

3399 Veterans Drive, Traverse City, Michigan 49684

QUARTERLY PROJECT UPDATE REPORT 4th QUARTER 2020

HARLTAND 36 GAS PLANT PORTION OF E¹/₂ of NW ¹/₄ of SECTION 36, T03N-R06E, HARTLAND TWP, LIVINGSTON COUNTY, MICHIGAN

LAMBDA ENERGY RESOURCES, LLC 1510 THOMAS ROAD KALKASKA, MICHIGAN 49646

> February 2, 2021 ECT No. 130685-2000

Complex Challenges . . . PRACTICAL SOLUTIONS

DOCUMENT REVIEW

The dual signatory process is an integral part of Environmental Consulting & Technology, Inc.'s (ECT's) Document Review Policy No. 9.03. All ECT documents undergo technical/peer review prior to dispatching these documents to any outside entity.

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1.0 INTRODUCTION

This Quarterly Project Update Report was compiled by Environmental Consulting & Technology, Inc. (ECT), on behalf of Lambda Energy Resources, LLC (LER) and details remediation system operations and performance monitoring through the 4th Quarter 2020 (October 1, 2020 through December 31, 2020) for the Hartland 36 Gas Plant location, herein referenced as the "Site".

2.0 PROJECT LOCATION

The Site is a former natural gas processing plant which operated from 1999 to 2015. The property is located in a portion of the East ½ of the Northeast ¼ of Section 36, T03N-R06E, on the south side of Lone Tree Road between North Pleasant Valley Road and South Tipsico Lake Road in Hartland Township, Livingston County, Michigan. A Site Location Map and Site and Surrounding Properties Map are included as Figure 1 and Figure 2, respectively, in Appendix A.

3.0 PROJECT SUBMITTALS

The following presents a chronological summary of previous documents submitted to the Michigan Department of Environment, Great Lakes, and Energy – Oil, Gas, and Minerals Division (EGLE-OGMD) by ECT for the Site:

- Soil Closure Report dated February 15, 2016
- Groundwater Characterization Work Plan dated February 23, 2016
- Groundwater Characterization Work Plan 2 dated July 8, 2016
- Project Update Report dated September 26, 2016
- Groundwater Characterization Work Plan 3 dated October 14, 2016
- Additional Groundwater Characterization Work Plan dated December 29, 2016
- Groundwater Characterization Work Plan 5 dated March 2, 2017
- Biosparging Pilot Study Work Plan dated April 5, 2017
- Groundwater Characterization Report dated July 3, 2017
- Technical Memorandum Biosparging Pilot Study dated July 28, 2017
- Remediation System Design Plan dated August 11, 2017
- Quarterly Project Update Report 1st Quarter 2018 dated April 24, 2018
- Quarterly Project Update Report 2nd Quarter 2018 dated August 8, 2018
- Quarterly Project Update Report 3rd Quarter 2018 dated October 26, 2018
- Quarterly Project Update Report 4th Quarter 2018 dated April 8, 2019
- Quarterly Project Update Report 1st Quarter 2019 dated April 10, 2019
- Quarterly Project Update Report 2nd Quarter 2019 dated August 19, 2019
- Quarterly Project Update Report 3rd Quarter 2019 dated November 25, 2019
- Quarterly Project Update Report 4th Quarter 2020 dated May 5, 2020
- Quarterly Project Update Report 1st Quarter 2020 dated July 17, 2020
- Quarterly Project Update Report 2nd Quarter 2020 dated September 10, 2020
- Quarterly Project Update Report 3rd Quarter 2020 dated December 17, 2020



4.0 PROJECT OVERVIEW

KCS Michigan Resources developed the Site in 1999 and operated the natural gas processing plant into 2006. Merit Energy Company acquired the Site in 2006 and operated the plant until August 2015, when facility decommissioning commenced. LER acquired the Site from Merit Energy Company in July 2018.

In general, operations at the Site included crude oil and brine separation and storage, natural gas compression, dehydration, sweetening (hydrogen sulfide [H₂S] removal), carbon dioxide (CO₂) removal (amine process), and refrigeration for natural gas liquid (NGL) extraction and storage.

Contaminated soil was discovered in September 2015 during facility decommissioning activities at the former sweetening plant/refrigeration building; sulfolane impacts are from the gas treatment chemical Sulfinol®. Remediation activities (excavation and off-Site disposal) completed from September 2015 through December 2016 resulted in disposal of 13,481.4 tons of soil at the Venice Park Landfill in Lennon, Michigan. Verification of soil remediation (VSR) samples collected from the excavations confirmed remediation of impacted soils. Refer to the Soil Closure Report dated February 15, 2016 for a detailed summary of soil remediation and sampling activities.

Groundwater investigation activities commenced on October 29, 2015 and were completed on March 7, 2017. Seven soil borings, 13 temporary monitor wells, including two vertical aquifer profile (VAP) locations, and 37 permanent monitor wells, including 20 shallow screened monitor wells and 17 deep screened monitor wells, have been installed at the Site. The lateral and vertical extents of groundwater impacted with sulfolane have been delineated to non-detectable concentrations (laboratory reporting limit of 10 micrograms per liter, μ g/L). The maximum sulfolane concentration reported from a monitor well at the Site was 11,000 micrograms per liter (μ g/L) from MW-20D on the June 19-21, 2017 sampling event. Refer to the Groundwater Characterization Report dated July 3, 2017 for a detailed summary of groundwater characterization and assessment activities.

A biosparging pilot study was conducted at the Site from May 1, 2017 through June 16, 2017. The pilot study included three tests to evaluate the effectiveness of biosparging to enhance bioremediation of sulfolane dissolved in groundwater at the Site. Data obtained from the pilot study indicates biosparging is an effective remedial alternative for the Site. Concentrations of sulfolane were reduced by 100% within five feet of the biosparge point and 97% to 99% at a distance of 20 feet from the biosparge point. Dissolved oxygen (DO) influence of 4.2-10 milligrams per liter (mg/L) was observed at monitoring locations situated 40 feet from the biosparge point. Refer to the Technical Memorandum – Biosparging Pilot Study dated July 28, 2017 for a summary of pilot study activities and results.

Information obtained from the pilot study was utilized to compile the Remediation System Design Plan dated August 11, 2017. The Remediation System Design Plan presented the biosparge point (BSP) array, remediation system equipment, anticipated remediation system operation and maintenance (O&M), and performance monitoring activities. Biosparge system installation activities commenced at the Site on August 21, 2017 and concluded with startup of the remediation system on November 16, 2017. Remediation system equipment and components were generally consistent with



details and specifications provided in the Remediation System Design Plan and included 41 biosparge points (BSPs). Refer to the Quarterly Project Update Report – 1st Quarter 2018 dated April 24, 2018 for a summary of remediation system installation activities, O&M, and results of performance monitoring events completed through the 1st Quarter 2018.

Performance monitoring results from the 3rd Quarter 2020 indicate the remediation system has mitigated concentrations of sulfolane in groundwater with 12 of the 13 monitor wells that reported a concentration of sulfolane above the cleanup goal from the pre-startup sampling event reporting sulfolane non-detect from the monitoring event completed September 9-10, 2020. Concentrations of sulfolane were reported above the cleanup goal from MW-17S (91 μ g/L) for the 3rd Quarter 2020 performance monitoring event. Refer to the Quarterly Project Update Report – 3rd Quarter 2020 dated December 17, 2020 for a summary of results of performance monitoring events completed through the 3rd Quarter 2020.

5.0 REMEDIATION SYSTEM OPERATION AND MAINTENANCE

The remediation system was shut down on February 17, 2020 for scheduled maintenance of the air sparge compressor skid. The remediation system remained shut down until operation resumed on November 4, 2020. Operation of the remediation system resumed in order to mitigate the concentration of sulfolane detected at MW-17S from the 3rd Quarter 2020 monitoring event. Site visits are completed to assure optimal operating conditions, to monitor remediation system equipment, and to perform regularly scheduled maintenance. Site visits generally include the following:

- Equipment readings temperature, flow rate, pressure, operation hours, etc.
- Flow rate adjustments
- BSP array changes
- Scheduled equipment maintenance
- Alarm condition assessment (as necessary)

The above information is logged on field forms to assess operating conditions as well as for completing system adjustments with respect to performance monitoring data. The primary monitoring parameters utilized to assess remediation system performance are as follows:

- BSP pressure and flow rate
- Sulfolane and sulfate concentrations
- Dissolved oxygen (DO) levels

Remediation system O&M data obtained from site visits is included on Table 1 in Appendix B. Groundwater sampling data is summarized on Table 2 in Appendix B and is further discussed in Section 6.0.

In order to target residual sulfolane concentrations at MW-17S, biosparge points BSP-28 and BSP-29 were operated during the 4th Quarter 2020. Target BSP flow rates were 15 to 20 standard cubic feet



per minute (scfm), pending pressure associated with the operating array. Remediation system operational performance (i.e. percent runtime) was 75% from November 4, 2020 through December 1, 2020. The remediation system was shut down on December 1, 2020 to allow for a period of subsurface stabilization prior to the December 10, 2020 performance monitoring event. The remediation system remained shut down for the remainder of the 4th Quarter 2020, pending analytical results from the December 2020 performance monitoring event.

6.0 PERFORMANCE MONITORING SUMMARY

The following sections detail performance monitoring activities completed at the Site in the 4th Quarter 2020.

6.1 PERFORMANCE MONITORING EVENTS

Personnel from ECT completed the following performance monitoring events at the Site in the 4th Quarter 2020:

- October 23, 2020 Confirmation groundwater sampling event at MW-17S
- December 10, 2020 Quarterly groundwater monitoring event of the following 14 monitor wells:
 - MW-7, MW-7D, MW-13, MW-13D, MW-14S, MW-14D, MW-15D, MW-17S, MW-17D, MW-18, MW-19S, MW-19D, MW-20S, and MW-20D

6.2 LABORATORY ANALYSIS

Groundwater samples from the October 23, 2020 and December 10, 2020 monitoring events were collected via low-stress sampling methods in general accordance with USEPA Region 1 Low-Stress (low flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells, Revision Date September 19, 2017. Groundwater samples, including QA/QC samples, were collected and analyzed in general accordance with currently applicable EGLE-RRD guidance documents.

The samples were collected into laboratory supplied containers, placed on ice, and shipped under chain-of-custody protocols to the ALS Environmental laboratory facility located in Holland, Michigan for analysis of the following:

- Sulfolane by USEPA Method 8270D
- Sulfate by Method A4500-SO4 E-11 (only groundwater samples collected on December 10, 2020)

Copies of laboratory analytical reports are included in Appendix C. Copies of low-flow sampling field forms are included in Appendix D.



6.3 CLEANUP GOALS

The EGLE-OGMD established an interim drinking water criterion for sulfolane of 90 μ g/L which has been considered the cleanup goal for sulfolane dissolved in groundwater at the Site. However, per the June 28, 2020 EGLE-OGMD response to the Quarterly Project Update Report – 1st Quarter 2020, the Draft EGLE Part 201 Residential Generic Cleanup Criteria and Screening Level (Part 201 Residential GCCSL) for Drinking Water for sulfolane (5.9 μ g/L), published in the Comprehensive Cleanup Criteria Update 2017, is now considered the basis for final site closure. Per footnote (M) of the proposed cleanup criteria tables, since the calculated health-based criteria of 5.9 μ g/L is below the analytical target detection limit of 10 μ g/L, the analytical target detection limit of 10 μ g/L is considered the criterion.

The cleanup goal for sulfate, resulting from the biodegradation of sulfolane, was established in previous project submittals and is the EGLE Part 201 Residential GCCSL Drinking Water Criterion of 250 mg/L.

6.4 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON

The following presents a summary and comparison of groundwater analytical results to the cleanup goal for sulfolane through the quarterly groundwater sampling event completed December 10, 2020.

Monitor wells located west beyond the extent of the lower clay confining layer

• Monitor well clusters MW-6/6D and MW-12S/12D reported sulfolane non-detect from all associated sampling events.

Monitor wells screened below the lower clay confining layer

- Monitor wells MW-19DD and MW-21D reported sulfolane non-detect from all associated sampling events.
- Concentrations of sulfolane were reported above applicable cleanup criteria from MW-15DD from the pre-remediation system startup sampling event (September 11-13, 2017) and a confirmation sampling event (September 21, 2018). The concentration of sulfolane detected in MW-15DD is suspected to be the result of drilling activities completed on August 28, 2017. Sulfolane was reported non-detect from MW-15DD from all subsequent sampling events.

Monitor wells screened within the limits of the clay confining layer (area of sulfolane impact)

- The following monitor wells reported sulfolane non-detect from all associated sampling events:
 - MW-1, MW-2, MW-2D, MW-3, MW-3D, MW-4, MW-5, MW-8, MW-9, MW-10, MW-11, MW-15, MW-16, MW-16D, MW-22D, and MW-23D
- The following monitor wells previously reported sulfolane above the cleanup goal prior to the pre-remediation system startup event and non-detect at and subsequent to the pre-remediation system startup event:
 - ▶ MW-7 and MW-13



- The following presents percent reductions to the concentration of sulfolane (relative to the highest concentration from/after the pre-remediation system startup sampling event) for monitor wells that reported sulfolane above the cleanup goal from the pre-remediation system startup sampling event:
 - ➢ October 23, 2020:
 - o MW-17S: 91 μg/L 97.1%
 - ➢ December 10, 2020:
 - MW-7D, MW-14S, MW-14D, MW-15D, MW-15DD, MW-17S, MW-17D, MW-18, MW-19S, MW-19D, MW-20S, and MW-20D: Non-detect 100%
 - o MW-13D: 99 μ g/L 86.4%
- Prior to the 2nd Quarter 2020 monitoring event, MW-13D was the only monitor well at the Site that reported concentrations of sulfate above the cleanup goal (250 mg/L). MW-17D has reported sulfate above the cleanup goal for the 2nd and 3rd Quarter 2020 monitoring event. MW-7 reported sulfate above the cleanup goal for the 4th Quarter 2020 monitoring event. Sulfate concentrations were reported at 250 mg/L for MW-7, 460 mg/L for MW-13D, and 220 mg/L for MW-17D from the 4th Quarter 2020 monitoring event. As noted in the Technical Memorandum Biosparging Pilot Study dated July 28, 2017, natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is expected once biosparging has ceased. Natural attenuation/biodegradation appears to be occurring as supported by the decrease to the concentrations of sulfate at MW-13D and MW-17D from peak concentrations of 920 μg/L (MW-13D 1st Quarter 2020) and 290 μg/L (MW-17D 3rd Quarter 2020).

Monitor well locations are illustrated on Figure 3 in Appendix A. Please refer to Table 2 and Table 3 in Appendix B for a summary of groundwater monitoring data for the Site.

7.0 CONCLUSIONS AND RECOMMENDATIONS

As supported by the data presented herein, the remediation system has been effective at reducing concentrations of sulfolane after approximately three years (37 months) of operation. The supplemental monitoring event sample collected from MW-17S on October 23, 2020 reported a concentration of sulfolane (91 μ g/L) above the cleanup goal. 13 of the 14 monitor wells, including MW-17S, that previously reported a concentration of sulfolane above the cleanup goal were reported non-detect at the December 10, 2020 monitoring event. MW-13D reported a concentration of sulfolane (99 μ g/L) above the first time since the 2nd Quarter 2020 performance monitoring event.

The concentration of sulfate reported from MW-13D remains above the cleanup goal. However, the concentration of sulfate at MW-13D decreased to $460 \,\mu\text{g/L}$ from $920 \,\mu\text{g/L}$ from the 1st Quarter 2020 monitoring event, thus indicating natural attenuation/biodegradation (i.e sulfate reduction) of sulfate is likely occurring. Prior to the 2nd Quarter 2020 monitoring event, MW-13D was the only monitor well to have reported a concentration of sulfate above the cleanup goal. In addition to MW-13D, MW-7 reported sulfate above the cleanup goal for the 4th Quarter 2020 monitoring event.

Per recommendations presented in the Quarterly Project Update Report – 3rd Quarter 2018 dated October 26, 2018, and correspondence with EGLE-OGMD staff, three performance monitoring



events per year were to include the 14 monitor wells with current/previous detections of sulfolane and one performance monitoring event per year was to include all (37) monitor wells. As a result of sulfolane reported non-detect from two of the 2020 quarterly sampling events, thus indicating that the majority of the plume has been remediated and minimal concerns remain, sampling the remaining 23 monitor wells is no longer warranted.

8.0 SCHEDULE

The following schedule of activities is proposed/anticipated for the 1st Quarter 2021:

- The following performance monitoring events are proposed to be completed during the 1st Quarter 2021:
 - Supplemental monitoring event in January 2021 at MW-13D and MW-17S.
 - Quarterly monitoring event in March 2021 to include the 14 monitor wells with current/previous detections of sulfolane.
- The remediation system continues to be shut down pending the result for MW-13D and MW-17S from the January 2021 monitoring event.
- A quarterly project update report will be submitted within three weeks of receipt of analytical data from the March 2021 monitoring event.



APPENDIX A

FIGURES







FIGURE 2 SITE AND SURROUNDING PROPERTIES MAP HARTLAND 36 GAS PLANT PORTION OF E 1/2 OF NE 1/4 OF SECTION 36, T03N-R06E HARTLAND TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN Source: Google Earth, 2016; ECT, 2016.





Legend

۵

Monitor Well

◬

Temporary Monitor Well

Ø

Soil Boring

Excavation Boundary

Fenceline (former)



BSP Location

ND

Not Detected at the Reporting Limit Sulfolane concentrations (in μ g/L) from the December 2020 sampling event.



1) DRAWING BASED UPON FIELD OBSERVATIONS TAKEN 11/18/15 (FOR MW DESIGNATED WELLS), 06/06/16 (FOR TMW DESIGNATED WELLS/BORINGS) AND 08/02/16 (FOR MONITORING WELLS 8-13 &

2) ADDITIONAL FIELD OBSERVATIONS TAKEN 11/01/16 FOR LOCATIONS AND ELEVATIONS OF MW-13D, MW-14S & D, MW-17S & D. MW-18. AND MW-19S & D. NEW ELEVATIONS WERE ESTABLISHED FOR MW-9, MW-10, MW-11, MW-13, MW-15 AND MW-16. SOIL BORINGS SB-1 & SB-2 WERE ALSO LOCATED ON





HARTLAND 36 GAS PLANT

130685 - 2000 ECT PROJECT NUMBER

DESIGNED BY CHECKED BY

BJB JSL DRAWN BY APPROVED BY

SHEET TITLE

SITE PLAN

SCALE: 1" = 50 @ 11x17

25' 50'



FIGURE



APPENDIX B

TABLES



| | TABLE 1 REMEDIATION SYSTEM O&M DATA Hartland 36 Gas Plant Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, | | | | | | | | | | | | | | | | | | | |
|------------------------|--|-----------|----------|-------------|--------------------------|---------------------|---------------|--------------------|--------------------------|---------------------------|------------------|-------------|----------|-----------|----------|-----------|----------------------------|-------------------------|-------------|-----------|
| | | | | | | | Portio | n of E1/2 c ECT | f NW1/4 of Project #1 | f Section 3 3-0685-200 | 6, T03N-R()0 | 06E, | | | | | | | | |
| | | 11/4 | /2020 | | r | 11/12 | 2/2020 | | | 11/18 | /2020 | | | 11/25 | 5/2020 | | | 12/1 | /2021 | |
| | Arı | rival | Depa | rture | Arr | ival | Depa | arture | Arr | rival | Depa | arture | Arr | ival | Depa | arture | Arr | ival | Depa | rture |
| | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate | Pressure | Flow Rate |
| BSP # | (p3i) | (senn) | (p3i) | (Jenn) | (p3i) | (Jenn) | (p3i) | (senn) | (psi) | (Jenn) | (p3i) | (senn) | (p3i) | (senny | (psi) | (senn) | (psi) | (Jenny | (p31) | (senn) |
| 2 | | | | | | | | | | | | | | | | | | | | |
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| 9 | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | |
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| 22 | | - | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | |
| 27 | | | 16 | 6 | 1 | 0 | 0 | 0 | | | | | | | | | 15 | 0 | 8 | 0 |
| 28 | | | 12 | 12 | 0 | 0 | 11 | 17 | 0 | 0 | 10 | 7 | 8 | 15 | 8 | 18 | 10 | 19 | 5 | 0 |
| 29 | | | 10 | 16 | 1 | 0 | 12.5 | 17 | 0 | 0 | 11 | 17 | 7 | 20 | 7 | 19 | 9 | 20 | 5 | 0 |
| 30 | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | | | | |
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| 35 | | | | | | | | | | | | | | | | | | | | |
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| 37 | | | | | | | | | | | | | | | | | | | | |
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| 47 | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | | | | |
| Elapsed Time, hrs | 575 | 95.47 | 5759 | 96.65 70 | 5769 | J3.63 | 576 | 94.44 | 5770 | b/.85 | 5770 | b9.63 | 5793 | 36.83 | 5793 | 37.59 | 5808 | 31.43 | 5808 | 31.49 |
| Blower Temp., 'F | | | 2 | /U | 1 | 15 | 2 | 55 | 5 | 12 | 2 | 40 | 2 | 42 | 2 | 39 1 5 | 2 | 20 | 1 | 2 2 |
| Manifold Pressure, psi | | | 1 | 8 | 1 | 1 | 1 | 16 | 1 | 5 | 1 | 15 | 1 | .+ | 24 | 3 | 24 | 4.5 | 1 | <u>د</u> |
| Heat Exr Temp., °F | | | 7 | 0 | 4 | 16 | e | 50 | 4 | 12 | 5 | 50 | 4 | 7 | 4 | 17 | 3 | 2 | 3 | 2 |
| Comments | | | , | - | System dov Temp light | vn on arriva on. | l; Process Ro | oom High | System dov on. | wn on arrival | ; Air Sparge | Fault light | | | | | Shut systen sampling ne | n down upo ext week. | n departure | for |

BSP's with closed valves.

BSPs installed 5/2-3/2018.

BSP-42 permanently removed from manifold 5/2/2018. BSP-48 installed 2/12/2020.



| | TABLE 2 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON Hartland 36 Gas Plant Portion of E1/2 of NW1/4 of Section 36, T03X-R05E, Hartland Township, Livingston County, Michigan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|--|---|---|---|---|---|---|---|--|--|--|--|--|--|---|---|---|--|---|---|--|--|--|--|--|-----------|--------|---------|
| | | | | | | | | | | | | | | TABLE | 2 | | | | | | | | | | | | | | | |
| | | | | | | | | | | GROUN | DWATER | ANALY | TICAL SU | JMMARY 8 | & CLEA | NUP CR | ITERIA | COMPAR | RISON | | | | | | | | | | | |
| | | | | | | | | | | | | | Ha | rtland 36 Ga | s Plant | | | | | | | | | | | | | | | |
| | | | | | | | | | | Portion of | E1/2 of NW | 1/4 of Sec | ction 36, 10 | 3N-R06E, Hai | rtland I o | wnship, Li | vingston | County, Mi | chigan | | | | | | | | | | | |
| | 1 | | | 1 | MIN O | | 1 | MIN OD | | r | MIN O | | ECT | Project #13-0 | 1003-2000 | U | | | 1 | MIN C | | 1 | Millio | | 1 | MW CD | | 1 | 104/ 7 | |
| Data | Culfelone | MIW-1 | Culfata | Sulfalana | MW-2 | Culfate | Sulfalana | MW-2D | Sulfate | Sulfalana | IVI VV-3 | Cullata | Sulfalana | MW-3D | Sulfata | Sulfalana | NIW-4 | Cullate | Sulfalana | MW-5 | Sulfate | Sulfalana | NI W-6 | Culfata | Sulfalana | MW-6D | Sulfate | Sulfalana | MW-7 | Culfate |
| 0/11 12/17 | Suilolane | 0.00 | Sullate | Suitolaite | 4.14 | Suilate | Suiloiane | 5.26 | Suilate | Suitolaile | 6.06 | Sunate | Suitolane | 1.02 | Suilate | Suiloiane | 7.75 | Suilate | Sunoiane | 7.24 | Suilate | Sullolate | 2.77 | Suilate | Suiloiane | 5.00 | Sunate | Suitolane | 1.55 | Suilate |
| 9/21/17 | 140 | 0.00 | | 140 | 4.14 | | ND | 5.50 | | | 0.30 | | ND | 1.05 | | | 1.15 | | 110 | 7.51 | | 140 | 2.11 | | | 5.50 | | 140 | 1.55 | |
| 12/19-20/17 | ND | 8.83 | 6.4 | ND | 8.76 | 16 | ND | 5.02 | 21 | ND | 9.81 | 41 | ND | 1.90 | 27 | ND | 7.10 | 24 | ND | 6.85 | 24 | ND | 2.99 | 42 | ND | 9.26 | 19 | ND | 10.07 | 46 |
| 1/25/18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2/27/18 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/28-29/18 | ND | 7.87 | 5.0 | ND | 7.79 | 14 | ND | 4.05 | 17 | ND | 11.53 | 26 | ND | 1.31 | 30 | ND | 9.77 | 29 | ND | 6.31 | 24 | ND | 3.22 | 41 | ND | 6.92 | 20 | ND | 9.75 | 31 |
| 6/19-21/18 | ND | 15.96 | 9.3 | ND | 10.66 | 15 | ND | 7.87 | 18 | ND | 8.43 | 11 | ND | 1.06 | 28 | ND | 9.86 | 21 | ND | 12.49 | 28 | ND | 10.58 | 56 | ND | 10.91 | 10 | ND | 10.49 | 17 |
| 9/18-20/18 | 20/18 ND 9.98 8.5 ND 12.08 15 ND 10.21 21 ND 9.56 16 ND 11.87 34 ND 11.86 23 ND 11.26 25 ND 5.56 57 ND 8.27 22 11/18 | | | | | | | | | | | | | | ND | 13.67 | 24 | | | | | | | | | | | | | |
| 12/17-18/18 | 18/18 | | | | | | | | | | | | | | ND | 10.03 | 41 | | | | | | | | | | | | | |
| 3/25-26/19 | Condition | | | | | | | | | | | | | ND | 15.99 | 44 | | | | | | | | | | | | | | |
| 6/24-26/19 | Construction Construction< | | | | | | | | | | | | | ND | 12.22 | 20 | | | | | | | | | | | | | | |
| 9/23-24/19 | 324/19 <t< td=""><td>ND</td><td>12.78</td><td>25</td></t<> | | | | | | | | | | | | ND | 12.78 | 25 | | | | | | | | | | | | | | | |
| 1/2/20 | And the second | | | | | | | | | | | | | | 9.00 | 29 | | | | | | | | | | | | | | |
| 2/13/20 | And the field of t | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/5-6/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | ND | 49.87 | 22 |
| 4/2/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6/1-2/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | ND | 18.32 | 23 |
| 9/9-10/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | ND | 8.50 | 21 |
| 10/23/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12/10/20 | | | | | | | | | | | | | | | | | | | | | | | | | | | | ND | 3.52 | 250 |
| % Decrease | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Sulfolane Criterion (µg/L) | | | 1 | | | | | | | | | | | | Non-dete | ect - <10 | | | | | | | | | | | | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | | | | | | | | | | | | | | | Non-dete | ect - <10 60 | | | | | | | | | | | | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | | MW 7D | | | | *** | | | | | | | | | Non-dete 25 | ect - <10 50 | | | | | | | | | | | | | *** | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | Sulfolana | MW-7D | Sulfato | Sulfolano | MW-8 | Sulfato | Sulfolano | MW-9 | Sulfato | Sulfolane | MW-10 | Sulfato | Sulfolana | MW-11 | Non-dete 25 | ect - <10 50 | MW-12S | Sulfato | Sulfolano | MW-12D | | Sulfolano | MW-13 | Sulfato | Sulfolano | MW-13D | Sulfata | - | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 | Sulfolane | MW-7D DO | Sulfate | Sulfolane | MW-8 DO 9.09 | Sulfate | Sulfolane | MW-9 DO 0.73 | Sulfate | Sulfolane | MW-10 DO 7.42 | Sulfate | Sulfolane | MW-11 DO 3.69 | Non-dete 25 Sulfate | ect - <10 50 Sulfolane | MW-12S DO 2.65 | Sulfate | Sulfolane | MW-12D DO 1.36 | Sulfate | Sulfolane | MW-13 DO 0.94 | Sulfate | Sulfolane | MW-13D DO 0.52 | Sulfate | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 | Sulfolane 1,900 | MW-7D DO 0.79 | Sulfate | Sulfolane ND | MW-8 DO 9.09 | Sulfate | Sulfolane ND | MW-9 DO 0.73 | Sulfate | Sulfolane ND | MW-10 DO 7.42 | Sulfate | Sulfolane | MW-11 DO 3.69 | Non-dete | ect - <10 50 Sulfolane ND | MW-12S DO 2.65 | Sulfate | Sulfolane | MW-12D DO 1.36 | Sulfate | Sulfolane | MW-13 DO 0.94 | Sulfate | Sulfolane 660 (730) | MW-13D DO 0.52 | Sulfate 330 | | | |
| Sulfolane Criterion (μg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 | Sulfolane 1,900 4,100 | MW-7D DO 0.79 0.89 | Sulfate | Sulfolane ND | MW-8 DO 9.09 6.34 | Sulfate | Sulfolane ND ND | MW-9 DO 0.73 0.57 | Sulfate | Sulfolane ND ND | MW-10 DO 7.42 7.95 | Sulfate 36 | Sulfolane ND ND | MW-11 DO 3.69 5.04 | Non-dete 25 Sulfate 20 | ect - <10 50 Sulfolane ND ND | MW-12S DO 2.65 3.98 | Sulfate | Sulfolane ND | MW-12D DO 1.36 4.00 | Sulfate | Sulfolane ND ND | MW-13 DO 0.94 13.79 | Sulfate | Sulfolane 660 (730) 480 | MW-13D DO 0.52 0.51 | Sulfate 330 240 | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 | Sulfolane 1,900 4,100 | MW-7D DO 0.79 0.89 | Sulfate | Sulfolane ND ND | MW-8 DO 9.09 6.34 | Sulfate | Sulfolane ND | MW-9 DO 0.73 0.57 | Sulfate | Sulfolane ND ND | MW-10 DO 7.42 7.95 | Sulfate 36 | Sulfolane ND ND ND | MW-11 DO 3.69 5.04 | Non-dete 25 Sulfate 20 | ect - <10 50 Sulfolane ND ND | MW-12S DO 2.65 3.98 | Sulfate 19 | Sulfolane ND ND ND | MW-12D DO 1.36 4.00 | Sulfate 32 | Sulfolane ND ND | MW-13 DO 0.94 13.79 | Sulfate | Sulfolane 660 (730) 480 400 | MW-13D DO 0.52 0.51 2.13 | Sulfate 330 240 240 | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 1/25/18 2/27/18 | Sulfolane 1,900 4,100 1,200 | MW-7D DO 0.79 0.89 1.47 | Sulfate 46 96 | Sulfolane ND ND ND | MW-8 DO 9.09 6.34 | Sulfate 8 | Sulfolane ND ND | MW-9 DO 0.73 0.57 | Sulfate | Sulfolane ND ND | MW-10 DO 7.42 7.95 | Sulfate 36 | Sulfolane ND ND | MW-11 DO 3.69 5.04 | Non-dete 25 Sulfate 20 | ect - <10 50 Sulfolane ND ND | MW-12S DO 2.65 3.98 | Sulfate 19 | Sulfolane ND ND | MW-12D DO 1.36 4.00 | Sulfate 32 | Sulfolane ND ND | MW-13 DO 0.94 13.79 | Sulfate 80 | Sulfolane 660 (730) 480 400 ND | MW-13D DO 0.52 0.51 2.13 9.90 | Sulfate 330 240 240 210 | | | |
| Sulfate Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/26-29/18 | Sulfolane 1,900 4,100 1,200 820 | MW-7D DO 0.79 0.89 1.47 0.61 | Sulfate 46 96 81 | Sulfolane ND ND ND | MW-8 DO 9.09 6.34 9.65 | Sulfate 8 12 | Sulfolane ND ND ND ND | MW-9 DO 0.73 0.57 1.32 | Sulfate 21 26 | Sulfolane ND ND ND | MW-10 DO 7.42 7.95 10.34 | Sulfate 36 48 | Sulfolane ND ND ND | MW-11 DO 3.69 5.04 5.17 | Non-dete 25 Sulfate 20 20 16 | ect - <10 50 Sulfolane ND ND ND | MW-12S DO 2.65 3.98 7.70 | Sulfate 19 18 | Sulfolane ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 | Sulfate 32 33 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 | Sulfate 80 63 | Sulfolane 660 (730) 480 400 ND ND | MW-13D DO 0.52 2.13 9.90 8.41 | Sulfate 330 240 240 210 220 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 | Sulfolane 1,900 4,100 1,200 820 180 (170) | MW-7D DO 0.79 0.89 1.47 0.61 1.09 | Sulfate 46 96 81 61 (57) | Sulfolane ND ND ND ND ND ND | MW-8 DO 9.09 6.34 9.65 8.58 | Sulfate | Sulfolane ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 | Sulfate 21 26 21 | Sulfolane ND ND ND ND ND ND | MW-10 DO 7.42 7.95 10.34 9.98 | Sulfate 36 48 39 | Sulfolane ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 | Non-dete 25 Sulfate 20 20 16 18 | soct - <10 so Sulfolane ND ND ND ND ND ND ND | MW-12S DO 2.65 3.98 7.70 9.09 | Sulfate 19 18 22 22 | Sulfolane ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 5.26 | Sulfate 32 33 36 | Sulfolane ND ND ND ND ND | MW-13 DO 0.94 13.79 10.12 8.08 | Sulfate 80 63 93 | Sulfolane 660 (730) 480 400 ND ND ND ND 180 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 | Sulfate 330 240 240 210 220 480 | | | |
| Sulfate Criterion (µg/L) Sulfate Criterion (µg/L) Date 9/11-13/17 9/21/17 1/25/18 2/27/18 3/28-29/18 9/19-20/18 9/19-20/18 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 40.00 | Sulfate 46 96 81 61 (57) 58 07 | Sulfolane ND ND ND ND ND ND | MW-8 DO 9.09 6.34 9.65 8.58 7.88 | Sulfate | Sulfolane ND ND ND ND ND ND | MW-9 DO 0.73 0.57 1.32 3.36 1.66 | Sulfate 21 26 21 21 26 21 29 | Sulfolane ND ND ND ND ND ND ND | MW-10 DO 7.42 7.95 10.34 9.98 11.83 | Sulfate 36 48 39 18 | Sulfolane ND ND ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 | Non-dete 25 Sulfate 20 20 16 18 45 | soct - <10 so Sulfolane ND ND ND ND ND ND ND ND | MW-12S DO 2.65 3.98 7.70 9.09 3.52 | Sulfate 19 18 22 55 | Sulfolane ND ND ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 4.27 | Sulfate 32 33 36 34 | Sulfolane ND ND ND ND ND ND ND ND | MW-13 DO 0.94 13.79 13.79 10.12 8.08 9.36 9.36 | Sulfate | Sulfolane 660 (730) 480 480 ND ND ND ND 180 ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.02 | Sulfate 330 240 240 210 220 480 650 550 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 22/27/18 3/28-29/18 6/19-21/18 9/18-20/18 12/17-19/18 12/17-19/18 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 270 (300) 4 700 | MW-7D DO 0.79 1.47 0.61 1.09 1.32 12.68 0.10 | Sulfate 46 96 81 61(57) 58 37 58 | Sulfolane ND . | MW-8 DO 9.09 9.65 8.58 7.88 | Sulfate 8 12 30 9.4 | Sulfolane ND | MW-9 DO 0.73 1.32 3.36 1.66 | Sulfate 21 26 21 26 21 | Sulfolane ND | MW-10 DO 7.42 7.95 10.34 9.98 11.83 | Sulfate 36 48 39 18 | Sulfolane ND ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 | Non-dete 25 Sulfate 20 20 16 18 45 | ect - <10 50 Sulfolane ND ND ND ND ND ND ND | MW-12S DO 2.65 3.98 7.70 9.09 3.52 | Sulfate 19 18 222 55 | Sulfolane ND ND ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 4.27 | Sulfate 32 33 36 34 | Sulfolane Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 | Sulfate 80 63 93 69 94 140 | Sulfolane 660 (730) 480 ND ND 180 ND ND ND ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 4.05 | Sulfate 330 240 240 210 220 480 650 740 740 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25/18 3/22-29/18 3/22-29/18 9/18-20/18 12/17-18/18 3/25-26/19 6/21-26/19 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 270 (300) 1,700 510 | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 | Sulfate 46 96 81 61(57) 58 37 53 37 53 94 | Sulfolane ND ND ND ND ND ND ND | MW-8 DO 9.09 6.34 9.65 8.58 7.88 12.70 | Sulfate | Sulfolane ND ND ND ND ND ND ND | MW-9 DO 0.73 0.57 1.32 3.36 1.66 1.20 | Sulfate | Sulfolane ND ND ND ND ND | MW-10 DO 7.42 10.34 9.98 11.83 9.50 | Sulfate 36 48 39 18 61 | Sulfolane ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 | Non-dett 25 Sulfate 20 20 16 18 45 18 45 40 | sect - <10 io Sulfolane ND ND ND ND ND ND ND ND ND | MW-12S DO 2.65 3.98 7.70 9.09 3.52 5.84 | Sulfate 19 18 222 55 27 | Sulfolane ND ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 4.27 2.06 | Sulfate 32 33 36 34 | Sulfolane ND The ND The ND ND ND ND ND ND ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 9.54 | Sulfate | Sulfolane 660 (730) 480 400 ND ND ND ND 180 ND ND 16 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 | Sulfate 330 240 240 210 220 480 650 740 740 740 | | | |
| Sulfate Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 1/25/18 3/28-29/18 1/27/18 9/18-20/18 1/217-18/18 3/25-26/19 6/24-26/19 9/27-26/19 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 270 (300) 1,700 510 140 | MW-7D DO 0.79 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 | Sulfate 96 81 61 (57) 58 37 53 84 57 | Sulfolane ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-8 DO 9.09 9.65 8.56 7.88 12.70 | Sulfate 8 12 30 9.4 17 17 | Sutfolane ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 1.20 | Sulfate 21 26 21 29 26 21 29 26 21 29 26 27 | Sulfolane ND ND ND ND ND ND ND ND ND | MW-10 DO 7.42 10.34 9.98 11.83 8.50 | Sulfate 36 48 39 18 61 61 | Sulfolane ND ND ND ND ND ND ND ND ND - | MW-11 DO 3.69 5.04 5.17 10.94 11.094 11.00 11.21 | Non-dette 25 Sulfate 20 20 16 18 45 18 45 40 | sct - <10 so Sulfolane ND ND ND ND ND ND ND ND ND ND ND | MW-12S DO 2.665 3.98 7.70 9.09 3.52 3.52 5.84 5.84 | Sulfate 19 18 22 55 27 27 | Sulfolane ND ND ND ND ND ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 4.27 4.27 2.96 2.96 2.95 | Sulfate 32 33 36 34 37 37 37 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.93 | Sulfate 80 63 93 69 94 110 140 | Sulfolane 660 (730) ND ND ND ND ND ND ND ND ND ND ND ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 | Sulfate 330 240 240 210 220 480 650 740 740 740 740 750 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 22/27/18 9/18-20/18 6/19-21/18 9/18-20/18 | Sulfolane 1,900 4,100 820 820 180 (170) 170 270 (300) 1,700 510 1,400 | MW-7D DO 0.79 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 0.19 0.81 4.02 | Sulfate 46 46 81 61 (57) 58 37 53 84 57 48 | Sutfolane ND ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-8 DO 9.09 9.65 8.58 7.88 12.70 | Sulfate 8 12 30 9.4 17 17 | Sulfolane ND ND ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 1.20 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND ND | MW-10 DO 7.42 10.34 9.98 111.83 8.50 | Sulfate 36 48 39 18 61 | Sulfolane ND ND ND ND ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.20 | Non-dete 25 Sulfate 20 20 20 16 18 45 45 40 | | MW-12S DO 2.65 3.98 7.70 9.09 3.52 5.84 5.84 | Sulfate 19 18 22 55 27 27 | Sulfolane ND ND ND ND ND ND ND ND ND | MW-12D DO 1.36 4.00 3.45 5.26 4.27 2.96 | Sulfate 32 33 36 34 37 37 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.93 10.09 | Sulfate - | Sulfolane 660 (730) 480 400 ND ND 180 ND 180 ND 16 19 ND 37 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 | Sulfate 330 240 240 220 480 650 740 740 740 740 750 660 | | | |
| Sulfate Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/26-29/18 9/18-20/18 1/217-18/18 3/25-26/19 6/24-26/19 9/23-24/19 1/2/20 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 170 170 170 170 170 170 140 1,200 2,400 | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 | Sulfate 96 81 61 (57) 58 37 37 37 37 37 37 37 58 44 57 48 4 | Sulfolane ND ND ND ND ND ND ND ND | MW-8 DO 9.09 9.65 8.58 7.88 12.70 | Sulfate | Sulfolane ND | MW-9 DO 0.73 1.32 3.36 1.66 1.20 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND ND | MW-10 DO 7.42 10.34 9.98 111.83 <th< th=""> <th< th=""> <td>Sulfate 36 36 48 39 18 61</td><td> Sulfolane ND ND ND ND ND ND ND </td><td>MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 11.21 </td><td> Non-dete 20 20 20 16 18 45 40 40 </td><td>set - 40 60 Sulfolane ND ND ND ND ND ND ND ND ND </td><td> MW-12S DO 2.65 3.98 3.98 7.70 9.09 3.52 5.84 5.84 5.84 </td><td> Sulfate 19 22 255 27 27 </td><td>Sulfolane ND ND ND ND ND ND </td><td>MW-12D DO 1.36 3.45 5.26 4.27 2.96 2.96 </td><td> Sulfate 336 336 </td><td>Sulfolane ND ND</td><td>MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.54 8.93 10.09</td><td>Sulfate 63 94 1100 140 140 120</td><td>Sulfolane 660 (730) 480 400 ND ND ND ND ND 180 ND ND 19 ND 19 ND 37 </td><td>MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 </td><td>Sulfate 330 240 240 210 220 480 650 740 740 740 740 750 660 </td><td></td><td></td><td></td></th<></th<> | Sulfate 36 36 48 39 18 61 | Sulfolane ND ND ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 11.21 | Non-dete 20 20 20 16 18 45 40 40 | set - 40 60 Sulfolane ND ND ND ND ND ND ND ND ND | MW-12S DO 2.65 3.98 3.98 7.70 9.09 3.52 5.84 5.84 5.84 | Sulfate 19 22 255 27 27 | Sulfolane ND ND ND ND ND ND | MW-12D DO 1.36 3.45 5.26 4.27 2.96 2.96 | Sulfate 336 336 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.54 8.93 10.09 | Sulfate 63 94 1100 140 140 120 | Sulfolane 660 (730) 480 400 ND ND ND ND ND 180 ND ND 19 ND 19 ND 37 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 | Sulfate 330 240 240 210 220 480 650 740 740 740 740 750 660 | | | |
| Suffore Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 9/11-20/18 1/27-16/18 3/22-26/19 6/22-26/19 9/23-26/19 1/27-46/19 1/270 1/270 2/3/20 | Sulfolane 1,900 4,100 820 1200 820 1200 1270 270 (300) 1,700 510 140 1,200 2,400 1,500 | MW-7D DO 0.79 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 | Suifate 46 96 81 61 (57) 58 37 53 84 857 48 | Sulfolane ND ND ND ND ND ND ND ND | MW-8 DO 9.09 9.65 8.58 7.88 12.70 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 | Sulfate 21 26 21 29 26 21 29 | Sulfolane ND | MW-10 DO 7.42 7.95 10.34 9.98 11.83 8.50 - | Sulfate 36 48 39 18 61 | Sulfolane ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 - | Non-deter 25 Sulfate 20 20 16 18 45 40 | | MW-128 DO 2.65 7.70 9.09 3.52 3.52 5.84 5.84 | Sulfate | sulfolane ND ND ND ND ND | MW-12D DO 1.36 3.45 5.26 4.27 2.96 2.96 | Sulfate 33 33 34 37 - | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.93 10.09 | Sulfate | Sulfolane 660 (730) ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 | Sulfate 330 240 240 240 220 220 220 480 650 740 740 740 740 750 660 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 227/18 3/25-28/19 9/18-20/18 12/17-18/18 3/25-28/19 9/23-24/19 12/3-4/19 1/2/20 2/13/20 3/5-6/20 | Sulfolane 1,900 1,200 820 180 (170) 170 270 (300) 170 510 140 510 1,700 510 1,200 2,400 1,500 ND | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 | Sulfate 46 81 61 (57) 53 84 57 53 84 57 53 84 32 | Sulfolane ND ND ND ND ND ND ND | MW-8 DO 9.09 6.34 9.65 8.58 7.88 12.70 12.70 | Sulfate | Sulfolane ND | MW-9 DO 0.73 0.57 1.32 3.36 1.66 1.20 1.20 - | Sulfate | Sulfolane ND ND ND ND ND ND ND ND | MW-10 DO 7.42 7.95 10.34 9.98 11.83 8.50 | Sulfate 36 36 48 39 18 61 61 61 61 | Sulfolane ND ND ND ND ND ND ND ND - | MW-11 DO 3.69 5.04 5.04 10.94 11.09 - | Non-dete 25 | | MW-128 DO 2.65 3.98 7.70 9.09 3.552 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.85 5.85 5.85 5.85 5.85 5.85 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.84 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.84 7.84 7.70 7.84 7.70 7.70 7.85 7.70 7.84 7.84 7.70 | Sulfate | Sulfolane ND ND ND ND ND | MW-12D DO 1.36 3.45 5.26 4.27 2.96 - | Sulfate 32 33 36 34 37 37 - | Sulfolane ND | MW-13 DO 0.94 10.12 8.08 9.36 10.41 11.46 8.53 10.09 28.96 | Sulfate - | Sulfolane 660 (730) 480 ND 180 ND 180 ND 180 ND 16 19 ND 16 37 37 ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 7.08 | Sulfate 330 240 240 210 220 480 650 740 740 740 740 740 750 660 920 | | | |
| Sulfate Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-26/18 0/19-21/18 9/18-20/18 1/217-18/18 3/25-26/19 0/22-24/19 1/27/87 | Sulfolane 1,900 4,100 220 180 (170) 170 270 (300) 1,700 140 1,200 2,400 ND 330 | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 1.47 1.47 1.59 1.32 1.47 1.47 1.47 1.47 1.47 - | Sulfate 46 96 81 58 37 53 37 53 37 53 37 53 37 53 37 53 37 - | Sutfolane ND ND ND ND | MW-8 DO 9.09 6.34 9.65 8.58 7.88 12.70 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 - | Sulfate 21 221 226 29 26 | Sulfolane ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-10 DO 7.42 10.34 9.98 11.63 - | Sulfate | Sulfolane ND ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 | Non-dete 25 Sulfate 20 16 18 45 16 18 45 16 | sulfolane ND | MW-128 DO 2.65 3.98 7.70 9.09 3.52 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 5.84 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.70 7.84 7.70 7.70 7.84 7.70 7.70 7.70 7.84 7.70 | Sulfate | Sulfolane ND ND ND ND ND ND | MW-12D DO 1.38 4.00 3.45 5.26 5.26 4.27 | Sulfate 33 6 34 37 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.54 8.93 10.09 28.96 | Sulfate | Sulfolane 660 (730) ND ND ND ND ND 19 ND 19 ND 19 ND 37 ND 37 ND 16 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 2.61 5.07 0.82 | Suifate 330 240 240 240 240 240 220 480 650 740 740 750 660 920 920 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 22/27/18 9/18-20/18 6/19-21/18 9/18-20/18 12/17-14/18 3/25-26/19 6/24-26/19 9/23-24/19 12/20 1/12/20 1/12/20 1/12/20 6/1-2/20 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 270 (300) 1,700 510 1,200 2,400 ND 330 ND | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 15.88 | Sulfate 96 81 61(57) 58 37 53 84 61(57) 58 37 48 32 30 | Sulfolane ND | MW-8 DO 9.09 6.34 9.65 8.58 7.88 12.70 12.70 - | Sulfate 8 30 9.4 17 17 | Sulfolane ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 1.20 - | Sulfate | Sulfolane ND ND ND ND ND ND ND ND | MW-10 DO 7.42 7.95 9.98 11.83 8.50 - | Sulfate 36 48 39 18 61 | Suffolane ND ND ND ND | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 - | Non-dete 25 Sulfate 20 20 20 20 | | MW-12S DO 2.65 3.98 9.09 3.52 5.84 5.84 5.84 5.84 | Sulfate 19 19 122 55 227 55 | Sulfolane ND ND ND ND ND ND ND ND | *** MW-12D DO 1.36 *** 4.00 *** 3.45 5.26 4.27 *** 3.45 5.26 *** *** *** *** *** *** *** * | Sulfate | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.53 10.09 28.96 28.96 4.51 | Sulfate 80 80 | Sulfolane 660 (730) 480 400 ND ND ND ND 16 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND 19 ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 7.082 7.082 7.055 | Sulfate 330 240 240 210 220 480 480 480 480 740 740 740 740 740 750 660 920 550 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 3/22-23/18 3/22-23/18 9/18-20/18 12/17-18/18 3/25-26/19 9/18-20/18 12/17-18/18 3/25-26/19 9/22-24/19 1/2/20 1/2/20 4/2/20 6/1-2/20 9/9-10/20 | Sulfolane 1,900 4,100 1,200 820 180 (170) 170 270 (300) 1,700 510 1,700 2,400 1,500 ND ND | MW-7D D0 0.79 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 15.88 12.56 | Suifate - | Sulfolane ND | MW-8 DO 9.09 6.34 9.65 8.58 8.58 7.88 12.70 12.70 - | Sulfate | Sulfolane ND | MW-9 DO 0.73 1.32 3.36 1.66 1.20 | Sulfate 21 26 29 28 | Sulfolane ND | MW-10 DO 7.42 | Sulfate 36 36 48 39 18 61 61 - | Sulfolane ND ND ND ND ND | MW-11 DO 3.69 5.04 10.94 11.00 11.21 11.21 | Non-deta 25 Sulfate 20 20 16 18 45 40 | sulfolane Sulfolane ND ND ND ND ND ND | *** MW-128 DO 2.65 *** 3.98 *** 7.70 9.09 3.52 *** 5.84 *** *** 5.84 *** *** *** *** *** *** *** *** *** * | Sulfate 19 18 22 55 27 | Sulfolane ND ND ND ND ND ND ND ND | MW-12D DO 1.38 4.00 3.345 5.26 4.27 2.96 2.96 | Suifate 32 33 33 33 33 | Sulfolane ND | MW-13 DO 0.94 13.79 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.54 8.54 8.54 8.54 8.54 8.54 | Sulfate | Sulfolane 660 (730) ND ND ND ND 180 ND 180 ND 18 19 ND 16 37 ND ND ND ND ND ND ND ND ND | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 7.08 7.08 6.56 2.92 | Sulfate 330 240 240 210 220 480 650 740 740 740 740 740 750 660 50 500 510 | | | |
| Suffore Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 9/18-20/18 12/17-16/18 3/25-26/19 6/24-26/19 9/23-24/19 12/27-46/19 12/2-4/19 12/2-4/19 12/20 4/2/20 6/1-2/20 9/9-10/20 10/23/20 | Sulfolane 1,900 4,100 1,200 820 170 270 (300) 1,700 510 1,700 2,400 ND 330 ND ND ND - | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 2.68 0.19 0.81 2.58 4.02 12.14 12.58 12.58 12.58 | Sulfate 96 81 61 (57) 58 37 55 53 84 48 30 30 27 27 27 | Sulfolane ND ND ND ND ND ND | MW-8 DO 9.09 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-9 DO 0.73 1.32 3.36 1.66 | Sulfate | Suffolane ND | NW-10 DO 7.42 10.34 9.98 11.83 11.83 8.50 8.50 - | Sulfate 36 36 48 39 18 61 61 61 61 | | MW-11 DO 3.69 5.04 5.04 5.04 11.00 11.00 11.00 11.00 11.01 11.02 11 | Non-deta Sulfate 20 20 16 18 45 18 40 | suffolane Suffolane ND | *** MW-128 DO 2.65 *** 3.98 *** 7.70 9.09 3.52 *** 5.84 *** *** *** *** *** *** *** * | Sulfate 19 | Sulfolane ND ND ND ND ND ND ND | MW-12D DO 1.36 4.00 5.26 5.26 4.27 2.96 | Sulfate 32 32 33 36 34 37 37 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.54 8.93 10.09 - | Suifate 80 80 80 80 93 69 94 110 140 140 140 140 140 91 91 86 86 92 | | MW-13D DO 0.52 0.511 2.13 9.90 8.41 2.42 5.06 0.38 1.995 2.61 5.07 0.82 7.082 7.082 6.56 2.92 7.052 | Sulfate 330 240 240 240 240 240 240 240 240 240 240 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 2/27/18 3/28-29/18 6/19-21/18 9/18-20/18 12/17-18/18 3/25-26/19 1/27-48/19 1/27-26/19 1/22-26/19 | Sulfolane 1,900 1,200 820 1480 (170) 1770 270 (300) 1,700 510 140 1,200 2,400 1,500 ND 14,200 2,400 1,500 ND ND ND | MW-7D DO 0.79 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 15.88 12.58 12.58 4.02 1.214 1.588 12.58 12.58 1.588 1.59 | Suifate 46 96 81 61 (57) 53 37 53 84 57 48 32 32 30 27 21 | Sulfolane ND | MW-8 DO 9.09 6.34 9.65 8.56 8.56 7.88 12.70 - | Sulfate | Sulfolane ND ND ND ND ND ND ND <td>MW-9 DO 0.73 0.57 1.32 3.36 1.66 1.20 </td> <td>Sulfate </td> <td>Sulfotane ND ND</td> <td>MW-10 DO 7.42 10.34 9.98 11.83 11.83 8.50 </td> <td>**** Sulfate *** 36 *** 48 39 18 *** 61 *** 61 *** *** *** *** *** *** *</td> <td></td> <td>MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 -</td> <td> Non-dette 25 Sulfate 20 16 18 45 16 16</td> <td></td> <td>*** MW-12S DO 2.65 *** 3.98 *** 9.09 3.52 *** 9.09 3.52 *** *** *** *** *** *** *** *</td> <td>Sulfate </td> <td> Sulfolane ND ND ND ND ND</td> <td> MW-12D DO 1.36 4.00 5.26 5.26 5.26 4.27 -</td> <td> Sulfate 32 336 336 336 337 </td> <td>Sulfolane ND ND</td> <td>MW-13 DO 0.94 13.79 10.12 8.08 9.36 9.36 10.41 11.46 8.53 10.09 28.96 4.51 3.70 4.56</td> <td>Sulfate </td> <td>Sulfolane 660 (730) 480 ND ND 180 ND 180 ND 16 19 ND 16 19 ND 37 ND 37 ND 16 19 ND 16 19 ND 18 ND 18 0 99 99</td> <td>MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 7.08 6.56 2.92 6.56</td> <td>Sulfate 330 240 240 220 480 650 740 740 740 740 740 750 660 920 560 510 460</td> <td></td> <td></td> <td></td> | MW-9 DO 0.73 0.57 1.32 3.36 1.66 1.20 | Sulfate | Sulfotane ND | MW-10 DO 7.42 10.34 9.98 11.83 11.83 8.50 | **** Sulfate *** 36 *** 48 39 18 *** 61 *** 61 *** *** *** *** *** *** * | | MW-11 DO 3.69 5.04 5.17 10.94 11.00 11.21 - | Non-dette 25 Sulfate 20 16 18 45 16 16 | | *** MW-12S DO 2.65 *** 3.98 *** 9.09 3.52 *** 9.09 3.52 *** *** *** *** *** *** *** * | Sulfate | Sulfolane ND ND ND ND ND | MW-12D DO 1.36 4.00 5.26 5.26 5.26 4.27 - | Sulfate 32 336 336 336 337 | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 9.36 10.41 11.46 8.53 10.09 28.96 4.51 3.70 4.56 | Sulfate | Sulfolane 660 (730) 480 ND ND 180 ND 180 ND 16 19 ND 16 19 ND 37 ND 37 ND 16 19 ND 16 19 ND 18 ND 18 0 99 99 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 7.08 6.56 2.92 6.56 | Sulfate 330 240 240 220 480 650 740 740 740 740 740 750 660 920 560 510 460 | | | |
| Suffolane Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 2/27/18 3/25-28/18 3/25-28/19 6/19-21/18 9/18-20/18 1/217-18/18 3/25-26/19 6/24-26/19 1/2/20 2/13/20 6/1-2/20 6/1-2/20 6/1-2/20 1/2/02/20 | Sulfolane 1,000 4,100 4,100 1,200 820 140 1,700 510 1,700 510 1,700 510 1,700 510 1,200 2,400 ND ND ND ND ND 100% | MW-7D DO 0.79 0.61 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 12.14 15.88 12.56 12.56 8.80 | Sulfate 46 96 81 61 (57) 53 84 61 (57) 53 84 84 85 30 67 30 27 30 277 21 | Sulfolane ND ND ND ND ND ND < | MW-8 DO 9.09 6.34 9.65 8.58 9.65 8.58 - | Sulfate | Sulfolane ND ND ND ND ND ND ND ND ND Corr ND ND Corr ND ND Corr ND ND Corr ND ND Corr ND ND Corr ND ND Corr ND ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr ND Corr Corr Corr Corr Corr Corr Corr Cor | MW-9 DO 0.73 - | Sulfate | Sulfolane ND ND ND ND ND ND | MW-10 DO 7.42 | Sulfate 36 48 39 18 61 61 - | | MW-11 DO 3.69 5.04 10.94 11.00 11.21 - | Non-dette 25 | | MW-128 DO 2.65 3.98 9.09 3.52 5.84 5.84 | Sulfate | Sulfolane ND ND ND ND ND | MW-12D DO 1.38 - | Sulfate sea sea sea sea sea sea sea | Sulfolane ND | MW-13 DO 0.94 13.79 13.79 10.12 8.08 9.36 10.41 11.46 8.54 8.93 10.09 28.96 4.51 3.70 4.56 | Sulfate | Sulfolane 660 (730) 660 (730) 670 (730) 680 (730) 680 (730) 180 (7 | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.61 5.07 0.82 6.56 2.92 6.292 - | Sulfate 330 240 240 240 240 240 240 240 650 740 740 740 740 740 740 740 740 750 660 560 510 5510 5510 | | | |
| Suffore Criterion (ug/L) Suffate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 22/27/18 9/18-20/18 6/19-21/18 9/18-20/18 12/17-18/18 3/25-26/19 6/24-26/19 9/23-24/19 12/20 11/27-18/18 3/25-26/19 6/24-26/19 9/23-24/19 12/20 11/2/20 11/2/20 12/10/20 12/10/20 12/10/20 Sufface Criterion (ug/L) Sufface Criterion (ug/L) | Sulfolane 1,900 4,100 1200 820 180 (170) 1770 270 (300) 1,700 510 140 1,200 2,400 1,200 2,400 1,200 ND ND ND ND 100 100 100 1,200 1 | MW-7D DO 0.79 0.89 1.47 0.61 1.09 1.32 12.68 0.19 0.81 2.58 4.02 12.14 15.88 12.58 12.58 12.58 12.58 8.80 8.80 | Suifate | Sulfolane ND ND ND ND ND ND ND ND <td>MW-8 D0 9.09 9.65 8.58 12.70 </td> <td>Sulfate </td> <td>Sulfolane ND ND</td> <td>MW-9 DO 0.73 1.32 3.36 1.86 1.20 </td> <td>Sulfate </td> <td>Sulfolane ND ND ND ND ND ND ND ND <</td> <td> MW-10 DO 7.42 10.34 9.68 10.34 9.68 10.34 9.68 8.50 8.50 -</td> <td>**** Sulfate *** *** *** *** *** *** *** *** *** *</td> <td></td> <td>MW-11 DO 3.69 5.04 5.17 10.94 11.21 11.21 -</td> <td></td> <td></td> <td>*** MW-12S DO 2.65 *** 3.98 *** 7.70 9.09 3.52 *** 5.84 *** *** 5.84 *** *** *** *** *** *** *** *** *** *</td> <td></td> <td> Sulfolane ND ND ND ND ND ND</td> <td> MW-12D DO 1.36 3.45 5.26 4.00 2.96 </td> <td> Sulfate </td> <td>Sulfolane ND ND</td> <td>MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.93 10.09 28.96 10.41 11.46 8.93 10.09 4.51 3.70 4.56 4.56</td> <td>Sulfate </td> <td>Sulfolane 660 (730) </td> <td>MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.81 5.07 0.82 7.08 6.56 2.92 0.12 </td> <td> Sulfate 330 240 220 220 220 220 220 220 220 220 220</td> <td></td> <td></td> <td></td> | MW-8 D0 9.09 9.65 8.58 12.70 | Sulfate | Sulfolane ND | MW-9 DO 0.73 1.32 3.36 1.86 1.20 | Sulfate | Sulfolane ND ND ND ND ND ND ND ND < | MW-10 DO 7.42 10.34 9.68 10.34 9.68 10.34 9.68 8.50 8.50 - | **** Sulfate *** *** *** *** *** *** *** *** *** * | | MW-11 DO 3.69 5.04 5.17 10.94 11.21 11.21 - | | | *** MW-12S DO 2.65 *** 3.98 *** 7.70 9.09 3.52 *** 5.84 *** *** 5.84 *** *** *** *** *** *** *** *** *** * | | Sulfolane ND ND ND ND ND ND | MW-12D DO 1.36 3.45 5.26 4.00 2.96 | Sulfate | Sulfolane ND | MW-13 DO 0.94 13.79 10.12 8.08 9.36 10.41 11.46 8.93 10.09 28.96 10.41 11.46 8.93 10.09 4.51 3.70 4.56 4.56 | Sulfate | Sulfolane 660 (730) | MW-13D DO 0.52 0.51 2.13 9.90 8.41 2.42 5.06 0.38 1.95 2.81 5.07 0.82 7.08 6.56 2.92 0.12 | Sulfate 330 240 220 220 220 220 220 220 220 220 220 | | | |

 Notes

 1) Concentrations of sulfclane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

 2) D0 - dissolved oxygen.

 3) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mg/L), equivalent to parts per million (ppm).

 4) (--) - Not sampled.

 5) ND - Concentration not detected above reporting limit.

 6) Concentrations shown in parenthesis are from duplicate sample.

 7) % Decrease of sulficiane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).

 8) Sulficianc entrinon establishesis, and Minerals Division (FGLE-OGMD).

 9) Sulfate criterion - Part 201 Residential Generic Cleanup Criteria and Screening Levels (Part 201 Residential GCCSLs), dated January 10, 2018, per R299.44 (Table 1) of the Michigan Administrative Code.

 10) Concentrations that are shaded
 and bold exceed cleanup criteria.

| | TABLE 2 GROUNDWATER ANALYTICAL SUMMARY & CLEANUP CRITERIA COMPARISON Haritand 36 das Plant Portion of E1/2 of NW1/4 of Section 36, T03N-R06E, Hartland Township, Livingston County, Michigan ECT Project #13-0685-2000 MW-145 MW-150 MW-150 MW-160 MW-175 MW-170 | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|---|---|---|---|---|--|--|--|---|--|--|--|--|---|--|--|--|--|--|---|---|--|---|---|--|--|
| | | | | | | | | GRC | JUNDWA | IER AN | ALYTICA | L SUMI Hartlan | IARY&C d 36 Gas P | LEANU | PCRITE | RIACOM | PARISO | N | | | | | | | | | |
| | | | | | | | | Porti | on of E1/2 | of NW1/4 o | f Section 3 | 6, T03N-R | 06E, Hartla | and Towns | hip, Living | ston Count | ty, Michiga | an | | | | | | | | | |
| | | | | r | | | r | | | | | ECT Proje | ct #13-068 | 5-2000 | | | | | | | | | | | | | |
| Dette | Cultatana | MW-14S | 0 | Outfalana | MW-14D | 0 | Cultations | MW-15 | 0 | 0 | MW-15D | 0 | 0 | MW-15DD | 0 | Outfalana | MW-16 | 0 | Outfalana | MW-16D | 0 | Out along | MW-17S | 0 | 0 | MW-17D | 0 |
| 0/11-13/17 | Suifolane 120 | 0.85 | Suirate | 7 700 | 0.22 | Suitate | Suirolane | 4 39 | Suifate | Surolane | 0.22 | Suifate | Suifolane | 0.23 | Suirate | Suitolane | 3.31 | Suitate | Suitolane | 0.28 | Suitate | 3 100 | 0.25 | Suitate | Surrolane | 0.36 | Suitate |
| 9/21/17 | | | | | | | | 4.55 | | | | | 48 | 0.64 | | | | | | | | | 0.25 | | | 0.50 | |
| 12/19-20/17 | 100 | 2.05 | 91 | 7,100 | 0.45 | 39 | ND | 11.02 | 14 | ND | 4.22 | 46 | ND | 0.56 | 37 | ND | 8.42 | 16 | ND | 5.99 | 24 | 2,400 | 0.88 | 49 | 51 | 8.10 | 33 |
| 1/25/18 | 85 | 3.35 | 56 | 5,400 | 0.43 | 44 | | | | | | | | | | | | | | | | 510 | 0.95 | 53 | ND | 10.07 | 38 |
| 2/27/18 | ND | 9.63 | 110 | 4,000 | 0.50 | 48 | | | | | | | | | | | | | | | | 460 | 0.96 | 53 | ND | 11.02 | 38 |
| 3/28-29/18 | ND | 8.61 | 120 | 3,000 (5,100) | 0.22 | 50 (51) | ND | 7.96 | 16 | ND | 6.86 | 29 | ND | 0.54 | 37 | ND | 8.73 | 19 | ND | 3.88 | 25 | 52 (52) | 3.28 | 64 | ND | 9.68 | 36 |
| 6/19-21/18 | 52 | 0.28 | 67 | 2,600 (2,800) | 0.09 | 77 (77) | ND | 7.98 | 39 | ND | 3.80 | 27 | ND | 0.53 | 42 | ND | 16.43 | 43 | ND | 8.12 | 24 | 55 | 8.61 | 68 | ND (ND) | 10.63 | 42 (41) |
| 9/18-20/18 | ND 440 140 660 2.89 110 ND 8.25 3.2 ND 7.45 20 0.60 41 ND 8.12 21 ND 2.08 22 32 3.07 65 ND 3.83 49 MD 9.00 9.20 220 3.49 12.0 ND 0.60 41 ND 8.12 21 ND 2.08 22 3.07 65 ND 3.83 49 MD 9.20 23.02 3.49 12.0 ND 6.71 22 ND | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12/17-18/18 | ND 9.20 220 230 3.49 120 ND 6.77 22 ND 9.30 61 ND 9.75 47 ND 1.00 1.00 ND 5.71 120 ND ND ND 9.30 61 ND 9.75 47 ND 1.01 100 5.71 120 ND ND ND ND <t< th=""></t<> | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6/24-26/19 | ND 1108 180 ND 5.71 120 ND 5.73 2.3 ND 5.77 8.0 ND 9.68 45 ND 9.88 160 110 5.82 120 ND 8.58 ND 6.56 ND 11.24 2.3 ND 6.78 3.0 ND 10.3 10.9 4.5 ND 5.96 100 7.1 2.83 150 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9/23-24/19 | ND 9.88 160 110 5.82 120 ND 8.88 55 ND 0.53 65 ND 11.24 23 ND 6.78 33 ND 1.43 69 ND 10.33 65 ND 5.96 100 7.1 2.83 100 7.1 2.83 ND 1.43 69 ND 10.33 65 ND 5.96 100 7.1 2.83 100 7.1 2.83 ND 1.83 ND 1.93 65 ND 5.96 100 7.1 2.83 100 7.0 67 3.0 ND 1.43 69 ND 1.03 65 ND 5.96 100 7.1 2.83 ND 7.10 1.01 1.01 1.01 1.02 2.66 2.6 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12/3-4/19 | ND 5.56 100 71 2.83 150 ND 2.96 2.66 ND 4.78 7.3 ND 7.19 96 ND 8.66 93 7.1 10.21 150 ND 6.29 7.1 10.21 ND 7.19 96 ND 8.66 93 7.1 10.21 150 ND 6.29 7.1 ND 7.89 61 ND 8.68 80 7.1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1/2/20 | ND 8.6 93 74 10.21 150 ND ND 6.29 21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2/13/20 | Interpretation Inter | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3/5-6/20 | Image: Series of the series | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4/2/20 | ND 8.44 100 ND 11.39 130 ND 5.66 2.1 ND 3.26 56 ND 8.20 230 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9/9-10/20 | ND 6.44 100 ND 11.39 130 1 1 NU 5.06 2.1 1 1 1 NU 5.06 2.1 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10/23/20 | 110 | 17.00 | | | 10.57 | 100 | | | | 110 | 0.54 | 21 | | | | | | | | | | 91 | 6.89 | | 110 | 1.25 | 230 |
| 12/10/20 | ND | 1.94 | 50 | ND | 1.66 | 110 | | | | ND | 22.18 | 26 | | | | | | | | | | ND | 4.28 | 64 | ND | 4.75 | 220 |
| % Decrease | 100% | | | 100% | | | | | | 100% | | | 100% | | | | | | | | | 100% | | | 100% | | |
| | | | | | | | | | | | | | | | | | | | | | | 1.1.1.1 | | | | | |
| Sulfolane Criterion (µg/L) | | | | | • | | | | | | | | N | on-detect - < | :10 | | | | | | | | | | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | | | | | | | | | | | | | N | on-detect - < 250 | 10 | | | | | 1 | | | | | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | | | | 1 | | | | | | | | | N | on-detect - < 250 | :10 | | | | | | | | | | | | |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) | Sulfalana | MW-18 | Sulfato | Sulfalana | MW-19S | Sulfato | Sulfalana | MW-19D | Sulfata | Sulfelene | MW-19DD | Sulfato | Ne | 250 MW-20S | 10 Sulfata | Sulfalana | MW-20D | Sulfata | Sulfalana | MW-21D | Sulfata | Sulfalana | MW-22D | Sulfata | Sulfelene | MW-23D | Sulfato |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 | Sulfolane | MW-18 DO | Sulfate | Sulfolane | MW-19S DO 1.64 | Sulfate | Sulfolane | MW-19D DO | Sulfate | Sulfolane | MW-19DD DO 3.82 | Sulfate | Ne Sulfolane | MW-20S 1.50 | Sulfate | Sulfolane | MW-20D DO 0.45 | Sulfate | Sulfolane | MW-21D DO 6.08 | Sulfate | Sulfolane | MW-22D DO 7.76 | Sulfate | Sulfolane | MW-23D DO 2.87 | Sulfate |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 | Sulfolane | MW-18 DO 1.16 | Sulfate | Sulfolane | MW-19S DO 1.64 | Sulfate | Sulfolane 5,900 | MW-19D DO 0.60 | Sulfate | Sulfolane ND | MW-19DD DO 3.82 | Sulfate | Sulfolane 63 | MW-20S DO 1.50 | Sulfate | Sulfolane 12,000 | MW-20D DO 0.45 | Sulfate | Sulfolane ND | MW-21D DO 6.08 | Sulfate | Sulfolane ND | MW-22D DO 7.76 | Sulfate | Sulfolane ND | MW-23D DO 2.87 | Sulfate |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/1-13/17 9/21/17 12/19-20/17 | Sulfolane 2,200 660 | MW-18 DO 1.16 0.67 | Sulfate 37 | Sulfolane 29 ND | MW-19S DO 1.64 10.32 | Sulfate 44 | Sulfolane 5,900 3,200 | MW-19D DO 0.60 0.38 | Sulfate 73 | Sulfolane ND | MW-19DD DO 3.82 7.16 | Sulfate 22 | Ne Sulfolane 63 49 | MW-20S DO 1.50 4.04 | Sulfate | Sulfolane 12,000 12,000 | MW-20D DO 0.45 0.52 | Sulfate 43 | Sulfolane ND ND | MW-21D DO 6.08 7.58 | Sulfate 22 | Sulfolane ND ND | MW-22D DO 7.76 5.74 | Sulfate 12 | Sulfolane ND | MW-23D DO 2.87 2.48 | Sulfate |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 | Sulfolane 2,200 660 2,300 | MW-18 DO 1.16 0.67 0.74 | Sulfate 37 34 | Sulfolane 29 ND | MW-19S DO 1.64 10.32 | Sulfate 44 | Sulfolane 5,900 3,200 ND | MW-19D DO 0.60 0.38 0.77 | Sulfate 73 74 | Sulfolane ND ND | MW-19DD DO 3.82 7.16 | Sulfate 22 | Na Sulfolane 63 49 ND | MW-20S DO 1.50 4.04 3.76 | 10 Sulfate 45 45 | Sulfolane 12,000 12,000 10,000 | MW-20D DO 0.45 0.52 1.61 | Sulfate 43 41 | Sulfolane ND ND | MW-21D DO 6.08 7.58 | Sulfate 22 | Sulfolane ND ND | MW-22D DO 7.76 5.74 | Sulfate 12 | Sulfolane ND ND | MW-23D DO 2.87 2.48 | Sulfate 20 |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/19-20/17 1/25/18 2/27/18 | Sulfolane 2,200 660 2,300 2,000 | MW-18 DO 1.16 0.67 0.74 0.39 | Sulfate | Sulfolane 29 ND | MW-19S DO 1.64 10.32 | Sulfate | Sulfolane 5,900 3,200 ND ND | MW-19D DO 0.60 0.38 0.77 0.57 | Sulfate | Sulfolane ND ND | MW-19DD DO 3.82 7.16 | Sulfate 22 | Net Sulfolane 63 49 ND ND ND | MW-20S DO 1.50 4.04 3.76 | Sulfate 45 45 52 | Sulfolane 12,000 12,000 10,000 9,300 | MW-20D DO 0.45 0.52 1.61 0.61 | Sulfate 43 41 46 | Sulfolane ND ND | MW-21D DO 6.08 7.58 | Sulfate | Sulfolane ND ND | MW-22D DO 7.76 5.74 | Sulfate 12 | Sulfolane ND ND | MW-23D DO 2.87 2.48 | Sulfate 20 |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 12/9-20/17 1/25/18 2/27/18 3/28-29/18 | Sulfolane 2,200 660 2,300 2,000 980 980 | MW-18 DO 1.16 0.67 0.74 0.39 0.71 | Sulfate | Sulfolane 29 ND ND ND | MW-19S DO 1.64 10.32 9.45 | Sulfate | Sulfolane 5,900 3,200 ND ND 290 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 | Sulfate 73 74 51 54 | Sulfolane ND ND ND | MW-19DD DO 3.82 7.16 6.27 | Sulfate 22 26 | Sulfolane 63 49 ND ND | MW-20S DO 1.50 4.04 3.76 2.03 | 10 Sulfate 45 45 52 57 (58) | Sulfolane 12,000 12,000 9,300 10,000 9,300 | MW-20D DO 0.45 0.52 1.61 0.61 2.00 | Sulfate 43 41 46 51 | Sulfolane ND ND ND | MW-21D DO 6.08 7.58 4.13 | Sulfate | Sulfolane ND ND ND | MW-22D DO 7.76 5.74 5.32 | Sulfate 12 9.4 | Sulfolane ND ND ND ND | MW-23D DO 2.87 2.48 3.03 3.03 | Sulfate 20 19 |
| Sulfolane Criterion (µg/L) Sulfate Criterion (mg/L) Date 9/11-13/17 9/21/17 1/25/18 2/27/18 2/27/18 3/28-29/18 6/19-21/18 0/19-21/18 | Sulfolane 2,200 660 2,300 2,000 980 14 | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 | Sulfate 37 34 33 34 33 40 (40) | Sulfolane 29 ND ND ND | MW-19S DO 1.64 9.45 11.14 42.94 | Sulfate | Sulfolane 5,900 3,200 ND ND 290 750 479 (450) | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 | Sulfate 73 74 51 54 63 77 (71) | Sulfolane ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.90 | Sulfate 22 26 23 20 | Nu Sulfolane 63 ND ND ND ND | MW-20S DO 1.50 2.03 4.80 0.28 | 10 Sulfate 45 45 52 57 (58) 56 6 | Sulfolane 12,000 10,000 9,300 10,000 6,600 22,(24) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.27 | Sulfate 43 41 46 51 58 80 (81) | Sulfolane ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 | Sulfate 22 22 21 21 | Sulfolane ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 | Sulfate 12 9.4 8.0 6.9 | Sulfolane ND ND ND ND ND | MW-23D DO 2.87 3.03 5.72 2.42 | Sulfate 20 19 20 21 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 1/219-20/17 1/25/18 3/28-29/18 3/28-29/18 9/18-20/18 9/18-20/18 | Sulfolane 2,200 2,300 2,300 2,000 980 14 ND (ND) ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 | Sulfate 37 34 33 34 33 34 39 49 (49) 53 | Sulfolane 29 ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 | Sulfate 44 43 36 44 44 | Sulfolane 5,900 3,200 ND ND 290 750 170 (150) 440 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 | Sulfate 73 74 51 54 63 77 (77) 83 | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 | Sulfate 22 26 23 20 | Net Sulfolane 63 ND ND ND ND ND | MW-20S DO 1.50 2.03 4.80 9.28 9.77 | 10 Sulfate 45 45 52 57 (58) 56 63 48 | Sulfolane 12,000 12,000 9,300 10,000 6,600 22 (34) 19 | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 | Sulfate 43 41 41 46 51 58 80 (81) 90 | Sulfolane ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 | Sulfate 22 22 21 21 | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 | Sulfate 12 9.4 8.0 6.8 | Sulfolane ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 5.72 | Sulfate 20 19 20 21 |
| Sulfolane Criterion (mg/L) Sulfate Criterion (mg/L) 9/11-13/17 9/21/17 1/25/18 2/27/18 3/28-29/18 6/19-21/18 9/18-20/18 9/18-20/18 1/21/7-18/18 3/25-28/19 | Sulfolane 2,200 2,300 2,300 2,000 980 14 ND (ND) ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 | Sulfate 37 34 33 34 39 49 (49) 53 47 | Sulfolane 29 ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 | Sulfate 44 43 36 44 47 47 | Sulfolane 5,900 3,200 ND 290 750 170 (150) 440 350 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 | Sulfate 73 74 51 54 63 77 (77) 83 88 | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 | Sulfate 22 26 23 20 | Network Sulfolane 63 49 ND ND ND ND ND ND ND ND ND | MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 | 10 Sulfate 45 52 57 (58) 56 63 48 62 | Sulfolane 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) | Sulfolane ND ND ND ND ND ND | MW-21D DO 6.08 4.13 4.22 5.77 | Sulfate 22 22 21 21 | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 | Sulfate 12 9.4 8.0 6.8 | Sulfolane ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 | Sulfate 20 19 20 21 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 9/18-20/18 9/18-20/18 12/17-14/18 3/25-26/19 5/24-26/19 | Sulfolane 2,200 2,300 2,000 980 14 ND (ND) ND ND ND ND ND (ND) | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 | Sulfate 37 34 33 34 39 49 (49) 53 47 47 45 (44) | Sulfolane 29 ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 10.42 | Sulfate 44 43 36 44 47 47 62 | Sulfolane 5,900 3,200 ND ND 290 750 170 (150) 440 350 98 (73) | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 | Sulfate 73 74 51 54 63 77 (77) 83 88 88 100 (94) | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27 | Sulfate 22 26 23 20 23 20 | No Sulfolane 63 49 ND ND ND ND ND ND ND ND | n-detect - < 250 MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 | Sulfate 45 52 57 (58) 56 63 48 62 72 | Sulfolane 12,000 12,000 10,000 9,300 6,600 22 (34) 19 ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) | Sulfolane ND ND ND ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 | Sulfate 22 22 21 21 24 | Sulfolane ND ND ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 | Sulfate 20 19 20 21 - 30 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 12/19-20/17 1/25/18 3/28-29/18 3/28-29/18 9/18-20/18 12/17-18/18 3/25-26/19 6/24-26/19 9/23-24/19 | Sulfolane 2,200 2,300 2,300 980 14 ND (ND) ND (ND) ND (ND) ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 9.97 1.60 | Sulfate 37 34 33 34 39 49 (49) 53 47 45 (44) 43 | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 9.45 9.45 9.45 9.45 9.45 9.45 9.45 9.45 9.44 9.45 9.44 9.45 | Sulfate 44 336 44 47 47 47 62 58 | Sulfolane 5,900 3,200 ND ND 290 750 170 (150) 440 350 98 (73) ND | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 | Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 5.25 6.89 7.27 7.27 | Sulfate 22 26 23 20 23 23 | No Sulfolane 63 ND ND ND ND ND ND ND ND ND ND | n-detect - < 250 MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 | Sulfate 45 52 57 (58) 56 63 48 62 72 66 | Sulfolane 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.36 6.26 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) | Sulfolane ND ND ND ND ND ND ND ND - | MW-21D DO 6.08 4.13 4.22 5.77 5.66 5.66 | Sulfate 22 22 21 21 21 22 | Sulfotane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 9.20 | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 | Sulfate 20 20 20 20 21 - |
| Sulfalane Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 9/21/17 9/21/18 2/25/18 2/25/18 2/25/18 9/18-20/18 9/18-20/18 9/18-20/18 9/18-20/18 9/18-20/18 9/22-24/19 9/22-24/19 | Suffolane 2,200 2,300 2,000 980 14 ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 | Sulfate 37 34 33 34 33 34 49 (49) 53 47 45 (44) 43 49 | Suffolane 29 ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 9.79 11.40 | Sulfate 44 43 36 44 47 47 62 58 62 | Suffolane 5,900 3,200 ND 230 750 170 (150) 440 350 98 (73) ND 92 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 0.86 0.86 0.86 0.24 0.17 8.39 0.57 | Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 | Sulfolane ND ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27 7.27 | Sulfate 22 26 23 20 20 23 23 | No Sulfolane 63 49 ND ND ND ND ND ND ND ND ND ND ND ND | n-detect - < 250 MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23 | Sulfate 45 52 57 (58) 56 63 48 62 72 66 64 | Sulfolane 12,000 12,000 9,300 10,000 9,300 10,000 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80) | Sulfolane ND ND ND ND ND ND ND | MW-21D DO 6.08 4.13 4.22 5.77 5.66 | Sulfate 22 21 21 21 24 | Sulfolane ND ND ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 9.20 | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 6.39 | Sulfate 20 19 20 21 30 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25/18 2/227/18 2/227/18 2/227/18 2/227/18 3/28-29/18 0/18-20/18 12/17-18/18 3/25-28/19 0/22-24/19 1/2/20 | Sulfolane 2,200 2,300 2,000 980 14 ND (ND) ND ND (ND) ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 | Sulfate 37 34 33 34 39 49 (49) 53 47 45 (44) 43 49 | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 | Sulfate 44 43 36 44 43 36 44 47 62 58 62 | Sulfolane 5,900 3,200 ND 290 750 170 (150) 440 350 98 (73) ND 92 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 | Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 | Sulfolane ND ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27 7.27 | Sulfate 22 26 23 20 23 | No Sulfolane 63 49 ND ND ND ND ND ND ND ND ND ND ND | n-detect - < 250 MW-20S DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23 | Sulfate 45 45 52 57(58) 56 63 48 62 72 66 64 | Sulfolane 12,000 10,000 6,600 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (80) | Sulfolane ND ND ND ND ND ND ND ND - | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 5.66 | Sulfate | Sulfolane ND ND ND ND ND ND ND | MW-22D DO 7.7.6 5.74 5.32 12.97 7.65 9.20 | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 6.39 | Sulfate 20 19 20 21 30 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 1/219-20/17 1/25/18 3/28-29/18 3/28-29/18 9/18-20/18 9/18-20/18 1/217-18/18 3/25-26/19 6/24-26/19 9/23-24/19 1/2/20 2/1/320 2/1/320 | Sulfolane 2,200 2,300 2,000 980 14 ND (ND) ND ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.97 1.60 97 97 | Sulfate 37 33 33 34 49 (49) 53 47 45 (44) 43 49 45 | Suffolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 11.14 12.84 8.95 11.14 10.42 9.79 11.40 | Sulfate 44 43 36 44 47 47 47 47 47 58 62 | Suffolane 5,900 ND ND 290 750 440 440 350 98 (73) ND 98 (73) ND 92 | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 0.24 | Sulfate 73 51 54 63 77 (77) 83 88 100 (94) 110 92 | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 6.89 7.27 | Sulfate 22 26 23 20 23 23 | Ni Sulfolane 63 | | Sulfate 45 52 57 (58) 63 48 62 72 66 64 | Sulfolane 12,000 10,000 9,300 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.86 6.26 6.15 - | Sulfate 43 41 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80) | Sulfolane ND ND ND ND ND ND - | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 5.66 | Sulfate 22 22 21 21 24 | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 - | Sulfate 200 19 20 21 30 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 12/19-20/17 12/25/18 2/27/18 3/28-29/18 0/19-21/18 3/28-29/18 12/17-18/18 3/25-26/19 9/23-24/19 1/2/20 3/5-6/20 3/25-6/20 3/5-6/20 | Sulfolane 2,200 2,300 2,300 2,000 980 14 ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 7.25 | Sulfate 37 33 33 33 34 49 (49) 53 47 45 (49) 45 47 44 45 (49) 45 47 44 49 47 49 71 | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-195 DO 1.64 9.45 11.14 12.84 12.84 8.95 14.18 10.42 9.79 11.40 13.19 | Sulfate | Sulfolane 5,900 ND ND 290 750 170 (150) 98 (73) ND 92 ND | MW-19D DO 0.60 0.7 0.38 0.77 0.57 0.47 1.08 3.02 0.24 0.86 3.02 0.24 0.17 8.39 0.57 - | Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 100 92 | Sulfolane ND ND ND ND ND ND | MW-19DD DO 3.822 7.16 6.27 6.25 6.89 7.27 7.27 | Sulfate 22 26 23 20 | Ni Sulfolane 63 49 ND ND | | Sulfate 45 52 57 (58) 56 63 48 62 72 66 64 66 64 33 | Sulfolane 12,000 13,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.86 6.26 6.15 4.20 - | Sulfate 43 41 46 51 58 80 (81) 90 94 (94) 84 (79) 84 (80) 88 (91) | Sulfolane ND ND ND ND ND ND - | MW-21D DO 6.08 7.58 4.13 4.22 5.76 5.66 | Sulfate 22 21 21 24 - | Sulfolane ND ND ND ND ND - | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 - | Sulfate 12 9,4 8,0 6,8 8,3 | Sulfolane ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 6.39 - | Sulfate 20 19 20 21 - 30 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 12/19-20/17 12/25/18 2/22-29/18 2/27/18 2/22-29/18 2/27/18 9/18-20/18 12/17-18/18 3/25-28/19 12/27-18/18 3/25-28/19 12/2-24/19 1/2/20 2/13/20 2/13/20 6/1-220 | Sulfolane 2,200 | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 7.25 6.08 | Sulfate 37 34 33 34 39 49 (49) 53 47 45 (44) 43 49 71 61 | Sulfolane 29 ND | MW-195 DO 1.64 9.45 11.14 12.84 8.95 11.14 12.84 8.95 11.14 10.42 9.79 11.40 13.19 13.19 | Sulfate 44 4- 336 44 44 47 62 58 62 68 68 72 | Sulfolane 5,900 ND ND 170 (150) 440 350 98 (73) ND 92 ND ND ND | MW-19D DO 0.60 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 9.24 15.02 | Sulfate 73 74 51 53 63 77 (77) 83 88 100 (94) 110 92 100 92 | Sulfolane ND ND ND ND ND ND ND | MW-19DD DO 3.82 7.16 6.27 5.25 6.89 7.27 - | Sulfate 22 23 20 23 23 23 | Ni Sulfolane 63 49 ND | | Sulfate 45 52 57(58) 56 63 48 62 72 66 64 33 36 | Sulfolane 12,000 9,300 9,300 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 2.00 3.999 5.37 5.32 10.35 10.86 6.26 6.15 4.20 4.20 7.29 | Sulfate 43 41 46 51 58 80 (81) 90 94 (94) 84 (80) 88 (91) 83 (85) | Sulfolane ND ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 5.66 - | Sulfate 22 21 21 21 22 24 24 | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.32 12.97 7.65 9.20 - | Sulfate 12 9.4 8.0 6.8 8.3 | Sulfolane ND ND ND ND ND ND ND | MW-23D DO 2.87 3.03 5.72 3.12 6.39 - | Sulfate 200 211 300 300 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) Date 9/11-13/17 9/21/17 1/219-20/17 1/25/18 3/28-29/18 3/28-29/18 3/28-29/18 9/18-20/18 9/18-20/18 1/27/18/18 3/25-26/19 6/24-26/19 9/23-24/19 1/2/20 3/5-6/20 3/5-6/20 4/1/20 6/1-2/20 9/9-10/20 | Sulfolane 2,200 2,300 2,300 2,000 980 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 | Sulfate | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 11.14 12.84 8.95 11.14 12.84 8.95 11.14 12.84 8.95 11.14 11.80 11.36 10.46 | Sulfate 44 43 36 44 62 58 62 68 62 72 72 | Sulfolane 5,900 ND ND 290 750 170 (150) 440 350 98 (73) ND 98 (73) ND ND ND ND ND | MW-19D DO 0.38 0.77 0.57 0.47 1.08 0.86 3.02 0.24 0.17 8.39 0.57 9.24 13.48 | Sulfate 73 74 51 54 63 77 (77) 83 88 88 100 (94) 110 92 100 92 92 84 | Sutfolane ND ND ND ND ND ND ND ND ND - | MW-19DD DO 3.82 6.27 5.25 6.89 7.27 - | Sulfate 22 26 23 20 23 23 - | Ni Sulfolane 63 49 ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND | | Sulfate 45 45 52 57 (58) 56 63 48 62 72 66 64 33 36 110 | Sulfolane 12,000 10,000 9,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 5.32 10.35 5.37 10.36 6.26 6.15 - | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (80) 88 (91) 83 (85) 83 (80) | Suffolane ND ND ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 | Sulfate | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 9.20 - | Sulfate 12 9.4 8.0 6.8 8.3 | Sutfolane ND ND ND ND ND - | MW-23D DO 2.87 3.03 3.03 5.72 - | Sulfate 20 21 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25/18 2/27/18 9/18-20/18 9/18-20/18 12/17-18/18 3/25-26/19 9/23-24/19 12/23-4/19 12/23-4/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23-24/19 12/23/20 6/1-22/0 9/9-10/20 9/9-10/20 10/23/20 | Suffolane 2,200 2,000 2,000 980 980 980 980 980 980 980 980 980 | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 0.56 0.66 0.67 0.67 0.67 | Sulfate | Sulfolane 29 ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 9.79 11.40 11.36 10.46 | Sulfate | Sutfolane 5,900 3,200 ND ND 170 (150) 98 (73) ND 98 (73) ND 92 ND ND ND ND ND ND | MW-19D DO 0.60 0.77 0.57 0.47 1.08 0.86 0.302 0.24 0.17 8.39 0.57 9.24 0.17 8.39 0.57 15.02 13.48 | Suffate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 100 92 84 92 84 | Sulfolane ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19DD DO 3.82 6.27 5.25 6.89 7.27 - | Sulfate 22 26 23 20 23 23 | No Sulfolane 63 *** 49 ND ND ND ND ND ND ND ND ND ND ND ND ND | n-detect - < 250 250 00 1.50 4.04 3.76 4.03 2.03 2.03 2.03 2.03 2.03 2.03 2.03 2 | Sulfate 45 52 57 (58) 56 63 48 62 72 66 64 33 36 110 | Sulfolane 12,000 10,000 6,600 6,600 22(34) 19 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 2.00 3.99 5.37 10.35 10.35 10.35 10.35 10.86 6.26 6.15 4.20 7.29 2.79 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (79) 84 (79) 84 (80) 83 (80) 83 (80) | Sulfolane ND ND ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 | Suffate | Sulfolane ND ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.85 9.20 - | Sulfate | Sulfolane ND ND ND ND ND ND ND | MW-23D DO 2.87 2.48 3.03 5.72 3.12 6.39 6.39 - | Sulfate 20 19 20 21 |
| Sulfolane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/25/18 3/28-29/18 3/28-29/18 3/28-29/18 3/28-29/18 3/28-29/18 3/25-28/19 12/17-18/18 3/25-28/19 12/2-24/19 12/2-24/19 12/2-24/19 12/2-24/19 12/2-24/19 12/2-20 9/9-10/20 12/2/202 12/2/202 | Sulfolane 2,200 2,200 2,000 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.97 1.60 0.97 7.25 7.25 8.68 0.56 0.56 0.59 0.51 0.97 0.97 0.97 0.97 0.97 0.97 0.67 0.74 0.67 0.67 0.74 0.74 0.97 0.67 0.74 0.97 0.97 0.97 0.97 0.97 - | Sulfate 37 34 33 33 33 34 49 (49) 53 53 47 45 (44) 43 49 71 71 61 50 65 58 | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 13.19 11.36 10.46 9.18 | Sulfate 44 43 36 44 44 47 62 58 62 58 62 68 68 72 72 74 | Sulfolane 5,900 3,200 ND ND 220 750 170 (150) 440 350 98 (73) ND 98 (73) ND 99 (73) ND ND ND ND ND ND ND ND ND | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.24 0.17 0.57 9.24 9.24 15.02 13.48 12.69 | Suffate 73 74 51 54 63 77 (77) 83 88 88 100 (94) 110 92 100 92 84 120 | Sulfolane ND ND ND ND ND ND ND ND ND | MW-19DD DO 3.82 5.25 6.27 5.25 6.83 7.27 7.27 - | Sulfate 22 23 20 23 20 23 23 - | Normal Sector Se | n-detect - < 250 MW-205 DO 1.50 1.50 2.03 3.76 9.28 9.77 12.20 20.73 6.06 7.23 9.74 9.74 7.41 7.41 | Sulfate 45 57 (58) 66 64 | Sulfolane 12,000 10,000 3,300 10,000 6,600 22 (34) 19 ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-20D DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.35 10.86 6.26 6.15 4.20 7.29 2.79 1.65 | Suffate 43 41 41 51 58 80 (81) 90 89 (84) 94 (94) 94 (94) 94 (94) 84 (80) 88 (91) 83 (85) 83 (80) 80 (80) | Sulfotane ND ND ND ND ND ND ND - | MW-210 DO 6.08 7.58 4.13 4.22 5.77 5.66 5.66 | Sulfate | Sulfolane ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 9.20 9.20 - | Sulfate 12 9.4 8.0 6.8 8.3 - | Sulfolane ND ND ND ND ND ND ND ND ND | MW-23D DO 2.87 3.03 5.72 3.03 5.72 3.72 6.39 6.39 - | Sulfate 20 19 20 21 30 |
| Sulfalane Criterion (ug/L) Sulfate Criterion (ug/L) 9/11-13/17 9/21/17 9/21/17 12/19-20/17 12/25/18 2/27/18 2/27/18 2/27/18 2/25-20/19 9/18-20/18 9/18-20/18 9/18-20/19 9/23-24/19 12/22-26/19 9/23-24/19 12/22/19 12/22/19 9/9-10/20 9/9-10/20 12/20/20 | Sulfolane 2,200 2,300 2,300 980 14 ND (ND) ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 6.08 0.56 0.56 0.56 1.16 0.97 1.16 1.16 1.16 - | Sulfate 37 33 33 33 49 49 (49) 53 39 49 47 45 (49) 43 47 71 61 50 55 58 | Sulfolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-195 DO 1.64 9.45 9.45 11.14 12.84 8.95 14.18 10.42 9.79 11.40 13.19 13.19 13.19 13.6 10.46 13.64 14.64 13.64 13.64 13.64 13.64 13.64 13.64 14.64 13.64 14.64 13.64 | Sulfate 44 43 36 44 47 47 47 47 47 62 58 62 68 62 68 72 72 72 72 72 72 72 72 72 72 72 72 72 72 72 | Sulfolane 5,900 ND ND 2300 170 (150) 170 (150) 170 (150) 98 (73) ND 92 ND ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.83 0.24 0.17 8.39 0.57 9.24 0.17 15.02 13.48 13.48 13.48 | Sulfate 73 74 51 54 63 77 (77) 83 88 100 (94) 110 92 100 92 84 120 92 84 120 | Sulfolane ND | MW-19DD DO 3.82 6.27 5.25 6.89 7.27 - | Sulfate 22 26 23 20 23 23 | Normal Sulfolane 63 | n-detect - < 250 250 00 1.50 2.03 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23 9.74 11.51 7.91 7.41 7.41 7.41 7.41 7.41 7.41 7.41 7.41 7.41 7.41 7.41 7.41 | Sulfate 45 52 57 (58) 58 63 48 48 66 64 33 3 36 110 57 | Sulfolane 12,000 12,000 10,000 9,300 22 (34) 19 ND (ND) ND (ND (ND) ND (ND) ND (ND) ND (ND) ND (ND (ND) ND (ND (ND) ND (ND (| MW-20D DO 0.45 1.61 0.61 2.00 3.99 5.37 5.32 10.35 10.36 6.26 6.15 7.29 2.79 1.65 | Sulfate 43 41 46 51 58 80 (81) 90 89 (84) 84 (79) 84 (80) 83 (85) 83 (85) 83 (80) 83 (80) 80 (80) | Sulfolane ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 | Sulfate | Sulfolane ND | MW-22D DO 7.76 5.74 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.76 5.32 12.97 7.775 5.32 12.97 7.775 5.32 12.97 7.775 5.32 12.97 7.775 5.32 12.97 7.775 5.32 12.97 7.775 5.32 12.97 7.7757 7.7757 7.7757 7.7757 7.77577 7.7757777 7.77577777777 | Sulfate 12 9.4 8.0 6.8 - | Sulfolane ND | MW-23D DO 2.87 2.48 5.72 3.12 6.39 6.39 6.39 6.39 6.39 | Sulfate 20 19 20 21 - - - - - - - - - - - - - - - - - |
| Sulfalane Criterion (ug/L) Sulfate Criterion (mg/L) 9/11-13/17 9/21/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/17 12/19-20/18 9/18-20/18 9/18-20/18 12/17-18/18 3/25-26/19 12/22-20/22-20/19 12/22-20/22-20/22-20/22-20/22-2 | Sulfolane 2,200 2,300 2,000 2,000 14 ND (ND) ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-18 DO 1.16 0.67 0.74 0.39 0.71 3.13 0.67 2.28 1.09 0.97 1.60 0.93 7.25 7.25 6.08 0.56 0.56 0.12 | Sulfate 37 34 33 34 39 53 49 (49) 53 47 47 47 47 47 47 47 47 47 47 61 58 58 | Sutfolane 29 ND ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19S DO 1.64 9.45 11.14 12.84 8.95 11.14 12.84 8.95 11.14 12.84 8.95 11.41 12.84 10.42 9.79 11.30 13.19 | Sulfate 44 43 43 44 47 62 62 68 68 72 72 72 74 74 | Sulfolane 5,900 ND ND 290 170 (150) 440 98 (73) ND 98 (73) ND ND ND ND ND ND ND ND ND ND ND ND ND | MW-19D DO 0.60 0.38 0.77 0.57 0.47 1.08 0.86 0.86 0.86 0.86 0.86 0.24 0.17 8.39 0.57 9.24 15.02 13.48 12.69 12.69 | Sulfate 73 74 54 63 77 (77) 83 88 100 (94) 110 92 100 92 84 120 120 | Sulfolane ND | MW-19DD DO 3.82 6.27 5.25 6.89 7.27 - | Sulfate 22 26 23 20 23 23 - | No Sulfolane 63 63 ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND | m-detect - < 250 MW-205 DO 1.50 4.04 3.76 2.03 4.80 9.28 9.77 12.20 20.73 6.06 7.23 9.74 9.74 9.74 9.74 9.74 9.74 9.74 9.74 9.74 9.75 9.74 9.74 9.74 9.75 9.75 9.74 9.74 9.74 9.75 9.74 9.75 9.74 9.74 9.74 9.74 9.74 9.74 9.74 9.74 | Sulfate 45 52 57 (58) 56 63 48 62 72 66 64 33 36 110 57 57 57 | Sulfolane 12,000 12,000 10,000 9,300 10,000 22 (34) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) ND (ND) | MW-200 DO 0.45 0.52 1.61 0.61 2.00 3.99 5.37 10.35 10.35 10.35 10.86 6.26 6.15 4.20 7.29 2.79 1.65 1.65 | Suffate 43 41 46 51 58 80 (81) 90 89 (84) 94 (94) 84 (80) 83 (85) 83 (80) 83 (80) 80 (80) | Sulfolane ND ND ND ND ND ND ND ND ND | MW-21D DO 6.08 7.58 4.13 4.22 5.77 5.66 5.66 | Suffate 22 22 21 24 24 - | Sulfolane ND ND ND ND ND ND ND | MW-22D DO 7.76 5.74 5.74 5.32 12.97 7.65 5.32 12.97 7.65 5.32 9.20 5.32 5.32 12.97 7.65 5.32 12.97 7.65 5.32 12.97 7.65 5.74 5.32 12.97 7.76 5.74 5.74 5.74 5.74 5.74 5.74 5.74 5.74 | Sulfate 9.4 8.0 8.3 8.3 | Sulfolane ND ND ND ND ND ND ND - | MW-23D DO 2.87 3.48 3.03 5.72 3.12 6.39 6.39 - | Sulfate 20 19 20 21 30 |

 Notes

 1) Constructions of sulfolane reported in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

 2) DO - dissolved oxygen.

2) Concentrations of dissolved oxygen and sulfate reported in milligrams per liter (mgL), equivalent to parts per million (ppm).
 4) (----) Not sampled.
 5) ND - Concentration not detected above reporting limit.

(a) UP - Concentration not detected above reporting limit.
 (c) Concentrations shown in parenthesis are from deplicate sample.
 (c) Concentrations shown in parenthesis are from deplicate sample.
 (c) Substrate of sulficane is the most recent sampling event relative to highest reported concentration since the pre-system startup event (9/11-13/17).
 (c) Sulficane criterion established by EGLE-OII, Gas, and Minerals Division (EGLE-OGMD).
 (c) Sulfaction entropy and the single sample.
 (c) Sulfaction is that are shaded ______ and block ecced cleanup criteria.

| | | | | | | | | | TABL | .E 3 | | | | | | | | | |
|-------------------|--------------|---|---------|-----------|----------|------------|----------|----------------|---------------|--------------|----------------|--------------|-----------------|-----------|------------|--------------|------------------|-----------|---------------|
| | | | | ; | SULFOL | ANE GROU | JNDWATE | R ANALY | TICAL SU | MMARY & | CLEANU | P CRITERI | A COMPAR | RISON | | | | | |
| | | | | | | | | | Hartland 36 | Gas Plant | | | | | | | | | |
| | | | | | | | Po | ortion of E1/2 | of NW1/4 of | Section 36, | T03N-R06E, | | | | | | | | |
| | | | | | | | ł | lartland Tow | nship, Living | gston County | , Michigan | | | | | | | | |
| | I | | | | | | | EC | T Project #1 | 3-0685-2000 | | | | | | | | | |
| Sample Location | Screened | 11/4-5/15 | 1/27/16 | 6/3/2016 | 8/3-1/16 | 0/21-22/16 | 10/12/16 | 11/3/16 | 12/8/16 | 12/21-23/16 | 2/14/17 | 3/14-16/2017 | 1/27/17: 5/1/17 | 5/11/2017 | 5/30-31/17 | 6/10-21/17 | 0/11-13/17 | 0/21/2017 | 12/10-20/2017 |
| MW-1 | 20 1 - 25 1 | ND | ND | ND | 0/3-4/10 | ND | | | 12/0/10 | | 2/14/17 | ND | | | | ND | 3/11-13/17 ND | 5/21/2017 | ND |
| MW-2 | 19.1 - 24.1 | ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND <t< th=""><th>ND</th></t<> | | | | | | | | | | | | | | | ND | | |
| MW-2D | 27.7 - 29.7 | ND ND ND | | | | | | | | | | | | | | | ND | | |
| MW-3 | 22.0 - 27.0 | ND ND ND ND ND ND ND ND ND ND | | | | | | | | | | | | | | | ND | | |
| MW-3D | 30.0 - 32.0 | NU ··· NU ··· ··· ··· NU NU ··· NU ··· NU NU ··· NU | | | | | | | | | | | | | | | ND | | |
| MW-4 | 23.1 - 28.1 | ···· ···· ···· ···· ···· ···· ND ND ···· ND ND ND ND ND ND ···· ND ···· ND ···· ND ···· ND | | | | | | | | | | | | | | | ND | | |
| MW-5 | 18.0 - 23.0 | ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND ND | | | | | | | | | | | | | | | ND | | |
| MW-6 | 25.4 - 30.4 | ND | ND | ND | ND | ND | ND | ND | | ND | | ND | | | ND | ND | ND | | ND |
| MW-6D | 39.4 - 44.4 | | | | ND | ND 210 | ND | ND | | ND | | ND | | | ND | ND | ND | | ND |
| MW-7 | 25.2 - 30.2 | 880 | 44 | 510 | ND | 210 | | | | ND | | ND | | | | 12 | ND | | ND |
| MW-8 | 24.6 - 29.6 | | | | ND | ND | | | 3,100 | ND | | 3,000 ND | | | | 2,600 ND | 1,900 ND | | 4,100 |
| MW-9 | 23.6 - 28.6 | | | | ND | ND | | | | ND | | ND | | | | ND | ND | | ND |
| MW-10 | 21.2 - 26.2 | | | | ND | ND | | | | ND | | ND | | | | ND | ND | | ND |
| MW-11 | 21.7 - 26.7 | | | | ND | ND | | | | ND | | ND | | | | ND | ND | | ND |
| MW-12S | 20.5 - 25.5 | | | | ND | ND | ND | ND | | ND | | ND | | | ND | ND | ND | | ND |
| MW-12D | 39.7 - 44.7 | - | | | ND | ND | ND | ND | | ND | | ND | | | ND | ND | ND | | ND |
| MW-13 | 19.1 - 24.1 | | | | 6,600 | 8,800 | | | | 3,500 | | 5,100 | 7,000 | 3,700 | 97 | ND | ND | | ND |
| MW-13D | 27.7 - 29.7 | | | | | | | 7,800 | | 8,300 | | 5,400 | 6,900 | 1,100 | 420 | 290 | 730 | | 480 |
| MW-14S | 18.6 - 23.6 | | | | | | | 46 | | 460 | | 540 | 490 | 160 | 520 | 94 | 120 | | 100 |
| MW-14D | 36.7 - 41.7 | | | | | | | 7,900 | | 10,000 | | 7,600 | 9,800 | 8,600 | 8,200 | 7,800 | 7,700 | | 7,100 |
| MW-15 | 19.3 - 24.3 | | | | ND | ND | | | | ND | 4 600 | ND 2 200 | | | | ND | ND | | ND |
| MW-15D | 50 - 55 | | | | | | | | | | 4,000 | 3,200 | | | | 670 | 230 | 48 | ND |
| MW-16 | 19.5 - 24.5 | | | | ND | ND | | | | ND | | ND | ND | ND | ND | ND | ND | | ND |
| MW-16D | 31.4 - 33.4 | | | | | | | | | | ND | ND | | | | ND | ND | | ND |
| MW-17S | 19.9 - 24.9 | | | | | | | 3,900 | | 5,100 | | 3,000 | | | | 5,300 | 3,100 | | 2,400 |
| MW-17D | 35.4 - 37.4 | | | | | | | 440 | | 510 | | 400 | | | | 390 | 400 | | 51 |
| MW-18 | 19.9 - 24.9 | - | | | | | | 6,800 | | 6,800 | | 4,300 | | 2,100 | 4,800 | 3,800 | 2,200 | | 660 |
| MW-19S | 22.6 - 27.6 | | | | | | | 2,700 | | 1,500 | | 1,300 | | | | 24 | 33 | | ND |
| MW-19D | 43.0 - 48.0 | | | | | | | 7,000 | | 7,600 | | 4,300 | | | | 7,000 | 5,900 | | 3,200 |
| MW-19DD | 57 - 62 | | | | | | | | | | | | | | | | ND | | ND |
| MW-20S | 17.8 - 22.8 | | | | | | | | 25 | | | 97 | | | | 160 | 63 | | 49 |
| MW-20D MW-21D | 31.0 - 33.0 | | | | | | | | 8,700 ND | | | 8,300 | | | | 11,000 ND | 12,000 | | 12,000 |
| MW-21D | 364-414 | | | | | | | | | | | ND | | | | ND | ND | | ND |
| MW-23D | 28.1 - 30.1 | | | | | | | | | | | ND | | | | ND | ND | | ND |
| EGLE-OGMD Clea | nup Criteria | | | | | | | | | Non-de | tect - <10 µg/ | L | | | | | | | ı |
| Collection Method | | L | F | Bailer/PP | | | | | | | | LF | | | | | | | |

Notes

1) ft bgs - Feet below ground surface.

Collection method - Grab, peristaltic pump (PP), low flow (LF), Bailer.

3) µg/L - Micrograms per liter, equivalent to parts per billion (ppb).

4) (---) - Not sampled.

5) ND - Concentration not detected above reporting limit.

6) Sulfolane concentrations included on the table are for the higher concentration from samples submitted for duplicate analysis.

7) Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).

Concentrations that are shaded in and bold exceed cleanup criteria.
 MW-7 sampled on 8/11/2016 for the 8/3-4/2016 sample event.



| | | | | | SULFOLA | NE GROU | NDWATEF Ha | R ANALYTI H SE/NE/N Intland Towns ECT | TABLE CAL SUMI artland 36 Ga W Section 36 ship, Livingst Project #13-1 | 3 MARY & CI is Plant 5, T03N-R06E on County, M 0685-2000 | LEANUP C , lichigan | RITERIA (| COMPARIS | SON | | | | | |
|-------------------|----------------------------|-----------|--|--------------|--------------|--------------|---------------|---|---|---|---------------------------|-----------|-----------|------------|----------|------------|-------------|------------|------------|
| | Screened | | | | | | | | | | | | | | | | | | |
| Sample Location | Interval (ft bgs) | 1/25/2018 | 2/27/2018 | 3/28-29/2018 | 6/19-21/2018 | 9/18-20/2018 | 12/17-18/2018 | 3/25-26/19 | 6/24-26/2019 | 9/23-24/2019 | 12/3-4/19 | 1/2/2020 | 2/13/2020 | 3/5-6/2020 | 4/2/2020 | 6/1-2/2020 | 9/9-10/2020 | 10/23/2020 | 12/10/2020 |
| MW-1 | 20.1 - 25.1 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-2 | 19.1 - 24.1 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-2D | 27.7 - 29.7 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-3D | 30.0 - 32.0 | | ND ND ND ND ND | | | | | | | | | | | | | | | | |
| MW-4 | 23.1 - 28.1 | | ··· ND ND ND ··· ND ··· | | | | | | | | | | | | | | | | |
| MW-5 | 18.0 - 23.0 | | ND ND ND ND | | | | | | | | | | | | | | | | |
| MW-6 | 25.4 - 30.4 | | Image: Constraint of the state of | | | | | | | | | | | | | | | | |
| MW-6D | 39.4 - 44.4 | | ND ND <t< th=""><th></th></t<> | | | | | | | | | | | | | | | | |
| MW-7 | 25.2 - 30.2 | | | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-7D | 39.2 - 44.2 | | 1,200 | 820 | 180 | 170 | 300 | 1,700 | 510 | 140 | 1,200 | 2,400 | 1,500 | ND | 330 | ND | ND | | ND |
| MW-8 | 24.6 - 29.6 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-10 | 23.0 - 28.0 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-11 | 21.7 - 26.7 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-12S | 20.5 - 25.5 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-12D | 39.7 - 44.7 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-13 | 19.1 - 24.1 | | | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-13D | 27.7 - 29.7 | 400 | ND | ND | 180 | ND | ND | 16 | 19 | ND | 37 | | | ND | 16 | ND | ND | | 99 |
| MW-14S | 18.6 - 23.6 | 85 | ND | ND | 52 | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-14D | 36.7 - 41.7 | 5,400 | 4,000 | 5,100 | 2,800 | 680 ND | 290 | ND | 110 ND | 71 | 71 | | | ND | ND | ND | ND | | ND |
| MW-15D | 19.3 - 24.3 37 9 - 42 9 | | | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | | ND | | ND |
| MW-15DD | 50 - 55 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-16 | 19.5 - 24.5 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-16D | 31.4 - 33.4 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-17S | 19.9 - 24.9 | 510 | 460 | 52 | 55 | 32 | ND | ND | ND | ND | ND | | | ND | | ND | 190 | 91 | ND |
| MW-17D | 35.4 - 37.4 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-18 | 19.9 - 24.9 | 2,300 | 2,000 | 980 | 14 | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-19S | 22.6 - 27.6 | | | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW 1000 | 43.0 - 48.0 | ND | ND | 290 | 750 | 170 ND | 440 | 350 | 98 | ND | 92 | | | ND | ND | ND | ND | | ND |
| MW-1900 | 17.8 - 22.8 | ND | ND | ND | ND | ND | ND | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-20D | 31.0 - 33.0 | 10,000 | 9,300 | 10,000 | 6,600 | 34 | 19 | ND | ND | ND | ND | | | ND | | ND | ND | | ND |
| MW-21D | 52.3 - 57.3 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-22D | 36.4 - 41.4 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| MW-23D | 28.1 - 30.1 | | | ND | ND | ND | | | ND | | | | | | | | | | |
| EGLE-OGMD Clea | nup Criteria | | | | | | _ | | | Non-detect | t - <10 µg/L | 1 | | | | 1 | | _ | |
| Collection Method | | | | | | L | .F | | | | | Ba | ailer | LF | Bailer | | l | .F | |

 Notes

 1) ft bgs - Feet below ground surface.

 2) Collection method - Grab, peristaltic pump (PP), low flow (LF), Bailer.

a) µg/L - Micrograms per liter, equivalent to parts per billion (ppb).
 4) (---) - Not sampled.

5) ND - Concentration not detected above reporting limit.
6) Sulfolane concentrations included on the table are for the higher concentration from samples submitted for duplicate analysis.

7) Cleanup criteria for sulfolane established by EGLE-Oil, Gas, and Minerals Division (EGLE-OGMD).

Concentrations that are shaded in an oblight with the share of the sha



APPENDIX C

LABORATORY ANALYTICAL REPORTS





02-Nov-2020

Nick Summerland Lambda Energy Resources 1510 Thomas Rd Kalkaska, MI 49646

Re: Lambda (Hartland 36 Gas Plant)

Work Order: 20102451

Dear Nick,

ALS Environmental received 1 sample on 27-Oct-2020 09:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 7.

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

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

Sincerely,



Electronically approved by: Gary Byar

Environmental 🕽

Gary Byar Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

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RIGHT SOLUTIONS RIGHT PARTNER

| Client: | Lambda Energy Resources | |
|-------------|--------------------------------|-----------------------------|
| Project: | Lambda (Hartland 36 Gas Plant) | Work Order Sample Summary |
| Work Order: | 20102451 | ttorin order sample sammary |
| | | |

| <u>Lab Samp ID</u> <u>Client Sample ID</u> | <u>Matrix</u> <u>Tag Number</u> | Collection Date Date Received Hold |
|--|---------------------------------|------------------------------------|
| 20102451-01 MW-17S | Groundwater | 10/23/2020 10:15 10/27/2020 09:00 |

Client:Lambda Energy ResourcesProject:Lambda (Hartland 36 Gas Plant)

 Sample ID:
 MW-17S

 Collection Date:
 10/23/2020 10:15 AM

Work Order: 20102451 Lab ID: 20102451-01

Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|-------|------------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 5 | | SW846 | 8270D | Prep: SW 3510 10/30/20 15:17 | Analyst: EEW |
| Sulfolane | 91 | | 10 | μg/L | 1 | 10/30/2020 09:36 PM |
| Surr: 2-Fluorobiphenyl | 46.0 | | 26-79 | %REC | 1 | 10/30/2020 09:36 PM |
| Surr: 4-Terphenyl-d14 | 62.3 | | 43-106 | %REC | 1 | 10/30/2020 09:36 PM |
| Surr: Nitrobenzene-d5 | 42.7 | | 29-80 | %REC | 1 | 10/30/2020 09:36 PM |

| Client: | Lambda Energy Resources |
|-------------|--------------------------------|
| Work Order: | 20102451 |
| Project: | Lambda (Hartland 36 Gas Plant) |

QC BATCH REPORT

Batch ID: 166867 Instrument ID SVMS10

Method: SW846 8270D

| MBLK | Sample ID: SI | BLKW1-166867-1668 | 367 | | | ι | Jnits: µg/L | - | Analys | sis Date: 10/ | 30/2020 08 | 8:15 PM |
|--|---------------|-------------------|-------|-----------|------------------|----|------------------|------------------|------------------|----------------------|--------------|---------|
| Client ID: | | Run ID: | SVMS1 | 0_201030A | | Se | qNo: 6848 | 3168 | Prep Date: 10 |)/30/2020 | DF: 1 | |
| Analyte | alyte | | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfolane | | ND | 10 | | | | | | | | | |
| Surr: 2-Fluorob | iphenyl | 29.71 | 0 | 50 | | 0 | 59.4 | 26-79 | | 0 | | |
| Surr: 4-Terpher | nyl-d14 | 36.03 | 0 | 50 | | 0 | 72.1 | 43-106 | | 0 | | |
| Surr: 4-Terphenyl-d14 Surr: Nitrobenzene-d5 | | 30.3 | 0 | 50 | | 0 | 60.6 | 29-80 | | 0 | | |
| LCS | Sample ID: SI | LCSW1-166867-1668 | 867 | | | ι | Jnits: µg/L | - | Analys | sis Date: 10/ | 30/2020 08 | 3:42 PM |

| Client ID: | Run ID: | SVMS1 | 0_201030A | | Se | eqNo: 6848 | 3169 | Prep Date: 10 | /30/2020 | DF: 1 | |
|------------------------|---------|-------|-----------|------------------|----|-------------------|------------------|------------------|----------|--------------|------|
| Analyte | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfolane | 79.94 | 10 | 100 | | 0 | 79.9 | 30-100 | | 0 | | |
| Surr: 2-Fluorobiphenyl | 28.39 | 0 | 50 | | 0 | 56.8 | 26-79 | | 0 | | |
| Surr: 4-Terphenyl-d14 | 36.62 | 0 | 50 | | 0 | 73.2 | 43-106 | | 0 | | |
| Surr: Nitrobenzene-d5 | 27.77 | 0 | 50 | | 0 | 55.5 | 29-80 | | 0 | | |

| LCSD | Sample ID: SLCSDW1-1 | Units: µg/L | | | Analysis Date: 10/30/2020 09:09 PM | | | | | | | |
|---------------------|----------------------|-------------|--------|----------|------------------------------------|----|------------------|------------------|------------------|--------|--------------|------|
| Client ID: | | Run ID: | SVMS10 | _201030A | | Se | qNo: 6848 | 8170 | Prep Date: 10/3 | 0/2020 | DF: 1 | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfolane | | 76.49 | 10 | 100 | | 0 | 76.5 | 30-100 | 79.94 | 4.41 | 30 | |
| Surr: 2-Fluorobiphe | enyl | 23.2 | 0 | 50 | | 0 | 46.4 | 26-79 | 28.39 | 20.1 | 40 | |
| Surr: 4-Terphenyl-a | 114 | 33.24 | 0 | 50 | | 0 | 66.5 | 43-106 | 36.62 | 9.68 | 40 | |
| Surr: Nitrobenzene- | -d5 | 25.15 | 0 | 50 | | 0 | 50.3 | 29-80 | 27.77 | 9.9 | 40 | |

The following samples were analyzed in this batch:

20102451-01A

| Client: | Lambda Energy Resources | OUALIFIERS. |
|------------|--------------------------------|--------------------|
| Project: | Lambda (Hartland 36 Gas Plant) | ACDONVMS LINITS |
| WorkOrder: | 20102451 | ACKON I WIS, UNITS |

| Qualifier | Description |
|----------------|--|
| * | Value exceeds Regulatory Limit |
| ** | Estimated Value |
| a | Analyte is non-accredited |
| В | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| Н | Analyzed outside of Holding Time |
| Hr | BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated. |
| J | Analyte is present at an estimated concentration between the MDL and Report Limit |
| ND | Not Detected at the Reporting Limit |
| 0 | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference $> 40\%$ |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL |
| Α | reagent contamination at the observed level. |
| Acronym | Description |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| LOD | Limit of Detection (see MDL) |
| LOQ | Limit of Quantitation (see PQL) |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PQL | Practical Quantitation Limit |
| RPD | Relative Percent Difference |
| TDL | Target Detection Limit |
| TNTC | Too Numerous To Count |
| А | APHA Standard Methods |
| D | ASTM |
| Е | EPA |
| SW | SW-846 Update III |
| Units Reported | Description |
| $\mu g/L$ | Micrograms per Liter |

Sample Receipt Checklist

| Client Name: LAMBDA-KAL | | Date/Time F | Received: <u>27</u> | -Oct-20 | <u>09:00</u> | |
|--|---------------------------|--------------|---------------------|--------------|--------------|-----------|
| Work Order: 20102451 | | Received by | /: <u>DS</u> | <u>8</u> | | |
| Checklist completed by Diane Shaw 2 | 27-Oct-20 | Reviewed by: | Nathan Wi | lliams | 6 | 28-Oct-20 |
| Matrices: <u>Groundwater</u> Carrier name: <u>FedEx</u> | Duio | | oolghatare | | | Date |
| Shipping container/cooler in good condition? | Yes 🗸 | No 🗌 | Not Present | | | |
| Custody seals intact on shipping container/cooler? | Yes 🗌 | No 🗌 | Not Present | \checkmark | | |
| Custody seals intact on sample bottles? | Yes 🗌 | No 🗌 | Not Present | \checkmark | | |
| Chain of custody present? | Yes 🗹 | No 🗌 | | | | |
| Chain of custody signed when relinquished and received? | Yes 🗹 | No 🗌 | | | | |
| Chain of custody agrees with sample labels? | Yes 🗹 | No 🗌 | | | | |
| Samples in proper container/bottle? | Yes 🗹 | No 🗌 | | | | |
| Sample containers intact? | Yes 🗸 | No 🗌 | | | | |
| Sufficient sample volume for indicated test? | Yes 🗸 | No 🗌 | | | | |
| All samples received within holding time? | Yes 🗹 | No 🗌 | | | | |
| Container/Temp Blank temperature in compliance? | Yes 🗸 | No 🗌 | | | | |
| Sample(s) received on ice? Temperature(s)/Thermometer(s): | Yes ✔ <u>3.0/3.0 c</u> | No 🗌 | <u>IR1</u> | | | |
| Cooler(s)/Kit(s): | | | | | | |
| Date/Time sample(s) sent to storage: | 10/27/2020 | 0 2:08:04 PM | | | _ | |
| Water - VOA vials have zero headspace? | Yes 🗋 | No | No VOA vials sul | bmitted | \checkmark | |
| Water - pH acceptable upon receipt? | Yes 🗹 | No 🗌 | N/A | | | |
| pH adjusted? pH adjusted by: | Yes | No 🗹 | N/A | | | |

Login Notes:

| Client Contacted: | Date Contacted: | Person Contacted: |
|-------------------|-----------------|-------------------|
| Contacted By: | Regarding: | |
| | | |
| Comments: | | |
| | | |
| CorrectiveAction: | | |
| | | |



ALS Environmental 781 Industrial Cir, Ste 3 **Traverse City, Michigan** 49686 (Tel) 231.421.3204 (Cell) 231.944.3459

Chain of Custody Form

of

____1___

Page __1___

RETURN SAMPLES TO:

ALS Environmental 3352 128th Avenue Holland, Michigan 49424 (Tel) 616.399.6070 (Fax) 616.399.6185

| | | ~ , | | | [| | ALS Proiect | t Manager: | Garv | Bvar | | A | LS Wo | rk Orde | er #: | 20 | 107 | 45 | Ĩ |
|--|-----------------|----------------------|-------------------------|----------------|---------------------|--------------------|-------------------------|---------------|----------|---------------------------------------|--------------|-------------------------|----------|-----------|----------|-----------|-----------|----------|----------|
| | Cueto | mer Information | | | Pr | oject Infor | mation | | | 4 | Paramo | eter/M | etho | Rea | uest f | or Ana | lvsis | - 10 | |
| Pi | Irchase Order | | | Project Na | ame Har | tland 36 Gas | Plant | | A | Sulfola | ne | | | | | (1) | Amber | Liter | |
| | Work Order | | | Project Num | ber | | | · | В | Sulfate | | ÷., | | | | (1) | 125 p | | |
| C | ompany Name | ECT, Inc. | | Bill To Comp | any Lan | nbda Energy | | | С | | | | ****** | | | ······ | | | |
| S | end Report To | Jeremy Lewandows | ki | Invoice A | ttn. Nic | k Summeriar | nd | | D | 40 | er . | it I × 12 andre pending | | | | | | | |
| | Address | 3399 Veterans Dr. | | Addı | ress 151 | 0 Thomas R | d | | E | a | naly | ical | re | sw / t | 5 pl | lease | | | |
| | City/State/Zip | Traverse City, MI 49 | 684 | City/State | /Zip Kal | Kalkaska, Mi 49646 | | | | | | | | | | | | | |
| | Phone | 231-946-8200 | | Ph | one 231 | 231-258-6411 | | | н | · · · · · · · · · · · · · · · · · · · | | | | | | | | | |
| | Fax | 231-946-8208 | | | Fax | | | | 1 | | | | | | | | | | |
| e | -Mail Address | jlewandowski@ecti | inc.com | - | mi | chigan.invoi | ces@lambdaen | ergyllc.com | J | | | | | | | | | | |
| No. | | Sample Description | | Date | Tim | e Matr | ix Pres. Key Numbers | # Bottles | A | В | С | D | E | F | G | н | 1 | J | Hold |
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30-Dec-2020

Nick Summerland Lambda Energy Resources 1510 Thomas Rd Kalkaska, MI 49646

Re: Lambda (Merit Hartland 130685.2000)

Work Order: 20121039

Dear Nick,

ALS Environmental received 15 samples on 11-Dec-2020 08:00 AM for the analyses presented in the following report.

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

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

The total number of pages in this report is 24.

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

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

Sincerely,



Environmental 💭

Electronically approved by: Gary Byar

Gary Byar Project Manager

Report of Laboratory Analysis

Certificate No: MI: 0022

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

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Work Order Sample Summary

| Lab Samp ID | <u>Client Sample ID</u> | <u>Matrix</u> | Tag Number | Collection Date | Date Received | Hold |
|-------------|-------------------------|---------------|------------|------------------------|------------------|------|
| 20121039-01 | MW-7D | Groundwater | | 12/10/2020 10:35 | 12/11/2020 08:00 | |
| 20121039-02 | MW-15D | Groundwater | | 12/10/2020 10:35 | 12/11/2020 08:00 | |
| 20121039-03 | MW-7S | Groundwater | | 12/10/2020 11:15 | 12/11/2020 08:00 | |
| 20121039-04 | MW-17D | Groundwater | | 12/10/2020 11:20 | 12/11/2020 08:00 | |
| 20121039-05 | MW-19D | Groundwater | | 12/10/2020 11:50 | 12/11/2020 08:00 | |
| 20121039-06 | MW-17S | Groundwater | | 12/10/2020 12:00 | 12/11/2020 08:00 | |
| 20121039-07 | MW-19S | Groundwater | | 12/10/2020 12:30 | 12/11/2020 08:00 | |
| 20121039-08 | MW-14S | Groundwater | | 12/10/2020 12:45 | 12/11/2020 08:00 | |
| 20121039-09 | MW-13D | Groundwater | | 12/10/2020 13:20 | 12/11/2020 08:00 | |
| 20121039-10 | MW-14D | Groundwater | | 12/10/2020 13:25 | 12/11/2020 08:00 | |
| 20121039-11 | MW-13S | Groundwater | | 12/10/2020 14:00 | 12/11/2020 08:00 | |
| 20121039-12 | MW-20S | Groundwater | | 12/10/2020 14:15 | 12/11/2020 08:00 | |
| 20121039-13 | MW-18 | Groundwater | | 12/10/2020 14:40 | 12/11/2020 08:00 | |
| 20121039-14 | MW-20D | Groundwater | | 12/10/2020 15:00 | 12/11/2020 08:00 | |
| 20121039-15 | MW-20D Dup | Groundwater | | 12/10/2020 15:00 | 12/11/2020 08:00 | |
| | | | | | | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-7D

Collection Date: 12/10/2020 10:35 AM

Work Order: 20121039 Lab ID: 20121039-01 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 3 | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 03:50 AM |
| Surr: 2-Fluorobiphenyl | 63.5 | | 26-79 | %REC | 1 | 12/28/2020 03:50 AM |
| Surr: 4-Terphenyl-d14 | 86.7 | | 43-106 | %REC | 1 | 12/28/2020 03:50 AM |
| Surr: Nitrobenzene-d5 | 61.1 | | 29-80 | %REC | 1 | 12/28/2020 03:50 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 21 | | 1.0 | mg/L | 1 | 12/15/2020 05:51 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-15D

Collection Date: 12/10/2020 10:35 AM

Work Order: 20121039 Lab ID: 20121039-02 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 04:11 AM |
| Surr: 2-Fluorobiphenyl | 63.1 | | 26-79 | %REC | 1 | 12/28/2020 04:11 AM |
| Surr: 4-Terphenyl-d14 | 84.7 | | 43-106 | %REC | 1 | 12/28/2020 04:11 AM |
| Surr: Nitrobenzene-d5 | 61.7 | | 29-80 | %REC | 1 | 12/28/2020 04:11 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 26 | | 1.0 | mg/L | 1 | 12/15/2020 05:52 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-7S

Collection Date: 12/10/2020 11:15 AM

Work Order: 20121039 Lab ID: 20121039-03 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 3 | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 04:33 AM |
| Surr: 2-Fluorobiphenyl | 64.8 | | 26-79 | %REC | 1 | 12/28/2020 04:33 AM |
| Surr: 4-Terphenyl-d14 | 85.6 | | 43-106 | %REC | 1 | 12/28/2020 04:33 AM |
| Surr: Nitrobenzene-d5 | 63.0 | | 29-80 | %REC | 1 | 12/28/2020 04:33 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 250 | | 4.0 | mg/L | 4 | 12/15/2020 06:02 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-17D

Collection Date: 12/10/2020 11:20 AM

Work Order: 20121039 Lab ID: 20121039-04 Matrix: GROUNDWATER

| Analyses | Result Qual | | Report Limit | Units | Dilution Factor | Date Analyzed | | |
|--------------------------------|-------------|--|-----------------|----------|-----------------------------|---------------------|--|--|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE | | |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 04:54 AM | | |
| Surr: 2-Fluorobiphenyl | 68.0 | | 26-79 | %REC | 1 | 12/28/2020 04:54 AM | | |
| Surr: 4-Terphenyl-d14 | 85.7 | | 43-106 | %REC | 1 | 12/28/2020 04:54 AM | | |
| Surr: Nitrobenzene-d5 | 66.6 | | 29-80 | %REC | 1 | 12/28/2020 04:54 AM | | |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR | | |
| Sulfate | 220 | | 4.0 | mg/L | 4 | 12/15/2020 06:03 PM | | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-19D

Collection Date: 12/10/2020 11:50 AM

Work Order: 20121039 Lab ID: 20121039-05 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 05:16 AM |
| Surr: 2-Fluorobiphenyl | 63.0 | | 26-79 | %REC | 1 | 12/28/2020 05:16 AM |
| Surr: 4-Terphenyl-d14 | 92.7 | | 43-106 | %REC | 1 | 12/28/2020 05:16 AM |
| Surr: Nitrobenzene-d5 | 61.5 | | 29-80 | %REC | 1 | 12/28/2020 05:16 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 120 | | 4.0 | mg/L | 4 | 12/15/2020 06:03 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-17S

Collection Date: 12/10/2020 12:00 PM

Work Order: 20121039 Lab ID: 20121039-06 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 05:37 AM |
| Surr: 2-Fluorobiphenyl | 67.7 | | 26-79 | %REC | 1 | 12/28/2020 05:37 AM |
| Surr: 4-Terphenyl-d14 | 87.9 | | 43-106 | %REC | 1 | 12/28/2020 05:37 AM |
| Surr: Nitrobenzene-d5 | 67.0 | | 29-80 | %REC | 1 | 12/28/2020 05:37 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 64 | | 1.0 | mg/L | 1 | 12/15/2020 05:54 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-19S

Collection Date: 12/10/2020 12:30 PM

Work Order: 20121039 Lab ID: 20121039-07 Matrix: GROUNDWATER

| Analyses | Result Qual | | Report Limit | Units | Dilution Factor | Date Analyzed | |
|---------------------------------|-------------|--|-----------------|----------|-----------------------------|---------------------|--|
| SEMI-VOLATILE ORGANIC COMPOUNDS | ; | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE | |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 05:59 AM | |
| Surr: 2-Fluorobiphenyl | 62.6 | | 26-79 | %REC | 1 | 12/28/2020 05:59 AM | |
| Surr: 4-Terphenyl-d14 | 81.7 | | 43-106 | %REC | 1 | 12/28/2020 05:59 AM | |
| Surr: Nitrobenzene-d5 | 60.2 | | 29-80 | %REC | 1 | 12/28/2020 05:59 AM | |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR | |
| Sulfate | 74 | | 1.0 | mg/L | 1 | 12/15/2020 05:54 PM | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-14S

Collection Date: 12/10/2020 12:45 PM

Work Order: 20121039 Lab ID: 20121039-08 Matrix: GROUNDWATER

| Analyses | Report Result Qual Limit | | Units | Dilution Factor | Date Analyzed | |
|---------------------------------|-----------------------------|--|--------|--------------------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 3 | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 06:20 AM |
| Surr: 2-Fluorobiphenyl | 71.0 | | 26-79 | %REC | 1 | 12/28/2020 06:20 AM |
| Surr: 4-Terphenyl-d14 | 94.2 | | 43-106 | %REC | 1 | 12/28/2020 06:20 AM |
| Surr: Nitrobenzene-d5 | 69.5 | | 29-80 | %REC | 1 | 12/28/2020 06:20 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 50 | | 1.0 | mg/L | 1 | 12/15/2020 05:55 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-13D

Collection Date: 12/10/2020 01:20 PM

Work Order: 20121039 Lab ID: 20121039-09 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed | |
|--------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|--|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE | |
| Sulfolane | 99 | | 10 | μg/L | 1 | 12/28/2020 06:42 AM | |
| Surr: 2-Fluorobiphenyl | 68.5 | | 26-79 | %REC | 1 | 12/28/2020 06:42 AM | |
| Surr: 4-Terphenyl-d14 | 88.6 | | 43-106 | %REC | 1 | 12/28/2020 06:42 AM | |
| Surr: Nitrobenzene-d5 | 65.5 | | 29-80 | %REC | 1 | 12/28/2020 06:42 AM | |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR | |
| Sulfate | 460 | | 10 | mg/L | 10 | 12/15/2020 06:10 PM | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-14D

Collection Date: 12/10/2020 01:25 PM

Work Order: 20121039 Lab ID: 20121039-10 Matrix: GROUNDWATER

| Analyses | Result Qual | | Report Limit | Units | Dilution Factor | Date Analyzed | |
|--------------------------------|-------------|--|-----------------|----------|-----------------------------|---------------------|--|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE | |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 07:03 AM | |
| Surr: 2-Fluorobiphenyl | 62.9 | | 26-79 | %REC | 1 | 12/28/2020 07:03 AM | |
| Surr: 4-Terphenyl-d14 | 80.7 | | 43-106 | %REC | 1 | 12/28/2020 07:03 AM | |
| Surr: Nitrobenzene-d5 | 59.2 | | 29-80 | %REC | 1 | 12/28/2020 07:03 AM | |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR | |
| Sulfate | 110 | | 4.0 | mg/L | 4 | 12/15/2020 06:05 PM | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-13S

Collection Date: 12/10/2020 02:00 PM

Work Order: 20121039 Lab ID: 20121039-11

Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 3 | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 07:25 AM |
| Surr: 2-Fluorobiphenyl | 59.9 | | 26-79 | %REC | 1 | 12/28/2020 07:25 AM |
| Surr: 4-Terphenyl-d14 | 78.0 | | 43-106 | %REC | 1 | 12/28/2020 07:25 AM |
| Surr: Nitrobenzene-d5 | 59.2 | | 29-80 | %REC | 1 | 12/28/2020 07:25 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 94 | | 1.0 | mg/L | 1 | 12/15/2020 05:56 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-20S

Collection Date: 12/10/2020 02:15 PM

Work Order: 20121039 Lab ID: 20121039-12 Matrix: GROUNDWATER

| Analyses | Result | Result Qual | | Units | Dilution Factor | Date Analyzed |
|--------------------------------|--------|-------------|--------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 07:47 AM |
| Surr: 2-Fluorobiphenyl | 57.6 | | 26-79 | %REC | 1 | 12/28/2020 07:47 AM |
| Surr: 4-Terphenyl-d14 | 87.1 | | 43-106 | %REC | 1 | 12/28/2020 07:47 AM |
| Surr: Nitrobenzene-d5 | 56.4 | | 29-80 | %REC | 1 | 12/28/2020 07:47 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 57 | | 1.0 | mg/L | 1 | 12/15/2020 05:57 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-18

Collection Date: 12/10/2020 02:40 PM

Work Order: 20121039 Lab ID: 20121039-13

Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|---------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUNDS | 3 | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 20 | µg/L | 1 | 12/28/2020 03:28 AM |
| Surr: 2-Fluorobiphenyl | 62.4 | | 26-79 | %REC | 1 | 12/28/2020 03:28 AM |
| Surr: 4-Terphenyl-d14 | 83.9 | | 43-106 | %REC | 1 | 12/28/2020 03:28 AM |
| Surr: Nitrobenzene-d5 | 60.1 | | 29-80 | %REC | 1 | 12/28/2020 03:28 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 58 | | 1.0 | mg/L | 1 | 12/15/2020 05:57 PM |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-20D

Collection Date: 12/10/2020 03:00 PM

Work Order: 20121039 Lab ID: 20121039-14 Matrix: GROUNDWATER

| Analyses | Result Qu | | Report Limit | Units | Dilution Factor | Date Analyzed | |
|---------------------------------|-----------|--|-----------------|----------|-----------------------------|---------------------|--|
| SEMI-VOLATILE ORGANIC COMPOUNDS | | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE | |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 08:08 AM | |
| Surr: 2-Fluorobiphenyl | 70.5 | | 26-79 | %REC | 1 | 12/28/2020 08:08 AM | |
| Surr: 4-Terphenyl-d14 | 96.8 | | 43-106 | %REC | 1 | 12/28/2020 08:08 AM | |
| Surr: Nitrobenzene-d5 | 70.4 | | 29-80 | %REC | 1 | 12/28/2020 08:08 AM | |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR | |
| Sulfate | 80 | | 1.0 | mg/L | 1 | 12/15/2020 05:59 PM | |

Client: Lambda Energy Resources

Project:Lambda (Merit Hartland 130685.2000)Sample ID:MW-20D Dup

Collection Date: 12/10/2020 03:00 PM

Work Order: 20121039 Lab ID: 20121039-15 Matrix: GROUNDWATER

| Analyses | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed |
|--------------------------------|--------|------|-----------------|----------|-----------------------------|---------------------|
| SEMI-VOLATILE ORGANIC COMPOUND | S | | SW846 | 8270D | Prep: SW3510 12/17/20 12:32 | Analyst: EE |
| Sulfolane | ND | | 10 | µg/L | 1 | 12/28/2020 08:30 AM |
| Surr: 2-Fluorobiphenyl | 64.1 | | 26-79 | %REC | 1 | 12/28/2020 08:30 AM |
| Surr: 4-Terphenyl-d14 | 83.5 | | 43-106 | %REC | 1 | 12/28/2020 08:30 AM |
| Surr: Nitrobenzene-d5 | 61.9 | | 29-80 | %REC | 1 | 12/28/2020 08:30 AM |
| SULFATE | | | A4500- | SO4 E-11 | | Analyst: JDR |
| Sulfate | 80 | | 1.0 | mg/L | 1 | 12/15/2020 06:00 PM |

Date: 30-Dec-20

| Client: | Lambda Energy Resources |
|-------------|-------------------------------------|
| Project: | Lambda (Merit Hartland 130685.2000) |
| Work Order: | 20121039 |

Case Narrative

Batch 169411 Sample 20121039-13A SVO_8270_W Prep comment: Reduced volume for MS/MSD due to limited bottles. Client Sample ID: MW-18

Batch R306100 Sample 20121039-13BMS/MSD SO4_4500E_DISC_W The MS/MSD recovery for Sulfate was below the lower control limit. The corresponding result in the parent sample may be biased low for this analyte: sulfate Client Sample ID: MW-18

Client:Lambda Energy ResourcesWork Order:20121039Project:Lambda (Merit Hartland 130685.2000)

QC BATCH REPORT

| Batch ID: 169411 | Instrument ID SV | MS8 | | Metho | d: SW846 | 6 82 | 70D | | | | | |
|-----------------------|-----------------------------------|------------------------|----------------------------|--|--|--|--|----------------------------------|--|------------|--------------|---------|
| MBLK | Sample ID: SBLKW1-1 | 69411-169 [,] | 411 | | | ι | Units:µg/L | | Analysis | Date: 12/2 | 8/2020 02 | 2:02 AM |
| Client ID: | | Run ID | SVMS8 | _201227A | | Se | eqNo: 703 | 5444 | Prep Date: 12/1 | 7/2020 | DF: 1 | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfolane | | ND | 10 | | | | | | | | | |
| Surr: 2-Fluorobiphen | vl | 35.57 | 0 | 50 | | 0 | 71.1 | 26-79 | 0 | | | |
| Surr: 4-Terphenyl-d1 | 4 | 42.7 | 0 | 50 | | 0 | 85.4 | 43-106 | 0 | | | |
| Surr: Nitrobenzene-d | 15 | 35.24 | 0 | 50 | | 0 | 70.5 | 29-80 | 0 | | | |
| LCS | Sample ID: SLCSW1-1 | 69411-1694 | 411 | | | ι | Units:µg/L | | Analysis | Date: 12/2 | 8/2020 02 | 2:24 AM |
| Client ID: | | Run ID | SVMS8 | _201227A | | Se | eqNo: 703 | 5445 | Prep Date: 12/1 | 7/2020 | DF: 1 | |
| | | | | | SPK Ref | | | Control | RPD Ref | | RPD | |
| Analyte | | Result | PQL | SPK Val | Value | | %REC | Limit | Value | %RPD | Limit | Qual |
| Sulfolane | | 57 31 | 10 | 100 | | 0 | 573 | 30-100 | 0 | | | |
| Surr: 2-Fluorobinhen | vl | 35.08 | 0 | 50 | | 0 | 70.2 | 26-79 | 0 | | | |
| Surr: 4-Terphenvl-d1 | 4 | 43.13 | 0 | 50 | | 0 | 86.3 | 43-106 | 0 | | | |
| Surr: Nitrobenzene-d | 15 | 33.75 | 0 | 50 | | 0 | 67.5 | 29-80 | 0 | | | |
| MS | Sample ID [.] 20121039-1 | I3A MS | | | | I | Inits: ua/I | | Analysis | 8/2020 02 | 9·45 ΔM | |
| Client ID: MW-18 | | Run ID | · SVMS8 | 201227A | | SegNo: 7035446 | | | Prep Date: 12/17/2020 | | DF 1 | |
| | | | | | | | -q | Control | | | | |
| Analyte | | Result | PQL | SPK Val | Value | | %REC | Limit | Value | %RPD | Limit | Qual |
| Sulfolane | | 139.2 | 20 | 200 | | 0 | 69.6 | 30-100 | 0 | | | |
| Surr: 2-Fluorobiphen | vl | 65.06 | 0 | 100 | | 0 | 65.1 | 26-79 | 0 | | | |
| Surr: 4-Terphenyl-d1 | 4 | 84.84 | 0 | 100 | | 0 | 84.8 | 43-106 | 0 | | | |
| Surr: Nitrobenzene-d | 15 | 63 | 0 | 100 | | 0 | 63 | 29-80 | 0 | | | |
| MSD | Sample ID: 20121039-1 | I3A MSD | | | | ι | Units:µg/L | | Analysis | Date: 12/2 | 8/2020 03 | :07 AM |
| Client ID: MW-18 | | Run ID | SVMS8 | _201227A | | Se | eqNo: 703 | 5447 | Prep Date: 12/1 | 7/2020 | DF: 1 | |
| Analyte | | Result | PQI | SPK Val | SPK Ref Value | | %RFC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfolano | | 152.4 | 20 | 200 | | 0 | 76.2 | 30 100 | 120.2 | 0.04 | 30 | |
| Surr: 2-Fluorobinhen | vl | 74.16 | 0 | 100 | | 0 | 74.2 | 26-79 | 65.06 | 1.3 1 | 40 | |
| Surr: 4-Terphenvl-d1 | 4 | 83.62 | 0 | 100 | | 0 | 83.6 | 43-106 | 84.84 | 1.45 | 40 | |
| Surr: Nitrobenzene-d | 15 | 72.66 | 0 | 100 | | 0 | 72.7 | 29-80 | 63 | 14.2 | 40 | |
| The following samples | s were analyzed in thi | is batch: | 20 20 20 20 20 | 121039-01/ 121039-04/ 121039-07/ 121039-10/ 121039-13/ | A 20 A 20 A 20 A 20 A 20 A 20 |)121)121)121)121)121)121 | 1039-02A 1039-05A 1039-08A 1039-11A 1039-14A | 20 20 20 20 20 20 | 121039-03A 121039-06A 121039-09A 121039-12A 121039-15A | | | |

QC BATCH REPORT

Batch ID: R306100 Instrument ID GALLERY Method: A4500-SO4 E-11

| MBLK | Sample ID: 00MBLANK-R306100 | | | | | | Jnits: mg/l | Analysis Date: 12/15/2020 07:1 | | | :19 PM | | |
|-------------------|-----------------------------|----------|----------------------------------|---|--|--|---|----------------------------------|--|--------------|--------------------|--------------|--------|
| Client ID: | | Run ID | GALLE | RY_201215 | В | SeqNo: 7000272 | | Prep Date: | | DF: 1 | | | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | | %RPD | RPD Limit | Qual |
| Sulfate | | ND | 1.0 | | | | | | | | | | |
| MS | Sample ID: 20121039-1 | 3BMS | | | | ι | Jnits: mg/l | _ | Analy | ysis | Date: 12/1 | 5/2020 06 | :23 PM |
| Client ID: MW-18 | | Run ID | GALLE | RY_201215 | В | Se | qNo: 7000 | 249 | Prep Date: | | | DF: 4 | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | | %RPD | RPD Limit | Qual |
| Sulfate | | 105 | 4.0 | 50 | 58. | 19 | 93.6 | 95-118 | | 0 | | | S |
| MSD | Sample ID: 20121039-1 | 3BMSD | | | | ι | Jnits: mg/l | _ | Analy | ysis | Date: 12/1 | 5/2020 06 | :23 PM |
| Client ID: MW-18 | | Run ID | GALLE | RY_201215 | В | Se | qNo: 7000 | 250 | Prep Date: | | | DF: 4 | |
| Analvte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | | %RPD | RPD Limit | Qual |
| Sulfate | | 103.4 | 4.0 | 50 | 58. | 19 | 90.4 | 95-118 | 1 | 05 | 1.53 | 10 | S |
| LCS1 | Sample ID: 0LCS1 10-F | R306100 | | | | ι | Jnits: mg/l | _ | Analy | ysis | Date: 12 /1 | 5/2020 07 | :20 PM |
| Client ID: | | Run ID | GALLE | RY_201215 | в | Se | qNo: 7000 | 273 | Prep Date: | | | DF: 1 | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | | %RPD | RPD Limit | Qual |
| Sulfate | | 10.09 | 1.0 | 10 | | 0 | 101 | 90-119 | | 0 | | | |
| LCS2 | Sample ID: 0LCS2 50-F | R306100 | | | | ι | Jnits: mg/l | _ | Analy | ysis | Date: 12/1 | 5/2020 05 | :50 PM |
| Client ID: | | Run ID | GALLE | RY_201215 | В | Se | qNo: 7000 | 178 | Prep Date: | | | DF: 1 | |
| Analyte | | Result | PQL | SPK Val | SPK Ref Value | | %REC | Control Limit | RPD Ref Value | | %RPD | RPD Limit | Qual |
| Sulfate | | 53.4 | 1.0 | 50 | | 0 | 107 | 95-118 | | 0 | | | |
| The following sam | ples were analyzed in thi | s batch: | 20 20 20 20 20 20 |)121039-01E)121039-04E)121039-07E)121039-10E)121039-13E | 3 20 3 20 3 20 3 20 3 20 3 20 |)121)121)121)121)121)121 | 039-02B 039-05B 039-08B 039-11B 039-14B | 20 20 20 20 20 20 | 121039-03B 121039-06B 121039-09B 121039-12B 121039-15B | | | | |

| Client: | Lambda Energy Resources | OUALIFIERS |
|------------|-------------------------------------|-------------------|
| Project: | Lambda (Merit Hartland 130685.2000) | ACDONVMS UNITS |
| WorkOrder: | 20121039 | ACRONTINS, UNITS |

Qualifier Description Value exceeds Regulatory Limit ** Estimated Value а Analyte is non-accredited В Analyte detected in the associated Method Blank above the Reporting Limit Е Value above quantitation range Н Analyzed outside of Holding Time Hr BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated. J Analyte is present at an estimated concentration between the MDL and Report Limit ND Not Detected at the Reporting Limit 0 Sample amount is > 4 times amount spiked Dual Column results percent difference > 40%Р R RPD above laboratory control limit S Spike Recovery outside laboratory control limits U Analyzed but not detected above the MDL Х Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level. Acronym Description DUP Method Duplicate LCS Laboratory Control Sample LCSD Laboratory Control Sample Duplicate LOD Limit of Detection (see MDL) LOQ Limit of Quantitation (see PQL) MBLK Method Blank MDL Method Detection Limit MS Matrix Spike MSD Matrix Spike Duplicate

| SW | SW-846 Update III |
|----------------|----------------------|
| Units Reported | Description |
| μg/L | Micrograms per Liter |
| mg/L | Milligrams per Liter |

ASTM

EPA

Practical Quantitation Limit

Relative Percent Difference

Target Detection Limit

Too Numerous To Count APHA Standard Methods

POL

RPD

TDL

TNTC

А

D Е

Sample Receipt Checklist

| Client Name: LAMBDA-KAL | | Da | ate/Time R | Received: | <u>11-Dec-20</u> | 00:80 | |
|--|-----------------------|--------------|--------------|--------------|------------------|-------|-----------|
| Work Order: 20121039 | | Re | eceived by | r: | <u>DS</u> | | |
| Checklist completed by Diane Shaw 1 | 1-Dec-20 | Review | wed by: | Nathan V | Villiam | S | 11-Dec-20 |
| Matrices: <u>Groundwater</u> Carrier name: <u>Courier</u> | Date | | | esignature | | | Date |
| Shipping container/cooler in good condition? | Yes | ✓ | No | Not Prese | nt 🗌 | | |
| Custody seals intact on shipping container/cooler? | Yes | ✓ | No 🗌 | Not Prese | nt 🗌 | | |
| Custody seals intact on sample bottles? | Yes | | No 🗌 | Not Prese | nt 🗹 | | |
| Chain of custody present? | Yes | ✓ | No 🗌 | | | | |
| Chain of custody signed when relinquished and received? | Yes | ✓ | No 🗌 | | | | |
| Chain of custody agrees with sample labels? | Yes | ✓ | No 🗌 | | | | |
| Samples in proper container/bottle? | Yes | \checkmark | No 🗌 | | | | |
| Sample containers intact? | Yes | ✓ | No 🗌 | | | | |
| Sufficient sample volume for indicated test? | Yes | ✓ | No 🗌 | | | | |
| All samples received within holding time? | Yes | \checkmark | No 🗌 | | | | |
| Container/Temp Blank temperature in compliance? | Yes | \checkmark | No 🗌 | | | | |
| Sample(s) received on ice? Temperature(s)/Thermometer(s): | Yes 2.8/2.8 | | No | IR1 | |] | |
| Cooler(s)/Kit(s): | | | | | |] | |
| Date/Time sample(s) sent to storage: Water - VOA vials have zero headspace? | <u>12/11/2</u> Yes | 020 9:22:1 | 8 AM No 🗌 | No VOA vials | submitted | | |
| Water - pH acceptable upon receipt? | Yes | ✓ | No 🗌 | N/A | | | |
| pH adjusted? pH adjusted by: | Yes - | | No 🖌 | N/A | |] | |

Login Notes:

| Client Contacted: | Date Contacted: | Person Contacted: | |
|-------------------|-----------------|-------------------|----|
| Contacted By: | Regarding: | | |
| | | | |
| Comments: | | | |
| | | | |
| CorrectiveAction: | | | |
| | | | SE |
| | | | 01 |

SRC Page 1 of 1

| | | Cincinnati, OH +1 513 733 5336 | Fort Collin +1 970 49 | is, CO 0 1511 | Chain | of Cust | tody F | orm | Ì | Houston, +1 281 5 | TX 30 5656 | S + | pring Cit 1 610 94 | y, PA 8 4903 | So +1 | uth Cha 304 35 | rleston, WV 6 3168 |
|------------------------------|----------------------|--|--------------------------|------------------|--------------------|--------------|-----------------|---------------|------------------------|------------------------|-------------------|----------|------------------------|--------------------|---------------|-------------------|---|
| | | Everett, WA +1 425 356 2600 | Holland, N +1 616 39 | ll 9 6070 | Paç | geof | 2 | | | Middletov +1 717 94 | wn, PA 14 5541 | 54 + | alt Lake (1 801 26 | City, UT 6 7700 | Yo +1 | rk, PA | 5 5280 |
| | | | | | C | | 5339 | | | | | | | | | | |
| | ~~) | | | | A | LS Project | Manager: | } : | riu je V | | A | LS Wor | k Orde | r #: 💈 | 10 | 210 | 239 |
| 1 | Customer Information | | | Proj | ect Informa | tion | | ļ | | Parar | neter/ | Method | Requ | est for | Analy | sis | |
| Purchase Order | - | ************************************** | Project Na | ame M | erif H | artlan | 6 | Å | Ju | Holan | - | | | | | | |
| Work Order | | | Project Num | iber 13 | 0685- | 2000 | | B | Su | Ifate | | | | | | | |
| Company Name | ECT Inc. | eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee | Bill To Comp | any | **** | | | C | | | | | | ····· | | | |
| Send Report To | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | Invoice / | Attn | <i>\$717.47</i> | | | D | ***-*** | | | | | | | | |
| Address | | | Addr | ess | | | | E | | | .AA | | | | | | |
| | | | | | | | | F | | | | | | | | · | |
| City/State/Zip | | | City/State/ | Zip | 194,144 d commente | | | G | | | | | | | **** | | |
| Phone | 231-676-30 | 23 | Ph | one | | | | н | | | | | | | | | |
| Fax | | ###################################### | | Fax | **** | | | 1 | | | | | | | | | |
| e-Mail Address | J Lewandowski | Cectina | e-Mail Addr | 855 | | | | J | | | | | | | | | |
| No. | Sample Description | | Date | Time | Matrix | Pres. | # Bottles | A | B | C | D | E F. | G | H | | J | Hold |
| 1 MW | -7D | <u> </u> | 2/10/2020 | 10135 | Chu 1 | | Z | \mathcal{X} | $\boldsymbol{\lambda}$ | | | | | | | | |
| 2 <i>N</i> IW | -13 p | 12 | 2/10/2020 | 10-35 | GW | - | 2 | X | X | | | | | | ļ | | |
| 3 <i>M</i> u |)-75 | / | 2/10/2000 | 11:15 | 64 | | 2 | Ŋ | X | | | | | | | | |
| 4 /Mh | 1-1710 | 16 | 2/10/2020 | 11:50 | GW | ~ | 2 | X | X | | | | | | | | |
| 5 mw- | -MD | 12 | Hiofrono | 11:50 | GW | | 2 | Ø | X | | | | | | | | |
| 6 MW. | -175 | 12 | 110/2020 | /2:00 | GW | | 2 | X | と | | | | | | | | *** |
| 7 MW- | - 193 | 12 | 10/2020 | 12:30 | GW | | 2 | Ø | N | | | | | | | | |
| 8 MW. | -14s | 12 | 110/2020 | 12:45 | GW | | 2 | χ | X | | | | | | | | |
| 9 mw- | -150 | 12 | 2/10/2020 | 13:20 | GW | _ | 2 | X | X | | | | | | | | |
| 10 MW- | 140 | 13 | 2/10/2000 | 13:25 | GW | | | | | | | | | | | | |
| Sampler(s) Please I | Print & Sign | | Shipmen | t Method | Turr | naround Time | in Business | Days | BD) | Other_ | | | 1 | lesults | Due Da | te: | |
| Relinquished by: | D | ate: 12020 Tin | | Received by | hh | | <u>. 49 c T</u> | Notes: | | LJZ | BN | | an T | | | <u> </u> | |
| Ty / Gr+C Relinquished by | к] Л | | | Received by | Lapo ato yt. | 12/1 | (20 | Coc | ler (D | Cooler 1 | iemp | QC Packa | ge: (Che | ck One E | lox Belo | N) | işdağını dağın sürdere de Miller de Paris Sandara maşlı |
| Logged by (Laborator) | | 10100 ate:, Tin | | Checked by | | 08 | D O | ID | 7 | 28- | | | II Std QC | Daw D- | <u>ت</u> ۲ |] TRRP | Checklist |
| Preservative Key: | DCS 1-HCI 2-HNO3 3- | 2/11(20 H2SO4 4-NaOH | 0000 1 5-Na2S2O3 | 6-NaHS | 304 7-Othe | r 8-4°C | 9-5035 | pŧ | 23 | <u> </u> | | Level | V SW846 | /Raw Da /CLP | .e [| _ TRRP | ' Level IV |

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|-------------------------|--------------------------------|--------------------------------------|---|--------------------|---|-----------------------|---|-----------------|--------------------------|---|------------------|--------------------|------------------------------|----------------------------|---|--------------------------------|-----------------------------|---|
| | | Everett, WA +1 425 356 2600 | Holiand, +1 616 39 | MI 9 6070 | F | Pageof | 2 | | | Middlet +1 717 ! | own, P 944 55 | A 41 | Salt +1 8 | Lake City 01 266 7 | y, UT 700 | York, P +1 717 | A 505 5: | 280 |
| R | | | | | | сос ID: 4 Ц | 5338 | | | | | | | | | | | |
| | L 3/ | | | | | ALS Project | Manager: | | | | | ALS \ | Nork (|)rder # | 1: 2 | 012 | 10: | 39 |
| | Customer Information | | | P | roject Inform | nation | | Į.,, | | Para | amete | er/Met | hod R | eques | t for A | nalysis | | |
| Purchase Order | | | Project N | ame // | Nerif H | artland | | A | - 5 | al folas | ne | | | | | | | |
| Work Order | | | Project Nur | nber / | 130685 | - 2000 | | B | 5 | ulfate | . | | | | | | | |
| Company Name | ECT Inc | | Bill To Com | pany | | | | C | ., | | | | | | | | | |
| Send Report To | | | Invoice | Attn | | κ | | D | | | | ,,,, ,, ,,, | | | | -A-+ A A FF | | |
| | | | | | | | | E | ,, | | | | | | | | | |
| Address | | | AUC | 1639 | | 647-847-477 | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | F | | | ,,.,,,,,,, | | | | | | | |
| City/State/Zip | | | City/State | /Zip | | | | G | | | | | | | | | | |
| Phone | 231-676-3 | 3023 | Pl | none | | | | H | | | | | | | | | | |
| Fax | 2 2 2 2 | | | Fax | <i></i> | | , | J. | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | | | | | |
| e-Mail Address | Therandowsk | i@ectinc.ce | e-Mail Add | iress | | | • | J | | | | | ,,,,,,,,,, | | | | | |
| No. | Sample Description | | Date | Time | e Matrix | x Pres. | # Bottles | A | B | C | D | E | F | G | H | 1 | | Hold |
| II MU | J-135 | | 12/10/2020 | 14:0 | 0 6W | | 2 | Ø | $\boldsymbol{\varkappa}$ | | | | | | | | | |
| 12 Mh | 1-205 | /. | 2/10/2020 | 14:15 | . GW | - | 2 | X | X | | | | | | | | | |
| 13 MW | -18/m5/45D | ľ | 2/10/2020 | 14:40 | GW | | 4 | $ \mathcal{X} $ | λ | | | | | *** | | | | |
| 14 MW | -200 | 1 | 2/10/2020 | 15:00 | > 6W | | Z | k | \mathcal{N} | | | | | ****** | **** | | | |
| 15 MW | -20D Dup | 17 | 10/2020 | 15:00 | s GW | | Z | X | X | | | | | Ŷ | | | | |
| 6 | , | | | | | | | | | | | | | | | ******* | | ,,,,, |
| 7 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | |
| 9 | | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | , | | | | | | | | | | | |
| 10 | | | | | | 49949 (9 849) | | | | | | | | | | | | , |
| Sampler(s) Please | Print & Sign | | Shipme | nt Method | 1 | furnaround Time | in Busines | s Days | (80) | C Other | ۲ | | | Re | sults Di | ue Date: | | |
| Polinnuichad has | + Joey Kniss | | l me | Received | | 10 BD | 5 BD | | 3 BD | | 2 BD | | | | | | | 744270000000000000000000000000000000000 |
| Heinquisned by: Ty J | lartin 1. | 2/16/2020 1 | <u>مد: ځ</u> | | VY | | | 120103 | Wileyaran manada a dan s | nonfrancountracture constant | *** | | 950853 9665 809366580 | | ang | teristanisikentetistiatististi | kiija kasintaa tatiitiin to | ****** |
| Relinquished by: | Λ 1 | 21/0/20 7 | 700 | Hereived | | 大心 | 1/20 | Cou | oler ID | Coole | er Temp | | Package Level II S | x: (Check Std QC | : One Bo | x Below) | RRP C | hecklist |
| Logged by (Laborator | | 12/11/20 to | me: 0900 | Checked | by ILa | EB | | | 21 | 2. | 8 's | | Level III : Level IV | Std QC/F SW846/C | law Date CLP | 🗆 T | RRP Le | əvel IV |
| Preservative Key | : 1-HCI 2-HNO _a 3-I | 1 ₂ SO ₄ 4-NaO | $\frac{-100}{H} = \frac{100}{5 - Na_2S_2C}$ |) ₃ 6-N | aHSO, 7-0 | ther 8-4°C | 9-5035 | | 0#23 | | | | Other _ | | | | - | |

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APPENDIX D

LOW-FLOW SAMPLING FIELD FORMS



| CLIENT | Lambda Ener | COV | | | Monitori | ng Location: | IER | Hartland #36 | | | |
|-----------------------|-------------------|---------------|-------------------|---------------|--|--------------------------------|-----------------|-------------------|---------------|--|--|
| | 12300 Long T | ree Poad | | | Sample ID: MW- /7 S | | | | | | |
| LOCATION: | 13390 Lone I | ree Roau | himan | | Well Type: 2" PVC | | | | | | |
| | Hartland Iow | /nsnip, wic | nigan | | | wen type: | | 2100 | | | |
| PROJECT: | 130685.2000 | | | | | | | | | | |
| INSPECTION | 1 | - | | | | | | | | | |
| Label on well? | | VES NO REMED | DIED | | Is cement pad in g | good repair? | | YES NO REMEDIE | NIA | | |
| ls reference mark v | risible? | YES NO REMEL | DIED | | Is protective casin | ig locked and in go | od repair? | YES NO REMEDIE | D | | |
| Standing water pres | sent? | YES NO REMED | DIED | | Is inner cap in place | ce and properly se | aling well? | YES NO REMEDIE | D | | |
| Indication of surface | e runoff in well? | YES NO REMEL | DIED | | Is well casing in vi | isibly good repair? | (| YES NO REMEDIE | D | | |
| Repair Notes: | | | | | | | | | | | |
| STATIC WAT | ER LEVEL | | | | 10/2 | | | | | | |
| | | | | | Date: | 3/2020 | Time: 09 | 05 | | | |
| Top of Casing E | Elevation: | | | | | | č | | | | |
| Depth to Water: | : | 18.91 | | Measured with | n: 🤇 | ELECTRONIC TAPE | CHALKED TAP | E OTHER | | | |
| Elevation of Wa | ater: | | | Well depth ve | rified? | YES NO | | | | | |
| | | | | | | | | | | | |
| WELL PURG | ING | | | | 1 | | | | | | |
| Purge Method: | PERISTAL TIC | BLADDER | OTHER | | Date: 10/2 | 3/2020 | Start Time: | 0917 | | | |
| ange meaned. | (Linio mano | | | | | | | | | | |
| Measured Wall | Donth: 27.1 | 0' | Screen Length | | | Depth to Scre | en Midpoint: | | | | |
| Measured went | | | ocreen Lengu | | | Departo coro | on mapointi | | · | | |
| | Mator Lavel | Droudour | Pumping Pote | Temp | Spec Cond | Diss Ovy | nH | ORP | Turbidity | | |
| | vvater Level | | rumping Rate | (inclusion) | (umba/arr) | (m~//) | (911) | (m)/) | | | |
| Time | (teet) | (feet) | (ml/min) | (-0) | (umno/cm) | (mg/I) | (5.0.) | (117) | (110) | | |
| init'al | 10.71 | | 1 | | | | 10 | | | | |
| 0920 | Clean C | punges | fnat ma | ce part | anates; | <u>'ssves</u> u | pourp | ry rate | and | | |
| 0925 | drawd | our k | esolved C | 0930 | | | | | | | |
| 0930 | 19.01 | 0.10 | 200 | 11.14 | 571 | 26.88 | 7.60 | -99.7 | 2.03 | | |
| 0935 | 19.01 | 0.10' | 200 | 11.20 | 533 | 21.50 | 7.35 | -83.5 | 2.37 | | |
| 0940 | 19.01 | 0.10' | 200 | 11.23 | 535 | 18.57 | 7.37 | -83.9 | 3.31 | | |
| 0945 | 19.01 | 0.10' | 700 | 11.25 | 535 | 14.30 | 7.42 | -84.6 | 1.13 | | |
| 0050 | 1901 | 6.10' | 700 | 11.26 | 535 | 9.96 | 7.46 | -85.4 | 1.04 | | |
| 1950 | 19.01 | A.10' | 200 | 1131 | 5210 | 8.20 | 7.48 | -9.5.3 | 1.07 | | |
| 0955 | 17.01 | 0110 | 200 | 11.21 | 570 | 777 | 740 | - 9.5.7 | 258 | | |
| 1000 | 19.01 | 0.10 | 200 | 11.30 | 596 | 7.09 | 7 51 | -0.51 | 1 70 | | |
| 1003 | 19.01 | 0.10 | 200 | 11.49 | 53/ | 1.0 | 2.31 | | 1.67 | | |
| | | Stabil | ization Criteria: | +/- 3% | +/- 3%* | +/-10% | +/- 0.1 Units | +/- 10 mV | +/- 10 % - | | |
| Total Volume PL | urged (gai): | | | | Stabiliza | (II > 0.5 Hig/I) | ce Doc USEPA EC | ASOP-GW 001 Rev # | (II = 0 INTO) | | |
| | Veie | mad Ti | CHIAT-S | 111100 | 1 20 20 | ORGAN | ic bac | train al | Par, etc ? | | |
| FIELD ANAL | 1313 | 1000 | CHIES | - nate | she | | | , | | | |
| | Time: | 1000 | | | | CALIBRAT | ION CHECK | | Mark if | | |
| | Temperature: | 11.48 | deg. C | | | Standard (conc.) | Reading | | Recalibrated | | |
| Spec | ific Conductance: | 543 | umhos/cm | | Specific Cond.: | | umh | nos/cm | | | |
| D | issolved Oxygen: | 6.89 | mg/L | I. | Dissolved Oxygen: | | mg/ | L | | | |
| | pH: | 7.53 | S.U. | | pH: | | | | | | |
| | ORP | 0.5. | 3 mV | | Eh: | / | mV | | | | |
| | Turbidity: | 197 | NTU | | Turbidity: | | NTL | J | | | |
| | raibiaity. | / | | | raibidity: | | | | | | |
| SAMDI E CO | LECTION | Time: | 1015 | | | Sample Dupli | cate ? No | 2 | | | |
| SAWFLE CO | Complet | nine. | 1013 | | | Sample Metho | d' Cear f | Yow / sea: | static | | |
| Appearance of a | sample. | | | | | Sample Metre | | | | | |
| NO POTTI ES | SIZE | TYPE | EII TERED. | | PRESER | RVATIVE: | | PARAMETER: | | | |
| 1 | 1000 ml | | ves no | None, HCI, HN | IO3. NaOH. H₂SO4 | , ZnAc, TSP, BAK | | Sulfolane | | | |
| | - <u>125</u> ml | glass plastic | yes no | None HCI. HN | IO3, NaOH, H2SO4 | , ZnAc, TSP, BAK | | | TR | | |
| | ml | glass plastic | yes no | None, HCI, HN | IO3, NaOH, H2SO4 | , ZnAc, TSP, BAK | | | | | |
| | ml | glass plastic | yes no | None, HCI, HN | IO3, NaOH, H2SO4 | , ZnAc, TSP, BAK | | | | | |
| | mi | glass plastic | yes no | None, HCI, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | - | | | | |
| - | ml | glass plastic | yes no | None, HCl, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | | | |
| | mi | glass plastic | yes no | None, HCI, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | | | |
| | ml | glass plastic | yes no | None, HCI, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | 1 | | |
| | ml | glass plastic | yes no | None, HCI, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | 1X. | | | | |
| | ml | glass plastic | yes no | None, HCI, HN | IO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | [| | |
| | ml | glass plastic | yes no | None, HCI, HN | 10_3 , NaOH, H_2SO_4 | , ZnAc, TSP, BAK | | | | | |
| SAMPLING F | PERSONNEL | | \bigcap | Chain | of Custody No | | | | I | | |
| Name (SIGNA | TURENARIA | adra | ETP) |) Name (| SIGNATURE | | | | I | | |
| Manie (SIGNA | | 1100 | - Vip | Hame (| | | | | | | |
| | // | | | | | | | | | | |
| | / | | | | | | | | | | |

)

| CLIENT: LOCATION: PROJECT: | Lambda Ener 13390 Lone T Hartland Tow 130685.2000 | 'gy 'ree Road ynship, Mich | ligan | | Monitori | ing Location: Sample ID: Well Type: | | _Hartland #36 _MW75 _2" PVC | |
|--|--|---|---|--|--|--|---|---|---|
| INSPECTION Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes: | isible? sent? e runoff in well? | YES NO REMEDI YES A REMEDI YES A REMEDI | ED ED ED ED | | Is cement pad in g Is protective casir Is inner cap in pla Is well casing in vi | good repair? ng locked and in go ce and properly se isibly good repair? | od repair? aling well? (| YES NO REMEDIE (YES NO REMEDIE (YES) NO REMEDIE (YES) NO REMEDIE | ED ED ED |
| STATIC WAT Top of Casing E Depth to Water: Elevation of Wa | ER LEVEL | 25.15 | | Measured wit Well depth ve | Date: 12/10/ h: prified? | ELECTRONIC TAPE | Time: <u>10:47</u> | E OTHER | |
| WELL PURG Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 12/10 | 1/20 | Start Time: | 10:44 | |
| Measured Well I | Depth: | | Screen Length | : | - | Depth to Scre | en Midpoint: _ | | - |
| Time 11:06 11:65 11:10 Final | Water Level (feet) 25.23 25.24 25.24 25.24 | Drawdown (feet) 0.0% 0.0% 0.0% | Pumping Rate (ml/min) 150 250 250 | Temp (°C) 10.3 (0.3 (0.5 | Spec Cond. (umho/cm) 10分の 10分の | Diss Oxy (mg/l) 5.25 3.39 3.52 | pH (S.U.) <u>구</u> 공국 <u>7.34</u> <u>7.35</u> | ORP (mV) <u> 21.)</u> <u> 17.]</u> | Turbidity (NTU) /.7/ /.0> 0.64 |
| Total Volume Pu | urged (gal): | Stabiliz | ation Criteria: | +(-35% | (+/- 3%) Stabiliza | +(- 10% (if > 0.5 mg/l) ation Criteria Referen | +/- 0.1 Units ce Doc. USEPA EQ/ | +/-10 mV | +/(10 %) (if > 5 NTU) 3, January 19, 2010 |
| FIELD ANAL | YSIS | 11:10 | | | | | | | Mark if |
| Speci D | Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity: | 10,5 10,5 1620 3.52 7.35 1121 0.64 | deg. C umhos/cm mg/L S.U. mV NTU | | Specific Cond.: Dissolved Oxygen: pH: Eh: Turbidity: | Standard (conc.) | Reading umhc mg/L S.U. mV | os/cm | Recalibrated |
| SAMPLE CO | | Time: | 11:15 | | | Sample Duplic | cate ?: | | |
| Appearance of S NO./BOTTLES: | SIZE: <u>1000</u> ml <u>125</u> ml ml ml ml ml ml ml ml ml ml | TYPE: glass plastic glass plastic | FILTERED: yes no yes no | None, HCI, HI None, HCI, HI | PRESEF NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄ | RVATIVE: , ZnAc, TSP, BAK , ZnAc, TSP, BAK | | PARAMETER: Sulfolane Sulfate | |
| SAMPLING P | ERSONNEL | // | 1 //. | Chair | of Custody No | | | | |
| Name (SIGNA | TURE): | In | -M- | Name (| SIGNATURE): | | | De engene auf de carate, della ser | |

| CLIENT: LOCATION: PROJECT: | Lambda Ener 13390 Lone T Hartland Tow 130685.2000 | | Monitori | ing Location: Sample ID: Well Type: | | _ Hartland #36 MW >∂ 2" PVC | | | |
|--|--|---|---|---|---|--|--------------------------------------|---|---|
| INSPECTION Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes: | isible? sent? e runoff in well? | YES NO REMEDI NO REMEDI YES NO REMEDI YES NO REMEDI | ED ED ED ED | | Is cement pad in g Is protective casir Is inner cap in pla Is well casing in v | good repair? ng locked and in go ce and properly se isibly good repair? | ood repair? aaling well? | NO REMEDIE NO REMEDIE NO REMEDIE VE NO REMEDIE | 5D 5D 5D |
| STATIC WAT Top of Casing E Depth to Water: | ER LEVEL | 25.55 | | Measured wit | Date: 12/10/ | 20 | Time: | THER | |
| Elevation of Wa | ater: | | | vven deptn ve | rmed ? | YES IND | | | |
| WELL PURG Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 12/10/ | 20 | Start Time: | 10:05 | |
| Measured Well | Depth:48. 50 | 5 | Screen Length | : | | Depth to Scre | en Midpoint: | | _ |
| Time 10:20 10:25 10:30 Final | Water Level (feet) 25:55 25:55 25:55 25:55 | Drawdown (feet) ට ට | Pumping Rate (ml/min) 250 250 250 | Temp (°C) 9.9 9.9 9.9 | Spec Cond. (umho/cm) 467 465 464 | Diss Oxy (mg/l) 9.46 9.80 | рН (S.U.) 7.53 7.52 7.49 | ORP (mV)~ /40.5 /37.1 137.2 | Turbidity (NTU) 6.28 2.25 2.29 |
| Total Volume Pu | urged (gal): | Stabiliz | ation Criteria: | +(- 3% | (+/- 3%) Stabiliz | (H/- 10% (if > 0.5 mg/l) ation Criteria Referen | +/- 0.1 Units | +/10 mV | +/-10% (if > 5 NTU) 3, January 19, 2010 |
| | Time: | 10:30 | | | | CALIBRAT | ION CHECK | | Mark if |
| Speci D | Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity: | 4.4 464 8.40 2.49 153.2 | deg. C umhos/cm mg/L S.U. mV NTU | 1 | Specific Cond. Dissolved Oxygen: pH: Eh: Turbidity: | Standard (conc.) | Reading | nos/cm | |
| SAMPLE CO | | Time: | 10:35 | | | Sample Dupli | cate ?: <u>/</u> | D Floi | |
| NO./BOTTLES: | SiZE: | TYPE: glass plastic glass plastic | FILTERED: yes no yes no | None, HCI, HN None, HCI, HN | PRESE NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄ | RVATIVE: 1, ZnAc, TSP, BAK 1, ZnAc, TSP, BAK | | PARAMETER: Sulfolane Sulfate | |
| SAMPLING P | PERSONNEL | / | 1/. | Chain | of Custody No |) | | | |
| Name (SIGNA | TURE): | - free | m | Name (| SIGNATURE): | | | | |

| CLIENT: Lambda En | ergy | Monito | Monitoring Location: Hartland #36 | | | | | | |
|---------------------------------------|-------------------------|---|-----------------------------------|------------------|-------------------|--------------------|--|--|--|
| LOCATION: 13390 Lone | Tree Road | | Sample ID:MW | | | | | | |
| Hartland To | wnship, Michigan | | Well Type: | | 2" PVC | | | | |
| PROJECT: 130685.200 |) | | | | | | | | |
| INSPECTION | | | | | ~ | | | | |
| Label on well? | YES NO REMEDIED | Is cement pad ir | o good repair? | (| YES NO REMEDIE | D | | | |
| Is reference mark visible? | ES NO REMEDIED | Is protective cas | ing locked and in goo | od repair? | YES NO REMEDIE | D | | | |
| Standing water present? | YES NO REMEDIED | Is inner cap in p | lace and properly sea | aling well? | YES NO REMEDIE | D | | | |
| Indication of surface runoff in well? | YES NO REMEDIED | Is well casing in | visibly good repair? | | (ES) NO REMEDIE | D | | | |
| | | | 1 | A de la Color C | | | | | |
| STATIC WATER LEVEL | | Data 12 kg | 1000 | Time: | | | | | |
| Tan of Caping Eleventions | | Date: | 202N | nme: | | | | | |
| Lop of Casing Elevation: | 2191 | Measured with | | | OTHER | | | | |
| Elevation of Water | mi D (| Well depth verified? | YES NO | UTRENED TAPE | . OTHER | | | | |
| LIGVALION OF WALCH. | | | | | | | | | |
| WELL PURGING | | 1 | 1 | ~ | | | | | |
| Purge Method: PERISTALTIC | BLADDER OTHER | Date: 12/0 | 20 | Start Time: | 3:30 | | | | |
| | | | | | 12 m | | | | |
| Measured Well Depth: | Screen Lengt | h: | Depth to Scree | en Midpoint: _ | | | | | |
| | | | | | | | | | |
| Water Level | Drawdown Pumping Rate | e Temp Spec Cond. | Diss Oxy | рН | ORP | Turbidity | | | |
| Time (feet) | (feet) (ml/min) | (°C) (umho/cm) | (mg/l) | (S.U.) | (mV) | (NTU) | | | |
| 13:45 21.93 | 0.12 250 | 16.7 800 | 4.60 | 6.81 | 64.2 | 3.11 | | | |
| 13:50 21.94 | 0.13 250 | 12.4 800 | 4.58 | 1.81 | 66.0 | 2.21 | | | |
| 13:95 21.94 | 0.13 250 | 12.4 810 | 4.56 | 2.82 | 66.8 | 1.73 | | | |
| Final 21.94 | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | ~ | | | |
| | Stabilization Critoria | +- 3% +1- 20/ | +/- 10% | +/- 0 1 Inite | +- 10 mV | +1-10% | | | |
| Total Volume Purged (gal): 7 | Gal | 1-3/0 | (if > 0.5 ma/l) | | i juniv | (if > 5 NTU) | | | |
| | <i>•</i> | Stabil | ization Criteria Referenc | e Doc. USEPA EQA | SOP-GW 001 Rev #3 | , January 19, 2010 | | | |
| FIELD ANALYSIS | | | | | | | | | |
| Time | : 13:55 | | CALIBRATI | ON CHECK | | Mark if | | | |
| Temperature | e: 12.4 deg. C | 1 | Standard (conc.) | Reading | | Recalibrated | | | |
| Specific Conductance | e: <u>610</u> umhos/cm | Specific Cond | N | umho | s/cm | | | | |
| Dissolved Oxyger | n: <u>4.56</u> mg/L | Dissolved Oxyger | n: | mg/L | | 1 | | | |
| pH | 1: <u>2.82</u> s.u. | pH | l: | S.U. | | <u> </u> | | | |
| ORF | p: <u>66.9</u> mV | E | n: | mV | | | | | |
| Turbidity | /: I. 📝 NTU | Turbidit | y: | NTU | | | | | |
| | | | | | | | | | |
| SAMPLE COLLECTION | Time: 14:00 | | Sample Duplic | ate ?: <i>N</i> | 0 | | | | |
| Appearance of Sample: | Clear, no oder | | Sample Metho | d: <u>Low</u> | Flow | | | | |
| | | DDEP | | | | | | | |
| NO./BOTTLES: SIZE: 1 1000 r | nl glass plastic ves no | None, HCI, HNO, NaOH, HASO | Ja, ZnAc, TSP. BAK | | Sulfolane | | | | |
| <u> </u> | nl glass plastic yes no | None, HCI, HNO ₃ , NaOH, H ₂ SC | D ₄ , ZnAc, TSP, BAK | | Sulfate | | | | |
| r | nl glass plastic yes no | None, HCI, HNO3, NaOH, H2SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| | nl glass plastic yes no | None, HCI, HNO3, NaOH, H2SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| · · | nl glass plastic yes no | None, HCI, HNO ₃ , NaOH, H ₂ SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| | ni glass plastic yes no | None, HCI, HNO3, NaOH, H2SC | A, ZNAC, ISP, BAK | | | | | | |
| | ni glass plastic yes no | None, HCI, HNO3, NaOH, H2SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| r | nl glass plastic yes no | None, HCl, HNO ₃ , NaOH, H ₂ SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| r | nl glass plastic yes no | None, HCl, HNO3, NaOH, H2SC | 04, ZnAc, TSP, BAK | | | | | | |
| r | nl glass plastic yes no | None, HCl, HNO ₃ , NaOH, H ₂ SC | D ₄ , ZnAc, TSP, BAK | | | | | | |
| SAMPLING PERSONNEL | | Chain of Custody N | 0 | | | | | | |
| Name (SIGNATURE): | | Name (SIGNATURE) |): | | | | | | |

| CLIENT: L LOCATION: 1 PROJECT: 1 | Lambda Ener 13390 Lone T Hartland Tow 130685.2000 | gy ree Road nship, Mic | higan | | Monitor | ing Location: Sample ID: Well Type: | | Hartland #36 | |
|--|---|---|---|--|--|---|--|--|--|
| INSPECTION Label on well? Is reference mark visi Standing water prese Indication of surface r Repair Notes: | ible? int? runoff in well? | YES NO REMED YES NO REMED YES NO REMED YES NO REMED | IED IED IED | | Is cement pad in Is protective casir Is inner cap in pla Is well casing in v | good repair? ng locked and in go ice and properly se risibly good repair? | od repair? aling well? | YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE | |
| STATIC WATE Top of Casing Ele Depth to Water: Elevation of Wate | evation: | 21.14 | | Measured wit Well depth ve | Date: (2/10) h: wified? | ELECTRONIC TAPE | Time: 12: | 4(1 e other | |
| WELL PURGIN Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 1210 | 20 | Start Time: | 12:43 | |
| Measured Well De | epth: | | Screen Length | 1: | - 1 | Depth to Scre | en Midpoint: _ | | |
| Time 13:00 13:05 13:10 13:15 Final | Water Level (feet) 21.35 21.35 21.36 21.36 21.37 | Drawdown (feet) 0.2.(0.7.2 0.7.2 | Pumping Rate (ml/min) 250 250 250 250 | Temp (°C) [1.4] [1.5] [1.5] [1.5] [1.8] | Spec Cond. (umho/cm) (300 (270 (270) | Diss Oxy (mg/l) 0.72-l 0.17 0.16 0.12 | pH (S.U.) 7.28 7.28 7.29 7.29 | ORP (mV) 75,5 61,7 52.9 | Turbidity (NTU) 6.10 5.24 6.57 5.22 |
| Total Volume Pure | ged (gal): | Stabili gal | zation Criteria: | f1- 3% | | +/- 10% (if > 0.5 mg/l) ation Criteria Referen | +/-0.1 Units | +/-10 mV | +/- 10 %) (if > 5 NTU) 3, January 19, 2010 |
| FIELD ANALY | SIS Time: | 13:15 | | | | CALIBRAT | ON CHECK | | Mark if |
| Specifi Dis | Temperature: c Conductance: solved Oxygen: pH: ORP: Turbidity: | 119 1270 0.12 7.29 52.9 5.22 | deg. C umhos/cm mg/L S.U. mV NTU | | Specific Cond Dissolved Oxygen: pH: Eh: Turbidity: | Standard (conc.) | Reading umho mg/L S.U. mV mV NTU | ps/cm | Recalibrated |
| SAMPLE COL | | Time: | 13:20 mp orler | | | Sample Duplic | cate ?: | Flow | |
| NO./BOTTLES: | SIZE: 1000ml ml ml ml ml ml ml ml | TYPE: glass plastic glass plastic | FILTERED: yes no yes no yes no yes no yes no yes no yes no yes no yes no yes no | None, HCI, HI None, HCI, HI | PRESEI NO3, NaOH, H2SO, NO3, NaOH, H2SO, | RVATIVE: 4. ZnAc, TSP, BAK 4. ZnAc, TSP, BAK | | PARAMETER: Sulfolane Sulfate | |
| SAMPLING PE | | 1 | | Chain | |) | | | |
| Name (SIGNAT | URE): | for | | Name (| SIGNATURE): | | | | |

| CLIENT: | Lambda Ene | rav | | | Monitor | ing Location: | | Hartland #36 | |
|-----------------------|---------------------------------------|----------------|-------------------|--------------------------------|--|---|--|--|---------------------|
| I OCATION: | 13390 Lone 1 | ree Road | | | | Sample ID: | | MW- 141 | 5 |
| | Hartland Tow | higan | | | Well Type: | | 2" PVC | | |
| DRO JECT. | 130685 2000 | manip, mic | ingan | | | tion type. | | | |
| PROJECT. | 130005.2000 | | | | | | | | |
| INSPECTION | | | | | | | | | |
| Label on well? | | YES NO REMEL | DIED | | Is cement pad in | good repair? | | YES NO REMEDI | ED |
| Is reference mark v | isible? | (YES) NO REMEL | DIED | | Is protective casir | ng locked and in go | od repair? | YES NO REMEDI | ED |
| Standing water pres | sent? | YES NO REMEL | DIED | | is inner cap in pla | ice and property set | aiing weir? | YES NO REMEDI | =D |
| Indication of surface | e runoπ in weil? | YES NO REMEL | DED | | 's well casing in v | ISIDIY GOOD TEPAIL? | C | | |
| STATIC WAT | | | | | | | | | |
| STATIC WAT | ERLEVEL | | | | Data 12/10 | 12020 | T: 12 | :13 | |
| | | | | | Date: 12/10 | 12020 | Time: / ~ | 10 | |
| Top of Casing E | Elevation: | 20 621 | | | | <u> </u> | _ | | |
| Depth to Water: | | 20.43 | | Measured with | n: 🤇 | ELECTRONIC TAPE | CHALKED TAPE | OTHER | |
| Elevation of Wa | iter: | | | Well depth ve | rified? | YES NO | | | |
| | | | | | | | | | |
| WELL PURG | ING | | | | 12/10 | 12.2 | | 2:15 | |
| Purge Method: | (PERISTALTIC) | BLADDER | OTHER | | Date: 12/10 | 1 desto | Start Time: / | 2.15 | |
| | | | | | | | | | |
| Measured Well | Depth: 26.5 | 2 | Screen Length | n: | _ | Depth to Scree | en Midpoint: | | _ |
| | | | | | | | | | |
| | Water Level | Drawdown | Pumpina Rate | Temp | Spec Cond. | Diss Oxy | pН | ORP | Turbidity |
| Time | (feet) | (feet) | (ml/min) | (°C) | (umbo/cm) | (mg/l) | (S.U.) | (mV) | (NTU) |
| 12.20 | 7105 | - 12 | 200 | 10:00 | 875 | IGA | 5.95 | 743 | 7.24 |
| 12.30 | 21.05 | 17 | 200 | 10 cm | 071 | 195 | (ALL | 66.7 | 7.7 |
| 12.55 | 21.03 | /2 | 200 | 10.55 | 821 | 1.45 | 6.09 | | |
| 12:40 | 21.05 | 12 | 200 | 10.58 | 820 | 1.94 | G. 10 | u | 1.09 |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | - | | | | | | | | |
| | · | | | | | | | | |
| | | | | | | | | | |
| |) | フィー Stabili | ization Criteria: | +/- 3% | +/- 3% | +/- 10% | +/- 0.1 Units | +/- 10 mV | +/- 10 % |
| Total Volume Pu | irged (gal): | 25 | | | | (if > 0.5 mg/l) | | | (if > 5 NTU) |
| | (010 | | | Repairing out to Management in | Stabiliz | ation Criteria Reference | ce Doc. USEPA EQA | SOP-GW 001 Rev # | 3, January 19, 2010 |
| FIELD ANAL | YSIS | 17.1. | | | | | | | |
| | Time: | 12:40 | | | | CALIBRATI | ON CHECK | | Mark if |
| | Temperature: | 10.58 | deg. C | | | Standard (conc.) | Reading | | Recalibrated |
| Speci | fic Conductance: | 820 | umhos/cm | | Specific Cond .: | | umho | s/cm | |
| | issolved Ovvcen: | 1.94 | mg/l | | Dissolved Oxygen | 3 | ma/l | | |
| | | 1.16 | III9/L | | | | | | |
| | pH: | 414 | 5.0. | | pH: | | | | |
| | ORP: | 7 09 | mV | | Eh: | | mv | | |
| | Turbidity: | (.01 | NTU | | Turbidity: | | NTU | | I |
| | | | | | | | | A | |
| SAMPLE CO | LLECTION | Time: | 12:45 | | | Sample Duplic | ate ?: | 0 | |
| Appearance of S | Sample: | Clear, | no odol | Γ | | Sample Metho | d: LOW | FIDE | - |
| | | | | | | | | | |
| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | | PRESER | RVATIVE: | | PARAMETER: | |
| | 1000 ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | 4, ZnAc, TSP, BAK | | Sulfolane | |
| | <u>125</u> ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | 4, ZnAc, TSP, BAK | | Sulfate | |
| | mi | glass plastic | yes no | None, HCI, HN | NO_3 , NaOH, H_2SO_4 | 4, ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO | 4, ZnAc, TSP, BAK | | | |
| | mi | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4 | 4, ZnAc, ISP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO_3 , NaOH, H_2SO_4 | 4, ZNAC, ISP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO_3 , NaOH, H_2SO_4 | A, ZNAC, ISP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | HO_3 , NaOH, H_2SO_4 | A, ZNAC, ISP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NOUH, H_2SO_4 | A, ZHAU, ISP, BAK | And the second sec | na da ser en | |
| | mi | glass plastic | yes no | None, HCI, HN | MO_3 , INBUT, $H_2 > O_4$ | A ZIAC, ISP, DAK | | | |
| | · · · · · · · · · · · · · · · · · · · | yiass plastic | yes 110 | None, Hoi, Hi | 103, 11201, 112004 | , <u></u> , <u></u> _, <u>_</u> , <u>_</u> _, <u>_</u> , <u>_</u> , <u>_</u> , <u>_</u> _, <u>_</u> , <u>_</u> _, <u>_</u> , <u>_</u> | | | |
| SAMPLING P | PERSONNEL | -K MA | 1 | Chain | of Custody No |) | | | |
| Name (SIGNA | TURE): | 14/10 | w | Name (| SIGNATURE): | | | | |
| | / | / | | | | | | | |
| | | / | | | | | | | |

| CLIENT: LOCATION: PROJECT: | LIENT: Lambda Energy OCATION: 13390 Lone Tree Road Hartland Township, Michigan ROJECT: 130685.2000 | | | | Monitori | ing Location: Sample ID: Well Type: | | Hartland #36 _MW / <u>/ /</u> 2" PVC | D |
|--|---|---|---|--|--|---|---|---|---|
| INSPECTION Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes: | isible? sent? e runoff in well? | YES NO REMED YES NO REMED YES NO REMED YES NO REMED | NED NED NED | | Is cement pad in g Is protective casir Is inner cap in pla Is well casing in vi | good repair? ng locked and in go ce and properly se isibly good repair? | ood repair? (aling well? (| YES NO REMEDI YES NO REMEDI YES NO REMEDI VIES NO REMEDI | ED ED ED |
| STATIC WAT | ER LEVEL | | | | Date: 12/16/2 | 2020 | Time: 12: | 54 | |
| Top of Casing E Depth to Water: Elevation of Wa | levation: ter: | 20.82 | | Measured wit Well depth ve | h: arified? | ELECTRONIC TAP | CHALKED TAPE | OTHER | |
| WELL PURG | PERISTALTIC | BLADDER | OTHER | | Date:12/16/2 | 2070 | Start Time: | 2:55 | |
| Measured Well | Depth: <u>45.1</u> | | Screen Length | : | - | Depth to Scre | en Midpoint: | | _ |
| Time /3:/0 /3:15 /3:20 | Water Level (feet) 20.83 20.83 20.83 | Drawdown (feet) 01 01 | Pumping Rate (ml/min) 240 240 240 | Temp (°C) <u>9.52</u> <u>9.48</u> 9.39 | Spec Cond. (umho/cm) (0 (0 4) (0 (0 5) (0 6 3) | Diss Oxy (mg/l) /. 76 /.64 /.66 | рН (S.U.), <u>G. 26</u> <u>G. 19</u> <u>G. /7</u> | ORP (mV) 48:9 50.8 5-1.6 | Turbidity (NTU) 3.71 3.47 3.12 |
| Total Volume Pu | urged (gal): /. | Stabili | zation Criteria: | +/- 3% | +/- 3% Stabiliza | +/- 10% (if > 0.5 mg/l) ation Criteria Referen | +/- 0.1 Units | +/- 10 mV | +/- 10 % (if > 5 NTU) 3, January 19, 2010 |
| FIELD ANAL Speci D | YSIS Time: Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity: | /3:20 9.39 663 1.66 6.17 5-1.6 3.12 | deg. C umhos/cm mg/L S.U. mV NTU | | Specific Cond.: Dissolved Oxygen: pH: Eh: Turbidity: | CALIBRAT Standard (conc.) | ION CHECK Reading umho: mg/L S.U. mV NTU | s/cm | Mark if Recalibrated |
| SAMPLE CO | LLECTION | Time: | 13:25 | | | Sample Dupli | cate ?: 100 | | |
| Appearance of S NO./BOTTLES: | SIZE: <u>1000</u> ml <u>125</u> ml ml ml ml ml ml ml ml | TYPE: glass plastic glass plastic | FILTERED: yes no yes no | None, HCI, HI None, HCI, HI | PRESEF NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄ | Sample Meth RVATIVE: , ZnAc, TSP, BAK , ZnAc, TSP, BAK | | PARAMETER: Sulfolane Sulfate | |
| SAMPLING P | ERSONNEL | . At | 1 | Chair | n of Custody No | | | | |
| Name (SIGNA | TURE): | 14 Tar | | Name (| (SIGNATURE): | an a | | | |

| CLIENT: | Lambda Ene | rgy | | Monitoring Location: Hartland #36 | | | | | |
|-----------------------|-------------------|----------------|------------------|--|--|-----------------------|--------------------|-----------------|---------------------|
| LOCATION: | 13390 Lone | Free Road | | | | Sample ID: | | _MW/5 | <u>0</u> |
| | Hartland Tov | vnship, Mic | higan | | | Well Type: | | 2" PVC | |
| PROJECT: | 130685.2000 | - | - | | | | | | |
| INSPECTION | | | | | | | | | |
| Label on well? | | (YES) NO REMED | DIED | | Is cement pad in | good repair? | | VES NO REMEDI | ED |
| Is reference mark v | isible? | YES NO REMEL | DIED | | Is protective casir | ng locked and in g | ood repair? (| YES NO REMEDI | ED |
| Standing water pres | sent? | YES NO REMEL | DIED | | Is inner cap in pla | ice and properly se | ealing well? | YES NO REMEDI | ED |
| Indication of surface | e runoff in well? | YES NO REME | DIED | | Is well casing in v | isibly good repair? | ' (| YES NO REMEDI | ED |
| Repair Notes: | | I | | | | | | <u> </u> | |
| STATIC WAT | ERLEVEL | 1 | | | Data 12/1 | 2/2020 | T: 9: | 5-8 | |
| T | -1 | | | | Date: 704770 | | Time: | 5 0 | |
| Top of Casing E | =levation: | 20 62 | 1 | Moosured wit | b. | | | | |
| Elevation of Wa | ator: | 20.00 | | Well denth ve | arified? | VES NO | CHALKED TAPE | OTHER | |
| | 101. | | | Weil deptil ve | inica. | | | | |
| WELL PURG | ING | | | | | | | | |
| Purge Method: | PERISTALTIC | | OTHER | | Date: 12/10 | 0/2010 | Start Time: / | 0:00 | |
| r dige wettod. | LINGTALING | DENDDER | | | | | | | |
| Measured Well | Depth: 46.0 | <u>^'</u> | Screen Length | | - | Depth to Scre | en Midpoint: | | |
| Weasured Wein | | | Concorn Longar | | - | | | | |
| | Water evel | Drawdown | Pumping Rate | Temp | Spec Cond | Diss Oxv | рH | ORP | Turbidity |
| Time | (feet) | (feet) | (ml/min) | (°C) | (umho/cm) | (mg/l) | (S.U.) | (mV) | (NTU) |
| 10:15 | 20.64 | 02 | 180 | 8.36 | 418 | 24.99 | 5.64 | 75.0 | 8.07 |
| 10:20 | 20.64 | 02 | 180 | 8.41 | 4109 | 25.59 | 5.79 | 65.1 | 2.54 |
| 10:25 | 212 64 | 02 | 180 | 8.42 | 402 | 23.81 | 5.88 | 58.8 | Ce-14 |
| \$0:30 | 20.64 | 02 | 180 | 8.44 | 400 | 22.18 | 5.93 | 53.2 | 4 91 |
| | Office - | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | Manager Construction of Construction | | | | |
| | | | | | | | | | |
| | 1 | Stabili | zation Criteria: | +/- 3% | +/- 3% | +/- 10% | +/- 0.1 Units | +/- 10 mV | +/- 10 % |
| Total Volume Pu | urged (gal):_/- | /5 | | | | (if > 0.5 mg/l) | | | (if > 5 NTU) |
| | VOID | | | | Stabiliz | ation Criteria Refere | nce Doc. USEPA EQA | ASOP-GW 001 Rev | #3, January 19, 201 |
| FIELD ANAL | 1515 | 10.30 | | | | | | | |
| | Time: | 10.30 | | | | CALIBRAT | ION CHECK | | Mark if |
| 1 | Temperature: | 8.99 | deg. C | | | Standard (conc.) | Reading | | Recalibrated |
| Speci | fic Conductance: | - 400 | umhos/cm | | Specific Cond .: | | umhos | s/cm | |
| Di | issolved Oxygen: | 2010 | mg/L | 1 | Dissolved Oxygen: | | mg/L | | |
| | pH: | 5-95 | S.U. | | pH: | | S.U. | | |
| | ORP: | 5 3. 00 | mV | | Eh: | | mV | | |
| | Turbidity: | -1.71 | NTU | | Turbidity: | | .[NTU | | |
| | LECTION | , | 10.25 | n daar galaa ay daa daa daa daga daga daga daga da | | Sample Dur | anto 2: | <u>~</u> | |
| SAMPLE CO | LLEGTION | Clark | AD Ad | | | Sample Moth | od: 10/1 | ElC/.1 | |
| Appearance of S | sample: | chur, | | | | Sample Meth | . <u> </u> | 1000 | _ |
| NO./BOTTLES | SIZE: | TYPE: | FILTERED: | | PRESEF | RVATIVE: | | PARAMETER: | |
| | mi | glass plastic | y es no | Noie, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | Sulfolane | |
| | _ <u>125</u> _ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | Sulfate | |
| | mi | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | mi | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H_2SO_4 | ZnAc TSP, BAK | | | |
| | mi | glass plastic | yes no | None HCL HN | | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | ves no | None, HCI, HN | NO3, NaOH, H2SO4 | , ZnAc. TSP. BAK | | | |
| | mi | glass plastic | yes no | None, HCI, HN | 103, NaOH, H2SO4 | , ZnAc, TSP, BAK | | | |
| | mi | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | mi | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| SAMPLING P | PERSONNEL | 11 | | Chain | of Custody No | | | | |
| | | Tull | lat | Alama (| | | | | |
| Name (SIGNA | TURE): | 17/2 | | Name (| SIGNATURE): | | | | |
| | | / | | | | | | | |

| CLIENT: Lam | bda Energy | | Monitor | ing Location: | Hartla | nd #36 |
|--|--|-----------------------------|--|--------------------------|--------------------------|------------------------------|
| LOCATION: 1339 | OCATION: 13390 Lone Tree Road | | | | MW | 175 |
| Hart | and Township, Mic | higan | | Well Type: | 2" PV(| 2 |
| PROJECT: 1306 | 85.2000 | | | | | |
| INSPECTION | | | | | | |
| Label on well? | YES NO REME | DIED | Is cement pad in | good repair? | (YES) NO | REMEDIED |
| Is reference mark visible? | TES NO REME | DIED | Is protective casir | ng locked and in goo | nd repair? | REMEDIED |
| Standing water present? | YES NO REME | DIED | ls inner cap in pla | ice and properly seal | ling well? | REMEDIED |
| Indication of surface runoff in Repair Notes: | n well? YES NO REME | DIED | Is well casing in v | sibly good repair? | YES NO | REMEDIED |
| STATIC WATER I | EVEL | | | | | |
| STATIC WATER L | | | Data: 12/10 | 12020 - | Time: 11:27 | |
| Top of Cosing Elevatio | | | Date. Ip are | | | |
| Depth to Water: | 19 63' | Measu | red with: | | | 2 |
| Elevation of Water: | | Well de | epth verified? | YES (NO) | | |
| Liovation of tratein | | | | 0 | | |
| WELL PURGING | | | | , | | |
| Purge Method: (PERI | STALTIC BLADDER | OTHER | Date: /2/10 | 0/2020 : | Start Time: //:2 | .8 |
| alge method. | BERBBER | 0 m2n | | | | |
| Measured Well Depth- | | Screen Lenath: | | Depth to Scree | n Midpoint: | |
| incustried went Depth. | | | | | | |
| Wat | ter Level Drawdown | Pumping Rate Te | mp Spec Cond | Diss Oxv | pH OF | RP Turbiditv |
| Time | (feet) (feet) | (ml/min) (° | C) (umbo/cm) | (ma/l) | (S.U.) (m | (NTÚ) |
| 11:45 10 | | 140 97 | 35 505 | 458 | 6.05 62 | 9 4.01 |
| 11:50 | <u>-07</u> | 140 93 | 506 | 4,29 | 6.12 56 | 5 3.71 |
| 11:00 10 | 70 - 07 | 140 94 | 1 500 | 4 28 | 618 51 | 0 3.16 |
| 11-3-3 17 | . 1001 | 110 1.00 | 300 | -1.00 | | <u> </u> |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | | | |
| | | | | - | | |
| | | | | | | |
| | | | | | | |
| | Stabi | ization Criteria: +/- | 3% +/- 3% | +/- 10% - | +/- 0.1 Units +/- 1 | 0 mV +/- 10 % |
| Total Volume Purged (o | gal): 1.25 | | | (if > 0.5 mg/l) | | (if > 5 NTU) |
| 5 (| | | Stabiliz | ation Criteria Reference | e Doc. USEPA EQASOP-GW (| 001 Rev #3, January 19, 2010 |
| FIELD ANALYSIS | | | | | | |
| | Time: //:55 | | | CALIBRATIC | ON CHECK | Mark if |
| Ter | nperature: 9.41 | deg. C | | Standard (conc.) | Reading | Recalibrated |
| Specific Con | ductance: 506 | umhos/cm | Specific Cond .: | | umhos/cm | |
| Dissolve | d Oxygen: 4.28 | mg/L | Dissolved Oxygen: | | mg/L | |
| | pH: 6.18 | S.U. | oH: | | S.U. | |
| | ORP: 51.0 | mV | Eh: | | mV | |
| | Turbidity: 3.16 | NTU | Turbidity: | | NTU | |
| | | | | | | |
| SAMPLE COLLEC | TION Time: | 12:00 | | Sample Duplica | ate ?: 🖍 🖉 | |
| Appearance of Sample | clear, | no odor | | Sample Method | : LOW F-1001 | |
| | | | | 140 | | |
| NO./BOTTLES: | SIZE: TYPE: | FILTERED: | PRESE | RVATIVE: | PARAM | IETER: |
| 1 | 1000 ml glass plastic | yes no None | HCI, HNO ₃ , NaOH, H ₂ SO, | A, ZnAc, TSP, BAK | Sulfola | ane |
| | _125_ml glass plastic | yes no None | HCI, HNO ₃ , NaOH, H ₂ SO | A, ZNAC, ISP, BAK | Sulfate | 3 |
| | IIII glass plastic ml glass plastic | yes no None, | HCI, HNO, NaOH, H2SO | , ZnAc, TSP. BAK | | |
| | glass plastic ml glass plastic | yes no None. | HCI, HNO3, NaOH, H2SO | , ZnAc, TSP, BAK | | |
| | ml glass plastic | yes no None, | HCI, HNO3, NaOH, H2SO | , ZnAc, TSP, BAK | | |
| | ml glass plastic | yes no None, | HCI, HNO3, NaOH, H2SO | , ZnAc, TSP, BAK _ | | |
| | ml glass plastic | yes no None, | HCI, HNO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | |
| | ml glass plastic | yes no None, | HCI, HNO3, NaOH, H2SO | A, ZNAC, TSP, BAK | | |
| | mi glass plastic mi glass plastic | yes no None, ves no None | HCI, HNO3, NaOH, H2SO | , ZIAC, ISP, BAK _ | | |
| | | <u></u> | Chain of Quetedu Ma | | | |
| SAMPLING PERSO | JNNEL | | Unain of Custody No | | | |
| Name (SIGNATURE) | : Tutt | nt S | ame (SIGNATURE): | | | |
| | | | | | | |

| LOCATION: 13390 Lone Tree Road Sample ID: MVP:1 C PROJECT: 130685.2000 Well type: ZPPC PC INSPECTION Graduation of the matrix state of the metabolic state of the met | CLIENT: | CLIENT: Lambda Energy | | | | Monitori | ng Location: | | Hartland #36 | 2 |
|--|-----------------------|-----------------------|---------------|------------------|---|---|------------------------|--------------------|------------------|---|
| Haritand Township, Michigan Well Type: 2.PC/ PROJECT: 100 Stabilization In researce In researce In researce Bandward Stabilization Stabilization In researce In researce In researce Bandward Stabilization Stabilization In researce In researce In researce Status Status Status In researce In researce In researce Status Status Status In researce In researce In researce Status Status Status In researce In researce In researce Status Status In researce In researce In researce In researce Status Status In researce In researce In researce In researce Period Status In researce In researce In researce In researce Status Status In researce In researce In researce In researce Tool Status In researce In researce< | LOCATION: | 13390 Lone T | ree Road | | | | Sample ID: | | MW- ((| 0 |
| FINDEDCI: 1000000000000000000000000000000000000 | DRO IECT. | Hartland Tow | nship, Micl | nigan | | | Well Type: | | 2" PVC | |
| United on series Units | INSPECTION | 130003.2000 | | | | | | | | |
| Interview construction Is grade to be the colspan="2" (Colspan="2" (Col | | | Co NO DEMED | ED | | Is cement pad in o | nood repair? | (| | ΞD |
| Sanding water present? The Construction Is more cap in plots are diposed water? The Construction Tradication of articles The Construction Is well case of plots are diposed water? The construction The construction Table Modes The Construction Is well case of plots are diposed water? The construction The construction The construction Top of Casing Elevation: 20.52' Measured with: Cuttion: The Construction Cuttion: The Construction Cuttion: The Construction Purge Method: Censtruction Censtruction Cuttion: The Construction Cuttion: The Construction Cuttion: The Construction /// Construction Censtruction | Is reference mark vi | sible? | VES NO REMED | IED | | Is protective casin | ig locked and in go | od repair? | YES NO REMEDI | ED |
| Indexador dirativa? Inter 2010 STATIC WATER LEVEL Top of Casing Elavation: 20.52' Measured with: Current rate Description Data / 20/0/20/20/ Time: /0:44 Daph Io Viater: 20.52' Measured with: Current rate Outside Table Well Duption Purge Method: Fersitian: Date: //2/0/20/20 Start Time: /0:50 Measured Well Depti: 40.78' Screen Length: Depti: //2/0/20/20 Start Time: /0:50 Measured Well Depti: //0.78' Screen Length: Depti: //2/0/20/20 Start Time: /0:750 Measured Well Depti: //0.78' Screen Length: Depti: //2/0/20/20 Start Time: /0:750 Measured Well Depti: //0.78' Screen Length: Depti: //2/0/20/20 Start Time: /0:750 ///0 9.21 //2/0 //2/0 Start Time: /0:750 Measured Well Depti: //1:0 //2.7 //1/0 20.58 36 /2/0 9.21 /2.37 /2.4 /2.7 /2.4 ///1/2 20.66 | Standing water pres | ent? | YES NO REMED | IED | | Is inner cap in place | ce and properly se | aling well? | YES NO REMEDI | ED |
| Regen Note:: Control in the intervent of the interv | Indication of surface | e runoff in well? | YES NO REMED | IED | | Is well casing in vi | isibly good repair? | 7 | YES NO REMEDI | ED |
| STATIC WATER LEVEL Date: /2/10/2020 Time: /0:49 Top of Casing Elevation: 20.52' Measured with: Elevation: Top: OHARD TAPE OTHER Depth to Water: 20.52' Measured with: Elevation: Top: OHARD TAPE OTHER Well depth verified? Time: /0:50 Measured Well Depth: <u>40.78</u> Screen Length: Depth to Screen Midpoint: Time: Users ALTD: Elevation: The REMEMENT OF THE R | Repair Notes: | | | 10 AL 10 | | | | | | |
| Duble 1000000000000000000000000000000000000 | STATIC WAT | ER LEVEL | | | | Datas 12hC | 12020 | Time: 10:2 | 19 | |
| Top on basing Levelation: 20.52' Measured with: DECTRONC TWP CHURCH DAPE DTHER Elevation of Water: 20.52' Well depth verified? Tro of Water: Date: /2//0/2C/U Start Time./0:50 Well DURSING BLADDER OTHER Date: /2//0/2C/U Start Time./0:50 Weasured Well Depth: 40.78' Screen Length: Depth to Screen Midpoint: Time (feel) (feel) (feel) (feel) (feel) //: 0.5 20.86' 36 2400 9.71' 640 9.75' 7.5' | Top of Casing E | levation: | | | | Date: 700110 | | Time. <u>70</u> | | |
| Elevation of Water: Well depth verified? The Construction of Water: Well depth verified? The Construction of Water: Well depth verified? The Construction of Water: Date: /2//0/2C/2C/2C Start Time: /0:570 Well Depth: 40.78 Screen Length: Depth to Screen Midpoint: | Depth to Water: | | 20.52 | * | Measured wit | h: C | ELECTRONIC TAPE | CHALKED TAPE | OTHER | |
| WELL PURGING Data Contract Description Start Time Description Purge Method: CERISTALTED BLADDER OTHER Date: //2//0/2CD0 Start Time.//2:50 Measured Well Depth: '40.78' Screen Length: Depth to Screen Midpoint: | Elevation of Wat | ter: | | | Well depth ve | rified? | YES (NO) | | | |
| WELL PURCING | | | | | | | | | | |
| Purge Method: (FENSTALTIC) BLADER OTHER Date: (2/1/2/200 Start Time / 0 - 7 0 Measured Well Depth: (40 - 78) Screen Length: Depth to Screen Midpoint: | WELL PURG | ING | | | | 12/110 | 12-12-1 | 11 | 1.51 | |
| Measured Well Depth: 40.78' Screen Length: Depth to Screen Midpoint: Time (feet) (feet) (minim) 94.0 9.1 64.2 (SU) (mV) Turbidity //:05 20:88 36 240 9.21 64.2 64.2 5:85 75.4 75.9 75.7 75.6 75.6 75.7 75.7 75.6 75.7 | Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 12/10 | 12000 | Start Time: / C | | |
| Measured Well Depti: TO - 10 Screen Length: Depti to Screen Midpont: Water Level Drawdown Pumping Rate Temp Specond Diss Oxy pH ORP Turbidity //:/0 20:/68 -,36 2400 9:/75 G42 5:20 5:55 75:4 7:10 7:10 7:10 7:10 7:10 7:10 7:10 7:10 7:10 7:03 //:/15 20:/65 36 24:00 9:71 6:40 4:75 5:91 7:10 7:03 //:/15 20:/65 36 24:00 9:71 6:40 4:75 5:91 7:10 7:03 //:/15 Stabilization Criteria: +/:3% +/:3% +/:0% +/:01 10:10 */:00 7:03 10:00 <td></td> <td>40 -</td> <td>oc'</td> <td></td> <td></td> <td></td> <td>-</td> <td></td> <td></td> <td></td> | | 40 - | oc' | | | | - | | | |
| Water Level Drawdown Pumping Rate Temp Spec Cond. Diss Oxy pH ORP Turbidity //: 0.5 20: 6.6 -: 3.6 24:0 9: 7.5 64:2 5: 5.5 75: 4 75: 3 75: 4 75: 5 75: 4 <td< td=""><td>Measured Well D</td><td>Depth: 70-</td><td>10</td><td>Screen Length</td><td>ו:</td><td>-</td><td>Depth to Scre</td><td>en Miapoint:</td><td></td><td>-</td></td<> | Measured Well D | Depth: 70- | 10 | Screen Length | ו: | - | Depth to Scre | en Miapoint: | | - |
| Time (feet) (feet) <td></td> <td>Mator Loval</td> <td>Drawdown</td> <td>Pumping Pata</td> <td>Temp</td> <td>Snec Cond</td> <td>Diss Ovv</td> <td>nН</td> <td>ORP</td> <td>Turbidity</td> | | Mator Loval | Drawdown | Pumping Pata | Temp | Snec Cond | Diss Ovv | nН | ORP | Turbidity |
| Image Operator Stabilization | Timo | (foot) | (feet) | (ml/min) | (°C) | (umbo/cm) | | (SU) | (m\/) | (NTU) |
| Image: Stabilization Criteria: Image: Stabilization Criteria: <thimage: criteria:<="" stabilization="" th=""> <thimage: st<="" td=""><td>11:05</td><td>20.88</td><td>- 36</td><td>240</td><td>9.15</td><td>642</td><td>5.20</td><td>5.85</td><td>75.4</td><td>7.84</td></thimage:></thimage:> | 11:05 | 20.88 | - 36 | 240 | 9.15 | 642 | 5.20 | 5.85 | 75.4 | 7.84 |
| Image: Section Content Image: Secontent Image: Section Content | 11:10 | 20.88 | 36 | 240 | 9.21 | 639 | 4.87 | 5.91 | 71.0 | 7.17 |
| J. J. <thj.< th=""> J. J. J.<!--</td--><td>11:15</td><td>20.88</td><td> 36</td><td>240</td><td>9.17</td><td>640</td><td>4.75</td><td>5.96</td><td>66.6</td><td>7.03</td></thj.<> | 11:15 | 20.88 | 36 | 240 | 9.17 | 640 | 4.75 | 5.96 | 66.6 | 7.03 |
| Image: Stabilization Criteria: #/- 3% #/- 10% #/- 107% #/- 10 mV #/- 10 mV< | | | | | | | | | | |
| Image: Stabilization Criteria: +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 % Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 % Field Analysis (f > 0.5 mg/l) Field Analysis /// / 5 CallBRATION CHECK Mark if Temperature: 9./7 deg. C Standard (conc.) Reading Recalibrated Dissolved Oxygen: 4.7.5 mg/L Dissolved Oxygen: mg/L mg/L Dissolved Oxygen: | | | | | | | | | | |
| Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 % Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 % FileLD ANALYSIS Time: // 1 / 5 CALIBRATION CHECK Mark if Specific Conductance: // 4/0 umbosicm Specific Conductance: umbosicm mg/L | | | | | | | | | | |
| Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 mV +/- 10 % Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 mV +/- 10 % (ff > 5 NTU) Stabilization Criteria: +/- 3% +/- 3% +/- 3% +/- 3% +/- 10% (ff > 5 NTU) Stabilization Criteria: +/- 3% +/- 3% +/- 3% +/- 3% +/- 10% (ff > 5 NTU) Stabilization Criteria: +/- 3% +/- 3% +/- 3% +/- 10% (ff > 5 NTU) Stabilization Criteria: +/- 3% +/- 3% +/- 10% (ff > 5 NTU) Stabilization Criteria: +/- 10% Mark if Time: // 1.7 5 Geg C Staddard (conc): Reading Recalibrated Option 10 with sum of the sum o | | | | | | | | | | |
| Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10% Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10% FileLD ANALYSIS (if > 0.5 mg/l) Stabilization Criteria Reference Doc. USEPA E0ASOP-GW 001 Rev #3. Jamuary 15, 2010 FileLD ANALYSIS Time: /// 7 deg. C Standard (conc.) Reading Recalibrated Dissolved Oxygen: 4.7 5 mg/L Dissolved Oxygen: mg/L | | | | | | | | | | |
| Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 % Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 % (ff > 5 NTU) Stabilization Criteria: +/- 3% +/- 3% +/- 10% (ff > 0.5 mgl) Stabilization Criteria Reference Doc. USEPA EGASOP-GW 001 Rev #3. January 19, 2010 FIELD ANALYSIS CALIBRATION CHECK Mark if CALIBRATION CHECK Mark if Time: /// 7 deg. C Standard (conc.) Recalibrated Specific Cond: mmbolicm Dissolved Oxygen: mgl. PI: 5. 9 U Sul mgl. mgl. OR Gulo G mv Turbidity: NTU mgl. SAMPLE COLLECTION Time: /// 20 Sample Duplicate ?: // 20 Sample Method: Low F : lo & Sulfate 1 1000 mid gass plastic yes no None, HCI, HNO, NaOH, H;SO, ZAAC, TSP, BAK Sulfate | | | | | | | | | | |
| Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 10% +/- 10 mV +/- 10 mV +/- 10 % Total Volume Purged (gal): /. 5 Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 % Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 0.1 Units +/- 10 mV +/- 10 % Stabilization Criteria: +/- 3% +/- 3% +/- 10% +/- 10 mV +/- 10 % (ff > 0.5 mg/l) Stabilization Criteria: +/- 3% +/- 3% +/- 10% (ff > 0.5 mg/l) (ff > 5 NTU) Stabilization Criteria: /// 7 deg.C Standard (conc.) NERADA Mark if FileLD ANALYSIS Dissolved Oxygen: | | | | | | | | | | |
| Total Volume Purged (gal): /.5 Stabilization Criteria: +/-3% +/-3% +/-10% +/- | | | | | | | | | | |
| Total volume Purged (gal) (I + 0.5 mig) // 3 (I + 0.5 mig) // | | | Stabili: | zation Criteria: | +/- 3% | +/- 3% | +/-10% | +/- 0.1 Units | +/- 10 mV | +/-10% |
| FIELD ANALYSIS Time: //::/ 5 CALIBRATION CHECK Mark if Specific Conductance: GUO Standard (conc.) Reading Reacalibrated Dissolved Oxygen: | Total Volume Pu | rged (gai): 7 · · · | _ | | | Stabiliza | ation Criteria Referen | ce Doc. USEPA EQAS | SOP-GW 001 Rev # | 3, January 19, 2010 |
| Time: ///:/ 5 CALIBRATION CHECK Mark if Temperature: 9.//7 deg.C Standard (conc.) Reading Recalibrated Specific Conductance: 6.4.40 umhos/cm Specific Cond:: umhos/cm Dissolved Oxygen: 4.75 mg/L Dissolved Oxygen: 4.75 mg/L Dissolved Oxygen: 4.75 mg/L umhos/cm Dissolved Oxygen: 4.75 mg/L Dissolved Oxygen: 4.75 DISSOlved Oxygen: 4.75 mg/L DISSOlved Oxygen: 4.75 mg/L DISSOlved Oxygen: 4.75 SU DISSOlved Oxygen: 4.75 SU DISSOlved Oxygen: 4.75 SU ORP: 64.6 mV Turbidity: 7.03 NTU Turbidity: 7.03 NTU Turbidity: 7.03 Suppon= NO/BOTTLES: SIZE: TYPE: FILTERED: PRESERVATIVE: PARAMETER: < | FIELD ANAL | YSIS | | | | | | | | |
| Temperature: 9.1 deg. C Standard (conc.) Reading Recalibrated Specific Conductance: 4.75 mg/L Dissolved Oxygen: | | Time: | 11:15 | - | | | CALIBRAT | ION CHECK | | Mark if |
| Specific Conductance: <u>6</u> <u>40</u> <u>unhos/cm</u> <u>mg/L</u> <u>Dissolved Oxygen:</u> <u>mg/L</u> <u>mg/L</u> <u>pH:</u> <u>5:94</u> <u>5:94</u> <u>SU.</u> <u>pH:</u> <u>5:94</u> <u>SU.</u> <u>pH:</u> <u>5:94</u> <u>SU.</u> <u>pH:</u> <u>5:94</u> <u>SU.</u> <u>mg/L</u> <u>mg/L</u> <u>SU.</u> <u>mg/L</u> <u>mg/L</u> <u>su.</u> <u>mg/L</u> <u>mg/L</u> <u>su.</u> <u>mg/L</u> <u>mg/L</u> <u>mg/L</u> <u>mg/L</u> <u>su.</u> <u>mg/L</u> <u>m</u> | 1 | Temperature: | 9.17 | deg. C | | | Standard (conc.) | Reading | | Recalibrated |
| Dissolved Oxygen: 4.75 mg/L Dissolved Oxygen: mg/L pH: 5.96 S.U. pH: S.U. ORP: 66.6 mV Eh: mV Turbidity: 7.03 NTU Turbidity: NTU SAMPLE COLLECTION Time: //:20 Sample Duplicate ?: //20 Appearance of Sample: Cleat , no odor Sample Method: Low Friday 1 125 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 125 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 125 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 125 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK Sulfale 1 mi glass plastic yes no None, HCI, HNO, NaOH, H;SO, ZnAc, TSP, BAK <td>Specif</td> <td>fic Conductance:</td> <td>640</td> <td>umhos/cm</td> <td></td> <td>Specific Cond .:</td> <td></td> <td> umhos</td> <td>/cm</td> <td></td> | Specif | fic Conductance: | 640 | umhos/cm | | Specific Cond .: | | umhos | /cm | |
| pH: 5.90 S.U. pH: | Di | ssolved Oxygen: | 4.75 | mg/L | 1 | Dissolved Oxygen: | | mg/L | | |
| ORP: <u>Gu. 6</u> mv mv mv mv Turbidity: 7.03 NTU Turbidity: | | pH: | 5.96 | S.U. | | pH: | | S.U. | | |
| Turbidity: | | ORP: | 66.6 | mV | | Eh: | | mV | | |
| SAMPLE COLLECTION Time: //:20 Clest, no oder Sample Duplicate ?: //00 Sample Method: | | Turbidity: | 7.03 | NTU | | Turbidity: | | NTU | | |
| SAMPLE COLLECTION Time: ///xo Sample Duplicate ?: //co Appearance of Sample: Cleat / no odot Sample Method: Low Flow NO,BOTTLES: SIZE: TYPE: FILTERED: PRESERVATIVE: PARAMETER: 1 125 mil glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfalane 1 125 mil glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfala 1 125 mil glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfala 1 mil glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK | | | | 11.2.6 | | and a first start from a first starting of the last | 0 | 4.20 | | ander sector Process Classical Space" e der segnes Carl |
| Appearance of Sample: Creat () A B Gat Sample Method. DOB (P-1000) NO,/BOTTLES: SIZE: TYPE: FILTERED: PRESERVATIVE: PARAMETER: 1 125 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 125 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfolane | SAMPLE COL | LECTION | Time: _ | 11:20 | | | Sample Duplic | cate ?: /00 | Ficili | |
| NO./BOTTLES: SIZE: TYPE: FILTERED: PRESERVATIVE: PARAMETER: 1 1000 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfolane 1 125 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfolane 1 125 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate 1 ml glass plastic yes no None, HCI, HNO3, NaOH, H ₂ SO4, ZnAc, TSP, BAK Sulfate Sulfate Sulfate < | Appearance of S | ampie: | (Itav) | 10 0001 | | | Sample Metric | | 1-10-00 | |
| 1 1000 ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfalae 1 125 ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfalae ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfalae ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Sulfalae ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK < | NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | and the second se | PRESER | RVATIVE: | | PARAMETER: | |
| 1 125 ml glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK Sulfate | | 000ml | glass plastic | yes no | None, HCI, HM | NO ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | Sulfolane | |
| mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no None, HCI, HNO ₃ , NaOH, H ₂ SO ₄ , ZhAc, TSP, BAK mil glass plastic yes no < | | <u>125</u> ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | Sulfate | |
| | | ml | glass plastic | yes no | None, HCI, Hr | 10_3 , NaOH, H ₂ SO ₄ , 10_2 NaOH H ₂ SO ₄ | ZnAc, TSP, BAK | | | |
| ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK ml glass plastic yes no None, HCl, HNO3, NaOH, H2SO4, ZnAc, TSP, BAK Mame (SIGNATURE): Name (SIG | | ml | glass plastic | yes no | None, HCI, HN | 103, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK mil glass plastic yes no <t< td=""><td></td><td> ml</td><td>glass plastic</td><td>yes no</td><td>None, HCI, HN</td><td>NO3, NaOH, H2SO4,</td><td>, ZnAc, TSP, BAK</td><td></td><td></td><td></td></t<> | | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| mil glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK | | ml | glass plastic | yes no | None, HCI, HM | 10 ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | | |
| | | ml | glass plastic | yes no | None, HCI, HN | 103, NaOH, H2SO4, | ZnAc, TSP, BAK | | | |
| ml glass plastic yes no None, HCl, HNO ₃ , NaOH, H ₂ SO ₄ , ZnAc, TSP, BAK SAMPLING PERSONNEL Address Chain of Custody No. Name (SIGNATURE): Mark Name (SIGNATURE): | | mi | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| SAMPLING PERSONNEL Chain of Custody No Name (SIGNATURE): Name (SIGNATURE): | | ml | glass plastic | yes no | None, HCI, HM | 103, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| Name (SIGNATURE): Name (SIGNATURE): | SAMPLING P | ERSONNEL | 1 | 11 | Chain | of Custody No. | | | | |
| | | | -The A | m | Nome (| SIGNATURE | | | | |
| | Name (SIGNA | IUREJ. | 141 | | Name (| | | | | a anto a persona da partecente da |

| CLIENT: Lambda End LOCATION: 13390 Lone Hartland To PROJECT: 130685.2000 | ergy Tree Road wnship, Michigan | | Monitori | ng Location: Sample ID: Well Type: | | Hartland #36 | 1 ms/mgD | |
|---|--|--|--|--|--|-------------------------------------|---|--|
| INSPECTION | C | | | | | A | | |
| Label on well? Is reference mark visible? Standing water present? Indication of surface runoff in well? Repair Notes: | YES NO REMEDIED YES W REMEDIED YES W REMEDIED | | Is cement pad in good repair? Is protective casing locked and in good repair? Is inner cap in place and properly sealing well? Is well casing in visibly good repair? Ves No REMEDIED Ves No REMEDIED Ves No REMEDIED Ves No REMEDIED Ves No REMEDIED Ves No REMEDIED Ves No REMEDIED | | | | | |
| STATIC WATER LEVEL | | | 17/10/ | 2.5 | | Λ | | |
| Top of Casing Elevation: Depth to Water: Elevation of Water: | 21.89 | Measured wit Well depth ve | Date: <u>1219</u> th: erified? | ELECTRONIC TAPE | Time: <u>14:0</u> CHALKED TAPE | E OTHER | | |
| WELL PURGING | | | 12 hol | e 0 | | 111.00 | | |
| Purge Method: PERISTALTIC | BLADDER OTHER_ | | Date: 12(10) | 20 | Start Time: | 14:10 | | |
| Measured Well Depth:?? | Screen | Length: | _ | Depth to Scree | en Midpoint: _ | | - | |
| Time (feet) $14:25$ 21.94 $14:30$ 21.94 $14:35$ 21.94 $14:35$ 21.94 $14:36$ 21.94 | Drawdown Pumping (feet) (ml/n 0.05 25 0.05 250 0.05 250 | g Rate Temp nin) (°C) <u>1Z.Z.</u> <u>12.1</u> 12.1 | Spec Cond. (umho/cm) 740 740 740 | Diss Oxy (mg/l) 0.15 0.11 0.12 | pH (S.U.) 7.71 7.23 7.23 | ORP (mV) 64.6 63.4 63.2 | Turbidity (NTU) 3,63 1.29 0.24 | |
| | Stabilization Co | riteria: | +/- 3% | | +/- 0.1.Units | +/_10mV | +/- 10 % (if > 5 NTU) 3, January 19, 2010 | |
| FIELD ANALYSIS | 111.26 | | | | | | | |
| Time Temperature Specific Conductance Dissolved Oxygen pH ORF Turbidity | : [2.[de; : [2.[de; : [2.[de; : [2.[mg : [3.12] mg : [3.23] s.[: [63.2] mV : [0.74] NT | g. C ihos/cm //L J. / U | Specific Cond.: Dissolved Oxygen: pH: Eh: Turbidity: | CALIBRATI Standard (conc.) | ON CHECK Reading umho mg/L S.U. mV NTU | os/cm | Mark if Recalibrated | |
| SAMPLE COLLECTION | Time: <u>14:40</u> | | | Sample Duplic | ate ?: <u>Ye4</u> | WIS/MED | | |
| Appearance of Sample: NO./BOTTLES: SIZE: 1 1000 n 1 125 n | TYPE: FILTER glass plastic yes glass plastic yes | RED: None, HCI, H None, HCI, H | PRESER NO ₃ , NaOH, H ₂ SO ₄ , NO ₃ , NaOH, H ₂ SO ₄ , | Sample Metho RVATIVE: , ZnAc, TSP, BAK , ZnAc, TSP, BAK | a:(| PARAMETER: Sulfolane Sulfate | | |
| SAMPLING PERSONNEL | | Chair | n of Custody No | | | | | |
| Name (SIGNATURE): | - Jungth | Name | (SIGNATURE): | | | | | |

ą.

| CLIENT: LOCATION: PROJECT: | Lambda Energy 13390 Lone Tree Road Hartland Township, Michigan 130685.2000 | | | | Monitoring Location: Hartland #36 Sample ID:MW/(ら Well Type: 2" PVC | | | | |
|--|---|--|---|---|--|--|---|--|--|
| Label on well? Label on well? Is reference mark v Standing water pre- Indication of surface Repair Notes: | isible? sent? e runoff in well? | YES NO REMEDI YES NO REMEDI YES NO REMEDI YES NO REMEDI | ED ED ED | | Is cement pad in Is protective casi Is inner cap in pla Is well casing in v | good repair? ng locked and in gr ace and properly se visibly good repair? | ood repair? ealing well? | YES NO REMEDII ES NO REMEDII ES NO REMEDII YES NO REMEDII | ED ED ED ED |
| STATIC WAT Top of Casing E Depth to Water Elevation of Wa | ER LEVEL | 23.04 | | Measured with Well depth ve | Date: <u>12/10/</u> h: rified? | ELECTRONIC TAP | Time:(: * | 57 Pe OTHER | |
| WELL PURG Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 12/10/ | 2020 | Start Time: | 11:55 | |
| Measured Well | Depth: | | Screen Length | וי: | | Depth to Scre | en Midpoint: | | - |
| Time 12:10 12:15 12:20 12:25 Finel | Water Level (feet) 23.23 23.24 23.24 23.24 23.24 23.24 | Drawdown (feet) 0.4 0.20 0.20 0.20 | Pumping Rate (ml/min) 250 250 250 250 | Temp (°C) <u>[[.3]</u> <u>[[.3]</u> <u>[].4]</u> | Spec Cond. (umho/cm) 463 463 463 463 | Diss Oxy (mg/l) 9.98 9.03 9.12 9.12 | pH (S.U.) 7.488 7.499 7.499 7.499 | ORP (mV) <u>102.8</u> <u>102.8</u> <u>102.9</u> | Turbidity (NTU) 19.2 15.7 14.0 13.2 |
| Total Volume Pu | urged (gal):2 | Stabiliz gel | zation Criteria: | +/- 3% | FI- 39 | +/- 10% (if > 0.5 mg/l) ation Criteria Referen | +/-0.1 Units | +1-10 mV | +/- 10 % (if > 5 NTU) 3, January 19, 2010 |
| FIELD ANAL | YSIS | 10.26 | | | | | | | Maria if |
| Spec D | Time: Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity: | 11.4 454 9.18 3.89 1029 13.2 | deg. C umhos/cm mg/L S.U. mV NTU | 1 | Specific Cond. Dissolved Oxygen: pH: Eh: Turbidity: | CALIBRAT Standard (conc.) | ION CHECK Reading umh mg/l S.U. mV | ios/cm | Recalibrated |
| SAMPLE CO | LLECTION | Time: _ | 12:30 | | | Sample Dupli | cate ?: | NO | |
| Appearance of S NO./BOTTLES:11 | SIZE: <u>1000</u> ml <u>125</u> ml <u>125</u> ml ml ml ml ml ml ml ml ml ml | TYPE: glass plastic glass plastic | FILTERED: yes no yes no | None, HCI, HN None, HCI, HN | PRESEI 103, NaOH, H2SO, 103, NaOH, H2SO, | RVATIVE: 4. ZnAc, TSP, BAK 4. ZnAc, TSP, BAK | | PARAMETER: Sulfolane Sulfate | |
| SAMPLING F | PERSONNEL | 1 | 11 | Chain | of Custody No |) | | | |
| Name (SIGNA | TURE): | huy | th | Name (| SIGNATURE): | | | | |

| CLIENT: LOCATION: PROJECT: | LIENT: Lambda Energy DCATION: 13390 Lone Tree Road Hartland Township, Michigan ROJECT: 130685.2000 | | | | Monitori | ng Location: Sample ID: Well Type: | | Hartland #36 _MW / 9 ▷ 2" PVC | |
|--|---|--|---|--|--|--|--|--|---|
| INSPECTION Label on well? Is reference mark v Standing water pres Indication of surface Repair Notes: | isible? sent? e runoff in well? | | Is cement pad in g Is protective casin Is inner cap in pla Is well casing in vi | good repair? ng locked and in go ce and properly se isibly good repair? | ood repair? (aling well? (| YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE YES NO REMEDIE | ED ED ED | | |
| STATIC WATER LEVEL Date: 12/10/2020 Time: 11/2 Top of Casing Elevation: Depth to Water: 12/10/2020 Time: 11/2 Depth to Water: 22.95 Measured with: Electronic Tape CHALKED TA Elevation of Water: Well depth verified? Yes Model | | | | | | | OTHER | | |
| WELL PURG Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 12/10/ | 20 | Start Time: | 11:20 | |
| Measured Well | Depth: | | Screen Length | n: | - | Depth to Scre | en Midpoint: _ | | - |
| Time :35 :40 :45 :45 | Water Level (feet) 23.02 23.02 23.02 23.02 | Drawdown (feet) 0.0フ 0.0フ 0.0フ | Pumping Rate (ml/min) 250 250 250 | Тетр (°С) <u> 0.4</u> <u> 0.4</u> <u> 0.4</u> | Spec Cond. (umho/cm) <u>746</u> フまひ フまひ | Diss Oxy (mg/l) 13.12 12.94 12.69 | рН (S.U.) 7.50 7.48 | ORP (mV) /16.5 /17.3 /18,4 | Turbidity (NTU) /0.9 /2-8 /0-2 |
| Total Volume Pu | urged (gal):2 | Stabili | zation Criteria: | +/- 3% | +/- 3% | +(- 10%) (if > 0.5 mg/l) ation Criteria Referen | +/- O(1 Units) ce Doc. USEPA EQA | +/- 10 mV/ | +// 10 % (if 5.NFU) 3, January 19, 2010 |
| FIELD ANAL | YSIS | 11:49 | / | | | CALIBRAT | | | Mark if |
| Speci D | Temperature: ific Conductance: issolved Oxygen: pH: ORP: Turbidity: | 10.4 730 12.60 7.44 118.4 | deg. C umhos/cm / mg/L S.U. mV NTU | | Specific Cond Dissolved Oxygen: pH: Eh: Turbidity: | Standard (conc.) | Reading umho mg/L S.U. mV NTU | s/cm | Recalibrated |
| SAMPLE CO | LLECTION | Time: | 11:50 | | | Sample Duplic | cate ?: | U PL | |
| Appearance of S NO./BOTTLES: | Sample: | TYPE: glass plastic glass plastic | FILTERED: yes no yes no | None, HCl, HI None, HCl, HI | PRESEF NO3, NAOH, H2SO4 NO3, NAOH, H2SO4 | CATTIPIE METRO RVATIVE: , ZnAc, TSP, BAK , ZnAc, TSP, BAK | | F10W PARAMETER: Sulfolane Sulfate | |
| SAMPLING P | PERSONNEL | | yes 110 | Chain | of Custody No | | | | |
| Name (SIGNA | TURE): | pm | M | Name (| SIGNATURE): | | | | |

| CLIENT: | LIENT: Lambda Energy | | | | Monitori | ng Location: | | Hartland #36 | |
|---------------------|----------------------|---------------|------------------|---|--|--------------------------|---------------------|--|---|
| LOCATION: | 13390 Lone T | ree Road | | | | Sample ID: | | _ <u>MW-205</u> | |
| | Hartland Tow | nship, Mic | higan | | | Well Type: | | 2" PVC | |
| PROJECT | 130685 2000 | nonp, mo | | | | | | | |
| INCOLOT. | 130003.2000 | | | | | | |) | |
| INSPECTION | | \sim | | | | and an and a | | C | |
| Label on well? | | YES NO REMED | IED | | Is cement pad in g | jood repair? | od ropair? | YES NO REMEDIE | ED |
| Is reference mark v | isible? | YES NO REMED | IED | | Is protective casin | ig locked and in go | ou repair? | YES NO REMEDIE | D |
| Standing water pres | sent? | YES NO REMED | IED | | Is inner cap in plac | sibly good repair? | | YES NO REMEDIE | Đ |
| Repair Notes: | e runoff in well? | YES NO REMED | IED | | IS WEIL CASING IT VI | Sibly good repair : | | | |
| STATIC WAT | ERIEVEI | | | | n na haran da baran da bara ku da baran | | | | |
| STATIC WAT | | | | | Data: 121 | 10/2020 | Time: 13 | :44 | |
| | | | | | Date. 7200 | | 1 inte | | |
| Top of Casing E | evation: | 7776 | | Manaurad wit | h: | | | OTHER | |
| Depth to water: | | 20.30 | | Well death vo | rified? | ELECTRONIC TAPE | CHALKED TAPE | UTHER | |
| Elevation of Wa | ter: | | | weil depth ve | rilled ? | YES (NO | | | |
| | | | | | | | | | |
| WELL PURG | ING | | | | 12/10 | 12.20 | / ' | 3:45 | |
| Purge Method: | PERISTALTIC | BLADDER | OTHER | | Date: 10410 | 12020 | Start Time: | 5.75 | |
| | 0.5 | - 1 | | | | | | | |
| Measured Well | Depth: 25.1 | 0 | Screen Length | ו: | - | Depth to Scree | en Midpoint: | | _ |
| | | | | | | | | | |
| | Water Level | Drawdown | Pumping Rate | Temp | Spec Cond. | Diss Oxy | pН | ORP | Turbidity |
| Time | (feet) | (feet) | (ml/min) | (°C) | (umho/cm) | (mg/l) | (S.U.) | (mV) | (NTU) |
| 14:00 | 22.45 | 09 | 220 | 10.17 | 360 | 7.13 | 6.49 | 55.8 | 5.57 |
| 111:100 | 22/15 | - 09 | 270 | 10.23 | 359 | 6.96 | 6.57 | 52.2 | 4.91 |
| 14.03 | 22.43 | 09 | 220 | 10.20 | 3/00 | 7/11 | 6.61 | 40 7 | 4 12 |
| 14:10 | 2.45 | 09 | 220 | 10. dle | 300 | 7.41 | <u> </u> | 77. / | -1.13 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
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| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | Ctobili | Totion Critoria: | +/ 20/ | +/ 30/ | +/- 10% | $+/_{-}0.1$ Inits | +/- 10 m\/ | +/- 10 % |
| Total Valuma Du | | 5 Stabili | zation Criteria. | +1- 3% | +1- 376 | (if > 0.5 mg/l) | +/- 0.1 Offics | 17- 10 1110 | (if > 5 NTU) |
| Total volume Fu | irgeu (gai). | | | | Stabiliza | ation Criteria Reference | ce Doc. USEPA EQA | SOP-GW 001 Rev # | 3. January 19, 2010 |
| | 2121 | | | andreas and a state of the state of the state | | | | | |
| FIELD ANAL | 1313 | 11.10 | | | | | | | March 16 |
| 1 | Time: | 14.10 | | | | CALIBRATI | ON CHECK | | Mark IT |
| | Temperature: | 10.26 | deg. C | | | Standard (conc.) | Reading | | Recalibrated |
| Speci | ific Conductance: | 360 | umhos/cm | | Specific Cond.: | | umhos | s/cm | |
| Di | issolved Oxygen: | 7.41 | mg/L | 1 | Dissolved Oxygen: | | mg/L | | |
| | pH: | 6.61 | S.U. | | pH: | | S.U. | | |
| | ORP | 49.7 | mV | | Eh: | | mV | | |
| | Turbidity | 4.13 | NTU | | Turbidity | | NTU | | |
| | i a biaity. | | | | · _ · _ · _ · | | | | |
| | | Time | 141:15 | | and the second | Sample Duplic | ate ?: No | an a | o, es an ainmitia de la seconda de companie de la seconda de seconda de seconda de seconda de seconda de second |
| Appagement of | CLEOTION Complet | al co | | - | | Sample Metho | d' Low | FICE | |
| Appearance of S | sample: | Clear | , 10 00 | C1 | | Sample Metho | | | • |
| NO ROTTI ES | SIZE. | TYPE | | | PRESER | VATIVE: | | PARAMETER | |
| NU./BUTTLES: | 1000 ml | glass plastic | ves no | None HCI HN | No. NaOH. H.SO. | ZnAc, TSP. BAK | | Sulfolane | |
| 1 | 125 ml | glass plastic | ves no | None, HCI, HN | NO3, NaOH, H ₂ SO4 | ZnAc, TSP. BAK | | Sulfate | |
| | <u></u> mi | glass plastic | ves no | None, HCI, HN | NO3, NaOH, H2SO4 | ZnAc, TSP. BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4 | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | 10 ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO ₃ , NaOH, H ₂ SO ₄ , | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, HN | NO3, NaOH, H2SO4, | , ZnAc, TSP, BAK | | | |
| SAMPLING P | ERSONNEL | | 1 | Chain | of Custody No. | | | | |
| | | - A | ter | Nie (| | | | | |
| Name (SIGNA | IURE): | 174 | V | Name (| SIGNATURE): | | | | |
| | | 1 | | | | | | | |

| CLIENT: | Lambda Ener | ду | | | Monitori | Hartland #36 | 0 | | |
|-----------------------|-------------------|---------------|--|--|--|---------------------|-----------------|------------------|--|
| LOCATION: | 13390 Lone T | ree Road | | | | Sample ID: | | | |
| | Hartland Tow | nship, Mic | higan | | | Well Type: | | 2" PVC | |
| INSPECTION | 130003.2000 | | | | | | | | a an air an an an An Diac an airt air an |
| Label on well? | | TES NO REMEN | IED | | Is cement pad in a | good repair? | | VES NO REMEDIE | Ð |
| Is reference mark v | isible? | YES NO REMED | IED | | Is protective casir | ng locked and in go | od repair? | YES NO REMEDIE | ED |
| Standing water pres | sent? | YES NO REMED | IED | | Is inner cap in pla | ce and properly sea | aling well? | YES NO REMEDIE | ED |
| Indication of surface | e runoff in well? | YES NO REMED | IED | | Is well casing in v | isibly good repair? | | YES NO REMEDIE | ED |
| Repair Notes: | | | | | | | | | |
| STATIC WAT | | | | | Date: 12/16 | 12020 | Time: 14 | : 24 | |
| Top of Casing E | levation: | | | | | | | | |
| Depth to Water: | | 22.20 | | Measured wi | th: C | ELECTRONIC TAPE | CHALKED TAPE | OTHER | |
| Elevation of Wa | ter: | | | Well depth ve | erified? | YES NO | | | |
| | | | ang pangan di karang karang di Karang ka | | | | | | |
| Purge Method | | | | | Date: 12/10 | 0/2020 | Start Time: | 14.25 | - |
| Purge Method: | PERISTALTIC | BLADDER | UTHER | | | | | 1.00 | |
| Measured Well | Depth: | | Screen Length | ı: | _ | Depth to Scree | en Midpoint: _/ | / | _ |
| | | | _ | | | | | | ~ |
| | Water Level | Drawdown | Pumping Rate | Temp | Spec Cond. | Diss Oxy | pН | ORP | Turbidity |
| Time | (feet) | (feet) | (ml/min) | (°C) | (umho/cm) | (mg/l) | (S.U.) | (mV) | (NTU) |
| 14:40 | 25.12 | 42 | 140 | 7.21 | 45) | ×.04 | 6.55 | 75.0 | 41.0 |
| 14:45 | 25.12 | 42 | 140 | 7.00 | 454 | 1.81 | 6.55 | 11.9 | 31.0 |
| 14:50 | -5.12 | 72 | 140 | 7.17 | 460 | 1.68 | 0.30 | 06.0 | 34.d |
| 14:55 | 25.12 | 92 | 140 | 9.15 | 400 | 1.05 | Q. 5 / | 62.4 | 20.4 |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | 2 Stabili | zation Criteria: | +/- 3% | +/- 3% | +/- 10% | +/- 0.1 Units | +/- 10 mV | +/- 10 % |
| Total Volume Pu | irged (gal): | 25 | | | Ctabilia | (if > 0.5 mg/l) | | SOP-GW 001 Rev # | (if > 5 NTU) 3. January 19, 2010 |
| FIELD ANAL | YSIS | | | | Stabilizi | | | | -,, 10, 2010 |
| | Time | 14:5 | 5 | | | CALIBRATI | ON CHECK | | Mark if |
| | Temperature: | 9.15 | dea. C | | | Standard (conc.) | Reading | | Recalibrated |
| Speci | fic Conductance: | 460 | umhos/cm | | Specific Cond.: | | umho | s/cm | |
| орос П | issolved Oxvaen: | 1.65 | mg/L | | Dissolved Oxygen: | | mg/L | | |
| l | pH: | 6.37 | S.U. | | pH: | | S.U. | | |
| | ORP: | 63.4 | mV | | Eh: | | mV | | |
| | Turbidity: | 35.4 | NTU | | Turbidity: | | NTU | | |
| | | | | and the second | | | | 10 | |
| SAMPLE CO | LLECTION | Time: | 15-:00 | C . | | Sample Duplic | ate ?:Υ | OW EMAL | |
| Appearance of S | sample: | Clear | , no ode | | | Sample Metho | u | ~ FICH | |
| NO./BOTTLES: | SIZE: | TYPE: | FILTERED: | | PRESER | RVATIVE: | | PARAMETER: | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | 4, ZnAc, TSP, BAK | | Sulfolane | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | A, ZnAc, TSP, BAK | 5.16. | Sulfate | |
| <u> </u> | 1200 ml | glass plastic | yes no | None) HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | A ZNAC, TSP, BAK | SUIS | te | |
| | <u><u> </u></u> | glass plastic | ves no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | , ZnAc, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ | A, ZNAC, TSP, BAK | | | |
| | ml | glass plastic | yes no | None, HCI, H | NO ₃ , NaOH, H ₂ SO ₄ NO ₃ , NaOH, H ₂ SO ₄ | , ZNAC, TSP, BAK | | | |
| SAMPLING | ERSONNEL | | ,00 110 | Choir | n of Custody No |) | | | |
| SAWFLING P | | An Ma | A | Neme | | ·· | | | |
| Name (SIGNA | IURE): | | | Name | (SIGNATURE): | <u>\</u> | | | |
| | | 1 | | V Y |) | X | | | |
| Lambda Low Flow | / Logs 2018 | | | XI | JUP. | /) | | 12/10/ | 2020, 7:10 AM |
| | | | | · · | • | | | | |