	12	Not Detected
Vinyl Chloride	0.85	Not Detected	2.2	Not Detected
m,p-Xylene	1.7	1.2 J	7.4	5.3 J
o-Xylene	0.85	Not Detected	3.7	Not Detected
TVOC Ref. to Hexane	17	3400	60	12000

J = Estimated value.

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	88	70-130
1,2-Dichloroethane-d4	87	70-130
4-Bromofluorobenzene	93	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2309184-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091907d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 12:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	5.0	Not Detected	12	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Freon 12	0.50	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2309184-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091907d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 12:31 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TVOC Ref. to Hexane	10	Not Detected	35	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	92	70-130
4-Bromofluorobenzene	92	70-130

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Client Sample ID: CCV

Lab ID#: 2309184-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 10:52 AM**	

Compound	%Recovery
Acetone	82
Benzene	96
alpha-Chlorotoluene	92
Bromodichloromethane	93
Bromoform	96
Bromomethane	90
2-Butanone (Methyl Ethyl Ketone)	93
Carbon Disulfide	91
Carbon Tetrachloride	89
Chlorobenzene	100
Dibromochloromethane	97
Chloroethane	90
Chloroform	96
Chloromethane	92
1,2-Dibromoethane (EDB)	93
1,2-Dichlorobenzene	96
1,3-Dichlorobenzene	99
1,4-Dichlorobenzene	96
1,1-Dichloroethane	86
Freon 12	87
1,2-Dichloroethane	87
1,1-Dichloroethene	96
cis-1,2-Dichloroethene	99
trans-1,2-Dichloroethene	92
1,2-Dichloropropane	92
cis-1,3-Dichloropropene	92
trans-1,3-Dichloropropene	94
Freon 114	85
Ethyl Benzene	100
4-Ethyltoluene	100
Hexachlorobutadiene	101
2-Hexanone	89
Methylene Chloride	87
4-Methyl-2-pentanone	81
Styrene	96
1,1,2,2-Tetrachloroethane	95
Tetrachloroethene	104
Toluene	94
1,2,4-Trichlorobenzene	100
1,1,1-Trichloroethane	90
1,1,2-Trichloroethane	93
Trichloroethene	92

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Client Sample ID: CCV

Lab ID#: 2309184-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091903**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 10:52 AM**	

Compound	%Recovery
Freon 11	84
Freon 113	87
1,2,4-Trimethylbenzene	99
1,3,5-Trimethylbenzene	98
Vinyl Acetate	88
Vinyl Chloride	92
m,p-Xylene	99
o-Xylene	97
TVOC Ref. to Hexane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130
1,2-Dichloroethane-d4	83	70-130
4-Bromofluorobenzene	89	70-130

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Client Sample ID: LCS

Lab ID#: 2309184-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 11:16 AM**	

Compound	%Recovery	Method Limits
Acetone	76	70-130
Benzene	97	70-130
alpha-Chlorotoluene	95	70-130
Bromodichloromethane	91	70-130
Bromoform	96	70-130
Bromomethane	80	70-130
2-Butanone (Methyl Ethyl Ketone)	91	70-130
Carbon Disulfide	86	70-130
Carbon Tetrachloride	90	70-130
Chlorobenzene	103	70-130
Dibromochloromethane	96	70-130
Chloroethane	79	70-130
Chloroform	93	70-130
Chloromethane	85	70-130
1,2-Dibromoethane (EDB)	102	70-130
1,2-Dichlorobenzene	99	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	99	70-130
1,1-Dichloroethane	84	70-130
Freon 12	80	70-130
1,2-Dichloroethane	86	70-130
1,1-Dichloroethene	86	70-130
cis-1,2-Dichloroethene	96	70-130
trans-1,2-Dichloroethene	86	70-130
1,2-Dichloropropane	91	70-130
cis-1,3-Dichloropropene	94	70-130
trans-1,3-Dichloropropene	94	70-130
Freon 114	78	70-130
Ethyl Benzene	104	70-130
4-Ethyltoluene	102	70-130
Hexachlorobutadiene	107	70-130
2-Hexanone	96	70-130
Methylene Chloride	78	70-130
4-Methyl-2-pentanone	87	70-130
Styrene	101	70-130
1,1,2,2-Tetrachloroethane	100	70-130
Tetrachloroethene	104	70-130
Toluene	95	70-130
1,2,4-Trichlorobenzene	108	70-130
1,1,1-Trichloroethane	89	70-130
1,1,2-Trichloroethane	95	70-130
Trichloroethene	91	70-130

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Client Sample ID: LCS

Lab ID#: 2309184-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091904**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 11:16 AM**	

Compound	%Recovery	Method Limits
Freon 11	79	70-130
Freon 113	84	70-130
1,2,4-Trimethylbenzene	104	70-130
1,3,5-Trimethylbenzene	102	70-130
Vinyl Acetate	118	70-130
Vinyl Chloride	82	70-130
m,p-Xylene	98	70-130
o-Xylene	101	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	90	70-130

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Client Sample ID: LCSD

Lab ID#: 2309184-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 11:39 AM**	

Compound	%Recovery	Method Limits
Acetone	76	70-130
Benzene	96	70-130
alpha-Chlorotoluene	94	70-130
Bromodichloromethane	90	70-130
Bromoform	95	70-130
Bromomethane	79	70-130
2-Butanone (Methyl Ethyl Ketone)	90	70-130
Carbon Disulfide	84	70-130
Carbon Tetrachloride	88	70-130
Chlorobenzene	102	70-130
Dibromochloromethane	96	70-130
Chloroethane	75	70-130
Chloroform	92	70-130
Chloromethane	83	70-130
1,2-Dibromoethane (EDB)	102	70-130
1,2-Dichlorobenzene	99	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	99	70-130
1,1-Dichloroethane	82	70-130
Freon 12	80	70-130
1,2-Dichloroethane	84	70-130
1,1-Dichloroethene	84	70-130
cis-1,2-Dichloroethene	94	70-130
trans-1,2-Dichloroethene	86	70-130
1,2-Dichloropropane	91	70-130
cis-1,3-Dichloropropene	94	70-130
trans-1,3-Dichloropropene	92	70-130
Freon 114	76	70-130
Ethyl Benzene	104	70-130
4-Ethyltoluene	102	70-130
Hexachlorobutadiene	105	70-130
2-Hexanone	96	70-130
Methylene Chloride	76	70-130
4-Methyl-2-pentanone	87	70-130
Styrene	101	70-130
1,1,2,2-Tetrachloroethane	98	70-130
Tetrachloroethene	104	70-130
Toluene	95	70-130
1,2,4-Trichlorobenzene	107	70-130
1,1,1-Trichloroethane	88	70-130
1,1,2-Trichloroethane	93	70-130
Trichloroethene	91	70-130

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Client Sample ID: LCSD

Lab ID#: 2309184-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91091905**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/19/23 11:39 AM**	

Compound	%Recovery	Method Limits
Freon 11	78	70-130
Freon 113	82	70-130
1,2,4-Trimethylbenzene	103	70-130
1,3,5-Trimethylbenzene	102	70-130
Vinyl Acetate	116	70-130
Vinyl Chloride	81	70-130
m,p-Xylene	100	70-130
o-Xylene	100	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	84	70-130
4-Bromofluorobenzene	89	70-130

CHAIN OF CUSTODY RECORD

No. 2589

EQUUS Environmental, LLC
(918) 921-5331

PROJECT NUMBER:	CHKSTATM
PROJECT NAME:	CHK STATE M
COC	1 of 1
SHIPPED TO:	AIR TOXICS
PROJECT MANAGER:	DAVID BRADY
TAT:	STANDARD
SAMPLER'S PRINTED NAME:	Terry Fisher
SAMPLERS SIGNATURE:	
PO#	
WO#	

* TVOC = $C_6 - C_{12}$

	Date	Time	Sample ID	Sample Matrix	# of Sample Containers	TO-15	* TVOC as HEXANE	REMARKS
01A	9-6-23	1243	20230906M-1	Air	1	X	X	TAG #

TOTAL NUMBER OF CONTAINERS: 1

RELINQUISHED BY:	DATE 9-6-23	RECEIVED BY:	DATE 9/8/23
	TIME 1550		TIME 1045
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
	TIME		TIME

2309184

METHOD OF SHIPMENT: FEDEX

AIRBILL NUMBER: Fedex 6411 6738 0303

RECEIVED IN LABORATORY BY: DATE / TIME

Send PDF, EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: KEN HAYES 615-301-5035

LABORATORY ADDRESS: 180 BLUE RAVINE RD STE B FOLSOM, CA 95630

Custody Seal Intact? Yes No None Temp °C 0.1

Carrier: FedEX

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation

Job Number: 180-162480-1
SDG Number: Property ID: 891077

Login Number: 162480
List Number: 1
Creator: Hayes, Ken

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Drury
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 9/25/2023 5:11:54 PM

JOB DESCRIPTION

CHK STATE M

JOB NUMBER

460-287822-1

Eurofins Edison
777 New Durham Road
Edison NJ 08817

See page two for job notes and contact information.

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization

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Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 460-287822-1

Table of Contents

Definitions/Glossary

Client: Chesapeake Energy Corporation Job ID: 460-287822-1
Project/Site: CHK STATE M

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Job ID: 460-287822-1

Laboratory: Eurofins Edison

Narrative

Job Narrative
460-287822-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 9/7/2023 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.3°C

Receipt Exceptions
Insufficient sample volume was provided for the following sample for the VOC analysis: Dup (460-287822-4). Containers for VOC were not received.

GC/MS VOA
Method 8260D_LL: The laboratory control sample (LCS) for analytical batch 460-931930 recovered outside control limits for the following analyte: Toluene (biased low).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Chesapeake Energy Corporation Job ID: 460-287822-1
Project/Site: CHK STATE M

Client Sample ID: EQ Blank — Lab Sample ID: 460-287822-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	11.8		1.00		mg/L	1		300.0	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 460-287822-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	402		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: MW-1R — Lab Sample ID: 460-287822-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.637		0.500		ug/L	1		8260D	Total/NA
Ethylbenzene	2.63		0.500		ug/L	1		8260D	Total/NA

Client Sample ID: Dup — Lab Sample ID: 460-287822-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	391		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: Trip — Lab Sample ID: 460-287822-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-287822-1
Project/Site: CHK STATE M

Client Sample ID: EQ Blank — Lab Sample ID: 460-287822-1

Date Collected: 09/06/23 07:40 **Matrix: Water**
Date Received: 09/07/23 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			09/13/23 23:37	1
Ethylbenzene	ND		0.500		ug/L			09/13/23 23:37	1
Toluene	ND	*-	0.500		ug/L			09/13/23 23:37	1
Xylenes, Total	ND		1.00		ug/L			09/13/23 23:37	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*108*		*76 - 120*		*09/13/23 23:37*	*1*
Dibromofluoromethane (Surr)	*106*		*77 - 132*		*09/13/23 23:37*	*1*
1,2-Dichloroethane-d4 (Surr)	*88*		*70 - 128*		*09/13/23 23:37*	*1*
Toluene-d8 (Surr)	*104*		*80 - 120*		*09/13/23 23:37*	*1*

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**11.8**		1.00		mg/L			09/14/23 23:55	1

Client Sample ID: MW-4 — Lab Sample ID: 460-287822-2

Date Collected: 09/06/23 09:35 **Matrix: Water**
Date Received: 09/07/23 10:30

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**402**		10.0		mg/L			09/15/23 00:10	10

Client Sample ID: MW-1R — Lab Sample ID: 460-287822-3

Date Collected: 09/06/23 11:40 **Matrix: Water**
Date Received: 09/07/23 10:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.637**		0.500		ug/L			09/14/23 04:36	1
Ethylbenzene	**2.63**		0.500		ug/L			09/14/23 04:36	1
Toluene	ND	*-	0.500		ug/L			09/14/23 04:36	1
Xylenes, Total	ND		1.00		ug/L			09/14/23 04:36	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*104*		*76 - 120*		*09/14/23 04:36*	*1*
Dibromofluoromethane (Surr)	*104*		*77 - 132*		*09/14/23 04:36*	*1*
1,2-Dichloroethane-d4 (Surr)	*83*		*70 - 128*		*09/14/23 04:36*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/14/23 04:36*	*1*

Client Sample ID: Dup — Lab Sample ID: 460-287822-4

Date Collected: 09/06/23 00:00 **Matrix: Water**
Date Received: 09/07/23 10:30

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**391**		10.0		mg/L			09/15/23 01:10	10

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-287822-1
Project/Site: CHK STATE M

Client Sample ID: Trip
Date Collected: 09/06/23 11:40
Date Received: 09/07/23 10:30

Lab Sample ID: 460-287822-5
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			09/13/23 23:14	1
Ethylbenzene	ND		0.500		ug/L			09/13/23 23:14	1
Toluene	ND	*-	0.500		ug/L			09/13/23 23:14	1
Xylenes, Total	ND		1.00		ug/L			09/13/23 23:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*76 - 120*		*09/13/23 23:14*	*1*
Dibromofluoromethane (Surr)	*107*		*77 - 132*		*09/13/23 23:14*	*1*
1,2-Dichloroethane-d4 (Surr)	*85*		*70 - 128*		*09/13/23 23:14*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*09/13/23 23:14*	*1*

Surrogate Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(76-120)	(77-132)	(70-128)	(80-120)
460-287822-1	EQ Blank	108	106	88	104
460-287822-3	MW-1R	104	104	83	102
460-287822-5	Trip	105	107	85	103
LCS 460-931930/4	Lab Control Sample	106	100	79	102
LCSD 460-931930/5	Lab Control Sample Dup	105	97	78	102
MB 460-931930/9	Method Blank	105	104	84	105

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-931930/9
Matrix: Water
Analysis Batch: 931930

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			09/13/23 20:10	1
Ethylbenzene	ND		0.500		ug/L			09/13/23 20:10	1
Toluene	ND		0.500		ug/L			09/13/23 20:10	1
Xylenes, Total	ND		1.00		ug/L			09/13/23 20:10	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*105*		*76 - 120*		*09/13/23 20:10*	*1*
Dibromofluoromethane (Surr)	*104*		*77 - 132*		*09/13/23 20:10*	*1*
1,2-Dichloroethane-d4 (Surr)	*84*		*70 - 128*		*09/13/23 20:10*	*1*
Toluene-d8 (Surr)	*105*		*80 - 120*		*09/13/23 20:10*	*1*

Lab Sample ID: LCS 460-931930/4
Matrix: Water
Analysis Batch: 931930

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	15.74		ug/L		79	71 - 126
Ethylbenzene	20.0	16.17		ug/L		81	78 - 120
Toluene	20.0	15.40	*-	ug/L		77	78 - 120
Xylenes, Total	40.0	33.63		ug/L		84	80 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*106*		*76 - 120*
Dibromofluoromethane (Surr)	*100*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*79*		*70 - 128*
Toluene-d8 (Surr)	*102*		*80 - 120*

Lab Sample ID: LCSD 460-931930/5
Matrix: Water
Analysis Batch: 931930

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	20.0	16.32		ug/L		82	71 - 126	4	30
Ethylbenzene	20.0	16.47		ug/L		82	78 - 120	2	30
Toluene	20.0	15.62		ug/L		78	78 - 120	1	30
Xylenes, Total	40.0	33.78		ug/L		84	80 - 120	0	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*105*		*76 - 120*
Dibromofluoromethane (Surr)	*97*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*78*		*70 - 128*
Toluene-d8 (Surr)	*102*		*80 - 120*

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 460-932202/3
Matrix: Water
Analysis Batch: 932202

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			09/14/23 15:59	1

Lab Sample ID: LCS 460-932202/5
Matrix: Water
Analysis Batch: 932202

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			3.20	3.065		mg/L		96	90 - 110		

Lab Sample ID: LCSD 460-932202/6
Matrix: Water
Analysis Batch: 932202

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			3.20	3.056		mg/L		95	90 - 110	0	15

QC Association Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

GC/MS VOA

Analysis Batch: 931930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-287822-1	EQ Blank	Total/NA	Water	8260D	
460-287822-3	MW-1R	Total/NA	Water	8260D	
460-287822-5	Trip	Total/NA	Water	8260D	
MB 460-931930/9	Method Blank	Total/NA	Water	8260D	
LCS 460-931930/4	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-931930/5	Lab Control Sample Dup	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 932202

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-287822-1	EQ Blank	Total/NA	Water	300.0	
460-287822-2	MW-4	Total/NA	Water	300.0	
460-287822-4	Dup	Total/NA	Water	300.0	
MB 460-932202/3	Method Blank	Total/NA	Water	300.0	
LCS 460-932202/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 460-932202/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Client Sample ID: EQ Blank
Lab Sample ID: 460-287822-1
Date Collected: 09/06/23 07:40
Matrix: Water
Date Received: 09/07/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	931930	VBP	EET EDI	09/13/23 23:37
Total/NA	Analysis	300.0		1	932202	OXG	EET EDI	09/14/23 23:55

Client Sample ID: MW-4
Lab Sample ID: 460-287822-2
Date Collected: 09/06/23 09:35
Matrix: Water
Date Received: 09/07/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	932202	OXG	EET EDI	09/15/23 00:10

Client Sample ID: MW-1R
Lab Sample ID: 460-287822-3
Date Collected: 09/06/23 11:40
Matrix: Water
Date Received: 09/07/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	931930	VBP	EET EDI	09/14/23 04:36

Client Sample ID: Dup
Lab Sample ID: 460-287822-4
Date Collected: 09/06/23 00:00
Matrix: Water
Date Received: 09/07/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	932202	OXG	EET EDI	09/15/23 01:10

Client Sample ID: Trip
Lab Sample ID: 460-287822-5
Date Collected: 09/06/23 11:40
Matrix: Water
Date Received: 09/07/23 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	931930	VBP	EET EDI	09/13/23 23:14

Laboratory References:
EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Chesapeake Energy Corporation Job ID: 460-287822-1
Project/Site: CHK STATE M

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	01-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-24
Massachusetts	State	M-NJ312	06-30-24
New Jersey	NELAP	12028	06-30-24
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	03-01-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	11-03-23

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
300.0	Anions, Ion Chromatography	EPA	EET EDI
5030C	Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-287822-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-287822-1	EQ Blank	Water	09/06/23 07:40	09/07/23 10:30
460-287822-2	MW-4	Water	09/06/23 09:35	09/07/23 10:30
460-287822-3	MW-1R	Water	09/06/23 11:40	09/07/23 10:30
460-287822-4	Dup	Water	09/06/23 00:00	09/07/23 10:30
460-287822-5	Trip	Water	09/06/23 11:40	09/07/23 10:30

CHAIN OF CUSTODY RECORD

No. 2585

EQUUS Environmental LLC (918) 921-5331

PROJECT NUMBER: CHKSTATM	PROJECT NAME: CHK STATE M	COC 1 of 1	
SHIPPED TO: EUROFINS-EDISON	PROJECT MANAGER: DAVID BRADY	TAT: STANDARD	
		PO# —	WO# —

SAMPLER'S PRINTED NAME: Terry Fisher

SAMPLERS SIGNATURE: [signature]

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	CHLORIDE	BTEX	TEMP	REMARKS
9-6-23	740	EQ Blank	water	4	X	X	X	287822
9-6-23	935	MW-4	water	1	X		X	
9-6-23	1140	MW-1R	water	3		X	X	
9-6-23	—	Dup	water	1	X	X	X	
—	—	TRIP	water	2		X	X	

460-287822 Chain of Custody

TOTAL NUMBER OF CONTAINERS → 10

RELINQUISHED BY: [signature]	DATE 9-6-23 TIME 1550	RECEIVED BY: Tatyana [signature] via Fedex	DATE 9/7/23 TIME 1030	1.2°/1.3 IR9
RELINQUISHED BY:	DATE TIME	RECEIVED BY	DATE TIME	
METHOD OF SHIPMENT: FEDEX		AIRBILL NUMBER: Fedex 6772 2897 7398		
RECEIVED IN LABORATORY BY:	DATE TIME	Send PDF EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com		
LABORATORY CONTACT: KEN HAYES 615-301-5035		LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON, NJ 08817		

White: Receiving Lab   Yellow: Equus Environmental Project File   Pink: Equus QA/QC

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 28822

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.2 ℃	1.3 ℃	Cooler #4:	℃	℃	Cooler #7:	℃	℃
Cooler #2:	℃	℃	Cooler #5:	℃	℃	Cooler #8:	℃	℃
Cooler #3:	℃	℃	Cooler #6:	℃	℃	Cooler #9:	℃	℃

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below.

Sample No(s). adjusted _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s) _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

EDS-WI-038, Rev 4.1
10/22/2019

Initials: TL Date: 9/7/23

CHAIN OF CUSTODY RECORD

No. 2585

EQUUS Environmental LLC (918) 921-5331

PROJECT NUMBER: CHKSTATM	PROJECT NAME: CHK STATE M	COC 1 of 1
SHIPPED TO: EUROFINS-EDISON	PROJECT MANAGER: DAVID BRADY	TAT: STANDARD

SAMPLER'S PRINTED NAME: Terry Fisher

SAMPLERS SIGNATURE: [signature]

PO#: — WO#: —

REMARKS: 287822

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	CHLORIDE	BTEX	TEMP
9-6-23	740	EQ Blank	water	4	X	X	X
9-6-23	935	MW-4	water	1	X		X
9-6-23	1140	MW-1R	water	3		X	X
9-6-23	—	Dup	water	1	X	X	X
—	—	TR.B	water	2		X	X

TOTAL NUMBER OF CONTAINERS → 10

RELINQUISHED BY:	DATE / TIME	RECEIVED BY:	DATE / TIME
[signature]	DATE 9-6-23 TIME 1550	[signature] via Fedex	DATE 9/7/23 TIME 1030
RELINQUISHED BY:	DATE / TIME	RECEIVED BY	DATE / TIME

12°11 3 IR9

METHOD OF SHIPMENT: FEDEX

AIRBILL NUMBER: Fedex 6772 2897 7398

RECEIVED IN LABORATORY BY: DATE TIME

Send PDF EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: KEN HAYES 615-301-5035

LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON, NJ 08817

460-287822 Chain of Custody

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 28722

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.2 ℃	1.3 ℃	Cooler #4:	℃	℃	Cooler #7:	℃	℃
Cooler #2:	℃	℃	Cooler #5:	℃	℃	Cooler #8:	℃	℃
Cooler #3:	℃	℃	Cooler #6:	℃	℃	Cooler #9:	℃	℃

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below.

Sample No(s). adjusted _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s) _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

*Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.

EDS-WI-038, Rev 4.1
10/22/2019

Initials: TL Date: 9/7/23

CHAIN OF CUSTODY RECORD

No. 2585

EQUUS Environmental LLC (918) 921-5331

PROJECT NUMBER: CHKSTATM

SHIPPED TO: EUROFINS-EDISON

PROJECT NAME: CHK STATE M

PROJECT MANAGER: DAVID BRADY

COC 1 of 1

TAT: STANDARD

PO# —

WO# —

SAMPLER'S PRINTED NAME: Terry Fisher

SAMPLERS SIGNATURE: [signature]

287822

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	CHLORIDE	BTEX	TEMP	REMARKS
9-6 23	740	EQ Blank	water	4	X	X	X	
9-6-23	935	MW-4	water	1	X		X	
9-6-23	1140	MW-1R	water	3		X	X	
9-6-23	—	DUP	water	1	X	X	X	
—	—	TR.P	water	2		X	X	

460-287822 Chain of Custody

TOTAL NUMBER OF CONTAINERS → 10

RELINQUISHED BY: [signature] DATE 9-6-23 TIME 1550

RECEIVED BY: Tatyana [signature] via Fedex DATE 9/7/23 TIME 1030

1.2°/1.3 IR9

RELINQUISHED BY: DATE: TIME:

RECEIVED BY: DATE: TIME:

METHOD OF SHIPMENT: FEDEX

AIRBILL NUMBER: Fedex 6772 2897 7398

RECEIVED IN LABORATORY BY: DATE: TIME:

Send PDF EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: KEN HAYES 615-301-5035

LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON NJ 08817

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 28822

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.2 ℃	1.3 ℃	Cooler #4:	℃	℃	Cooler #7:	℃	℃
Cooler #2:	℃	℃	Cooler #5:	℃	℃	Cooler #8:	℃	℃
Cooler #3:	℃	℃	Cooler #6:	℃	℃	Cooler #9:	℃	℃

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

Initials: TL Date: 9/7/23

CHAIN OF CUSTODY RECORD

No. 2585

EQUUS Environmental LLC (918) 921-5331

PROJECT NUMBER: CHKSTATM

PROJECT NAME: CHK STATE M

COC 1 of 1

SHIPPED TO: EUROFINS-EDISON

PROJECT MANAGER: DAVID BRADY

TAT: STANDARD

SAMPLER'S PRINTED NAME: Terry Fish

SAMPLERS SIGNATURE:

PO# —

WO# —

287822

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	CHLORIDE	BTEX	TEMP	REMARKS
9-6-23	740	EQ Blank	water	4	X	X	X	
9-6-23	935	MW-4	water	1	X		X	
9-6-23	1140	MW-1R	water	3		X	X	
9-6-23	—	Dup	water	1	X	X	X	
—	—	TRIP	water	2		X	X	

460-287822 Chain of Custody

TOTAL NUMBER OF CONTAINERS: 10

RELINQUISHED BY:	DATE 9-6-23	RECEIVED BY: Refrigerated via Fedex	DATE 9/7/23	12°/13 IR9
	TIME 1550		TIME 1030	
RELINQUISHED BY	DATE	RECEIVED BY:	DATE	
	TIME		TIME	

METHOD OF SHIPMENT: FEDEX

AIRBILL NUMBER: Fedex 6772 2897 7398

RECEIVED IN LABORATORY BY: DATE / TIME

Send PDF EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: KEN HAYES 615-301-5035

LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON NJ 08817

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 28822

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.2 ℃	1.3 ℃	Cooler #4:	℃	℃	Cooler #7:	℃	℃
Cooler #2:	℃	℃	Cooler #5:	℃	℃	Cooler #8:	℃	℃
Cooler #3:	℃	℃	Cooler #6:	℃	℃	Cooler #9:	℃	℃

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

Initials: TL Date: 9/7/23

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation Job Number: 460-287822-1

Login Number: 287822 **List Source: Eurofins Edison**
List Number: 1
Creator: Rivera, Kenneth

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	False	Refer to Job Narrative for details.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chase Acker
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 1/4/2024 4:47:08 PM

JOB DESCRIPTION

CHK STATE M
Property ID: 891077

JOB NUMBER

180-167173-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

my EOL

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
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Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 180-167173-1
SDG: Property ID: 891077

Table of Contents

Case Narrative

Client: Chesapeake Energy Corporation Job ID: 180-167173-1
Project: CHK STATE M

Job ID: 180-167173-1 Eurofins Pittsburgh

Job Narrative
180-167173-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 12/14/2023 10:12 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

Subcontract Work
Method TO 15: This method was subcontracted to Eurofins Air Toxics, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

Definitions/Glossary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-167173-1
SDG: Property ID: 891077

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-167173-1
SDG: Property ID: 891077

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-167173-1	20231212 M-1	Air	12/12/23 13:30	12/14/23 10:12

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-167173-1
SDG: Property ID: 891077

Method	Method Description	Protocol	Laboratory
TO-15	TO-15	EPA	Eurofins

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Eurofins = Eurofins Air Toxics, 180 Blue Ravine Road, Suite B, Folsom, CA 95630

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1/2/2024
Mr. Ken Hayes
Eurofins Environment Testing
500 Wilson Pike Circle Suite 100

Brentwood TN 37027

Project Name: CHK STATE M
Project #:
Workorder #: 2312338

Dear Mr. Ken Hayes

The following report includes the data for the above referenced project for sample(s) received on 12/14/2023 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Brian Whittaker

Project Manager

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WORK ORDER #: 2312338

Work Order Summary

CLIENT:	Mr. Ken Hayes Eurofins Environment Testing 500 Wilson Pike Circle Suite 100 Brentwood, TN 37027	**BILL TO:**	Accounts Payable Eurofins Environment Testing 180 S Van Buren Ave. Barberton, OH 44203
PHONE:	800-765-0980	**P.O. #**	180-167173-1
FAX:	615-726-3404	**PROJECT #**	CHK STATE M
DATE RECEIVED:	12/14/2023	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	01/02/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	20231212 M-1	TO-15	9 "Hg	1.8 psi
02A	Lab Blank	TO-15	NA	NA
03A	CCV	TO-15	NA	NA
04A	LCS	TO-15	NA	NA
04AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 01/02/24

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

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LABORATORY NARRATIVE
EPA Method TO-15
Eurofins Environment Testing
Workorder# 2312338

One 6 Liter Summa Canister sample was received on December 14, 2023. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A single point calibration for TVOC (Total Volatile Organic Compounds) referenced to Hexane was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

TVOC (Total Volatile Organic Compounds) referenced to Hexane includes area counts for peaks that elute from Hexane minus 0.08 minutes to Naphthalene plus 0.08 minutes and quantitating the area based on the response factor of Hexane.

All Quality Control Limit exceedances and affected sample results are noted by flags. Each flag is defined at the bottom of this Case Narrative and on each Sample Result Summary page. Target compound non-detects in the samples that are associated with high bias in QC analyses have not been flagged.

The presence of a closely eluting non-target peak in sample 20231212 M-1 is interfering with the quantitation mass ion for 4-Ethyltoluene. The reported 4-Ethyltoluene concentration is flagged with a "CN" flag to indicate a high bias due to matrix contribution.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

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File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified
b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 20231212 M-1

Lab ID#: 2312338-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	8.0	9.9	19	24
Benzene	0.80	1.8	2.6	5.8
Ethyl Benzene	0.80	0.82	3.5	3.6
4-Ethyltoluene	0.80	1.9 CN	3.9	9.3 CN
Toluene	1.6	2.6	6.0	9.8
1,2,4-Trimethylbenzene	0.80	1.1	3.9	5.3
1,3,5-Trimethylbenzene	0.80	1.6	3.9	7.9
m,p-Xylene	1.6	2.0	6.9	8.8
TVOC Ref. to Hexane	16	3800	56	13000

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Client Sample ID: 20231212 M-1

Lab ID#: 2312338-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121807**	**Date of Collection:**	**12/12/23 1:30:00 PM**
Dil. Factor:	**1.60**	**Date of Analysis:**	**12/18/23 01:26 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	8.0	9.9	19	24
Benzene	0.80	1.8	2.6	5.8
alpha-Chlorotoluene	0.80	Not Detected	4.1	Not Detected
Bromodichloromethane	0.80	Not Detected	5.4	Not Detected
Bromoform	0.80	Not Detected	8.3	Not Detected
Bromomethane	8.0	Not Detected	31	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.2	Not Detected	9.4	Not Detected
Carbon Disulfide	3.2	Not Detected	10	Not Detected
Carbon Tetrachloride	0.80	Not Detected	5.0	Not Detected
Chlorobenzene	0.80	Not Detected	3.7	Not Detected
Dibromochloromethane	0.80	Not Detected	6.8	Not Detected
Chloroethane	3.2	Not Detected	8.4	Not Detected
Chloroform	0.80	Not Detected	3.9	Not Detected
Chloromethane	8.0	Not Detected	16	Not Detected
1,2-Dibromoethane (EDB)	0.80	Not Detected	6.1	Not Detected
1,2-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,3-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,4-Dichlorobenzene	0.80	Not Detected	4.8	Not Detected
1,1-Dichloroethane	0.80	Not Detected	3.2	Not Detected
Freon 12	0.80	Not Detected	4.0	Not Detected
1,2-Dichloroethane	0.80	Not Detected	3.2	Not Detected
1,1-Dichloroethene	0.80	Not Detected	3.2	Not Detected
cis-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
trans-1,2-Dichloroethene	0.80	Not Detected	3.2	Not Detected
1,2-Dichloropropane	0.80	Not Detected	3.7	Not Detected
cis-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
trans-1,3-Dichloropropene	0.80	Not Detected	3.6	Not Detected
Freon 114	0.80	Not Detected	5.6	Not Detected
Ethyl Benzene	0.80	0.82	3.5	3.6
4-Ethyltoluene	0.80	1.9 CN	3.9	9.3 CN
Hexachlorobutadiene	3.2	Not Detected	34	Not Detected
2-Hexanone	3.2	Not Detected	13	Not Detected
Methylene Chloride	8.0	Not Detected	28	Not Detected
4-Methyl-2-pentanone	0.80	Not Detected	3.3	Not Detected
Styrene	0.80	Not Detected	3.4	Not Detected
1,1,2,2-Tetrachloroethane	0.80	Not Detected	5.5	Not Detected
Tetrachloroethene	0.80	Not Detected	5.4	Not Detected
Toluene	1.6	2.6	6.0	9.8
1,2,4-Trichlorobenzene	3.2	Not Detected	24	Not Detected
1,1,1-Trichloroethane	0.80	Not Detected	4.4	Not Detected
1,1,2-Trichloroethane	0.80	Not Detected	4.4	Not Detected
Trichloroethene	0.80	Not Detected	4.3	Not Detected

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Client Sample ID: 20231212 M-1

Lab ID#: 2312338-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121807**	**Date of Collection: 12/12/23 1:30:00 PM**	
Dil. Factor:	**1.60**	**Date of Analysis: 12/18/23 01:26 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.80	Not Detected	4.5	Not Detected
Freon 113	0.80	Not Detected	6.1	Not Detected
1,2,4-Trimethylbenzene	0.80	1.1	3.9	5.3
1,3,5-Trimethylbenzene	0.80	1.6	3.9	7.9
Vinyl Acetate	3.2	Not Detected	11	Not Detected
Vinyl Chloride	0.80	Not Detected	2.0	Not Detected
m,p-Xylene	1.6	2.0	6.9	8.8
o-Xylene	0.80	Not Detected	3.5	Not Detected
TVOC Ref. to Hexane	16	3800	56	13000

CN =See Case Narrative explanation

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	104	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2312338-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121806a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 10:49 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	5.0	Not Detected	12	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Freon 12	0.50	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2312338-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121806a**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 10:49 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TVOC Ref. to Hexane	10	Not Detected	35	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	112	70-130
4-Bromofluorobenzene	101	70-130

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Client Sample ID: CCV

Lab ID#: 2312338-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 09:35 AM**	

Compound	%Recovery
Acetone	105
Benzene	107
alpha-Chlorotoluene	105
Bromodichloromethane	110
Bromoform	102
Bromomethane	104
2-Butanone (Methyl Ethyl Ketone)	112
Carbon Disulfide	110
Carbon Tetrachloride	109
Chlorobenzene	106
Dibromochloromethane	106
Chloroethane	111
Chloroform	109
Chloromethane	108
1,2-Dibromoethane (EDB)	106
1,2-Dichlorobenzene	102
1,3-Dichlorobenzene	104
1,4-Dichlorobenzene	100
1,1-Dichloroethane	109
Freon 12	114
1,2-Dichloroethane	110
1,1-Dichloroethene	114
cis-1,2-Dichloroethene	112
trans-1,2-Dichloroethene	116
1,2-Dichloropropane	104
cis-1,3-Dichloropropene	106
trans-1,3-Dichloropropene	108
Freon 114	105
Ethyl Benzene	109
4-Ethyltoluene	106
Hexachlorobutadiene	100
2-Hexanone	104
Methylene Chloride	107
4-Methyl-2-pentanone	100
Styrene	105
1,1,2,2-Tetrachloroethane	104
Tetrachloroethene	108
Toluene	103
1,2,4-Trichlorobenzene	104
1,1,1-Trichloroethane	112
1,1,2-Trichloroethane	108
Trichloroethene	106

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Client Sample ID: CCV

Lab ID#: 2312338-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121803**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 09:35 AM**	

Compound	%Recovery
Freon 11	112
Freon 113	105
1,2,4-Trimethylbenzene	101
1,3,5-Trimethylbenzene	101
Vinyl Acetate	113
Vinyl Chloride	120
m,p-Xylene	106
o-Xylene	105
TVOC Ref. to Hexane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	102	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	97	70-130

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Client Sample ID: LCS

Lab ID#: 2312338-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 09:59 AM**	

Compound	%Recovery	Method Limits
Acetone	110	70-130
Benzene	106	70-130
alpha-Chlorotoluene	102	70-130
Bromodichloromethane	106	70-130
Bromoform	99	70-130
Bromomethane	106	70-130
2-Butanone (Methyl Ethyl Ketone)	113	70-130
Carbon Disulfide	113	70-130
Carbon Tetrachloride	108	70-130
Chlorobenzene	105	70-130
Dibromochloromethane	102	70-130
Chloroethane	107	70-130
Chloroform	109	70-130
Chloromethane	104	70-130
1,2-Dibromoethane (EDB)	114	70-130
1,2-Dichlorobenzene	99	70-130
1,3-Dichlorobenzene	101	70-130
1,4-Dichlorobenzene	98	70-130
1,1-Dichloroethane	109	70-130
Freon 12	110	70-130
1,2-Dichloroethane	111	70-130
1,1-Dichloroethene	110	70-130
cis-1,2-Dichloroethene	111	70-130
trans-1,2-Dichloroethene	113	70-130
1,2-Dichloropropane	102	70-130
cis-1,3-Dichloropropene	106	70-130
trans-1,3-Dichloropropene	105	70-130
Freon 114	103	70-130
Ethyl Benzene	110	70-130
4-Ethyltoluene	103	70-130
Hexachlorobutadiene	101	70-130
2-Hexanone	105	70-130
Methylene Chloride	106	70-130
4-Methyl-2-pentanone	102	70-130
Styrene	103	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Tetrachloroethene	105	70-130
Toluene	102	70-130
1,2,4-Trichlorobenzene	102	70-130
1,1,1-Trichloroethane	111	70-130
1,1,2-Trichloroethane	105	70-130
Trichloroethene	106	70-130

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Client Sample ID: LCS

Lab ID#: 2312338-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121804**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 09:59 AM**	

Compound	%Recovery	Method Limits
Freon 11	108	70-130
Freon 113	99	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3,5-Trimethylbenzene	100	70-130
Vinyl Acetate	163 Q	70-130
Vinyl Chloride	117	70-130
m,p-Xylene	105	70-130
o-Xylene	105	70-130
TVOC Ref. to Hexane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	105	70-130
4-Bromofluorobenzene	98	70-130

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Client Sample ID: LCSD

Lab ID#: 2312338-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 10:23 AM**	

Compound	%Recovery	Method Limits
Acetone	108	70-130
Benzene	107	70-130
alpha-Chlorotoluene	103	70-130
Bromodichloromethane	105	70-130
Bromoform	99	70-130
Bromomethane	104	70-130
2-Butanone (Methyl Ethyl Ketone)	111	70-130
Carbon Disulfide	111	70-130
Carbon Tetrachloride	106	70-130
Chlorobenzene	103	70-130
Dibromochloromethane	101	70-130
Chloroethane	109	70-130
Chloroform	106	70-130
Chloromethane	102	70-130
1,2-Dibromoethane (EDB)	113	70-130
1,2-Dichlorobenzene	99	70-130
1,3-Dichlorobenzene	102	70-130
1,4-Dichlorobenzene	97	70-130
1,1-Dichloroethane	106	70-130
Freon 12	109	70-130
1,2-Dichloroethane	111	70-130
1,1-Dichloroethene	108	70-130
cis-1,2-Dichloroethene	109	70-130
trans-1,2-Dichloroethene	112	70-130
1,2-Dichloropropane	101	70-130
cis-1,3-Dichloropropene	106	70-130
trans-1,3-Dichloropropene	106	70-130
Freon 114	100	70-130
Ethyl Benzene	108	70-130
4-Ethyltoluene	103	70-130
Hexachlorobutadiene	102	70-130
2-Hexanone	104	70-130
Methylene Chloride	104	70-130
4-Methyl-2-pentanone	103	70-130
Styrene	103	70-130
1,1,2,2-Tetrachloroethane	104	70-130
Tetrachloroethene	104	70-130
Toluene	104	70-130
1,2,4-Trichlorobenzene	103	70-130
1,1,1-Trichloroethane	111	70-130
1,1,2-Trichloroethane	105	70-130
Trichloroethene	107	70-130

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Client Sample ID: LCSD

Lab ID#: 2312338-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91121805**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 12/18/23 10:23 AM**	

Compound	%Recovery	Method Limits
Freon 11	106	70-130
Freon 113	97	70-130
1,2,4-Trimethylbenzene	102	70-130
1,3,5-Trimethylbenzene	101	70-130
Vinyl Acetate	161 Q	70-130
Vinyl Chloride	115	70-130
m,p-Xylene	104	70-130
o-Xylene	104	70-130
TVOC Ref. to Hexane	Not Spiked	

Q = Exceeds Quality Control limits.

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	103	70-130
1,2-Dichloroethane-d4	104	70-130
4-Bromofluorobenzene	99	70-130

CHAIN OF CUSTODY RECORD

2312338

No. 2924

EQUUS Environmental LLC

(918) 921-5331

PROJECT NUMBER:

PROJECT NAME: CHK STATE M

COC 1 of 1

SHIPPED TO: TA-AIR TOXICS

PROJECT MANAGER: DAVID BRADY

TAT: STANDARD

SAMPLER'S PRINTED NAME: Riley O'Bannon

SAMPLERS SIGNATURE:

PO# —

WO# —

* TVOC = $C_6 - C_{12}$

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	TO-15	TVOC as Hexane *
12/12/23	1330	20231212 M-1	Gas	1	X	X

REMARKS: TAG# 610949

TOTAL NUMBER OF CONTAINERS: 1

RELINQUISHED BY: DATE 12/12/23 TIME 1515

RELINQUISHED BY: DATE TIME

RECEIVED BY: Armin D. SATL DATE 12/14/23 TIME 1011

RECEIVED BY: DATE TIME

Custody Seal Intact? Yes No None Temp °C N/A

Carrier: FedEx

METHOD OF SHIPMENT: FEDEX

AIRBILL NUMBER: 711209549298

RECEIVED IN LABORATORY BY: DATE TIME

Send PDF, EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: Ken Hayes 615-301-5035

LABORATORY ADDRESS: 180 Blue Ravine Rd Ste B Folsom, CA 95630

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

eurofins | Air Toxics

Eurofins Air Toxics Sample Receipt Confirmation Cover Page

Thank you for choosing Eurofins Air Toxics (EATL). We have received your samples and have listed any Sample Receipt Descrepancies below.

In order to expedite analysis and reporting, please review the attached information for accuracy.

For corrections call: **Air Toxics, Ltd. at 916-985-1000**

EATL will proceed with the analysis as specified on the Chain of Custody (COC) and Sample Receipt Summary page.

Please note : The Sample Receipt Confirmation, including the total workorder charge, is subject to change upon secondary review. Our aim is to provide a confirmation to you in a timely manner. Sample Receipt Discrepancies, if any, may not include discrepancies regarding sample receipt pressure(s). Additionally, the COC will be provided with the final report.

In accordance with your company's contract, this account is required to have a PO that is fully executed by both parties which also covers the cost of the workorder before any data can be released. Please ensure that you have given all appropriate information to our Project Manager so that there will be no delay in reporting of the data you are requesting.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:30 A.M to 5:30 P.M. PST

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SAMPLE RECEIPT SUMMARY

WORKORDER 2312338

Client

Mr. Ken Hayes
Eurofins Environment Testing
500 Wilson Pike Circle Suite 100
Brentwood, TN 37027

Phone

800-765-0980

Fax

615-726-3404

Sales Rep: TA

Date Promised: 12/29/23
Date Completed:
Date Received: 12/14/23
PO#:
Project#: CHK STATE M

Total $: $ 170.00
Logged By: LN

Fraction	Sample #	Analysis	Collected	Amount$
01A	20231212 M-1	TO-15	12/12/2023	$150.00
Misc. Charges	6 Liter Summa Canister (1) @ $20.00 each., Shipment 157625			$20.00

Note: Samples received after 3 P.M. PST are considered to be received on the following work day.
Atlas Project Name/Profile#: EQUUS/23738

BILL TO: Accounts Payable
Eurofins Environment Testing
180 S Van Buren Ave.
Barberton, OH 44203

Analysis Code: TO-14A

TERMS:

Reporting Method: TO-15 (Sp)-Eurofins TA (CEC, OK)

CHAIN OF CUSTODY RECORD

2312338

No. 2924

EQUUS Environmental LLC

(918) 921-5331

PROJECT NUMBER:

PROJECT NAME: CHK STATE M

COC 1 of 1

SHIPPED TO: TA-AIR TOXICS

PROJECT MANAGER: DAVID BRADY

TAT: STANDARD

SAMPLER'S PRINTED NAME: Riley O'Bannon

SAMPLERS SIGNATURE:

PO# —

WO# —

* TVOC = $C_6 - C_{12}$

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	TO-15	TVOC as Hexane *
12/12/23	1330	20231212 M-1	Gas	1	X	X

REMARKS: TAG# 610949

TOTAL NUMBER OF CONTAINERS: 1

RELINQUISHED BY: DATE 12/12/23 TIME 1515

RELINQUISHED BY: DATE TIME

METHOD OF SHIPMENT: FEDEX

RECEIVED IN LABORATORY BY: DATE TIME

LABORATORY CONTACT: Ken Hayes 615-301-5035

RECEIVED BY: Armin D. SATL DATE 12/14/23 TIME 1011

RECEIVED BY: DATE TIME

Custody Seal Intact? Yes No None Temp °C NA

Carrier: Fedex

AIRBILL NUMBER: 711209549298

Send PDF, EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY ADDRESS: 180 BLUE RAVINE RD STE B FOLSOM, CA 95630

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

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Method : TO-15 (Sp)-Eurofins TA (CEC, OK)

CAS Number	Compound	Rpt. Limit (ppbv)
67-64-1	Acetone	5.0
71-43-2	Benzene	0.50
100-44-7	alpha-Chlorotoluene	0.50
75-27-4	Bromodichloromethane	0.50
75-25-2	Bromoform	0.50
74-83-9	Bromomethane	5.0
78-93-3	2-Butanone (Methyl Ethyl Ketone)	2.0
75-15-0	Carbon Disulfide	2.0
56-23-5	Carbon Tetrachloride	0.50
108-90-7	Chlorobenzene	0.50
124-48-1	Dibromochloromethane	0.50
75-00-3	Chloroethane	2.0
67-66-3	Chloroform	0.50
74-87-3	Chloromethane	5.0
106-93-4	1,2-Dibromoethane (EDB)	0.50
95-50-1	1,2-Dichlorobenzene	0.50
541-73-1	1,3-Dichlorobenzene	0.50
106-46-7	1,4-Dichlorobenzene	0.50
75-34-3	1,1-Dichloroethane	0.50
75-71-8	Freon 12	0.50
107-06-2	1,2-Dichloroethane	0.50
75-35-4	1,1-Dichloroethene	0.50
156-59-2	cis-1,2-Dichloroethene	0.50
156-60-5	trans-1,2-Dichloroethene	0.50
78-87-5	1,2-Dichloropropane	0.50
10061-01-5	cis-1,3-Dichloropropene	0.50
10061-02-6	trans-1,3-Dichloropropene	0.50
76-14-2	Freon 114	0.50
100-41-4	Ethyl Benzene	0.50
622-96-8	4-Ethyltoluene	0.50
87-68-3	Hexachlorobutadiene	2.0
591-78-6	2-Hexanone	2.0
75-09-2	Methylene Chloride	5.0
108-10-1	4-Methyl-2-pentanone	0.50
100-42-5	Styrene	0.50
79-34-5	1,1,2,2-Tetrachloroethane	0.50
127-18-4	Tetrachloroethene	0.50
108-88-3	Toluene	1.0
120-82-1	1,2,4-Trichlorobenzene	2.0
71-55-6	1,1,1-Trichloroethane	0.50

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Method : TO-15 (Sp)-Eurofins TA (CEC, OK)

CAS Number	Compound	Rpt. Limit (ppbv)
79-00-5	1,1,2-Trichloroethane	0.50
79-01-6	Trichloroethene	0.50
75-69-4	Freon 11	0.50
76-13-1	Freon 113	0.50
95-63-6	1,2,4-Trimethylbenzene	0.50
108-67-8	1,3,5-Trimethylbenzene	0.50
108-05-4	Vinyl Acetate	2.0
75-01-4	Vinyl Chloride	0.50
108-38-3	m,p-Xylene	1.0
95-47-6	o-Xylene	0.50
9999-9999-500	TVOC Ref. to Hexane	10

CAS Number	Surrogate	Method Limits
2037-26-5	Toluene-d8	70-130
17060-07-0	1,2-Dichloroethane-d4	70-130
460-00-4	4-Bromofluorobenzene	70-130

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Unreturned Media/Equipment

The following media/equipment are outstanding:

Shipped on: Nov 27 2023 1:13PM

Equipment Type	Physical ID	Outstanding Qty	Amount
Filter		1	$50.00

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 .FAX (916) 985-1020
Hours 6:60 A.M to 5:30 P.M. PST

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation

Job Number: 180-167173-1
SDG Number: Property ID: 891077

Login Number: 167173
List Number: 1
Creator: Hayes, Ken

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Drury
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 12/27/2023 2:56:25 PM

JOB DESCRIPTION

CHK STATE M

JOB NUMBER

460-295012-1

Eurofins Edison
777 New Durham Road
Edison NJ 08817

See page two for job notes and contact information.

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization

Generated
12/27/2023 2:56:25 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 460-295012-1

Table of Contents

Definitions/Glossary

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project/Site: CHK STATE M

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project: CHK STATE M

Job ID: 460-295012-1 Eurofins Edison

Job Narrative
460-295012-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 12/13/2023 11:25 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.2°C

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project/Site: CHK STATE M

Client Sample ID: Equipment Blank Lab Sample ID: 460-295012-1

No Detections.

Client Sample ID: DUP-1 Lab Sample ID: 460-295012-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	358		5.00		mg/L	5		300.0	Total/NA

Client Sample ID: MW-4 Lab Sample ID: 460-295012-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	362		5.00		mg/L	5		300.0	Total/NA

Client Sample ID: MW-1R Lab Sample ID: 460-295012-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.623		0.500		ug/L	1		8260D	Total/NA
Ethylbenzene	2.68		0.500		ug/L	1		8260D	Total/NA
Xylenes, Total	1.17		1.00		ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project/Site: CHK STATE M

Client Sample ID: Equipment Blank — Lab Sample ID: 460-295012-1

Date Collected: 12/12/23 08:45 **Matrix: Water**
Date Received: 12/13/23 11:25

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			12/24/23 00:33	1

Client Sample ID: DUP-1 — Lab Sample ID: 460-295012-2

Date Collected: 12/12/23 00:00 **Matrix: Water**
Date Received: 12/13/23 11:25

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**358**		5.00		mg/L			12/24/23 00:48	5

Client Sample ID: MW-4 — Lab Sample ID: 460-295012-3

Date Collected: 12/12/23 10:50 **Matrix: Water**
Date Received: 12/13/23 11:25

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**362**		5.00		mg/L			12/24/23 01:03	5

Client Sample ID: MW-1R — Lab Sample ID: 460-295012-4

Date Collected: 12/12/23 13:50 **Matrix: Water**
Date Received: 12/13/23 11:25

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**0.623**		0.500		ug/L			12/23/23 15:40	1
Ethylbenzene	**2.68**		0.500		ug/L			12/23/23 15:40	1
Toluene	ND		0.500		ug/L			12/23/23 15:40	1
Xylenes, Total	**1.17**		1.00		ug/L			12/23/23 15:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*119*		*76 - 120*		*12/23/23 15:40*	*1*
Dibromofluoromethane (Surr)	*111*		*77 - 132*		*12/23/23 15:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*109*		*70 - 128*		*12/23/23 15:40*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*12/23/23 15:40*	*1*

Surrogate Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(76-120)	(77-132)	(70-128)	(80-120)
460-295012-4	MW-1R	119	111	109	101
LCS 460-951975/5	Lab Control Sample	117	106	107	101
LCSD 460-951975/6	Lab Control Sample Dup	117	107	105	101
MB 460-951975/10	Method Blank	120	110	108	100

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-951975/10
Matrix: Water
Analysis Batch: 951975

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			12/23/23 15:17	1
Ethylbenzene	ND		0.500		ug/L			12/23/23 15:17	1
Toluene	ND		0.500		ug/L			12/23/23 15:17	1
Xylenes, Total	ND		1.00		ug/L			12/23/23 15:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*120*		*76 - 120*		*12/23/23 15:17*	*1*
Dibromofluoromethane (Surr)	*110*		*77 - 132*		*12/23/23 15:17*	*1*
1,2-Dichloroethane-d4 (Surr)	*108*		*70 - 128*		*12/23/23 15:17*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*12/23/23 15:17*	*1*

Lab Sample ID: LCS 460-951975/5
Matrix: Water
Analysis Batch: 951975

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.0	19.31		ug/L		97	71 - 126		
Ethylbenzene			20.0	17.18		ug/L		86	78 - 120		
Toluene			20.0	18.24		ug/L		91	78 - 120		
Xylenes, Total			40.0	34.71		ug/L		87	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*117*		*76 - 120*
Dibromofluoromethane (Surr)	*106*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*107*		*70 - 128*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: LCSD 460-951975/6
Matrix: Water
Analysis Batch: 951975

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			20.0	18.59		ug/L		93	71 - 126	4	30
Ethylbenzene			20.0	16.44		ug/L		82	78 - 120	4	30
Toluene			20.0	17.30		ug/L		87	78 - 120	5	30
Xylenes, Total			40.0	32.97		ug/L		82	80 - 120	5	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*117*		*76 - 120*
Dibromofluoromethane (Surr)	*107*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*105*		*70 - 128*
Toluene-d8 (Surr)	*101*		*80 - 120*

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 460-952009/3
Matrix: Water
Analysis Batch: 952009

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			12/23/23 18:51	1

Lab Sample ID: LCS 460-952009/5
Matrix: Water
Analysis Batch: 952009

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			3.20	2.962		mg/L		93	90 - 110		

Lab Sample ID: LCSD 460-952009/6
Matrix: Water
Analysis Batch: 952009

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			3.20	2.928		mg/L		91	90 - 110	1	15

QC Association Summary

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project/Site: CHK STATE M

GC/MS VOA

Analysis Batch: 951975

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-295012-4	MW-1R	Total/NA	Water	8260D	
MB 460-951975/10	Method Blank	Total/NA	Water	8260D	
LCS 460-951975/5	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-951975/6	Lab Control Sample Dup	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 952009

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-295012-1	Equipment Blank	Total/NA	Water	300.0	
460-295012-2	DUP-1	Total/NA	Water	300.0	
460-295012-3	MW-4	Total/NA	Water	300.0	
MB 460-952009/3	Method Blank	Total/NA	Water	300.0	
LCS 460-952009/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 460-952009/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Client Sample ID: Equipment Blank
Lab Sample ID: 460-295012-1
Date Collected: 12/12/23 08:45
Matrix: Water
Date Received: 12/13/23 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		1	952009	OXG	EET EDI	12/24/23 00:33

Client Sample ID: DUP-1
Lab Sample ID: 460-295012-2
Date Collected: 12/12/23 00:00
Matrix: Water
Date Received: 12/13/23 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	952009	OXG	EET EDI	12/24/23 00:48

Client Sample ID: MW-4
Lab Sample ID: 460-295012-3
Date Collected: 12/12/23 10:50
Matrix: Water
Date Received: 12/13/23 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		5	952009	OXG	EET EDI	12/24/23 01:03

Client Sample ID: MW-1R
Lab Sample ID: 460-295012-4
Date Collected: 12/12/23 13:50
Matrix: Water
Date Received: 12/13/23 11:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	951975	SZD	EET EDI	12/23/23 15:40

Laboratory References:
EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Chesapeake Energy Corporation Job ID: 460-295012-1
Project/Site: CHK STATE M

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	09-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-01-24
Georgia	State	12028 (NJ)	06-30-24
Massachusetts	State	M-NJ312	06-30-24
New Jersey	NELAP	12028	06-30-24
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	02-29-24
Rhode Island	State	LAO00376	12-30-23
USDA	US Federal Programs	P330-20-00244	05-31-24

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
300.0	Anions, Ion Chromatography	EPA	EET EDI
5030C	Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-295012-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-295012-1	Equipment Blank	Water	12/12/23 08:45	12/13/23 11:25
460-295012-2	DUP-1	Water	12/12/23 00:00	12/13/23 11:25
460-295012-3	MW-4	Water	12/12/23 10:50	12/13/23 11:25
460-295012-4	MW-1R	Water	12/12/23 13:50	12/13/23 11:25

CHAIN OF CUSTODY RECORD

No. 2923

EQUUS Environmental LLC
(918) 921-5331

PROJECT NUMBER:
PROJECT NAME: CHK STATE M
COC 1 of 1 295012
SHIPPED TO: TA-EDISON
PROJECT MANAGER: DAVID BRADY
TAT: STANDARD
SAMPLER'S PRINTED NAME: Riley OBannon
SAMPLERS SIGNATURE:
PO# —
WO# —

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	CHLORIDE 300.0	BTEX 8260	TEMP	REMARKS
12/12/23	0845	Equipment Blank	W	1	X		X	
12/12/23	0000	DUP-1	W	1	X		X	
12/12/23	1050	MW-4	W	1	X		X	
12/12/23	1350	~~MW-1R~~ MW-1R	W	3		X	X	

Ref EQUUS * Chesapea Date 15Nov23
Dep Wgt 33 00 LBS
DV 0 00

SHIPPING 0 00
SPECIAL 0 00
HANDLING 0 00
TOTAL 0 00

Svcs: PRIORITY OVERNIGHT
TRCK. 6772 2899 9315

460-295012 Chain of Custody

Fedex

TOTAL NUMBER OF CONTAINERS

RELINQUISHED BY:	DATE 12/12/23 TIME 1515	RECEIVED BY:	DATE 12/13/23 TIME 11:25
RELINQUISHED BY	DATE TIME	RECEIVED BY:	DATE TIME

METHOD OF SHIPMENT: FEDEX
AIRBILL NUMBER: 6772 2899 9315
RECEIVED IN LABORATORY BY: DATE TIME
Send PDF EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com
LABORATORY CONTACT: Ken Hayes 615-301-5035
LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON NJ 08817

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

IR-9 1-1c/1-2c

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: 295017

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	1.1 °C	1.2 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below*

Sample No(s). adjusted. _____

Preservative Name/Conc. _____ Volume of Preservative used (ml) _____

Lot # of Preservative(s) _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

** Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

Initials: BRalta Date: 12/13/23

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation Job Number: 460-295012-1

Login Number: 295012 **List Source: Eurofins Edison**
List Number: 1
Creator: Rivera, Kenneth

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Chase Acker
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

Generated 3/28/2024 2:43:11 PM

JOB DESCRIPTION

CHK STATE M
Property ID: 891077

JOB NUMBER

180-171119-1

Eurofins Pittsburgh
301 Alpha Drive
RIDC Park
Pittsburgh PA 15238

See page two for job notes and contact information.

my EOL

Eurofins Pittsburgh

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

PA Lab ID: 02-00416

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Pittsburgh Project Manager.

Authorization

Generated
3/28/2024 2:43:11 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 180-171119-1
SDG: Property ID: 891077

Table of Contents

Case Narrative

Client: Chesapeake Energy Corporation Job ID: 180-171119-1
Project: CHK STATE M

Job ID: 180-171119-1 Eurofins Pittsburgh

Job Narrative
180-171119-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The sample was received on 3/14/2024 9:42 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice.

Subcontract Work
Method TO 15: This method was subcontracted to Eurofins Air Toxics, Inc. The subcontract laboratory certification is different from that of the facility issuing the final report. The subcontract report is appended in its entirety.

Definitions/Glossary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-171119-1
SDG: Property ID: 891077

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-171119-1
SDG: Property ID: 891077

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
180-171119-1	20240312M-1	Air	03/12/24 13:41	03/14/24 09:42

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 180-171119-1
SDG: Property ID: 891077

Method	Method Description	Protocol	Laboratory
TO-15	TO-15	EPA	Eurofins

Protocol References:

EPA = US Environmental Protection Agency

Laboratory References:

Eurofins = Eurofins Air Toxics, 180 Blue Ravine Road, Suite B, Folsom, CA 95630

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3/26/2024
Mr. Ken Hayes
Eurofins Environment Testing
301 Alpha Dr.

Pittsburgh PA 15238

Project Name: CHKSTATEM
Project #: CHKSTATM
Workorder #: 2403380

Dear Mr. Ken Hayes

The following report includes the data for the above referenced project for sample(s) received on 3/14/2024 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Brian Whittaker at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Brian Whittaker

Project Manager

Eurofins Air Toxics, LLC
180 Blue Ravine Road, Suite B
Folsom, CA 95630
T | 916-985-1000
F | 916-351-8279
www.airtoxics.com

eurofins | Air Toxics

WORK ORDER #: 2403380

Work Order Summary

CLIENT:	Mr. Ken Hayes Eurofins Environment Testing 301 Alpha Dr. Pittsburgh, PA 15238	**BILL TO:**	Mr. Ken Hayes Eurofins Environment Testing 301 Alpha Dr. Pittsburgh, PA 15238
PHONE:		**P.O. #**	CHKSTATM
FAX:		**PROJECT #**	CHKSTATM CHKSTATEM
DATE RECEIVED:	03/14/2024	**CONTACT:**	Brian Whittaker
DATE COMPLETED:	03/26/2024		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	20240312M-1	TO-15	7.6 "Hg	1.9 psi
02A	Lab Blank	TO-15	NA	NA
03A	CCV	TO-15	NA	NA
04A	LCS	TO-15	NA	NA
04AA	LCSD	TO-15	NA	NA

CERTIFIED BY: Heidi Hayes DATE: 03/26/24

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP – 209222, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP – T104704434-22-18, UT NELAP – CA009332022-14, VA NELAP - 12240, WA ELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program) CA300005-017
Eurofins Environment Testing Northern California, LLC certifies that the test results contained in this report meet all requirements of the 2016 TNI Standard.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000

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LABORATORY NARRATIVE
EPA Method TO-15
Eurofins Environment Testing
Workorder# 2403380

One 6 Liter Summa Canister sample was received on March 14, 2024. The laboratory performed analysis via EPA Method TO-15 using GC/MS in the full scan mode.

Receiving Notes

The Chain of Custody (COC) information for sample 20240312M-1 did not match the entry on the sample tag with regard to sample identification. The information on the COC was used to process and report the sample.

The Chain of Custody (COC) was not relinquished properly. A correct date was not provided by the field sampler.

Analytical Notes

A single point calibration for TVOC (Total Volatile Organic Compounds) referenced to Hexane was performed for each daily analytical batch. Recovery is reported as 100% in the associated results for each CCV.

TVOC (Total Volatile Organic Compounds) referenced to Hexane includes area counts for peaks that elute from Hexane minus 0.08 minutes to Naphthalene plus 0.08 minutes and quantitating the area based on the response factor of Hexane.

The presence of a closely eluting non-target peak in sample 20240312M-1 is interfering with the quantitation mass ion for 4-Ethyltoluene. The reported 4-Ethyltoluene concentration is flagged with a "CN" flag to indicate a high bias due to matrix contribution.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

M - Reported value may be biased due to apparent matrix interferences.

CN - See Case Narrative.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

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b-File was quantified by a second column and detector
r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
EPA METHOD TO-15 GC/MS FULL SCAN

Client Sample ID: 20240312M-1

Lab ID#: 2403380-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	7.6	10	18	24
4-Ethyltoluene	0.76	2.0 CN	3.7	9.6 CN
1,2,4-Trimethylbenzene	0.76	1.2	3.7	6.0
1,3,5-Trimethylbenzene	0.76	2.0	3.7	10
TVOC Ref. to Hexane	15	4200	53	15000

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Client Sample ID: 20240312M-1

Lab ID#: 2403380-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032522**	**Date of Collection:**	**3/12/24 1:41:00 PM**
Dil. Factor:	**1.51**	**Date of Analysis:**	**3/25/24 08:48 PM**

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	7.6	10	18	24
Benzene	0.76	Not Detected	2.4	Not Detected
alpha-Chlorotoluene	0.76	Not Detected	3.9	Not Detected
Bromodichloromethane	0.76	Not Detected	5.0	Not Detected
Bromoform	0.76	Not Detected	7.8	Not Detected
Bromomethane	7.6	Not Detected	29	Not Detected
2-Butanone (Methyl Ethyl Ketone)	3.0	Not Detected	8.9	Not Detected
Carbon Disulfide	3.0	Not Detected	9.4	Not Detected
Carbon Tetrachloride	0.76	Not Detected	4.8	Not Detected
Chlorobenzene	0.76	Not Detected	3.5	Not Detected
Dibromochloromethane	0.76	Not Detected	6.4	Not Detected
Chloroethane	3.0	Not Detected	8.0	Not Detected
Chloroform	0.76	Not Detected	3.7	Not Detected
Chloromethane	7.6	Not Detected	16	Not Detected
1,2-Dibromoethane (EDB)	0.76	Not Detected	5.8	Not Detected
1,2-Dichlorobenzene	0.76	Not Detected	4.5	Not Detected
1,3-Dichlorobenzene	0.76	Not Detected	4.5	Not Detected
1,4-Dichlorobenzene	0.76	Not Detected	4.5	Not Detected
1,1-Dichloroethane	0.76	Not Detected	3.0	Not Detected
Freon 12	0.76	Not Detected	3.7	Not Detected
1,2-Dichloroethane	0.76	Not Detected	3.0	Not Detected
1,1-Dichloroethene	0.76	Not Detected	3.0	Not Detected
cis-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
trans-1,2-Dichloroethene	0.76	Not Detected	3.0	Not Detected
1,2-Dichloropropane	0.76	Not Detected	3.5	Not Detected
cis-1,3-Dichloropropene	0.76	Not Detected	3.4	Not Detected
trans-1,3-Dichloropropene	0.76	Not Detected	3.4	Not Detected
Freon 114	0.76	Not Detected	5.3	Not Detected
Ethyl Benzene	0.76	Not Detected	3.3	Not Detected
4-Ethyltoluene	0.76	2.0 CN	3.7	9.6 CN
Hexachlorobutadiene	3.0	Not Detected	32	Not Detected
2-Hexanone	3.0	Not Detected	12	Not Detected
Methylene Chloride	7.6	Not Detected	26	Not Detected
4-Methyl-2-pentanone	0.76	Not Detected	3.1	Not Detected
Styrene	0.76	Not Detected	3.2	Not Detected
1,1,2,2-Tetrachloroethane	0.76	Not Detected	5.2	Not Detected
Tetrachloroethene	0.76	Not Detected	5.1	Not Detected
Toluene	1.5	Not Detected	5.7	Not Detected
1,2,4-Trichlorobenzene	3.0	Not Detected	22	Not Detected
1,1,1-Trichloroethane	0.76	Not Detected	4.1	Not Detected
1,1,2-Trichloroethane	0.76	Not Detected	4.1	Not Detected
Trichloroethene	0.76	Not Detected	4.0	Not Detected

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Client Sample ID: 20240312M-1

Lab ID#: 2403380-01A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032522**	**Date of Collection: 3/12/24 1:41:00 PM**	
Dil. Factor:	**1.51**	**Date of Analysis: 3/25/24 08:48 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.76	Not Detected	4.2	Not Detected
Freon 113	0.76	Not Detected	5.8	Not Detected
1,2,4-Trimethylbenzene	0.76	1.2	3.7	6.0
1,3,5-Trimethylbenzene	0.76	2.0	3.7	10
Vinyl Acetate	3.0	Not Detected	11	Not Detected
Vinyl Chloride	0.76	Not Detected	1.9	Not Detected
m,p-Xylene	1.5	Not Detected	6.6	Not Detected
o-Xylene	0.76	Not Detected	3.3	Not Detected
TVOC Ref. to Hexane	15	4200	53	15000

CN =See Case Narrative explanation

Container Type: 6 Liter Summa Canister

Surrogates	%Recovery	Method Limits
Toluene-d8	92	70-130
1,2-Dichloroethane-d4	109	70-130
4-Bromofluorobenzene	78	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2403380-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032507d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 11:25 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Acetone	5.0	Not Detected	12	Not Detected
Benzene	0.50	Not Detected	1.6	Not Detected
alpha-Chlorotoluene	0.50	Not Detected	2.6	Not Detected
Bromodichloromethane	0.50	Not Detected	3.4	Not Detected
Bromoform	0.50	Not Detected	5.2	Not Detected
Bromomethane	5.0	Not Detected	19	Not Detected
2-Butanone (Methyl Ethyl Ketone)	2.0	Not Detected	5.9	Not Detected
Carbon Disulfide	2.0	Not Detected	6.2	Not Detected
Carbon Tetrachloride	0.50	Not Detected	3.1	Not Detected
Chlorobenzene	0.50	Not Detected	2.3	Not Detected
Dibromochloromethane	0.50	Not Detected	4.2	Not Detected
Chloroethane	2.0	Not Detected	5.3	Not Detected
Chloroform	0.50	Not Detected	2.4	Not Detected
Chloromethane	5.0	Not Detected	10	Not Detected
1,2-Dibromoethane (EDB)	0.50	Not Detected	3.8	Not Detected
1,2-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,3-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,4-Dichlorobenzene	0.50	Not Detected	3.0	Not Detected
1,1-Dichloroethane	0.50	Not Detected	2.0	Not Detected
Freon 12	0.50	Not Detected	2.5	Not Detected
1,2-Dichloroethane	0.50	Not Detected	2.0	Not Detected
1,1-Dichloroethene	0.50	Not Detected	2.0	Not Detected
cis-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
trans-1,2-Dichloroethene	0.50	Not Detected	2.0	Not Detected
1,2-Dichloropropane	0.50	Not Detected	2.3	Not Detected
cis-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
trans-1,3-Dichloropropene	0.50	Not Detected	2.3	Not Detected
Freon 114	0.50	Not Detected	3.5	Not Detected
Ethyl Benzene	0.50	Not Detected	2.2	Not Detected
4-Ethyltoluene	0.50	Not Detected	2.4	Not Detected
Hexachlorobutadiene	2.0	Not Detected	21	Not Detected
2-Hexanone	2.0	Not Detected	8.2	Not Detected
Methylene Chloride	5.0	Not Detected	17	Not Detected
4-Methyl-2-pentanone	0.50	Not Detected	2.0	Not Detected
Styrene	0.50	Not Detected	2.1	Not Detected
1,1,2,2-Tetrachloroethane	0.50	Not Detected	3.4	Not Detected
Tetrachloroethene	0.50	Not Detected	3.4	Not Detected
Toluene	1.0	Not Detected	3.8	Not Detected
1,2,4-Trichlorobenzene	2.0	Not Detected	15	Not Detected
1,1,1-Trichloroethane	0.50	Not Detected	2.7	Not Detected
1,1,2-Trichloroethane	0.50	Not Detected	2.7	Not Detected
Trichloroethene	0.50	Not Detected	2.7	Not Detected

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Client Sample ID: Lab Blank

Lab ID#: 2403380-02A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032507d**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 11:25 AM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Freon 11	0.50	Not Detected	2.8	Not Detected
Freon 113	0.50	Not Detected	3.8	Not Detected
1,2,4-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
1,3,5-Trimethylbenzene	0.50	Not Detected	2.4	Not Detected
Vinyl Acetate	2.0	Not Detected	7.0	Not Detected
Vinyl Chloride	0.50	Not Detected	1.3	Not Detected
m,p-Xylene	1.0	Not Detected	4.3	Not Detected
o-Xylene	0.50	Not Detected	2.2	Not Detected
TVOC Ref. to Hexane	10	Not Detected	35	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	107	70-130
4-Bromofluorobenzene	83	70-130

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Client Sample ID: CCV

Lab ID#: 2403380-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 10:12 AM**	

Compound	%Recovery
Acetone	93
Benzene	100
alpha-Chlorotoluene	86
Bromodichloromethane	104
Bromoform	90
Bromomethane	81
2-Butanone (Methyl Ethyl Ketone)	97
Carbon Disulfide	97
Carbon Tetrachloride	87
Chlorobenzene	101
Dibromochloromethane	102
Chloroethane	96
Chloroform	92
Chloromethane	109
1,2-Dibromoethane (EDB)	93
1,2-Dichlorobenzene	88
1,3-Dichlorobenzene	88
1,4-Dichlorobenzene	86
1,1-Dichloroethane	100
Freon 12	90
1,2-Dichloroethane	107
1,1-Dichloroethene	88
cis-1,2-Dichloroethene	82
trans-1,2-Dichloroethene	88
1,2-Dichloropropane	107
cis-1,3-Dichloropropene	95
trans-1,3-Dichloropropene	95
Freon 114	88
Ethyl Benzene	96
4-Ethyltoluene	100
Hexachlorobutadiene	78
2-Hexanone	98
Methylene Chloride	90
4-Methyl-2-pentanone	91
Styrene	95
1,1,2,2-Tetrachloroethane	107
Tetrachloroethene	85
Toluene	96
1,2,4-Trichlorobenzene	86
1,1,1-Trichloroethane	81
1,1,2-Trichloroethane	96
Trichloroethene	90

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Client Sample ID: CCV

Lab ID#: 2403380-03A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032504**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 10:12 AM**	

Compound	%Recovery
Freon 11	89
Freon 113	84
1,2,4-Trimethylbenzene	95
1,3,5-Trimethylbenzene	96
Vinyl Acetate	76
Vinyl Chloride	107
m,p-Xylene	97
o-Xylene	88
TVOC Ref. to Hexane	100

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	99	70-130
1,2-Dichloroethane-d4	96	70-130
4-Bromofluorobenzene	86	70-130

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Client Sample ID: LCS

Lab ID#: 2403380-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 10:36 AM**	

Compound	%Recovery	Method Limits
Acetone	94	70-130
Benzene	100	70-130
alpha-Chlorotoluene	86	70-130
Bromodichloromethane	99	70-130
Bromoform	87	70-130
Bromomethane	84	70-130
2-Butanone (Methyl Ethyl Ketone)	97	70-130
Carbon Disulfide	97	70-130
Carbon Tetrachloride	88	70-130
Chlorobenzene	102	70-130
Dibromochloromethane	99	70-130
Chloroethane	96	70-130
Chloroform	91	70-130
Chloromethane	110	70-130
1,2-Dibromoethane (EDB)	94	70-130
1,2-Dichlorobenzene	87	70-130
1,3-Dichlorobenzene	88	70-130
1,4-Dichlorobenzene	84	70-130
1,1-Dichloroethane	101	70-130
Freon 12	92	70-130
1,2-Dichloroethane	105	70-130
1,1-Dichloroethene	83	70-130
cis-1,2-Dichloroethene	82	70-130
trans-1,2-Dichloroethene	87	70-130
1,2-Dichloropropane	107	70-130
cis-1,3-Dichloropropene	95	70-130
trans-1,3-Dichloropropene	94	70-130
Freon 114	87	70-130
Ethyl Benzene	99	70-130
4-Ethyltoluene	98	70-130
Hexachlorobutadiene	79	70-130
2-Hexanone	96	70-130
Methylene Chloride	89	70-130
4-Methyl-2-pentanone	92	70-130
Styrene	95	70-130
1,1,2,2-Tetrachloroethane	109	70-130
Tetrachloroethene	85	70-130
Toluene	96	70-130
1,2,4-Trichlorobenzene	86	70-130
1,1,1-Trichloroethane	82	70-130
1,1,2-Trichloroethane	96	70-130
Trichloroethene	92	70-130

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Client Sample ID: LCS

Lab ID#: 2403380-04A

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032505**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 10:36 AM**	

Compound	%Recovery	Method Limits
Freon 11	88	70-130
Freon 113	82	70-130
1,2,4-Trimethylbenzene	97	70-130
1,3,5-Trimethylbenzene	96	70-130
Vinyl Acetate	120	70-130
Vinyl Chloride	109	70-130
m,p-Xylene	97	70-130
o-Xylene	90	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	100	70-130
1,2-Dichloroethane-d4	99	70-130
4-Bromofluorobenzene	84	70-130

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Client Sample ID: LCSD

Lab ID#: 2403380-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032506**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 11:00 AM**	

Compound	%Recovery	Method Limits
Acetone	97	70-130
Benzene	97	70-130
alpha-Chlorotoluene	87	70-130
Bromodichloromethane	100	70-130
Bromoform	87	70-130
Bromomethane	86	70-130
2-Butanone (Methyl Ethyl Ketone)	102	70-130
Carbon Disulfide	99	70-130
Carbon Tetrachloride	88	70-130
Chlorobenzene	102	70-130
Dibromochloromethane	98	70-130
Chloroethane	99	70-130
Chloroform	93	70-130
Chloromethane	112	70-130
1,2-Dibromoethane (EDB)	94	70-130
1,2-Dichlorobenzene	86	70-130
1,3-Dichlorobenzene	87	70-130
1,4-Dichlorobenzene	85	70-130
1,1-Dichloroethane	103	70-130
Freon 12	89	70-130
1,2-Dichloroethane	104	70-130
1,1-Dichloroethene	86	70-130
cis-1,2-Dichloroethene	86	70-130
trans-1,2-Dichloroethene	89	70-130
1,2-Dichloropropane	107	70-130
cis-1,3-Dichloropropene	94	70-130
trans-1,3-Dichloropropene	94	70-130
Freon 114	88	70-130
Ethyl Benzene	99	70-130
4-Ethyltoluene	99	70-130
Hexachlorobutadiene	80	70-130
2-Hexanone	98	70-130
Methylene Chloride	92	70-130
4-Methyl-2-pentanone	90	70-130
Styrene	96	70-130
1,1,2,2-Tetrachloroethane	108	70-130
Tetrachloroethene	85	70-130
Toluene	94	70-130
1,2,4-Trichlorobenzene	86	70-130
1,1,1-Trichloroethane	85	70-130
1,1,2-Trichloroethane	96	70-130
Trichloroethene	90	70-130

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Client Sample ID: LCSD

Lab ID#: 2403380-04AA

EPA METHOD TO-15 GC/MS FULL SCAN

File Name:	**91032506**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/25/24 11:00 AM**	

Compound	%Recovery	Method Limits
Freon 11	89	70-130
Freon 113	81	70-130
1,2,4-Trimethylbenzene	96	70-130
1,3,5-Trimethylbenzene	98	70-130
Vinyl Acetate	121	70-130
Vinyl Chloride	110	70-130
m,p-Xylene	98	70-130
o-Xylene	93	70-130
TVOC Ref. to Hexane	Not Spiked	

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130
1,2-Dichloroethane-d4	101	70-130
4-Bromofluorobenzene	85	70-130

2403360

CHAIN OF CUSTODY RECORD

No. 2940

EQUUS Environmental, LLC
(918) 921-5331

PROJECT NUMBER: CHKSTATM	PROJECT NAME: CHKSTATEM
SHIPPED TO: AIR TOXICS	PROJECT MANAGER: MATT MAGNAVERDE
COC 1 of 1	TAT: STANDARD
SAMPLER'S PRINTED NAME: TERRY FISHER	PO# — WO# —
SAMPLERS SIGNATURE:	

	Date	Time	Sample ID	Sample Matrix	# of Sample Containers	TO-15	TVOA as Hexane *
01A	3/12/24	1341	20240312M-1	Air	1	X	X

* C_6-C_{12}

REMARKS
TAG#: 6L2755
CAT# 27420
SER# N5336

TOTAL NUMBER OF CONTAINERS: 1

RELINQUISHED BY:	DATE 3-16-24	RECEIVED BY:	DATE 3.14.24
	TIME 1630		TIME 0942
RELINQUISHED BY:	DATE	RECEIVED BY:	DATE
	TIME		TIME

Custody Seal Intact? Yes No None Temp °C N/A
Carrier: Fed Ex

METHOD OF SHIPMENT: FEDEX
AIRBILL NUMBER: FEDEX 7112 0958 8693

RECEIVED IN LABORATORY BY: DATE TIME

Send PDF, EDD, and INVOICE (if applicable) to: QAQC@EquusEnv.com

LABORATORY CONTACT: KEN 615-501-5035

LABORATORY ADDRESS: 180 BLUE RAVINE RD STE B FOLSOM, CA 95630

White: Receiving Lab Yellow: Equus Environmental Project File Pink: Equus QA/QC

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation

Job Number: 180-171119-1
SDG Number: Property ID: 891077

Login Number: 171119
List Number: 1
Creator: Hayes, Ken

List Source: Eurofins Pittsburgh

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.		
The cooler's custody seal, if present, is intact.		
Sample custody seals, if present, are intact.		
The cooler or samples do not appear to have been compromised or tampered with.		
Samples were received on ice.		
Cooler Temperature is acceptable.		
Cooler Temperature is recorded.		
COC is present.		
COC is filled out in ink and legible.		
COC is filled out with all pertinent information.		
Is the Field Sampler's name present on COC?		
There are no discrepancies between the containers received and the COC.		
Samples are received within Holding Time (excluding tests with immediate HTs)		
Sample containers have legible labels.		
Containers are not broken or leaking.		
Sample collection date/times are provided.		
Appropriate sample containers are used.		
Sample bottles are completely filled.		
Sample Preservation Verified.		
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs		
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").		
Multiphasic samples are not present.		
Samples do not require splitting or compositing.		
Residual Chlorine Checked.		

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ANALYTICAL REPORT

PREPARED FOR

Attn: Dana Drury
Chesapeake Energy Corporation
PO BOX 548806
Oklahoma City, Oklahoma 73154

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JOB DESCRIPTION

CHK STATE M

JOB NUMBER

460-300160-1

Eurofins Edison
777 New Durham Road
Edison NJ 08817

See page two for job notes and contact information.

Eurofins Edison

Job Notes

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to the NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. This report is confidential and is intended for the sole use of Eurofins Environment Testing Northeast, LLC Edison and its client. All questions regarding this report should be directed to the Eurofins Environment Testing Northeast, LLC Edison Project Manager or designee who has signed this report.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northeast, LLC Project Manager.

Authorization

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3/22/2024 6:08:33 PM

Authorized for release by
Ken Hayes, Project Manager II
Ken.Hayes@et.eurofinsus.com
(615)301-5035

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Laboratory Job ID: 460-300160-1

Table of Contents

Definitions/Glossary

Client: Chesapeake Energy Corporation Job ID: 460-300160-1
Project/Site: CHK STATE M

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Chesapeake Energy Corporation Job ID: 460-300160-1
Project: CHK STATE M

Job ID: 460-300160-1 Eurofins Edison

Job Narrative
460-300160-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 3/13/2024 10:00 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.9°C.

Receipt Exceptions
Per laboratory policy, the Trip Blank sample date/time was added to reflect the latest sample date/time of the sampling event.
Trip (460-300160-5)

GC/MS VOA
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Chesapeake Energy Corporation Job ID: 460-300160-1
Project/Site: CHK STATE M

Client Sample ID: EQ Blank Lab Sample ID: 460-300160-1

No Detections.

Client Sample ID: MW-4 Lab Sample ID: 460-300160-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	339		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: Dup Lab Sample ID: 460-300160-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	357		10.0		mg/L	10		300.0	Total/NA

Client Sample ID: MW-1R Lab Sample ID: 460-300160-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.50		0.500		ug/L	1		8260D	Total/NA
Ethylbenzene	113		0.500		ug/L	1		8260D	Total/NA
Xylenes, Total	128		1.00		ug/L	1		8260D	Total/NA

Client Sample ID: Trip Lab Sample ID: 460-300160-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Edison

Client Sample Results

Client: Chesapeake Energy Corporation Job ID: 460-300160-1
Project/Site: CHK STATE M

Client Sample ID: EQ Blank — Lab Sample ID: 460-300160-1

Date Collected: 03/12/24 08:00 **Matrix: Water**
Date Received: 03/13/24 10:00

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		10.0		mg/L			03/18/24 14:39	10

Client Sample ID: MW-4 — Lab Sample ID: 460-300160-2

Date Collected: 03/12/24 11:00 **Matrix: Water**
Date Received: 03/13/24 10:00

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**339**		10.0		mg/L			03/18/24 14:54	10

Client Sample ID: Dup — Lab Sample ID: 460-300160-3

Date Collected: 03/12/24 00:00 **Matrix: Water**
Date Received: 03/13/24 10:00

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**357**		10.0		mg/L			03/18/24 15:08	10

Client Sample ID: MW-1R — Lab Sample ID: 460-300160-4

Date Collected: 03/12/24 12:50 **Matrix: Water**
Date Received: 03/13/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**1.50**		0.500		ug/L			03/21/24 17:13	1
Ethylbenzene	**113**		0.500		ug/L			03/21/24 17:13	1
Toluene	ND		0.500		ug/L			03/21/24 17:13	1
Xylenes, Total	**128**		1.00		ug/L			03/21/24 17:13	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*85*		*76 - 120*		*03/21/24 17:13*	*1*
Dibromofluoromethane (Surr)	*85*		*77 - 132*		*03/21/24 17:13*	*1*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 128*		*03/21/24 17:13*	*1*
Toluene-d8 (Surr)	*115*		*80 - 120*		*03/21/24 17:13*	*1*

Client Sample ID: Trip — Lab Sample ID: 460-300160-5

Date Collected: 03/12/24 00:00 **Matrix: Water**
Date Received: 03/13/24 10:00

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/21/24 12:19	1
Ethylbenzene	ND		0.500		ug/L			03/21/24 12:19	1
Toluene	ND		0.500		ug/L			03/21/24 12:19	1
Xylenes, Total	ND		1.00		ug/L			03/21/24 12:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*86*		*76 - 120*		*03/21/24 12:19*	*1*
Dibromofluoromethane (Surr)	*86*		*77 - 132*		*03/21/24 12:19*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*70 - 128*		*03/21/24 12:19*	*1*
Toluene-d8 (Surr)	*114*		*80 - 120*		*03/21/24 12:19*	*1*

Surrogate Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		BFB	DBFM	DCA	TOL
Lab Sample ID	Client Sample ID	(76-120)	(77-132)	(70-128)	(80-120)
460-300160-4	MW-1R	85	85	97	115
460-300160-5	Trip	86	86	101	114
LCS 460-965152/3	Lab Control Sample	90	85	97	112
LCSD 460-965152/15	Lab Control Sample Dup	87	84	100	116
MB 460-965152/7	Method Blank	88	87	102	113

Surrogate Legend

BFB = 4-Bromofluorobenzene
DBFM = Dibromofluoromethane (Surr)
DCA = 1,2-Dichloroethane-d4 (Surr)
TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 460-965152/7
Matrix: Water
Analysis Batch: 965152

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.500		ug/L			03/21/24 08:40	1
Ethylbenzene	ND		0.500		ug/L			03/21/24 08:40	1
Toluene	ND		0.500		ug/L			03/21/24 08:40	1
Xylenes, Total	ND		1.00		ug/L			03/21/24 08:40	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene	*88*		*76 - 120*		*03/21/24 08:40*	*1*
Dibromofluoromethane (Surr)	*87*		*77 - 132*		*03/21/24 08:40*	*1*
1,2-Dichloroethane-d4 (Surr)	*102*		*70 - 128*		*03/21/24 08:40*	*1*
Toluene-d8 (Surr)	*113*		*80 - 120*		*03/21/24 08:40*	*1*

Lab Sample ID: LCS 460-965152/3
Matrix: Water
Analysis Batch: 965152

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Benzene			20.0	22.18		ug/L		111	71 - 126		
Ethylbenzene			20.0	20.90		ug/L		104	78 - 120		
Toluene			20.0	20.86		ug/L		104	78 - 120		
Xylenes, Total			40.0	41.50		ug/L		104	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-Bromofluorobenzene	*90*		*76 - 120*
Dibromofluoromethane (Surr)	*85*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*97*		*70 - 128*
Toluene-d8 (Surr)	*112*		*80 - 120*

Lab Sample ID: LCSD 460-965152/15
Matrix: Water
Analysis Batch: 965152

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene			20.0	23.09		ug/L		115	71 - 126	4	30
Ethylbenzene			20.0	20.88		ug/L		104	78 - 120	0	30
Toluene			20.0	21.35		ug/L		107	78 - 120	2	30
Xylenes, Total			40.0	41.77		ug/L		104	80 - 120	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
4-Bromofluorobenzene	*87*		*76 - 120*
Dibromofluoromethane (Surr)	*84*		*77 - 132*
1,2-Dichloroethane-d4 (Surr)	*100*		*70 - 128*
Toluene-d8 (Surr)	*116*		*80 - 120*

QC Sample Results

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 460-964618/3
Matrix: Water
Analysis Batch: 964618

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		1.00		mg/L			03/18/24 13:09	1

Lab Sample ID: LCS 460-964618/5
Matrix: Water
Analysis Batch: 964618

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			3.20	2.884		mg/L		90	90 - 110		

Lab Sample ID: LCSD 460-964618/6
Matrix: Water
Analysis Batch: 964618

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride			3.20	2.996		mg/L		94	90 - 110	4	15

QC Association Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

GC/MS VOA

Analysis Batch: 965152

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-300160-4	MW-1R	Total/NA	Water	8260D	
460-300160-5	Trip	Total/NA	Water	8260D	
MB 460-965152/7	Method Blank	Total/NA	Water	8260D	
LCS 460-965152/3	Lab Control Sample	Total/NA	Water	8260D	
LCSD 460-965152/15	Lab Control Sample Dup	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 964618

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
460-300160-1	EQ Blank	Total/NA	Water	300.0	
460-300160-2	MW-4	Total/NA	Water	300.0	
460-300160-3	Dup	Total/NA	Water	300.0	
MB 460-964618/3	Method Blank	Total/NA	Water	300.0	
LCS 460-964618/5	Lab Control Sample	Total/NA	Water	300.0	
LCSD 460-964618/6	Lab Control Sample Dup	Total/NA	Water	300.0	

Lab Chronicle

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Client Sample ID: EQ Blank — Lab Sample ID: 460-300160-1

Date Collected: 03/12/24 08:00 — **Matrix: Water**
Date Received: 03/13/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	964618	OXG	EET EDI	03/18/24 14:39

Client Sample ID: MW-4 — Lab Sample ID: 460-300160-2

Date Collected: 03/12/24 11:00 — **Matrix: Water**
Date Received: 03/13/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	964618	OXG	EET EDI	03/18/24 14:54

Client Sample ID: Dup — Lab Sample ID: 460-300160-3

Date Collected: 03/12/24 00:00 — **Matrix: Water**
Date Received: 03/13/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	300.0		10	964618	OXG	EET EDI	03/18/24 15:08

Client Sample ID: MW-1R — Lab Sample ID: 460-300160-4

Date Collected: 03/12/24 12:50 — **Matrix: Water**
Date Received: 03/13/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	965152	SZD	EET EDI	03/21/24 17:13

Client Sample ID: Trip — Lab Sample ID: 460-300160-5

Date Collected: 03/12/24 00:00 — **Matrix: Water**
Date Received: 03/13/24 10:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	965152	SZD	EET EDI	03/21/24 12:19

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Accreditation/Certification Summary

Client: Chesapeake Energy Corporation Job ID: 460-300160-1
Project/Site: CHK STATE M

Laboratory: Eurofins Edison

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0818	09-30-24
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	01-02-25
Georgia	State	12028 (NJ)	06-30-24
Massachusetts	State	M-NJ312	06-30-24
New Jersey	NELAP	12028	06-30-24
New York	NELAP	11452	04-01-24
Pennsylvania	NELAP	68-00522	02-28-25
Rhode Island	State	LAO00376	12-31-24
USDA	US Federal Programs	P330-20-00244	05-31-24

Method Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET EDI
300.0	Anions, Ion Chromatography	EPA	EET EDI
5030C	Purge and Trap	SW846	EET EDI

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET EDI = Eurofins Edison, 777 New Durham Road, Edison, NJ 08817, TEL (732)549-3900

Sample Summary

Client: Chesapeake Energy Corporation
Project/Site: CHK STATE M

Job ID: 460-300160-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
460-300160-1	EQ Blank	Water	03/12/24 08:00	03/13/24 10:00
460-300160-2	MW-4	Water	03/12/24 11:00	03/13/24 10:00
460-300160-3	Dup	Water	03/12/24 00:00	03/13/24 10:00
460-300160-4	MW-1R	Water	03/12/24 12:50	03/13/24 10:00
460-300160-5	Trip	Water	03/12/24 00:00	03/13/24 10:00

CHAIN OF CUSTODY RECORD

No. 2941

EQUUS Environmental LLC (918) 921-5331

PROJECT NUMBER: CHKSTAT M
SHIPPED TO: EDISON
PROJECT NAME: CHK STATE M
PROJECT MANAGER: MATT MULAYERO
COC 1 of 1
TAT: STANDARD
PO#: —
WO#: 300160

SAMPLER'S PRINTED NAME: TERRY FISHER
SAMPLERS SIGNATURE: [signature]

Date	Time	Sample ID	Sample Matrix	# of Sample Containers	BTEX	CHLORIDE	Temp	REMARKS
3-12-24	800	Eq Blank	W	1		X	X	
3-12-24	1100	MW-4	W	1		X	X	
3-12-24	—	Dup	W	1		X	X	
3-12-24	1250	MW-1R	W	3	X		X	
—	—	Trip	W	2	X		X	

460-300160 Chain of Custody

TOTAL NUMBER OF CONTAINERS → 8   23336024

RELINQUISHED BY: [signature] DATE 3/12/24 TIME 1630
RECEIVED BY: [signature] DATE 3/13/24 TIME 10:00

IR: 9 1 5c 11.9c

RELINQUISHED BY: DATE TIME
RECEIVED BY: DATE TIME

METHOD OF SHIPMENT: FEDEX
AIRBILL NUMBER: FEDEX 6772 2902 3194

RECEIVED IN LABORATORY BY: DATE TIME
Send PDF EDD, and INVOICE (if applicable) to:
QAQC@EquusEnv.com

LABORATORY CONTACT: KEN 615-301-5035
LABORATORY ADDRESS: 777 NEW DURHAM RD EDISON, NJ 08817

White: Receiving Lab   Yellow: Equus Environmental Project File   Pink: Equus QA/QC

300160

Eurofins TestAmerica Edison
Receipt Temperature and pH Log

Job Number: _____

Number of Coolers: 1 IR Gun # 9

Cooler Temperatures

	RAW	CORRECTED		RAW	CORRECTED		RAW	CORRECTED
Cooler #1:	15 °C	19 °C	Cooler #4:	°C	°C	Cooler #7:	°C	°C
Cooler #2:	°C	°C	Cooler #5:	°C	°C	Cooler #8:	°C	°C
Cooler #3:	°C	°C	Cooler #6:	°C	°C	Cooler #9:	°C	°C

TALS Sample Number	Ammonia (pH<2)	COD (pH<2)	Nitrate Nitrite (pH<2)	Metals* (pH<2)	Hardness (pH<2)	Pest (pH 5-9)	EPH or QAM (pH<2)	Phenols (pH<2)	Sulfide (pH>9)	TKN (pH<2)	TOC (pH<2)	Total Cyanide (pH>12)	Total Phos (pH<2)	Other	Other

If pH adjustments are required record the information below:

Sample No(s). adjusted: _____

Preservative Name/Conc. _____ Volume of Preservative used (ml). _____

Lot # of Preservative(s): _____ Expiration Date: _____

The appropriate Project Manager and Department Manager should be notified about the samples which were pH adjusted.

**Samples for Metal analysis which are out of compliance must be acidified at least 24 hours prior to analysis.*

EDS-WI-038, Rev 4.1
10/22/2019

Initials: BRalen Date: 3/13/24

Login Sample Receipt Checklist

Client: Chesapeake Energy Corporation Job Number: 460-300160-1

Login Number: 300160 **List Source: Eurofins Edison**
List Number: 1
Creator: Rivera, Kenneth

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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 339655

CONDITIONS

Operator: CHESAPEAKE OPERATING, INC. 6100 NORTH WESTERN AVE OKC, OK 73118	OGRID: 147179
	Action Number: 339655
	Action Type: [UF-GWA] Ground Water Abatement (GROUND WATER ABATEMENT)

CONDITIONS

Created By	Condition	Condition Date
michael.buchanan	Tenth Annual GW Monitoring Report for State M Lease accepted for the record.	6/17/2024