

# **Marathon County Solid Waste Department**

172900 State Highway 29 Ringle, WI 54471

 Director:
 715-446-3101 X104

 Site Supervisor:
 715-446-3101 X102

 Administrative Office:
 715-446-3101 X100

 Scale Master
 715-446-3101 X103

 Solid Waste & Recycling Info Line
 877-270-3989 toll-free

March 27, 2020

Ms. Sally Hronek Wisconsin Department of Natural Resources Waste Management Engineer 2984 Shawano Avenue Green Bay, WI 54313-6727

Re: Marathon County Solid Waste – Bluebird Ridge Recycling and Disposal Facility-Landfill #4228 FID 337005680

Dear Ms. Hronek:

Please accept this submittal of the 2019 Annual Solid Waste Report for the Bluebird Ridge Recycling and Disposal Facility of Marathon County. This Annual Solid Waste Report is being submitted in accordance with the approved Plan of Operation for Bluebird Ridge Recycling and Disposal Facility.

In accordance with your request, two (2) additional hard copies and emailed PDF copies are being distributed to the WDNR staff as noted below.

Should you have any questions or comments regarding this Annual Solid Waste Report, please do not hesitate to contact me at (715) 445-3101.

Thank you,

**Dave Hagenbucher** 

Dain Hazeloler

Solid Waste Operations Manager Marathon County Solid Waste Dept

172900 State Highway 29 Ringle, Wisconsin 54471

C: 715-551-5864 O: 715-446-3101x102

CC: C. Lee Daigle, PE – Tetra Tech Senior Project Manager
Nathan Coller – WDNR Spooner Service Center (1 hard copy and 1 electronic copy)
John Morris – WDNR Eau Claire Service Center (1 hard copy and 1 electronic copy)



## **Marathon County Solid Waste Department Bluebird Ridge Recycling & Disposal Facility 2019 ANNUAL REPORT**

WDNR License No. 4228 FID 337005680

Marathon County Solid Waste Management Department 172900 Highway 29 Ringle, WI 54471

Solid Waste & Recycling Information Line: 877-270-3989

www.marathoncountysolidwaste.org



marathoncountysolidwaste

#### **Staff, Consultants & Contractors**

#### Marathon County Solid Waste Department Staff:

 Director Meleesa Johnson Solid Waste Manager Dave Hagenbucher • Environmental Resource Specialist Ron Smith • Solid Waste Scale Master Jessica Kubichek Accounting and Business Specialist Julie Groshek Waste Specialist Eric Olson Waste Specialist Abby Lichtscheidl Waste Specialist Dave Vitt • SW Specialist / Mechanic Chris Wickman

Solid Waste LTE

 Waste Specialist
 Intern
 Intern
 Intern

 Intern
 Intern
 Jana Suriano

#### **Engineering Consultants:**

- Mark Torresani, P.E.
   Cornerstone Environmental Group, a Tetra Tech company 8413 Excelsior Drive, Suite 160
   Madison, WI 53717
- Lee Daigle, P.E.
   Cornerstone Environmental Group, a Tetra Tech company 8413 Excelsior Drive, Suite 160 Madison, WI 53717

#### **Contractors:**

- Ahern Fire Protection
- CQM, Inc.
- RDO Integrated Controls
- Northern Lakes Service, Inc.
- Northern Pipe, Inc.
- Recycling Connections Corporation
- Veolia ES-Technical Solutions
- Lloyd Trucking
- Marathon County Forestry Depart.
- Krueger & Stienfest, Inc
- Walt's Petroleum Service, Inc
- River View Construction, Inc.
- Oakridge Engineering
- QED Environmental Systems (Trinity Environmental Equipment))
- Global Containment Systems GCS
- Golder Associates Inc.
- she Engineering
- E-Con Electrical, Inc.
- Valley Scale
- Van Ert Electrical Company
- Wisconsin Public Service

#### **Introduction**

This document is being submitted to the WDNR to meet the annual reporting requirements included in the Wisconsin Department of Natural Resources (DNR) January 31, 2013 Plan of Operation approval and the January 15, 2015, September 13, 2018, March 22, 2019 and June 19, 2019 Plan Modification approvals.

#### **Background**

Marathon County Solid Waste Department (MCSWD) owns, operates, and manages Bluebird Ridge Recycling and Disposal Facility (BRRDF), with MCSWD staff directing all facets of the operation. The facility opened in July 2014, with an approved capacity of 2,900,000 cubic yards. This landfill is situated on the southeast corner of the 574 acre site owned by the MCSWD and is one of three landfills located on the property. The property is located along the north side of Hwy 29, in the Town of Ringle, Wisconsin.



Bluebird Ridge Recycling & Disposal Facility (Shown at Construction phase in September 2013)



#### **Summary of Landfill Activities in 2019**

Disposal operations began on July 21, 2014. As of December 31, 2019, the remaining estimated waste disposal capacity was 1,232,038 cubic yards. During 2019, approximately 223,977 tons of waste was disposed of at the BRRDF. Operational duties performed by the MCSWD personnel include, but are not limited to, complete site operations, administrative management, air permit compliance, gas system management, vegetation management, household hazardous waste diversion, storm water management, and customer service. As needed, the county hired various contractors to perform specific tasks beyond the capabilities of the MCSWD staff (as noted above).

Cover materials including alternative daily cover (ADC) were used as the means to control odors, reduce the risk of fires, and to create a suitable driving surface across the waste mass. Sludge from Linetec was approved as an ADC and construction and demolition (C&D) waste was approved for construction of roadways, access ramps and wet weather pads within the limits of waste. Both of these methods worked well for their intended purpose.

#### **Operations Summary**

- Daily operations
  - o Safety and health management
  - o Compaction & cover operations
  - o Supplemental cover added to control odors
  - Litter and wind-blown debris control
  - o Plowing roads
  - o Grading roads
  - Water roads & also add calcium chloride for dust control
  - Vegetation management including screening
  - o Intermediate cover placement and maintenance
  - o Storm-water infrastructure maintenance and repair
- Evaluated and approved special waste disposal requests for high volume industrial products, off-specification food additives, contaminated soils and other materials using approved special waste plan
- Conducted daily, monthly, annual environmental monitoring both on and around the landfill
- Conducted educational tours, workshops, and events
- Continued work with Central WI Off-road Cycling Coalition, DNR and Ice Age Trail Alliance on off-road biking course development
- New yard area for dumpsters by the office/scale house
- Constructed esker along Mountain Bay Trail



Operations, ash used as daily cover, clean soil as intermediate cover

#### **Construction Activities**

During 2019, MCSW worked with Tetra Tech, Riverview Construction, and numerous other contractors to construct a 5.1 acre contiguous expansion to the west of the existing Phase 1-4. This construction included mass excavation of approximately 200,000 cubic yards of soil, stockpiling material along the south side of the site, boulder removal, clay liner placement, geomembrane installation, drainage stone installation, and leachate collection infrastructure installation. Details on the Phase 5A Expansion can be found in the BRRDF 5A Construction Documentation Report submitted January 23<sup>rd</sup> 2020, and approved February 13<sup>th</sup> 2020.

During liner construction in 2019, a cross-over landfill gas (LFG) header pipe was installed along the north-south delineation berm between Phases 3/4 and Phase 5A. The cross-over LFG header pipe was connected to the existing LFG header pipe north of Phase 5A and a blind flange was installed at the south end of the cross-over LFG header pipe. The constructed LFG header piping consisted of approximately 1,150 linear feet of 12-inch diameter SDR-11 HDPE header pipe. Additionally, a condensate drain pipe was connected to the cross-over LFG header pipe to drain condensate from the header pipe to the Phase 5A leachate collection sump.



2019 Phase 5A liner installation

#### Waste Disposal Activities

During 2019, approximately 223,977.01 tons of waste was accepted in BRRDF and disposed in Phases 3 and 4. Included in this sum were the following waste categories (reported in tons):

| BRRDF 4228 TONNAGE REPORT |          |          |          |          |          |          |          |          |          |          |          |          |            |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|------------|
| Category                  | Jan      | Feb      | Mar      | Apr      | May      | Jun      | Jul      | Aug      | Sep      | Oct      | Nov      | Dec      | Totals     |
| 1 (MSW)                   | 9434.99  | 11080.58 | 13244.66 | 14876.38 | 15035.94 | 12968.75 | 14281.34 | 14307.1  | 16026.9  | 17032.07 | 13130.92 | 14387.02 | 165,806.65 |
| 2 (Ash)                   | 15.59    | 19.57    | 18.5     | 0        | 80.82    | 37.32    | 296.87   | 127.53   | 75.44    | 82.26    | 727.73   | 0        | 1,481.63   |
| 3 (Papermill Sludge)      | 624      | 410.09   | 595.59   | 985.45   | 805.81   | 497.21   | 621.55   | 656.49   | 470.65   | 495.12   | 448.99   | 425.04   | 7,035.99   |
| 4 (Foundry)               | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 560.21   | 0        | 0        | 560.21     |
| 5 (WWTP Sludge)           | 234.28   | 324.46   | 448.98   | 504.42   | 96.18    | 158.93   | 117.56   | 27.08    | 0        | 68.66    | 8.73     | 0        | 1,989.28   |
| 6 (Other)                 | 485.34   | 669.71   | 623.27   | 650.13   | 1908.64  | 1633.14  | 702.04   | 813.12   | 1847.76  | 901.07   | 913.4    | 676.83   | 11,824.45  |
| 21 (WPS Ash)              | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 20,832.19  |
| 25 (C&D)                  | 571.53   | 360.62   | 619.61   | 1206.56  | 1578.72  | 1365.47  | 1662.3   | 1472.54  | 1464.35  | 1827.74  | 870.07   | 1338     | 14,337.51  |
| 27 (Non-Profit)           | 0        | 4.68     |          | 0        | 0        | 0        | 0        | 0        | 4.58     | 0        | 0        | 0        | 9.26       |
| 28 (Disaster)             | 0        |          | 13.29    | 14.64    | 5.36     | 0        | 59.58    | 6.01     | 0.96     | 0        | 0        | 0        | 99.84      |
| Total                     | 11365.73 | 12869.71 | 15563.9  | 18237.58 | 19511.47 | 16660.82 | 17741.24 | 17409.87 | 19890.64 | 20967.13 | 16099.84 | 16826.89 | 223,977.01 |

Waste that was disposed of at the facility originated from the following counties:

- Eau Claire
- Clark
- Taylor
- Vilas
- Ashland
- Bayfield
- Oneida
- Langlade
- Menominee
- Portage

- Wood
- Shawano
- Marathon
- Waupaca
- Price
- Forest
- Chippewa
- Lincoln
- Dunn

There were no issues or problems in handling the wastes delivered.

#### **Special Wastes**

BRRDF is licensed to accept waste what would be considered non-hazardous special wastes. This includes, but is not limited to, contaminated soils; petroleum contaminated soil; incinerator, boiler and other ash; industrial manufacturing process waste and sludge; waste water and water treatment plant sludge; large quantities of dead animal carcasses; street sweepings and dewatered car wash grit.

MCSWD pre-screens all special wastes via a Special Waste Profile form. Customers desiring to deliver non-standard wastes must complete the form and provide to it MCSWD staff for review and approval. The generator of waste, or their agent, must complete the form and also have a variety of select laboratory tests conducted on the special waste prior to a decision being made on acceptance. The MCSWD Special Waste Analytical Protocol and Acceptance Criteria delineates parameter thresholds the waste material must meet in order to qualify as a non-hazardous special waste. No special wastes are accepted without first completing this process. Records are retained on site. In 2019, the site had no non-approved wastes.

Approximately 51,839.77 tons of special waste was accepted into the BRRDF in 2019, which are included in the tons reported to the state, as identified above. The special waste accepted in BRRDF included the following waste categories (reported in tons):

| Special Waste Tonnage 2019         |           |                                    |         |  |  |  |
|------------------------------------|-----------|------------------------------------|---------|--|--|--|
| BRRDF MATERIAL                     | Tonnage   | AREA B MATERIAL                    | Tonnage |  |  |  |
| Contaminated Soil/Industrial Waste | 11,824.45 | Contaminated Soil/Industrial Waste | 896.71  |  |  |  |
| Ash                                | 1,481.63  | Ash                                | 0       |  |  |  |
| WPS Bottom Ash - ADC               | 20,832.19 | WPS Bottom Ash - ADC               | 0       |  |  |  |
| Foundry Material                   | 560.21    | Foundry Material                   | 0       |  |  |  |
| Sludges (WWTP and Papermill)       | 9,025.27  | Sludges (WWTP and Papermill)       | 0       |  |  |  |
| Sludge Other                       | 7,991.44  | Sludge Other                       | 0       |  |  |  |
| Friable asbestos                   | 124.58    | Friable asbestos                   | 0       |  |  |  |
| TOTAL                              | 51,839.77 | TOTAL                              | 896.71  |  |  |  |

Approximately 20,832 tons of WPS bottom ash were used as alternative daily cover (ADC) material. Other ADC consisted of Linetec sludge, street sweepings, and contaminated soils. No ADC was used on exterior side-slopes, within 10 feet of liner or within 100 feet of the limits of waste. Native soils were also used as cover material. No problems were encountered during 2019 with the use of special waste as ADC or C&D waste used in roadways, access ramps and wet weather pads within the limits of waste.

#### **Odor Monitoring Summary**

Odor complaints in 2019 were received from a few separate residents. Complaints came early in the year, and then again towards the end of the year. The first complaint was reported on 01/25/19 from an unknown resident living to the east of the landfill. Two additional complaints were noted on 02/22/19, and 03/06/19 from the same resident. Early in the year, MCSW took in a significant amount of sludge from various businesses and Wastewater Treatment Plants. Much of this sludge was typically land applied, however, this was not an option during this time. MCSW made an effort to manage this material without creating odors, but due to the nature of sludge, it was inevitable that some would migrate. Odor complaints toward the end of the year included one on 09/22/19

and 09/26/19 from the same resident. We also received one on 10/03/19, one on 10/26/19, and one on 11/02/19 all from separate residents. The odors late in the year were attributed to the significant amount of precipitation that was received at the site. 2019 was a historically high year for rain. Increased precipitation within the landfill could have increased the rate of anaerobic decomposition, and thus increased the amount of landfill gas generation. Even with existing gas extraction infrastructure, this may not have been enough to completely control odor migration. MCSWD staff conducted additional site monitoring and inspections for pin pointing possible sources, additional intermediate soil cover was added to areas no longer receiving waste, seeding of intermediate cover areas, adding landfill gas extraction system components before statutorily required, and continued to immediately cover certain putrescible wastes that are known or exhibit odorous characteristics.

#### **Load Inspections**

Load inspections were completed periodically, at least every 5,000 tons, and for suspicious loads. Forms documenting load inspections are kept in the facility files.

#### <u>Additional Waste & Recycling Services Information</u>

The MCSWD offers a full range of solid waste and recycling services. During 2019, the following material were either separated for recycling from the waste stream by staff or source separated by the generator:

- Appliances
- Electronics
- Fluorescent lighting
- Household hazardous waste
- Lead-acid batteries
- Oil filters
- Rechargeable batteries
- Recyclable containers and papers

- Scrap metal
- Sharps
- Tires
- Waste anti-freeze
- Waste oil
- Shingles
- Yard waste
- Vinyl siding

In 2012, the MCSWD was granted, by the DNR, a NR502.05(3)(j) exemption for a short-term, non-containerized, waste storage facility for the collection and short-term storage of waste shingles. The shingle recycling drop-off opened in June 2012 and was permitted to receive both residential and residential-like commercial shingle for recycling. Only clean shingles (free of debris and garbage-nails allowed) are accepted for recycling. Loads that do not meet the criteria are required to be landfilled.



Additional services provided by MCSWD

In 2019, the shingle recycling program diverted 653.90 tons of shingles from landfill disposal. All shingles were taken to Kafka Granite in Mosinee, Wisconsin, where they were ground up and nails were removed via magnet. Ground shingles were mixed with asphalt.

MCSWD hosts a yard material site. Yard waste accepted at BRRDF includes grass, leaves and brush. Incoming yard waste is placed in a pile located north of BRRDF and west of the BRRDF leachate storage tank and left to naturally decompose. Some composted material is used as soil amendment in areas like soil stockpiles and sides of parking lots on site.

MCSWD administers a multi-municipality street sweeping low hazard exemption beneficial reuse program. Participating municipalities can divert from landfilling the sand/grit collected after the winter season. Collected sweepings can be used in municipal utility and public works projects or reused by MCSWD as ADC. Additionally, MCSWD uses a similar material from Domtar Paper Mill after they clean up their yard. In 2019, these programs diverted 2316.52 tons of mulch and street sweepings that were used as ADC.

In addition to the above noted materials, MCSWD underwrote the entire cost of the county's Medication Drop Box Program, at eight local police departments, for unused/unwanted/outdated medications. MCSWD operated a household hazardous materials collection facility which provided service to Marathon county residents, farmers, and businesses on a fee-free system. Shawano, Lincoln, and Wood county residents, farmers, and businesses where provided this service on a fee-based system.

#### **Landfill Maintenance**

During 2019, the following site maintenance activities were completed:

- Regular inspections of leachate tank, the loadout station area and sump were conducted to check for potential leaks on a daily basis.
- Quarterly inspections of the leachate force-main and gas condensate secondary containment access points.
- Roadways were treated with calcium chloride as a means of dust control during May 2019.
- Plantings on the vegetative buffers along the southern and eastern boundaries were regularly checked for predation and water needs. Fencing was installed where needed to prevent destruction to plantings.
- The storm water and infiltration basin was inspected to ensure the integrity of overflow and slopes.
- Storm water grates were cleared routinely and as needed of both windblown litter and sediment.
- Storm water culvert were cleaned out during the annual leachate line jetting.
- Upkeep of silt fences around identified wetland areas and periodic inspection performed.
- Placed and seeded approximately 5 acres of intermediate cover for erosion control.
- Maintained storm water system & biofilter.
- Gas system penetration points filled with bentonite
- Site-wide groundwater well maintenance and repairs
- BRRDF Phase 3&4 SSR 2 pump replaced
- Installation of new electrical service around the east side of BRRDF and installation of new transformer and electrical panels on the south side of Phase 5A



MCSWD staff working to clean ditches after snowmelt; utilization of a large vacuum



Intermediate cover grading and seeding



Results of intermediate cover seeding and soil stabilization

#### **Gas Collection System**

An active landfill gas extraction system for BRRDF commenced in mid-May 2018. This expansion of the gas collection and control system (GCCS) ties into the existing GCCS for Area A and Area B landfills, which consists of gas collectors and transfer piping, a blower to move the gas collected and end-use equipment (described below). The gas wells located in BRRDF currently include four (4) vertical gas extraction wells, and 4 leachate cleanout riser wells, connected via a sub-header system to the landfill gas main header pipe that services Area A and Area B landfills. The landfill gas

extracted from the landfill is transferred to the on-site landfill gas recovery building (located south of the Area A Landfill) via a header pipe to a landfill gas to energy plant or to a flare. Vacuum applied to the wellfield is regulated by the variable frequency drive (VFD) blower station that controls the GCCS. A map of the BRRDF component of the GCCS is provided in Attachment A.

Expansion of the system in 2019 consisted of approximately 1200 feet of 12" header along the floor of Phase 5A. This will act as a loop to connect the system on the North and South sides.



New 12" gas header along the floor of BRRDF, pre backfill.

Landfill gas emissions from the entire MCSWD property, including BRRDF, are regulated under and in accordance with Air Pollution Control Operation Permit 737092730-P20 (issued November 2, 2015). Refer to the Construction Activities section of this report for details regarding GCCS improvements installed during 2019.

Existing sensing devices measure gas flow rates, pressure, vacuum and methane and oxygen concentrations. These sensors are located on the main header line pipe leading into the gas recovery building and includes gas collected from Area A, Area B and BRRDF landfills. Data is recorded and stored on a computerized data collection system. This data is used for operating and reporting purposes.

The Marathon County GCCS operated 98.31% of the year and approximately 8,611.74 hours of operation. The average aggregated flow rate for the site GCCS was approximately 664.33 standard cubic feet per minute (scfm). Methane and oxygen concentrations of landfill gas averaged, by volume, 48.7% for methane and 1.0% oxygen. Total gas collected from the site in 2019 was 379,820,134.73 standard cubic feet (scf). From the total gas collected at the site, 30,137,124.25 scf was used for production of electricity and 349,683,010.47 scf was sent to the flare. The table below summarizes the aggregated flow, combustion location, and vacuum of the GCCS at the site.

#### 2019 MARATHON COUNTY GCCS DATA (INCLUDES AREA A, AREA B & BRRDF)

| Month | Average CFM | Total CFM      | CFM to Electric | CFM to Flare   |
|-------|-------------|----------------|-----------------|----------------|
| Jan   | 469.87      | 31,074,896.25  | 10,100,040.05   | 20,974,856.20  |
| Feb   | 468.78      | 27,377,343.11  | 8,476,124.60    | 18,901,218.51  |
| Mar   | 520.44      | 29,244,410.46  | 6,012,000.23    | 23,232,410.22  |
| Apr   | 581.56      | 29,051,175.86  | 3,927,714.23    | 25,123,461.62  |
| May   | 665.95      | 29,759,679.84  | 31,727.17       | 29,727,952.67  |
| Jun   | 694.42      | 30,015,041.54  | 15,953.36       | 29,999,088.18  |
| Jul   | 672.9       | 30,038,221.55  | 91.96           | 30,038,129.59  |
| Aug   | 672.94      | 30,042,858.49  | 2,781.34        | 30,040,077.16  |
| Sep   | 766.38      | 33,111,328.85  | 3,497.19        | 33,107,831.66  |
| Oct   | 813.48      | 36,313,769.15  | 0.26            | 36,313,768.89  |
| Nov   | 845.18      | 36,512,866.46  | 1,050.27        | 36,511,816.19  |
| Dec   | 800.01      | 37,278,543.17  | 1,566,143.59    | 35,712,399.58  |
| TOTAL | 664.33      | 379,820,134.73 | 30,137,124.25   | 349,683,010.47 |

Below is a chart listing average monthly methane (CH4) and oxygen (O2) concentrations of the site GCCS (combined Area A, Area B and BRRDF landfill gas).

| 2019 GCCS  Vacuum and Concentrations | Ave Vacuum<br>(negative inches<br>water column) | Ave<br>CH4% | Ave O2% |
|--------------------------------------|---|-------------|---------|
| January                              | 26.64   | 50.2        | 0.9     |
| February                             | 24.66   | 50.5        | 1.0     |
| March                                | 22.38   | 53.5        | 0.8     |
| April                                | 25.09   | 51.0        | 1.1     |
| May                                  | 24.92   | 52.2        | 8.0     |
| June                                 | 26.66   | 52.8        | 0.7     |
| July                                 | 25.45   | 50.8        | 0.6     |
| August                               | 25.27   | 22.3        | 1.1     |
| September                            | 26.73   | 52.0        | 1.1     |
| October                              | 26.98   | 51.3        | 1.2     |
| November                             | 26.48   | 48.3        | 1.5     |
| December                             | 27.01   | 49.4        | 1.5     |
| Average                              | 25.69   | 48.7        | 1.0     |

#### **Gas System Outages**

As indicated previously, the gas extraction system operated nearly continuously. Any shutdowns, whether for planned maintenance or unplanned events were reported to the WDNR Air Management staff. The January to June 2019 Semi-annual Report and July to December 2019 Semi-annual Report for the facility include descriptions of the startup, shutdown and malfunction events associated with the GCCS, single control device and the continuous monitoring system.

#### **Surface Emission Monitoring**

Surface emission monitoring (SEM) of Area B was conducted on March 28 2019, May 20 2019, September 25 2019, and December 25 2019. No (0) exceedances were detected during any of these

quarterly SEM events. For all SEM events, a flame ionization detector (FID) is used while MCSWD's environmental technician walked a serpentine pattern across the surface of the landfill. Results of the monitoring are provided in Attachment B.

#### **Soil Gas Monitoring**

During 2019, the soil gas probes were monitored quarterly for relative pressure, methane (CH4), oxygen (02), ambient air temperature, gas temperature, ground conditions, barometric pressure, and barometric pressure trend. In 2019, these monitoring results indicated no migration of landfill gas from BRRDF. During an inspection with WDNR, it was noted to make sure all Gas Probes are properly labeled and locked. MCSWD staff made sure this was completed in a timely manner.

First Quarter Probe Data (January 23, 2019):

| Gas Probe [Depth in feet] | Location  | Methane<br>(%CH4 by Vol.) | Oxygen<br>(%02 by Vol.) | Pressure<br>(inch W.C.) | Notes:      |
|---------------------------|-----------|---------------------------|-------------------------|-------------------------|-------------|
| WDNR<br>Parameter #       | Location  | 85547                     | 85550                   | 46389                   | WDNR ID No. |
| BRRDF Probes              | Lic. 4228 |                           |                         |                         |             |
| GP101                     | N BRRDF   | 0                         | 18.4                    | 0.11                    | 550         |
| GP102                     | E BRRDF   | 0                         | 19.1                    | -0.03                   | 551         |
| GP103                     | E BRRDF   | 0                         | 20.1                    | 0.0                     | 552         |
| GP104                     | S BRRDF   | 0                         | 19.5                    | 0.0                     | 553         |
| GP105                     | S BRRDF   | 0                         | 16.4                    | 0.08                    | 554         |
| GP106                     | W BRRDF   | 0                         | 20.9                    | 0.01                    | 555         |

Second Quarter Probe Data (April 23, 2019):

| Gas Probe [Depth in feet] | Location  | Methane<br>(%CH4 by Vol.) | Oxygen<br>(%02 by Vol.) | Pressure<br>(inch W.C.) | Notes:      |
|---------------------------|-----------|---------------------------|-------------------------|-------------------------|-------------|
| WDNR<br>Parameter #       | Location  | 85547                     | 85550                   | 46389                   | WDNR ID No. |
| BRRDF Probes              | Lic. 4228 |                           |                         |                         |             |
| GP101                     | N BRRDF   | 0                         | 18.3                    | 0                       | 550         |
| GP102                     | E BRRDF   | 0                         | 20.7                    | 0                       | 551         |
| GP103                     | E BRRDF   | 0                         | 20.9                    | -0.02                   | 552         |
| GP104                     | S BRRDF   | 0                         | 18.8                    | 0.01                    | 553         |
| GP105                     | S BRRDF   | 0                         | 19.3                    | 0                       | 554         |
| GP106                     | W BRRDF   | 0                         | 20.9                    | 0.04                    | 555         |

#### Third Ouarter Probe Data (July 26, 2019):

| Gas Probe [Depth in feet] | Location  | Methane<br>(%CH4 by Vol.) | Oxygen<br>(%02 by Vol.) | Pressure<br>(inch W.C.) | Notes:      |
|---------------------------|-----------|---------------------------|-------------------------|-------------------------|-------------|
| WDNR<br>Parameter #       | Location  | 85547                     | 85550                   | 46389                   | WDNR ID No. |
| BRRDF Probes              | Lic. 4228 |                           |                         |                         |             |
| GP101                     | N BRRDF   | 0                         | 21                      | -0.02                   | 550         |
| GP102                     | E BRRDF   | 0                         | 20.2                    | 0                       | 551         |
| GP103                     | E BRRDF   | 0                         | 20.8                    | -0.03                   | 552         |
| GP104                     | S BRRDF   | 0                         | 21.1                    | 0                       | 553         |
| GP105                     | S BRRDF   | 0                         | 21.2                    | -0.09                   | 554         |
| GP106                     | W BRRDF   | 0                         | 21.1                    | -0.01                   | 555         |

Fourth Ouarter Probe Data (October 14, 2019):

| Gas Probe [Depth in feet] | Location  | Methane<br>(%CH4 by Vol.) | Oxygen<br>(%02 by Vol.) | Pressure<br>(inch W.C.) | Notes:      |
|---------------------------|-----------|---------------------------|-------------------------|-------------------------|-------------|
| WDNR<br>Parameter #       | Location  | 85547                     | 85550                   | 46389                   | WDNR ID No. |
| BRRDF Probes              | Lic. 4228 |                           |                         |                         |             |
| GP101                     | N BRRDF   | 0                         | 16.9                    | 0.04                    | 550         |
| GP102                     | E BRRDF   | 0                         | 15.8                    | 0.01                    | 551         |
| GP103                     | E BRRDF   | 0                         | 19.8                    | 0                       | 552         |
| GP104                     | S BRRDF   | 0                         | 16.5                    | 0                       | 553         |
| GP105                     | S BRRDF   | 0                         | 15.2                    | 0.06                    | 554         |
| GP106                     | W BRRDF   | 0                         | 19.5                    | 0.07                    | 555         |

#### **Gas Condensate Monitoring**

Gas condensate generated at BRRDF is collected and transferred to the leachate force-main which is conveyed to the leachate storage tank for BRRDF. Gas condensate is monitored as part of the leachate storage tank requirements since it is mixed with leachate in the tank.

#### **Landfill Gas Monitoring**

Landfill gas emissions from BRRDF are regulated under and in accordance with Air Pollution Control Operation Permit 737092730-P20 (issued November 2, 2015). Monitoring results for 2019 are summarized in the table below.

The gas extraction wells are monitored monthly for gas temperature, percent oxygen, percent methane, header pressure, wellhead pressure, barometric pressure, barometric pressure trend and gas flow rate. Results are reported semiannually to the WDNR Air Management staff. The January to June 2019 Semi-annual Report and July to December 2019 Semi-annual Report for the facility include the monthly monitoring results.

On October 15, 2019 MCSWD's environmental technician and Tetra Tech used a summa canister to collect a sample of landfill gas. The full canister was shipped via express mail services to Air Technology Labs, Inc. (ATL) in City of Industry, California for analyses of volatile organic compounds. The test method used was United States Environmental Protection Agency (EPA) test method TO-15, Determination of Volatile Organic Compounds (VOCs) In Air Collected In Specially-Prepared Canisters and Analyzed by Gas Chromatography/ Mass Spectrometry (GC/MS). Results of the testing performed by ATL is provided as Attachment C to this annual report.

#### **Leachate System Information:**

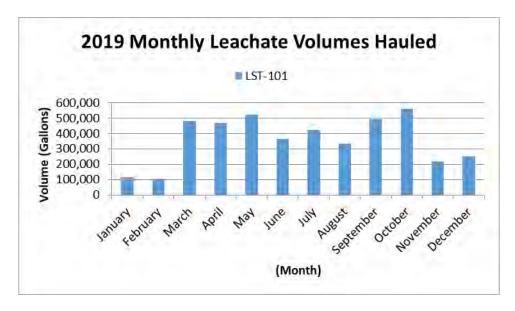
Leachate is collected within the leachate management system that includes a granular drainage layer and perforated piping laid in gravel filled trenches that drain to collection sumps. Leachate gathers in sumps in the low points of Phase 2 and Phase 4. Each sump includes a pump and a forcemain within a side slope riser. A pump within the riser pipes transfers leachate through a forcemain system to an aboveground storage tank. Two side-slope riser pipes are constructed and operational (one for Phase 1 and 2 and one for Phase 3 and 4). Pumping from the side slope risers can be interrupted should the level sensor system inside the aboveground storage tank indicate the liquid has reached a specified level to ensure the tank does not overflow. The contracted hauler routinely visits the site to pump the stored leachate into a 6,600 gallon tanker truck. The leachate is then delivered to a licensed waste water treatment facility (WWTF).

Leachate collected in 2019 was transported to either the Domtar, Inc. WWTF in Rothschild, Wisconsin, Wausau Wastewater Treatment in Wausau, Wisconsin, or the Stevens Point Wastewater Utility in Stevens Point, Wisconsin. Leachate is pumped into the WWTF and treated to ensure all

effluent meets Wisconsin Pollutant Discharge Elimination System (WPDES) standards prior to discharge into the Wisconsin River. Preventative maintenance of the leachate storage and pumping system was conducted, as needed, by on-site operations contractor or other tank and pump specialists when required. Unplanned repairs were performed by the most available, qualified tank and pump specialists. The total volume (gallons) of leachate collected/transported/treated in 2019 is as follows:

Leachate Volume (gallons) hauled off site:

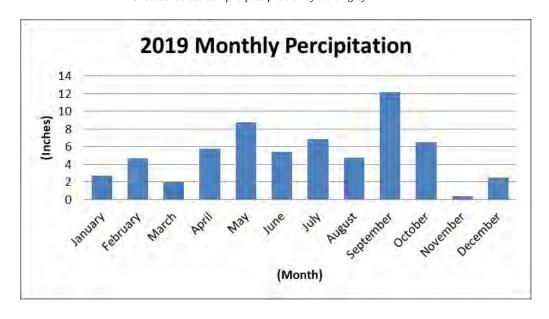
| 2019       | LST-101   |
|------------|-----------|
| January    | 118,800   |
| February   | 105,600   |
| March      | 481,800   |
| April      | 468,600   |
| May        | 521,400   |
| June       | 363,000   |
| July       | 422,400   |
| August     | 336,600   |
| September  | 495,000   |
| October    | 561,000   |
| November   | 217,800   |
| December   | 250,800   |
| BBR total: | 4,342,800 |



#### **Precipitation:**

| 2019 Precipi | tation (inches) |
|--------------|-----------------|
| January      | 2.7             |
| February     | 4.7             |
| March        | 2               |
| April        | 5.8             |
| May          | 8.75            |
| June         | 5.4             |
| July         | 6.9             |
| August       | 4.75            |
| September    | 12.2            |
| October      | 6.5             |
| November     | 0.4             |
| December     | 2.47            |
| Total        | 62.57           |

<sup>\*</sup> Snow converted to liquid precipitation by dividing by 10



#### **Leachate Line Jetting**

On June 10 and June 11, 2019 Northern Pipe, Inc. of Green Bay, Wisconsin, water jetted the leachate lines of BRRDF. Jetting was accomplished by accessing each pipe at one end and jetting the full length of the pipe; overlap was done on the slopes. Each line was televised in 2018. No issues were reported. A total of 2500 gallons were used during the jetting process. The report for BRRDF jetting and televising is provided as Attachment D.



Leachate jetting BRRDF

#### **Leachate Head Well Monitoring**

Leachate head wells are monitored by MCSWD staff on a quarterly basis. The site's monitoring records indicate that the leachate head wells were mostly dry during 2019. Please note that data before September was not included. The previous MCSWD Environmental Technician left employment with Marathon County mid-year. The data before September 2019 was misplaced during the transition period.

| Bluebird Ridge Re | Bluebird Ridge Recycling and Disposal Facility - 4228 |                 |                 |              |  |  |  |
|-------------------|---|-----------------|-----------------|--------------|--|--|--|
| Leachate Head W   | Leachate Head Well Monitoring                         |                 |                 |              |  |  |  |
| Sample Point      | Date  | Depth to Bottom | Depth to Liquid | Total Liquid |  |  |  |
| LHM-1             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-2             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-3             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-4             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-5             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-6             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-7             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-8             | NA  | NA              | NA              | NA           |  |  |  |
| Sample Point      | Date  | Depth to Bottom | Depth to Liquid | Total Liquid |  |  |  |
| LHM-1             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-2             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-3             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-4             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-5             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-6             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-7             | NA  | NA              | NA              | NA           |  |  |  |
| LHM-8             | NA  | NA              | NA              | NA           |  |  |  |
| Sample Point      | Date  | Depth to Bottom | Depth to Liquid | Total Liquid |  |  |  |
| LHM-1             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-2             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-3             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-4             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-5             | 9/3/2019  | NA              | Dry             | 5"           |  |  |  |
| LHM-6             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-7             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-8             | 9/3/2019  | NA              | Dry             | 0            |  |  |  |
| Sample Point      | Date  | Depth to Bottom |                 | Total Liquid |  |  |  |
| LHM-1             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-2             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-3             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-4             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-5             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-6             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-7             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |
| LHM-8             | 12/18/2019  | NA              | Dry             | 0            |  |  |  |

#### **Leachate Sampling**

Leachate sampling and analytical analysis BRRDF LST-101 was conducted in April and October 2019 by Northern Lakes Services (NLS). VOCs and metals were sampled semi-annually and semi-volatile organics were sampled and tested in April only. Sampling results show a variety of compounds present that are consistent with previous sampling results. Full results are available on the WDNR Groundwater and Environmental Monitoring System (GEMS) database and are maintained in site files. Conductivity and pH values reported in 2019 are summarized below.

|          |         | Conductivity | рН   |
|----------|---------|--------------|------|
| Leachate | 2019    | umho/cm      | S.U. |
| LST-101  | April   | 11,200       | 7.55 |
|          | October | 12850        | 7.61 |

#### **Storm Water Management**

The biofilter stormwater collection and infiltration system located north of Phases 1 and 2 was periodically checked and inspected for signs of failure, erosion and/or operational problems. The bio-filter and infiltration basin preformed as designed and lost no structural integrity. A small temporary runoff basin exists in the southwest corner of the cell. This basin is continually monitored to ensure it remains operational to discharge runoff from the west side of Phase 3 and 4 to the stormwater ditch located on the south side of the active site. This runoff ultimately drains to the biofilter stormwater collection and infiltration system. No storm water left the site.

In accordance with Condition 21 of the Plan of Operation, an annual stormwater inspection was performed June 12, 2019. This included the outfall to the bio-filter and general inspection of ditches associated with BRRDF. This inspection and quarterly visual inspections are provided in Attachment E.

#### **Groundwater Monitoring & Analysis**

Environmental monitoring at the BRRDF is conducted and reported as specified in the January 31, 2013 Plan of Operation Approval. The three year assessment will be submitted this year for the period covering 2017 to 2019. This assessment can be found in Attachment H.

#### **Private Well Monitoring**

Water supply wells, as defined in the Plan of Operation Approval and located on properties adjacent to or in the vicinity of the landfill, were sampled in April and October. The collection of samples from these wells was performed in conjunction with the Area A private wells routine monitoring program. Analytical results and explanations, where necessary, were reported to the private well owners. Results of the down-gradient wells having WDNR well ID numbers were submitted electronically to the WDNR's GEMS.

No exceedances of NR 140 Groundwater Quality Standards or NR 812 Drinking Water Standards were reported in the samples collected from the private wells. The private water supply well samples analyzed in 2019 met the parameters identified in the site's monitoring plan for safe drinking water standards and no exceedances were recorded. During 2018, a low-level (estimated between limit of quantitation and the limit of detection) detection of tetrachloroethene (PCE) and acetone were reported in a sample collected from private well PW-68. This PCE was detected again in April of 2019, but not in October of 2019. Additionally, in 2018 a low-level detection of dichlorofluoromethane was reported in a sample collected from private well PW-27. PW-27 did not have any detects in 2019 in either sampling month. Private well results can be found in Attachment F.

#### **Groundwater Monitoring**

Please refer to the 2017 – 2019 three year groundwater assessment for more detailed information about site groundwater conditions and status. This assessment is attachment H of this report. Groundwater wells associated with BRRDF were sampled in April and October. The samples were analyzed by Northern Lake Service Laboratory. Exceedances more than well-specific Prevention Action Limits (PALs) and NR 140 PALs are summarized below.

# Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table April 2019

|          | Ma               | arathon County S | olid Waste: Bluebird | Ridge Groundy | vater Mon | itoring We | lls |     |          |
|----------|------------------|------------------|----------------------|---------------|-----------|------------|-----|-----|----------|
|          | BRRDF            | Facility #4228   | Exceedances          |               |           |            |     |     |          |
| Project# | Date             | Well#            | Parameter            | Units         | Result    | PAL        | ES  | ACL | Comments |
| 318859   | April 3 & 4 2019 | R59P             | Alkalinity           | mg/L          | 330.00    | 230.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59P             | Conductivity         | umhos@25C     | 590.00    | 470.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59P             | Hardness             | mg/L          | 360.00    | 230.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Alkalinity           | mg/L          | 420.00    | 230.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Conductivity         | umhos@25C     | 680.00    | 470.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Hardness             | mg/L          | 420.00    | 230.00     |     |     | well     |

# Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table October 2019

|          | Ma              | arathon County S | olid Waste: Bluebird | Ridge Groundy | vater Mon | itoring We | lls |     |          |
|----------|-----------------|------------------|----------------------|---------------|-----------|------------|-----|-----|----------|
|          | BRRDF           | Facility #4228   | Exceedances          |               |           |            |     |     |          |
| Project# | Date            | Well#            | Parameter            | Units         | Result    | PAL        | ES  | ACL | Comments |
| 333066   | October 14 & 15 | R59P             | Alkalinity           | mg/L          | 380,00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59P             | Conductivity         | umhos@25C     | 670.00    | 470.00     |     |     | well     |
| 333066   | October 14 & 15 | R59P             | Hardness             | mg/L          | 430.00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59WT            | Alkalinity           | mg/L          | 420.00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59WT            | Conductivity         | umhos@25C     | 710.00    | 470.00     |     |     | well     |
| 333066   | October 14 & 15 | R59WT            | Hardness             | mg/L          | 470.00    | 230.00     |     |     | well     |

Indicator parameters which include alkalinity, hardness and conductivity, were reported above well specific PALs at wells R59P and R59WT during 2019. The exceedance reports submitted to the WDNR for sampling events in April and October 2019 are provided in Attachment G.

Indicator parameters hardness, alkalinity and specific conductance concentrations are exhibiting increasing trends at the BRRDF upgradient well nest R59WT/P. Wells upgradient of R59WT/P include the Area A Landfill wells R13R and R35. Well R35 has also reported well-specific exceedances for specific conductance with an increasing trend in specific conductance concentrations. Well R13R has recorded specific conductance between 1,310 to 1,410 umho/cm during the three year period from 2017 to 2019. The increase in concentrations at the R59WT/P well nest may be associated with the elevated readings for these parameters occurring upgradient of this well nest in the VOC plume.

# ATTACHMENT A BRRDF GCCS MAP



# ATTACHMENT B SURFACE EMISSION MONITORING REPORTS

1st Qtr 2019

#### **Marathon County Solid Waste**

#### **Surface Emissions Monitoring**

### Calibration Procedure and Background Determination Report

Landfill name: Marathon County Landfill

Instrument make: Thermo Fisher Scientific, Model: TVA1000B,

S/N: 0115248137

#### **Calibration Procedure**

- 1. Install filled hydrogen tank, attach probe/readout device; turn on analyzer and hydrogen supply valve.
- 2. Wait 4-5 minutes for proper hydrogen flow, then press; 1 = run. The unit will ignite and display readings. If flame out message appears, clear the message, (press exit) wait another minute and repeat step 2. If unit has not been properly calibrated a bad calibration parameter appears go to step 3 below.
- 3. Press (exit) until the main menu appears. Calibration can now be performed. For best results, allow unit to warm up for 20 minutes, then press (2=setup).
- 4. Press (1=calibration), choose manual mode.
- 5. Press (2=span concentration) Select the FID detector that the span concentration is for, then press the up or down arrows to select the correct unit of measure for the span gas. Enter the span calibration value; 500%CH, and press the enter key.
- 6. Next Zero the instrument. Press (3=zero) to start this process. Press enter for single detector units. Zero the instrument by using; Air Zero grade. Introduce zero gas into the analyzer through the probe, utilize plastic T bypass pressure valve. Press (enter) to start.
- 7. Wait for minimal change in values (about 15 seconds). Typically, the sample is stable when the first two digits of the reading do not change for 4-5 seconds. Press (enter) to except, press (1) to save.

- 8. Next calibrate with span gas. Press (4=span) Select the detector to be calibrated and press (enter) to start. Follow screen prompts. Wait for readings to stabilize (typically 10-15 seconds). Enter (1) to save.
- 9. Press (5=RF) to verify proper response factor. Confirm that response factor says RFO: default if not set to this value.
- 10. Press (EXIT) twice to return to main menu
- 11. Press (1= Run)

| A | <b>^</b> | e | 9   | B   |
|---|----------|---|-----|-----|
|   | •        | _ | . ( | K.J |

| Background | <b>Determination</b> | <b>Procedure</b> |
|------------|----------------------|------------------|
|            |                      |                  |

- 1. Upwind Reading (highest in 30 seconds): / / / ppm (1)
- 2. Downwind Reading (highest in 30 seconds): \( \frac{\frac{1}{68}}{\sqrt{68}} \) ppm (2)

Calculate Background Value:  $(1)+(2) = \frac{3.24}{}$ 

2

Performed By: Ron Smith Time: 0800 Date: 3/28/19

- 8. Next calibrate with span gas. Press (4=span) Select the detector to be calibrated and press (enter) to start. Follow screen prompts. Wait for readings to stabilize (typically 10-15 seconds). Enter (1) to save.
- 9. Press (5=RF) to verify proper response factor. Confirm that response factor says RFO: default if not set to this value.
- 10. Press (EXIT) twice to return to main menu

ODA

11. Press (1= Run)

|      |     |     | DD |     |
|------|-----|-----|----|-----|
| 9a _ | _ f | Ph. |    | Des |

**Background Determination Procedure** 

- 1. Upwind Reading (highest in 30 seconds): 1. 5 ppm (1)
- 2. Downwind Reading (highest in 30 seconds):  $\frac{23.13}{23.8}$  ppm (2)

  Calculate Background Value:  $\frac{(1)+(2)}{2} = \frac{12.38}{2}$

2

Performed By: RON SMILE Time: 0800 Date: 3/28/19

# Marathon County Solid Waste

# **Daily Surface Monitoring Log**

|                 | RRR  |         |
|-----------------|--|---------|
| Landfill Name:  | Marathon County Landfill  On the County Landfill  On the County Landfill |         |
| Performed By:   | ////> Date: $3/28//9$ Time: $0.80%$                                      |         |
| Temperature: _  | 38 Sky: Sunny Ground: damp   |         |
| Barometric Pre  | essure: $29.98$ Barometric Pressure end: $30.09$                         | -       |
| Barometric Tre  | end: $1500$ Wind: $7000$   |         |
| Location of Le  | ak: No Detects   |         |
|                 | Garbage Odor   |         |
| Time:           | Concentration of leak:   | _(ppm)  |
| Location of lea | ak:  |         |
| Time:           | Concentration of leak:   | _ (ppm) |
| Location of le  | ak:  |         |
| Timo:           | Concentration of leak:   | (ppm)   |

# **Marathon County Solid Waste**

# **Daily Surface Monitoring Log**

| Landfill Name: <u>Mar</u> | athon County Landfill Area           |         |
|---------------------------|--------------------------------------|---------|
| Performed By: <u>KIN</u>  | S Date: 3/28/19 Time: 0801           |         |
| Temperature: 38           | Sky: Sonny Ground: damp              |         |
| Barometric Pressure:      | 29.98 Barometric Pressure end: 30.04 |         |
| Barometric Trend: 🔨       | Sing Wind: 7 NNW                     |         |
| Location of Leak:         | No Detect                            |         |
| Time:                     | Concentration of leak:               | (ppm)   |
| Location of leak:         |                                      |         |
| Time:                     | Concentration of leak:               | _ (ppm) |
| Location of leak:         |                                      |         |
| Timos                     | Concentration of leak:               | (ppm)   |

1st 04, 2019

# Marathon County Solid Waste

## SEM Calibration Precision Test Record

| Landfill Name: Marathon County LF   |
|---|
| Monitoring Date: $3/28/19$ Performed By $R_{NN} + M_{N}$                            |
| Expiration Date: June 2019 Time 0800  |
| Instrument Make: <u>Thermo Fisher Scientific</u> Model: <u>TVA1000B</u>             |
| S/N:0115248137  |
|   |
| Measurement #1:   |
| Meter Reading for Zero Air: $-\frac{\partial_1/4}{}$ ppm(1)                         |
| Meter Reading for Calibration Gas: $\frac{494}{9}$ pmm (2)                          |
| Measurement #2:   |
| Meter Reading for Zero Air: $\sim 0./0$ ppm (3)                                     |
| Meter Reading for Calibration Gas: $495$ ppm (4)                                    |
| Measurement #3:   |
| Meter Reading for Zero Air: $\frac{0.9}{1.00}$ ppm (5)                              |
| Meter Reading for Calibration Gas: $\frac{796}{96}$ ppm (6)                         |
| Calculate Precision:  |
| (.002)  |
| $\frac{[500-(2)]+[500-(4)]+[500-(6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$ |
| =% (must be less than 10%)  |

3/28/11 BBR SEM

Garbage odor

h 2017 Air.pdf - Adobe Reader Total Est solution Young till redinance Tours " - violations. Chidani Surace Vedel-1 SECOND GUARTER 2017 QUARTERLY AIRSPACE SURVEY RESULTS Tend fill staken. Original Surface Model: Total Cut Valines. . 36% THIRD QUARTER 3/20/19 Total fill technic Otiqual Surface Vodel: Final Surface Vodelford for volume FOURTH CUARTER 11

Not Moniturel Luring 1st, 3-lor 4th Qtr LEGEND Just 2NR Qtr GAS SYSTEM OTHER VISIBLE OBJECTS SOIL GAS MONITORING PROBE + LEACHATE HEAD WELLS SEM PATTERN OTHER PIPES TRAIL 1 TRAIL 2 0 PVC PIPE TRAIL 3 X LYSIMETER (MANHOLE) TRAIL 4 1380 TRAIL 5 1 GAS EXTRACTION WELL 1370 1370 STAR 1380 1390 1400 D CE PA CST 0 7/21/2006 and B\2006-001-05\dwg\2131SRF-EM-MON 062007.dwg LHWS THE 1400 1330 1380 1370 1360 -1350 1350-Projects\MCLF AREA A LANDFILL JULY 2006 SURFACE EMISSION MONITORING SCALE SHEET 1"= 200 BECHER-HOPPE ASSOCIATES .... INITIALS ENGINEERS ARCHITECTS SCIENTISTS
330 Fourth Street P.O. Bar 2000 - Ilaucu, N - 54402-2000
Tel 715-245-2000 - Faz 715-345-2008 - Immishasoc.com MARATHON COUNTY KRS PROJECT SOLID WASTE DEPARTMENT 2006.001.05

15+ Qtr 2019

# Marathon County Solid Waste

| instrument kesponse lime lest kecord  |
|---|
| Landfill Name: Marathon County LF Monitoring Date: 3/28/19  |
| Time: Instrument Make: Thermo Fisher Scientific   |
| Model:TVA1000B  |
| Measurement #1:   |
| Stabilize Reading Using Calibration Gas: 494 ppm  |
| 90% of the Stabilized Reading = $444.6$ ppm   |
| Time to reach 90% of stabilized reading after switching from zero air to calibration gas: $4$ seconds (1) |
| Measurement #2:   |
| Stabilize Reading Using Calibration Gas: $\frac{\sqrt{95}}{}$ ppm   |
| 90% of the Stabilized Reading = $445.5$ ppm   |
| Time to reach 90% of stabilized reading after switching from zero air to calibration gas:                 |
| Measurement #3:   |
| Stabilize Reading Using Calibration Gas: $\frac{49b}{2}$ ppm  |
| 90% of the Stabilized Reading = 446.4 ppm   |
| Time to reach 90% of stabilized reading after switching from zero air to calibration gas:  seconds (3)    |
| Calculate Response Time:  |
| (1)+(2)+(3) = 3.66 seconds (must be less than 30 sec)   |
| Performed By: Row Smith   |

#### **Marathon County Solid Waste**

#### **Surface Emissions Monitoring**

### Calibration Procedure and Background Determination Report

Landfill name: Marathon County Landfill

Instrument make: Thermo Fisher Scientific, Model: TVA1000B,

S/N: 0115248137

#### **Calibration Procedure**

- 1. Install filled hydrogen tank, attach probe/readout device; turn on analyzer and hydrogen supply valve.
- 2. Wait 4-5 minutes for proper hydrogen flow, then press; 1 = run. The unit will ignite and display readings. If flame out message appears, clear the message, (press exit) wait another minute and repeat step 2. If unit has not been properly calibrated a bad calibration parameter appears go to step 3 below.
- 3. Press (exit) until the main menu appears. Calibration can now be performed. For best results, allow unit to warm up for 20 minutes, then press (2=setup).
- 4. Press (1=calibration), choose manual mode.
- 5. Press (2=span concentration) Select the FID detector that the span concentration is for, then press the up or down arrows to select the correct unit of measure for the span gas. Enter the span calibration value; 500%CH, and press the enter key.
- 6. Next Zero the instrument. Press (3=zero) to start this process. Press enter for single detector units. Zero the instrument by using; Air Zero grade. Introduce zero gas into the analyzer through the probe, utilize plastic T bypass pressure valve. Press (enter) to start.
- 7. Wait for minimal change in values (about 15 seconds). Typically, the sample is stable when the first two digits of the reading do not change for 4-5 seconds. Press (enter) to except, press (1) to save.

- 8. Next calibrate with span gas. Press (4=span) Select the detector to be calibrated and press (enter) to start. Follow screen prompts. Wait for readings to stabilize (typically 10-15 seconds). Enter (1) to save.
- 9. Press (5=RF) to verify proper response factor. Confirm that response factor says RFO: default if not set to this value.
- Press (EXIT) twice to return to main menu 10.
- Press (1= Run) 11.

# **Background Determination Procedure**

AHB

- 1, 65 ppm (1) 1. Upwind Reading (highest in 30 seconds):
- Downwind Reading (highest in 30 seconds): 4,83 ppm (2)

(1)+(2) = 3/24Calculate Background Value:

2

Up wind Keading 0.94 ppm (1)

Downwind Reading 7.33 ppm(2)

Calculate Background 1+2 = 4,24

Value

# SEM Calibration Precision Test Record

| Landfill Name: Marathon County LF                                    | 0 4 11                                      |
|--|---|
| Monitoring Date: $520/9$ Performed B                                 | y RONSMith                                  |
| Monitoring Date: $500/9$ Performed B Expiration Date: $9/9$ Time $0$ | 2800  |
| Instrument Make: <u>Thermo Fisher Scientific</u>                     |   |
| S/N:0115248137   |   |
|  |   |
| Measurement #1:  |   |
| Meter Reading for Zero Air:  | 0.25 ppm(1)                                 |
| Meter Reading for Calibration Gas:                                   | 495 pmm (2)                                 |
| Measurement #2:  |   |
| Meter Reading for Zero Air:  | <u>0</u> , 55 <sub>ppm (3)</sub>            |
| Meter Reading for Calibration Gas:                                   | 494 ppm (4)                                 |
| Measurement #3:  |   |
| Meter Reading for Zero Air:  | 0.63 ppm (5)                                |
| Meter Reading for Calibration Gas:                                   | 495 ppm (6)                                 |
| Calculate Precision:   | 494   |
|  | (.002)                                      |
| [500-(2)]+[500-(4)]+[500-<br>3                                       | $(6)$ ] × $\frac{1}{500}$ × $\frac{100}{1}$ |
| = <u>/ (</u>   | oe less than 10%)                           |

| instrument kesponse ilme lest kecord   |
|--|
| Landfill Name: <u>Marathon County LF</u> Monitoring Date:  |
| Time: Instrument Make: Thermo Fisher Scientific  |
| Model:TVA1000BS/N:0115248137   |
| Measurement #1:  |
| Stabilize Reading Using Calibration Gas: 495 ppm   |
| 90% of the Stabilized Reading = $445.5^{\circ}$ ppm  |
| Time to reach 90% of stabilized reading after switching from zero air to                               |
| calibration gas: seconds (1)   |
| Measurement #2:  |
| Stabilize Reading Using Calibration Gas: $\frac{494}{}$ ppm  |
| 90% of the Stabilized Reading = $447.60$ ppm   |
| Time to reach 90% of stabilized reading after switching from zero air to                               |
| calibration gas: seconds (2)   |
| Measurement #3:  |
| Stabilize Reading Using Calibration Gas: $\frac{\sqrt{94}}{\sqrt{94}}$ ppm                             |
| 90% of the Stabilized Reading = $\frac{44460}{9}$ ppm  |
| Time to reach 90% of stabilized reading after switching from zero air to                               |
| calibration gas:   |
| Calculate Response Time:   |
| (1)+(2)+(3) = 3,33 seconds (must be less than 30 sec)  |
| Calculate Response Time: $(1)+(2)+(3) = 3,33 \text{ seconds (must be less than 30 sec)}$ Performed By: |

# **Daily Surface Monitoring Log**

AreaA

| Landfill Name: _ | Marathon County Landfill                    |        |
|------------------|---|--------|
| Performed By: _  | Row S Date: 5/20/19 Time: 0800              |        |
| Temperature:     | 46 Sky: Paith Olly Ground: damp             |        |
| Barometric Pres  | ssure: 30.18 Barometric Pressure end: 30.16 | librar |
| Barometric Tre   | nd: Wind: $E 5mpL$                          |        |
| Location of Lea  | k: No Détect                                |        |
| Time:            | Concentration of leak:                      | _(ppm) |
| Location of lea  | k:  |        |
| Time:            | Concentration of leak:                      | (ppm)  |
| Location of lea  | k:  |        |
| Time:            | Concentration of leak:                      | (ppm)  |

# **Daily Surface Monitoring Log**



| Landfill Name: _ | Marathon County Landfill                                       |  |
|------------------|--|--|
| Performed By: _/ | RonS Date: $5/20/19$ Time: $O800$                              | <u>)                                    </u> |
| Temperature:     | RONS Date: 5/20/19 Time: 0800 46 Sky: lastly Clos Ground: Lamp |  |
| Barometric Pres  | sure: <u>30.18</u> Barometric Pressure end: <u>30.7</u>        | <u></u>                                      |
| Barometric Tren  | d: Wind: _E 5mph   |  |
| Location of Leal | No Detects   | ***  |
| Time:            | Concentration of leak:   | (ppm)  |
| Location of leak | K:   |  |
| Time:            | Concentration of leak:   | (ppm)  |
| Location of leas | K:   |  |
|                  | Concentration of leak:   | (mnm)  |



# **Daily Surface Monitoring Log**

| Landfill Name:Ma    | arathon County Landfill                     |       |
|---------------------|---|-------|
|                     | NS Date: $\frac{5/20//9}{19}$ Time: $0.600$ |       |
| Temperature: 46     | Sky: Partly Clly Ground: Samy               |       |
|                     | e: 30.18 Barometric Pressure end: 30.16     |       |
| Barometric Trend: _ | Wind: $E 5mpL$                              |       |
| Location of Leak:   | No Detects                                  |       |
| Time:               | Concentration of leak:                      | (ppm) |
| Location of leak:   |   |       |
| Time:               | Concentration of leak:                      | (ppm) |
| Location of leak:   |   |       |
|                     | Concentration of leak:                      | (mm)  |

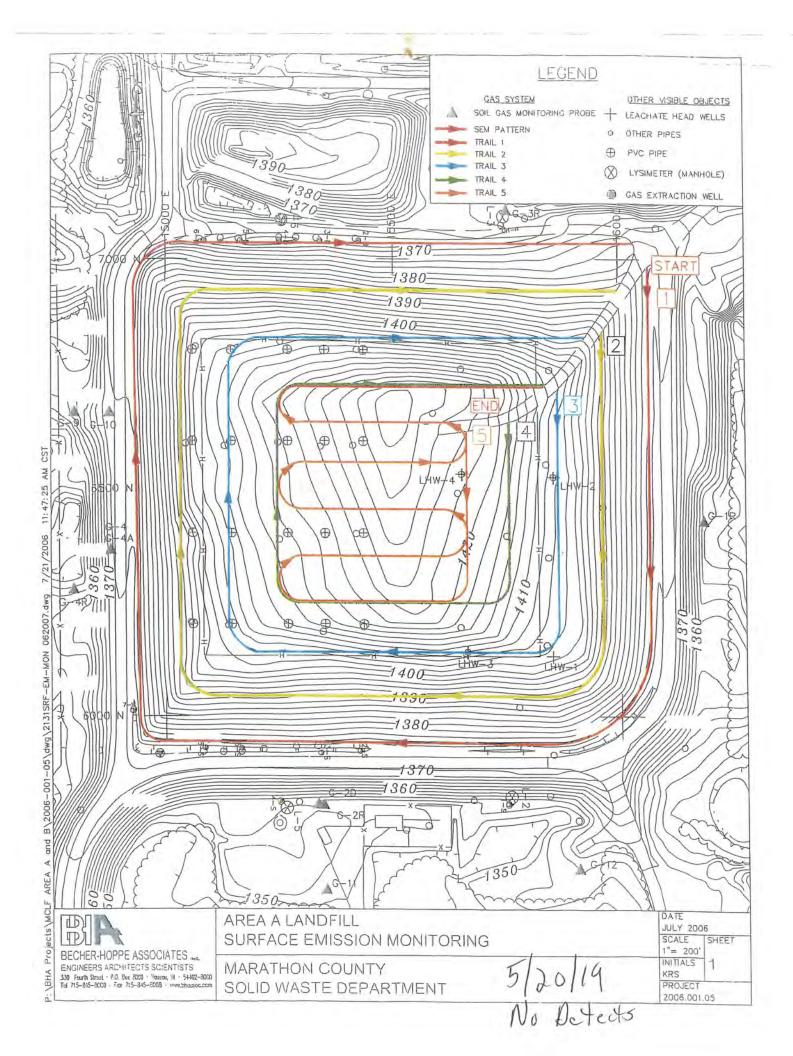
(1 of 4) : 36%

4

**以** 

41

Poje Total Street, Total City Column Total " - volume Chinami Surrane Medel: 2017 QUARTERLY AIRSPACE SURVEY RESULTS
SECOND QUARTER
THIRD QUARTER Treed fill states . Dugingt Surface Model: Final Surface Model: Total Out Matiness. Total Ell tichian Treal Circ Halima Ottgivil Syffice Vadel: Final Surface Vodel: FOURTH QUARTER



E 17,500 E 17,600 E 17,700 E 17,800



# BBR SEM .

2017 QUARTERLY AIRSPACE SURVEY RESULTS

SECOND QUARTER

| 20   | 18 QUARTERLY        | 2018 QUARTERLY AIRSPACE SURVEY RESULTS          | LTS               |
|--|---------------------|---|-------------------|
| FIRST QUARTER                                | UARTER              | SECOND  | SECOND QUARTER    |
| riginal Surface Model:<br>nal Surface Model: | 12-14-17<br>3-21-18 | Original Surface Model:<br>Final Surface Model: | 3-21-18<br>6-5-18 |
| otal Cut Volume:                             | 6,191 C.Y.          | Total Cut Volume:                               | 4,071 C.Y.        |
| otal Fill Volume:                            | 56,905 C.Y.         | Total Fill Volume:                              | 60,357 C.Y.       |
| THIRD Q                                      | THIRD QUARTER       | FOURTH  | FOURTH QUARTER    |
| riginal Surface Model:<br>nal Surface Model: |                     | Original Surface Model:<br>Final Surface Model: |                   |
| otal Cut Volume:<br>otal Fill Volume:        |                     | Total Cut Volume:<br>Total Fill Volume:         |                   |

LEGEND

FINAL SURFACE CONTOURS (6-5-18)

ORIGINAL SURFACE CONTOURS (3-21-18)

LIMIT OF WASTE

PHASE LIMITS

6,697 C.Y. 58,516 C.Y.

Total Cut Volume: Total Fill Volume:

11,395 C.Y. 52,884 C.Y. 9-14-17

6-19-17 9-14-17

Original Surface Model: Final Surface Model:

FOURTH QUARTER

5,282 C.Y. 74,276 C.Y.

Total Cut Volume: Total Fill Volume:

6,918 C.Y. 62,183 C.Y.

3-21-17

Original Surface Model: Final Surface Model:

3-21-17 6-19-17

- ORIGINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON MARCH 21, 2018.
- FINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON JUNE 5, 2018.

4.700

| ١    | 130          |                 |
|------|--------------|-----------------|
|      | APPROVED BY: | <b>EXISTING</b> |
| מל מ |              | CONDITION       |
|      | DRAWN BY:    | S               |
|      | WBE          |                 |

| CQM, INC. | RIN             | MARATHON COL               | DATE: JUNE 2018 | SCALE: 1"=130" APPRO |
|-----------|-----------------|----------------------------|-----------------|----------------------|
| INC.      | IGLE, WISCONSIN | MARATHON COUNTY LANDFILL . | APS             | APPROVED BY:         |
| FIGURE: 1 | 1 2 2           | - BLUEBIRD                 | REVISED:        | DRAWN BY: WBE        |

E 17,900

E 18,000

E 18,100

E 18,200

E 18,400

E 18,500

No Octeds 119

# CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

| LANDFILL NAME: Marathon County Landfill - Area A                            |
|---|
| INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137         |
| Calibration Procedure   |
| 1. Allow instrument to internally zero itself while introducing zero air.   |
| 2. Introduce the calibration gas into the probe.  Stable reading = _500 ppm |
| 3. Adjust meter to read 500 ppm.  |
| Background Determination Procedure  |
| 1. Upwind Reading (highest in 30 seconds): ppm (1)                          |
| 2. Downwind Reading (highest in 30 seconds): ppm (2)                        |
| Calculate Background Value: $\frac{(1) + (2)}{2}$                           |
| Background = $0.0$ ppm  |

PERFORMED BY: <u>Jalen Thomas</u> TIME: <u>10:00 AM</u> DATE: <u>9/4/2019</u>

# CALIBRATION PRECISION TEST RECORD

LANDFILL NAME: Marathon County Landfill - Area A

INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137

**MEASUREMENT #1:** 

Meter Reading for Zero Air: \_\_\_\_\_\_ ppm (1)

Meter Reading for Calibration Gas: 490 ppm (2)

**MEASUREMENT #2:** 

Meter Reading for Zero Air: 0.0 ppm (3)

Meter Reading for Calibration Gas: 488 ppm (4)

**MEASUREMENT #3:** 

Meter Reading for Zero Air: 0.0 ppm (5)

Meter Reading for Calibration Gas: 489 ppm (6)

**CALCULATE PRECISION:** 

 $\frac{[500 - (2)] + [500 - (4)] + [500 - (6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$ 

= <u>2.2</u> % (must be less than 10%)

PERFORMED BY: Jalen Thomas TIME: 10:00 AM DATE: 9/4/2019

# INSTRUMENT RESPONSE TIME TEST RECORD

**LANDFILL NAME: Marathon County Landfill - Area A** INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137 **MEASUREMENT #1: Stabilized Reading Using Calibration Gas:** 483 ppm 90% of the Stabilized Reading: 434.7\_\_\_ppm Time to Reach 90% of Stabilized reading After switching from Zero Air to **Calibration Gas** 3.8 seconds (1) **MEASUREMENT #2: Stabilized Reading Using Calibration Gas:** 484 ppm 90% of the Stabilized Reading: 435.9 ppm Time Reach 90% of Stabilized Reading After switching from Zero Air to **Calibration Gas** 3 seconds (2) **MEASUREMENT #3: Stabilized Reading Using Calibration Gas:** 480 \_ppm 432 ppm 90% of the Stabilized Reading: Time to Reach 90% of Stabilized Reading After switching from Zero Air to **Calibration Gas** 3.5 seconds (3)**CALCULATE RESPONSE TIME:**  $\frac{(1)+(2)+(3)}{3}$ = 3.43 SECONDS (MUST BE LESS THAN 30 SECONDS)

DATE: 9/4/2019

PERFORMED BY: Jalen Thomas TIME: 10:00 AM

# DAILY SURFACE MONITORING LOG

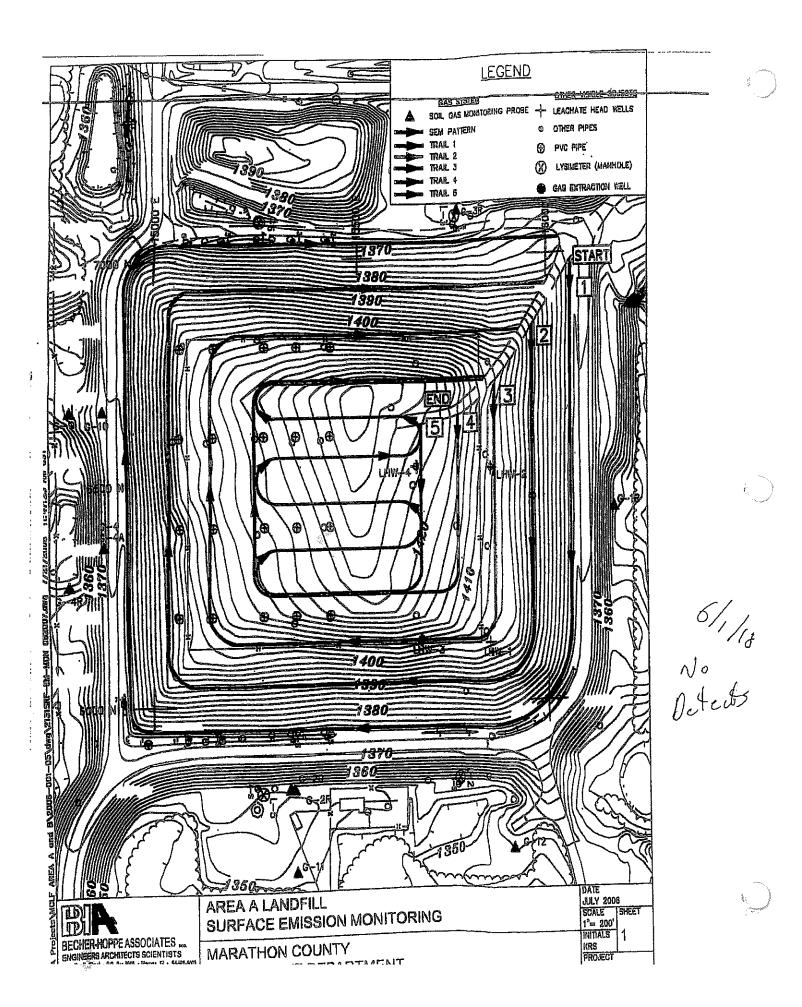
PERFORMED BY: <u>Jalen Thomas</u>

**START TIME: 10:00 AM** 

DATE: 9/4/2019\_

LANDFILL NAME: Marathon County Landfill - Area A

| Location Identifier of Leak | <b>Location and Time</b> | Concentration of<br>Leak (ppm) |
|-----------------------------|--------------------------|--------------------------------|
| No detections on site       |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
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|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |



# CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

| LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge          |
|---|
| INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137         |
| Calibration Procedure   |
| 1. Allow instrument to internally zero itself while introducing zero air.   |
| 2. Introduce the calibration gas into the probe.  Stable reading = _500 ppm |
| 3. Adjust meter to read 500 ppm.  |
| Background Determination Procedure  |
| 1. Upwind Reading (highest in 30 seconds): ppm (1)                          |
| 2. Downwind Reading (highest in 30 seconds): 2.5 ppm (2)                    |
| Calculate Background Value: $\frac{(1) + (2)}{2}$                           |
| Background = 1.25 ppm   |

PERFORMED BY: <u>Jalen Thomas</u> TIME: <u>11:00 AM</u> DATE: <u>9/25/2019</u>

# CALIBRATION PRECISION TEST RECORD

LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge

INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137

# **MEASUREMENT #1:**

Meter Reading for Zero Air: \_\_\_\_\_\_ ppm (1)

Meter Reading for Calibration Gas: 488 ppm (2)

# **MEASUREMENT #2:**

Meter Reading for Zero Air: 0.0 ppm (3)

Meter Reading for Calibration Gas: 490 ppm (4)

# **MEASUREMENT #3:**

Meter Reading for Zero Air: 0.0 ppm (5)

Meter Reading for Calibration Gas: 490 ppm (6)

# **CALCULATE PRECISION:**

$$\frac{[500 - (2)] + [500 - (4)] + [500 - (6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$$

= 2.1 % (must be less than 10%)

PERFORMED BY: Jalen Thomas TIME: 11:00 AM DATE: 9/25/2019

# INSTRUMENT RESPONSE TIME TEST RECORD

LANDFILL NAME: <u>Marathon County Landfill - Area B & Blue Bird Ridge</u>

INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137

**MEASUREMENT #1:** 

Stabilized Reading Using Calibration Gas: 480 ppm

90% of the Stabilized Reading: 432 ppm

Time to Reach 90% of Stabilized reading

After switching from Zero Air to

Calibration Gas <u>3.5</u> seconds (1)

**MEASUREMENT #2:** 

Stabilized Reading Using Calibration Gas: 480 ppm

90% of the Stabilized Reading: 432 ppm

Time Reach 90% of Stabilized Reading

After switching from Zero Air to

Calibration Gas <u>3.5</u> seconds (2)

**MEASUREMENT #3:** 

Stabilized Reading Using Calibration Gas: 482 ppm

90% of the Stabilized Reading: 433.8 ppm

Time to Reach 90% of Stabilized Reading

After switching from Zero Air to

Calibration Gas 3.5 seconds (3)

**CALCULATE RESPONSE TIME:** 

 $\frac{(1)+(2)+(3)}{3}$ 

= 3.5 SECONDS (MUST BE LESS THAN 30 SECONDS)

PERFORMED BY: Jalen Thomas TIME: 11:00 AM DATE: 9/25/2019

\_

# DAILY SURFACE MONITORING LOG

PERFORMED BY: Jalen Thomas

**START TIME: 11:00 AM** 

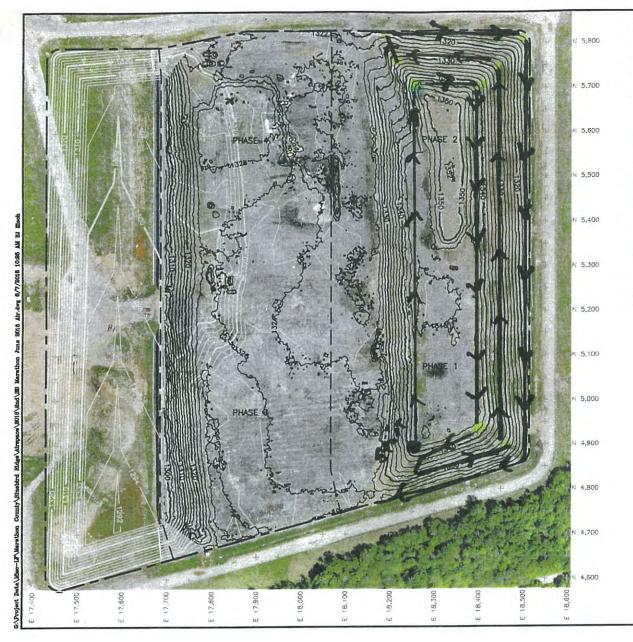
DATE: 9/25/2019\_

LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge

| Location Identifier of Leak | <b>Location and Time</b> | Concentration of<br>Leak (ppm) |
|-----------------------------|--------------------------|--------------------------------|
| No detections on site       |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
|                             |                          |                                |
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|                             |                          |                                |
|                             |                          |                                |

n 2017 Ampoli Adope Reade (1 of 4)..36% = 3017 QUARTERLY AIRSPACE SURVEY RESULTS SECOND GUARTER THIRD QUARTER FOURTH QUARTER Original Surface Model: Original Surface Model: Tred fall daling. Total fill telam

# BBR SEM Trail - No 8/8/15



| 20  | 17 QUARTERLY        | AIRSPACE SURVEY RESUL                           | .15                 |
|---|---------------------|---|---------------------|
| FIRST Q   | UARTER              | SECOND  | QUARTER             |
| Original Surface Model:<br>Final Surface Model: | 12-19-16<br>3-21-17 | Original Surface Model:<br>Final Surface Model: | 3-21-17<br>6-19-17  |
| Total Cut Volume:                               | 5,282 C.Y.          | Total Cut Volume:                               | 6,918 C.Y.          |
| Total Fill Volume:                              | 74,276 C.Y.         | Total Fill Volume:                              | 62,183 C.Y.         |
| THIRD Q   | UARTER              | FOURTH (  | QUARTER             |
| Original Surface Model:<br>Final Surface Model: | 6-19-17<br>9-14-17  | Original Surface Model:<br>Final Surface Model: | 9-14-17<br>12-14-17 |
| Total Cut Volume:                               | 6,697 C.Y.          | Total Cut Volume:                               | 11,395 C.Y.         |
| Total Fill Volume:                              | 58,516 C.Y.         | Total Fill Volume:                              | 52,884 C.Y.         |

| 20  | 018 QUARTERLY             | AIRSPACE SURVEY RESUL                           | _TS                       |
|---|---------------------------|---|---------------------------|
| FIRST (   | QUARTER                   | SECOND  | QUARTER                   |
| Original Surface Model:<br>Final Surface Model: | 12-14-17<br>3-21-18       | Original Surface Model:<br>Final Surface Model: | 3-21-18<br>6-5-18         |
| Total Cut Volume:<br>Total Fill Volume:         | 6,191 C.Y.<br>56,905 C.Y. | Total Cut Volume:<br>Total Fill Volume:         | 4,071 C.Y.<br>60,357 C.Y. |
| THIRD (   | QUARTER                   | FOURTH (  | QUARTER                   |
| Original Surface Model:<br>Final Surface Model: |                           | Original Surface Model:<br>Final Surface Model: |                           |
| Total Cut Volume:<br>Total Fill Volume:         |                           | Total Cut Volume:<br>Total Fill Volume:         | X.                        |

### LEGEND

### NOTES:

- ORIGINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON MARCH 21, 2018.
- FINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON JUNE 5, 2018.

| SCALE: 1"=130"  | APPROVED BY:   | DRAWN BY: WBE |
|-----------------|----------------|---------------|
| DATE: JUNE 2018 | APS            | REVISED:      |
| MARATHON        | COUNTY LANDFI  | LL - BLUEBIRD |
|                 | RINGLE, WISCOI | NSIN          |
| CO              | M, INC.        | FIGURE:       |

# CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

| LANDFILL NAME: <u>Marathon County Landfill - Area B &amp; Blue Bird Ri</u> dge |
|--|
| INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137            |
| Calibration Procedure  |
| 1. Allow instrument to internally zero itself while introducing zero air.      |
| 2. Introduce the calibration gas into the probe.  Stable reading = _500 ppm    |
| 3. Adjust meter to read 500 ppm.   |
| Background Determination Procedure   |
| 1. Upwind Reading (highest in 30 seconds): ppm (1)                             |
| 2. Downwind Reading (highest in 30 seconds): 15 ppm (2)                        |
| Calculate Background Value: $\frac{(1) + (2)}{2}$                              |
| Background = $7.5$ ppm   |

PERFORMED BY: <u>Jalen Thomas</u> TIME: <u>8:00 AM</u> DATE: <u>12/24/201</u>9

# CALIBRATION PRECISION TEST RECORD

LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge

INSTRUMENT MAKE: Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137

# **MEASUREMENT #1:**

Meter Reading for Zero Air: \_\_\_\_\_\_ ppm (1)

Meter Reading for Calibration Gas: 485 ppm (2)

# **MEASUREMENT #2:**

Meter Reading for Zero Air: 0.0 ppm (3)

Meter Reading for Calibration Gas: 487 ppm (4)

# **MEASUREMENT #3:**

Meter Reading for Zero Air: 0.0 ppm (5)

Meter Reading for Calibration Gas: 486 ppm (6)

# **CALCULATE PRECISION:**

$$\frac{[500 - (2)] + [500 - (4)] + [500 - (6)]}{3} \times \frac{1}{500} \times \frac{100}{1}$$

= <u>2.8</u> % (must be less than 10%)

PERFORMED BY: Jalen Thomas TIME: 8:00 AM DATE: 12/24/2019

# INSTRUMENT RESPONSE TIME TEST RECORD

LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge

INSTRUMENT MAKE:Thermo Fisher MODEL: TVA100B-81020 S/N: 0115238137

**MEASUREMENT #1:** 

Stabilized Reading Using Calibration Gas: 484 ppm

90% of the Stabilized Reading: 435.6 ppm

Time to Reach 90% of Stabilized reading

After switching from Zero Air to

Calibration Gas <u>3.5</u> seconds (1)

**MEASUREMENT #2:** 

Stabilized Reading Using Calibration Gas: 485 ppm

90% of the Stabilized Reading: 436.5 ppm

Time Reach 90% of Stabilized Reading

After switching from Zero Air to

Calibration Gas 4.0 seconds (2)

**MEASUREMENT #3:** 

Stabilized Reading Using Calibration Gas: 485 ppm

90% of the Stabilized Reading: 436.5 ppm

Time to Reach 90% of Stabilized Reading

After switching from Zero Air to

Calibration Gas 4.0 seconds (3)

**CALCULATE RESPONSE TIME:** 

 $\frac{(1)+(2)+(3)}{3}$ 

= 3.83 SECONDS (MUST BE LESS THAN 30 SECONDS)

PERFORMED BY: Jalen Thomas TIME: 8:00 AM DATE: 12/24/2019

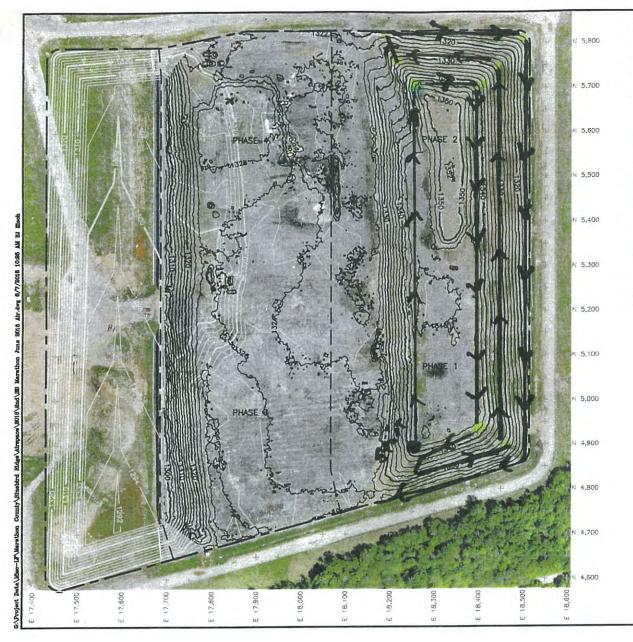
\_

# DAILY SURFACE MONITORING LOG

**PERFORMED BY: Jalen Thomas** START TIME: 8:00 AM DATE: <u>12/24/2019</u>\_ LANDFILL NAME: Marathon County Landfill - Area B & Blue Bird Ridge **Location and Time Location Identifier Concentration of** of Leak Leak (ppm) N/a

n 2017 Ampoli Adope Reade (1 of 4)..36% = 3017 QUARTERLY AIRSPACE SURVEY RESULTS SECOND GUARTER THIRD QUARTER FOURTH QUARTER Original Surface Model: Original Surface Model: Tred fall daling. Total fill telam

# BBR SEM Trail - No 8/8/15



| 20  | 17 QUARTERLY        | AIRSPACE SURVEY RESUL                           | .15                 |
|---|---------------------|---|---------------------|
| FIRST Q   | UARTER              | SECOND  | QUARTER             |
| Original Surface Model:<br>Final Surface Model: | 12-19-16<br>3-21-17 | Original Surface Model:<br>Final Surface Model: | 3-21-17<br>6-19-17  |
| Total Cut Volume:                               | 5,282 C.Y.          | Total Cut Volume:                               | 6,918 C.Y.          |
| Total Fill Volume:                              | 74,276 C.Y.         | Total Fill Volume:                              | 62,183 C.Y.         |
| THIRD Q   | UARTER              | FOURTH (  | QUARTER             |
| Original Surface Model:<br>Final Surface Model: | 6-19-17<br>9-14-17  | Original Surface Model:<br>Final Surface Model: | 9-14-17<br>12-14-17 |
| Total Cut Volume:                               | 6,697 C.Y.          | Total Cut Volume:                               | 11,395 C.Y.         |
| Total Fill Volume:                              | 58,516 C.Y.         | Total Fill Volume:                              | 52,884 C.Y.         |

| 20  | 018 QUARTERLY             | AIRSPACE SURVEY RESUL                           | _TS                       |
|---|---------------------------|---|---------------------------|
| FIRST (   | QUARTER                   | SECOND  | QUARTER                   |
| Original Surface Model:<br>Final Surface Model: | 12-14-17<br>3-21-18       | Original Surface Model:<br>Final Surface Model: | 3-21-18<br>6-5-18         |
| Total Cut Volume:<br>Total Fill Volume:         | 6,191 C.Y.<br>56,905 C.Y. | Total Cut Volume:<br>Total Fill Volume:         | 4,071 C.Y.<br>60,357 C.Y. |
| THIRD (   | QUARTER                   | FOURTH (  | QUARTER                   |
| Original Surface Model:<br>Final Surface Model: |                           | Original Surface Model:<br>Final Surface Model: |                           |
| Total Cut Volume:<br>Total Fill Volume:         |                           | Total Cut Volume:<br>Total Fill Volume:         | X.                        |

### LEGEND

### NOTES:

- ORIGINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON MARCH 21, 2018.
- FINAL SURFACE SURVEY PERFORMED BY CQM, INC. ON JUNE 5, 2018.

| SCALE: 1"=130"  | APPROVED BY:   | DRAWN BY: WBE |
|-----------------|----------------|---------------|
| DATE: JUNE 2018 | APS            | REVISED:      |
| MARATHON        | COUNTY LANDFI  | LL - BLUEBIRD |
|                 | RINGLE, WISCOI | NSIN          |
| CO              | M, INC.        | FIGURE:       |

# ATTACHMENT C 2019 LANDFILL GAS MAINLINE TO-15 LAB REPORT



November 4, 2019

Madison, WI 53717

Tetra Tech ATTN: Lee Daigle 8413 Excelsior Dr., Suite 160



# LABORATORY TEST RESULTS

Project Reference: Marathon County VOC
Project Number: MCLF-2019-VOC
Lab Number: K101506-01/02

Enclosed are results for sample(s) received 10/15/19 by Air Technology Laboratories. Samples were received intact. Analyses were performed according to specifications on the chain of custody provided with the sample(s).

# Report Narrative:

- Unless otherwise noted in the report, sample analyses were performed within method performance criteria and meet all requirements of the TNI Standards.
- The enclosed results relate only to the sample(s).

Preliminary results were e-mailed to Lee Daigle on 11/01/19.

ATL appreciates the opportunity to provide testing services to your company. If you have any questions regarding these results, please call me at (626) 964-4032.

Sincerely,

Mark Johnson

**Operations Manager** 

MJohnson@AirTechLabs.com

Note: The cover letter is an integral part of this analytical report.

|   | 18501 E. Gale Ave Suite 130 |                              | CHAIN OF           | CHAIN OF CUSTODY RECORD |  |         |
|---|-----------------------------|------------------------------|--------------------|-------------------------|--|---------|
| できるこうころには、  | Industry, CA 91748          | TURNAROUND TIME              | JND TIME           | DELIVERABLES PAGE:      | PAGE: OF   |         |
|   | Ph: 626-964-4032            | Standard X                   | 48 hours           | EDD N                   | Condition upon receipt:  |         |
| 1   | 6-964-5832                  | Same Day                     | 72 hours           | EDF D                   | Sealed Yes   | □ 8     |
| Project No .: MCLF - 2019 - VOC   |                             | 24 hours                     | 96 hours           | LEVEL 3                 | Intact Yes   | □<br>8  |
| Project Name: WARATHLY CO VOC   |                             | Other:                       |                    | LEVEL 4                 | Chilled  | _ deg C |
| Report To: LEE DAIGLE   |                             | BILLING                      | NG                 | A                       | ANALYSIS REQUEST   |         |
| Company: TETTA TECH   |                             | P.O. No.: 10201901           | 901 aprovação      |                         |  |         |
| Street: 8413 Excessor DR Sunte 1.   | 60                          | Bill to: Marathen            | Co. Solid Hast     |                         |  |         |
| City/State/Zip: MADISCN MI \$5717   |                             | 1729 CO SAR                  | SAR Highwa 24      |                         |  |         |
| Phone& Fax: 951-236-2520  |                             | Ringle WI                    |                    |                         |  |         |
| -   |                             |                              |                    | - Q                     |  |         |
| LAB USE ONLY SAMPLE IDENTIFICATION  | ICATION                     | 317E<br>3TE<br>1PLE<br>319IE | RIX<br>AINER<br>PE |                         |  |         |
|   |                             | AQ<br>MAS                    | CONT               | 3                       |  |         |
| ) 1#000 -01 MAINLINE VOC #1   | (N4127)                     | MS2:11 61/6/01               | UF6                | ×                       |  |         |
|   | 1378)                       | 14:000                       | 1 1                | ×                       |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  |         |
|   |                             |                              |                    |                         |  | П       |
| TO THE THAT WORK MAINTAIN OF THE THAT WAS THE TO THE TO THE THE TO THE T | 10/91                       | DATE/TIME                    | COMMENTS           |                         |  |         |
| HOMAS TETTA   | 10/9                        | DATE/TIME                    | 75 15              |                         | 1/1  |         |
| DATE/TIME<br> U/ 10 /19   | Feb ex                      | DATE/TIME                    |                    | 0                       |  | K101    |
| 10 15 1 1 1 2 SWHAT BY  | www                         | DATECTIME 140                |                    |                         |  | 300     |
| PAIETIME  |                             | ATE/TIME                     |                    |                         |  |         |
| METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS   | S Courier ATLI Other        | er .                         |                    |                         |  |         |
| DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy  |                             | servation: H=HCL             | N=None / Contain   | er: B=Bag C=Car         | N=None / Container: B=Bag C=Can V=VOA O=Other Rev. 03 - 5/7/09 | 5/7/09  |

Date 10.31-19

Client:

Tetra Tech

Attn:

Lee Daigle

Project Name:

**Marathon County VOC** 

Project No.:

MCLF-2019-VOC

Date Received:

10/15/2019

Matrix:

Air

# Fixed Gases by EPA METHOD 3C

| Lab                | No.:  | K101506-01        |        | K1015    | 06-02   |  |   |
|--------------------|-------|-------------------|--------|----------|---------|--|---|
| Client Sample 1    | I.D.: | Mainline VOC #1   |        | Mainline | VOC #2  |  |   |
| Date/Time Samp     | led;  |                   |        | 10/9/19  | 11:08   |  |   |
| Date/Time Analy    | zed:  | 10/17/19 11:57    |        | 10/17/19 | 9 12:11 |  |   |
| QC Batch           | No.:  | 191017GC8A1<br>CM |        | 1910170  | GC8A1   |  |   |
| Analyst Initi      | ials: |                   |        | CM CM    |         |  |   |
| Dilution Fac       | tor:  | 4.4               |        | 4.2      |         |  |   |
| ANALYTE (Un        | its)  | Result            | RL     | Result   | RL      |  |   |
| Nitrogen (%        | v/v)  | 12                | 4.4    | 12       | 4.2     |  |   |
| Oxygen/Argon (%    | v/v)  | ND                | 2.2    | ND       | 2.1     |  | 1 |
| Carbon Dioxide (%  | v/v)  | 37                | 0.044  | 37       | 0.042   |  |   |
| Methane (%         | v/v)  | 54                | 0.0044 | 55       | 0.0042  |  |   |
| Carbon Monoxide (% | v/v)  | ND                | 0.0044 | ND       | 0.0042  |  |   |

RL = Reporting Limit

ND = Not detected at or above the RL.

Reviewed/Approved By:

Mark Johnson

**Operations Manager** 

The cover letter is an integral part of this analytical report

Project Name: Marathon County VOC

Project No.: MCLF-2019-VOC

Date Received: 10/15/19
Matrix: Air
Reporting Units: ug/L

# **EPA Method TO15**

| Lab No.:                      | K1015          | 06-01      | K1015          | 06-02      |         |         |
|-------------------------------|----------------|------------|----------------|------------|---------|---------|
| Client Sample I.D.:           | Mainline       | VOC #1     | Mainline       | VOC #2     |         |         |
| Date/Time Sampled:            | 10/9/19        | 11:25      | 10/9/19        | 11:08      |         |         |
| Date/Time Analyzed:           | 10/25/19       | 14:12      | 10/25/19       | 14:47      |         |         |
| QC Batch No.:                 | 191025N        | MS2A1      | 191025N        | MS2A1      |         |         |
| Analyst Initials:             | AS             | S          | A.             | S          |         |         |
| Dilution Factor:              | 44             | 1          | 42             | 2          |         | - 5.    |
| ANALYTE                       | Result<br>ug/L | RL<br>ug/L | Result<br>ug/L | RL<br>ug/L |         |         |
| Dichlorodifluoromethane (12)  | 1.0            | 0.22       | 1.1            | 0.21       |         |         |
| Chloromethane                 | ND             | 0.18       | ND             | 0.17       | - 1     |         |
| 1,2-Cl-1,1,2,2-F ethane (114) | ND             | 0.31       | 0.30           | 0.29       | = -   - | -11 1 1 |
| Vinyl Chloride                | 2.4            | 0.11       | 3.2            | 0.11       |         |         |
| Bromomethane                  | ND             | 0.17       | ND             | 0.16       |         | 11 12   |
| Chloroethane                  | ND.            | 0.12       | 0.17           | 0.11       |         | 1 14-24 |
| Trichlorofluoromethane (11)   | 0.70           | 0.25       | 0.79           | 0.24       |         |         |
| 1,1-Dichloroethene            | ND             | 0.17       | ND             | 0.17       |         |         |
| Carbon Disulfide              | 0.92           | 0.68       | 1.4            | 0.66       |         |         |
| 1,1,2-Cl 1,2,2-F ethane (113) | ND             | 0.34       | ND             | 0.32       |         |         |
| Acetone                       | 4.1            | 0.52       | 4.9            | 0.50       |         |         |
| Methylene Chloride            | 0.26           | 0.15       | ND             | 0.15       |         |         |
| t-1,2-Dichloroethene          | ND             | 0.17       | 0.17           | 0.17       |         |         |
| 1,1-Dichloroethane            | 0.23           | 0.18       | 0.29           | 0.17       |         |         |
| Vinyl Acetate                 | ND             | 0.77       | ND             | 0.74       |         |         |
| c-1,2-Dichloroethene          | 0.90           | 0.17       | 1.2            | 0.17       |         | _=_,    |
| 2-Butanone                    | 4.1            | 0.13       | 5.3            | 0.12       |         |         |
| t-Butyl Methyl Ether (MTBE)   | ND             | 0.16       | ND             | 0.15       |         |         |
| Chloroform                    | ND             | 0.21       | ND             | 0.21       |         |         |
| 1,1,1-Trichloroethane         | ND             | 0.24       | ND             | 0.23       |         |         |
| Carbon Tetrachloride          | ND             | 0.28       | ND             | 0.26       |         |         |
| Benzene                       | 2.0            | 0.14       | 2.6            | 0.13       |         |         |
| 1,2-Dichloroethane            | 0.34           | 0.18       | 0.50           | 0.17       |         |         |
| Trichloroethene               | 0.43           | 0.24       | 0.46           | 0.23       | == 1    |         |
| 1,2-Dichloropropane           | ND             | 0.20       | ND             | 0.19       |         |         |
| Bromodichloromethane          | ND             | 0.29       | ND             | 0.28       |         |         |
| c-1,3-Dichloropropene         | ND             | 0.20       | ND             | 0.19       |         |         |
| 4-Methyl-2-Pentanone          | 1.5            | 0.18       | 1.6            | 0.17       |         |         |
| Toluene                       | 23             | 0.17       | 31             | 0.16       |         |         |
| t 1,3-Dichloropropene         | ND             | 0.20       | ND             | 0.19       |         |         |

Project Name: Marathon County VOC

Project No.: MCLF-2019-VOC

Date Received: 10/15/19
Matrix: Air
Reporting Units: ug/L

# **EPA Method TO15**

| Lab No.:                  | K1015           | 06-01      | K10150          | 06-02      |      |       |  |
|---------------------------|-----------------|------------|-----------------|------------|------|-------|--|
| Client Sample I.D.:       | Mainline VOC #1 |            | Mainline VOC #2 |            |      |       |  |
| Date/Time Sampled:        | 10/9/19 11:25   |            | 10/9/19         | 11:08      |      |       |  |
| Date/Time Analyzed:       | 10/25/19        | 14:12      | 10/25/19        | 14:47      |      |       |  |
| QC Batch No.:             | 191025N         | AS2A1      | 191025N         | AS2A1      |      |       |  |
| Analyst Initials:         | AS              | S          | AS              | S          |      |       |  |
| Dilution Factor:          | 44              |            | 42              |            |      |       |  |
| ANALYTE                   | Result<br>ug/L  | RL<br>ug/L | Result<br>ug/L  | RL<br>ug/L |      |       |  |
| 1,1,2-Trichloroethane     | ND              | 0.24       | ND              | 0.23       |      |       |  |
| Tetrachloroethene         | 0.82            | 0.30       | 1.00            | 0.29       | 4    |       |  |
| 2-Hexanone                | ND              | 0.18       | ND              | 0.17       |      | = 3/1 |  |
| Dibromochloromethane      | ND              | 0.37       | ND              | 0.36       |      |       |  |
| 1,2-Dibromoethane         | ND              | 0.34       | ND              | 0.32       | V    |       |  |
| Chlorobenzene             | ND              | 0.20       | ND              | 0.19       |      |       |  |
| Ethylbenzene              | 5.5             | 0.19       | 7.9             | 0.18       |      |       |  |
| p,&m-Xylene               | 9.1             | 0.19       | 14              | 0.18       |      |       |  |
| o-Xylene                  | 3.1             | 0.19       | 4.5             | 0.18       |      |       |  |
| Styrene                   | 0.22            | 0.19       | 0.33            | 0.18       |      |       |  |
| Bromoform                 | ND              | 0.45       | ND              | 0.44       |      |       |  |
| 1,1,2,2-Tetrachloroethane | ND              | 0.60       | ND              | 0.58       |      |       |  |
| Benzyl Chloride           | ND              | 0.23       | ND              | 0.22       |      |       |  |
| 4-Ethyl Toluene           | 0.75            | 0.22       | 1.1             | 0.21       |      |       |  |
| 1,3,5-Trimethylbenzene    | ND              | 0.43       | 0.43            | 0.41       | 1 10 |       |  |
| 1,2,4-Trimethylbenzene    | ND              | 0.43       | 0.58            | 0.41       |      |       |  |
| 1,3-Dichlorobenzene       | ND              | 0.26       | ND              | 0.25       |      |       |  |
| 1,4-Dichlorobenzene       | ND              | 0.26       | ND              | 0.25       |      |       |  |
| 1,2-Dichlorobenzene       | ND              | 0.26       | ND              | 0.25       |      |       |  |
| 1,2,4-Trichlorobenzene    | ND              | 0.65       | ND              | 0.63       |      | =_(   |  |
| Hexachlorobutadiene       | ND              | 0.47       | ND              | 0.45       |      |       |  |

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:

Mark Johnson Operations Manager Date 10-31-19

The cover letter is an integral part of this analytical report

Project Name: Marathon County VOC

Project No.: MCLF-2019-VOC

Date Received: 10/15/19
Matrix: Air
Reporting Units: ug/L

# **EPA Method TO15**

| Lab No.:                      | METHOD         | BLANK      |   |     |   |   |       |
|-------------------------------|----------------|------------|---|-----|---|---|-------|
| Client Sample I.D.:           | 1 2 4 -        |            |   |     |   |   |       |
| Date/Time Sampled:            |                |            |   |     |   |   |       |
| Date/Time Analyzed:           | 10/25/1        | 9 9:31     |   |     |   |   |       |
| QC Batch No.:                 | 191025         | MS2A1      |   |     |   |   |       |
| Analyst Initials:             | A              | S          |   | 1   |   |   |       |
| Dilution Factor:              | 0.2            | .0         |   |     |   |   |       |
| ANALYTE                       | Result<br>ug/L | RL<br>ug/L |   |     |   |   | N.    |
| Dichlorodifluoromethane (12)  | ND             | 0.00099    |   |     |   |   |       |
| Chloromethane                 | ND             | 0.00083    |   |     |   |   |       |
| 1,2-Cl-1,1,2,2-F ethane (114) | ND             | 0.0014     |   |     |   |   |       |
| Vinyl Chloride                | ND             | 0.00051    |   |     |   |   |       |
| Bromomethane                  | ND             | 0.00078    |   |     |   | 7 |       |
| Chloroethane                  | ND             | 0.00053    |   |     | - |   |       |
| Trichlorofluoromethane (11)   | ND             | 0.0011     |   | 7   | 7 | 4 |       |
| 1,1-Dichloroethene            | ND             | 0.00079    |   |     |   |   |       |
| Carbon Disulfide              | ND             | 0.0031     |   |     |   |   |       |
| 1,1,2-Cl 1,2,2-F ethane (113) | ND             | 0.0015     |   |     |   |   |       |
| Acetone                       | ND             | 0.0024     |   | 162 | 1 |   |       |
| Methylene Chloride            | ND             | 0.00069    |   | 100 |   |   |       |
| t-1,2-Dichloroethene          | ND             | 0.00079    |   |     |   |   | 1     |
| 1,1-Dichloroethane            | ND             | 0.00081    |   |     |   |   |       |
| Vinyl Acetate                 | ND             | 0.0035     |   |     |   |   |       |
| c-1,2-Dichloroethene          | ND             | 0.00079    |   |     |   |   |       |
| 2-Butanone                    | ND             | 0.00059    |   |     |   |   |       |
| t-Butyl Methyl Ether (MTBE)   | ND             | 0.00072    |   |     |   |   | -     |
| Chloroform                    | ND             | 0.00098    |   |     |   |   |       |
| 1,1,1-Trichloroethane         | ND             | 0.0011     |   | -   |   |   |       |
| Carbon Tetrachloride          | ND             | 0.0013     |   |     |   |   |       |
| Benzene                       | ND             | 0.00064    |   |     |   |   | 11111 |
| 1,2-Dichloroethane            | ND             | 0.00081    |   |     |   |   | 7     |
| Trichloroethene               | ND             | 0.0011     |   |     |   |   | 1     |
| 1,2-Dichloropropane           | ND             | 0.00092    |   |     |   |   |       |
| Bromodichloromethane          | ND             | 0.0013     |   |     |   |   |       |
| c-1,3-Dichloropropene         | ND             | 0.00091    |   |     |   |   |       |
| 4-Methyl-2-Pentanone          | ND             | 0.00082    | 1 |     |   |   |       |
| Toluene                       | ND             | 0.00075    |   |     |   |   |       |
| t-1,3-Dichloropropene         | ND             | 0.00091    |   |     |   |   |       |

Project Name: Marathon County VOC

Project No.: MCLF-2019-VOC

Date Received: 10/15/19
Matrix: Air
Reporting Units: ug/L

# **EPA Method TO15**

| Lab No.:                  | METHOD BLANK   |            |               |                           |
|---------------------------|----------------|------------|---------------|---------------------------|
| Client Sample I.D.:       |                |            |               |                           |
| Date/Time Sampled:        | V==            |            |               |                           |
| Date/Time Analyzed:       | 10/25/19 9:31  |            |               |                           |
| QC Batch No.:             | 191025MS2A1    |            |               |                           |
| Analyst Initials:         | AS             |            |               |                           |
| Dilution Factor:          | 0.20           |            |               |                           |
| ANALYTE                   | Result<br>ug/L | RL<br>ug/L |               |                           |
| 1,1,2-Trichloroethane     | ND             | 0.0011     |               |                           |
| Tetrachloroethene         | ND             | 0.0014     |               | the state of the state of |
| 2-Hexanone                | ND             | 0.00082    |               |                           |
| Dibromochloromethane      | ND             | 0.0017     | 1 1 1 1 1 1 1 |                           |
| 1,2-Dibromoethane         | ND             | 0.0015     |               |                           |
| Chlorobenzene             | ND             | 0.00092    |               |                           |
| Ethylbenzene              | ND             | 0.00087    |               |                           |
| p,&m-Xylene               | ND             | 0.00087    |               |                           |
| o-Xylene                  | ND             | 0.00087    |               |                           |
| Styrene                   | ND             | 0.00085    |               |                           |
| Bromoform                 | ND             | 0.0021     |               |                           |
| 1,1,2,2-Tetrachloroethane | ND             | 0.0027     |               |                           |
| Benzyl Chloride           | ND             | 0.0010     |               |                           |
| 4-Ethyl Toluene           | ND             | 0.00098    |               |                           |
| 1,3,5-Trimethylbenzene    | ND             | 0.0020     |               |                           |
| 1,2,4-Trimethylbenzene    | ND             | 0.0020     |               |                           |
| 1,3-Dichlorobenzene       | ND             | 0.0012     |               |                           |
| 1,4-Dichlorobenzene       | ND             | 0.0012     |               |                           |
| 1,2-Dichlorobenzene       | ND             | 0.0012     |               |                           |
| 1,2,4-Trichlorobenzene    | ND             | 0.0030     |               |                           |
| Hexachlorobutadiene       | ND             | 0.0021     |               |                           |

ND = Not Detected (below RL)

RL = Reporting Limit

Reviewed/Approved By:

Mark Johnson Operations Manager Date 10-31-19

The cover letter is an integral part of this analytical report

AirTECHNOLOGY Laboratories, Inc. -

TO15 REPORT 2019\_8

Date: 10 31-19

# LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 191025MS2A1

Matrix: Air

### EPA Method TO-14/TO-15 Lab No: Method Blank LCS LCSD 10/25/19 9:31 Date/Time Analyzed: 10/25/19 8:19 10/25/19 8:54 Data File ID: 25OCT015.D 25OCT013.D 25OCT014.D **Analyst Initials:** VMVM VM **Dilution Factor:** 0.2 1.0 1.0 Limits Result Spike Result Result Low High Max. Pass/ ANALYTE % Rec % Rec RPD ppby ppby Amount ppbv %Rec %Rec RPD Fail 1,1-Dichloroethene 0.0 10.0 9.5 95 9.6 96 1.1 70 130 30 Pass Methylene Chloride 0.0 10.0 10.3 103 10.5 105 1.9 70 130 30 Pass Trichloroethene 0.0 10.0 9.9 99 9.4 94 5.4 70 130 30 Pass Toluene 0,0 10.0 9.8 98 9.4 94 3.5 70 130 30 Pass 1,1,2,2-Tetrachloroethane 0.0 10.0 9.8 98 9.3 93 5.2 70 130 30 Pass

RPD = Relative Percent Difference

Reviewed/Approved By:

Mark Johnson

**Operations Manager** 

The cover letter is an integral part of this analytical report

# ATTACHMENT D

2019 BRRDF LEACHATE LINE JETTING AND TELEVISING REPORT





1772 S Vandenberg Road Green Bay, Wisconsin 54311 920-468-7074 | info@northernpipeinc.com Leachate Cleaning 6/10/2019 - 6/12/2019 Vactor w/ 1,200' of 3/4" hose

## **AREA A**

| CLEANOUT            |     | PIPE | TOTAL       | FT JETTED | FT JETTED | TOTAL  |   |
|---------------------|-----|------|-------------|-----------|-----------|--------|---|
| <b>ACCESS POINT</b> |     | SIZE | LENGTH (FT) | (S)       | (N)       | JETTED | COMMENTS  |
|                     | 1   | 8    | 1,180       | 285       | 540       | 825    | Stops at 285' from South and 540' from North          |
|                     | 2   | 6    | 1,040       | 750       | 340       | 1,090  | Overlap achieved - line is good                       |
|                     | 3   | 6    | 1,040       | 1,040     | -         | 1,040  | Jetted from south, line is good                       |
|                     | 4   | 8    | 1,180       | 170       | 1,100     | 1,270  | Stops at 170' from South, overlap achieved from North |
|                     | 5   | 6    | 1,040       | 825       | 315       | 1,140  | Overlap achieved - line is good                       |
|                     | 6   | 6    | 1,040       | 600       | 540       | 1,140  | Overlap achieved - line is good                       |
|                     | 7   | 8    | 460         | 330       | -         | 330    | Stops at 330' from West                               |
| Gas Condensate      | Lin | e    | 280         | -         | -         | 280    | Line is good  |
| •                   |     |      | 7,260       |           |           | 7,115  |   |

3,000 gallons of water used

## **AREA B**

| CLEANOUT            | F  | PIPE | TOTAL       | FT JETTED | FT JETTED | TOTAL  |                          |
|---------------------|----|------|-------------|-----------|-----------|--------|--------------------------|
| <b>ACCESS POINT</b> | 9  | SIZE | LENGTH (FT) | (E/S)     | (W/N)     | JETTED | COMMENTS                 |
|                     | 1  | 12   | 660         | 660       | -         | 660    | From B1E - line is good  |
|                     | 2  | 12   | 500         | 500       | -         | 500    | From B2S - line is good  |
|                     | 3  | 12   | 505         | 505       | -         | 505    | From B3S - line is good  |
|                     | 4  | 12   | 510         | 510       | -         | 510    | From B4S - line is good  |
|                     | 5  | 12   | 660         | 660       | -         | 660    | From B5S - line is good  |
|                     | 6  | 12   | 280         | 280       | -         | 280    | From B6E - line is good  |
|                     | 7  | 12   | 850         | 850       | -         | 850    | From B7S - line is good  |
|                     | 8  | 12   | 875         | 875       | -         | 875    | From B8S - line is good  |
|                     | 9  | 12   | 305         | 305       | -         | 305    | From B9E - line is good  |
|                     | 10 | 12   | 840         | 840       | -         | 840    | From B10S - line is good |
|                     | 11 | 12   | 795         | 795       | -         | 795    | From B11S - line is good |
|                     | 12 | 12   | 270         | 270       | -         | 270    | From B12E - line is good |
|                     | 13 | 12   | 750         | 750       | -         | 750    | From B13S - line is good |
|                     | 14 | 12   | 725         | 725       |           | 725    | From B14S - line is good |
|                     |    |      | 8,525       |           |           | 8,525  |                          |

5,500 gallons of water used

## **BLUE BIRD RIDGE**

| CLEANOUT         | PIPE | TOTAL       | FT JETTED | FT JETTED | TOTAL                                 |
|------------------|------|-------------|-----------|-----------|---------------------------------------|
| ACCESS POINT     | SIZE | LENGTH (FT) | (N)       | (S)       | JETTED COMMENTS                       |
| LCR 12 TO LCR 11 | 6    | 1,180       | 600       | 600       | 1,200 Overlap achieved - line is good |
| LCR 8 TO LCR 9   | 6    | 1,144       | 600       | 600       | 1,200 Overlap achieved - line is good |
| LCR 10 TO LOOP 7 | 6    | 650         | 404       | 276       | 680 Overlap achieved - line is good   |
| LCR 4 TO LCR 6   | 6    | 1,070       | 600       | 600       | 1,200 Overlap achieved - line is good |
| LCR 2 TO LCR 3   | 6    | 1,020       | 600       | 600       | 1,200 Overlap achieved - line is good |
| LCR 5 TO LOOP 1  | 6    | 395         | 395       | -         | 395 Overlap achieved - line is good   |
|                  |      | 5,459       | _         | _         | 5,875                                 |

2,500 gallons of water used

## ATTACHMENT E 2019 ANNUAL STORMWATER INSPECTION REPORT

State of Wisconsin Department of Natural Resources dnr.wi.gov

## Annual Facility Site Compliance Inspection Report (AFSCI)

For Storm Water Discharges Associated With Industrial Activity Under Wisconsin Pollutant Discharge Elimination System (WPDES) Permit Form 3400-176 (R 5/14)

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**Notice:** This form is authorized by s. NR 216.29(2), Wis. Adm. Code. Submittal of a completed form to the Department is mandatory for industrial facilities covered under a Tier 1 storm water general permit. Facilities covered under a Tier 1 permit are not required to submit AFSCI reports after submittal of the second AFSCI report, unless so directed by the Department. However, these inspections and quarterly visual inspections shall still be conducted and results shall be kept on site for Department inspection. Facilities covered under a Tier 2 storm water general, industry-specific general or individual permit shall keep the results of their AFSCI and quarterly visual inspections on site for Department inspection. Failure to comply with these regulations may result in fines up to \$25,000 per day pursuant to s. 283.91, Wis. Stats.

Personally identifiable information on this form may be used for other water quality program purposes.

Please type or clearly print your answers to all questions.

| Section I: Facility/Site Information  |   |   |                          |                                    |  |
|---|---|---|--------------------------|------------------------------------|--|
| Facility/Site Name (As Appears on Permit Authorization)   |   | County  |                          |                                    |  |
| Bluebird Ridge Recycling and Disposal Facility 4228   |   | Marathon  |                          |                                    |  |
| Location Address/Description (if different from mailing address belo  | w)  | State Z   | IP Code                  |                                    |  |
| 172900 State Highway 29   |   | WI  |                          | 54471                              |  |
| ○ City ● Township ○ Village   | Facility Identification   | on Number (FID) and/o   | r FIN Nur                | nber if known:                     |  |
| of Ringle   | FID 33  | 7005680 FIN   |                          |                                    |  |
| Section II: Facility/Site Contact Person  |   |   |                          |                                    |  |
| Local Contact Person  | Mailing Address (if   | different than site local   | ion addre                | ess)                               |  |
| Meleesa Johnson   |   |   |                          |                                    |  |
| Title   | Municipality (if diffe  | rent than above)  |                          |                                    |  |
| Director  |   |   |                          |                                    |  |
| Telephone (include area code)   | State   | ZIP Code (if different  | from abov                | /e)                                |  |
| (715) 446-3101  | WI  |   |                          |                                    |  |
| E-mail address or Website (if applicable)   |   | Fax (include area cod   | e)                       |                                    |  |
| Meleesa.Johnson@co.marathon.wi.us   |   | (715)   | 446-290                  | 6                                  |  |
| Section III: Certification & Signature<br>(Person attesting to the accuracy and completeness of Annu  | al Facility Site Cor  | mpliance Inspection   | Report.)                 |                                    |  |
| This form must be signed by an official representative of the p<br>Code. See instructions on page 4. If this form is not signed, or   | ermitted facility in a<br>is found to be inco                       | accordance with s. N<br>emplete, it will be retu                            | R 216.22<br>irned.       | (7), Wis. Adm.                     |  |
| I certify under penalty of law that this document and all attachments with a system designed to assure that qualified personnel properly of the person or persons who manage the system or those persons submitted is, to the best of my knowledge and belief, true, accurate submitting false information, including the possibility of fine and impossibility of the possibility of | gather and evaluate<br>directly responsible<br>, and complete. I am | the information submit<br>for gathering the infor<br>a aware that there are | tted. Base<br>mation, th | ed on my inquiry<br>ne information |  |
| Signature of Authorized Representative  | Telephone Number  | (include area code)   |                          |                                    |  |
| Don't Hywha   |   | (715) 446-3101  | l                        |                                    |  |
| Type or Print Name  | Company Name  |   |                          |                                    |  |
| David Hagenbucher   | Marathon County Solid Waste   |   |                          |                                    |  |
| Position Title  | Mailing Address   |   |                          |                                    |  |
| Manager   | 172900 State Hig  | hway 29   |                          |                                    |  |
| Date Signed   | Municipality  |   | State                    | ZIP Code                           |  |
| 12/04/19  | Ringle  |   | WI                       | 54471                              |  |
| How to Use this Form:   |   |   |                          |                                    |  |

The first level of storm water monitoring consists of a comprehensive annual facility site compliance inspection (AFSCI) to determine if your facility is operating in compliance with your Storm Water Pollution Prevention Plan (SWPPP). You should use the results of this inspection to determine the extent to which your SWPPP needs to be updated to prevent pollution from new source areas, as well as to correct any inadequacies that the plan may have in handling existing source areas. This first level of monitoring is addressed in Section IV of this Annual Report on page 2.

The second level of storm water monitoring consists of quarterly visual observations of storm water leaving the site during runoff events caused by snow-melt or rainfall. This is a practical, low cost tool for identifying obvious contamination of storm water discharges, and can also help identify which practices are ineffective. The goal of quarterly inspections is to obtain results from a set of four inspections that are distributed as evenly as possible throughout the year and which depict runoff quality during each of the four seasons. This second level of monitoring is addressed in Section V of this Annual Report on page 3.

## Annual Facility Site Compliance Inspection Report (AFSCI)

Form 3400-176 (R.5/14)

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| Section IV: Annual Facility Site Compliance Inspec   | tion   |  |
|--|--|--|
| The Annual Facility Site Compliance Inspection shall be ader remains current; potential pollution sources at your facility are that the Best Management Practices prescribed in your SWP | e identified: the facility site map and drainage m   | nap remain accurate: and '                     |
| Name of Person Conducting Inspection   | Inspection Date  |  |
| David Hagenbucher  | 06/12/2019   | )  |
| Employer   | Telephone Number   |  |
| Marathon County Solid Waste  | (715) 446-31   | 01   |
| Your inspection should start with a review of your written SW these inspections, you find that the provisions in your SWPP discharged from your facility.                                | /PPP kept at your facility. The SWPPP should learn in the state of the | pe amended if, through<br>orm water from being |
| 1. Has your SWPPP been updated to include current Non-   | Storm Water Discharge Evaluation results?  | ○Yes ○No <b>③</b> N/A                          |
| 2. Has your SWPPP been amended for any new construct conditions at the facility?   | tion that would affect the site map or drainage  | OYes <b>●</b> No ON/A                          |
| 3. Has your SWPPP been amended for any changes in faction new source areas for contamination of storm water?   | cility operations that could be identified as  | OYes <b>●</b> No ON/A                          |
| 4. Are there any materials at the facility that are handled, s exposure to storm water that are not currently addresse   | stored, or disposed in a manner to allow<br>d in your SWPPP?   | ○Yes <b>③</b> No ○N/A                          |
| 5. Are there any maintenance or material handling activitie addressed in your SWPPP?   | es conducted outdoors that have not been   | OYes <b>⊙</b> No ○N/A                          |
| 6. Are outside areas kept in a neat and orderly condition?   |  | ●Yes ○No ○N/A                                  |
| 7. Are regular housekeeping inspections made?  |  | ●Yes ○No ○N/A                                  |
| 8. Do you see spots, pools, puddles, or other traces of oils   | s, grease, or other chemicals on the ground?   | OYes ●No ON/A                                  |
| 9. Are particulates on the ground from industrial operations   | s or processes being controlled?   | ●Yes ○No ○N/A                                  |
| 10. Do you see leaking equipment, pipes or containers?   |  | OYes ●No ON/A                                  |
| 11. Do drips, spills, or leaks occur when materials are being  | transferred from one source to another?  | OYes   |
| 12. Are drips or leaks from equipment or machinery being c   | controlled?  | ●Yes ○No ○N/A                                  |
| 13. Are cleanup procedures used for spilled solids?  |  | ●Yes ○No ○N/A                                  |
| 14. Are absorbent materials (floor dry, kitty litter, etc.) regula   | arly used in certain areas to absorb spills?   | ●Yes ○No ○N/A                                  |
| 15. Can you find discoloration, residue, or corrosion on the drain work areas?   | roof or around vents or pipes that ventilate or  | OYes <b>●</b> No ON/A                          |
| 16. Are Best Management Practices implemented to reduce from source areas at the facility?   | e or eliminate contamination of storm water  | ●Yes ○No ○N/A                                  |
| 17. Are Best Management Practices adequately maintained  |  | ●Yes ○No ○N/A                                  |
| 18. Are there significant changes to your SWPPP needed to control a discharge of contaminated storm water from y   | o correct plan inadequacies to effectively /our facility?  | ○Yes   |

## **Annual Facility Site Compliance Inspection Report (AFSCI)**

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Comments:

June - A storm water inspection was conducted during a significant rainfall event in June. June of 2019 saw a lot of rain but very few heavy precipitation events at the solid waste facility. On 06/12/19, the site received approximately 1.25" of rain within a 24 hour period. Ground conditions were relatively saturated from previous rain events. Bluebird Ridge has one main storm water location, consisting of a sedimentation basin and a biofilter. There are multiple culverts and drainage ditches that feed into the sediment basin. The infrastructure also served as a sedimentation location for the construction activities that were taking place. The construction of Phase 5A opened a 6 acre parcel of land for liner construction. All rainwater that fell here was pumped into the same storm water ditches. The storm water infrastructure handled the precipitation without any issues. Ditches, sediment fences, culverts, and sedimentation ponds all functioned as required and kept sediment from flowing off site. The water flowing into the sediment ponds contained a very small amount of soil. Intermediate landfill slopes had fully established vegetation so the main sources of sediment was from the construction activity. However, the small amount of sediment that was carried with the pumped water remained in the sedimentation basin. All erosion throughout the site was handled properly through best management practices. Erosion mat, silt socks, seed, topsoil, and swales were implemented to prevent any further soil erosion. By November, all soil will be seeded, mulched, and vegetated to minimize erosion.

An on site inspection with WDNR was also completed in 2019. WDNR staff provided valuable information on keeping our storm water infrastructure functioning as intended, and also provided information on area where there could be some improvement. All information was beneficial and Marathon County worked to establish Best Management Practices whenever and wherever possible.

## Section V: Quarterly Visual Inspection Reports

Quarterly Visual Inspections at each storm water discharge outfall on your site can be a valuable assessment tool and are required by the Tier 1, Tier 2, and Nonmetallic Mining Industrial Storm Water General Permits. These inspections should be performed when sufficient runoff occurs during daylight hours. Try to make observations within the first 30 minutes after runoff begins discharging from the outfall or soon thereafter as practical, but no later than 60 minutes. If you find visible pollution, note the probable source and list any possible Best Management Practices that could be used to reduce or eliminate the problem. Make any necessary changes to your Storm Water Pollution Prevention Plan as needed. If you were unable to evaluate an outfall during a specific quarter, this should be indicated along with a reason as to why this could not be done.

|             | Date of     | Inspection              |             |
|-------------|-------------|-------------------------|-------------|
| 1st Quarter | 2nd Quarter | 3rd Quarter             | 4th Quarter |
| 03/13/2019  | 06/12/2018  | 09/11/2018              | 12/09/2018  |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             |                         |             |
|             |             | 1st Quarter 2nd Quarter |             |

Briefly summarize what you found when conducting your Quarterly Visual Inspections. (Include any observations of color, odor, turbidity, floating solids, foam, oil sheen, or any other indications of storm water pollution and the probable sources of any observed storm water contamination.)

March - Water was frozen but the site received 1" of rain. Site infrastructure handled the water well and there was minimal flowing water. Most of the liquid saturated the existing snow cover.

June - A storm water inspection was conducted during a significant rainfall. June of 2019 saw a lot of rain but very few heavy precipitation events at the solid waste facility. On 06/12/19, the site received approximately 1.25" of rain within a 24 hour period. Ground conditions were relatively saturated from previous rain events. Bluebird Ridge has one main storm water location, consisting of a sedimentation basin and a biofilter. There are multiple culverts and drainage ditches that feed into the sediment basin. The infrastructure also served as a sedimentation location for the construction activities that were taking place. The construction of Phase 5A opened a 6 acre parcel of land for liner construction. All rainwater that fell here was pumped into the same storm water ditches. The storm water infrastructure handled the precipitation without any issues. Ditches, sediment fences, culverts, and sedimentation ponds all functioned as required and kept sediment from flowing off site. The water flowing into the sediment ponds contained a very small amount of soil. Intermediate landfill slopes had fully established vegetation so the main sources of sediment was from the construction activity. However, the small amount of sediment that was carried with the pumped water remained in the sedimentation basin. All erosion throughout the site was handled properly through best management practices. Erosion mat, silt socks, seed, topsoil, and swales were implemented to prevent any further soil erosion. By November, all soil will be seeded, mulched, and vegetated to minimize erosion.

September - 2019 became the wettest year on record. September had a large amount of precipitation events. On 9/11, the site received 2.5" of rain in a 24 hour period. The construction of Phase 5A was still taking place, so sediment and storm water from the cell construction was pumped into the ditches and diverted to the ponds. This rain event was significant, but the site handled everything with a problem.

December- Water was frozen and precipitation was all snow.

### Instructions

## Section I: Facility/Site Information

Provide the name of the facility as it appears on the permit application or permit cover letter and location address. If known, provide the Facility Identification (FID) and/or FIN Number assigned by the WDNR.

### Section II: Facility/Site Contact Person

Provide the local contact person information for the facility. The mailing address should be given for the facility contact person if it is different from the facility site location address information.

### Section III: Certification & Signature

State Statutes provide for severe penalties for submitting false information on this AFSCI form. State regulations require this form be signed as follows:

- 1. For a corporation, by a principal executive officer of at least the level of Vice President, or a duly authorized representative having overall responsibility for the operation covered by this permit.
- 2. For a unit of government, a principal executive officer, a ranking elected official, or other duly authorized representative.
- 3. For a partnership, by a general partner; for a sole proprietorship, by the proprietor.
- 4. For a limited liability company, by member or manager.

## Section IV: Annual Facility Site Compliance Inspection

Provide the name of the person conducting the inspection, inspection date, name of employer, and telephone number. Check the appropriate box for each of the listed questions and provide explanations in the comment box as needed.

## **Section V: Quarterly Visual Inspection Reports**

Provide the outfall number in the table and the dates of each quarterly visual inspection. Summarize the findings of your visual inspections below the table. Attach additional sheets if needed.

## **Mailing Address**

Unless otherwise directed, mail this completed form to the Wisconsin Department of Natural Resources (WDNR) office associated with the county of the facility site location as follows:

| the county of the la  | the county of the facility site location as follows:                    |   |  |  |  |  |  |
|---|---|---|--|--|--|--|--|
|   |   |   | RN REGION (NOR)  |  |  |  |  |
| Ashland<br>Barron<br>Bayfield<br>Burnett<br>Douglas<br>Florence   | Forest<br>Iron<br>Langlade<br>Lincoln<br>Oneida<br>Polk                 | Price<br>Rusk<br>Sawyer<br>Taylor<br>Vilas<br>Washburn          | WDNR Baldwin Service Center<br>890 Spruce Street<br>Baldwin, WI 54002<br>715-684-2914 ext. 109               |  |  |  |  |
|   |   | NORTHE  | AST REGION (NER)   |  |  |  |  |
| Brown<br>Calumet<br>Door<br>Fond du Lac<br>Green Lake<br>Kewaunee | Manitowoc<br>Marinette<br>Marquette<br>Menominee<br>Oconto<br>Outagamie | Shawano<br>Waupaca<br>Waushara<br>Winnebago                     | WDNR Northeast Regional Headquarters<br>2984 Shawano Avenue<br>Green Bay, WI 54313-6727<br>(920) 662-5100    |  |  |  |  |
| v 1   |   | WEST CEN  | TRAL REGION (WCR)  |  |  |  |  |
| Adams Buffalo Chippewa Clark Crawford Dunn Eau Claire             | Jackson<br>Juneau<br>La Crosse<br>Marathon<br>Monroe<br>Pepin           | Pierce<br>Portage<br>St. Croix<br>Trempealeau<br>Vernon<br>Wood | WDNR Baldwin Service Center<br>890 Spruce Street<br>Baldwin, WI 54002<br>715-684-2914 ext. 109               |  |  |  |  |
|   |   | SOUTH CEN   | ITRAL REGION (SCR)   |  |  |  |  |
| Columbia<br>Dane<br>Dodge<br>Grant                                | Green<br>Iowa<br>Jefferson<br>LaFayette                                 | Richland<br>Rock<br>Sauk  | WDNR South Central Regional Headquarters<br>3911 Fish Hatchery Road<br>Fitchburg, WI 53711<br>(608) 275-3266 |  |  |  |  |
|   |   | SOUTHE  | AST REGION (SER)   |  |  |  |  |
| Kenosha<br>Milwaukee<br>Ozaukee                                   | Racine<br>Sheboygan<br>Walworth   | Washington<br>Waukesha  | WDNR Waukesha Service Center<br>141 N.W. Barstow Street, Room 180<br>Waukesha, WI 53188<br>(262) 574-2100    |  |  |  |  |

## ATTACHMENT F

## EXCEEDANCE REPORTS FOR AREA A & BRRDF PRIVATE WELL MONITORING APRIL AND OCTOBER 2019



## Marathon County Solid Waste Department 172900 E. Hwy 29

172900 E. Hwy 29 Ringle, WI 54471

 Director:
 715-446-3101 X104

 Site Supervisor:
 715-446-3101 X102

 Administrative Office:
 715-446-3101 X100

 Scale Master
 715-446-3101 X103

 Solid Waste & Recycling Info Line
 877-270-3989 toll-free

May 22, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 2892, 3338 & 4228 (Private Wells)

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2019. There were no exceedances in the private groundwater wells, and therefore an exceedance table has not been provided.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

## ENVIRONMENTAL MONITORING DATA CERTIFICATION

Department of Natural Resources

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

## Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- \* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact WA/5

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

| Iorthern Lake Service, Inc.  | ity owner):  |  |   |
|--|--|--|---|
|  | THE PARTY OF THE P |  |   |
| contact for questions about data formatting. Include data  |  |  | ress:   |
| Iame: Chris Geske<br>-mail: lims@nlslab.com  | Phone: 715-47  | 8-2777                                       |   |
| A FIGURE STREET  |  | E104 ID IEIDI                                | Actual sampling dates (e.g., July 2-6, 20   |
| Marathon County Area A Private Wells (Semi-annual)   | 02892  | Facility ID [FID]                            | APRIL -04-2019  |
| he enclosed results are for sampling required in the monti   | h(s) of: (e.g., June 2003)   |  |   |
| APRIL -2019  |  |  |   |
| Groundwater monitoring data from private water supply Leachate monitoring data  Notification attached?  No. No groundwater standards or explosive gas limits were exceeded.  Yes, a notification of values exceeding a groundwater standard is attached groundwater standard and preliminary analysis of the cause and signif Yes, a notification of values exceeding an explosive gas limit is attached.  | ed. It includes a list of monitoring points icance of any concentration.   | , dates, sample values,                      |   |
| Certification  |  |  | $\mathcal{L}_{\mathcal{A}}(\mathbb{R}^n) = \mathcal{L}_{\mathcal{A}}(\mathbb{R}^n) = \mathcal{L}_{\mathcal{A}}(\mathbb{R}^n)$ |
| To the best of my knowledge, the information reported are true and correct. Furthermore, I have attached comproundwater standards or explosive gas levels, and a property of the correct o | plete notification of any sar  | npling values meetii<br>ause and significant | ng or exceeding   |
|  | Title  |  | (Area Code) Telephone No.   |
| acility Representative Name (Print)  |  |  |   |
| acility Representative Name (Print)  | 05/22/19   |  |   |

## Marathon County Solid Waste Mgmnt Dept Marathon County Area A Private Wells 04-01-2019

Lab ID: 721026460

NLS Project: 318858

Collected: 04-01-2019

License: 02892 FID:

## EXCEEDANCES:

| Desc (Point ID) Parameter | Units | Result | PAL / ACL | ES | Comments |
|---------------------------|-------|--------|-----------|----|----------|
|---------------------------|-------|--------|-----------|----|----------|

## State of Wisconsin

## **ENVIRONMENTAL MONITORING DATA CERTIFICATION**

Department of Natural Resources

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

### Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- \* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- \* Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact WA/5

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

| Name of entity submitting data (laboratory, consultant  | , facility owner):   |  |   |
|---|--|--|---|
| Northern Lake Service, Inc.  Contact for questions about data formatting. Include of  | data preparer's name, telephone nu   | mber and E-mail add                          | ress:   |
| Name: Chris Geske   | Phone: 715-47  |  |   |
| E-mail: lims@nlslab.com   |  |  |   |
| Facility Name   | License No. / Monitoring ID  | Facility ID [FID]                            | Actual sampling dates (e.g., July 2-6, 20   |
| Marathon County BRRDF Private Wells   | 04228  | 337005680                                    | APRIL -04-2019  |
| The analysed variety are far according required in the L  | marth(a) of (a.g., lung 2002)  |  |   |
| The enclosed results are for sampling required in the r<br>APRIL -2019  | nonin(s) or. (e.g., June 2005)   |  |   |
| Leachate monitoring data  Notification attached?  No. No groundwater standards or explosive gas limits were exceed to the standard is a groundwater standard and preliminary analysis of the cause and Yes, a notification of values exceeding an explosive gas limit is attached to the standard and preliminary analysis of the cause and Yes, a notification of values exceeding an explosive gas limit is attached. | attached. It includes a list of monitoring points,<br>I significance of any concentration. | , dates, sample values,                      |   |
| Certification   |  |  | $\mathbb{E}_{\mathbb{R}^{n+1}}^{(n+1)} = \mathbb{E}_{\mathbb{R}^{n+1}}^{(n+1)} = \mathbb{E}_{\mathbb{R}^{n+1}}^{(n+1)} = \mathbb{E}_{\mathbb{R}^{n+1}}^{(n+1)} = \mathbb{E}_{\mathbb{R}^{n+1}}^{(n+1)}$ |
| To the best of my knowledge, the information repo<br>are true and correct. Furthermore, I have attached<br>groundwater standards or explosive gas levels, an<br>concentrations exceeding groundwater standards.   | complete notification of any san<br>d a preliminary analysis of the ca                     | npling values meetin<br>ause and significant | ng or exceeding<br>of<br>715 551 5864   |
| Davice 1/agen sucher  | Title  | 0  | (Area Code) Telephone No.   |
| Facility Representative Name (Print)  | - 1 1.   |  |   |
| Dead Hyler  | 05/22/19   |  |   |
| Facility Representative Name (Print) Signature  FOR DNR USE ONLY. Check action tak  | Date   |  |   |

## Marathon County Solid Waste Mgmnt Dept Marathon County BRRDF Private Wells 04-01-2019

Lab ID: 721026460

NLS Project: 318857

Collected: 04-01-2019

License: 04228

FID: 337005680

## EXCEEDANCES:

|  | Comments             |  |
|--|----------------------|--|
| The second secon | ES                   |  |
| The second secon | PAL / ACL            |  |
| The second secon | Result               |  |
| Contract of the Contract of th | Units                |  |
| Contract of the second | Parameter            |  |
| The second secon | Well Desc (Point ID) |  |
|  |                      |  |

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

NLS Customer: NLS Project: Printed: 05/01/19

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318857 20080

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. W100034

## Marathon County BRRDF Private Wells April 2019 Project:

PW11 NLS ID: 1113402

Collected: 04/04/19 09:32 Received: 04/05/19

| Lab                   | 721026460     | 721026460      |
|-----------------------|---------------|----------------|
| 2/MCL Analyzed Method | ത             | 04/04/19 NA    |
| LOD LOQ/MCL           |               |                |
| Difution              | ,             |                |
| Units                 | ft.           | ff.            |
| Result                | 4.86          | 5.85           |
| rameter Result Units  | epth to water | epth to bottom |
| Param                 | Field d       | Field d        |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples.

NA = Not Applicable LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL.

Reviewed by:

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. W100034

Page 2 of 3

318857

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph. (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

20080

NLS Customer: NLS Project: Printed: 05/01/19

Marathon County BRRDF Private Wells April 2019 Project:

PW26 NLS ID: 1113403

Matrix: GW

Collected: 04/04/19 09:43 Received: 04/05/19

|                     |               |               |                 |  | . 73  |
|---------------------|---------------|---------------|-----------------|--|---|
| Lab                 | 721026460     | 721026460     | 721026460       | 721026460  | OQ are considered   |
| ICL Analyzed Method | 04/04/19 NA   | 04/04/19 NA   | 04/04/19 NA     | 04/12/19 SW846 8260C                             | /alues in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered |
| NOO'                |               |               |                 |  | itation".   |
| LOD LOQ/MCL         |               |               |                 | THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER. | n Quanti  |
| Dilution            |               |               |                 |  | on of "Less-Certai  |
|                     |               |               |                 | THE RESERVE THE PERSON NAMED IN COLUMN           | iin a regi  |
| Units               |               |               |                 |  | Q and are with  |
| Result              | none detected | none detected | none detected   | see attached                                     | LOD but less than the LO  |
|                     |               |               |                 | V  | al to the l   |
|                     |               |               |                 |  | ts greater than or equ  |
| Parameter           | Field color   | Field odor    | Field turbidity | VOCs (water) by GC/MS                            | Values in brackets represent result   |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content. NA = Not Applicable

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD) DWB = Dry Weight Basis

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL

Reviewed by:

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph. (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

NLS Customer:

Page 3 of 3

318857 20080

NLS Project: Printed: 05/01/19

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. W100034

Marathon County BRRDF Private Wells April 2019 Project:

PW8575 NLS ID: 1113404

Matrix: GW

Collected: 04/04/19 10:00 Received: 04/05/19

|                       |               | Units | Dilution | ΓOD | LOQ/MCL | Analyzed Method      | Lab       |
|-----------------------|---------------|-------|----------|-----|---------|----------------------|-----------|
| Field color           | none detected |       |          |     |         |                      | 721026460 |
| ield odor             | none detected |       |          |     |         | 04/04/19 NA          | 721026460 |
| Field turbidity       | none detected |       |          |     |         | 04/04/19 NA          | 721026460 |
| /OCs (water) by GC/MS | see attached  |       |          |     |         | 04/12/19 SW846 8260C | 721026460 |
|                       |               |       |          |     |         |                      |           |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

NA = Not Applicable Shaded results indicate >MCL

Reviewed by:

Page 1 of 2

NLS Project: 318857 Customer: Marathon County Solid Waste Mgmnt Dept NL Project Description: Marathon County BRRDF Private Wells

Project Title: April 2019

Printed: 05/01/2019 04:22 Template: SAT3APP3

| Betreelication   No ugh, 1 019 088 5   5  | ANALYTE NAME   | RESULT | UNITS | DIL | ГОД  | LOQ  | MCL Note   |  |
|---|--|--------|-------|-----|------|------|--|--|
| NO  | Benzene  | QN     | ng/L  | -   | 0.19 | 69.0 | 2  |  |
| ane ND 99/L 1 0.16 0.56 80  ND 99/L 1 0.19 0.66 80  ND 99/L 1 0.19 0.69 100  ND 99/L 1 0.19 0.69 5  ND 99/L 1 0.19 0.69 15  ND 99/L 1 0.19 0.19 11  ND   | Bromodichloromethane   | QN     | ug/L  | -   | 0.19 | 0.68 | 80   |  |
| NE  | Bromoform  | QN     | ng/L  | 1   | 0.16 | 0.56 | 80   |  |
| ane ND ug/L 1 016 55  ND ug/L 1 15 54  ND ug/L 1 017 066 80  ND ug/L 1 073 066 80  ND ug/L 1 073 066 80  ND ug/L 1 073 067  ND ug/L 1 073 067  ND ug/L 1 073 073  ND ug/L 1 074 075  ND ug/L 1 074 076  ND ug/L 1 074 076  ND ug/L 1 074 076  ND ug/L 1 078 069  ND ug/L 1 078 078  ND ug/L 1 078 069  ND ug/L 1 078 078  ND ug/L 1 078  ND  | Bromomethane   | ND     | ng/L  | _   | 0.22 | 0.79 |  |  |
| ane ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.15 5.4 100  ND ug/L 1 0.17 0.69 80  ND ug/L 1 0.17 0.69 80  ND ug/L 1 0.12 0.63  ND ug/L 1 0.12 0.63  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.65  ND ug/L 1 0.19 0.65  ND ug/L 1 0.15 0.65  ND ug/L 1 0.15 0.65  ND ug/L 1 0.15 0.65  ND ug/L 1 0.17 0.65  ND ug/L 1 0.15 0.65  ND ug/L 1  | Carbon Tetrachloride   | QN     | ng/L  | _   | 0.19 | 0.66 | 5  |  |
| ane ND ug/L 1 15 54  ND ug/L 1 0.17 0.69  ND ug/L 1 0.17 0.69  ND ug/L 1 0.17 0.69  ND ug/L 1 0.27 0.73  ND ug/L 1 0.27 0.75  ND ug/L 1 0.27 0.75  ND ug/L 1 0.27 0.75  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.65  ND ug/L 1 0.19 0.66  ND ug/L 1 0.19 0.66  ND ug/L 1 0.17 0.69  ND ug/L 1 0.18 0.65  ND ug/L 1 0.17 0.69  ND ug/L 1 0.17 0.69  ND ug/L 1 0.18 0.65  ND ug/L 1  | Chlorobenzene  | QN     | ng/L  | 1   | 0.16 | 0.56 | 100  |  |
| NE  | Chloroethane   | QN     | ug/L  | -   | 1.5  | 5.4  |  |  |
| ane ND ug/L 1 0.19 0.68 ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.27 0.73 0.73 0.73 0.74 0.74 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75   | Chloroform   | QN     | ng/L  | _   | 0.17 | 09.0 | 80   |  |
| ane ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.22 0.73  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.23 0.76 600  ND ug/L 1 0.24 0.75 75  ND ug/L 1 0.18 0.49 75  ND ug/L 1 0.18 0.64 75  ND ug/L 1 0.18 0.64 75  ND ug/L 1 0.18 0.64 75  ND ug/L 1 0.18 0.65 75  ND ug/L 1 0.19 0.65 75  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.25 0.86 100  ND ug/L 1 0.26 0.56 100  ND ug/L 1 0.26 0.56 100  ND ug/L 1 0.29 0.10 0.58 100  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.69 18  ND ug/L 1 0.25 0.76  ND ug/L 1 0.52 0.76  ND ug/L 1 0.53 0.76  ND ug/L 1 0.53 0.77  ND ug/L 1 0.75  ND ug/L 1 0.75  ND ug/L 1 0.75  ND ug/L 1 0.7  | Chloromethane  | QN     | ng/L  | -   | 0.19 | 0.68 |  |  |
| ane ND ug/L 1 0.121 0.73  ND ug/L 1 0.22 0.75  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.23 0.76 75  ND ug/L 1 0.14 0.49 77  ND ug/L 1 0.19 0.65 7  ND ug/L 1 0.19 0.65 100  ND ug/L 1 0.29 1.0  ND ug/L 1 0.19 0.65 100  ND ug/L 1 0.16 0.57 20  ND ug/L 1 0.16 0.58 20  ND ug  | Dibromochloromethane   | QN     | ng/L  | _   | 0.17 | 0.61 | 80   |  |
| ND   ug/L   0.21   0.73   0.75     ND   ug/L   1   0.22   0.75   0.00     ND   ug/L   1   0.22   0.75   0.00     ND   ug/L   1   0.21   0.75   0.00     ND   ug/L   1   0.21   0.75   7.5     ND   ug/L   1   0.18   0.64   7.5     ND   ug/L   1   0.18   0.64   7.5     ND   ug/L   1   0.18   0.65   7.5     ND   ug/L   1   0.18   0.65   7.5     ND   ug/L   1   0.19   0.65   7.0     ND   ug/L   1   0.14   0.51   7.0     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   5     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.16   0.57   0.50     ND   ug/L   1   0.50   0.70   0.70     ND   ug/L   1   0.70   0.70   0.70     ND   ug/L   1   0.70   0.70   0.70     ND   ug/L   1   0.70   0.70   0.70     Ug/L   1   0.70   0.70   0  | 1.2-Dibromo-3-Chloropropane  | QN     | ng/L  | 1   | 0.21 | 0.73 |  |  |
| ND   ug/L   1 0.21 0.73   | 1.2-Dibromoethane  | QN     | ng/L  | _   | 0.12 | 0.43 |  |  |
| ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.20 0.72  ND ug/L 1 0.20 0.72  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.65 70  ND ug/L 1 0.15 0.65 70  ND ug/L 1 0.15 0.65 70  ND ug/L 1 0.20 0.60 5  ND ug/L 1 0.20 0.60 5  ND ug/L 1 0.20 0.60 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.15 0.68 1000  ND ug/L 1 0.16 0.56 1000  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 15  ND ug/L 1 0.15 0.57 2.2  ND ug/L 1 0.16 0.58 15  ND ug/L 1 0.15 0.59 5  ND ug/L 1 0.15 0.50 1.8  ND ug/L 1 0.15 0.50 1.8  ND ug/L 1 0.15 0.50 1.8  ND ug/L 1 0.20 0.70 6.50 1.8  ND ug/L 1 0.15 0.50 1.8  ND ug/L   | Dibromomethane   | QN     | ug/L  | -   | 0.21 | 0.73 |  |  |
| ND   ug/L   0 020   0.75   75   | 1.2-Dichlorobenzene  | QN     | ng/L  | -   | 0.22 | 0.76 | 009  |  |
| ND   ug/L   1   0.21   0.76   75     ND   ug/L   1   0.18   0.64     ND   ug/L   1   0.18   0.64     ND   ug/L   1   0.18   0.65   5     ND   ug/L   1   0.18   0.65   70     ND   ug/L   1   0.18   0.65   70     ND   ug/L   1   0.19   0.68   70     ND   ug/L   1   0.19   0.68   70     ND   ug/L   1   0.19   0.68   70     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.51   200     ND   ug/L   1   0.17   0.51   200     ND   ug/L   1   0.17   0.51   5     ND   ug/L   1   0.16   0.58   100     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5     Ug/R   1   | 1 3-Dichlorobenzene  | QN     | na/L  | _   | 0.20 | 0.72 | Addition to the continue of th |  |
| ND   ug/L   1   0.14   0.49     ND   ug/L   1   0.18   0.64     ND   ug/L   1   0.18   0.64     ND   ug/L   1   0.18   0.65   7     ND   ug/L   1   0.18   0.51   70     ND   ug/L   1   0.14   0.51   100     ND   ug/L   1   0.15   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.56   5     ND   ug/L   1   0.17   0.57   2     ND   ug/L   1   0.15   0.57   2     ND   ug/L   1   0.15   0.58   1     ND   ug/L   1   0.17   0.50   1     ND   ug/L   1   0  | 1 4-Dichlorohenzene  | QN     | na/L  | _   | 0.21 | 0.76 | 75   |  |
| ND   ug/L   0.18   0.64     ND   ug/L   1   0.19   0.65   5     ND   ug/L   1   0.16   0.65   70     ND   ug/L   1   0.15   0.62   70     ND   ug/L   1   0.14   0.68   100     ND   ug/L   1   0.14   0.68   100     ND   ug/L   1   0.14   0.68   100     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.17   0.68   100     ND   ug/L   1   0.17   0.68   100     ND   ug/L   1   0.17   0.68   5     ND   ug/L   1   0.17   0.68   5     ND   ug/L   1   0.17   0.68   5     ND   ug/L   1   0.17   0.69   5     ND   ug/L   1   0.17   0.69   5     ND   ug/L   1   0.17   0.69   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.22   0.76   1000     ND   ug/L   1   0.22   0.76   1000     ND   ug/L   1   0.22   0.76   1000     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5     ND   ug/L   1   0.50  | Dichlorodifluoromethane  | QN     | na/L  | -   | 0.14 | 0.49 | WORKERSON OF THE CONTROL OF THE CONT |  |
| ND   ug/L   1   0.19   0.69   5     ND   ug/L   1   0.16   0.57   7     ND   ug/L   1   0.18   0.51   70     ND   ug/L   1   0.14   0.51   100     ND   ug/L   1   0.14   0.51   100     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   100     ND   ug/L   1   0.17   0.58   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.50   5     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.16   0.55   1.1     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.16   0.55   1.1     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.  | 1 1-Dichloroethane   | QN     | na/L  | _   | 0.18 | 0.64 |  |  |
| ND   ug/L   1   0.16   0.57   7     ND   ug/L   1   0.18   0.62   70     ND   ug/L   1   0.19   0.18   100     ND   ug/L   1   0.14   0.14   100     ND   ug/L   1   0.14   0.15   100     ND   ug/L   1   0.14   0.17   100     ND   ug/L   1   0.16   0.10   5     ND   ug/L   1   0.16   0.16   100     ND   ug/L   1   0.16   0.16   100     ND   ug/L   1   0.16   0.16   100     ND   ug/L   1   0.17   0.18   5     ND   ug/L   1   0.17   0.16   100     ND   ug/L   1   0.17   0.16   100     ND   ug/L   1   0.18   5     ND   ug/L   1   0.17   0.18   5     ND   ug/L   1   0.18   11   1000     ND   ug/L   1   0.18   11   11   11   11     ND   ug/L   1   0.18   11   11   11   11   11   11   11   | 1 2-Dichloroathana   | CZ     | 110/1 | -   | 0 19 | 69 0 |  |  |
| NB   ug/L   1   0.18   0.62   70     ND   ug/L   1   0.15   0.51   100     ND   ug/L   1   0.14   0.51   100     ND   ug/L   1   0.14   0.51   100     ND   ug/L   1   0.20   0.70   0.51     ND   ug/L   1   0.20   0.70   0.51     ND   ug/L   1   0.20   0.70   0.55   100     ND   ug/L   1   0.15   0.55   100     ND   ug/L   1   0.17   0.55   0.50     ND   ug/L   1   0.17   0.55   0.50     ND   ug/L   1   0.17   0.50   0.50     ND   ug/L   1   0.15   0.50   0.50     ND   ug/L   1   0.50   0.50   0.50     Ug/L   1   0.50   0.50   0.50   0.50   0.50     Ug/L   1   0.50   0.50   0.50   0.50   0.50   0.50   0.50     Ug/L   1   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50   0.50  | 1.1-Dichloroathana   | CN     | 1/00  | -   | 0.16 | 0.57 | 7  |  |
| NE  | i, 1 Dictionations   | CN     | 1/011 | -   | 0.18 | 0.62 | 02   |  |
| ND   ug/L   1   0.24   0.84   5     ND   ug/L   1   0.19   0.68     ND   ug/L   1   0.19   0.68     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.61   2     ND   ug/L   1   0.17   0.69   5     ND   ug/L   1   0.16   0.55   5     ND   ug/L   1   0.16   0.55   5     ND   ug/L   1   0.16   0.55   1     ND   ug/L   1   0.16   0.55   1     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.57   3.5     Ug/R   1   0.50   1.8     Ug/R   1   0.57   3.5     Ug/R   1   0.50   1.8   | the control of the co | O.N.   | 1/65  | -   | 0.15 | 0.52 | 100  |  |
| ND   ug/L   0.19   0.68   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.69   0.60   0.70   0.69   0.60   0.70   0.69   0.60   0.70   0.69   0.60   0.  | Tails-1,z-Uchiologuiene  | ON .   | 1/61  |     | 2.50 | 0.0  | , L  |  |
| ND   ug/L   1   0.15   0.50     ND   ug/L   1   0.14   0.51     ND   ug/L   1   0.20   0.17   5     ND   ug/L   1   0.29   1.0     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.22   0.76   1     ND   ug/L   1   0.22   0.76   1     ND   ug/L   1   0.22   0.76   1     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5     ND  | 1,Z-Dicfliotoproparie  | 2      | J/Sn: | - - | 4.0  | 0.0  |  |  |
| ND   ug/L   1   0.31   700     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.50   5     ND   ug/L   1   0.24   0.84   5     ND   ug/L   1   0.27   0.50     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5     Ug/R   1   0.97   0.88     Ug/R   1   0.97   3.5     Ug/R   1   0.97   1.8     Ug/R   1   0.97   | cis-1,3-Dichloropropene  |        | ug/L  |     | 0.18 | 0.00 |  |  |
| NEW Control   1.1   1.20   1.1   1.1   1.00   | trans-1,3-Dichloropropene  |        | ug/L  | _   | 41.0 | 0.0  | 100  |  |
| loride ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  Octhane ND ug/L 1 0.17 0.58 5  octhane ND ug/L 1 0.17 0.68 1000  octhane ND ug/L 1 0.17 0.69 5  octhane ND ug/L 1 0.17 0.69 5  octhane ND ug/L 1 0.17 0.69 5  idene ND ug/L 1 0.17 0.60 5  idene ND ug/L 1 0.16 0.57 2  idene ND ug/L 1 0.16 0.57 2  idene ND ug/L 1 0.16 0.57 1  idene ND ug/L 1 0.22 0.76  idene ND ug/L 1 0.22 0.76  idene ND ug/L 1 0.50 1.8  idene   | Ethylbenzene   | ΩN     | ng/L  | _   | 0.30 | 1.1  | 00/  |  |
| There         ND         ug/L         1         0.29         1.0           Thene         ND         ug/L         1         0.16         0.56         100           Thene         ND         ug/L         1         0.17         0.56         100           Thene         ND         ug/L         1         0.17         0.58         5           Thene         ND         ug/L         1         0.17         0.59         5           Thene         ND         ug/L         1         0.17         0.59         5           Thene         ND         ug/L         1         0.17         0.59         5           Thene         ND         ug/L         1         0.17         0.50         1           Thene         ND         ug/L         1         0.22         0.76         0.76           Actor         ND         ug/L         1         0.22         0.76         1           Retone         ND         ug/L         1         0.50         1.8         1           Actor         ND         ug/L         1         0.50         1.8         1           Actor         ND         ug  | Methylene chloride   | QN     | ng/L  | 1   | 0.20 | 0.70 | ව  |  |
| ND         ug/L<br>ug/L<br>voethane         1         0.16<br>0.16         100<br>0.56         100           Thene         ND         ug/L<br>ug/L<br>voethane         1         0.16<br>0.19         0.56<br>0.58         100           octhane         ND         ug/L<br>ug/L<br>vomethane         1         0.17         0.53<br>0.59         5           omethane         ND         ug/L<br>ug/L<br>vomethane         1         0.17         0.50<br>0.54         5           inne         ND         ug/L<br>ug/L<br>vomethane         1         0.17         0.50<br>0.76         2           inne         ND         ug/L<br>ug/L<br>vomethane         1         0.12         0.76         0.76           inne         ND         ug/L<br>ug/L<br>vomethane         1         0.22         0.76         0.76           ketone         ND         ug/L<br>ug/L<br>vomethane         1         0.50         1.8         0.56           inne         ND         ug/L<br>vomethane         1         0.50         1.8         0.56           inne         ND         ug/L<br>vomethane         1         0.50         1.8         0.56           inne         ND         ug/L<br>vomethane         1         0.57         3.5         0.56           inne <t< td=""><td>Naphthalene</td><td>QN</td><td>ng/L</td><td>_</td><td>0.29</td><td>1.0</td><td>The state of the s</td><td></td></t<> | Naphthalene  | QN     | ng/L  | _   | 0.29 | 1.0  | The state of the s |  |
| ND         ug/L         1         0.16         0.56           Shere         ND         ug/L         1         0.17         0.58         5           octhane         ND         ug/L         1         0.17         0.58         5           octhane         ND         ug/L         1         0.17         0.59         5           ne         ND         ug/L         1         0.17         0.59         5           omethane         ND         ug/L         1         0.17         0.60         2           dene         ND         ug/L         1         0.17         0.60         2           Actone         ND         ug/L         1         0.17         0.60         2           Ketone         ND         ug/L         1         0.16         0.57         2.7           Retone         ND         ug/L         1         0.16         0.58         1           ND         ug/L         1         0.16         0.58         1         1           Retone         ND         ug/L         1         0.16         0.58         1           ND         ug/L         1         0.50 <td>Styrene</td> <td>QN</td> <td>ng/L</td> <td>1</td> <td>0.16</td> <td>0.56</td> <td>100</td> <td></td>  | Styrene  | QN     | ng/L  | 1   | 0.16 | 0.56 | 100  |  |
| hene         ND         ug/L         1         0.17         0.58         5           octhane         ND         ug/L         1         0.19         0.68         1000           octhane         ND         ug/L         1         0.17         0.59         5           octhane         ND         ug/L         1         0.17         0.59         5           omethane         ND         ug/L         1         0.17         0.60         5           dene         ND         ug/L         1         0.17         0.60         2           dene         ND         ug/L         1         0.16         0.57         2           fide         ND         ug/L         1         0.22         0.76         0.76           Ketone         ND         ug/L         1         0.22         0.76         0.76           ND         ug/L         1         0.16         0.58         0.58         0.58           Ketone         ND         ug/L         1         0.16         0.58         0.58           monthale (SURR)         ND         ug/L         1         0.97         3.5         0.58 <t< td=""><td>ortho-Xvlene</td><td>QN</td><td>ng/L</td><td>1</td><td>0.16</td><td>0.56</td><td></td><td></td></t<>   | ortho-Xvlene   | QN     | ng/L  | 1   | 0.16 | 0.56 |  |  |
| ND   ug/L   1   0.19   0.68   1000     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.25   12     ND   ug/L   1   0.16   0.58     ND   ug/L   1   0.16   0.58     ND   ug/L   1   0.97   3.5     112%   112%   1   | Tetrachloroethene  | QN     | ng/L  | 1   | 0.17 | 0.58 | 3  |  |
| ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         .2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            108%         1         0.97         3.5            108%         1         0.97         3.5            104%         1         0.97         3.5   | Toluene  | QN     | ng/L  | _   | 0.19 | 0.68 | 1000   |  |
| ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.16         0.57         2           ND         ug/L         1         0.22         0.76         0.76           ND         ug/L         1         4.2         12         0.76           ND         ug/L         1         0.50         1.8         0.58           ND         ug/L         1         0.50         1.8         0.56           112%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           108%         1         0.97         3.5         0.76           <   | 1,1,1-Trichloroethane  | QN     | ug/L  | _   | 0.17 | 0.61 | 200  |  |
| ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76           ND         ug/L         1         4.2         1.2           ND         ug/L         1         0.58         1.8           ND         ug/L         1         0.50         1.8           ND         ug/L         1         0.97         3.5           112%         1         0.97         3.5           108%         1         0.97         3.5   | 1,1,2-Trichloroethane  | ΩN     | ng/L  | 1   | 0.17 | 0.59 | 22   |  |
| ND         ug/L         1         0.17         0.60           ND         ug/L         1         0.16         0.57         2           ND         ug/L         1         0.22         0.76           ND         ug/L         1         0.22         0.76           ND         ug/L         1         0.16         0.58           ND         ug/L         1         0.16         0.58           ND         ug/L         1         0.50         1.8           ND         ug/L         1         0.57         3.5           112%         1         0.97         3.5           108%         1         0.97         3.5   | Trichloroethene  | ΩN     | ng/L  | -   | 0.24 | 0.84 | 2  |  |
| ND   ug/L   1   0.16   0.57   .2     ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.58     ND   ug/L   1   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     112%   1   12%   1     108%   1   | Trichlorofluoromethane   | ON     | ug/L  | 1   | 0.17 | 09.0 |  |  |
| ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   4.2   1.2     ND   ug/L   1   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     112%   1   112%   1   108%   1     104%   1   104%   1  | Vinyl chloride   | ND     | ng/L  | _   | 0.16 | 0.57 | .2   |  |
| ND ug/L 1 0.22 0.76  ND ug/L 1 4.2 12  ND ug/L 1 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  112% 1 112% 1 108% 1 104% 1  | meta,para-Xylene   | ON     | ng/L  | _   | 0.32 | 1.1  | 10000  |  |
| ND ug/L 1 4.2 12  ND ug/L 1 0.16 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  112% 1 108% 1 104% 1   | MTBE   | ON     | ug/L  | 1   | 0.22 | 92.0 |  |  |
| ND         ug/L         1         0.16         0.58           ND         ug/L         1         0.50         1.8           ND         ug/L         1         0.97         3.5           112%         1         1         1           108%         1         1           104%         1         1  | Acetone  | QN     | ng/L  | -   | 4.2  | 12   |  |  |
| ND ug/L 1 0.50 1.8<br>ND ug/L 1 0.97 3.5  | Carbon Disulfide   | QN     | ug/L  | -   | 0.16 | 0.58 |  |  |
| ND ug/L 1 0.97 3.5  | Methyl Ethyl Ketone  | ΩN     | ng/L  | 1   | 0.50 | 1.8  |  |  |
| 112%:     1       108%:     1       104%:     1   | Tetrahydrofuran  | ΩN     | ng/L  | 1   | 0.97 | 3.5  |  |  |
| 108%     1       104%     1   | Dibromofluoromethane (SURR)  | 112%   |       | -   |      |      | S  |  |
| 104% 1  | Toluene-d8 (SURR)  | 108%   |       | -   |      |      | S  |  |
|   | 1-Bromo-4-Fluorobenzene (SURR)   | 104%   |       | 1   |      |      | တ  |  |

Page 2 of 2

NLS Project: 318857

Customer: Marathon County Solid Waste Mgmnt Dept NI Project Description: Marathon County BRRDF Private Wells Project Title: April 2019

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| ANALYTE KAMIE         RESULT         UNITS         DIL         LOO         MCL         NO           Bannotichanomethrane         NO         ught         1         0.19         0.69         5           Bonnotichanomethrane         NO         ught         1         0.19         0.69         5           Bonnotichanomethrane         NO         ught         1         0.19         0.69         5           Controderlane         NO         ught         1         0.19         0.69         5           Li Soliciotederlane         NO         ught         1 </th <th>Sample: 1113404 PW8575 Collected: 04/04/19 Analyzed: 04/12/19 - A</th> <th>nalyte</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>   | Sample: 1113404 PW8575 Collected: 04/04/19 Analyzed: 04/12/19 - A | nalyte |       |             |      |      |       |  |
|--|---|--------|-------|-------------|------|------|-------|--|
| ND ugh, 1 0.19 0.69 5  ND ugh, 1 0.19 0.68 80  ND ugh, 1 0.19 0.66 80  ND ugh, 1 0.17 0.60 80  ND ugh, 1 0.17 0.60 80  ND ugh, 1 0.17 0.60 80  ND ugh, 1 0.17 0.61 80  ND ugh, 1 0.18 0.64 7  ND ugh, 1 0.18 0.64 7  ND ugh, 1 0.18 0.64 7  ND ugh, 1 0.18 0.64 6  ND ugh, 1 0.18 0.64 7  ND ugh, 1 0.18 0.64 6  ND ugh, 1 0.18 0.64 7  ND ugh, 1 0.18 0.65 7  ND ugh, 1 0.18 0.65 7  ND ugh, 1 0.18 0.65 7  ND ugh, 1 0.18 0.68 6  ND ugh, 1 0.18 0.68 6  ND ugh, 1 0.19 0.69 6  ND ugh, 1  | ANALYTE NAME  | RESULT | UNITS | DIL         | ГОР  | Log  | MCL   | Note   |
| ND   | Benzene   | ΩN     | ug/L  | -           | 0.19 | 0.69 | 2     |  |
| ND ug/L 1 0.16 0.56 80  ND ug/L 1 0.19 0.66 80  ND ug/L 1 0.15 0.66 80  ND ug/L 1 0.17 0.66 80  ND ug/L 1 0.17 0.66 80  ND ug/L 1 0.27 0.73 600  ND ug/L 1 0.22 0.73 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.22 0.75 75  ND ug/L 1 0.18 0.68 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.69 1000  ND ug/L 1 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.   | Bromodichloromethane  | Q      | ug/L  | -           | 0.19 | 0.68 | 80    |  |
| ND ug/L 1 0.19 0.66 5  ND ug/L 1 0.19 0.66 50  ND ug/L 1 0.19 0.66 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.21 0.23  ND ug/L 1 0.22 0.78 600  ND ug/L 1 0.22 0.78 600  ND ug/L 1 0.18 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.18 0.18 0.68 5  ND ug/L 1 0.18 0.18 0.18 0.18 0.18 0.18 0.18 0.   | Bromoform   | Q      | ug/L  | -           | 0.16 | 0.56 | 80    |  |
| ND ug/L 1 0.19 0.66 5  ND ug/L 1 0.15 5.4  ND ug/L 1 0.15 5.4  ND ug/L 1 0.17 0.60 80  ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.27 0.73  ND ug/L 1 0.18 0.69 1.00  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.19 0.69 6  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.19 0.69 6  ND ug/L 1 0.19 0.69 0.70 5  ND ug/L 1 0.19 0.69 0.70 5  ND ug/L 1 0.19 0.69 6  ND ug/L 1 0.19 0.69 0.70 6  ND ug/L 1 0.19 0.70 0.70 6  ND ug/L 1 0.19 0.70 0.70 6  ND ug/L 1 0.19 0.70 0.70 0.70 6  ND ug/L 1 0.19 0.70 0.70 0.70 0.70 0.70 0.70 0.70 0.7  | Bromomethane  | Q      | ng/L  | 1           | 0.22 | 0.79 |       |  |
| ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.66 80  ND ug/L 1 0.17 0.68 80  ND ug/L 1 0.22 0.73  ND ug/L 1 0.18 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 0.68 5  ND ug/L 1 0.18 0.69 0.68 5  ND ug/L 1 0.18 0.69 0.68 5  ND ug/L 1 0.18 0.69 0.69 0.69 0.69 0.69 0.69 0.69 0.69  | Carbon Tetrachloride  | QN     | ug/L  | -           | 0.19 | 0.66 | 5     |  |
| ND ug/L 1 15 54  ND ug/L 1 0.77 060  ND ug/L 1 0.77 061  ND ug/L 1 0.77 061  ND ug/L 1 0.77 061  ND ug/L 1 0.78 75  ND ug/L 1 0.78 75  ND ug/L 1 0.78 75  ND ug/L 1 0.78 0.76  ND ug/L 1 0.78 0.69 5  ND ug/L 1 0.78 0.69 5  ND ug/L 1 0.78 0.69 5  ND ug/L 1 0.79 0.68 5  ND ug/L 1 0.79 0.69 0.69 6  ND ug/L 1 0.70 0.60 0.70 5  ND ug/L 1 0.70 0.60 0.70 0.7  | Chlorobenzene   | QN     | ng/L  | ۲-          | 0.16 | 0.56 | 100   |  |
| ND UG/L 1 0.17 0.60 80  ND UG/L 1 0.19 0.68  ND UG/L 1 0.12 0.61 80  ND UG/L 1 0.22 0.73  ND UG/L 1 0.22 0.76 600  ND UG/L 1 0.22 0.76 600  ND UG/L 1 0.24 0.75  ND UG/L 1 0.24 0.75  ND UG/L 1 0.25 0.76 600  ND UG/L 1 0.16 0.56 7  ND UG/L 1 0.16 0.56 7  ND UG/L 1 0.18 0.66 7  ND UG/L 1 0.19 0.66 5  ND UG/L 1 0.24 0.84 5  ND UG/L 1 0.24 0.84 5  ND UG/L 1 0.14 0.51 100  ND UG/L 1 0.24 0.85 5  ND UG/L 1 0.25 0.10 0.66 100  ND UG/L 1 0.26 0.66 100  ND UG/L 1 0.26 0.66 5  ND UG/L 1 0.29 0.10 0.66 100  ND UG/L 1 0.29 0.10 0.66 5  ND UG/L 1 0.16 0.56 5  ND UG/L 1 0.16 0.56 100  ND UG/L 1 0.16 0.56 5  ND UG/L 1 0.16 0.56 100  ND UG/L 1 0.16 0.57 0.58 5  ND UG/L 1 0.16 0.57 0.58 1000  ND UG/L 1 0.16 0.58 0.58 10000  ND UG/L 1 0.16 0.58 0.58 100000  ND UG/L 1 0.16 0.58 0.58 100000  ND UG/L 1 0.16 0.58 0.58 1000000  ND UG/L 1 0.16 0.58 0.58 100000  ND UG/L 1 0.16 0.58 0.58  | Chloroethane  | QN     | ng/L  | 1           | 1.5  | 5.4  |       |  |
| ND ug/L 1 0.19 0.68  ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.21 0.73 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.14 0.48 75  ND ug/L 1 0.18 0.66 5  ND ug/L 1 0.18 0.67 70  ND ug/L 1 0.18 0.67 70  ND ug/L 1 0.18 0.67 70  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.17 0.69 16  ND ug/L 1 0.17 0.69 16  ND ug/L 1 0.17 0.69 18  ND ug/L 1 0.17 0.69 118  ND ug/L 1 0.17 0.69 118  ND ug/L 1 0.20 0.76 0.76 118  ND ug/L 1 0.16 0.68 174  ND ug/L 1 0.18 0.76 118  ND ug/L 1 0.18 0.76 118  ND ug/L 1 0.18 0.76 118  ND ug/L 1 0.20 0.76 0.76 118  ND ug/L 1 0.19 0.89 174  ND ug/L 1 0.19 0.80 118  ND ug/L 1 0.19 0.80 118  ND ug/L 1 0.19 0.80 118  ND ug/L 1 0.20 0.76 0.80 118  ND ug/L 1 0.20 0.80 118   | Chloroform  | ND     | ng/L  | ~-          | 0.17 | 0.60 | 80    |  |
| ND 99/L 1 0.17 0.51 80  ND 99/L 1 0.21 0.73  ND 99/L 1 0.22 0.75 600  ND 99/L 1 0.22 0.75 600  ND 99/L 1 0.22 0.75 600  ND 99/L 1 0.20 0.75 600  ND 99/L 1 0.14 0.49  ND 99/L 1 0.16 0.69 5  ND 99/L 1 0.16 0.69 5  ND 99/L 1 0.16 0.69 7  ND 99/L 1 0.16 0.65 7  ND 99/L 1 0.16 0.65 7  ND 99/L 1 0.16 0.65 7  ND 99/L 1 0.20 0.70 6  ND 99/L 1 0.20 0.70 0.68 1000  ND 99/L 1 0.20 0.70 0.68 1000  ND 99/L 1 0.70 0.68 1000  ND 99/L 1 0.70 0.69 5  ND 99/L 1 0.70 0.69 5  ND 99/L 1 0.70 0.69 6  ND 99/L 1 0.70 0.69 0.70  ND 99/L 1 0.70 0.70 0.70  ND 99/L 1 0.70  N | Chloromethane   | QN     | ug/L  | <b>—</b>    | 0.19 | 0.68 |       |  |
| ND ug/L 1 0.21 0.73  ND ug/L 1 0.22 0.75  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.14 0.49  ND ug/L 1 0.14 0.49  ND ug/L 1 0.15 0.51  ND ug/L 1 0.20 0.70  ND ug/L 1 0.15 0.51  ND ug/L 1 | Dibromochloromethane  | ND .   | ug/L  | 1           | 0.17 | 0.61 | 80    |  |
| ND ug/L 1 0.12 0.43  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.20 0.76 75  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64 5  ND ug/L 1 0.19 0.64 5  ND ug/L 1 0.19 0.65 77  ND ug/L 1 0.16 0.65 70  ND ug/L 1 0.15 0.65 100  ND ug/L 1 0.15 0.65 100  ND ug/L 1 0.20 1.0 5  ND ug/L 1 0.16 0.55 5  ND ug/L 1 0.17 0.61 5  ND ug/L 1 0.18 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 1000  | 1,2-Dibromo-3-Chloropropane                                       | QN ·   | ng/L  | 1           | 0.21 | 0.73 |       |  |
| ND 99/L 10 021 0.73  ND 99/L 1 0.22 0.76 600  ND 99/L 1 0.23 0.76 75  ND 99/L 1 0.18 0.64 75  ND 99/L 1 0.18 0.64 5  ND 99/L 1 0.19 0.69 5  ND 99/L 1 0.19 0.65 7  ND 99/L 1 0.19 0.65 7  ND 99/L 1 0.19 0.68 5  ND 99/L 1 0.19 0.68 7  ND 99/L 1 0.19 0.68 15  ND 99/L 1 0.19 0.68 100  ND 99/L 1 0.16 0.56 100  ND 99/L 1 0.19 0.69 2  ND 99/L 1 0.19 0.69 16  ND 99/L 1 0.19 0.69 16  ND 99/L 1 0.15 0.59 6  ND 99/L 1 0.15 0.59 16  ND 99/L 1 0.15 0.59 18  ND 99/L 1 0.15 0.59 18  ND 99/L 1 0.15 0.58 17  ND 99/L 1 0.15 0.59 18  ND 99/L 1 0.50 0.58 17  ND 99/L 1 0.50 0.58 18  | 1,2-Dibromoethane   | QN     | ng/L  | Ψ.          | 0.12 | 0.43 |       |  |
| ND 99/L 10 022 0.76 600  ND 99/L 1 0.20 0.75  ND 99/L 1 0.29 0.75  ND 99/L 1 0.19 0.64  ND 99/L 1 0.19 0.65  ND 99/L 1 0.20  ND 99/L 1 0.20  ND 99/L 1 0.19 0.65  ND 99/L 1 0.19 0.18   | Dibromomethane  | ND     | ng/L  | ,           | 0.21 | 0.73 |       |  |
| ND ug/L 1 0.20 0.72  ND ug/L 1 0.21 0.76  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64  ND ug/L 1 0.16 0.67 7  ND ug/L 1 0.16 0.67 7  ND ug/L 1 0.18 0.68  ND ug/L 1 0.18 0.68  ND ug/L 1 0.18 0.68  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.26 0.67  ND ug/L 1 0.26 0.68  ND ug/L 1 0.26 0.68  ND ug/L 1 0.26 0.70  ND ug/L 1 0.26 0.68  ND ug/L 1 0.26 0.66  ND ug/L 1 0.26 0.66  ND ug/L 1 0.17 0.66  ND ug/L 1 0.17 0.66  ND ug/L 1 0.17 0.69  ND ug/L 1 0.17 0.69  ND ug/L 1 0.17 0.61  ND ug/L 1 0.17 0.60  ND ug/L 1 0.17 0.60  ND ug/L 1 0.17 0.61  ND ug/L 1 0.17 0.60  ND ug/L 1 0.17 0.60  ND ug/L 1 0.18 0.17  ND ug/L 1 0.26 0.58  ND ug/L 1 0.26 0.58  ND ug/L 1 0.26 0.58  ND ug/L 1 0.27 0.76  ND ug/L 1 0.29 0.84  N | 1,2-Dichlorobenzene   | ND     | ng/L  | <b>-</b>    | 0.22 | 0.76 | 009   |  |
| ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.65 7  ND ug/L 1 0.18 0.65 7  ND ug/L 1 0.20 0.50 70  ND ug/L 1 0.20 0.51 100  ND ug/L 1 0.20 0.50  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.56 100  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.56 7  ND ug/L 1 0.18 0.18 1  ND ug/L 1 0.18 0.18 0.18 1  ND | 1,3-Dichlorobenzene   | QN     | ng/L  | 1           | 0.20 | 0.72 |       |  |
| ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.67 7  ND ug/L 1 0.18 0.67 7  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.14 0.51 100  ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.14 0.51 100  ND ug/L 1 0.29 0.17 0.51 100  ND ug/L 1 0.29 0.10 5  ND ug/L 1 0.29 0.10 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.16 0.56 11.1000   | 1,4-Dichlorobenzene   | QN     | ng/L  | 1           | 0.21 | 0.76 | 75    |  |
| ND ug/L 1 0.18 0.64  ND ug/L 1 0.19 0.65 5  ND ug/L 1 0.18 0.65 7  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 0.57 2  ND ug/L 1 0.18 0.57 3.5  ND ug/L 1 0.18 3.5   | Dichlorodifluoromethane   | QN     | ug/L  | <b>-</b>    | 0.14 | 0.49 |       |  |
| ND ug/L 1 0.19 0.69 5 ND ug/L 1 0.18 0.65 77 ND ug/L 1 0.18 0.65 70 ND ug/L 1 0.18 0.65 70 ND ug/L 1 0.19 0.68 5 ND ug/L 1 0.19 0.68 100 ND ug/L 1 0.24 0.84 5 ND ug/L 1 0.20 0.70 5 ND ug/L 1 0.20 0.70 5 ND ug/L 1 0.29 1.0 ND ug/L 1 0.29 1.0 ND ug/L 1 0.29 1.0 ND ug/L 1 0.19 0.68 1000 ND ug/L 1 0.17 0.58 5 ND ug/L 1 0.17 0.69 1 ND ug/L 1 0.18 1 ND ug/L 1 0.19 3.5  | 1,1-Dichloroethane  | QN     | ug/L  | 1           | 0.18 | 0.64 |       |  |
| ND ug/L 1 0.16 0.57 7  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.10  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.68 1000  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.50 5  ND ug/L 1 0.16 0.57 .2  ND ug/L 1 0.16 0.58 11  ND ug/L 1 0.50 1.1 10000  ND ug/L 1 0.50 1.1 10000  ND ug/L 1 0.50 1.8  ND ug/L 1 0.57 3.5  114.% ug/L 1 0.97 3.5  | 1,2-Dichloroethane  | ND     | ug/L  | <del></del> | 0.19 | 0.69 | 5     |  |
| ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.14 0.84 5  ND ug/L 1 0.14 0.84 5  ND ug/L 1 0.14 0.81 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.26 1.00  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.58 11  ND ug/L 1 0.22 0.76 11  ND ug/L 1 0.22 0.76 11  ND ug/L 1 0.22 0.76 11  ND ug/L 1 0.50 18   | 1,1-Dichloroethene  | S      | ug/L  | _           | 0.16 | 0.57 | 7     |  |
| ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.19 0.68  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.51  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 1.0  ND ug/L 1 0.26 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.15 0.56 100  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.27 0.61 200  ND ug/L 1 0.27 0.61 200  ND ug/L 1 0.27 0.65 5  ND ug/L 1 0.27 0.65 5  ND ug/L 1 0.27 0.65 5  ND ug/L 1 0.27 0.65 7  ND ug/L 1 0.27 0.76 118  ND ug/L 1 0.27 0.76 118  ND ug/L 1 0.27 0.76 118  ND ug/L 1 0.50 1.8 114.8  | cis-1,2-Dichloroethene  | QN     | ng/L  | -           | 0.18 | 0.62 | 70    |  |
| ND ug/L 1 0.24 0.84 5 ND ug/L 1 0.19 0.68 ND ug/L 1 0.14 0.51 ND ug/L 1 0.20 1.1 700 ND ug/L 1 0.20 1.7 0.56 ND ug/L 1 0.16 0.56 100 ND ug/L 1 0.16 0.56 100 ND ug/L 1 0.17 0.56 5 ND ug/L 1 0.17 0.58 1000 ND ug/L 1 0.17 0.58 5 ND ug/L 1 0.17 0.61 200 ND ug/L 1 0.17 0.60 5 ND ug/L 1 0.16 0.57 2 ND ug/L 1 0.16 0.57 2 ND ug/L 1 0.16 0.57 3.5 ND ug/L 1 0.50 1.8   | trans-1,2-Dichloroethene  | ND     | ng/L  | -           | 0.15 | 0.51 | 100   |  |
| ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.29 1.0 55  ND ug/L 1 0.29 1.0 55  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 1000  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.25 0.76 1000  ND ug/L 1 0.25 0.76 1000  ND ug/L 1 0.25 0.76 112  ND ug/L 1 0.25 0.76 12  ND ug/L 1 0.50 1.8   | 1,2-Dichloropropane   | QN     | ng/L  | 1           | 0.24 | 0.84 | 5     |  |
| ND ug/L 1 0.14 0.51  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.16 0.57 .2  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.50 1.8  | cis-1,3-Dichloropropene   | ON     | ug/L  | 1           | 0.19 | 0.68 |       |  |
| ND ug/L 1 0.30 1.1 700  ND ug/L 1 0.56 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 2.8 1000  ND ug/L 1 0.18 0.57 2.1 12  ND ug/L 1 0.56 1.8 1000  ND ug/L 1 0.65 3.5 1.8 114%  1114%  1116%  | trans-1,3-Dichloropropene   | ND     | ng/L  | 1           | 0.14 | 0.51 |       |  |
| ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.69 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.27 0.69 5  ND ug/L 1 0.27 0.60 5  ND ug/L 1 0.27 0.60 5  ND ug/L 1 0.17 0.60 2  ND ug/L 1 0.17 0.60 2  ND ug/L 1 0.17 0.60 2  ND ug/L 1 0.18 1.1 10000  ND ug/L 1 0.22 0.76 1.1 10000  ND ug/L 1 0.22 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2  | Ethylbenzene  | ND     | ug/L  | 1           | 0.30 | 1.1  | 700   | -  |
| ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 1000  ND ug/L 1 0.17 0.58 1000  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.17 0.60 7  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.25 1.1  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 3.5   | Methylene chloride  | ND     | ng/L  | 1           | 0.20 | 0.70 | 5     | Control and Contro |
| ND         ug/L         1         0.16         0.56         100           ND         ug/L         1         0.17         0.58         5           ND         ug/L         1         0.17         0.58         5           ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.63         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.26         1.3            ND         ug/L         1         0.50         1.8            ND   | Naphthalene   | ON     | ng/L  | 1           | 0.29 | 1.0  |       |  |
| ND         ug/L         1         0.16         0.56           ND         ug/L         1         0.17         0.58         5           ND         ug/L         1         0.17         0.58         5           ND         ug/L         1         0.17         0.69         5           ND         ug/L         1         0.17         0.69         5           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.32         1.1         10000           ND         ug/L         1         0.22         0.76         0.56           ND         ug/L         1         0.16         0.58         0.56           ND         ug/L         1         0.16         0.58         0.58           ND         ug/L         1         0.16         0.58         1.8           ND         ug/L         1         0.50         1.8           114%         1         0.57  | Styrene   | QN     | ng/L  | 1           | 0.16 | 0.56 | 100   |  |
| ND         ug/L         1         0.17         0.58         5           ND         ug/L         1         0.19         0.68         1000           ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.69         5           ND         ug/L         1         0.17         0.60         5           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76         0.56           ND         ug/L         1         0.22         0.76         0.58           ND         ug/L         1         0.56         1.8           ND         ug/L         1         0.50         1.8           ND         ug/L         1         0.50         1.8           ND         ug/L         1         0.50         1.8           114%         1         0.97         3.5           114%         1         0.97         3.5           1         1         0.50         1.8           1         0.60         0.50         1.8 <td>ortho-Xylene</td> <td>ND</td> <td>ng/L</td> <td>1</td> <td>0.16</td> <td>0.56</td> <td></td> <td></td>  | ortho-Xylene  | ND     | ng/L  | 1           | 0.16 | 0.56 |       |  |
| ND         ug/L         1         0.19         0.68         1000           ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.69         5           ND         ug/L         1         0.17         0.69         5           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.22         0.57         .2           ND         ug/L         1         0.22         0.76         0.76           ND         ug/L         1         0.22         0.76         0.58           ND         ug/L         1         0.16         0.58         0.58           ND         ug/L         1         0.50         1.8         0.50           114%         0.97         3.5         1.8         0.50         1.8           111%         0.6%         1         0.97         3.5         0.50           116%         0.5%         1         0.57         3.5         0.50  | Tetrachloroethene   | ND     | ug/L  | 1           | 0.17 | 0.58 | 5     |  |
| ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         .2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76            ND         ug/L         1         4.2         1.2            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            114%         1         0.97         3.5            116%         1         0.97         3.5            116%         1         0.60         7         3.5           1         1         0.97         3.5            1         1         0.60         1      <  | Toluene   | ND     | ng/L  | _           | 0.19 | 0.68 | 1000  |  |
| ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         .2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            114%         1         0.97         3.5            116%         1         0.97         3.5            116%         1         0.97         3.5            116%         1         0.60         7            1         1         0.97         3.5            1         0.50         1  | 1,1,1-Trichloroethane   | ND     | ng/L  | 7           | 0.17 | 0.61 | 200   |  |
| ND   ug/L   1   0.24   0.84   5     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     114%   1   116%   1   | 1,1,2-Trichloroethane   | ΩN     | ng/L  | -           | 0.17 | 0.59 | 5     |  |
| ND ug/L 1 0.17 0.60  ND ug/L 1 0.16 0.57 .2  ND ug/L 1 0.22 0.76  ND ug/L 1 0.26  ND ug/L 1 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  114% 111% 1  | Trichloroethene   | S      | ng/L  | -           | 0.24 | 0.84 | 5     |  |
| ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.16   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     114%   111%   1   111%   11%   11%   11%     | Trichlorofluoromethane  | Q      | ug/L  | -           | 0.17 | 0.60 |       |  |
| ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   4.2   1.2     ND   ug/L   1   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     114%   111%   1   1.8     111%   1   1.8     116%   1   1.8     116%   1   1.8     1   0.97   3.5     1   0.6%   1   1.8     1   0.97   3.5     1   0.6%   1   1.8     1   0.97   1.8      | Vinyl chloride  | ND     | ng/L  |             | 0.16 | 0.57 | .2    |  |
| ND ug/L 1 0.22 0.76  ND ug/L 1 4.2 12  ND ug/L 1 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  114% 111% 1   | meta,para-Xylene  | ND     | ng/L  | _           | 0.32 | 1.1  | 10000 |  |
| ND ug/L 1 4.2 12  ND ug/L 1 0.16 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  114% 1 11% 1 106% 1   | MTBE  | ON     | ng/L  | 1           | 0.22 | 0.76 |       |  |
| ND ug/L 1 0.16 0.58<br>ND ug/L 1 0.50 1.8<br>ND ug/L 1 0.97 3.5<br>114% 1 111% 1 106% 1  | Acetone   | ON     | ng/L  | 1           | 4.2  | 12   |       |  |
| ND ug/L 1 0.50 1.8<br>ND ug/L 1 0.97 3.5<br>114% 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1   | Carbon Disulfide  | ON     | ng/L  | 1           | 0.16 | 0.58 |       |  |
| ND ug/L 1 0.97 3.5<br>114% 1<br>111% 1<br>106% 1   | Methyl Ethyl Ketone   | ON     | ng/L  | _           | 0.50 | 1.8  |       |  |
| 114%     1       111%     1       106%     1   | Tetrahydrofuran   | QN     | ng/L  | 1           | 0.97 | 3.5  |       |  |
| 111% 1<br>106% 1   | Dibromofluoromethane (SURR)                                       | 114%   |       | 1           |      |      |       | S  |
| 106% 1   | Toluene-d8 (SURR)   | 111%   |       | -           |      |      |       | S  |
|  | 1-Bromo-4-Fluorobenzene (SURR)                                    | 106%   |       | <u>_</u>    |      |      |       | S  |

## NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / BRRDF - Private Wells

1A

Turbidity (quant,text,color):

Odor:

| NLS Lab #:  | Point Name / Homeo   | wner: PW11   | DNR ID#:      | Time Purged:       | Color:        | Odor:         | Turbidity (quant,text,color): |
|---|--|--|---------------|--------------------|---------------|---------------|-------------------------------|
| 11/3/100  | William  |  | 027           |                    |               | X             | $\times$                      |
| 402   | R222780 Dunca  | an Road, Hatley Sample Location:                             | <u> </u>      |                    |               |               | Treated (Y/N):                |
| Date Sampled:   | Time Sampled:  |  | i of Ho       | USE WELL           |               |               | 1 1                           |
| 4.4.19  | 0932   | 10014  | 1 04 190      | GE WELL            | <u> </u>      |               |                               |
| Comments:   | 11 (2)   |  |               |                    |               |               |                               |
| DEPTH OF WATE   |  |  |               | ٠                  |               |               |                               |
| DEPTH OF BOTTO  | м <u>5,85</u>  |  |               |                    |               |               |                               |
| 4/13: South house fa  | ucet   |  |               |                    |               |               |                               |
|   |  |  |               |                    |               |               |                               |
|   |  |  |               |                    | •             |               |                               |
|   |  | -11100   | DNR ID#:      | Time Purged:       | Color:        | Odor:         | Turbidity (quant,text,color): |
| NLS Lab#:   | Point Name / Homeon  |  | 029           | ,                  |               | 140           | 1 10                          |
| 403   | James Glo  | odowski<br>an Road, Hatley                                   |               | 2 min              | CLRAR         | ND            | NP                            |
| Date Sampled:   | Time Sampled:  | Sample Location:   | I             |                    |               |               | Treated (Y/N):                |
| 4.4.19  | 0943   | KITCI  | HENU S        | INK                |               |               | 2                             |
| Comments:   | I  | 1  |               |                    |               |               |                               |
|   |  |  |               |                    |               |               |                               |
|   |  |  |               |                    |               |               | ·                             |
|   |  |  |               |                    |               |               | ,                             |
| As of 11/06: K  | itchen Sink (han   | d dug well, owne   | r may want    | us to purge little | e or no water | before sampli | ng)                           |
|   |  |  |               |                    |               |               |                               |
|   |  | •  |               |                    |               |               |                               |
|   |  |  |               |                    |               |               |                               |
| NY CY -L #-   |  | PWOEZE   | DNR ID#:      | Time Purged:       | Color:        | Odor:         | Turbidity (quant,text,color): |
| NLS Lab #:  |  | owner: PW8575  | DNR ID #: 367 | Time Purged:       |               |               | . 11                          |
| NLS Lab#:   | Jerry and F  | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| Pate Sampled:   | Jerry and I<br>R221615 S<br>Time Sampled:                                      | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| Pate Sampled:   | Jerry and I<br>R221615 S   | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| 404   | Jerry and I<br>R221615 S<br>Time Sampled:                                      | Krista Bates   | 367           | _ `                | REAR          | ND            | ND                            |
| 14024<br>Date Sampled:<br>4.4.19  | Jerry and I<br>R221615 S<br>Time Sampled:                                      | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| HO2<br>Date Sampled:<br>H. H. 19  | Jerry and I<br>R221615 S<br>Time Sampled:                                      | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| H024<br>Date Sampled:<br>4.4.19   | Jerry and I<br>R221615 S<br>Time Sampled:                                      | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| HO2<br>Date Sampled:<br>H. H. 19  | Jerry and I<br>R221615 S<br>Time Sampled:<br>/O OO                             | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| Date Sampled: 4.4.19 Comments:  | Jerry and I<br>R221615 S<br>Time Sampled:<br>/O OO                             | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| Date Sampled: 4.4.19 Comments:  | Jerry and I<br>R221615 S<br>Time Sampled:<br>/O OO                             | Krista Bates   | 367           | 5 min              | REAR          | ND            | ND                            |
| Date Sampled: 4.4.19 Comments: Outside faucet side o                    | Jerry and I<br>R221615 S<br>Time Sampled:<br>IO OO                             | Krista Bates Silk, Ringle   Sample Location:   OUTS/         | 367<br>DE S   | 5 min              | REAR          | ND            | ND                            |
| Date Sampled: 4.4.19 Comments:  | Jerry and I R221615 S Time Sampled: //O OO                                     | Krista Bates Silk, Ringle   Sample Location:   OUTS/         | 367           | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  4.4.19  Comments:  Outside faucet side o                 | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled: 4.4.19 Comments: Outside faucet side o                    | Jerry and I R221615 S Time Sampled: //O OO                                     | Krista Bates Silk, Ringle   Sample Location:   OUTS/         | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  4.4.19  Comments:  Outside faucet side o                 | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  4.4.19  Comments:  Outside faucet side o                 | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  H. Y. 19  Comments:  Outside faucet side of the sampled: | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  H. Y. 19  Comments:  Outside faucet side of the sampled: | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |
| Date Sampled:  H. 4. 19  Comments:  Outside faucet side of the sampled: | Jerry and I R221615 S Time Sampled: //O OO  fhouse  Point Name / Homes Trip Bl | Krista Bates Silk, Ringle   Sample Location:   OUTS     OUTS | 367  OE 5     | 5 min              | SI DE         | ND<br>of Hou  | NID.  Treated (Y/N):          |

Rev 10/18

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29

Ringle, WI 54471 9754

Page 1 of 10 WDATCP Laboratory Certification No. 105-330 EPA Laboratory ID No. WI00034 Printed: 05/01/19

WDNR Laboratory ID No. 721026460

20080

NLS Customer:

318858

NLS Project:

Marathon County Area A Private Wells April 2019 Project:

PW25 NLS ID: 1113406

Matrix: GW

Collected: 04/04/19 08:35 Received: 04/04/19

|                       | Result        | Units | Dilution | LOD LOQ/MCL Analyzed Method | Analyzed M | ethod       | Lab       |
|-----------------------|---------------|-------|----------|-----------------------------|------------|-------------|-----------|
| Field color           | none detected |       |          |                             | 04/04/19 N | 4           | 721026460 |
| Field odor            | none detected |       |          |                             | 04/04/19 N | 4           | 721026460 |
| Field turbidity       | none detected |       |          |                             | 04/04/19 N | <b>b</b>    | 721026460 |
| VOCs (water) by GC/MS | see attached  |       |          |                             | 04/12/19 S | SW846 8260C | 721026460 |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

Shaded results indicate >MCL LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Reviewed by:

NA = Not Applicable

WDATCP Laboratory Certification No. 105-330

WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

NLS Customer: NLS Project: Printed: 05/01/19

## Marathon County Area A Private Wells April 2019 Project:

## PW68 NLS ID: 1113407

Matrix: GW

Collected: 04/04/19 08:08 Received: 04/04/19

|                                      | 721026460   | 721026460   | 6460           | 6460   |
|--------------------------------------|---|-------------|----------------|--|
| Lab                                  | 72102   | 72102       | 721026460      | 721026460  |
| Dilution LOD LOQ/MCL Analyzed Method | 04/04/19 NA   | 04/04/19 NA | 04/04/19 NA    | 04/12/19 SW846 8260C   |
| LOQ/MCL                              |   |             | :              |  |
| 100                                  |   |             |                |  |
| ution                                |   |             |                | THE RESERVE THE PROPERTY OF TH |
| Units                                |   |             |                | A STATE OF THE PARTY OF THE PAR |
| S                                    |   |             |                |  |
| Units                                |   |             |                |  |
|                                      | etec  | detected    | ione defected  | attached   |
| Resul                                | none d  | none det    | none           | see atta   |
|                                      |   |             |                |  |
|                                      |   |             |                |  |
|                                      | while the control of |             |                |  |
|                                      |   |             |                |  |
|                                      |   |             |                | by GC/MS   |
| arameter                             | Field color   | ield odor   | ield turbidity | OCs (water) by GC/MS   |
| Par                                  | Ē   | E L         | Ē              | 9  |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

NA = Not Applicable

Shaded results indicate >MCL

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/LDWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

Reviewed by:

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Page 3 of 10 318858

NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

Marathon County Solid Waste Mgmnt Dept Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754 Attn: Dave Hagenbucher Client:

20080

NLS Customer: **NLS Project:** Printed: 05/01/19

Marathon County Area A Private Wells April 2019 Project:

PW18 NLS ID: 1113408

Collected: 04/04/19 08:24 Received: 04/04/19

| Parameter             | Units         | Dilution | Dilution LOD LOQ/MCL | Analyzed Method      | Lab       |
|-----------------------|---------------|----------|----------------------|----------------------|-----------|
| Field color           | none detected |          |                      | 04/04/19 NA          | 721026460 |
| Field odor            | none detected |          |                      | 04/04/19 NA          | 721026460 |
| Field turbidity       | none detected |          |                      | 04/04/19 NA          | 721026460 |
| VOCs (water) by GC/MS | see attached  |          |                      | 04/12/19 SW846 8260C | 721026460 |
|                       |               |          |                      |                      |           |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

LOQ = Limit of Quantitation MCL = Maximum Contaminant Levels for Drinking Water Samples. %DWB = (mg/kg DWB) / 10000LOD = Limit of Detection ND = Not Detected (< LOD) DWB = Dry Weight Basis

NA = Not Applicable Shaded results indicate >MCL. 1000 ug/L = 1 mg/L

Reviewed by:

R. T. Krueger President Authorized by:

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Page 4 of 10 318858

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Marathon County Landfill R18500 East Highway 29 Attn: Dave Hagenbucher Ringle, WI 54471 9754 Client:

20080

NLS Customer: NLS Project: Printed: 05/01/19

Marathon County Area A Private Wells April 2019 Project:

PW19 NLS ID: 1113409

Matrix: GW

Collected: 04/04/19 07:52 Received: 04/04/19

|  | Result Units Dilution | LOD LOQ/MCL Analyzed Method | Lab       |
|--|-----------------------|-----------------------------|-----------|
| Field color  |                       | 04/04/19 NA                 | 721026460 |
| Field odor   | none detected         | 04/04/19 NA                 | 721026460 |
| Field turbidity  | none detected         | 04/04/19 NA                 | 721026460 |
| VOCs (water) by GC/MS  | see attached          | 04/12/19 SW846 8260C        | 721026460 |
| The second secon |                       |                             | ı         |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

Shaded results indicate >MCL 1000 ug/L = 1 mg/LDWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD) DWB = Dry Weight Basis

NA = Not Applicable LOQ = Limit of Quantitation

Reviewed by:

# **ANALYTICAL REPORT** Analytical Laboratory and Environmental Services

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034 Page 5 of 10 Printed: 05/01/19

318858 NLS Project:

20080 NLS Customer:

Marathon County Area A Private Wells April 2019 Project:

Marathon County Solid Waste Mgmnt Dept

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

Attn: Dave Hagenbucher

Client:

400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

NORTHERN LAKE SERVICE, INC.

## PW24 NLS ID: 1113410

Matrix: GW

Collected: 04/04/19 08:44 Received: 04/04/19

| Parameter             | Result Units  | Dilution LOD LOQ/MCL Analyzed Method | Analyzed Method      | Lab       |
|-----------------------|---------------|--------------------------------------|----------------------|-----------|
|                       | etected       |                                      | 04/04/19 NA          | 721026460 |
| Field odor            | none detected |                                      | 04/04/19 NA          | 721026460 |
| -ield turbidity       | none detected |                                      | 04/04/19 NA          | 721026460 |
| VOCs (water) by GC/MS | see attached  |                                      | 04/12/19 SW846 8260C | 721026460 |
|                       | l             |                                      |                      |           |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/LDWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

Shaded results indicate >MCL

Reviewed by: NA = Not Applicable

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Page 6 of 10

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Marathon County Landfill Attn: Dave Hagenbucher Client:

NLS Customer: NLS Project: Printed: 05/01/19

20080

318858

## Marathon County Area A Private Wells April 2019 Project:

R18500 East Highway 29 Ringle, WI 54471 9754

PW17 NLS ID: 1113411

Collected: 04/04/19 09:18 Received: 04/04/19

| arameter             | Result Units  | Dilution | LOD LOQ/MCL Analyzed Method | Analyzed Method      | Lab       |
|----------------------|---------------|----------|-----------------------------|----------------------|-----------|
| ield color           | none detected |          |                             | 04/04/19 NA          | 721026460 |
| ield odor            | none detected |          |                             | 04/04/19 NA          | 721026460 |
| ield turbidity       | none detected |          |                             | 04/04/19 NA          | 721026460 |
| OCs (water) by GC/MS | see attached  |          |                             | 04/12/19 SW846 8260C | 721026460 |
|                      |               |          |                             |                      |           |

Less-Certain Quantitagreater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

Shaded results indicate >MCL. LOQ = Limit of Quantitation 1000 ug/L = 1 mg/LDWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

Reviewed by:

NA = Not Applicable

NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 Marathon County Solid Waste Mgmnt Dept Marathon County Landfill Attn: Dave Hagenbucher R18500 East Highway 29 Ringle, WI 54471 9754

Client:

Page 7 of 10 318858 NLS Project: Printed: 05/01/19

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

20080

NLS Customer:

Marathon County Area A Private Wells April 2019 Project:

PW64 NLS ID: 1113412

Matrix: GW

Collected: 04/04/19 09:05 Received: 04/04/19

|                       | Result Units  | Dilution | LOD   | LOQ/MCL | LOD LOQ/MCL Analyzed Method | Lab       |
|-----------------------|---------------|----------|---|---------|-----------------------------|-----------|
| Field color           | tected        |          |   |         | 04/04/19 NA                 | 721026460 |
| Field odor            | none detected |          |   |         | 04/04/19 NA                 | 721026460 |
| Field turbidity       | none detected |          |   |         | 04/04/19 NA                 | 721026460 |
| VOCs (water) by GC/MS | see attached  |          | and the second second control of the second |         | 04/12/19 SW846 8260C        | 721026460 |
|                       |               |          |   |         |                             |           |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

NA = Not Applicable LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L Shaded results indicate >MCL

Reviewed by:

NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Marathon County Landfill R18500 East Highway 29

20080

Printed: 05/01/19 INLS Project: NLS Customer:

318858

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WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Project: Marathon County Area A Private Wells April 2019

Ringle, WI 54471 9754

PW88 NLS ID: 1113413

Matrix: GW

Collected: 04/04/19 08:52 Received: 04/04/19

| Parameter             | Result        | Dilution | ГOD   | LOQ/MCL | Analyzed Method      | Lab       |
|-----------------------|---------------|----------|---|---------|----------------------|-----------|
| Field color           | none detected |          |   |         | 04/04/19 NA          | 721026460 |
| Field odor            | none detected |          |   |         | 04/04/19 NA          | 721026460 |
| Field turbidity       | none detected |          |   |         | 04/04/19 NA          | 721026460 |
| /OCs (water) by GC/MS | see attached  |          | from consequent to the second |         | 04/12/19 SW846 8260C | 721026460 |
|                       |               |          |   |         |                      |           |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection LOQ = 1 DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded

LOQ = Limit of Quantitation NA = Not Applicable 1000 ug/L = 1 mg/L. Shaded results indicate >MCL.

Reviewed by:

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330

Page 9 of 10 EPA Laboratory ID No. WI00034 Printed: 05/01/19

318858 NLS Project:

20080 NLS Customer:

## Marathon County Area A Private Wells April 2019 Project:

Marathon County Solid Waste Mgmnt Dept

Client:

Marathon County Landfill R18500 East Highway 29 Attn: Dave Hagenbucher

Ringle, WI 54471 9754

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520

NORTHERN LAKE SERVICE, INC.

Ph: (715)-478-2777 Fax: (715)-478-3060

## PW48 NLS ID: 1113414

Matrix: GW

Collected: 04/04/19 07:10 Received: 04/04/19

|                       | Units         | Dilution LOD LOQ/MCL Analyzed Method | Analyzed Method      | Lab       |
|-----------------------|---------------|--------------------------------------|----------------------|-----------|
| Field color           | none detected |                                      | 04/04/19 NA          | 721026460 |
| Field odor            | none detected |                                      | 04/04/19 NA          | 721026460 |
| Field turbidity       | none detected |                                      | 04/04/19 NA          | 721026460 |
| VOCs (water) by GC/MS | see attached  |                                      | 04/12/19 SW846 8260C | 721026460 |

/alues in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

NA = Not Applicable

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection ND = Not Detected (< LOD)

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL.

Reviewed by:

Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher Client:

Marathon County Landfill R18500 East Highway 29

Ringle, WI 54471 9754

20080 EPA Laboratory ID No. W100034 Page 10 of 10 318858 NLS Customer: NLS Project: Printed: 05/01/19

WDNR Laboratory ID No. 721026460

WDATCP Laboratory Certification No. 105-330

Fax: 715,446 2906 Phone: 715 446 3339

Marathon County Area A Private Wells April 2019 Project:

Trip Blank NLS ID: 1113415

Collected: 04/04/19 00:00 Received: 04/04/19

VOCs (water) by GC/MS Parameter

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered 721026460 to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content. NA = Not Applicable see attached

Authorized by: R. T. Krueger

Reviewed by:

Гар

Analyzed Method 04/12/19

LOQ/MCL

20

Dilution

Units

Result

President

1000 ug/L = 1 mg/LDWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOD = Limit of Detection

ND = Not Detected (< LOD)

Shaded results indicate >MCL

LOQ = Limit of Quantitation

Page 1 of 7

NLS Project: 318858

Customer: Marathon County Solid Waste Mgmnt Dept N

Project Title: April 2019

| 3:51                      |
|---------------------------|
| 790                       |
| 01/20                     |
| d: 05/                    |
| Printed: 05/01/2019 03:51 |
|                           |
| AT3A                      |
| Template: SAT3APP3        |
| Temp                      |
| •                         |
|                           |
|                           |

| Betterdentiation   ND   1921   1   0.19   0.88   5     Bornovichementane   | ANALYTE NAME                   | RESULT | UNITS | DIL LOD | <u> </u> | MCL   | Note   |             |
|--|--------------------------------|--------|-------|---------|----------|-------|--|-------------|
| ND ugl, 1 0.19 0.68 80  ND ugl, 1 0.19 0.66 80  ND ugl, 1 0.79 0.66 100  ND ugl, 1 0.79 0.66 100  ND ugl, 1 0.79 0.69 80  ND ugl, 1 0.79 0.69 80  ND ugl, 1 0.79 0.69 80  ND ugl, 1 0.77 0.73  ND ugl, 1 0.75 0.79  ND ugl, 1 0.75 0.79  ND ugl, 1 0.75 0.79  ND ugl, 1 0.79 0.69 75  ND ugl, 1 0.75 0.79  ND ugl, 1 0.79 0.69 75  ND ugl, 1 0.79 0.69 5  ND ugl, 1 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75  | Benzene                        | QN     | ng/L  | 1 0.1   |          | 5     |  |             |
| ND ug/L 1 0.16 0.56 80  ND ug/L 1 0.19 0.66 5  ND ug/L 1 0.19 0.69 80  ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.27 0.73 600  ND ug/L 1 0.27 0.75 75  ND ug/L 1 0.27 0.75 75  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 0.69 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.75 0.69 5  ND ug/L 1 0.75 0.89 5  ND ug/L | Bromodichloromethane           | ND     | ug/L  | 1 0.1   |          | 80    |  |             |
| ND ug/L 1 0.72 0.78 5  ND ug/L 1 0.76 0.66 100  ND ug/L 1 0.76 0.66 100  ND ug/L 1 0.77 0.61 80  ND ug/L 1 0.77 0.61 80  ND ug/L 1 0.73 0.43  ND ug/L 1 0.72 0.73 0.73  ND ug/L 1 0.72 0.73 0.73  ND ug/L 1 0.74 0.69 5  ND ug/L 1 0.75 0.68 100  ND ug/L 1 0.75 0.68 100  ND ug/L 1 0.76 0.69 5  ND ug/L 1 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75   | Bromoform                      | ON     | ng/L  | 1 0.1   |          | 80    |  |             |
| ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.60 80  ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.21 0.75 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.23 0.75 600  ND ug/L 1 0.14 0.48 75  ND ug/L 1 0.15 0.55 75  ND ug/L 1 0.16 0.55 70  ND ug/L 1 0.15 0.55 100  ND ug/L 1 0.15 0.55 110  ND ug/ | Bromomethane                   | ND     | ng/L  | 1 0.2   |          |       |  | П           |
| ND Ug/L 1 1.6 0.56 1100  ND Ug/L 1 0.16 0.56 1100  ND Ug/L 1 0.17 0.69 80  ND Ug/L 1 0.17 0.69 80  ND Ug/L 1 0.12 0.63 80  ND Ug/L 1 0.12 0.73 0.73  ND Ug/L 1 0.22 0.73 0.70  ND Ug/L 1 0.24 0.75  ND Ug/L 1 0.25 0.75 75  ND Ug/L 1 0.19 0.66 75  ND Ug/L 1 0.19 0.66 75  ND Ug/L 1 0.19 0.66 75  ND Ug/L 1 0.19 0.68 5  ND Ug/L 1 0.24 0.51 100  ND Ug/L 1 0.19 0.68 5  ND Ug/L 1 0.26 0.70 0.70  ND Ug/L 1 0.27 0.70  ND Ug/L 1 0.26 0.70 0.70  ND Ug/L 1 0.26 0.70 0.70  ND Ug/L 1 0.19 0.66 100  ND Ug/L 1 0.19 0.66 100  ND Ug/L 1 0.19 0.66 100  ND Ug/L 1 0.16 0.56 100  ND Ug/L 1 0.16 0.56 100  ND Ug/L 1 0.16 0.56 0.70  ND Ug/L 1 0.16 0.56 0.50  ND Ug/L 1 0.16 0.50  ND Ug | Carbon Tetrachloride           | ON     | ng/L  | 1 . 0.1 |          | 5     |  |             |
| ND ug/L 1 0.15 5.4  ND ug/L 1 0.17 0.66 80  ND ug/L 1 0.17 0.66 80  ND ug/L 1 0.21 0.63 80  ND ug/L 1 0.21 0.73 600  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.26 0.75 75  ND ug/L 1 0.18 0.64 5  ND ug/L 1 0.18 0.64 5  ND ug/L 1 0.19 0.69 100  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.69 100  ND ug/L 1 0.19 0.69 1000  ND ug/L 1 0.17 0.69 1000  ND ug/L 1 0.18 0.18 1000  ND ug/L 1 0.16 0.58 1100  ND ug/L 1 0.16 0.18 11000  ND ug/L 1 0.16 0.18 11000  ND ug/L 1 0.18 11000  ND ug | Chlorobenzene                  | ND     | ng/L  | 1 0.1   |          | 100   |  | П           |
| ND ug/L 1 0.17 0.60 80  ND ug/L 1 0.17 0.68  ND ug/L 1 0.21 0.73  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.25 0.75  ND ug/L 1 0.25 0.76  ND ug/L 1 0.18 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.15 0.69  ND ug/L 1 0.20 0.70  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.15 0.69  ND ug/ | Chloroethane                   | ND     | ng/L  | 1       |          |       |  | T           |
| ND ug/L 1 0.19 0.68  ND ug/L 1 0.27 0.61 80  ND ug/L 1 0.27 0.75  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.23 0.76 75  ND ug/L 1 0.19 0.69  | Chloroform                     | ON     | ng/L  | 1 0.1   |          | 80    |  |             |
| ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.21 0.73  ND ug/L 1 0.22 0.76  ND ug/L 1 0.20 0.72  ND ug/L 1 0.18 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.19 0.69  ND ug/L 1 0.19 0.68  ND ug/L 1 0.19 0.69  ND ug/L 1 0.19 0.19  ND ug/L 1 0.19 0.19  ND ug/L 1 0.19 0.19  ND ug/ | Chloromethane                  | ND     | ng/L  | 1 0.1   |          |       |  | П           |
| ND ug/L 1 0.21 0.73  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.21 0.76 600  ND ug/L 1 0.21 0.76 75  ND ug/L 1 0.19 0.49 75  ND ug/L 1 0.19 0.64 77  ND ug/L 1 0.19 0.65 70  ND ug/L 1 0.19 0.65 100  ND ug/L 1 0.19 0.65 110  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.16 0.56 118  | Dibromochloromethane           | ND     | ng/L  | 1 0.1   |          | 80    |  |             |
| ND ug/L 1 0.12 0.73  ND ug/L 1 0.21 0.75  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.24 0.75  ND ug/L 1 0.14 0.75  ND ug/L 1 0.18 0.65  ND ug/L 1 0.18 0.65  ND ug/L 1 0.16 0.57 7  ND ug/L 1 0.16 0.65  ND ug/L 1 0.16 0.65  ND ug/L 1 0.16 0.65  ND ug/L 1 0.16 0.66  ND ug/L 1 0.17 0.61  ND ug/L 1 0.16 0.66  ND ug/L 1 0.16 0.66  ND ug/L 1 0.17 0.61  ND ug/L 1 0.16 0.66  ND ug/L 1 0.17 0.61  ND ug/L 1 0.16 0.66  ND ug/L 1 0.16 0.16  ND ug/L 1 0.16  ND ug/L  | 1,2-Dibromo-3-Chloropropane    | ND     | ng/L  | 1 0.2   |          |       |  |             |
| ND ug/L 1 0.21 0.73 600  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.20 0.75 75  ND ug/L 1 0.18 0.64  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.19 0.68 77  ND ug/L 1 0.19 0.68 77  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.29 1.0 68  ND ug/L 1 0.19 0.66 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1 1.1  | 1,2-Dibromoethane              | ND     | ng/L  | 1 0.1   |          |       |  |             |
| ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.20 0.72  ND ug/L 1 0.14 0.49  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.19 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.68 7  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 1.70  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.15 0.55 100  ND ug/L 1 0.15 0.55 100  ND ug/L 1 0.15 0.55 100  ND ug/L 1 0.15 0.68 1000  ND ug/L 1 0.15 0.68 1000  ND ug/L 1 0.15 0.68 1000  ND ug/L 1 0.15 0.59 5  ND ug/L 1 0.15 0.59 5  ND ug/L 1 0.15 0.50 1.18  ND ug/L 1 0.15 0.50 1.18  ND ug/L 1 0.15 0.50 1.18  ND ug/L 1 0.50 1.18  | Dibromomethane                 | ND     | ng/L  | 1 0.2   |          |       |  |             |
| ND ug/L 1 0.21 0.75  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.65 70  ND ug/L 1 0.14 0.57 70  ND ug/L 1 0.14 0.51 100  ND ug/L 1 0.14 0.51 100  ND ug/L 1 0.14 0.51 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.17 0.56 11  ND ug/L 1 0.17 0.56 11  ND ug/L 1 0.17 0.56 11  ND ug/L 1 0.15 0.56 11  ND ug/L 1 0.16 0.56 11  ND ug/L 1 0.16 0.56 11  ND ug/L 1 0.16 0.56 118  ND ug/L 1 0.16 0.56 118  ND ug/L 1 0.16 0.56 118  ND ug/L 1 0.18 0.18 118  ND ug/L 1 0.18 0.18 118  | 1,2-Dichlorobenzene            | ND     | ng/L  | 1 0.2   |          | 900   |  |             |
| ND ug/L 1 0.14 0.64  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.65  ND ug/L 1 0.18 0.65 70  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.20 1.05  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.17 0.68 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.18 0.18  ND ug/L 1 0.18 0.18  ND ug/L 1 0.18 0.18  ND ug/L 1 0.10 0.18 0.18  ND ug/L 1 0.18 0.18   | 1.3-Dichlorobenzene            | QN     | ng/L  | 1 0.2   |          |       |  | Γ           |
| ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.65 7  ND ug/L 1 0.14 0.65 1  ND ug/L 1 0.15 0.68  ND ug/L 1 0.14 0.51  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.15 0.68 100  ND ug/L 1 0.15 0.68 100  ND ug/L 1 0.15 0.68 100  ND ug/L 1 0.15 0.68 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 0.50  ND ug/L 1 0.18 0.16 0.50  ND ug/L 1 0.50 0.18  | 1,4-Dichlorobenzene            | QN     | ng/L  | 1 0.2   |          | 75    |  | Г           |
| ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.65 7  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 10000  ND ug/L 1 0.17 0.61 10000  ND ug/L 1 0.17 0.61 11 10000  ND ug/L 1 0.50 1.8 11 11 11 11 11 11 11 11 11 11 11 11 11  | Dichlorodifluoromethane        | QN     | ng/L  | 1 0.1   |          |       |  | l           |
| ND ug/L 1 0.19 0.69 5 ND ug/L 1 0.18 0.65 70 ND ug/L 1 0.18 0.65 70 ND ug/L 1 0.19 0.65 100 ND ug/L 1 0.19 0.68 15 ND ug/L 1 0.19 0.68 ND ug/L 1 0.29 0.60 ND ug/L 1 0.29 1.0 5 ND ug/L 1 0.15 0.56 100 ND ug/L 1 0.15 0.56 100 ND ug/L 1 0.17 0.68 1000 ND ug/L 1 0.17 0.68 5 ND ug/L 1 0.17 0.69 5 ND ug/L 1 0.18 1.1 10000 ND ug/L 1 0.59 1.1 10000 ND ug/L 1 0.59 1.1 10000 ND ug/L 1 0.59 1.1 113% ND ug/L 1 0.59 3.5   | 1.1-Dichloroethane             | ND     | ng/L  | 1 0.1   |          |       |  | T           |
| ND ug/L 1 0.16 0.57 7  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.14 0.68  ND ug/L 1 0.14 0.68  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.14 0.51  ND ug/L 1 0.20 1.70 5  ND ug/L 1 0.26 1.00  ND ug/L 1 0.26 1.00  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.50 7  ND ug/L 1 0.17 0.50 7  ND ug/L 1 0.17 0.50 11  ND ug/L 1 0.17 0.50 11  ND ug/L 1 0.22 0.76 11  ND ug/L 1 0.22 0.76 11  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.22 0.76 1.38  ND ug/L 1 0.50 1.8   | 1.2-Dichloroethane             | QN     | ng/L  | 1 0.1   |          | 5     |  | T           |
| ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.19 0.68  ND ug/L 1 0.14 0.51  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 1000  ND ug/L 1 0.16 0.56 1000  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.27 0.50 7  ND ug/L 1 0.27 0.58 7  ND ug/L 1 0.25 1.10  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.25 1.10  ND ug/L 1 0.32 1.10  ND ug/L 1 0.40 0.50 1.8  ND ug/L 1 0.40 0.50 1.8  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  | 1.1-Dichloroethene             | ΩN     | ng/L  | 1 0.1   |          | 7     |  | Т           |
| ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.19 0.68  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.59 1  ND ug/L 1 0.17 0.50 11  ND ug/L 1 0.17 0.59 1  ND ug/L 1 0.17 0.50 11  ND ug/L 1 0.17 0.50 11  ND ug/L 1 0.15 0.50 118  ND ug/L 1 0.50 118   | cis-1.2-Dichloroethene         | ND     | nd/L  | 1 0.1   |          | 70    |  | Г           |
| ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.26 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.50 5  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 0.76  ND ug/L 1 0.22 1.1  ND ug/L 1 0.50 1.18   | trans-1,2-Dichloroethene       | ON     | ug/L  | 1 0.1   |          | 100   |  |             |
| ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.70 57  ND ug/L 1 0.29 1.0 56  ND ug/L 1 0.29 1.0 56  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.16 0.57 .2  ND ug/L 1 0.60 1.8  ND ug/L 1 0.50 1.8  ND ug/L 1 0.57 3.5   | 1,2-Dichloropropane            | ON     | ng/L  | 1 0.2   |          | 5     |  |             |
| ND ug/L 1 0.14 0.51  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56  ND ug/L 1 0.16 0.56  ND ug/L 1 0.17 0.58 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.60  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.57 1.2  ND ug/L 1 0.20 1.8  ND ug/L 1 0.20 1.8  ND ug/L 1 0.18 1.8  ND ug/L 1 0.16 0.58  ND ug/L 1 0.18 3.5   | cis-1,3-Dichloropropene        | QN     | ng/L  | 1 0.1   |          |       |  |             |
| ND ug/L 1 0.20 1.70 5  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.50 184 5  ND ug/L 1 0.17 0.50 1.8 113%  ND ug/L 1 0.22 0.76 1.8 113%  ND ug/L 1 0.50 1.8 113%  ND ug/L 1 0.50 1.8 113%  ND ug/L 1 0.50 3.5 1140%   | trans-1,3-Dichloropropene      | ND     | ng/L  | 1 0.1   |          |       |  | T           |
| ND   ug/L   1 0.29 0.70 5  | Ethylbenzene                   | ND     | ng/L  | 1.0.3   |          | 700   |  | Т           |
| ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.22 0.76 1000  ND ug/L 1 0.22 0.76 118  ND ug/L 1 0.25 1.1 10000  ND ug/L 1 0.59 3.5 1.1 10000  | Methylene chloride             | ND     | ng/L  | 1 0.2   |          | 5     |  |             |
| ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.32 1.2 1.2  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 3.5 1.1  113% 113% 110% - 1   | Naphthalene                    | ON .   | ng/L  | 1 0.2   |          |       |  | П           |
| ND       ug/L       1       0.16       0.56         ND       ug/L       1       0.17       0.58       5         ND       ug/L       1       0.17       0.68       1000         ND       ug/L       1       0.17       0.59       5         ND       ug/L       1       0.17       0.60       5         ND       ug/L       1       0.22       0.76       .2         ND       ug/L       1       0.22       0.76       .2         ND       ug/L       1       0.22       0.76       .18         ND       ug/L       1       0.50       1.8         ND       ug/L       1       0.50       3.5         110%       .2       3.5       .2         110%       .2       .2       .2         104%       .2       .2       .2         104%       .2       .2       .2  | Styrene                        | ND     | ng/L  | 1 0.1   |          | 100   |  |             |
| ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.50 5  ND ug/L 1 0.17 0.60  ND ug/L 1 0.17 0.60  ND ug/L 1 0.15 0.60  ND ug/L 1 0.22 0.76  ND ug/L 1 0.23 1.1  ND ug/L 1 0.23 1.2  ND ug/L 1 0.23 1.3  ND ug/L 1 0.58 1.3  ND ug/L 1 0.59 3.5  | ortho-Xylene                   | ND     | ng/L  | 1 0.1   |          |       |  | Т           |
| ND         ug/L         1         0.19         0.68         1000           ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.17         0.60         2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.22         0.76            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            113%         1         0.97         3.5            104%         1         0.97         3.5            104%         1         0.  | Tetrachloroethene              | ND     | ng/L  | 1 0.1   |          | 5     | And the state of t | П           |
| ND         ug/L         1         0.17         0.61         200           ND         ug/L         1         0.17         0.59         5           ND         ug/L         1         0.24         0.84         5           ND         ug/L         1         0.17         0.60         .2           ND         ug/L         1         0.16         0.57         .2           ND         ug/L         1         0.32         0.76            ND         ug/L         1         4.2         1.2            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.16         0.58            ND         ug/L         1         0.50         1.8            ND         ug/L         1         0.50         1.8            113%         1         0.97         3.5            104%         1         0.97         3.5            104%         1         0.97         3.5            104%         1         0.97         3.5   | Toluene                        | ND     | ng/L  | 1 0.1   |          | 1000  |  | 1           |
| ND     ug/L     1     0.17     0.59     5       ND     ug/L     1     0.24     0.84     5       ND     ug/L     1     0.17     0.60     .2       ND     ug/L     1     0.16     0.57     .2       ND     ug/L     1     0.32     1.1     10000       ND     ug/L     1     4.2     12       ND     ug/L     1     0.16     0.58       ND     ug/L     1     0.50     1.8       ND     ug/L     1     0.50     1.8       113%     1     0.97     3.5       110%     -1     1       10%     -1   | 1,1,1-Trichloroethane          | ND     | ng/L  | 1.0     |          | 200   |  |             |
| ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.17 0.60  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.22 0.76  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  113% 1 13% 1 10% 3.5  | 1,1,2-Trichloroethane          | ND     | ng/L  | 1 0.1   |          | 5     |  | 1           |
| ND ug/L 1 0.17 0.60  ND ug/L 1 0.16 0.57 .2  ND ug/L 1 0.22 0.76  ND ug/L 1 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  113% 113% -1  110% -1  | Trichloroethene                | ND     | ng/L  | 1 0.2   |          | 2     |  | T           |
| ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.16   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.57   3.5     113%   1   110%   -1     110%   -1   104%   1   | Trichlorofluoromethane         | ND     | ng/L  | 1 0.1   |          |       |  |             |
| ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.16   0.58     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5     113%   1   110%   - 1     110%   - 1   104%   1   | Vinyi chloride                 | ΩN     | ng/L  | 1 0.1   |          | .2    |  | Т           |
| ND   ug/L   1 0.22 0.76     ND   ug/L   1 4.2   12     ND   ug/L   1 0.58     ND   ug/L   1 0.50   1.8     ND   ug/L   1 0.97   3.5     113%   1   110%   1     104%   1   104%   1  | meta,para-Xylene               | ND     | ng/L  | 1 0.3   |          | 10000 |  |             |
| ND ug/L 1 4.2 12  ND ug/L 1 0.16 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  113% 1 10% -1  104% 1   | MTBE                           | UN     | ng/L  | 1 0.2   |          |       |  |             |
| ND ug/L 1 0.16 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  113% 1 110% -1 104% 1   | Acetone                        | ON     | ng/L  | 4       |          |       |  | 7           |
| ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  113% 1  110% -1  104% 1  | Carbon Disulfide               | ON     | ug/L  | 1 0.1   |          |       |  | Т           |
| ND ug/L 1 0.97 3.5<br>113% 1<br>110% -1<br>104% 1  | Methyl Ethyl Ketone            | ND     | ng/L  | 1 0.5   |          |       |  | Т           |
| 113% 1<br>110% - 1<br>104% 1   | Tetrahydrofuran                | ON     | ng/L  | 1 0.9   |          |       |  | $\neg \tau$ |
| 110% - 1<br>104% 1   | Dibromofluoromethane (SURR)    | 113%   |       | _       |          |       | တ  |             |
| 104%   | Toluene-d8 (SURR)              | 110%   |       | -       |          |       | S  |             |
|  | 1-Bromo-4-Fluorobenzene (SURR) | 104%   |       | _       |          |       | S  |             |

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NLS Project: 318858

Customer: Marathon County Solid Waste Mgmnt Dept Noject Description: Marathon County Area A Private Wells

**Project Tit** 

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|-----------------------------|--|
| Template: SAT3APP3          |  |
| itle: April 2019            |  |

| ANALYTE NAME                       | RESULT | UNITS | 미          | ГОР  | LOQ  | MCL   | Note   |
|------------------------------------|--------|-------|------------|------|------|-------|--|
| Benzene                            | ND     | ng/L  | _          | 0.19 | 0.69 | 5     |  |
| Bromodichloromethane               | ND     | ng/L  | 1          | 0.19 | 0.68 | 80    |  |
| Bromoform                          | ND     | ug/L  | 1          | 0.16 | 0.56 | 80    |  |
| Bromomethane                       | ON     | ng/L  | 1          | 0.22 | 62.0 |       |  |
| Carbon Tetrachloride               | ON     | ng/L  | 1          | 0.19 | 0.66 | 5     |  |
| Chlorobenzene                      | ΩN     | ng/L  | <b>.</b>   | 0.16 | 0.56 | 100   |  |
| Chloroethane                       | ON     | ng/L  | -          | 1.5  | 5.4  | ,     |  |
| Chloroform                         | GN     | ng/L  | -          | 0.17 | 09.0 | 80    |  |
| Chloromethane                      | QN     | ng/L  | _          | 0.19 | 0.68 |       |  |
| Dibromochioromethane               | ON     | ng/L  | <b>-</b> - | 0.17 | 0.61 | 80    |  |
| 1,2-Dibromo-3-Chloropropane        | QN     | ng/L  | -          | 0.21 | 0.73 |       |  |
| 1,2-Dibromoethane                  | QN     | ng/L  | -          | 0.12 | 0.43 |       | PRODUCTION OF THE PRODUCTION O |
| Dibromomethane                     | QN     | ug/L  | -          | 0.21 | 0.73 |       |  |
| 1.2-Dichlorobenzene                | QN     | ng/L  | <b>~</b>   | 0.22 | 0.76 | 009   |  |
| 1.3-Dichlorobenzene                | QN     | na/L  | ν          | 0.20 | 0.72 |       |  |
| 1.4-Dichlorobenzene                | QN     | na/L  | 1          | 0.21 | 0.76 | 75    |  |
| Dichlorodifluoromethane            | QN     | ng/L  | _          | 0.14 | 0.49 |       |  |
| 1 1-Dichloroethane                 | CN.    | ua/l_ |            | 0.18 | 0.64 |       |  |
| 1 2-Dichloroethane                 | CN     | 1/011 | _          | 0 19 | 0.69 | 5     |  |
| 1.1 Dichloroathana                 | i C    | 1/01  | -          | 0 16 | 0.57 |       |  |
| ri, Folimorocanomos                |        | I/a/I | _          | 0.18 | 0.62 | 02    |  |
| trans-1 2-Dichloroethene           | CN     | 1/011 | -          | 0.15 | 0.51 | 100   |  |
| 1 2-Dichloropronane                | QN     | ng/L  | -          | 0.24 | 0.84 | 5     |  |
| sis-1 3-Nichlaranapana             | CZ     | 1.65  | -          | 0 19 | 0.68 |       |  |
| trans 1.3 Dichlamananana           |        | 1/21  | -          | 0.10 | 0.51 |       |  |
| Table 1, 3-Dicilio opioperio       | ON ON  | 1/20  |            | 1 0  | 2.5  | 200   |  |
| Ethylbenzene                       |        | J/gn: | -          | 0.00 | 1.1  |       |  |
| Methylene chloride                 | ON S.  | ng/L  | _          | 0.20 | 0.70 | c     |  |
| Naphthalene                        | . UN   | ng/L  | _          | 0.29 | 1.0  |       |  |
| Styrene                            | ΩN     | ng/L  |            | 0.16 | 0.56 | 160   |  |
| ortho-Xylene                       | QN     | ng/L  | -          | 0.16 | 0.56 |       |  |
| Tetrachloroethene                  | [0.18] | ug/L  | -          | 0.17 | 0.58 | 5     | J.   |
| Toluene                            | ON     | ng/L  | -          | 0.19 | 0.68 | 1000  |  |
| 1,1,1-Trichloroethane              | ND     | ng/L  | ~          | 0.17 | 0.61 | 200   |  |
| 1,1,2-Trichloroethane              | ΩN     | ug/L  | 1          | 0.17 | 0.59 | 5     |  |
| Trichloroethene                    | QN     | ng/L  | ₩.         | 0.24 | 0.84 | သ     |  |
| Trichlorofluoromethane             | ΩN     | ng/L  | 1          | 0.17 | 0.60 |       |  |
| Vinyl chloride                     | ND     | ug/L  | τ-         | 0.16 | 0.57 | .2    |  |
| meta para-Xylene                   | ΩN     | ng/L  | <b>,</b>   | 0.32 | 1.1  | 10000 |  |
| MTBE                               | DN     | ng/L  | -          | 0.22 | 0.76 |       |  |
| Acetone                            | [4.5]  | ng/L  | 1          | 4.2  | 12   |       | ſ  |
| Carbon Disulfide                   | QN     | ng/L  | _          | 0.16 | 0.58 | •     |  |
| Methyl Ethyl Ketone                | QN     | ng/L  | <b>~</b>   | 0.50 | 1.8  |       |  |
| Tetrahydrofuran                    | QN     | ng/L  |            | 0.97 | 3.5  |       | ,  |
| Dibromofluoromethane (SURR)        | 116%   |       | _          |      |      |       | S  |
| Toluene-d8 (SURR)                  | 112%   |       | 1          |      |      |       | S  |
| 1-Bromo-4-Fluorobenzene (SURR)     | 106%   |       | -          |      |      |       | S  |
| NOTES APPLICABLE TO THIS ANALYSIS: |        |       |            |      |      |       |  |

NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmnt Dept
NLS P
Project Description: Marathon County Area A Private Wells

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NLS Project: 318858

Project Title: Apr

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| ANALYTE NAME                       | RESIII T | SLINI | 10         | COL  | 6    | MCI  | Note  |
|------------------------------------|----------|-------|------------|------|------|--|---|
| Benzene                            | CN.      | 1/0/1 |            | 0.19 | 69 0 | 2.   |   |
| Bromodichloromethane               | QN       | ng/L  | -          | 0.19 | 0.68 | 80   |   |
| Bromoform                          | QN       | ng/L  | -          | 0.16 | 0.56 | 80   |   |
| Bromomethane                       | QN       | ng/L  | 1          | 0.22 | 0.79 |  |   |
| Carbon Tetrachloride               | QN       | ng/L  | 1          | 0.19 | 0.66 | 2  |   |
| Chlorobenzene                      | QN       | ng/L  | 1          | 0.16 | 0.56 | 100  |   |
| Chloroethane                       | QN       | ng/L  | 1          | 1.5  | 5.4  | •  |   |
| Chloroform                         | QN       | ng/L  | 1          | 0.17 | 0.60 | 80   |   |
| Chloromethane                      | ΩN       | ng/L  | 1          | 0.19 | 0.68 |  |   |
| Dibromochloromethane               | ΩN       | ug/L  | 1          | 0.17 | 0.61 | 80   |   |
| 1,2-Dibromo-3-Chloropropane        | QN       | ug/L  | 1          | 0.21 | 0.73 |  |   |
| 1,2-Dibromoethane                  | QN       | ng/L  | 1          | 0.12 | 0.43 |  |   |
| Dibromomethane                     | ON<br>ON | ng/L  | -          | 0.21 | 0.73 |  |   |
| 1,2-Dichlorobenzene                | QN       | ng/L  | <b>←</b> - | 0.22 | 0.76 | 900  |   |
| 1,3-Dichlorobenzene                | QN       | ng/L  | ~          | 0.20 | 0.72 |  | CONTRACTOR OF THE PROPERTY OF |
| 1,4-Dichlorobenzene                | QN       | ng/L  | -          | 0.21 | 0.76 | 75   |   |
| Dichlorodifluoromethane            | QN       | ng/L  | -          | 0.14 | 0.49 |  |   |
| 1.1-Dichloroethane                 | QN       | ng/L  | -          | 0.18 | 0.64 |  |   |
| 1.2-Dichloroethane                 | QN       | ng/L  | _          | 0.19 | 69.0 | £C   |   |
| 1,1-Dichloroethene                 | QN       | ng/L  | -          | 0.16 | 0.57 | 7  |   |
| cis-1,2-Dichloroethene             | QN       | T/Gn  | _          | 0.18 | 0.62 | 70   |   |
| trans-1,2-Dichloroethene           | QN       | ng/L  | -          | 0.15 | 0.51 | 100  |   |
| 1,2-Dichloropropane                | ΩN       | ng/L  | _          | 0.24 | 0.84 | 5  |   |
| cis-1,3-Dichloropropene            | QN       | ng/L  | -          | 0.19 | 0.68 |  |   |
| trans-1,3-Dichloropropene          | ΩN       | ug/L  | 1          | 0.14 | 0.51 |  |   |
| Ethylbenzene                       | ND       | ng/L  | _          | 0.30 | 1.1  | 700  |   |
| Methylene chloride                 | ND       | ug/L  | 1          | 0.20 | 0.70 | 5  |   |
| Naphthalene                        | QN       | ng/L  | 1          | 0.29 | 1.0  |  |   |
| Styrene                            | ON       | ng/L  | 1          | 0.16 | 0.56 | 100  |   |
| ortho-Xylene                       | QN       | ng/L  | _          | 0.16 | 0.56 | •  |   |
| Tetrachloroethene                  | ND       | ng/L  | -          | 0.17 | 0.58 | 2  |   |
| Toluene                            | QN       | ng/L  | _          | 0.19 | 0.68 | 1000   |   |
| 1,1,1-Trichloroethane              | QN       | ng/L  | _          | 0.17 | 0.61 | 200  |   |
| 1,1,2-Trichloroethane              | QN       | T/gn  | -          | 0.17 | 0.59 | 5  |   |
| Trichloroethene                    | ΩN       | ng/L  | τ-         | 0.24 | 0.84 | 2  |   |
| Trichlorofluoromethane             | ON       | ng/L  | τ-         | 0.17 | 09.0 |  |   |
| Vinyl chloride                     | ON       | ng/L  | 1          | 0.16 | 0.57 | .2   |   |
| meta,para-Xylene                   | ND       | ng/L  | -          | 0.32 | 1.1  | 10000  |   |
| MTBE                               | QN       | ng/L  | Υ-         | 0.22 | 0.76 |  |   |
| Acetone                            | QN       | ng/L  | 1          | 4.2  | 12   |  |   |
| Carbon Disulfide                   | QN       | ng/L  | _          | 0.16 | 0.58 |  |   |
| Methyl Ethyl Ketone                | ΩN       | ug/L  | 7          | 0.50 | 1.8  | 4  |   |
| Tetrahydrofuran                    | ON       | ng/L  |            | 0.97 | 3.5  |  |   |
| Dibromofluoromethane (SURR)        | 119%     |       | ~          |      |      |  | S   |
| Toluene-d8 (SURR)                  | 108%     |       | _          |      |      |  | S   |
| 1-Bromo-4-Fluorobenzene (SURR)     | 108%     |       | 1          |      |      | THE PERSON NAMED IN COLUMN NAM | S   |
| NOTES APPLICABLE TO THIS ANALYSIS: |          |       |            |      |      |  |   |

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NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Project Title: April 2019

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| cample: In 13409 TVY 19 Collected 14/04/19 Analyzed 04/1/13-FAN  | II 9 - Analytes: 43 |              |          |      |      |       |      |
|--|---------------------|--------------|----------|------|------|-------|------|
| ANALYTE NAME   | RESULT              | UNITS        | DIL      | ГОБ  | rog  | MCL   | Note |
| Benzene  | ND                  | ng/L         | _        | 0.19 | 0.69 | 5     | -    |
| Bromodichloromethane   | QN                  | ng/L         | <b>~</b> | 0.19 | 0.68 | 80    |      |
| Bromoform  | QN                  | ng/L         | -        | 0.16 | 0.56 | 80    |      |
| Bromomethane   | ON                  | ng/L         | 1        | 0.22 | 0.79 |       |      |
| Carbon Tetrachloride   | QN                  | ug/L         | _        | 0.19 | 0.66 | 5     |      |
| Chlorobenzene  | QN                  | ug/L         | 1        | 0.16 | 0.56 | 100   |      |
| Chloroethane   | QN                  | ug/L         | -        | 1.5  | 5.4  |       |      |
| Chloroform   | ΩN                  | ng/L         | <b>-</b> | 0.17 | 09.0 | 80    |      |
| Chloromethane  | QN                  | ng/L         | -        | 0.19 | 0.68 |       |      |
| Dibromochloromethane   | QN                  | ng/L         | _        | 0.17 | 0.61 | 80    |      |
| 1.2-Dibromo-3-Chloropropane  | QN                  | ug/L         | -        | 0.21 | 0.73 |       |      |
| 12-Dibromoethane   | QN                  | ng/L         | Ļ        | 0.12 | 0.43 |       |      |
| Dibromomethane   | QN                  | na/L         | _        | 0.21 | 0.73 |       |      |
| 12-Dichlorobenzene   | QN                  | na/L         | -        | 0.22 | 0.76 | 009   |      |
| 1.3-Dichlorobenzene  | QN                  | ua/L         | -        | 0.20 | 0.72 |       |      |
| 4.4-Dichlorohanzana  | CN                  | 1/011        | -        | 0.21 | 0.76 | 75    |      |
| Dichlorodifficonmethane  | CN                  | 1/011        |          | 0.14 | 0.49 |       |      |
| 1.1 Dichloroothano   | ON CIN              | 1/211        | .        | 0.18 | 0.64 |       |      |
| 1, 1-Dictional transfer of the second |                     | 1/65         |          | 0.10 | 080  | ıc    |      |
| 1,2-Dignoloetriane   |                     | 1/80<br>1/80 | - -      | 0.10 | 0.03 | 2     |      |
| I, I-Dichioroethene  | ON ND               | ug/L         |          | 5.0  | 20.0 | 92    |      |
| cis-1,2-Dichloroethene   | ON C                | ug/L         | - ,      | 0.10 | 0.02 | 10    |      |
| trans-1,2-Dichloroethene   | ON                  | ng/L         | -        | 0.15 | 0.51 | 100   |      |
| 1,2-Dichloropropane  | ON                  | ng/L         | _        | 0.24 | 0.84 | သ     |      |
| cis-1,3-Dichloropropene  | QN                  | ng/L         | -        | 0.19 | 0.68 |       |      |
| trans-1,3-Dichloropropene  | QN                  | ng/L         | _        | 0.14 | 0.51 |       |      |
| Ethylbenzene   | QN                  | ng/L         | _        | 0.30 | 1.1  | 700   |      |
| Methylene chloride   | ΩN                  | ng/L         | -        | 0.20 | 0.70 | 5     |      |
| Naphthalene  | QN                  | ng/L         | 1        | 0.29 | 1.0  |       |      |
| Styrene  | QN                  | ua/L         | _        | 0.16 | 0.56 | 100   |      |
| ortho-Xylene   | QN                  | nd/L         | _        | 0.16 | 0.56 |       |      |
| Tetrachloroethene  | QN                  | ng/L         | 1        | 0.17 | 0.58 | 5     |      |
| Toluene  | QN                  | ng/L         | 1        | 0.19 | 0.68 | 1000  |      |
| 1,1,1-Trichloroethane  | ND                  | ng/L         | 1        | 0.17 | 0.61 | 200   |      |
| 1,1,2-Trichloroethane  | ON                  | ng/L         | 1        | 0.17 | 0.59 | 5     |      |
| Trichloroethene  | ON                  | ng/L         | 1        | 0.24 | 0.84 | 5     |      |
| Trichlorofluoromethane   | QN                  | ng/L         | 1        | 0,17 | 0.60 |       |      |
| Vinyl chloride   | QN                  | ng/L         | 1        | 0.16 | 0.57 | .2    |      |
| meta para-Xylene   | ND                  | ng/L         | 1        | 0.32 | 1.1  | 10000 |      |
| MTBE   | ND                  | ng/L         | 1        | 0.22 | 0.76 |       |      |
| Acetone  | QN                  | ng/L         | _        | 4.2  | 12   |       |      |
| Carbon Disulfide   | QN                  | ng/L         | -        | 0.16 | 0.58 |       |      |
| Methyl Ethyl Ketone  | ND                  | ng/L         | -        | 0.50 | 1.8  |       |      |
| Tetrahydrofuran  | ND                  | ng/L         | +        | 0.97 | 3.5  |       |      |
| Dibromofluoromethane (SURR)  | 113%                |              | _        |      |      |       | S    |
| Toluene-d8 (SURR)  | 111%                |              | -        |      |      |       | S    |
| 1-Bromo-4-Fluorobenzene (SURR)   | 106%                |              | 7        |      |      |       | S    |
| NOTES APPLICABLE TO THIS ANALYSIS:   |                     |              |          |      |      |       |      |

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NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Project Title: April 2019

Printed: 05/01/2019 03:51 Template: SAT3APP3

|                                | NESOE! | SINO | בור      | LOD  | Z<br>Z<br>Z | - L   | Note                                    |
|--------------------------------|--------|------|----------|------|-------------|-------|---|
| Benzene                        | QN     | ng/L | 1        | 0.19 | 69.0        | 2     |   |
| Bromodichloromethane           | QN     | ng/L | _        | 0.19 | 0.68        | 80    |   |
| Bromoform                      | QN     | T/Bn | 1        | 0.16 | 0.56        | 80    |   |
| Bromomethane                   | ΩN     | ug/L | -        | 0.22 | 0.79        |       |   |
| Carbon Tetrachloride           | ON     | ng/L | <b>.</b> | 0.19 | 0.66        | 5     |   |
| Chlorobenzene                  | ON     | ng/L | _        | 0.16 | 0.56        | 100   |   |
| Chloroethane                   | QN     | ng/L | 1        | 1.5  | 5.4         |       |   |
| Chloroform                     | QN     | ng/L | -        | 0.17 | 0.60        | 80    |   |
| Chloromethane                  | QN     | ng/L | 1        | 0.19 | 0.68        |       |   |
| Dibromochloromethane           | QN     | ng/L | 1        | 0.17 | 0.61        | 80    |   |
| 1,2-Dibromo-3-Chloropropane    | QN     | ng/L | 1        | 0.21 | 0.73        |       |   |
| 1,2-Dibromoethane              | QN     | ng/L | <b>-</b> | 0.12 | 0.43        |       |   |
| Dibromomethane                 | QN     | ng/L | τ-       | 0.21 | 0.73        |       |   |
| 1,2-Dichlorobenzene            | QN     | ng/L | -        | 0.22 | 0.76        | 900   |   |
| 1,3-Dichlorobenzene            | QN     | ng/L | -        | 0.20 | 0.72        |       |   |
| 1,4-Dichlorobenzene            | QN     | ng/L | _        | 0.21 | 0.76        | 75    |   |
| Dichlorodifluoromethane        | QN     | ng/L | ~        | 0.14 | 0.49        |       |   |
| 1.1-Dichloroethane             | QN     | ng/L | 1        | 0.18 | 0.64        |       |   |
| 1.2-Dichloroethane             | QN     | na/L | 1        | 0.19 | 0.69        | 5     | *************************************** |
| 1.1-Dichloroethene             | ON     | ng/L | 7        | 0.16 | 0.57        |       |   |
| cis-1.2-Dichloroethene         | QN     | ng/L | _        | 0.18 | 0.62        | 70    |   |
| trans-1.2-Dichloroethene       | QN     | ng/L | _        | 0.15 | 0.51        | 100   |   |
| 1.2-Dichloropropane            | QN     | ng/L | -        | 0.24 | 0.84        | 5     |   |
| cis-1,3-Dichloropropene        | ND     | ng/L | 1        | 0.19 | 0.68        |       |   |
| trans-1,3-Dichloropropene      | QN     | ug/L | 1        | 0.14 | 0.51        |       |   |
| Ethylbenzene                   | ON     | ng/L |          | 0.30 | 1.1         | 200   |   |
| Wethylene chloride             | ON     | ng/L | Ψ-       | 0.20 | 0.70        | 5     |   |
| Naphthalene                    | ON     | ng/L | _        | 0.29 | 1.0         |       |   |
| Styrene                        | ON     | ng/L | -        | 0.16 | 0.56        | 100   |   |
| ortho-Xylene                   | QN     | ng/L | _        | 0.16 | 0.56        |       |   |
| Tetrachloroethene              | QN     | ug/L | 1        | 0.17 | 0.58        | 5     |   |
| Toluene                        | QN     | ng/L | _        | 0.19 | 0.68        | 1000  |   |
| 1,1,1-Trichloroethane          | ON     | ng/L | _        | 0.17 | 0.61        | 200   |   |
| 1,1,2-Trichloroethane          | ON .   | ng/L | ~        | 0.17 | 0.59        | 5     |   |
| Trichloroethene                | ON     | ng/L | _        | 0.24 | 0.84        | 5     |   |
| Trichlorofluoromethane         | QN     | ng/L | -        | 0.17 | 09.0        |       |   |
| Vinyl chloride                 | ON     | ng/L | -        | 0.16 | 0.57        | .2    |   |
| meta para-Xylene               | ON     | ng/L | 1        | 0.32 | 1.1         | 10000 |   |
| MTBE                           | QN     | ng/L | 1        | 0.22 | 0.76        |       |   |
| Acetone                        | QN     | ug/L | _        | 4.2  | 12          |       | •                                       |
| Carbon Disulfide               | ND     | ug/L | 1        | 0.16 | 0.58        | -     |   |
| Methyl Ethyl Ketone            | QN     | ng/L | -        | 0.50 | 1.8         |       |   |
| Tetrahydrofuran                | QN     | ng/L | -        | 0.97 | 3.5         |       |   |
| Dibromofluoromethane (SURR)    | 120%   |      | 1        |      | -           |       | S                                       |
| Toluene-d8 (SURR)              | 106%   |      | _        |      |             |       | S                                       |
| 1-Bromo-4-Fluorobenzene (SURR) | 109%   |      | _        |      |             |       | U                                       |

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NLS Project: 318858

Customer: Marathon County Solid Waste Mgmnt Dept Noject Description: Marathon County Area A Private Wells

Template: SAT3APP3 Printed: 05/01/2019 03:51 Project Title: April 2019

| Sample: 1113411_PW17_Collected: 04/04/19 Analyzed: 04/12/19 - Analyt | ılytes: 43 |       |             |      |      |       |      |
|--|------------|-------|-------------|------|------|-------|------|
| ANALYTE NAME   | RESULT     | UNITS | 미           | LOD  | LOQ  | MCL   | Note |
| Benzene  | ND         | ng/L  | 1           | 0.19 | 0.69 | 5     |      |
| Bromodichloromethane   | QN         | ng/L  | _           | 0.19 | 0.68 | 80    |      |
| Bromoform  | QN         | ng/L  | 1           | 0.16 | 0.56 | 80    |      |
| Bromomethane   | QN         | ug/L  | -           | 0.22 | 0.79 |       |      |
| Carbon Tetrachloride   | 2          | ug/L  | _           | 0.19 | 0.66 | 2     |      |
| Chlorobenzene  | QN         | ng/L  | -           | 0.16 | 0.56 | 100   |      |
| Chloroethane   | 8          | ng/L  | -           | 1.5  | 5.4  |       |      |
| Chloroform   | Q          | ng/L  | -           | 0.17 | 09.0 | 8     |      |
| Chloromethane  | ND         | ng/L  | _           | 0.19 | 0.68 |       |      |
| Dibromochloromethane   | 2          | ng/L  | _           | 0.17 | 0.61 | 80    |      |
| 1,2-Dibromo-3-Chloropropane  | ON         | ng/L  | -           | 0.21 | 0.73 |       |      |
| 1,2-Dibromoethane  | Q          | ng/L  | -           | 0.12 | 0.43 |       |      |
| Dibromomethane   | QN         | ng/L  | <del></del> | 0.21 | 0.73 |       |      |
| 1,2-Dichlorobenzene  | Q          | ng/L  | _           | 0.22 | 0.76 | 009   |      |
| 1,3-Dichlorobenzene  | PD         | ng/L  | 1           | 0.20 | 0.72 |       |      |
| 1,4-Dichlorobenzene  | ND         | ng/L  | 1           | 0.21 | 0.76 | 75    |      |
| Dichlorodifluoromethane  | QN<br>ON   | ng/L  | 1           | 0.14 | 0.49 |       |      |
| 1,1-Dichloroethane   | ND         | ng/L  | 1           | 0.18 | 0.64 |       |      |
| 1,2-Dichloroethane   | QN         | ng/L  | Ψ-          | 0.19 | 0.69 | 5     |      |
| 1,1-Dichloroethene   | ON         | ng/L  | 1           | 0.16 | 0.57 | Ž     |      |
| cis-1,2-Dichloroethene   | QN         | ng/L  | 1           | 0.18 | 0.62 | 20    |      |
| trans-1,2-Dichloroethene   | N          | ug/L  | ~           | 0.15 | 0.51 | 100   |      |
| 1,2-Dichloropropane  | QN         | ng/L  | -           | 0.24 | 0.84 | 2     |      |
| cis-1,3-Dichloropropene  | ND         | ng/L  | _           | 0.19 | 0.68 |       |      |
| trans-1,3-Dichloropropene  | 2          | T/6n  | -           | 0.14 | 0.51 |       |      |
| Ethylbenzene   | Q          | ng/L  | -           | 0.30 | 1.1  | 700   |      |
| Methylene chloride   | 2          | ng/L  | <u></u>     | 0.20 | 0.70 | 5     |      |
| Naphthalene  | Q          | ng/L  | <u>-</u>    | 0.29 | 1.0  |       |      |
| Styrene  | ND         | ug/L  | ~           | 0.16 | 0.56 | 100   |      |
| ortho-Xylene   | Q          | ug/L  | _           | 0.16 | 0.56 |       |      |
| Tetrachloroethene  | Q          | ng/L  | <b>.</b>    | 0.17 | 0.58 | 5     |      |
| Toluene  | Q          | ng/L  |             | 0.19 | 0.68 | 1000  |      |
| 1,1,1-Trichloroethane  | N          | ng/L  | _           | 0.17 | 0.61 | 200   |      |
| 1,1,2-Trichloroethane  | 2          | ng/L  | _           | 0.17 | 0.59 | 5     |      |
| Trichloroethene  | 2          | ng/L  | -           | 0.24 | 0.84 | 2     |      |
| Trichlorofluoromethane   | ND         | ng/L  | _           | 0.17 | 09:0 |       |      |
| Vinyl chloride   | 2          | ng/L  | _           | 0.16 | 0.57 | .2    |      |
| meta,para-Xylene   | Q          | ng/L  | -           | 0.32 | 1.1  | 10000 |      |
| MTBE   | Q          | ng/L  | -           | 0.22 | 0.76 |       |      |
| Acetone  | Q          | ng/L  | -           | 4.2  | 12   |       |      |
| Carbon Disulfide   | 2          | ng/L  | -           | 0.16 | 0.58 |       |      |
| Methyl Ethyl Ketone  | ND         | ng/L  | -           | 0.50 | 1.8  |       |      |
| Tetrahydrofuran  | Q          | ng/L  | -           | 0.97 | 3.5  |       |      |
| Dibromofluoromethane (SURR)  | 120%       |       | τ           |      |      |       | S    |
| Toluene-d8 (SURR)  | 110%       |       | -           |      |      |       | S    |
| 1-Bromo-4-Fluorobenzene (SURR)                                       | 107%       |       | ~           |      |      |       | S    |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Project Title: April 2019

Template: SAT3APP3 Printed: 05/01/2019 03:51

| AMACH IT NAME         NAME IT NAME         CARD   | ANALY IE NAME<br>Benzene      |          |       |          |      |      |       |      |
|--|-------------------------------|----------|-------|----------|------|------|-------|------|
| ND ug/L 1 0.19 0.68 80  ND ug/L 1 0.19 0.68 80  ND ug/L 1 0.15 0.69 80  ND ug/ | Benzene                       | RESOLI   | CINIO | חור      | LOD  | LOC  | INCL  | Note |
| ND 99/L 1 0.16 880  ND 99/L 1 0.16 0.66 80  ND 99/L 1 0.17 0.69 80  ND 99/L 1 0.17 0.69 80  ND 99/L 1 0.17 0.61 80  ND 99/L 1 0.17 0.18 80  ND 99/L 1 0.17 0.18 0.60  ND 99/L 1 0.18 0.61 80  ND 99/L 1 0.18 0.68 1000  ND 99/L 1 0.18 0.68 10000  ND 99/L 1 0.18 0.68 100000  ND 99/L 1 0.18 0.68 100000  ND 99/L 1 0.18 0.68 100000  ND 99/L 1 0.18 0.68 1000000000000000000000000000000000000   |                               | ND       | ng/L  | ~-       | 0.19 | 0.69 | 5     |      |
| ND 9924 1 0.16 0.56 80  ND 1994 1 0.16 0.56 100  ND 1994 1 0.16 0.56 100  ND 1994 1 0.16 0.56 100  ND 1994 1 0.17 0.69 80  ND 1994 1 0.17 0.69 80  ND 1994 1 0.17 0.69 80  ND 1994 1 0.17 0.17 0.69 80  ND 1994 1 0.17 0.17 0.60 80  ND 1994 1 0.18 0.64 5  ND 1994 1 0.18 0.65 7 7  ND 1994 1 0.19 0.69 5  ND 1994 1 0.19  | Bromodichloromethane          | ΩN       | ng/L  | ~        | 0.19 | 0.68 | 80    |      |
| ND 9921 1 0.22 0.78 6 ND 9921 1 0.15 0.56 100 ND 9921 1 0.15 0.56 100 ND 9921 1 0.15 0.56 100 ND 9921 1 0.17 0.57 0.69 80 ND 9921 1 0.17 0.57 0.69 80 ND 9921 1 0.17 0.43 0.73 0.73 0.74 0.75 0.75 0.75 0.75 0.75 0.75 0.75 0.75   | Bromoform                     | ON       | ng/L  | 7-       | 0.16 | 0.56 | 80    |      |
| ND 6924 1 0.19 0.66 16 100   ND 1924 1 0.19 0.66 16 100   ND 1924 1 0.15 0.69 16 100   ND 1924 1 0.17 0.69 80   ND 1924 1 0.17 0.61 80   ND 1924 1 0.17 0.61 80   ND 1924 1 0.17 0.61 80   ND 1924 1 0.12 0.13 0.03   ND 1924 1 0.22 0.13 0.03   ND 1924 1 0.13 0.14 0.49   ND 1924 1 0.14 0.49 0   ND 1924 1 0.14 0.49 0   ND 1924 1 0.18 0.65 5   ND 1924 1 0.18 0.65 5   ND 1924 1 0.18 0.65 5   ND 1924 1 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.  | Bromomethane                  | QN.      | ng/L  | -        | 0.22 | 0.79 |       |      |
| ND 692 100  ND 109L 1 1.6 0.56 100  ND 109L 1 1.5 0.46  ND 109L 1 0.17 0.69 80  ND 109L 1 0.17 0.69 80  ND 109L 1 0.17 0.61 80  ND 109L 1 0.12 0.13 0.14  ND 109L 1 0.12 0.13 0.14  ND 109L 1 0.12 0.17 0.17  ND 109L 1 0.18 0.14 0.17  ND 109L 1 0.18 0.14 0.17  ND 109L 1 0.18 0.14 0.14  ND 109L 1 0.19 0.14 0.14  ND 109L 1 0.18 0.14 0.17  ND 109L 1 0.19 0.14 0.17  ND 109L 1 0.19 0.19  ND 109L 1 0.17 0.18  ND 1 | Carbon Tetrachloride          | QN       | T/Bn  | 1        | 0.19 | 99.0 | 5     | -    |
| ND 697 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0   | Chlorobenzene                 | ON       | ng/L  | _        | 0.16 | 0.56 | 100   |      |
| ND 1971 017 060 80  ND 1971 1 017 069 80  ND 1971 1 017 061 80  ND 1971 1 017 061 80  ND 1971 1 017 061 80  ND 1971 1 017 073  ND 1971 1 017 073  ND 1971 1 017 070  ND 1971 1 018 069  ND 1971 1 018 069  ND 1971 1 018 069  ND 1971 1 019 069  ND 1971 1 017 069   | Chloroethane                  | 2        | ng/L  | -        | 1.5  | 5.4  |       |      |
| ND 1997. 1 0.19 0.68  ND 1997. 1 0.12 0.73  ND 1997. 1 0.21 0.75  ND 1997. 1 0.22 0.76 600  ND 1997. 1 0.22 0.76 600  ND 1997. 1 0.22 0.76 75  ND 1997. 1 0.24 0.76 75  ND 1997. 1 0.18 0.64 5  ND 1997. 1 0.18 0.65 6  ND 1997. 1 0.19 0.68 6  ND 1997. 1 0.19 0.69 6  ND 1997. 1 0.20 0.70 5  ND 1997. 1 0.19 0.68 1000  ND 1997. 1 0.19 0.69 6  ND 1997. 1 0.19 0.50 0.70 6  ND 1997. 1 0.50 0.70 0.70 0.70 0.70 0.70 0.70 0.70   | Chloroform                    | ND       | ng/L  | _        | 0.17 | 0.60 | 80    |      |
| ND ug/L 1 0.17 0.61 80  ND ug/L 1 0.22 0.78  ND ug/L 1 0.22 0.78 600  ND ug/L 1 0.22 0.78 600  ND ug/L 1 0.24 0.75  ND ug/L 1 0.25 0.76 600  ND ug/L 1 0.14 0.89 75  ND ug/L 1 0.19 0.89 5  ND ug/L 1 0.19 0.8 | Chloromethane                 | ND       | nd/L  | 1        | 0.19 | 0.68 |       |      |
| ND ug/L 1 0.21 0.73  ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.21 0.75 75  ND ug/L 1 0.24 0.76 75  ND ug/L 1 0.24 0.64 75  ND ug/L 1 0.16 0.65 7  ND ug/L 1 0.16 0.65 7  ND ug/L 1 0.16 0.65 7  ND ug/L 1 0.26 0.70 70  ND ug/L 1 0.26 0.65 100  ND ug/L 1 0.29 0.70 5 5  ND ug/L 1 0.25 0.70 0.55 100  ND ug/L 1 0.25 0.70 0.55 100  ND ug/L 1 0.25 0.70 0.55 100  ND ug/L 1 0.25 0.70 0.57 0.55 100  ND ug/L 1 0.25 0.70 0.57 0.55 1000  ND ug/L 1 0.25 0.70 0.57 0.55 1000  ND ug/L 1 0.27 0.56 1000  ND ug/L 1 0.27 0.57 0.57 0.57 0.57 0.57 0.57 0.57 0.5  | Dibromochloromethane          | QN       | na/L  | _        | 0.17 | 0.61 | 80    |      |
| ND ug/L 1 0.22 0.75  ND ug/L 1 0.22 0.75  ND ug/L 1 0.20 0.72  ND ug/L 1 0.20 0.75  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.69  ND ug/L 1 0.18 0.65  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.16 0.56  ND ug/L 1 0.17 0.58  ND ug/L 1 0.17 0.59  ND ug/L 1 0.18  ND ug/L 1 0.18 | 1.2-Dibromo-3-Chloropropane   | 9        | na/L  | -        | 0.21 | 0.73 |       |      |
| ND ug/L 1 0.22 0.75 600  ND ug/L 1 0.22 0.76 75  ND ug/L 1 0.24 0.76 75  ND ug/L 1 0.14 0.49 75  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.18 0.62 100  ND ug/L 1 0.18 0.62 100  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.25 0.76 110  ND ug/L 1 0.25 0.10  ND ug/L 1 0.26 0.50  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.56 110  ND ug/L 1 0.17 0.56 110  ND ug/L 1 0.24 0.84 5  116.53 ug/L 1 0.16 0.58 100  ND ug/L 1 0.16 0.58 100  ND ug/L 1 0.27 0.56 110  ND ug/L 1 0.27 0.84 5  116.54 0.97 3.5 5  116.55 3 ug/L 1 0.50 1.8  ND ug/L 1 0.57 3.5 5  116.56 1100  ND ug/L 1 0.57 3.5 5   | 1 2-Dihromoethane             | CN       | 1/00  |          | 0.12 | 0.43 |       |      |
| ND ug/L 1 0.22 0.76 600  ND ug/L 1 0.14 0.49 75  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.18 0.69 5  ND ug/L 1 0.19 0.19 0.19 0.19 0.19 0.19 0.19 0.  | Dibromomethane                | CN       | 1/011 | -        | 0.24 | 0.73 |       |      |
| ND ug/L 1 0.22 0.75 75  ND ug/L 1 0.14 0.76 75  ND ug/L 1 0.14 0.69 5  ND ug/L 1 0.16 0.69 5  ND ug/L 1 0.16 0.65 77  ND ug/L 1 0.16 0.65 77  ND ug/L 1 0.16 0.65 77  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68 6  ND ug/L 1 0.19 0.68 6  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.19 0.68 100  ND ug/L 1 0.20 1.70 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.10 0.19 0.19 0.19 0.19 0.19 0.19 0.  | 4.9 Dishlashosasos            |          | 1/65  | -   ~-   | 0.00 | 0.78 | 008   |      |
| ND ug/L 1 0.24 0.75  ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64 5  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.19 0.65 77  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 0.58 5  ND ug/L 1 0.18 0.59 5  ND ug/L 1 0.18 0.59 5  ND ug/L 1 0.18 0.58  |                               | 2        | 1/8n  | - -      | 0.22 | 0.00 | 000   |      |
| ND ug/L 1 0.14 0.49 75  ND ug/L 1 0.14 0.49 65  ND ug/L 1 0.18 0.64 65  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.16 0.65 77  ND ug/L 1 0.16 0.65 70  ND ug/L 1 0.24 0.68 65  ND ug/L 1 0.20 0.70 55  ND ug/L 1 0.29 1.00  ND ug/L 1 0.29 1.00  ND ug/L 1 0.29 1.00  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.57 3.5 3.5 5  116%  ND ug/L 1 0.97 3.5 8  116%  116%   | 1,3-Dichlorobenzene           | ממ       | ng/L  | _        | 0.20 | 0.72 |       |      |
| ND ug/L 1 0.14 0.49  ND ug/L 1 0.18 0.64  ND ug/L 1 0.18 0.65 7 7  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.18 0.65 77  ND ug/L 1 0.19 0.68  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.27 0.76 1000  ND ug/L 1 0.27 0.76 1000  ND ug/L 1 0.27 0.76 1000  ND ug/L 1 0.26 100  ND ug/L 1 0.26 100  ND ug/L 1 0.27 0.76 1000  ND ug/L 1 0.26 0.76 0.76 118  ND ug/L 1 0.50 1.8 25  116%  116%  116%  116%  116%  116%  | 1,4-Dichlorobenzene           | ΩN       | ng/L  | -        | 0.21 | 0.76 | 75    |      |
| ND ug/L 1 0.18 0.64  ND ug/L 1 0.16 0.57 7  ND ug/L 1 0.18 0.65 70  ND ug/L 1 0.18 0.65 70  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.20 0.70 5  ND ug/L 1 0.20 1.0  ND ug/L 1 0.26 1.0  ND ug/L 1 0.26 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.16 0.56 5  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.56 5  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.17 0.61 200  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.27 0.56 5  ND ug/L 1 0.27 0.76 0.76 0.76 0.76 0.76 0.76 0.76 0.7   | Dichlorodifluoromethane       | ΩN       | ng/L  | _        | 0.14 | 0.49 |       | •    |
| ND   ug/L   0.19   0.69   5     ND   ug/L   1   0.18   0.57   7     ND   ug/L   1   0.18   0.65   70     ND   ug/L   1   0.18   0.51   100     ND   ug/L   1   0.14   0.51     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   100     ND   ug/L   1   0.17   0.58   100     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.50   1.8     ND   ug/L   1   0.17   0.50   1.8     ND   ug/L   1   0.17   0.50   1.8     ND   ug/L   1   0.50   3.5   5     | 1.1-Dichloroethane            | ΩN       | na/L  | -        | 0.18 | 0.64 |       |      |
| ND ug/L 1 0.16 0.57 7 ND ug/L 1 0.18 0.62 70 ND ug/L 1 0.18 0.62 70 ND ug/L 1 0.19 0.68 ND ug/L 1 0.19 0.68 ND ug/L 1 0.24 0.84 5 ND ug/L 1 0.20 0.70 5 ND ug/L 1 0.20 1.0 ND ug/L 1 0.26 1.0 ND ug/L 1 0.26 1.00 ND ug/L 1 0.16 0.56 100 ND ug/L 1 0.17 0.58 5 ND ug/L 1 0.17 0.58 5 ND ug/L 1 0.17 0.58 5 ND ug/L 1 0.17 0.61 200 ND ug/L 1 0.17 0.60 2 ND ug/L 1 0.16 0.57 0.60 2 ND ug/L 1 0.17 0.60 2 ND ug/L 1 0.17 0.60 2 ND ug/L 1 0.16 0.57 0.60 2 ND ug/L 1 0.16 0.57 0.60 2 ND ug/L 1 0.16 0.57 0.76 1.8 ND ug/L 1 0.16 0.50 1.8 ND ug/L 1 0.17 0.60 2 ND ug/L 1 0.16 0.57 0.76 1.8 ND ug/L 1 0.16 0.50 1.8 ND ug/L 1 0.16 0.50 1.8 ND ug/L 1 0.16 0.50 3.5 1.0   | 1 2-Dichloroethane            | CN       | 1/0/1 | -        | 0.19 | 0.69 | 2     |      |
| ND ug/L 1 0.18 0.62 70  ND ug/L 1 0.19 0.62 70  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.19 0.68  ND ug/L 1 0.20 0.84 5  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.20 1.0 5  ND ug/L 1 0.29 1.0 5  ND ug/L 1 0.29 1.0 5  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.17 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.18 0.59 5  ND ug/L 1 0.18 0.59 5  ND ug/L 1 0.18 0.59 0.58 0.58 0.58 0.58 0.58 0.58 0.58 0.58  | 1.1 Dichloroathana            | S        | 1/011 | -        | 0 16 | 0.57 |       |      |
| ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.15 0.51 100  ND ug/L 1 0.19 0.68  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.29 0.70 5  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.18 5  ND ug/L 1 0.16 0.58 5  ND ug/L 1 0.50 1.1 10000  ND ug/L 1 0.50 3.5 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2 1.2  | i, I-Dictionations            |          | 1/65  | -        | 0.10 | 0.62 | 02    |      |
| ND ug/L 1 0.24 0.84 50 10 10 10 10 10 10 10 10 10 10 10 10 10  | US-1,Z-Diditioloculene        |          | 1 /2  |          | 0.0  | 0.07 | 700   |      |
| ND ug/L 1 0.14 0.64 5  ND ug/L 1 0.14 0.68  ND ug/L 1 0.19 0.68  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 1000  ND ug/L 1 0.19 0.68 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.17 0.60 2  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.57 2  ND ug/L 1 0.16 0.58  ND ug/L 1 0.18 0.18  ND ug/L 1 0.19 0.18  ND ug/L 1 0.97 3.5   | trans-1,z-Dicrimoroeurene     | 2        | US/L  | -        | 2.0  | 200  | 001   |      |
| ND ug/L 1 0.19 0.08  ND ug/L 1 0.20 1.1 700  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.59 5  ND ug/L 1 0.18 0.56 11000  ND ug/L 1 0.22 0.76 116  ND ug/L 1 0.25 0.76 116  ND ug/L 1 0.58 118  ND ug/L 1 0.58 15  ND ug/L 1 0.58 15  ND ug/L 1 0.58 15  ND ug/L 1 0.59 3.5 116  ND ug/L 1 0.57 3.5 116  ND ug/L 1 0.58 11 | 1, z-Dichioropropane          | ON C     | ug/L  | _ ,      | 0.24 | 40.0 | C     |      |
| ND ug/L 1 0.14 0.51  ND ug/L 1 0.20 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.29 1.0  ND ug/L 1 0.16 0.56 100  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.58 5  ND ug/L 1 0.17 0.68 1000  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.69 5  ND ug/L 1 0.17 0.60 5  ND ug/L 1 0.27 0.50 5  ND ug/L 1 0.27 0.50 5  ND ug/L 1 0.27 0.50 5  ND ug/L 1 0.22 0.76 0.50 1000  ND ug/L 1 0.22 0.76 0.58 1000  ND ug/L 1 0.57 3.5 8  116% 1 0.97 3.5 8   | cis-1,3-Dichloropropene       | ND       | ng/L  | -        | 0.19 | 0.68 |       |      |
| ND   ug/L   1   0.30   1.1   700     ND   ug/L   1   0.26   1.0     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.50     ND   ug/L   1   0.17   0.50     ND   ug/L   1   0.17   0.50     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5     116%   11   | trans-1,3-Dichloropropene     | QN       | ng/L  | -        | 0.14 | 0.51 |       |      |
| ND   ug/L   1   0.20   0.70   5     ND   ug/L   1   0.29   1.0     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60   1     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.22   0.76   1     ND   ug/L   1   0.22   0.76   1     ND   ug/L   1   0.50   1.8   1     ND   ug/L   1   0.50   3.5   1     N   | Ethylbenzene                  | ND       | ug/L  | 1        | 0.30 | 1.1  | 700   |      |
| ND   ug/L   1   0.29   1.0     | Methylene chloride            | Q        | ng/L  | _        | 0.20 | 0.70 | 5     |      |
| ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.16   0.56   100     ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.17   0.69   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.16   0.57   2     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.22   0.76     ND   ug/L   1   0.16   0.58     Ug/L   1   0.16   0.16     Ug/L   1   0.16   0.16     Ug/L   1   0.16   0.16     Ug/L   1   0.16   0   | Naphthalene                   | ND       | ng/L  | 1        | 0.29 | 1.0  |       |      |
| ND   | Styrene                       | ND<br>ON | ng/L  | _        | 0.16 | 0.56 | 100   |      |
| ND   ug/L   1   0.17   0.58   5     ND   ug/L   1   0.19   0.68   1000     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.16   0.57   .2     ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76   0.76     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5   5     105%   1   105%   1     ND   ug/L   1   0.97   3.5   5     ND   ug/L   1   0.97   3.5   5     ND   ug/L   1   0.60   5     ND   ug/L   1    | ortho-Xvlene                  | QN<br>QN | nd/L  | -        | 0.16 | 0.56 |       |      |
| ND   ug/L   1   0.19   0.68   1000     ND   ug/L   1   0.17   0.61   200     ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.17   0.60   5     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.15   0.57   .2     ND   ug/L   1   0.22   0.76   0.18     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   3.5   5     105%   1   105%   5     105%   1   105%   5     105%   1   105%   5     ND   Ug/L   1   0.97   3.5   5     ND   Ug/L   1   0.97   3.5   5     ND   Ug/L   1   0.97   3.5   5     ND   Ug/L   1   0.60   5        | Tetrachioroethene             | ND       | ng/L  | 1        | 0.17 | 0.58 | 5     |      |
| ND   ug/L   0.17   0.61   200  | Toluene                       | QN       | ng/L  | 1        | 0.19 | 0.68 | 1000  |      |
| ND   ug/L   1   0.17   0.59   5     ND   ug/L   1   0.24   0.84   5     ND   ug/L   1   0.17   0.60     ND   ug/L   1   0.15   0.57  2     ND   ug/L   1   0.22   0.76     Same of the color of th       | 1 1 1-Trichloroethane         | 2        | na/L  | -        | 0.17 | 0.61 | 200   |      |
| ND ug/L 1 0.24 0.84 5  ND ug/L 1 0.17 0.60  ND ug/L 1 0.16 0.572  ND ug/L 1 0.32 1.1 10000  ND ug/L 1 0.22 0.76  ND ug/L 1 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  ND ug/L 1 0.50 1.8  116% 1 0.97 3.5 5   | 1.1.2-Trichloroethane         | QN       | na/L  | <b>-</b> | 0.17 | 0.59 | 5     |      |
| ND   ug/L   1   0.17   0.60   1   0.60   1   0.57   2   1   0.60   1   0.57   2   1   0.60   1   0.57   2   1   0.20   0.76   0.               | Trichloroethene               | QN       | na/L  | τ-       | 0.24 | 0.84 | 5     |      |
| ND ug/L   1 0.16 0.572     ND ug/L   1 0.32   1.1 10000     ND ug/L   1 0.22 0.76     [5.3] ug/L   1 4.2   12  | Trichlorofluoromethane        | QN       | na/L  | <b>~</b> | 0.17 | 09.0 |       |      |
| ND   ug/L   1   0.32   1.1   10000     ND   ug/L   1   0.22   0.76     [5.3]   ug/L   1   4.2   12   J     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.50   1.8     ND   ug/L   1   0.97   3.5   S     105%   1   0.97   S   S     105%   1   0.88   S     105%   1   0.97   S   S     105%   1   0.88   S     105%   1   0.97   S   S     105%   1   0.88   S     105%   105%   105%   S     | Vinyl chloride                | ΩN       | na/L  | -        | 0.16 | 0.57 | 7     |      |
| ND ug/L 1 0.22 0.76   July   Ug/L 1 0.22 0.76   July   Ug/L 1 0.16 0.58   July   Ug/L 1 0.50 1.8   July   Ug/L 1 0.50 1.8   July   Ug/L 1 0.97 3.5   July   Ug/L 1 0.97 3.5   Ug/L 1 0.98    | meta para-Xvlene              | Q.       | ug/L  | <b>~</b> | 0.32 |      | 10000 |      |
| [5.3] ug/L   | MTRF                          | QN       | na/L  |          | 0.22 | 0.76 |       |      |
| ND ug/L 1 0.16 0.58  ND ug/L 1 0.50 1.8  ND ug/L 1 0.97 3.5  116% 1 16% 1  | Acetone                       | [5.3]    | ng/L  | -        | 4.2  | 12   |       | J MD |
| ND ug/L 1 0.50 1.8<br>ND ug/L 1 0.97 3.5<br>116% 1<br>105% 1   | Carbon Disuffide              | QN       | na/L  | _        | 0.16 | 0.58 |       |      |
| ND ug/L 1 0.97 3.5<br>116% 1<br>105% 1   | Methyl Ethyl Ketone           | QN       | na/L  | -        | 0.50 | 8.7  |       |      |
| 116% 1<br>105% 1   | Tetrahydrofiran               | QV       | na/L  | -        | 0.97 | 3.5  |       |      |
| 105% 1   | Dibromoffinoromethane (SHRR)  | 116%     |       |          |      |      |       | S    |
| 10007  | Tolliene-d8 (SURR)            | 105%     |       | -        |      |      |       | S    |
|  | 4 Present A Pleasebase (2010) | 10007    |       | -        |      |      |       | 0    |

NOTES APPLICABLE TO THIS ANALYSIS: J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation. S = This compound is a surrogate used to evaluate the quality control of a method. MD = Matrix spike and matrix spike duplicate relative percent difference exceeded QC limits.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)

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NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Printed: 05/01/2019 03:53 Template: SATAPP3 Project Title: April 2019

| Sample: 1113413 PW88 Collected: 04/04/19 Analyzed: 04/12/19 - Analy | nalytes: 43 |       |          |      |      |       |  |
|---|-------------|-------|----------|------|------|-------|--|
| ANALYTE NAME  | RESULT      | SLIND | DIL      | ГОР  | LOQ  | MCL   | Note   |
| Benzene   | QN          | ng/L  | 1        | 0.24 | 0.84 | 5     |  |
| Bromodichloromethane  | ND          | ng/L  | 1        | 0.27 | 0.94 | 80    |  |
| Bromoform   | ND          | ng/L  | _        | 0.21 | 0.73 | 80    |  |
| Bromomethane  | Q           | ng/L  | _        | 0.27 | 96.0 |       | ಟ  |
| Carbon Tetrachloride  | ND          | ng/L  | -        | 0.16 | 0.55 | 2     |  |
| Chlorobenzene   | Q.          | ng/L  |          | 0.25 | 0.87 | 100   |  |
| Chloroethane  | Ω           | ng/L  | _        | 0.93 | 3.3  |       |  |
| Chloroform  | ND          | ng/L  | _        | 0.22 | 0.78 | 80    |  |
| Chloromethane   | ΩN          | ug/L  | _        | 0.22 | 0.78 |       |  |
| Dibromochloromethane  | ND          | ng/L  | τ-       | 0.16 | 0.56 | 80    | -  |
| 1,2-Dibromo-3-Chloropropane   | Q           | ng/L  | -        | 0.18 | 0.63 |       |  |
| 1,2-Dibromoethane   | ND          | ng/L  | -        | 0.23 | 0.81 |       |  |
| Dibromomethane  | Q           | ng/L  | _        | 0.22 | 0.78 |       |  |
| 1,2-Dichlorobenzene   | ND          | ug/L  | <b>7</b> | 0.21 | 0.73 | 009   |  |
| 1,3-Dichlorobenzene   | QN          | ng/L  | 1        | 0.20 | 0.70 |       |  |
| 1,4-Dichlorobenzene   | Q           | ng/L  | <u>.</u> | 0.27 | 0.95 | 75    |  |
| Dichlorodifluoromethane   | QN          | ng/L  | -        | 0.17 | 0.58 |       | -  |
| 1.1-Dichloroethane  | QN          | ng/L  | -        | 0.19 | 0.67 |       |  |
| 1.2-Dichloroethane  | QN          | ng/L  | -        | 0.22 | 0.78 | 2     | design design of the second se |
| 1.1-Dichloroethene  | S           | ng/L  | _        | 0.20 | 0.69 |       |  |
| cis-1 2-Dichloroethene  | QN          | na/L  | _        | 0.24 | 0.84 | 70    |  |
| trans-1.2-Dichloroethene  | QN.         | ng/L  | -        | 0.17 | 09:0 | 100   |  |
| 1 2-Dichloropropane   | QN          | na/L  | -        | 0.28 | 0.98 | 5     | in a second and a  |
| cis-1.3-Dichloropropene   | S           | na/L  | _        | 0.26 | 0.91 |       |  |
| trans-1 3-Dichloropropene   | S           | ua/l  | -        | 0.19 | 0.69 |       |  |
| Ethylhanzene  | S           |       |          | 0.19 | 0.69 | 700   |  |
| Mathylana chlorida  | CN          | 1/011 |          | 0.24 | 0.84 | 5     |  |
| Nathylana   | CZ          | 1/0/1 | -        | 0.43 | 15   |       |  |
| Chrane  | CN          | /ul   | -        | 0 19 | 0.66 | 100   |  |
| Other Vilene  | 22          | 1/60  |          | 0 19 | 0.66 |       |  |
| Totachiomothomo   | S CN        | 1/61  | -        | 0.22 | 0.78 | ĸ     |  |
| Tolligho  | 2 2         | 10/1  |          | 0.24 | 0.74 | 1000  |  |
| 1 4 4 Trichlomothano  | S S         | 1/85  | -        | 0.20 | 0.69 | 200   |  |
| 1,1,1-monocariano   | 2           | na/L  |          | 0.20 | 0.69 | 5     |  |
| Trichloroethene   | QN          | ng/L  | 1        | 0.32 | 1.1  | 5     | m-talence enterior en |
| Trichlorofluoromethane  | 2           | ng/L  | 1        | 0.20 | 0.71 |       |  |
| Vinyl chloride  | QN          | J/Bn  | _        | 0.17 | 09.0 | .2    |  |
| meta.para-Xylene  | QN          | ng/L  | _        | 0.37 | 1.3  | 10000 |  |
| MTBE  | QN          | ng/L  | _        | 0.21 | 0.73 |       |  |
| Acetone   | ND          | ng/L  | -        | 4.2  | 12   |       |  |
| Carbon Disulfide  | QN          | ng/L  | 1        | 0.17 | 0.59 |       |  |
| Methyl Ethyl Ketone   | ND          | ng/L  | <b>.</b> | 0.57 | 2.0  |       |  |
| Tetrahydrofuran   | Q           | ng/L  | -        | 0.58 | 2.0  |       |  |
| Dibromofluoromethane (SURR)   | 116%        |       | -        |      |      |       | S  |
| Toluene-d8 (SURR)   | 100%        |       | -        |      |      |       | S  |
| 1-Bromo-4-Fluorobenzene (SURR)                                      | 109%        |       | -        |      |      |       | S  |

In-Bromo-4-Filorobenzene (SURK)

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Bromomethane recovery 74%

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)

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NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Printed: 05/01/2019 03:53 Template: SATAPP3 Project Title: April 2019

| Sample: 1113414 PW48 Collected: 04/04/19 Analyzed: 04/12/19 Analy | Analytes: 43 |       |         |      |      |       |  |
|---|--------------|-------|---------|------|------|-------|--|
| ANALYTE NAME  | RESULT       | UNITS | DIL     | ГОО  | Log  | MCL   | Note   |
| Benzene   | S            | ng/L  | _       | 0.24 | 0.84 | 5     |  |
| Bromodichloromethane  | 2            | ng/L  | 1       | 0.27 | 0.94 | 80    |  |
| Bromoform   | QN           | ng/L  | 1       | 0.21 | 0.73 | 80    |  |
| Bromomethane  | ND           | ng/L  | 1       | 0.27 | 96.0 |       | SS   |
| Carbon Tetrachloride  | ND           | ng/L  | 1       | 0.16 | 0.55 | 5     | THE PROPERTY OF THE PROPERTY O |
| Chlorobenzene   | ND           | ng/L  | 1       | 0.25 | 0.87 | 100   | With the Country of t |
| Chloroethane  | ND           | ng/L  | 1       | 0.93 | 3.3  |       | <u>*</u>   |
| Chloroform  | QN           | ng/L  | 1       | 0.22 | 0.78 | 80    |  |
| Chloromethane   | QN           | ng/L  | -       | 0.22 | 0.78 |       |  |
| Dibromochloromethane  | QN           | ng/L  | -       | 0.16 | 0.56 | 80    |  |
| 1,2-Dibromo-3-Chloropropane                                       | QN           | ng/L  | ~       | 0.18 | 0.63 |       |  |
| 1,2-Dibromoethane   | QN           | ng/L  | _       | 0.23 | 0.81 |       |  |
| Dibromomethane  | QN           | ng/L  | -       | 0.22 | 0.78 |       |  |
| 1.2-Dichlorobenzene   | Q            | ng/L  | -       | 0.24 | 0.73 | 009   |  |
| 1.3-Dichlorobenzene   | ND           | ng/L  | _       | 0.20 | 0.70 |       |  |
| 1,4-Dichlorobenzene   | QN           | ug/L  | -       | 0.27 | 0.95 | 75    |  |
| Dichlorodifluoromethane   | ND           | ng/L  | -       | 0.17 | 0.58 |       |  |
| 1 1-Dichloroethane  | QN           | na/L  | 1       | 0.19 | 0.67 |       |  |
| 12-Dichloroethane   | Q            | na/L  | _       | 0.22 | 0.78 | ß     | ***************************************  |
| 1.1-Dichloroethene  | 2            | na/L  |         | 0.20 | 0.69 | 7     | ***************************************  |
| cis-1 2-Dichlomathana   | CN           | 1/01/ | -       | 0.24 | 0.84 | 70    |  |
| trans_1_2_Dichloroathana  | S            | 1/0/1 |         | 0.17 | 0.60 | 100   | The state of the s |
| 1 O Dichlorographo  | SIN CIN      | 1/011 | -       | 0.28 | 0 98 | יכ    | The second secon |
| 1,2-Unitionopioparie  | 28           | 1/01  |         | 0.26 | 0.93 | )     | WASHINGTON AND THE WASHINGTON AN |
| tong 1.9 Dishlopens   | 2 5          | 1/61  | -       | 0.10 | 0.69 |       |  |
| Trans-1,3-Dignioroproperie  | 22           | ug/L  |         | 0.13 | 0.03 | 200   |  |
| Etnylbenzene  | S S          | ug/L  | - -     | 200  | 0.03 | 00/   |  |
| Methylene chloride  | 2            | ng/L  | -       | 0.24 | 48.0 | C     |  |
| Naphthalene   | QN           | ng/L  |         | 0.43 | 1.5  |       |  |
| Styrene   | 2            | ng/L  | -       | 0.19 | 0.66 | 100   |  |
| ortho-Xylene  | QN           | ng/L  | -       | 0.19 | 99.0 |       |  |
| Tetrachloroethene   | ND           | ng/L  | _       | 0.22 | 0.78 | 5     |  |
| Toluene   | QN           | ng/L  | -       | 0.21 | 0.74 | 1000  |  |
| 1,1,1-Trichloroethane   | ND           | ng/L  | 1       | 0.20 | 69.0 | 200   |  |
| 1,1,2-Trichloroethane   | ND           | ug/L  | 1       | 0.20 | 0.69 | 5     |  |
| Trichloroethene   | ND           | ng/L  | _       | 0.32 | 1.7  | 5     |  |
| Trichlorofluoromethane  | ND           | ng/L  | <b></b> | 0.20 | 0.71 |       |  |
| Vinyl chloride  | ND           | ng/L  | -       | 0.17 | 0.60 | .2    |  |
| meta.para-Xylene  | Q            | ng/L  | 1       | 0.37 | 1.3  | 10000 |  |
| MTBE  | Q            | ng/L  | 1       | 0.21 | 0.73 |       |  |
| Acetone   | ND           | ng/L  | τ-      | 4.2  | 12   |       | and the state of t |
| Carbon Disulfide  | QN           | ng/L  | -       | 0.17 | 0.59 |       |  |
| Methyl Ethyl Ketone   | ND           | ng/L  | _       | 0.57 | 2.0  |       |  |
| Tetrahydrofuran   | ND           | ng/L  | 1       | 0.58 | 2.0  |       |  |
| Dibromofluoromethane (SURR)                                       | 101%         |       |         |      |      |       | S  |
| Toluene-d8 (SURR)   | 113%         |       | 1       |      |      |       | S  |
| 1-Bromo-4-Fluorobenzene (SURR)                                    | 106%         |       | -       |      |      | •     | S  |

<sup>1-</sup>Bromo-4-Fluorobenzene (SURR)

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Bromomethane recovery 74%

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)

Page 3 of 3

NLS Project: 318858 Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Project Title: April 2019

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| ANALYTE NAME   | RESULI    | ONITS | DIL      | LOD  | LOG  | MCL  | Note  |
|--|-----------|-------|----------|------|------|--|---|
| Benzene  | QN        | ng/L  | -        | 0.24 | 0.84 | 2  |   |
| Bromodichloromethane   | ΩN        | ng/L  | -        | 0.27 | 0.94 | 80   |   |
| Bromoform  | QN        | ng/L  | τ        | 0.21 | 0.73 | 80   |   |
| Bromomethane   | ND        | ng/L  | 1        | 0.27 | 0.96 |  | ၁၁  |
| Carbon Tetrachloride   | ON        | ng/L  | 1        | 0.16 | 0.55 | 2  |   |
| Chlorobenzene  | QN        | ng/L  | _        | 0.25 | 0.87 | 100  |   |
| Chloroethane   | 9         | ng/L  | ~        | 0.93 | 3.3  |  |   |
| Chloroform   | 2         | ng/L  | -        | 0.22 | 0.78 | . 08   | -   |
| Chloromethane  | 9         | ng/L  | -        | 0.22 | 0.78 |  |   |
| Dibromochloromethane   | S         | ng/L  | <b>-</b> | 0.16 | 0.56 | 80   |   |
| 1,2-Dibromo-3-Chloropropane  | Q         | ng/L  | _        | 0.18 | 0.63 |  |   |
| 1.2-Dibromoethane  | QN.       | na/L  | _        | 0.23 | 0.81 |  |   |
| Dibromomethane   | QN        | ua/L  | 1        | 0.22 | 0.78 |  |   |
| 1.2-Dichlorobenzene  | Q         | na/L  | _        | 0.21 | 0.73 | 009  |   |
| 1.3-Dichlorobenzene  | R         | na/L  | -        | 0.20 | 0.70 | The state of the s |   |
| 1.4-Dichlorobenzene  | QN        | ua/L  | -        | 0.27 | 0.95 | 75   |   |
| Dichlorodifluoromethane  | QN        | na/L  | -        | 0.17 | 0.58 |  | Annual designation of the second state of the |
| 1 1-Dichloroethane   | QN        | na/L  | -        | 0.19 | 0.67 |  | ***************************************   |
| 1 2-Dichloroethane   | 2         | na/L  |          | 0.22 | 0.78 | 2  |   |
| 1 1-Dichloroethene   | Q         | na/L  |          | 0.20 | 0.69 | 7  |   |
| cis-1 2-Dichloroethene   | ON        | na/L  | _        | 0.24 | 0.84 | 70   |   |
| trans-1 2-Dichloroethene   | QN        | na/L  | -        | 0.17 | 09.0 | 100  |   |
| 1 2-Dichloropropane  | QN        | ua/L  | -        | 0.28 | 0.98 | 2  |   |
| cis-1 3-Dichloronronene  | CN        | 1/0/1 | -        | 0.26 | 0.91 | *  |   |
| frans-1 3-Dichloropropene  | QN        | ua/L  |          | 0.19 | 69.0 |  |   |
| Fthvlhenzene   | QN        | na/L  |          | 0.19 | 0.69 | 700  |   |
| Methylene chloride   | QN.       | l/a/L | -        | 0.24 | 0.84 | 5  |   |
| Nanhthalene  | GN        | J/pn  |          | 0.43 | 5    |  |   |
| Styrana  | CN        | 1/011 | -        | 0 19 | 0.66 | 100  |   |
| Octions of the Control of the Contro | S N       | 1/61  | -        | 0.19 | 0.66 | 2  |   |
| Total Canadian   |           | 1/8:  | -        | 0.00 | 00.0 | u  |   |
|  | 22        | ng/L  | -        | 0.24 | 0.70 | 0001   |   |
| loluene  | 24        | ug/L  | - -      | 0.20 | 4.0  | 0001   |   |
| 1,1,1-Irchioroethane   | ON<br>Ci: | ng/L  | _        | 0.20 | 0.09 | 700  |   |
| 1,1,2-Trichloroethane  | ON        | ng/L  | -        | 0.20 | 0.69 | Ç  |   |
| Trichloroethene  | Q         | ng/L  | -        | 0.32 | 1.1  | 5  | 4   |
| Trichlorofluoromethane   | ND        | ng/L  | Ψ-       | 0.20 | 0.71 |  |   |
| Vinyl chloride   | QN        | ng/L  | 1        | 0.17 | 09.0 | .2   |   |
| meta,para-Xylene   | QN        | ng/L  | τ        | 0.37 | 1.3  | 10000  |   |
| MTBE   | QN        | ng/L  | -        | 0.21 | 0.73 |  |   |
| Acetone  | QV        | ng/L  | _        | 4.2  | 12   |  |   |
| Carbon Disulfide   | QV        | ng/L  | -        | 0.17 | 0.59 |  |   |
| Methyl Ethyl Ketone  | N         | ng/L  | -        | 0.57 | 2.0  |  |   |
| Tetrahydrofuran  | 2         | ng/L  | ۲.       | 0.58 | 2.0  |  |   |
| Dibromofluoromethane (SURR)  | 105%      |       | 1        |      |      |  | S   |
| Toluene-d8 (SURR)  | 113%      |       | 1        |      |      |  | S   |
| 1-Bromo-4-Fluorobenzene (SURR)   | 104%      |       | _        |      |      |  | S   |
| NOTES APPLICABLE TO THIS ANALYSIS:   |           |       |          |      |      |  |   |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Bromomethane recovery 74%

## NLS Private Well Sampling Form and Chain Of Custody (981 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells

| IA.                  | and the second second second |                                  |          |              |          |       |              |                   |
|----------------------|------------------------------|----------------------------------|----------|--------------|----------|-------|--------------|-------------------|
| NLS Lab #:           | Point Name / Hon             | neowner: PW25                    | DNR ID#: | Time Purged: | Color:   | Odor: | Turbidity (9 | unnt,text,color): |
| 1113-406             | Levano                       | loski, Mike<br>mcan Road, Hatley | 353      | 5 min        | CLEAR    | NO.   | NE           |                   |
| Date Sampled:        | Time Sampled:                | Sample Location:                 |          |              | 4 /      |       |              | Treated (Y/N)     |
| 4.4.19               | 0835                         | FAUCE                            | T NOI    | ETH SIDE     | of House | = .   |              | Ν                 |
| Comments:            |                              |                                  |          |              |          |       |              |                   |
|                      |                              |                                  |          |              |          |       |              |                   |
|                      |                              | •                                |          | •            | ٠.       |       |              |                   |
| ,                    | •                            | •                                |          |              | •        |       | •            |                   |
| Softener - no Collec | et from - outside fau        | icet, north side of house        |          |              |          |       |              |                   |

| NLS Lab #:            | Point Name / Hon     | ncowner: PW68                      | DNR ID#:        | Time Purged: | Color: | Odor: | Turbidity (quant,text,color): |
|-----------------------|----------------------|------------------------------------|-----------------|--------------|--------|-------|-------------------------------|
| 4017                  | Andras               | chko, Anthony<br>ncan Road, Hatley | 361             | 5 mil        | CLEAR  | ND    | NO                            |
| Date Sampled:         | Time Sampled:        | Sample Location:                   | ort out         | SIDE FAUC    | ET.    |       | Treated (Y/N)                 |
| Comments:             | W OWNER              | DEREK                              | Pionice         |              |        |       |                               |
|                       |                      | •                                  |                 |              |        | •     |                               |
| Softener - yes but no | t in use Collect fro | om – kitchen sink or Nort          | h outside fauce | t            |        |       |                               |

| NLS Lab#:                       |                                 | /ski, Janet                        | DNR ID#:<br>350 | Time Purged: | Color: | Odor:    | Turbidity ( | quant,text,color): |
|---------------------------------|---------------------------------|------------------------------------|-----------------|--------------|--------|----------|-------------|--------------------|
| Date Sampled: 4, 4.19 Comments: | R221765 Dus Time Sampled:  0824 | scan Road, Hafley Sample Location: | OUT             | SIDE FAL     |        | e of Hou | 'sÆ         | Treated (Y/N)      |
| Commence                        |                                 |                                    |                 |              |        |          |             |                    |
| Softener-no Col                 | lect from - kitchen s           | ink or outside back faucet         | •               |              |        |          |             |                    |

| NLS Lab #:            | Point Name / Hon     |                                   | DNR ID#:<br>351  | Time Purged:                            | Color:      | Odor: |    | quant,text,color): |
|-----------------------|----------------------|-----------------------------------|------------------|---|-------------|-------|----|--------------------|
| 409                   |                      | -Popp, Rose<br>Incan Road, Hatley | 221              | 5 mini                                  | CLEAR       | ND.   | NO | ·                  |
| Date Sampled:         | Time Sampled:        | Sample Location: .  OUT SIDE      | Faure            | T ALBOSA                                | DAMENA      |       |    | Treated (Y/N)      |
| Comments:             | 0752                 | 001 3100                          | 1 7000           | , ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | 07/31-27 17 |       |    |                    |
|                       |                      |                                   |                  |   |             |       |    |                    |
|                       |                      |                                   |                  |   |             |       |    |                    |
| Softerer - Yes. Colle | ct from — outside fa | ucet across driveway fron         | n house (not sof | tened — should be on y                  | ear round)  |       |    |                    |

Rev 3/19

See reverse side for sample custody information

## NLS Private Well Sampling Form and Chain Of Custody (pg 2 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells

2A

| NLS Lab #:        |                       | neowner: PW24<br>., Mark<br>nean Road, Hatley | DNR ID#:<br>352  | Time Purged:         | Color:              | Odor:          | Turbidity (qu | iant,text,color): |
|-------------------|-----------------------|---|------------------|----------------------|---------------------|----------------|---------------|-------------------|
| Date Sampled:     | Time Sampled:         | Sample Location:                              | ,                |                      |                     | 1              |               | Treated (Y/N)     |
| 4.4.19            | 0844                  | FRONT OF                                      | HOUSE            | 047 510              | FAUCET              | <del>7</del> · |               | 1.1               |
| Comments:         |                       |   |                  |                      |                     |                |               |                   |
| }                 |                       |   |                  |                      |                     |                |               |                   |
|                   |                       | •   |                  |                      |                     |                |               |                   |
| ,                 | •                     | •   |                  | •                    | •                   |                |               | •                 |
| Softener-no Colle | ct from – front outsi | de faucet (4/21/10 – owne                     | r said front fau | cet now works and is | closer to the well) |                |               |                   |

| NLS Lab#:     |               | ncowner: PW17 e, Neal illow Lane, Hatley | DNR ID #:<br>028 | Time Purged: | Color: | Odor:     | Turbidity (quant,text,color): |
|---------------|---------------|--|------------------|--------------|--------|-----------|-------------------------------|
| Date Sampled: | Time Sampled: | Sample Location:                         | of Hous          | SE EAST 511  | 06 By  | DEINE WAL | Treated (Y/N)                 |
| Comments:     | h             | of house near driveway                   |                  |              |        |           |                               |

| NLS Lab #:<br>4/2    |                     | ncowner: PW64<br>an, Carol<br>ncan Road, Hatley | DNR ID#:<br>359 | Time Purged: | Color:   | Odor: | Turbidity (qui |               |
|----------------------|---------------------|---|-----------------|--------------|----------|-------|----------------|---------------|
| Date Sampled:        | Time Sampled:       | Sample Location:                                |                 |              | <u> </u> |       |                | Treated (Y/N) |
| 4.4.19               | 0905                | BASE ME   | 700             | BEFORE SO    | MENER    |       |                | N             |
| Comments:            |                     | ,   |                 |              |          |       |                |               |
| Softener - yes Colle | ct from - faucet in | basement before softener                        |                 |              | -        |       |                |               |

| NLS Lab #: 4/3           |                    | ncowner: PW88<br>a, Aaron<br>uncan Road, Hatley | DNR ID #:<br>365 | Time Purged: | Color:<br>ND<br>CLEAR | Odor: | Turbidity (quant, text, color): |
|--------------------------|--------------------|---|------------------|--------------|-----------------------|-------|---------------------------------|
| Date Sampled:<br>4. 4.19 | Time Sampled:      | Sample Location:                                | DE FA            | UCET FROM    |                       | usE.  | Treated (Y/N)                   |
| Comments:                |                    |   |                  |              |                       |       |                                 |
| Softener-yes Colle       | ct from outside fa | ucet, front of house                            |                  |              |                       |       |                                 |

Rev 3/19

See reverse side for sample custody information

## NLS Private Well Sampling Form and Chain Of Custody (pg 3 of 3)

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells

|                  |   | DNR ID#:   | Time Purged:   | Color:   | Odor:  | Turbidity (qı  | innt,text,color):   |
|------------------|---|--|--|--|--|--|---|
|                  |   | 356  | 5 MIN  | CLEAR  | ND   | NO   | 7   |
| Time Sampled:    | Sample Location:                        |  |  |  |  |  | Treated (Y/N)   |
| 0710             | BAT                                     | HROOM  | LOCKER   | Room SI  | NK   |  | $\sim$  |
|                  |   |  |  | ***************************************  |  |  |   |
|                  |   |  |  |  |  |  | l   |
|                  |   |  |  |  |  |  | ٠ .   |
| ,                |   | •  |  | •  |  | •  |   |
| •                |   | •  |  | •  |  | •  |   |
| from - bathroom/ | ocker room sink                         |  |  |  |  |  |   |
|                  | Marathon<br>R222005 Do<br>Time Sampled: | Marathon Co. Hwy Dept, R222005 Duncan Road, Hatley  Time Sampled: Sample Location: | Marathon Co. Hwy Dept. R222005 Dunean Road, Hatley  Time Sampled: Sample Location: BATH Room | Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley  Time Sampled: Sample Location: BATH Room Locales | Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley  Time Sampled: Sample Location: D71D  BATHRoom Locker Room S1 | Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley  Time Sampled: Sample Location: D71D  BATHRoom Locket Room SINK | Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley  Time Sampled: Sample Location:  D71D  BATHRoom Lockee Room SINK |

| NLS Lab #:    | Point Name / Hom | neowner:         | DNR ID#: | Time Purged: | Color: | Odor: | Turbidity (qu | uant,text,color): |
|---------------|------------------|------------------|----------|--------------|--------|-------|---------------|-------------------|
| 415           | Tri              | ip Blank         | 999      | N/A          | N/A    | N/A   |               | N/A               |
| Date Sampled: | Time Sampled:    | Sample Location: | <u></u>  |              | J      |       |               | Treated (Y/N)     |
|               | N/A              |                  |          | N/A          |        |       |               | N/A               |
| Comments:     |                  |                  |          |              |        |       |               |                   |
|               |                  |                  |          |              |        |       |               |                   |
|               |                  |                  |          |              |        |       |               |                   |
|               |                  |                  |          |              |        |       |               |                   |

| NLS Lab #:    | Point Name / Hon | icowner:         | DNR ID#: | Time Purged: | Color: | Odor:   | Turbidity (qu | ant,text,color): |
|---------------|------------------|------------------|----------|--------------|--------|---------|---------------|------------------|
| Date Sampled: | Time Sampled:    | Sample Location: |          |              | 1      | <u></u> |               | Treated (Y/N)    |
| Comments:     |                  | I                |          |              |        |         |               | <b>!</b>         |
|               |                  |                  |          |              |        |         |               |                  |
|               |                  |                  |          |              |        |         |               |                  |

| NLS Lab#:     | Point Name / Hon | neowner:         | DNR ID#: | Time Purged: | Color; | Odor: | Turbidity (quant,text,color): |
|---------------|------------------|------------------|----------|--------------|--------|-------|-------------------------------|
|               |                  |                  |          |              |        |       |                               |
| Date Sampled: | Time Sampled:    | Sample Location: |          |              |        |       | Treated (Y/N)                 |
| ·             |                  |                  |          |              |        |       | <u>.</u>                      |
| Comments:     |                  |                  |          |              |        |       |                               |
|               |                  |                  |          |              |        |       |                               |
|               |                  |                  |          |              |        |       |                               |
|               |                  |                  |          |              |        |       |                               |
|               |                  |                  |          |              |        |       |                               |

Rev 3/19

See reverse side for sample custody information



## **Marathon County Solid Waste Department**

172900 E. Hwy 29 Ringle, WI 54471

 Director:
 715-446-3101 X104

 Site Supervisor:
 715-446-3101 X102

 Administrative Office:
 715-446-3101 X100

 Scale Master
 715-446-3101 X103

 Solid Waste & Recycling Info Line
 877-270-3989 toll-free

Dec 6, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 2892, 3338 & 4228 (Private Wells)

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2019. There were no exceedances in the private groundwater wells, and therefore an exceedance table has not been provided.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

## State of Wisconsin

## ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

Department of Natural Resources Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties

## Instructions:

- Prepare one form for each license or monitoring ID.
- Please type or print legibly.
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.

resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact - WA/5

Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

| Monitoring Data Submittal Information  | 是自己也能够特別對於  | <b>共主。在中国国际宣传</b>   | The Company of the Child                  |
|--|---|---------------------|---|
| Name of entity submitting data (laboratory, consultant, facil Northern Lake Service, Inc.  | ity owner):   |                     | the depart of the                         |
| Contact for questions about data formatting. Include data  | oreparer's name, telephone nu                                   | mber and E-mail add | ress: file of a 2 of 7 % file             |
| Name: Chris Geske  |   | 8-2777              | # ( + _ + _ + _ + _ + _ + _ + _ + _ +     |
| E-mail: lims@fislab.com  |   |                     | to y the laboratory                       |
| the state of the s | icense No. / Monitoring ID                                      | Facility ID [FID]   | Actual sampling dates (e.g., July 2-6, 20 |
| Marathon County Area A Private Wells   | 02892   |                     | OCTOBER -16-2019                          |
| H ' - Configuration and distribution of the W  |   |                     |   |
| the second of the second of the  |   |                     |   |
| . Starting and appropriate the state of the  |   |                     | Of the constituted by the party of the    |
| mention objections has a more end  | , a   |                     | man - Leach Such                          |
| and the state of t | 20 20   |                     |   |
| The enclosed results are for sampling required in the mont   | h(s) of: (e.g., June 2003)                                      |                     | ermon of facular disagradics              |
| OCTOBER -2019  |   |                     |   |
| No. No groundwater standards or explosive gas limits were exceeded.  Yes, a notification of values exceeding a groundwater standard is attach groundwater standard and preliminary analysis of the cause and signityes, a notification of values exceeding an explosive gas limit is attached explosive gas limits.  | ticance of any concentration.                                   |                     |   |
|  |   |                     |   |
| Certification  |   |                     | n   |
| Certification  To the best of my knowledge, the information reported are true and correct. Furthermore, I have attached congroundwater standards or explosive gas levels, and a concentrations exceeding groundwater standards.  David Hagen bucker  | nplete notification of any sal<br>preliminary analysis of the c | ause and significan | t of                                      |
| To the best of my knowledge, the information reported are true and correct. Furthermore, I have attached congroundwater standards or explosive gas levels, and a concentrations exceeding groundwater standards.  David Hagen bucker   | nplete notification of any sal<br>preliminary analysis of the c | ause and significan | ny or exceeding                           |
| To the best of my knowledge, the information reported<br>are true and correct. Furthermore, I have attached con<br>groundwater standards or explosive gas levels, and a<br>concentrations exceeding groundwater standards.   | nplete notification of any sal<br>preliminary analysis of the c | ause and significan | t of                                      |
| To the best of my knowledge, the information reported are true and correct. Furthermore, I have attached congroundwater standards or explosive gas levels, and a concentrations exceeding groundwater standards.  Divid Hagen bucker   | nplete notification of any sa                                   | ause and significan | t of                                      |

## Marathon County Solid Waste Mgmnt Dept Marathon County Area A Private Wells 10-01-2019

Lab ID: 721026460

NLS Project: 333074 Collected: 10-01-2019

License: 02892

FID:

## EXCEEDANCES:

| (Point ID) Parar | ameter | Units | Result | PAL / ACL | ES | Commen |
|------------------|--------|-------|--------|-----------|----|--------|
|------------------|--------|-------|--------|-----------|----|--------|

## State of Wisconsin

## ENVIRONMENTAL MONITORING DATA CERTIFICATION Form 4400-231(R 1/04)

Department of Natural Resources

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

## Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- \* Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to:

GEMS Data Submittal Contact - WA/5
Wisconsin Department of Natural Resources
P.O. Box 7921
Madison, WI 53707 - 7921

Monitoring Data Submittal Information Name of entity submitting data (laboratory, consultant, facility owner): Northern Lake Service, Inc. Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address: 2 72 213 2115 Phone: 715-478-2777 Name: Chris Geske lims@nlslab.com E-mail: Facility ID [FID] Actual sampling dates (e.g., July 2-6, 2003 License No. / Monitoring ID Facility Name OCTOBER -16-2019 337005680 04228 Marathon County BRRDF Private Wells committee of the entry to the transfer of the control of AT - VING AT GREAT ON or in the second of the second of the second 1, 20 20 7 5 miles a to the graph and sure The enclosed results are for sampling required in the month(s) of: (e.g., June 2003) ANTO WAR OF BUT A OCTOBER -2019 Type of Data Submitted (Check all that apply) Gas monitoring data Groundwater monitoring data from monitoring wells Groundwater monitoring data from private water supply wells Air monitoring data Other (specify) Leachate monitoring data Notification attached? No. No groundwater standards or explosive gas limits were exceeded. Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration. Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits. Certification To the best of my knowledge, the information reported and statements made on this data submittal and attachements are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards. David taa enbuch Facility Representative Name (Print) 12/06/19 Signature FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary. Found uploading problems on Initials Notified contact of problems on Uploaded data successfully on EDD format(s); Diskette DD (initial submittal and follow-up) E-mail (follow-up only) Other

## Marathon County Solid Waste Mgmnt Dept Marathon County BRRDF Private Wells 10-01-2019

Lab ID: 721026460

NLS Project: 333072 Collected: 10-01-2019

License: 04228

FID: 337005680

## **EXCEEDANCES:**

NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520

Ph: (715)-478-2777 Fax: (715)-478-3060

Client: Marathon County Solid Waste Mgmnt Dept

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754 Attn: Dave Hagenbucher

**ANALYTICAL REPORT** 

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/14/19 Page 1 of 4

NLS Project: 333072

NLS Customer:

20080

Marathon County BRRDF Private Wells October 2019

**PW11 NLS ID: 1155378**Matrix: GW

Collected: 10/16/19 14:12 Received: 10/16/19

| Which is broken considered to the LOO are considered within a region of "less-Certain Quantitation". Results greater than or equal to the LOO are considered | Field depth to bottom | ו ופוס מפטנוו נס אמנכו |             | Parameter of the second of the |  |
|--|-----------------------|------------------------|-------------|--|--|
| the I OD but less than the I o   | 6.82                  |                        | 4 85        | Result   |  |
| O and are within a region o  |                       | P                      | <b>→</b>    | Units  |  |
| f "I ess-Certain Quantitation  | CI CI I               | _                      | _           | llution LOD LOG  |  |
| າ".  Results greater than or equal   | 10110110              | 10/18/19 NA            | 10/16/19 NA | J/MCL  |  |
| to the LOQ are considered  |                       | 721026460              | /21026460   | Lab  |  |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are which a region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect diution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)
DWB = Dry Weight Basis LOD = Limit of Detection

1000 ug/L = 1 mg/L Shaded results indicate >MCL LOQ = Limit of Quantitation

NA = Not Applicable

Reviewed by:

Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/14/19 Page 2 of 4

**NLS Project:** 333072

NLS Customer: Phone: 715 446 3339 20080

Client: Attn: Dave Hagenbucher Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754 Marathon County Solid Waste Mgmnt Dept

Marathon County BRRDF Private Wells October 2019

PW26 NLS ID: 1155379 Matrix: GW

Collected: 10/16/19 13:52 Received: 10/16/19

| Values in brackets represent results greater than or  | VOCs (water) by GC/MS | Field turbidity | Field odor    | con also automate anno compressors | Parameter on the control of the cont |
|---|-----------------------|-----------------|---------------|------------------------------------|--|
| Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered | see attached          | none detected   | none detected | nected                             | Result Units Dilution LOD LOQ!   |
| Results greater than or equal to the L  | 10/22/19 SW846 8260C  | 10/16/19 NA     | 10/16/19 NA   | 10/16/19 NA                        | LOD LOQ/MCL Analyzed Method  |
| OQ are considered   | 721026460             | 721026460       | 721026460     | 721026460                          | Lab  |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect diution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples ND = Not Detected (< LOD) LOD = Limit of Detection

Shaded results indicate >MCL LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

NA = Not Applicable

Reviewed by:

Authorized by: R. T. Krueger

President

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460 EPA Laboratory ID No. WI00034

Printed: 11/14/19 Page 3 of 4

**NLS Project:** 333072

NLS Customer:

20080

Client: Attn: Dave Hagenbucher Marathon County Landfill Marathon County Solid Waste Mgmnt Dept

R18500 East Highway 29 Ringle, WI 54471 9754

Marathon County BRRDF Private Wells October 2019

PW8575 NLS ID: 1155380

Matrix: GW

Collected: 10/16/19 12:25 Received: 10/16/19

| Values III prackets represent results greater mair or  | Volume in brookets represent results greater than or  | VOCs (water) by GC/MS | Field turbidity   |             | Field odor    | Fleid color      | THE PROPERTY OF THE PROPERTY O | Parameter 1000 1000 1000 1000 1000 1000 1000 10 |
|--|---|-----------------------|---|-------------|---------------|------------------|--|---|
| Values III plackets repliesetit tesulis gleater main or equal to the problem of t | Value is broker regress regular greater than or equal to the LOD but less than the LOO and are within a region of "Less-C | see attached          | Ione detected   | すのすり ようさつよう | none detected | ווטווכ מכניסינים | Selected and the second | Result  |
| D/I OOs adjusted to refle  | ertain Quantitation". Re  |                       | THE RESIDENCE OF THE PROPERTY |             |               |                  |  | LOD LOQ/MCL Analyzed Method                     |
| OD/I OOs adjusted to reflect dilution and/or solids content  | -Certain Quantitation". Results greater than or equal to the LOQ are considered   | 10/22/19 SVV846 8260C | 10/00/10 00/00  | 10/16/19 NA | AN 61/01./01. | 101010           | 10/16/19 NA  | Analyzed Method                                 |
|  | OQ are considered   | 121020400             | 1000000   | 721026460   | 121020400     | 704000400        | 721026460  | Lab   |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect diution and/or

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

Ph: (715)-478-2777 Fax: (715)-478-3060 NORTHERN LAKE SERVICE, INC.
Analytical Laboratory and Environmental Services
400 North Lake Avenue - Crandon, WI 54520

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/14/19 Page 4 of 4

NLS Project: 333072

**NLS Customer:** 

20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754 **Marathon County Landfill** 

Marathon County BRRDF Private Wells October 2019

Collected: 10/16/19 00:00 Received: 10/16/19 Matrix: TB Trip Blank NLS ID: 1155381 Result

ND = Not Detected (< LOD)

DWB = Dry Weight Basis

MCL = Maximum Contaminant Levels for Drinking Water Samples.

Shaded results indicate >MCL 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

LOD = Limit of Detection %DWB = (mg/kg DWB) / 10000

Parameter
VOCs (water) by GC/MS see attached Units Dilution 6 LOQ/MCL Analyzed Method 10/22/19 EPA 624 L**ab** 721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

NA = Not Applicable

President

Reviewed by:

Authorized by: R. T. Krueger

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Page 1 of 3

Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333072

Project Description: Marathon County BRRDF Private Wells
Project Title: October 2019
Template: S.

Template: SAT3APP3 Printed: 11/14/2019 07:19

| Sample: 1155379 PW26 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 | Analytes: 43 |       |           |       |      |  |  |
|--|--------------|-------|-----------|-------|------|--|--|
| ANALYTE NAME   | RESULT       | ONITS | 먇         | LOD   |      | MCL  | Note   |
| Benzene  | ND           | ug/L  | -         | 0.19  | 0.69 | 30   |  |
| Bromodichloromethane   | 88           | ug/L  | ٠,        | 0.19  | 0.68 | 2000   |  |
| Bromoform  | N            | ug/L  | ٠ د       | 20.10 | 0.50 | 00   |  |
| Bromomethane<br>Carbon Totrophorida  | 8            | ng/L  | _         | 0.19  | 0.66 | 51   |  |
| Chlorobenzene  | ND           | ug/L  | _         | 0.16  | 0.56 | 100  |  |
| Chloroethane   | ND           | ug/L  |           | 1.5   | 5.4  |  |  |
| Chloroform   | ND           | ug/L  | _         | 0.17  | 0.60 | 80   |  |
| Chloromethane  | ND           | ug/L  |           | 0.19  | 0.68 |  |  |
| Dibromochloromethane   | ND           | ug/L  | خـ ا      | 0.17  | 0.61 | 80   |  |
| 1,2-Dibromo-3-Chloropropane  | ND           | ug/L  | _         | 0.21  | 0./3 | THE PARTY OF THE P | A STATE OF THE PARTY OF THE PAR |
| 1,2-Dibromoethane  | ND           | ug/L  |           | 0.12  | 0.43 |  | - Constitution   |
| Dibromomethane   | ND           | ug/L  |           | 0.21  | 0./3 |  |  |
| 1.2-Dichlorobenzene  | ND           | ug/L  | _         | 0.22  | 0.76 | 600  |  |
| 1,3-Dichlorobenzene  | ND           | ug/L  | _         | 0.20  | 0.72 |  | - Company - Comp |
| 1,4-Dichlorobenzene  | ND           | ug/L  |           | 0.21  | 0.76 | 75   |  |
| Dichlorodifluoromethane  | ND           | ug/L  | -         | 0.14  | 0.49 |  | A THE STATE OF THE |
| 1,1-Dichloroethane   | NO           | ug/L  | <u>ــ</u> | 0.10  | 0.04 | ٦  | The state of the s |
| 1,2-Dichlosofthane   | S            | 1/0// | <u> </u>  | 0.16  | 0.57 | 7  |  |
| ris-1 2-Dichloroethene   | NO           | ug/L  |           | 0.18  | 0.62 | 70   |  |
| trans-1.2-Dichloroethene   | ND           | ug/L  | _         | 0.15  | 0.51 | 100  |  |
| 1.2-Dichloropropane  | ND           | ug/L  | _         | 0.24  | 0.84 | 5  |  |
| cis-1,3-Dichloropropene  | ND           | ug/L  |           | 0.19  | 0.68 |  |  |
| trans-1,3-Dichloropropene  | ND           | ug/L  | 1         | 0.14  | 0.51 |  |  |
| Ethylbenzene   | ND           | ug/L  | _         | 0.30  | 1.1  | 700  |  |
| Methylene chloride   | ND           | ug/L  | _         | 0.20  | 0.70 | G  |  |
| Naphthalene  | ND           | ug/L  |           | 0.29  | 1.0  |  |  |
| Styrene  | ND           | ug/L  | _         | 0.16  | 0.56 | 100  |  |
| ortho-Xylene   | ND           | ug/L  |           | 0.16  | 0.56 |  |  |
| Tetrachloroethene  | ND           | ug/L  |           | 0.17  | 0.58 | O I  |  |
| Toluene  | ND           | ug/L  |           | 0.19  | 0.68 | 1000   |  |
| 1,1,1-Trichloroethane  | ND           | ug/L  |           | 0.17  | 0.61 | 200  |  |
| 1,1,2-Trichloroethane  | ND           | ug/L  |           | 0.17  | 0.59 | ı o  |  |
| Trichloroethene  | ND           | ug/L  |           | 0.24  | 0.84 | 5  |  |
| Trichlorofluoromethane   | ND           | ug/L  |           | 0.17  | 0.60 |  |  |
| Vinyl chloride   | ND           | ug/L  |           | 0.16  | 0.57 | .2   |  |
| meta,para-Xylene   | ND           | ug/L  |           | 0.32  | 111  | 10000  |  |
| MTBE   | ND           | ug/L  |           | 0.22  | 0.76 |  |  |
| Acetone  | ND           | ug/L  |           | 4.2   | 12   |  |  |
| Carbon Disulfide   | ND           | ug/L  |           | 0.16  | 0.58 |  |  |
| Methyl Ethyl Ketone  | ND           | ug/L  | _         | 0.50  | 1.8  |  |  |
| Tetrahydrofuran  | ND           | ug/L  | _         | 0.97  | 3.5  |  |  |
| Dibromofluoromethane (SURR)  | 122%         |       |           |       |      |  | S  |
|  | 116%         |       |           |       |      |  | v  |
| 1-Bromo-4-Fluorobenzene (SURR)   | 109%         |       | ٦         |       |      |  | v  |
| NOTES APPLICABLE TO THIS ANALYSIS:   |              |       |           |       |      |  |  |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

Page 2 of 3

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmnt Dept
Project Description: Marathon County BRRDF Private Wells
Project Title: October 2019
Template: SAT3APP3
Printed:

Template: SAT3APP3 Printed: 11/14/2019 07:19

Sample: 1155380 PW8575 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

| ď  |                       |                 |      | ٦    |  | 107%   | 1-Bromo-4-Fluorobenzene (SURR) |
|--|-----------------------|-----------------|------|------|--|--------|--------------------------------|
| o w  |                       |                 |      |      |  | 110%   | Toluene-d8 (SURR)              |
| y (v   |                       |                 |      |      |  | 120%   | Dibromofluoromethane (SURR)    |
|  |                       | 3.5             | 0.97 |      | ug/L   | ND     | Tetrahydrofuran                |
|  |                       | 1.8             | 0.50 | _    | ug/L   | ND     | Methyl Ethyl Ketone            |
|  |                       | 0.58            | 0.16 | _    | ug/L   | ND     | Carbon Disulfide               |
|  |                       | 12              | 4.2  | _    | ug/L   | ND     | Acetone                        |
|  |                       | 0.76            | 0.22 | 1    | ug/L   | ND     | MTBE                           |
|  | 10000                 | 1.1             | 0.32 |      | ug/L   | ND     | meta,para-Xylene               |
|  | 2                     | 0.57            | 0.16 |      | ug/L   | ND     | Vinyl chloride                 |
|  |                       | 0.60            | 0.17 |      | ug/L   | ND     | Trichlorofluoromethane         |
|  | ഗ                     | 0.84            | 0.24 |      | ug/L   | ND     | Trichloroethene                |
|  | ഗ                     | 0.59            | 0.17 |      | ug/L   | ND     | 1,1,2-Trichloroethane          |
|  | 200                   | 0.61            | 0.17 | _    | ug/L   | ND     | 1,1,1-Trichloroethane          |
|  | 1000                  | 0.68            | 0.19 |      | ug/L   | ND     | Toluene                        |
|  | თ                     | 0.58            | 0.17 | حــا | ug/L   | ND     | Tetrachloroethene              |
|  |                       | 0.56            | 0.16 | ے    | ug/L   | ND     | ortho-Xylene                   |
|  | 100                   | 0.56            | 0.16 |      | ug/L   | ND     | Styrene                        |
|  |                       | 1.0             | 0.29 |      | ug/L   | ND     | Naphthalene                    |
|  | ហ                     | 0.70            | 0.20 |      | ug/L   | ND     | Methylene chloride             |
|  | 700                   | 11.             | 0.30 |      | ug/L   | ND     | Ethylbenzene                   |
|  |                       | 0.51            | 0.14 |      | ug/L   | ND     | trans-1,3-Dichloropropene      |
|  |                       | 0.68            | 0.19 | 1    | ug/L   | ND     | cis-1.3-Dichloropropene        |
| Manufacture of the Control of the Co | 51                    | 0.84            | 0.24 |      | ug/L   | ND     | 1.2-Dichloropropane            |
|  | 100                   | 0.51            | 0.15 |      | ug/L   | ND     | trans-1.2-Dichloroethene       |
|  | 70                    | 0.62            | 0.18 | 1    | ug/L   | ND     | cis-1.2-Dichloroethene         |
|  | 7                     | 0.57            | 0.16 |      | ug/L   | ND     | 1.1-Dichloroethene             |
| The state of the s | 51                    | 0.69            | 0.19 | _    | ug/L   | ND     | 12-Dichloroethane              |
| CO. LOUIS PROFESSION L.  |                       | 0.64            | 0.18 | _    | ug/L   | UN     | 1.1-Dichloroethane             |
| AND THE PARTY OF T |                       | 0.49            | 0.14 | _    | ug/L   | ND     | Dichlorodifluoromethane        |
|  | 75                    | 0.76            | 0.21 | _    | ug/L   | ND     | 1,4-Dichlorobenzene            |
| ADDRESS OF THE PARTY OF THE PAR |                       | 0.72            | 0.20 |      | ug/L   | ND     | 1.3-Dichlorobenzene            |
| the additional to the second s | 600                   | 0.76            | 0.22 | 1    | ug/L   | ND     | 1.2-Dichlorobenzene            |
| - And Andrews -  |                       | 0.73            | 0.21 | 1    | ug/L   | ND     | Dibromomethane                 |
|  |                       | 0.43            | 0.12 | 1    | ug/L   | ND     | 1.2-Dibromoethane              |
| ATTENDED TO THE PARTY OF THE PA |                       | 0.73            | 0.21 | 1    | ug/L   | ND     | 1.2-Dibromo-3-Chloropropane    |
|  | 80                    | 0.61            | 0.17 | _    | ug/L   | ND     | Dibromochloromethane           |
|  |                       | 0.68            | 0.19 |      | ug/L   | ND     | Chloromethane                  |
|  | 80                    | 0.60            | 0.17 |      | ug/L   | ND     | Chloroform                     |
|  |                       | 5.4             | 1.5  | _    | ug/L   | ND     | Chloroethane                   |
|  | 100                   | 0.56            | 0.16 | _    | ug/L   | ND     | Chlorobenzene                  |
|  | ഗ                     | 0.66            | 0.19 | ے    | ug/L   | ND     | Carbon Tetrachloride           |
|  |                       | 0.79            | 0.22 | -1   | ug/L   | ND     | Bromomethane                   |
|  | 80                    | 0.56            | 0.16 |      | ug/L   | ND     | Bromoform                      |
|  | 80                    | 0.68            | 0.19 | 1    | ug/L   | ND     | Bromodichloromethane           |
|  | 5                     | 0.69            | 0.19 | _    | ug/L   | ND     | Benzene                        |
| Note   | MCL                   | LOQ             | LOD  | DIL  | UNITS  | RESULT | ANALYTE NAME                   |
|  | - month and in commit | Office American |      |      | The second secon |        |                                |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)

Page 3 of 3

Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333072

Project Description: Marathon County BRRDF Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/14/2019 07:19

Sample: 1155381 Trip Blank Collected: 10/16/19 Benzene Bromodichloromethane Chlorobenzene Carbon Tetrachloride ANALYTE NAME Bromomethane Bromoform Chloromethane Dibromochloromethane 1,2-Dibromo-3-Chloropropane Tetrahydrofuran

Dibromofluoromethane (SURR)

Toluene-d8 (SURR)

1-Bromo-4-Fluorobenzene (SURR) Methyl Ethyl Ketone Carbon Disulfide ibromomethane eta,para-Xylene richlorofluoromethane aphthalene ethylene chloride 2-Dichlorobenzene cetone duene 3-Dichlorobenzene ho-Xylene trachloroethene 1,3-Dichloropropene chloroethene ,2-Trichloroethane Dibromoethane 1-Trichloroethane benzene roethane Dichloroethane Dichlorobenzene lorodifluoromethane )ichloroethane ichloropropane ichloroethene 2-Dichloroethene 1,2-Dichloroethene Analyzed: 10/22/19 - Analytes: 43 RESULT 100/100/ 100/100/ 1/gu 1/gu ug/ 666 666 ug/ /gu 5555 5 6 6 ug/ ug/ ug/ ug/ 몯 6 0.18 0.15 0.15 0.14 0.20 0.20 0.16 0.16 0.17 0.18 0.19 0.16 0.19 0.17 0.21 0.12 0.21 0.22 0.22 0.21 0.21 0.19 0.17 0.17 0.24 0.17 0.16 0.32 0.22 4.2 MCL 600 10000 885 8 80 8 5 200 5 Ċ٦ 700 60 75 8 S Note လ|လ|လ В

## NOTES APPLICABLE TO THIS ANALYSIS:

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation. S = This compound is a surrogate used to evaluate the quality control of a method.

LB = Compound is suspected of being a laboratory contaminant.

## NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / BRRDF - Private Wells IA

|   |      |           |                   |           |                | . teet                 | 4/13: South house far |
|---|------|-----------|-------------------|-----------|----------------|------------------------|-----------------------|
|   |      |           | 780               |           | 0,             | 70 HT QQ               |                       |
|   |      |           | $S_{\mathcal{S}}$ | S         | SHOW           | to Ator                | Comments:             |
|   |      |           |                   |           |                | 11/1                   | 61.91.81              |
| -()                                     |      |           |                   |           | mple Location: | Time Sampled: S        | Date Sampled:         |
| Treated (Y/N):                          |      |           |                   |           |                | R222780 Duncan R       |                       |
| ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | ·    | <u></u> . |                   | L70       | neten          | William Kas            | 2/89                  |
| (10l02,1221,1nnup) tlibid1nT            | nobO | Color:    | Time Purged:      | DAR ID #: | rrwq :         | Point Name / Homeowner | # จัยว ราม            |

| (3)                           | nilqmss ərotəd | or no-water | us to purge little | r-may-want | d dug well, owne | nsh) Ani2 nəhəti           | <del>X :90/11 Jo s</del> ∀ |
|-------------------------------|----------------|-------------|--------------------|------------|------------------|----------------------------|----------------------------|
| Flora                         |                |             | アヨコロトリ             |            | N Rus            |                            |                            |
|                               |                |             |                    |            |                  |                            | Comments:                  |
| ~ ~                           |                | 7.5 nott f  | 0 301S             | 13711      | 4-1              | 7581                       | 61.91.01                   |
| · //                          |                | , ,, 0      | •                  |            | Sample Location: | Time Sampled:              | Date Sampled:              |
| Treated (V/V):                | od             | 00          | Swis               | 670        |                  | James Glo<br>R222470 Dunca | bLE                        |
| Turbidity (quanc,text,calor); | :TobO          | Color:      | Time Purged:       | DNR ID #:  | VIOCE: PW26      | Point Name / Homeov        | NES Eab#:                  |

|                                 |         | <u> </u> |              |           |                             |                       | o obiz tovcet side o          |
|---------------------------------|---------|----------|--------------|-----------|-----------------------------|-----------------------|-------------------------------|
|                                 |         |          |              |           |                             | 2001                  | Comments:                     |
| (VAX) Balkall                   |         |          | 2500         | 4) fo     | Sample Location:            | :holdmeSomiT<br>32,57 | :bolgmas otad<br>D1 · 61 - O1 |
| CIVA                            | ad      | ND.      | Emin)        | L9E       | Tista Bates<br>ille, Ringle | Jerry and E           | Q8 <i>E</i>                   |
| Turbidity (quant, text, color): | :Aobor: | Color:   | Time Purged: | DNR ID #: | Wher: PW8575                | oomoH\omeN trioq      | NES Fup #:                    |

| ) vag         | 81/                      |                  |            |              | 1 09Z  | everse side for sample | custody information             |
|---------------|--------------------------|------------------|------------|--------------|--------|------------------------|---------------------------------|
| :shnəmmoO     |                          |                  |            |              |        |                        |                                 |
| Date Sampled: | Time Sampled:            | Sample Location: |            |              |        |                        |                                 |
| ALS Lab #:    | omoH\omeNtnio4<br>A qirT |                  | 966<br>966 | Time Purged: | Color: | :aobO                  | Turbidity (quant, text, color): |

## NLS FIELD QUALITY ASSURANCE RECORD

|  |  |                |                 |                |              |                  |                               |                             | ,,,,,,,,,,,,  |
|--|--|----------------|-----------------|----------------|--------------|------------------|-------------------------------|-----------------------------|---|
|  |  |                |                 |                |              |                  |                               |                             | Comments:   |
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|  | 1 /  |                |                 |                |              |                  |                               |                             | (3/4/   |
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|  |  | ľ              |                 |                |              |                  |                               |                             | STD BY:   |
| <del></del>  |  |                |                 |                |              |                  |                               |                             | TIME:   |
|  |  |                | <u></u>         |                |              | <u></u>          |                               |                             | :ETAG   |
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|  | 1 /  |                |                 |                |              |                  |                               |                             | (S/A)   |
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|  | <del>/                                    </del> | $\vdash$       |                 |                |              |                  | 1                             |                             | (R/S)   |
|  |  |                |                 |                |              |                  |                               |                             | ВОРГЕ <i>В</i> 7. <u>00</u>                                   |
|  |  |                |                 | <u> </u>       |              |                  |                               | $\leftarrow$                | (RVI)   |
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| əffud H  | mples and p                                      | ss Hq wol 10   | of 00.7 raffing | d Ha diiw 10   | .4 raffind H | n asil zraftı    | id Ha steirac                 | yane adt pai                | 3racket test samples us                                       |
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| · · · · · · ·  |  |                | :# STN -        | 'hermometer    | L            |                  | . 741                         |                             | Sottles Prepared By:  |
|  |  |                |                 |                |              | 110              |                               |                             |   |
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|  |  |                |                 | <i>-</i> 3     |              | 52/1/L           | Kelt proli                    | 1 34/                       | Signature: 1  |

# **ANALYTICAL REPORT**

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 1 of 17

NLS Customer: NLS Project: 333074 20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754 **Marathon County Landfill** 

Project: Marathon County Area A Private Wells October 2019

PW48 NLS ID: 1155386

Collected: 10/16/19 10:55 Received: 10/16/19 Matrix: GW

| Values in brackets represent results greater than or equal to the Lo  | VOCs (water) by GC/MS | Field turbidity | Field odor    | данация подполняться — — — — — — — — — — — — — — — — — — — | Parameter with the second of t |
|---|-----------------------|-----------------|---------------|--|--|
| Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered | see attached          | none detected   | none detected | none detected  | Result Units Dilution LOD LOQ  |
| Results greater than or equal to the Lo   | 10/22/19 SW846 8260C  | 10/16/19 NA     | 10/16/19 NA   | 10/16/19 NA  | LOD LOQ/MCL Analyzed Method  |
| QQ are considered   | 721026460             | 721026460       | 721026460     | 721026460  | Lab  |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect diution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)
DWB = Dry Weight Basis LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 2 of 17

NLS Project: 333074

Client: Marathon County Solid Waste Mgmnt Dept
Afth: Dave Hagenbucher

Attn: Dave Hagenbucher Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW88 NLS ID: 1155387 Matrix: GW

Collected: 10/16/19 12:17 Received: 10/16/19

| not results greater than or equal to the LOD but less than the LOD and are within a region of "Less-L | ) by GC/MS see attached | Field turbidity none detected 10/1 | Field odor none detected 10/1 | none detected | Parameter Result Units Dilution LOD LOQ/MCL Anal |
|---|-------------------------|------------------------------------|-------------------------------|---------------|--|
| ass_Certain Organitation." Results greater than or equal to the LOO are considered                    | 10/22/19 SW846 8260C    | 10/16/19 NA                        | 10/16/19 NA                   |               | LOD LOQ/MCL /                                    |
| I to the I OO are considered  | 260C 721026460          |                                    | /21026460                     | /21026460     | Lab  |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dilution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000

MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

Authorized by:
R. T. Krueger

President

# **ANALYTICAL REPORT**

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 3 of 17

NLS Project: 333074

NLS Customer:

20080

Client: Marathon County Solid Waste Mgmnt Dept Marathon County Landfill Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

Matrix: GW PW24 NLS ID: 1155388

Collected: 10/16/19 12:09 Received: 10/16/19

| to be in the region of "Certain Quantitation". I OD and I OO tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content. | sent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater | by GC/MS see attached 10/22/19 | dify none detected | Field odor none detected 1076/19 NA | none detected | Parameter Result Units Dilution LOD LOQ/MCL Analyzed Method |
|--|---|--------------------------------|--------------------|-------------------------------------|---------------|---|
| and/or solids content.   | er than or equal to the LC  | /19 SW846 8260C                | /19 NA             | /19 NA                              | /IW NA        |   |
|  | Q are considered  | 721026460                      | 727026460          | 721020400                           | 724020121     | Lab   |

to be in the region of certain

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)
DWB = Dry Weight Basis LOD = Limit of Detection

1000 ug/L = 1 mg/L Shaded results indicate >MCL. LOQ = Limit of Quantitation

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 4 of 17

NLS Project: 333074

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

Ringle, WI 54471 9754 Marathon County Landfill R18500 East Highway 29

Marathon County Area A Private Wells October 2019

PW25 NLS ID: 1155389

Collected: 10/16/19 12:00 Received: 10/16/19 Matrix: GW

| to be in the region of "Cortain Occupation"   Of  | Values in brackets represent results greater than  | VOCs (water) by GC/MS  | Field turbidity | Field odor    | Field color   | Parameter。                  |
|---|--|--|-----------------|---------------|---------------|-----------------------------|
| to be in the region of "Ontain Occupation". I OD and I OD tagged with an actorick (*) are considered Reporting I in its. All I OD/I OOs adjusted to reflect dilution and/or solids content. | Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-C | see attached   | none detected   | none detected | none detected | Result Units Dilution       |
| D/I OOs adjusted to reflec  | ertain Quantitation". Res  | The state of the s |                 |               |               | LOD LOQ/MCL Analyzed Method |
| → dlution and/or solids content.  | -Certain Quantitation". Results greater than or equal to the LOQ are considered  | 10/22/19 SW846 8260C   | 10/16/19 NA     | 10/16/19 NA   | 10/16/19 NA   | Analyzed Method             |
|   | .OQ are considered   | 721026460  | 721026460       | 721026460     | 721026460     | Lab                         |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(") are considered reporting climits. All LO

DWB = Dry Weight Basis. %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD) LOD = Limit of Detection

1000 ug/L = 1 mg/L Shaded results indicate >MCL LOQ = Limit of Quantitation

NA = Not Applicable

Reviewed by: 2

Client:

Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754

**Marathon County Landfill** 

ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460 EPA Laboratory ID No. WI00034

Printed: 11/13/19 NLS Project: Page 5 of 17 333074

Marathon County Area A Private Wells October 2019

PW18 NLS ID: 1155390

Matrix: GW

Collected: 10/16/19 11:40 Received: 10/16/19

|  | Values in brackets represent results greater than or equal to th  | VOCs (water) by GC/MS | Field turbidity | Field odor    | Field color   | Parameter - Result |
|--|---|-----------------------|-----------------|---------------|---------------|--------------------|
| the property of the contract of the property o | Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered | see attached          | none detected   | none detected | none detected | Units              |
| reflect dilution and/or solids content   | Results greater than or equal to the L  | 10/22/19 SW846 8260C  | 10/16/19 NA     | 10/16/19 NA   | 70/16/19 NA   | od                 |
|  | .OQ are considered  | 721026460             | /21026460       | /21026460     | 721026460     | Lab                |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(") are considered Reporting Limits. All LOD/LOQS adjusted to relieve מסוומס ססוונסווני

ND = Not Detected (< LOD)
DWB = Dry Weight Basis DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 6 of 17

NLS Project: 333074

NLS Customer: Phone: 715 446 3339 20080

Client: R18500 East Highway 29 Ringle, WI 54471 9754 Marathon County Solid Waste Mgmnt Dept Marathon County Landfill Attn: Dave Hagenbucher

Project: Marathon County Area A Private Wells October 2019

PW68 NLS ID: 1155391

Matrix: GW

Collected: 10/16/19 11:28 Received: 10/16/19

| ent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less | ) by GC/MS see attached | Field furbidity none detected | Field odor none detected | none detected | Parameter Result Units Dilution LOD LOQ/MCI |
|---|-------------------------|-------------------------------|--------------------------|---------------|---|
| -Certain Quantitation". Results greater than or equal to the LOQ are considered                     | 10/22/19 SW846 8260C    | 10/16/19 NA                   | 10/16/19 NA              | 10/16/19 NA   | LOD LOQ/MCL Analyzed Method                 |
| .OQ are considered  | 721026460               | 721026460                     | 721026460                | 721026460     | Lab   |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)
DWB = Dry Weight Basis LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 7 of 17

333074

NLS Project: NLS Customer: 20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

Matrix: GW PW19 NLS ID: 1155392

Collected: 10/16/19 11:20 Received: 10/16/19

| Parameter 100 100 100 100 100 100 100 100 100 10           | Result の一次語外 Units こうこう Dilution できる  | LOD LOQ/MCL Analyzed Method           | Lab              |
|--|---|---------------------------------------|------------------|
| manufamora e e e e e e e e e e e e e e e e e e e           | none defected   | 10/16/19 NA                           | 721026460        |
| Field odor   | none detected   | 10/16/19 NA                           | 721026460        |
| Field furbidity  | none detected   | 10/16/19 NA                           | 721026460        |
| ) by GC/MS   | see attached  | 10/28/19 SW846 8260C                  | 721026460        |
| Values in brackets represent results greater than or equal | Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered | sults greater than or equal to the LC | Q are considered |
| to be in the region of "Certain Quantitation". LOD and LO  | to be in the region of "Certain Quantifation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content                       | ect dlution and/or solids content.    |                  |

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD) LOD = Limit of Detection

1000 ug/L = 1 mg/L Shaded results indicate >MCL. LOQ = Limit of Quantitation

NA = Not Applicable

Reviewed by:

Authorized by: R. T. Krueger

President

ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460 EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 8 of 17

**NLS Project:** 333074

NLS Customer:

20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754 Marathon County Landfill

Marathon County Area A Private Wells October 2019

Matrix: GW PW64 NLS ID: 1155393

Collected: 10/16/19 11:10 Received: 10/16/19

| Daramater (1997) And Commission of the Commissio | Dilution LOD LOQ/MC  | L Analyzed Method                    | Lab              |
|--|--|--------------------------------------|------------------|
|  | teria. Janiary in the material of the control of th | 10/16/19 NA                          | 721026460        |
| Field odor   | none detected  | 10/16/19 NA                          | 721026460        |
| Field turbidity  | none detected  | 10/16/19 NA                          | 721026460        |
| VOCs (water) by GC/MS see attached   | -  | SW846 8260C                          | 721026460        |
|  | The second to the local section of the second to the local sections of the local section | to areater then are audite the LOC   | ) are considered |
|  | The late of the 100 and an initial a region of a concept of the principle of the contraction.  | is areafor than or equal to the I Of | are considered   |

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD) LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

R. T. Krueger Authorized by:

President

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 9 of 17

**NLS Project:** 333074

**NLS Customer:** 

20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754 Marathon County Landfill

Project: Marathon County Area A Private Wells October 2019

Matrix: GW PW27 NLS ID: 1155394

Collected: 10/16/19 13:40 Received: 10/16/19

| to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content | Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considerections. | VOCs (water) by GC/MS see attached | Field turbidity none detected | Field odor none detected | Field color none detected | Parameter                   |
|---|---|------------------------------------|-------------------------------|--------------------------|---------------------------|-----------------------------|
| isk(*) are considered Reporting Limits. All LOD/LOQs adjusted to ref  | an the LOQ and are within a region of "Less-Certain Quantitation". Re   | ned                                | ected                         | ected                    |                           | Units Dilution              |
| lect dlution and/or solids content.   | esults greater than or equal to the LC  | 10/28/18 SW846 8260C /2102         | 10/16/19 NA                   | 10/10/10 NA              | 10/10/19 NA               | LOD LOQ/MCL Analyzed Method |
|   | Q are considered  | 121020400                          | 721020400                     | 721020400                | 721020400                 | Lab                         |

ND = Not Detected (< LOD)

DWB = Dry Weight Basis

MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

Authorized by:

President R. T. Krueger

# ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
WDATCP Laboratory Certification No. 105-330
EDA I aboratory ID No. WI00034

EPA Laboratory ID No. WI00034

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NLS Project: 333074
NLS Customer: 20080

Client: Marathon County Solid Waste Mgmnt Dept
Attn: Dave Hagenbucher

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW65 NLS ID: 1155395

Parameter
Field color
Field odor Collected: 10/16/19 13:30 Matrix: GW Tield turbidity
OCs (water) by GC/MS Received: 10/16/19 see attached none detected none detected none detected Units Dilution TOD LOQ/MCL Analyzed Method 10/16/19 NA 10/16/19 NA 10/28/19 SW846 8260C 10/16/19 NA 721026460 721026460 721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content. Results greater than or equal to the LOQ are considered

ND = Not Detected (< LOD)

DWB = Dry Weight Basis

MCL = Maximum Contaminant Levels for Drinking Water Samples

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

**J** 

Authorized by: R. T. Krueger President

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 11 of 17

NLS Customer: NLS Project: 333074 20080

Client: Marathon County Solid Waste Mgmnt Dept

Ringle, WI 54471 9754 R18500 East Highway 29 Marathon County Landfill Attn: Dave Hagenbucher

PW100 NLS ID: 1155396 Project: Marathon County Area A Private Wells October 2019

Matrix: GW

Parameter
Field color
Field odor
Field turbidity Collected: 10/16/19 13:20 Received: 10/16/19 /OCs (water) by GC/MS none detected see attached none detected Result Units Dilution 6 LOQ/MCL Results greater than or equal to the LOQ are considered Analyzed Method 10/16/19 10/16/19 10/28/19 SW846 8260C 10/16/19 NA **K K** 721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD)
DWB = Dry Weight Basis MCL = Maximum Contaminant Levels for Drinking Water Samples. %DWB = (mg/kg DWB) / 10000LOD = Limit of Detection

LOQ = Limit of Quantitation 1000 ug/L = 1 mg/L

Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

R. T. Krueger Authorized by:

President

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 12 of 17

NLS Project: 333074

Client: Marathon County Solid Waste Mgmnt Dept **Marathon County Landfill** Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754

Marathon County Area A Private Wells October 2019

Matrix: GW PW80 NLS ID: 1155397

| Collected: 10/16/19 12:57 |
|---------------------------|
| Received: 10/16/19        |
| 6/19                      |
|                           |

| Parameter 18 18 18 18 18 18 18 18 18 18 18 18 18 | A STATE OF THE PROPERTY OF THE STATE OF THE | Analyzed Method  | Lab               |
|--|---|--|-------------------|
| EIPID COOL                                       |   | 10/16/19 NA  | 721026460         |
| Field odor                                       | none detected   | 10/16/19 NA  | 721026460         |
| Field turbidity                                  | none detected   | 10/16/19 NA  | 721026460         |
| VOCs (water) by GC/MS                            |   | 10/28/19 SW846 8260C   | 721026460         |
| Values in brackets represent results grea        | Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered   | ertain Quantitation". Results greater than or equal to the LOQ are considere | )Q are considered |
| to be in the region of "Contain Orientifotic     | to be in the spain of "Costoin Countitation"   OD and I OD togged with an astorick/*) are considered Reporting I imits   All I OD/I OOs adjusted to reflect dilution and/or solids content  | dlution and/or solids content  |                   |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk() are considered kepoliung Limits. All LOD g I

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 13 of 17

**NLS Project:** 333074

NLS Customer:

20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

Ringle, WI 54471 9754 R18500 East Highway 29 **Marathon County Landfill** 

Matrix: GW PW53 NLS ID: 1155398 Marathon County Area A Private Wells October 2019

Parameter Field color Collected: 10/16/19 13:06 Received: 10/16/19 ield odor ield turbidity OCs (water) by GC/MS see attached none detected none detected none detected Units Dilution 60 LOQ/MCL Results greater than or equal to the LOQ are considered Analyzed Method 10/16/19 NA 10/16/19 NA 10/16/19 NA 10/28/19 SW846 8260C 721026460 721026460 721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

MCL = Maximum Contaminant Levels for Drinking Water Samples. DWB = Dry Weight Basis ND = Not Detected (< LOD) LOD = Limit of Detection %DWB = (mg/kg DWB) / 10000

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

Authorized by: R. T. Krueger

President

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

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NLS Project: 333074

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, WI 54471 9754 Marathon County Landfill

PW29 NLS ID: 1155399 Marathon County Area A Private Wells October 2019

Collected: 10/16/19 12:45 Received: 10/16/19

Matrix: GW

| Units  | CL Analyzed Method   | Lab  |
|--|--|--|
| дения выправления в принцения в принцения выправления в предуставления в принцения в принц | 10/16/19 NA  | 721026460  |
| none detected  | 10/16/19 NA  | 721026460  |
| none defected  | 10/16/19 NA  | 721026460  |
| see attached   | 10/28/19 SW846 8260C   | 721026460  |
| eater than or equal to the LOD but less than the LOO and are within a region of "Less-Certain Quantitation".   | Results greater than or equal to the L   | OQ are considered  |
| tion. I OD and I OD tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to   | eflect dlution and/or solids content.  |  |
|  | Result  none detected  none detected  none detected  none detected  none detected  see attached  seater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". I OD and I OO tagged with an asterisk(") are considered Reporting Limits. All LOD/LOQs adjusted to re | Units  Dilution  LOD LOQ/MCL  LOD/LOQ/LOQ/MCL  LOD/LOQ/LOQ/LOQ/LOQ/LOQ/LOQ/LOQ/LOQ/LOQ/LOQ |

to be in the region of Certail Qualititation. For any For tagger

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)

DWB = Dry Weight Basis LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL

NA = Not Applicable

Reviewed by:

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

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**NLS Project:** 333074

NLS Customer: 20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

PW54 NLS ID: 1155400 Project: Marathon County Area A Private Wells October 2019

Matrix: GW

Collected: 10/16/19 12:35 Received: 10/16/19 Field color
Field odor
Field turbidity Parameter /OCs (water) by GC/MS none detected see attached none detected Result Dilution 6 LOQ/MCL Analyzed Method 10/16/19 NA 10/16/19 NA 10/16/19 NA 0/28/19 SW846 8260C 721026460

Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 MCL = Maximum Contaminant Levels for Drinking Water Samples. ND = Not Detected (< LOD)
DWB = Dry Weight Basis LOD = Limit of Detection

> 1000 ug/L = 1 mg/LLOQ = Limit of Quantitation

Shaded results indicate >MCL.

NA = Not Applicable

Reviewed by:

President R. T. Krueger Authorized by:

ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460 WDATCP Laboratory Certification No. 105-330 EPA Laboratory ID No. WI00034

Printed: 11/13/19 Page 16 of 17

NLS Project: 333074

NLS Customer:

20080

Client: Marathon County Solid Waste Mgmnt Dept
Attn: Dave Hagenbucher

Marathon County Landfill R18500 East Highway 29 Ringle, WI 54471 9754

Project: Marathon County Area A Private Wells October 2019

PW17 NLS ID: 1155401 Matrix: GW

Collected: 10/16/19 14:05 Received: 10/16/19

| VOCs (water) by GC/MS    | Field turbidity      | Field odor    | Field color  | Parameter  |
|--------------------------|----------------------|---------------|--|--|
| see attached             | none detected        | none detected | none detected  | Result Units Dilution  |
| 10/28/1                  | 10/16/               | 10/16/1       | 10/10/   | LOD LOQ/MCL Analyzed Method  |
| 19 SW846 8260C 72102646C |                      | -             |  | and the second s |
|                          | 10/28/19 SW846 8260C |               | Field odor         none detected         10/16/19         NA         721026460           Field turbidity         none detected         10/76/19         NA         721026460           VOCs (water) by GC/MS         see attached         10/28/19         SW846 8260C         721026460 | none detected none detected none detected see attached   |

to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(\*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content.

ND = Not Detected (< LOD) LOD = Limit of Detection
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000
MCL = Maximum Contaminant Levels for Drinking Water Samples.

LOQ = Limit of Quantitation1000 ug/L = 1 mg/L

Shaded results indicate >MCL

ntitation NA = Not Applicable

Reviewed by:

by: H

Authorized by:
R. T. Krueger

NORTHERN LAKE SERVICE, INC. Analytical Laboratory and Environmental Services 400 North Lake Avenue - Crandon, WI 54520 Ph: (715)-478-2777 Fax: (715)-478-3060

# ANALYTICAL REPORT

WDATCP Laboratory Certification No. 105-330 WDNR Laboratory ID No. 721026460

EPA Laboratory ID No. WI00034

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NLS Project: NLS Customer: 333074 20080

Client: Marathon County Solid Waste Mgmnt Dept Attn: Dave Hagenbucher

R18500 East Highway 29 Ringle, Wi 54471 9754 Marathon County Landfill

Matrix: TB Project: Marathon County Area A Private Wells October 2019
Trip Blank NLS ID: 1155402

Collected: 10/16/19 00:00 Received: 10/16/19

| ND = Not Detected (< LOD)  LOD = Limit of Detection  DWB = Dry Weight Basis  %DWB = (mg/kg DWB) / 10000  1000 ug/L = 1 mg/L  MCL = Maximum Contaminant Levels for Drinking Water Samples.  LOQ = Limit of Quantitation  1000 ug/L = 1 mg/L  Shaded results indicate >MCL | Parameter VOCs (water) by GC/MS See attached Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All  |
|--|---|
| tion LOQ = Limit of Quantitation B) / 10000 1000 ug/L = 1 mg/L ater Samples. Shaded results indicate >MCL.   | Result see attached or equal to the LOD but less than the LOQ and are wit and LOQ tagged with an asterisk(*) are considered R   |
| NA = Not Applicable Reviewed by: Plate X   | Parameter  Result VOCs (water) by GC/MS  See attached  Values in brackets represent results greater than or equal to the LOD but less than the LOQ and are within a region of "Less-Certain Quantitation". Results greater than or equal to the LOQ are considered to be in the region of "Certain Quantitation". LOD and LOQ tagged with an asterisk(*) are considered Reporting Limits. All LOD/LOQs adjusted to reflect dlution and/or solids content. |
| Authorized by: R. T. Krueger President   | thod Lab 721026460 r equal to the LOQ are considered bilds content.   |

Page 1 of 6

Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Sample: 1155386 PW48 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 Benzene Bromodichloromethane ANALYTE NAME Bromomethane Acetone Carbon Disulfide meta,para-Xylene Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) Tetrahydrofuran Methyl Ethyl Ketone /inyl chloride ans-1,2-Dichloroethene aphthalene 2-Dichloroethane
1-Dichloroethene
s-1,2-Dichloroethene bromomethane chlorodifluoromethane ichlorofluoromethane loroethane Dibromoethane -Dibromo-3-Chloropropane rbon Tetrachloride Dichloropropane -Dichloroethane orobenzene -Dichlorobenzene oromethane rachloroethene Dichlorobenzene loroethene benzene ylene chloride ,3-Dichloropropene chlorobenzene Trichloroethane Trichloroethane ,3-Dichloropropene RESULT UNITS 666 l/gu ug/L 5555 ug/ 66 ug/ ug/ 999 ug/ ug/ ug/l Jg/ lg/L 믇 0.15 0.19 0.14 0.16 0.16 0.17 0.14 0.18 0.16 0.18 0.21 0.22 0.20 0.19 0.17 0.21 0.12 0.19 0.19 0.17 0.17 0.17 0.16 0.22 0.32 . . .50 .97 0.70 1.0 0.56 0.58 0.68 0.68 0.68 0.68 1.1 0.76 M CL 5 5 5 0000 600 100 700 5 7 7 5 8 8 885 Ωı 8 S 75 Note S

# NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Carbon Disulfide
Methyl Ethyl Ketone
Tetrahydrofuran
Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) Bromoform
Bromomethane
Carbon Tetrachloride 1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene
trans-1,2-Dichloroethene Sample: 1155387 PW88 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 Bromodichloromethane ANALYTE NAME meta,para-Xylene MTBE Trichlorofluoromethane
Vinyl chloride ortho-Xylene Tetrachloroethene <u>-thylbenzene</u> rans-1,3-Dichloropropene cetone 1ethylene chloride aphthalene 3-Dichlorobenzene 4-Dichlorobenzene hloromethane ibromochloromethane 2-Dibromo-3-Chloropropane hlorobenzene chlorodifluoromethane bromomethane 2-Dibromoethane 2-Dichloropropane loroethane Dichlorobenzene -Trichloroethane loroethene Trichloroethane RESULT B STINU 5 5 5 1/6n 1/6n 1/6n ng/ ug/ ug/L ű ųg/ ug/ 9 몯 TOD TOD 0.121 0.121 0.121 0.121 0.121 0.121 0.131 0.141 0.141 0.19 0.19 0.19 0.17 0.19 0.17 0.14 0.20 0.20 0.16 0.17 0.17 0.24 0.17 0.16 0.32 0.22 0.22 4.2 0.16 0.50  $\begin{array}{c} 0.43 \\ 0.076 \\ 0.076 \\ 0.063 \\$ 0.56 5.4 0.60 0.68 0.61 0.56 0.79 0.66 0.76 12 0.58 10000 5 5 5 5 MCL 600 8 90 885 8 5|8|2 75 8 ၯ႙ၴ Note တတြလ

# NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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Customer: Marathon County Solid Waste Mgmnt Dept Neroject Description: Marathon County Area A Private Wells
Project Title: October 2019 Template: S NLS Project: 333074

Template: SAT3APP3 Printed: 11/13/2019 09:36

|      | oluene-d8 (SURR) | bromofluoromethane (SURR) | etrahydrofuran | //ethyl Ethyl Ketone | arbon Disulfide | Acetone . | MTBE   | neta,para-Xylene | /inyl chloride | richlorofluoromethane | richloroethene | ,1,2-Trichloroethane | ,1,1-Trichloroethane | oluene | etrachloroethene | rtho-Xvlene | Styrene | Vaphthalene | Vlethylene chloride | thylbenzene | ans-1.3-Dichloropropene | ks-1 3-Dichloropropene | 2-Dichlorononane | is-1,2-Dichloroethene | 1-Dichloroethone | 2-Dichloroethane | 1-Dichloroethane | ichlorodifluoromethane | 4-Dichlorobenzene | 3-Dichlorobenzene | 2-Dichlorobenzene | bromomethane | 2-Dibromoethane | 2-Dibromo-3-Chloropropane  | ibromochloromethane | hloromethane | hloroform | noroethane | hlorohenzene | arbon Tetrachloride | Bromomethane | Bromoform | Bromodiohioromethane |      | ANALYTE NAME | Sample: 1155388 PW24 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 |
|------|------------------|---------------------------|----------------|----------------------|-----------------|-----------|--------|------------------|----------------|-----------------------|----------------|----------------------|----------------------|--------|------------------|-------------|---------|-------------|---------------------|-------------|-------------------------|------------------------|------------------|-----------------------|------------------|------------------|------------------|------------------------|-------------------|-------------------|-------------------|--------------|-----------------|--|---------------------|--------------|-----------|------------|--------------|---------------------|--------------|-----------|----------------------|------|--------------|--|
| 109% | 110%             | 123%                      | ND             | ND                   | ND              | ND        | ND     | ND               | ND             | ND                    | ND             | ND                   | ND                   | ND     | ND               | ND          | ND      | ND          | ND                  | ND          | ND                      | ND                     | ND               | ND                    | ND               | 36               | Z                | S                      | ND                | ND                | ND                | ND           | ND              | ND   | ND                  | ND           | ND        | ND         | ND           | ND                  | ND           | ND        | ND                   | ND   | RESULT       | ) - Analytes: 43   |
|      |                  |                           | ug/L           | ug/L                 | ug/L            | ug/L      | ug/L   | ug/L             | ug/L           | ug/L                  | ug/L           | ug/L                 | ug/L                 | ug/L   | ug/L             | ug/L        | ug/L    | ug/L        | ug/L                | ug/L        | ug/L                    | ug/L                   | ug/L             | ua/L                  | ug/L .           | 1/0/1            | ng/L             | ug/L                   | ug/L              | ug/L              | ug/L              | ug/L         | ug/L            | ug/L   | ug/L                | ug/L         | ug/L      | ug/L       | ug/L         | ug/L                | ug/L         | ug/L      | ug/L                 | ug/L | UNITS D      |  |
|      |                  |                           | 1 0.97         | 1 0.50               | 0.16            | 1 4.2     | 1 0.22 | 1 0.32           | 0.16           | 1 0.17                | 1 0.24         | 1 0.17               | 1 0.17               | 0.19   | 1 0.17           | 0.16        | 1 0.16  | 1 0.29      | 1 0.20              | 0.30        | 1 0.14                  | 0.19                   | 1 0.24           | 0.15                  | 1 0.18           | 0.16             | 0.10             | 0.14                   | 0.21              | 0.20              | 0.22              | 1 0.21       | 0.12            | 0.21   | 0.17                | 0.19         | 0.17      | 1.5        | 0.16         | 0.19                | 0.22         | 0.16      | 0.19                 | 0.19 | DIL LOD      |  |
|      |                  |                           | 3.5            | 1.8                  | 0.58            | 12        | 0.76   | 1.1              | 0.57           | 0.60                  | 0.84           | 0.59                 | 0.61                 | 0.68   | 0.58             | 0.56        | 0.56    | 1.0         | 0.70                | -1.1        | 0.51                    | 0.68                   | 0.84             | 0.51                  | 0.62             | 0.57             | 0.04             | 0.49                   | 0.76              | 0.72              | 0.76              | 0.73         | 0.43            | 0.73   | 0.61                | 0.68         | 0.60      | 5.4        | 0.56         | 0.66                | 0.79         | 0.56      | 0.68                 | 0.69 | LOQ          |  |
| ٥    | 0                | S                         |                |                      |                 |           |        | 10000            | .2             |                       | G              | n On                 | 200                  | 1000   | 5                |             | 100     |             | On .                | 700         |                         |                        | 5                | 100                   | 70               | 7                | רל               |                        | /5                |                   | 600               |              |                 | - Laboratoria de la laboratoria dela laboratoria de la laboratoria de la laboratoria dela laborato | 80                  |              | 80        |            | 100          | ហ                   |              | 80        | 80                   | 5    | MCL Note     |  |

NOTES APPLICABLE TO THIS ANALYSIS:
S = This compound is a surrogate used to evaluate the quality control of a method.

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NLS Project: 333074

Customer: Marathon County Solid Waste Mgmnt Dept N
Project Description: Marathon County Area A Private Wells
Project Title: October 2019 Template: S

Template: SAT3APP3 Printed: 11/13/2019 09:36

| Sample: 1155389 PW25 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 | ilytes: 43 |       |           |        |      |   |  |
|--|------------|-------|-----------|--------|------|---|--|
|  | RESULT     | UNITS | 믿         | LOD .  | LoQ  | MCL   | Note   |
| Benzene  | ND         | ug/L  |           | 0.19   | 0.69 | 5   |  |
| Bromodichloromethane   | ND         | ng/L  |           | 0.19   | 0.68 | 80  |  |
| Bromoform  | į          | ug/L  | <b>A</b>  | 2 . 10 | 0.50 | 00  |  |
| Bromomethane Carbon Tatrochloride  | 88         | ug/L  | _         | 0.19   | 0.66 | 5   |  |
| Chlorobenzene  | ND         | ug/L  | _         | 0.16   | 0.56 | 100   |  |
| Chloroethane   | ND         | ug/L  | 1         | 1.5    | 5.4  |   |  |
| Chloroform   | ND         | ug/L  | .         | 0.17   | 0.60 | 80  |  |
| Chloromethane  | ND         | ng/L  |           | 0.19   | 0.68 | 2   |  |
| Dibromochloromethane   | ND         | ug/L  | ۱         | 0.17   | 0.61 | 80  |  |
| 1,2-Dibromo-3-Chloropropane  | ND         | ug/L  | \         | 0.20   | 0.70 | La complete de la completa del la completa de la completa del la completa de la completa del la completa de la completa della |  |
| 1,2-Dibromoethane  | ND         | ug/L  | حـا ا     | 0.12   | 0.43 |   |  |
| Dibromomethane   | ND         | ug/L  |           | 0.21   | 0.73 | 000   |  |
| 1,2-Dichlorobenzene  | ND         | ug/L  | دا        | 0.22   | 0.76 | 000   |  |
| 1,3-Dichlorobenzene  | 5 6        | ng/L  | <b>.</b>  | 0.20   | 0.76 | 75  | The state of the s |
| Dishlorodiffuoromethane  | S          | ug/L  |           | 0.14   | 0.49 |   |  |
| 1 1-Dichloroethane   | ND         | ug/L  | _         | 0.18   | 0.64 |   |  |
| 1.2-Dichloroethane   | ND         | ug/L  |           | 0.19   | 0.69 | 51  |  |
| 1,1-Dichloroethene   | ND         | ug/L  |           | 0.16   | 0.57 | 7   |  |
| cis-1,2-Dichloroethene   | ND         | ug/L  |           | 0.18   | 0.62 | /0  |  |
| trans-1,2-Dichloroethene   | NO.        | ug/L  | الما الما | 0.15   | 0.01 | 200   |  |
| 1,2-Uichioropropane  | 5 6        | ng/r  |           | 0.19   | 0.68 |   |  |
| trans_1 3-Dichloropropene  | S          | ug/L  | _ .       | 0.14   | 0.51 |   |  |
| Ethylbenzene   | ND         | ug/L  | _         | 0.30   | 1.1  | 700   |  |
| Methylene chloride   | ND         | ug/L  | _         | 0.20   | 0.70 | On  |  |
| Naphthalene  | ND         | ug/L  | _         | 0.29   | 1.0  |   |  |
| Styrene  | ND         | ug/L  | _         | 0.16   | 0.56 | 100   |  |
| ortho-Xylene   | ND         | ug/L  |           | 0.16   | 0.56 | 1   |  |
| Tetrachloroethene  | NO NO      | ng/L  |           | 0.17   | 0.58 | 200   |  |
| Toluene  | 3 2        | ug/L  | ـــا      | 0.14   | 0.00 | 1000  |  |
| 1, 1, 1- I licinoroemane   | 5 8        | 10/1  | _  -      | 0.17   | 0.59 | 5 0   |  |
| Trichloroethene  | ND         | ug/L  | 1         | 0.24   | 0.84 | ហ   |  |
| Trichlorofluoromethane   | ND         | ug/L  |           | 0.17   | 0.60 |   |  |
| Vinyl chloride   | ND         | ug/L  | _         | 0.16   | 0.57 | 2   |  |
| meta,para-Xylene   | ND         | ng/L  |           | 0.32   | 1.1  | 10000   |  |
| MTBE   | S          | ug/L  |           | 0.22   | 0.76 |   |  |
| Acetone  | ND         | ng/L  | -         | 4.2    | 12   |   |  |
| Carbon Disulfide   | ND         | ug/L  |           | 0.16   | 0.58 |   |  |
| Methyl Ethyl Ketone  | S          | ug/L  |           | 0.50   | 1.8  |   |  |
| Tetrahydrofuran  | ND         | ug/L  |           | 76.0   | 3.5  |   | 2  |
| Dibromofluoromethane (SURR)  | 106%       |       | \         |        |      |   | 0  |
|  | 1110%      |       | _ اد      |        |      |   | S) C   |
| NOTES APPLICABLE TO THIS ANALYSIS:   | 111/0      |       | -         |        |      |   |  |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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**Customer: Marathon County Solid Waste Mgmnt Dept** NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SAT3APP3 Printed: 11/13/2019 09:36

Benzene Bromodichloromethane ANALYTE NAME Sample: 1155390 PW18 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 Dichlorodifluoromethane
1,1-Dichloroethane
1,2-Dichloroethane
1,1-Dichloroethene
cis-1,2-Dichloroethene Bromoform Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) Methyl Ethyl Ketone Carbon Disulfide is-1,3-Dichloropropene rans-1,3-Dichloropropene cetone finyl chloride ans-1,2-Dichloroethene etrahydrofuran ıeta,para-Xylene tho-Xylene ethylene chloride aphthalene 4-Dichlorobenzene ibromomethane ichlorofluoromethane hylbenzene 2-Dibromoethane bromochloromethane 2-Dibromo-3-Chloropropane loroethane chloroethene trachloroethene rbon Tetrachloride orobenzene -Dichloropropane -Dichlorobenzene Dichlorobenzene romethane -Trichloroethane 2-Trichloroethane RESULT SLING ű ug/ ng/ Ngu ug/ 6 6 6 ug/l 5555 ug/l ug/ 19 19 ug/ lg/ 딛 L0B 0.17 0.24 0.16 0.32 0.32 0.22 4.2 0.16 0.16 0.16 0.16 0.18 0.15 0.24 0.19 0.14 0.20 0.20 0.21 0.12 0.22 0.22 0.22 0.20 0.21 0.14 0.18 0.16 0.17 0.19 0.19 0.19 0.16 0.17 0.17 0.17 0.16 0.43 0.772 0.0773 0.0772 0.077 0.61 0.73 0.56 5.4 0.60 0.68 0.69 0.68 0.56 0.79 0.76 12 0.58 1.8 3.5 10000 5 200 5 MCL 600 100 5 0 75 08 8 100 885 5 등 등 Note SSS

# NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074
Project Description: Marathon County Area A Private Wells
Project Title: October 2019 Template: SAT3APP3 Printed: Template: SAT3APP3 Printed: 11/13/2019 09:36

| Sample: 1155391 PW68 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43 | s 43       |        |          |      |       |  |  |
|--|------------|--------|----------|------|-------|--|--|
| 5  | RESULT     | STINU  | DIL      | LOD  | LOQ   |  | Note   |
| Benzene  | U          | ug/L   | _        | 0.19 | 0.69  | 5  |  |
| Bromodichloromethane   | ND         | ug/L   |          | 0.19 | 0.68  | 80   |  |
| Bromoform  | NB         | ug/L   | داد      | 0.16 | 0.00  | 80   |  |
| Bromomethane   | i          | ug/L   | د د      | 27.0 | 0.79  | л  |  |
| Carbon Tetrachloride   | 38         | ug/L   |          | 0 18 | 0.56  | 100  |  |
| Chloroethane   | S          | ug/L   | _        | 1.5  | 5.4   |  |  |
| Chloroform   | ND         | ug/L   |          | 0.17 | 0.60  | 80   |  |
| Chloromethane  | ND         | ug/L   |          | 0.19 | 0.68  |  |  |
| Dibromochloromethane   | ND         | ug/L   | -1       | 0.17 | 0.61  | 80   |  |
| 1,2-Dibromo-3-Chloropropane  | ND         | ug/L   |          | 0.21 | 0.73  |  |  |
| 1,2-Dibromoethane  | ND         | ug/L   |          | 0.12 | 0.43  | A CONTRACTOR OF THE PERSON NAMED OF THE PERSON |  |
| Dibromomethane   | ND         | ug/L   | _        | 0.21 | 0.73  |  |  |
| 1,2-Dichlorobenzene  | ND         | ug/L   |          | 0.22 | 0.76  | 600  |  |
| 1,3-Dichlorobenzene  | N          | ug/L   | ٠,       | 0.20 | 0.72  | 75   |  |
| 1,4-Dichlorobenzene  | 2          | ug/L   |          | 0.41 | 0.70  |  |  |
| 1 1-Dichlomethane  | S          | ug/L   |          | 0.18 | 0.64  |  | The state of the s |
| 1.2-Dichloroethane   | ND         | ug/L   |          | 0.19 | 0.69  | 5  |  |
| 1,1-Dichloroethene   | ND         | ug/L   | 1        | 0.16 | 0.57  | 7  |  |
| cis-1,2-Dichloroethene   | ND         | ug/L   | _        | 0.18 | 0.62  | 70   |  |
| trans-1,2-Dichloroethene   | ND         | ug/L   | _        | 0.15 | 0.51  | 100  | All the second s |
| 1,2-Dichloropropane  | ND         | ug/L   | _        | 0.24 | 0.84  | 5  |  |
| cis-1,3-Dichloropropene  | ND         | ug/L   |          | 0.19 | 0.68  |  |  |
| trans-1,3-Dichloropropene  | ND         | ug/L   |          | 0.14 | 0.51  |  |  |
| Ethylbenzene   | ND         | ug/L   | _        | 0.30 | 2 . 1 | 700  |  |
| Methylene chloride   | ND         | ug/L   |          | 0.20 | 0.70  | O.   |  |
| Naphthalene  | ND         | ug/L   |          | 0.29 | 1.0   |  |  |
| Styrene  | ND<br>D    | ug/L   |          | 0.16 | 0.56  | 100  |  |
| ortho-Xylene   | ND         | ug/L   |          | 0.16 | 0.56  | 1  |  |
| Tetrachloroethene  | Z          | ug/L   |          | 0.17 | 0.58  | 200  |  |
| Toluene  | <b>3 8</b> | ug/L   |          | 0.19 | 0.68  | 000  |  |
| 1,1,1-I richloroethane   | 38         | ug/L   | <u> </u> | 0.17 | 0.50  | 200  |  |
| Trichloroethane  | 3          | 1,00/1 | >        | 0.11 | 0.84  | <b>УП</b> (  |  |
| Trichlorofluoromethane   | N          | ug/L   | اد       | 0.17 | 0.60  |  |  |
| Vinyl chloride   | ND         | ug/L   |          | 0.16 | 0.57  | 2  |  |
| meta,para-Xylene   | ND         | ug/L   | _        | 0.32 |       | 10000  |  |
| MTBE   | ND         | ug/L   | _        | 0.22 | 0.76  |  |  |
| Acetone  | ND         | ug/L   |          | 4.2  | 12    |  |  |
| Carbon Disulfide   | ND         | ug/L   |          | 0.16 | 0.58  |  |  |
| Methyl Ethyl Ketone  | ND         | ug/L   |          | 0.50 | 1.8   |  |  |
| Tetrahydrofuran  | ND         | ug/L   | _        | 0.97 | 3.5   |  |  |
| Dibromofluoromethane (SURR)  | 113%       |        |          |      |       |  | S C  |
| Toluene-d8 (SURR)  | 120%       |        |          |      |       |  | 2 (1)  |
| 1-Brofile-4-rigoropenzene (JORK)   | 111%       |        |          |      |       |  | C  |
| \CC                                    |            |        |          |      |       |  |  |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells
Project Title: October 2019 Template: S

Template: SATRAPP3 Printed: 11/13/2019 09:38

| thane thane thane thane thane thane thane ele ele ene propene propene propene propene ele ele thane  | O    |       |            |      |        |       | 96.31%                           | 1-Bromo-4-Fluorobenzene (SURR)              |
|--|------|-------|------------|------|--------|-------|----------------------------------|---|
| PMMID   Collected: 10/10519   Annayzed:10/20219   Annayzed: 10/20219   |      |       |            |      | _      |       | 97.11%                           | Toluene-d8 (SURR)                           |
| PMM9  Collected: 10/16/19  Analyzed: 10/26/19  Analyzed: 10/26/1 | 2    |       |            |      |        |       | 89.13%                           | Dibromofluoromethane (SURR)                 |
| Part   Collected: 10/16/19   Analyzed: 110/28/19   Analyzed: 110 |      |       | 2.7        | 0.83 |        | ug/L  | ND                               | Tetrahydrofuran                             |
| Pow/19/19   Analyzest 10/28/19   Analyzest 2012   Pow 19/2   Pow |      |       | 2.0        | 0.64 |        | ug/L  | ND                               | Methyl ethyl ketone                         |
| REVILT   LIOID   LIO |      |       | 1.4        | 0.43 |        | ug/L  | ND                               | Carbon disulfide                            |
| REDUIT   Not   N |      |       | 6.7        | 2.1  |        | ug/L  | ND                               | Acetone                                     |
| PRIVITE   Collected: 10/28/19   Analyzes; 43   100   |      |       | 1.4        | 0.44 |        | ug/L  | ND                               | MTBE  |
| PRIMIS   Collected 10/28/19   Analytes; 43"   RESULT UNITS DI LOQ MOL MOL ND LOQ MOL N |      | 10000 | 2.8        | 0.89 |        | ug/L  | ND                               | meta,para-Xylene                            |
| PMM19   Collected 10/16/19   Analytes, 43*   Mile   Mile |      | .2    | 0.42       | 0.13 |        | ug/L  | ND                               | Vinyl chloride                              |
| PRW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28/19 |      |       | 1.4        | 0.45 |        | ug/L  | ND                               | Trichlorofluoromethane                      |
| PWI15  Collected: 101/16/19  Analyzed: 1028/19  A |      | 51    | 1.6        | 0.50 |        | ug/L  | ND                               | Trichloroethene                             |
| PM/3   Collected: 10/16/19' Analyzed: 130   Mills    |      | 5     | 1.5        | 0.46 |        | ug/L  | ND                               | 1,1,2-Trichloroethane                       |
|  |      | 200   | 1.6        | 0.49 |        | ug/L  | ND                               | 1.1.1-Trichloroethane                       |
| PW/19   Collected: 10/16/19   Analyzes: 439   PW   PW   PW   PW   PW   PW   PW   P   |      | 1000  | 1.4        | 0.43 | 1      | ug/L  | ND                               | Toluene                                     |
| FW/19   Collected: 10/16/19   Anialyzeed: 10/28/19   Anialyzeed: 1 |      | σı    | 1.4        | 0.43 |        | ug/L  | ND                               | Tetrachloroethene                           |
| FW/19   Collected: 10/16/19   Analyzeed: 10/28/19   Analyzeed: 1 |      | 100   | 0.79       | 0.25 |        | ug/L  | ND                               | Styrene                                     |
| Individual   Ind |      |       | 1.4        | 0.44 | _      | ua/L  | ND                               | ortho-Xylene                                |
| In DW19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28/1 |      |       | 0.62       | 0.20 | 1.     | ug/L  | ND                               | Naphthalene                                 |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 43   Analyzed: 10/28/19   Anal |      | 51    | 1.4        | 0.44 | _      | ug/L  | ND                               | Methylene chloride                          |
| PWM9   Collected: 10//6/19   Analyzes: 43  |      | 700   | 1.4        | 0.43 |        | ug/L  | ND                               | Ethylhenzene                                |
| PWM9   Collected: 10//6/19   Analyzed: 43  |      |       | 0.74       | 0.22 |        | ug/L  | ND                               | trans-1 3-Dichloropropene                   |
| PM/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28/19  |      |       | 0.66       | 0.20 |        | ug/L  | ND                               | cis-1 3-Dichloropropene                     |
| PMM19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28/19  |      | 5     | 1.2        | 0.38 |        | ug/L  | ND                               | 1 2-Dichloropropane                         |
| PWM19 Collected: 10/16/19 Analyzed: 10/28/19 Analyzed: 10/28/19 Analyzes: 43   RESULT UNITS DIL LOD LOQ MCL  |      | 100   | 1.1        | 0.35 | 1      | ug/L  | ND                               | frans-1 2-Dichloroethene                    |
| PM/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28/19  |      | 70    | 1.3        | 0.41 | _      | ug/L  | D                                | cis-1 2-Dichloroethene                      |
| PW/19   Collected: 10/16/19   Analyzed: 10/128/19   Analyzed: 43   RESULT   UNITS   DIL   LOD   LOQ   MCL  |      | 7     | 1.5        | 0.48 | 1      | ug/L  | ND                               | 1 1-Dichloroethene                          |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 33   Analyzed: 10/28/19   Anal |      | 5     | 1.3        | 0.41 | 1      | ug/L  | UN                               | 1 2-Dichloroethane                          |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 43   RESULT   UNITS   DIL   LOD   LOQ   MCL     ND  |      |       | 1.5        | 0.47 | _      | ua/L  | ND.                              | 1 1 Dichloroathone                          |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28   Analyzed: 10/28/19   A |      |       | 1.3        | 0.40 | _      | ua/L  | ND NO                            | Dishlorodiffuoromethane                     |
| PW19   Collected: 10/16/19   Analyzed: 10/28/19   Analytes: 43   |      | 75    | 1.5        | 0.46 | اد     | ug/L  | ND                               | 1 A Dishlorobenzene                         |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 10/28   MC  |      |       | 1.4        | 0.45 |        | ug/L  | UN                               | 1.2-Dichlorobenzene                         |
| PW/19   Collected: 10/16/19   Analyzed: 10/28/19   Analyzed: 43  |      | 600   | 1.3        | 0.42 | _      | ua/L  | D                                | 7.3 Displace and Diplomentation             |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43           RESULT         UNITS         DIL         LOD         MCL           ND         ug/L         1         0.41         1.3         5           WD         ug/L         1         0.45         1.4         80           thane         ND         ug/L         1         0.36         1.1         80           ride         ND         ug/L         1         0.45         1.4         100           nD         ug/L         1         0.46         1.5         5           nD         ug/L         1         0.45         1.4         100           nD         ug/L         1         0.45         1.4         100           nD         ug/L         1         0.42         1.3         80           nD         ug/L         1         0.42         1.3         80           nD         ug/L         1         0.41         1.3         80           nD         ug/L         1         0.41         1.3         80           nD         ug/L         1         0.41         1.3         80           nD         ug/L <th></th> <td></td> <td>1.1</td> <td>0.36</td> <td>_</td> <td>ua/L</td> <td>ND.</td> <td>Dibromomothano</td>   |      |       | 1.1        | 0.36 | _      | ua/L  | ND.                              | Dibromomothano                              |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analyzes: 43  RESULT UNITS DIL LOD LOQ MCL  ND Ug/L 1 0.41 1.3 5  ND Ug/L 1 0.45 1.4 80  ND Ug/L 1 0.36 1.1 80  ND Ug/L 1 0.46 1.5 5  ride ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.46 1.5 5  ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.45 1.3 80  ND Ug/L 1 0.40 1.3 80  |      |       | 1.3        | 0.41 | _      | ua/L  | ND                               | 1.2-Dibromosthopo                           |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND Ug/L 1 0.41 1.3 5  ND Ug/L 1 0.45 1.4 80  ND Ug/L 1 0.36 1.1 80  ND Ug/L 1 0.46 1.5 5  ride ND Ug/L 1 0.45 1.4 100  ND Ug/L 1 0.42 1.3 80  ND Ug/L 1 0.42 1.3 80  |      |       | 0.90       | 0.27 |        | ug/L  | 3                                | Libromocniorometnane                        |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND Ug/L 1 0.41 1.3 5  ND Ug/L 1 0.45 1.4 80  ND Ug/L 1 0.36 1.1 80  ND Ug/L 1 0.14 0.46  ND Ug/L 1 0.45 1.4 1.0  ride ND Ug/L 1 0.46 1.5 5  ND Ug/L 1 0.45 1.4 1.0  ND Ug/L 1 0.46 1.5 5  ND Ug/L 1 0.45 1.4 1.0  ND Ug/L 1 0.45 1.3 80  |      | 80    | <u>ـــ</u> | 0 40 |        | 1,67  | ND NO                            | Chloromethane                               |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  ND ug/L 1 0.45 1.4 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.14 0.46  ND ug/L 1 0.45 1.5 5  ride ND ug/L 1 0.45 1.5 5  ND ug/L 1 0.45 1.4 100  Ug/L 1 0.45 1.5 5  ND ug/L 1 0.45 1.5 5  |      | 6     | ئار د      | 0.42 | ٠.     | ng/L  | NO.                              | Chloroform                                  |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  WD ug/L 1 0.45 1.4 80  Hane ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.46 5  ND ug/L 1 0.46 1.5 5  ND ug/L 1 0.45 1.4 1.0  ND ug/L 1 0.46 1.5 5  ND ug/L 1 0.45 1.4 1.0   |      | 200   | 3 .        | 2 -  | \<br>- | ug/L  | 200                              | Chloroethane                                |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  thane ND ug/L 1 0.45 1.4 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.46 1.5 5  ND ug/L 1 0.46 1.5 5  | CC   | 100   | 1.4        | 0.40 | ١      | ug/L  | NC NC                            | Chlorobenzene                               |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  ND ug/L 1 0.45 1.4 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.36 1.1 80  ND ug/L 1 0.36 1.4 6.46  ND ug/L 1 0.36 1.4 80   |      | 100   | \ .        | 0.46 |        | ug/L  | ND.                              | Carbon Tetrachloride                        |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  Whane ND ug/L 1 0.45 1.4 80  ND ug/L 1 0.36 1.1 80   |      | ח     | 0.40       | 0.14 |        | ug/L  | ZD                               | Bromomethane                                |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5  thane ND ug/L 1 0.45 1.4 80  |      | 80    | 2.1        | 0.36 | .      | ug/L  | ND                               | Bromoform                                   |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL  ND ug/L 1 0.41 1.3 5   |      | 80    | 1.4        | 0.45 |        | ug/L  | ND                               | Bromodichloromethane                        |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43  RESULT UNITS DIL LOD LOQ MCL   |      | 3 0   | 1.3        | 0.41 | ندا    | ug/L  | ND                               | Benzene                                     |
| PW19 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43   | Note | MCL   | LOQ        | TOD  | 무      | UNITS | RESULT                           | ANALYTE NAME                                |
|  |      |       |            |      |        |       | ialyzed: 10/28/19 - Analytes: 43 | Sample: 1155392 PW19 Collected: 10/16/19 An |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 [emplate: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155393 PW64 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 ANALYTE NAME Bromodichloromethane Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) meta,para-Xylene Chlorobenzene Carbon Tetrachloride Dichlorodifluoromethane 1,1-Dichloroethane 1,2-Dichloroethane Carbon disulfide ans-1,3-Dichloropropene hloroethane cetone romomethane etrahydrofuran lethylene chloride aphthalene ibromomethane richlorofluoromethane ethyl ethyl ketone chloroethene 4-Dichlorobenzene 3-Dichlorobenzene 2-Dichlorobenzene 2-Dibromo-3-Chloropropane bromochloromethane 1-Dichloroethene ho-Xylene oromethane 2-Trichloroethane rachloroethene Dibromoethane ,2-Dichloroethene -Trichloroethane 3-Dichloropropene ichloropropane ,2-Dichloroethene RESULT SS B STIND ug/∟ ng/ 55555 ű ug/ ug/ lo Ug lg/ ug/ ug/l 퉏 何何何 巨巨 몯 0.42 0.42 0.40 0.27 0.36 0.14 0.46 TOD 0.41 0.35 0.22 0.22 0.44 0.44 0.25 0.48 0.41 0.36 0.42 0.45 0.46 0.47 0.45 0.43 0.43 0.43 0.45 0.45 0.13 0.13 0.44 0.44 0.64 0.64 0.64 0.68 0.79 1.6 1.6 1.4 0.42 1.4 1.4 0.62 1.4 4 58 MCL 10000 600 5 700 8 80 880 2005 5 00 7 90 8 75 OI OI Note င္ပင SOS

# NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method CC = Continuing calibration verification standard recovery was outside QC limits. Chloroethane recovery 77%

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**Customer: Marathon County Solid Waste Mgmnt Dept** NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155394 PW27 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 ANALYTE NAME Bromomethane Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) Bromoform Chlorobenzene Chloroethane arbon Tetrachloride etranydroturan is-1,3-Dichloropropene ans-1,3-Dichloropropene romodichloromethane arbon disulfide ethyl ethyl ketone eta,para-Xylene etrachloroethene ethylene chloride ibromochloromethane
2-Dibromo-3-Chloropropane ichlorofluoromethane bromomethane ichloroethene ho-Xylene -Dichlorobenzene loromethane ,2-Trichloroethane -Dichloroethene oroform Dichlorobenzene Dichlorobenzene Dichloropropane Dichloroethane Dibromoethane Dichloroethane - I richloroethane chloride ,2-Dichloroethene orodifluoromethane halene 1,2-Dichloroethene RESULT STIND ug/L ug/L ug/ ug/L 666 ug/ 9 9 9 666 ug/ ű ā ű lg/ 들들 탇 0.40 0.27 0.41 0.42 0.42 0.46 0.46 0.44 0.20 0.44 0.25 0.43 0.43 0.41 0.48 0.41 0.35 0.38 0.20 0.22 LOQ 1.3 0.90 0.42 2.8 1.4 0.79 0.62 1.4 1.2 0.66 0.74 0.46 1.4 1.4 4 0 0 0 4 သြကြကြ  $\ddot{\omega}$ Ġ *ω* 4 το ω ω N N 10000 600 1000 200 5 5 5 0 7 80 80 100 885 Ç 끼 75 വ Note Ś တြေ

# NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method. CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

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Customer: Marathon County Solid Waste Mgmnt Dept

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155395 PW65 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 Bromodichloromethane ANALYTE NAME Bromomethane Bromoform Carbon Tetrachloride Dibromofluoromethane (SURR) meta,para-Xylene MTBE Carbon disulfide Viethyl ethyl ketone oluene-d8 (SURR) -Bromo-4-Fluorobenzene cetone rtho-Xylene is-1,3-Dichloropropene hloromethane ibromochloromethane etrahydrofuran etrachloroethene ans-1,3-Dichloropropene aphthalene bromomethane hlorobenzene oluene thylbenzene ethylene chloride 3-Dichlorobenzene 2-Dichlorobenzene 2-Dibromoethane 2-Dibromo-3-Chloropropane loroform nyl chloride 2-Dichloropropane 2-Dichloroethane 4-Dichlorobenzene chlorodifluoromethane loroethane I-Dichloroethene chlorofluoromethane chloroethene ,2-Trichloroethane 1-Trichloroethane Dichloroethane 2-Dichloroethene 1,2-Dichloroethene (SURR) RESULT 82.78% 96.1% 100.15% 3333 B B 딍 딍 B SLIND ug/ug/ ででき 666 ug/ ug/ ug/ ug/ ug/ ug/ 唇唇唇 ug/ ug/ la M ug/ हिं हिं हि ű 100 ű 밁 6 0.64 1.4 0.79 1.4 1.4 0.62 0.90 0.42 2.8 1.4 4 .46 1.5 6 4 4 ြ MCL 10000 5/0 600 880 80 200 80 100 S 띠음 58 75 Note SSS

# NOTES APPLICABLE TO THIS ANALYSIS:

Chloroethane recovery 77%

S = This compound is a surrogate used to evaluate the quality control of a method. CC = Continuing calibration verification standard recovery was outside QC limits.

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Title: October 2019 Project Description: Marathon County Area A Private Wells

Template: SATRAPP3 Printed: 11/13/2019 09:38

| Sample: 1155396 PW100 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43 | Analytes: 43 |       |       |      |       |   |      |
|---|--------------|-------|-------|------|-------|---|------|
| ANALYTE NAME  | RESULT       | UNITS | 먇     | LOD  | LOQ   | MCL   | Note |
| Benzene   | ND           | ng/L  |       | 0.41 | 1.3   | 3 5   |      |
| Bromodichloromethane  | 8            | ng/L  |       | 0.45 | 1.1.4 | 300   |      |
| Bromoform   | 8            | ug/L  | a     | 0.36 | 37 O  | 80  |      |
| Bromomethane  | 35           | ug/L  |       | 0.46 | 1.5   | 5   |      |
| Chlorohenzene   | N            | ug/L  | 1     | 0.45 | 1.4   | 100   |      |
| Chloroethane  | ND           | ug/L  | 1     | 2.1  | 6.7   |   | CC   |
| Chloroform  | ND           | ug/L  | _     | 0.42 | 13    | 80  |      |
| Chloromethane   | ND           | ug/L  |       | 0.42 | 1.3   |   |      |
| Dibromochloromethane  | ND           | ug/L  |       | 0.40 | 1.3   | 80  |      |
| 1,2-Dibromo-3-Chloropropane   | ND           | ug/L  |       | 0.27 | 0.90  | - Mariana and a second  |      |
| 1,2-Dibromoethane   | ND           | ug/L  |       | 0.41 | 1.3   |   |      |
| Dibromomethane  | ND           | ug/L  | _     | 0.36 | 1.1   | A contract of the contract of |      |
| 1,2-Dichlorobenzene   | ND           | ug/L  | _     | 0.42 | 1.3   | 600   |      |
| 1,3-Dichlorobenzene   | ND           | ug/L  | _     | 0.45 | 1.4   |   |      |
| 1,4-Dichlorobenzene   | 8            | ug/L  |       | 0.46 | 1.5   | 75  |      |
| Dichlorodifluoromethane   | ND           | ug/L  |       | 0.40 | 1.3   |   |      |
| 1,1-Dichloroethane  | S            | ng/L  |       | 0.47 | 1.5   | FI  |      |
| 1,2-Dichloroethane  |              | ug/L  | \<br> | 0.41 | 1.0   | 10  |      |
| 1,1-Uichioroethene  |              | IIG/I |       | 0.40 | Δ .   | 70  |      |
| trans-1 2-Dichloroethene  | ND           | ua/L  | _     | 0.35 | 1.1   | 100   |      |
| 1.2-Dichloropropane   | ND           | ug/L  | _     | 0.38 | 1.2   | 5   |      |
| cis-1,3-Dichloropropene   | ND           | ug/L  | 1     | 0.20 | 0.66  |   |      |
| trans-1,3-Dichloropropene   | ND           | ug/L  | 1     | 0.22 | 0.74  |   |      |
| Ethylbenzene  | ND           | ng/L  |       | 0.43 | 1.4   | 700   |      |
| Methylene chloride  | ND           | ug/L  | ے     | 0.44 | 1.4   | 5   |      |
| Naphthalene   | ND           | ug/L  | _     | 0.20 | 0.62  |   |      |
| ortho-Xylene  | ND           | ug/L  | _     | 0.44 | 1.4   |   |      |
| Styrene   | ND           | ug/L  | _     | 0.25 | 0.79  | 100   |      |
| Tetrachloroethene   | ND           | ug/L  | _     | 0.43 | 1.4   | 5   |      |
| Toluene   | ND           | ug/L  | _     | 0.43 | 1.4   | 1000  |      |
| 1,1,1-Trichloroethane   | ND           | ug/L  |       | 0.49 | 1.6   | 200   |      |
| 1,1,2-Trichloroethane   | ND           | ug/L  |       | 0.46 | 1.5   | ហ   |      |
| Trichloroethene   | ND           | ug/L  |       | 0.50 | 1.6   | 5   |      |
| Trichlorofluoromethane  | ND           | ug/L  | _     | 0.45 | 1.4   |   |      |
| Vinyl chloride  | B            | ug/L  |       | 0.13 | 0.42  | .2  |      |
| meta,para-Xylene  | ND           | ug/L  | _     | 0.89 | 2.8   | 10000   |      |
| MTBE  | ND           | ug/L  | _     | 0.44 | 1.4   |   |      |
| Acetone   | ND           | ug/L  |       | 2.1  | 6.7   |   |      |
| Carbon disulfide  | ND           | ug/L  |       | 0.43 | 1.4   |   |      |
| Methyl ethyl ketone   | ND           | ug/L  | 1     | 0.64 | 2.0   |   |      |
| Tetrahydrofuran   | ND           | ug/L  | 1     | 0.83 | 2.7   |   |      |
| Dibromofluoromethane (SURR)   | 83.76%       |       | 1     |      |       |   | တ    |
| Toluene-d8 (SURR)   | 92.36%       |       | _     |      |       |   | N (v |
| ene   | 96.57%       |       |       |      |       |   | V    |
| NOTES ADDITO ABLE TO THIS ANALYSIS:                                       |              |       |       |      |       |   |      |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chioroethane recovery 77%

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155397 PW80 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 ANALYTE NAME Bromodichloromethane Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) meta,para-Xylene MTBE trans-1,2-Dichloroethene cis-1,2-Dichloroethene Acetone Methylene chloride Naphthalene rans-1,3-Dichloropropene Methyl ethyl ketone arbon Tetrachloride arbon disulfide tyrene etrachloroethene ichlorodifluoromethane ibromochloromethane ,2-Dibromo-3-Chloropropane romomethane 'inyl chloride rtho-Xylene ,2-Dichloropropane ,1-Dichloroethane ,2-Dichloroethane romoform etrahydrofuran richlorofluoromethane 4-Dichlorobenzene 1-Dichloroethene ichloroethene loroethane lorobenzene ,1-Trichloroethane ,2-Trichloroethane oromethane Dibromoethane Dichlorobenzene Dichlorobenzene omomethane lbenzene RESULT 666 lg/ ug/ lg/ ű ug/ g/L 6 ug/ ug/ ug/ 666 医医医 밁  $\begin{array}{c} 0.42 \\ 0.42 \\ 0.43 \\ 0.43 \\ 0.43 \\ 0.44 \\ 0.43 \\ 0.43 \\ 0.44 \\ 0.$ 0.14 0.46 0.45 2.1 0.36 6 1.3 0.90 1.4 1.4 0.62 1.4 0.79 1.2 0.66 0.74 6.7 .46 <u>-</u>4 6 5 6 6 ယ် ကြယ်ကြယ်က MCL 10000 600 8 885 500 80 100 5|0 5|8|2 75 S 00 Note ഗിഗിഗ

# NOTES APPLICABLE TO THIS ANALYSIS:

Chloroethane recovery 77%

S = This compound is a surrogate used to evaluate the quality control of a method. CC = Continuing calibration verification standard recovery was outside QC limits.

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**Customer: Marathon County Solid Waste Mgmnt Dept** NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1(155398 PW53 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 Tetrahydrofuran

Dibromofluoromethane (SURR)

Toluene-d8 (SURR)

1-Bromo-4-Fluorobenzene (SURR) Bromodichloromethane ANALYTE NAME meta,para-Xylene MTBE Bromoform Zarbon disulfide Methyl ethyl ketone cetone /inyl chloride tyrene etrachloroethene laphthalene ans-1,2-Dichloroethene hloroform romomethane arbon Tetrachloride ichloroethene richlorofluoromethane lethylene chloride hloroethane inylbenzene, 2-Dichloropropane chlorodifluoromethane bromochloromethane 2-Dibromo-3-Chloropropane nlorobenzene 1-Dichlorobenzene 2-Dichloroethane 1-Dichloroethene -1,2-Dichloroethene 2-Dibromoethane -Dichloroethane oromethane romomethane o-Xylene 2-Trichloroethane 1-Trichloroethane Dichlorobenzene Dichlorobenzene 3-Dichloropropene
-1,3-Dichloropropene RESULT S 33333333 8 S UNITS 999 5 5 5 JG/ ug/ 666 lg/ /gu ug/ 巨巨 ug/ ug/ ű lg. 666 逅 ű é 66 ug/ 몯 0.42 0.42 0.41 0.36 0.42 0.45 0.27 0.46 0.45 2.1 LOD 1.2 0.66 0.74 1.4 0.62 1.3 1.3 0.90 6.7 1.5 4. 13 13 13 13 5 6 MCL MC 10000 1000 100 600 885 SO 50 500 75 80 8 100 O SOS CC Note

# NOTES APPLICABLE TO THIS ANALYSIS:

Chloroethane recovery 77%

S = This compound is a surrogate used to evaluate the quality control of a method CC = Continuing calibration verification standard recovery was outside QC limits.

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Sample: 1155399 PW29 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

| Sample 13339 FWZ9 Conscisus of the Samples of the S | u di   |       |            |        |                   |   |      |
|--|--------|-------|------------|--------|-------------------|---|------|
| ANALYTE NAME   | RESULT | UNITS | 맏          | TOD    | LOQ               | MCL   | Note |
| Benzene  | ND     | ug/L  | -          | 0.41   | 1.00              | 80 0  |      |
| Bromodichloromethane   | 3 2    | ng/L  | _ اد       | 0.40   | →<br> -<br> -     | 80  |      |
| Bromoform  | 38     | חמ/ר  | _ -        | 0.14   | 0.46              |   |      |
| Carbon Tetrachloride   | 8      | ug/L  |            | 0.46   | 1.5               | 5   |      |
| Chlorobenzene  | ND     | ug/L  | _          | 0.45   | 1.4               | 100   | 3)   |
| Chloroethane   | R      | ng/L  |            | 2.1    | 3 .               | ΩΩ  | CC   |
| Chloroform   | NB     | ug/L  |            | 0.42   | 200               | 00  |      |
| Chloromethane  | 38     | ug/L  | _ د        | 0.42   | <u>ــــا</u> ــــ | 80  |      |
| Dibromochloromethane   | 38     | 10/1  | _          | 0.70   | 0.90              |   |      |
| 1,2-Dibromo-3-Chloropropane  | 35     | 1/0/1 |            | 0.41   | 1.3               | - Additional Control of the Control |      |
| 1,2-Dibromoethane  | 38     | 1,60  |            | 0.36   | 1                 |   |      |
| Dibromomethane   | 55     | 1,0%  | ٠ .        | 0.42   | Δ.                | 600   |      |
| 1,2-Dichlorobenzene  |        | 1/0/1 | ٦ .        | 0.45   | 1.4               |   |      |
| 1,0-Dichlophopiono   | S      | ua/L  | ۷          | 0.46   | 1.5               | 75  |      |
| Dichlorodifilioromethane   | ND N   | ug/L  |            | 0.40   | 1.3               |   |      |
| 1,1-Dichloroethane   | ND     | ug/L  |            | 0.4/   | 1.0               | n   |      |
| 1,2-Dichloroethane   | S      | ug/L  |            | 0.41   | 1.0               | 7 0   |      |
| 1,1-Dichloroethene   | 5      | ug/L  | <b>-</b>   | 0.40   | <u>ئ</u> د        | 70  |      |
| cis-1,2-Dichloroethene   |        | 1/0/1 | _ -        | 0.35   | 1                 | 100   |      |
| 1 3 Dichloropropage  | ND     | ug/L  |            | 0.38   | 1.2               | ហ   |      |
| cis-1 3-Dichloropropene  | ND     | ug/L  | ٦          | 0.20   | 0.66              |   |      |
| trans-1.3-Dichloropropene  | ND     | ug/L  | _          | 0.22   | 0.74              |   |      |
| Ethylbenzene   | ND     | ug/L  |            | 0.43   | 1.4               | 700   |      |
| Methylene chloride   | S      | ug/L  | -          | 0.44   | 4.5               | C   |      |
| Naphthalene  | S      | ug/L  | \          | 0.20   | 0.02              |   |      |
| ortho-Xylene   | Z      | ug/L  |            | 0.44   | 4.1               | 100   |      |
| Styrene  |        | ug/L  | \<br>-     | 0.43   | 1/3               | ח כ   |      |
| Tetrachloroethene  |        | ug/L  | _ اد       | 0.43   | 1. 4              | 1000  |      |
| Toluene  | 33     | ug/L  |            | 0.49   | 1.6               | 200   |      |
| 1,1,1-11icillorocularie  | ND     | ug/L  | _          | 0.46   | 1.5               | 5   |      |
| Trichloroethene  | ND     | ug/L  |            | 0.50   | 1.6               | 51  |      |
| Trichlorofluoromethane   | ND     | ug/L  |            | 0.45   | 21.4              |   |      |
| Vinyl chloride   | S      | ug/L  |            | 0.13   | 0.42              | 7.0000  |      |
| meta,para-Xylene   | Z Z    | "Lygu | \<br>\<br> | 0.89   | 2.0               | 10000   |      |
| MTBE   | S C    | ug/L  | <b>.</b>   | ) C.44 | 6.7               |   |      |
| Acetone  | 5 8    | ng/L  | _          | 0 43   | 1 0.7             |   |      |
| Carbon disultide   | 25     |       | _   _      | 12.0   | 20.               |   |      |
| Tetrahydrofuran  | ND     | ug/L  | . د        | 0.83   | 2.7               |   |      |
| Dibromofluoromethane (SURR)  | 81.74% |       | 1          |        |                   |   | S    |
| Toluene-d8 (SURR)  | 90.18% |       | 1          |        |                   |   | ) (v |
| 1-Bromo-4-Fluorobenzene (SURR)   | 95.57% |       |            |        |                   |   | O    |
|  |        |       |            |        |                   |   |      |

NOTES APPLICABLE TO THIS ANALYSIS:

S = This compound is a surrogate used to evaluate the quality control of a method.

CC = Continuing calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

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Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Sample: 1155400 PW54 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 Benzene Bromodichloromethane ANALYTE NAME Dibromofluoromethane (SURR)
Toluene-d8 (SURR)
1-Bromo-4-Fluorobenzene (SURR) etrahydrofuran arbon disulfide lethyl ethyl ketone lethylene chloride laphthalene richlorofluoromethane inyl chloride tho-Xylene ibromomethane eta,para-Xylene 2-Dichloropropane omomethane ichloroethene 2-Dichloroethane bromochloromethane 2-Dibromo-3-Chloropropane nloromethane lorobenzene loroethane I-Dichloroethene 2-Dichlorobenzene ,2-Trichloroethane rachloroethene -Dichlorobenzene -Dichlorobenzene rbon Tetrachloride -Dichloroethane -Dibromoethane lorodifluoromethane -Trichloroethane ,2-Dichloroethene 3-Dichloropropene .3-Dichloropropene ,2-Dichloroethene 92.04% 99.18% RESULT S 20 S STIND ű 혈혈월 lg/ 医唇唇 υg l/gu ug/ ű 6 6 6 ğ ű 999 ųg/ ű 6 6 ű ug/ ű ű lg lg 뒫 0.43 0.49 0.49 0.46 0.50 0.45 0.89 0.89 0.36 0.42 0.45 0.47 0.47 0.47 0.27 0.27 0.27 0.43 0.42 0.42 0.40 0.27 0.41 0.36 0.45 2.1 8 1.4 0.62 1.4 0.79 0.066 0.74 ).46 1.5 1.4 6.7 6.7 0.42 2.8 1.3 0.90 4 .ω 6 5 6 4 4 MCL 600 200 80 8 885 8 이항경 100 00 G 3 വ Note ഗ

## NOTES APPLICABLE TO THIS ANALYSIS:

Chloroethane recovery 77%

S = This compound is a surrogate used to evaluate the quality control of a method

CC = Continuing calibration verification standard recovery was outside QC limits.

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**Customer: Marathon County Solid Waste Mgmnt Dept** NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATRAPP3 Printed: 11/13/2019 09:38

Benzene Bromodichloromethane Sample: 1155401 PW17 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43 ANALYTE NAME Chloromethane lethylene chloride laphthalene lethyl ethyl ketone etrahydrofuran is-1,2-Dichloroethene rans-1,2-Dichloroethene oluene-d8 (SURR) arbon Tetrachloride -Bromo-4-Fluorobenzene (SURR) arbon disulfide eta,para-Xylene inyl chloride tho-Xylene bromomethane bromochloromethane omomethane 2-Dichloropropane าloroform nloroethane nlorobenzene ichloroethene hlorodifluoromethane -Dichloroethane ?-Dichlorobenzene -Dibromo-3-Chloropropane rene rachloroethene -Dichlorobenzene Dichloroethene 1-Trichloroethane 2-Trichloroethane -Dichloroethane -Dibromoethane Dichlorobenzene s-1,3-Dichloropropene lorofluoromethane benzene RESULT 김희희희리리리리리 UNITS lg/ ug/L 56 /gu lg. 녆 ug/L 666 년 년 হূ হূ হূ হূ हिं हिं हिं ug/ ug/ 555 ű ľg/ ug/ ug/L l/gu 멅 0.44 0.20 0.44 0.25 0.43 0.43 0.41 0.48 0.41 0.35 0.38 0.20 0.22 0.42 0.40 0.27 0.27 0.41 0.36 0.46 0.46 0.46 0.41 0.45 0.36 0.42 <u>الم</u> 1.4 1.4 0.62 0.66 0.74 1.3 1.3 0.90 6,7 0.79 0.46 1.2 2.8 4 1.5 6 4 1 2 5 5 5 ... 4 10 0 S S 1000 200 600 50 8 80 885 Ω 5 0 이항기 75 8 Çī Note S SR S

## NOTES APPLICABLE TO THIS ANALYSIS:

 $S=\mbox{This}$  compound is a surrogate used to evaluate the quality control of a method.  $\mbox{CC}=\mbox{Continuing}$  calibration verification standard recovery was outside QC limits.

Chloroethane recovery 77%

SR = Surrogate recovery was outside QC limits.
Toluene-d8 recovered below QC limits.

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat2000)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Proje

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NLS Project: 333074

Project Description: Marathon County Area A Private Wells

Project Title: October 2019 Template: SATAPP3 Printed: 11/13/2019 09:39

| Sample: 1155402 Trip Blank Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43 | /28/19 - Analytes: 43 |       |          |      |      |       |  |
|--|-----------------------|-------|----------|------|------|-------|--|
| ANALYTE NAME   | RESULT                | UNITS | DIL.     | LOD  | Loa  | MCL   | Note   |
| Benzene  | ND                    | ug/L  | .        | 0.24 | 0.84 | 3 0   |  |
| Bromodichloromethane   | NO                    | ug/L  | د اد     | 0.27 | 0.94 | 80 8  |  |
| Bromoform  | 200                   | ng/L  | _ ا      | 0.27 | 0 00 | G     |  |
| Bromomethane   | Z Z                   | ng/L  | _ -      | 0.16 | 0.55 | 51    |  |
| Chlorohenzene  | ND                    | ug/L  | _        | 0.25 | 0.87 | 100   |  |
| Chloroethane   | ND                    | ug/L  |          | 0.93 | 3.3  |       |  |
| Chloroform   | ND                    | ug/L  | 1        | 0.22 | 0.78 | 80    |  |
| Chloromethane  | ND                    | ug/L  |          | 0.22 | 0.78 |       |  |
| Dibromochloromethane   | ND                    | ug/L  |          | 0.16 | 0.56 | 80    |  |
| 1.2-Dibromo-3-Chloropropane  | ND                    | ng/L  |          | 0.18 | 0.63 |       |  |
| 1,2-Dibromoethane  | ND                    | ug/L  | _        | 0.23 | 0.81 |       |  |
| Dibromomethane   | ND                    | ug/L  |          | 0.22 | 0.78 |       |  |
| 1.2-Dichlorobenzene  | ND                    | ug/L  | _        | 0.21 | 0.73 | 600   |  |
| 1,3-Dichlorobenzene  | ND                    | ug/L  |          | 0.20 | 0.70 | 1     | The state of the s |
| 1,4-Dichlorobenzene  | ND                    | ug/L  | . _      | 0.27 | 0.95 | /5    | And the second s |
| Dichlorodifluoromethane  | Z                     | ug/L  |          | 0.17 | 0.58 |       |  |
| 1,1-Dichloroethane   | Z                     | ug/L  | 1        | 0.19 | 0.50 | n     |  |
| 1,2-Dichloroethane   | 200                   | ug/L  | <u> </u> | 0.20 | 0.78 | 7     |  |
| 1,1-Dichloroethene   | Z                     | ug/L  | ۱ ـ      | 0.20 | 000  | 70    |  |
| cis-1,2-Dichloroethene   |                       | ug/L  | \        | 0.24 | 0.60 | 200   |  |
| trans-1,2-Dichloroethene   |                       | ug/r  | _ اد     | 0.17 | 0.00 | א כ   | A SALAR PARTY OF THE PARTY OF T |
| 1,2-Dichloropropane  |                       | יומ/ו |          | 92.0 | 0.91 |       | ALEXANDER OF THE PROPERTY OF T |
| trans 1.3 Dichloropropens  | CIN                   | ng/l  |          | 0.19 | 0.69 |       |  |
| Ethylhenzene   | ZZ                    | ng/L  |          | 0.19 | 0.69 | 700   |  |
| Methylene chloride   | [0.29]                | ug/L  | _        | 0.24 | 0.84 | 5     | JLB  |
| Naphthalene  | ND.                   | ug/L  | _        | 0.43 | 1.5  |       |  |
| Styrene  | ND                    | ug/L  | 1        | 0.19 | 0.66 | 100   |  |
| ortho-Xylene   | ND                    | ug/L  | -        | 0.19 | 0.66 |       |  |
| Tetrachloroethene  | ND                    | ug/L  | 1        | 0.22 | 0.78 | Ω     |  |
| Toluene  | ND                    | ug/L  | _        | 0.21 | 0.74 | 1000  |  |
| 1,1,1-Trichloroethane  | ND                    | ug/L  | 1        | 0.20 | 0.69 | 200   |  |
| 1,1,2-Trichloroethane  | ND                    | ug/L  | 1        | 0.20 | 0.69 | י ני  |  |
| Trichloroethene  | ND                    | ug/L  |          | 0.32 | 1.1  | O1    |  |
| Trichlorofluoromethane   | ND                    | ug/L  |          | 0.20 | 0.71 | >     |  |
| Vinyl chloride   | ND                    | ug/L  |          | 0.17 | 0.60 | 2     |  |
| meta,para-Xylene   | ND                    | ug/L  | _        | 0.37 | 1.3  | 10000 |  |
| MTBE   | ND                    | ug/L  |          | 0.21 | 0.73 |       |  |
| Acetone  | ND                    | ug/L  | _        | 4.2  | 12   |       |  |
| Carbon Disulfide   | ND                    | ug/L  |          | 0.17 | 0.59 |       |  |
| Methyl Ethyl Ketone  | ND                    | ug/L  |          | 0.57 | 2.0  |       |  |
| Tetrahydrofuran  | ND                    | ug/L  | _        | 0.58 | 2.0  |       |  |
| Dibromofluoromethane (SURR)  | . 112%                |       | _        |      |      |       | » «  |
| Toluene-d8 (SURR)  | 121%                  |       |          |      |      |       | v  |
| 1-Bromo-4-Fluorobenzene (SURR)   | 98%                   |       |          |      |      |       | ď  |
| NOTES APPLICABLE TO THIS ANALYSIS:   |                       |       |          |      |      |       |  |

J = Result enclosed in brackets is between LOD and LOQ, a region of less certain quantitation.
S = This compound is a surrogate used to evaluate the quality control of a method.
LB = Compound is suspected of being a laboratory contaminant.

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells (page 1 of 5)

Softener - no Collect from - bathroom/locker room sink Comments: Marathon Co. Highway Dept.
222005 Duncan Road, Hayley
Time Sampled:
Sample Location:
Sampled:
Sample Location:
Sampled:
Sample Location:
Sampled:
Sample Location:
Sampled:
Sampled:
Sample Location:
Sampled:
Sam 9501 61.91.01 - n.000 21418 マシンハフロフ Treated (Y/N): Date Sampled: CLUME -QN E. 1111) an 926 Turbidity (quant, text, color): Point Name / Homeowner: 84W4 Time Purged: DNR ID#: NES Eab#: ΑI

|                   | - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 |       |        |              |          | ucet, front of house                | sì obistuo – mort too | Softener - yes Coll |
|-------------------|---|-------|--------|--------------|----------|-------------------------------------|-----------------------|---------------------|
| ·                 |   |       |        |              |          |                                     |                       |                     |
| ;                 |   | •     |        |              |          |                                     |                       | Comments:           |
| N                 |   |       |        | 7.5%         | 10-1-10  | Thody                               | 1713                  |                     |
| Treated (V/V):    |   |       |        |              |          | Sample Location:                    | Time Sampled:         | Date Sampled:       |
| Q                 | 'A'                                     | an    | 014    | Sinia        | 398      | stensen Troy<br>Juncan Road, Hatley |                       | 1.82                |
| (10lo2,tx21,tnnup | Turbidity (                             | :TobO | Color: | Time Purged: | DNR ID#: | еомист: РW88                        | Point Name / Hon      | NES Ead#:           |

|                      |                |                | loser to the well) | cet now works and is c | r said front fau | onwo — 01\12\4)                                | ct from – front outs | Soffener – no Colle |
|----------------------|----------------|----------------|--------------------|------------------------|------------------|--|----------------------|---------------------|
|                      |                |                |                    | 1 72:                  | 2 12 1/2 )       |  | 6000                 | Comments:           |
| Treated (Y/N):       | Treated (V/N): |                |                    |                        | 14 TAN           | Sample Location:                               | Time Sampled:        | :DolgmaS 21aU       |
| lunnt, (ext, color): | Turbidity (q   | :TobO<br>:TobO | Color:<br>UD       | Time Purged:           | :# ai ana<br>352 | 1201vnet: PW24<br>5, Mark<br>menn Rond, Kindey | R221950 Da           | 288<br>NES 149 #:   |

| noiti              | smrojni vboteus | everse side for sample | 7 99S    |              |                   |  | {                | Rev 10/18            |
|--------------------|-----------------|------------------------|----------|--------------|-------------------|--|------------------|----------------------|
|                    | (5,             | गउत्तर                 | (NEW     | Tanmho       | ું <sub>ખેત</sub> | ر في الرا ممرع فرها<br>وحن north side of house |                  | Softener - no Collec |
|                    |                 |                        |          |              |                   | ·  |                  | Comments:            |
| \ \n'\             |                 | £ 9470                 | 1-1 JO 3 | No 5.0.      | 13274             | FIOISING                                       | 0021             | 61-91-01             |
| Treated (Y/V):     |                 |                        |          | `            |                   | Sample Location:                               | Time Sampled:    | Date Sampled:        |
|                    | NO- NO          |                        |          | Simil        | 555               | loski, Mike<br>ncan Road, Hatley               |                  | 388                  |
| quant,(ext,color): | Turbidity (     | Odor:                  | Color:   | Time Purged: | DNK ID #:         | 100WIICT: PW25                                 | Point Name / Hon | NES Eab#:            |

SITE: Marathon Co. Solid Waste Management Dept. / Area A - Private Wells (page 2 of 5)

| XIN          |  |
|--------------|--|
| <b>⊽</b> ′′C |  |

|                 |              |                                       |           |              |                  | nk or outside back faucet | is nodotid - mort tos | Softener-no Colle |
|-----------------|--------------|---------------------------------------|-----------|--------------|------------------|---------------------------|-----------------------|-------------------|
|                 |              |                                       |           |              | •                |                           |                       |                   |
|                 |              |                                       |           |              |                  |                           |                       |                   |
| <u></u>         |              | · · · · · · · · · · · · · · · · · · · |           |              |                  |                           |                       | Comments:         |
| \\ \\ \\        | ·            |                                       | مدر الترك | BACK FA      | 30               | 15200                     | 0/911                 | 31.71.01          |
| :(N/Y) bested   | <u> </u>     | <u> </u>                              |           |              |                  | Sample Location:          | Time Sampled:         | Date Sampled:     |
| ł               | an .         | 901                                   | an        | Ginin 3      |                  | can Road, Hatley          |                       | OIC               |
| 1               |              | ]                                     |           | •            | 9 <del>2</del> 0 | yski, Janet               | Falkon                | ソカと               |
| nt,text,color); | up) KibidauT | ;10hO                                 | Color:    | Time Purged: | שאונו ום #:      | 1001vner: PW18            | Point Name / Hon      | NES EUP#:         |

|                                 |       |        |              | toutside faucet | or North         | t in use Collect fre | Softener – yes dut no      |
|---------------------------------|-------|--------|--------------|-----------------|------------------|----------------------|----------------------------|
| Treated (V/V):                  |       |        | DAM 30       | 1151nQ          | Sample Location: | Time Sampled:        | Date Sampled;<br>Comments: |
| Turbidity (quant, text, color); | ci Vi | Color: | Time Purged: | 361<br>361      | chko, Anthony    | R221630 Du           | 261<br>Nrs 199#:           |

|                |             | ,       | ar round | eneq — sponiq pe ou Ac | itos fon) azuod | ieef aeross driveway from                                    | trom outside far   | Softerer - Yes. Collec |
|----------------|-------------|---------|----------|------------------------|-----------------|--|--|------------------------|
| Treated (V/V); | लास्त       | 30180 5 | Therese  | 130nkg 70              | 19110           |  | 11.70  | Comments:              |
|                | Turbidity ( | Odor:   | Chess.   | Time Purged:           | 351<br>351      | ncowner: PW19 -Popp, Rose mean Road, Hatley Sample Location: | Point Name / Hor<br>Jozwiak<br>Resiset Do<br>Time Sampled: | Date Sampled:          |

| 107                      | noiteme                          | onstody info | reverse side for sample | 200    |              |        |   |                             | Rev 10/18  |
|--------------------------|----------------------------------|--------------|-------------------------|--------|--------------|--------|---|-----------------------------|--|
| The second second second |                                  |              |                         |        | ·            |        | pasement before softener                        | ,<br>I ni taousî — morî to: | Softener - yes Colld   |
|                          | Treated (Y/V):                   |              |                         |        | Auc£T.       | 'd 100 | Sample Location:                                | Time Sampled:               | Dorte Sampled:   |
|                          | ity (quant,text,color):<br>S. C. |              | :robO                   | Color: | Time Purged: | 359 #: | neowner: PW64<br>an, Carol<br>nean Road, Hatley | B771274 Da                  | SUSSEMENT STATE OF THE PROPERTY OF THE PROPERT |

SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells  $_{(pnge\,3\,of\,5)}$ 

Softener - no Collect from - outside faucet, south side of house Comments: 61-91-01 0/2 81 Treated (Y/N): Fraaza, Ivan R222050 Silk Road, Ringle ime Sampled: Sample Location: Time Sampled: Date Sampled: Smin CICV '0N 00 7SE PW27 Point Name / Homeowner: MES Pup #: Turbidity (quant, text, color): Odor: Color: Time Purged: DAR ID #:

|                               |       |        |              |           | ont faucet       | rì abizino — morì to | Softener-no Colle |
|-------------------------------|-------|--------|--------------|-----------|------------------|----------------------|-------------------|
| ~                             |       |        | JSnop)       | 10 116    | 12/              | 08.81                | 60mments:         |
| Treated (Y/N):                |       |        | ,            |           | Sample Location: | Time Sampled:        | Date Sampled:     |
| and and                       | DD    | Od     | MW 9         | 390       | ybnA ,a          |                      | SbS               |
| Turbidity (quant,text,color): | :тоЬО | Color: | Тіте Ритged: | DNR ID #: | 160миск: БМ65    | Point Name / Hon     | NES Eup#:         |

|                |    |    |      | G F, G 3.5<br>inquired yd bonndelli |          | ocet, back west side of api         | et from – outside fa | Softener - No Colle |
|----------------|----|----|------|-------------------------------------|----------|-------------------------------------|----------------------|---------------------|
|                |    |    |      |                                     |          |                                     |                      | Comments:           |
| 0              |    |    |      | · 9812                              | 0/1 00   | Biscil i                            | 2251                 | 61.91.01            |
| Treated (V/V): |    |    |      | •                                   | <i>'</i> | Sample Location:                    | Time Sampled:        | Date Sampled:       |
| 0              | ~/ | an | . ON | Smil                                | 99€      | , Brandon<br>1917 Silk Road, Ringle |                      | 768                 |
|                |    |    |      |                                     |          |                                     | NES EUP#:            |                     |

|   | custody information             | everse side for sample | 1 998  |              |           | Pay 10/18               |                          |                      |  |
|---|---------------------------------|------------------------|--------|--------------|-----------|-------------------------|--------------------------|----------------------|--|
|   |                                 |                        |        |              |           | eet, west side of house | ust obisiuo – mort i     | Softener – no Collec |  |
|   |                                 |                        |        |              |           |                         |                          | Comments:            |  |
| _ | 7                               |                        |        | 35110/       | 1 20      | Tring-1                 | 1521                     | 61.91.01             |  |
|   | Treated (Y/N):                  |                        |        |              |           | Sample Location:        | Time Sampled:            | Date Sampled:        |  |
|   | Od                              | ON                     | AU     | NIMG         | 364       | Heath<br>Road, Ringle   | Gaedtke,<br>R221760 Silk | L.62                 |  |
|   | Turbidity (quant, text, color): | :TobO                  | Color: | Time Purged: | DNR ID #: | conner: PW80            | Point Name / Hom         | NPS Pup#:            |  |

SITE: Marathon Co. Solid Waste Management Dept. / Area A-Private Wells (page 4 of 5)

| בחבע)                           | altos lac | 301SING                        |              | <del>√(≀aioq bo</del> o | uog <del>poun Ajuo) Aspud Jose</del> |                   | Softener – yes <i>–</i> <del>Coll</del> i |
|---------------------------------|-----------|--------------------------------|--------------|-------------------------|--------------------------------------|-------------------|---|
|                                 |           | $\Sigma = (\chi, \beta_0) \in$ |              |                         |                                      |                   | Comments:                                 |
| Λ                               | .04       | nod Bor                        | 11744 752    | 10-H +                  | 0 3015                               | 9081              | 61.21.01                                  |
| Treated (V/N):                  |           | _                              | _            |                         | Sample Location:                     | Time Sampled:     | Date Sampled:                             |
| Od                              | 001       | aU                             | CIME         | LSE                     | yski, Michael<br>Road, Ringle        | · Впсрком         | 868                                       |
| Turbidity (quant, text, color): | Odor:     | Color:                         | Time Purged: | DAR ID #:               | 100WIICIT: PW53                      | Point Manie / Hon | NES Eab#:                                 |
|                                 |           |                                | "            |                         |                                      |                   | ٧b  |

|                                 |          |          |              |           | ucet, south side of house | et from – outside fa     | Softener-yes Colle |
|---------------------------------|----------|----------|--------------|-----------|---------------------------|--------------------------|--------------------|
| JsnoH                           | チャフプルミ   | M. 730   | unt most     | ひろれつ      | ב <sup>סדר בי</sup>       |                          |                    |
|                                 |          |          | 2120         | m 200     | 530C                      |                          | Comments:          |
| 1-N-                            | 7570/2 4 | a> =1015 | OS 2704      |           | 1151110                   | ابع درجہ                 | 61 91.01           |
| Treated (Y/N):                  | , ,      | `        |              |           | Sample Location:          | Time Sampled:            | Date Sampled:      |
| an                              | an       | 'dN      | ציונוים)     | 322       | , James<br>Load, Ringle   | Porter<br>R221704 Silk R | 866                |
| Turbidity (quant, text, color): | :nobO    | Color:   | Time Purged: | DNR ID #: | teowner: PW29             | Point Name / Hon         | NES Eab#:          |

| HERIOE<br>HERIOE            | י בסיטן ניין | ה פוטי א<br>שובת צו | EAVE FACE    | <i>(° )</i> | age, on year round or outs | reg ni 1990.fl — morît î                  | Softener - no Collec |
|-----------------------------|--------------|---------------------|--------------|-------------|----------------------------|---|----------------------|
|                             |              |                     |              |             |                            |   | Comments:            |
| 4                           |              | יוסייב              | 5°5 31.51    | 20H 70      | 13481                      | 1335                                      | 61.91-01             |
| Treated (Y/N):              |              |                     | , ,          | , ,         | Sample Location:           | time Sampled:                             | Date Sampled:        |
| rbidity (quant,lext,color); | uT :robO     | Color:              | Time Purged: | 358<br>358  | ;, Daniel                  | Point Name / Hon<br>Baul<br>R221657 Silk, | OH7                  |

| u              | oltsmiolni ybotzuo              | reverse side for sample | 1005       |                        | ,                |                               | 8                   | Rev 10/18           |  |
|----------------|---------------------------------|-------------------------|------------|------------------------|------------------|-------------------------------|---------------------|---------------------|--|
|                |                                 |                         | . (0       | ken — per owner 4/21/1 | brick deek bro   | de faucet (front faucet by    | ct trom — back outs | Soffener - no Colle |  |
| Treated (Y/V): |                                 | Э́с                     | 11 J J J . | र निवदार               | wad              | Sample Location:              | Time Sampled:       | Oomments:           |  |
|                | sup) ylibidauT<br>Tl C <b>A</b> | Codor:                  | Color:     | Time Purged:           | 028<br>DNR ID #: | e, Meal<br>illow Lane, Hatley | M 5787LIN           | IOH<br>Mrs rup #:   |  |

### SITE: Marathon Co. Solid Waste Management Dept. / Area A – Private Wells (pnge 5 od 5)

|                                |  |       | 1.87.35 | 70.5.50      | · ·             |                  |               | Comments:     |
|--------------------------------|--|-------|---------|--------------|-----------------|------------------|---------------|---------------|
| Trented (Y/V):                 |  |       | . 4     |              |                 | Sample Location: | Time Sampled: | Date Sampled: |
| (40l02,1x21,1nnnp) Vilbid'1.uT |  | :robO | Color:  | Time Purged: | 999<br>1048 110 | Blank<br>Blank   |               | NF2 Fup#:     |
|                                |  |       |         |              |                 |                  |               | V.C           |

|                                 |       |        | ·            |            |                  |                  |               |
|---------------------------------|-------|--------|--------------|------------|------------------|------------------|---------------|
|                                 |       |        | ·            |            |                  |                  | Comments:     |
| Trented (Y/V):                  |       |        |              |            | Sample Location: | Time Sampled:    | Date Sampled: |
|                                 |       |        |              |            |                  |                  |               |
| Turbidity (quant, text, color): | :TobO | Color: | Time Purged: | באנצ ום #: | зсомись:         | Point Mame / Hon | NES Eud #:    |

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|-------------------|-------------|-------|--------|--------------|-----------|------------------|------------------|---------------|
|                   | <u> </u>    |       |        |              |           |                  | 1                | Comments:     |
| Treated (VAV):    |             |       |        |              |           | Sample Location: | Time Sampled:    | Date Sampled: |
| :(10lo2,1291,1mm) | p) tibidauT | :aopO | Color: | Time Purged: | DNR ID #: | ісомись:         | noH \ smnN tnioT | NF2 Fup#:     |

|                                    |       |        |              |           |                  |                   | ANA vos       |
|------------------------------------|-------|--------|--------------|-----------|------------------|-------------------|---------------|
|                                    |       |        |              |           |                  |                   | ·<br>         |
| <u> </u>                           |       |        |              |           |                  |                   | Comments:     |
| Trented (V/V):                     |       |        |              |           | Sample Location: | :bolqma2 omiT     | Date Sampled: |
| :(10103,10x1), (quant,10x1,color); | Odor: | Color: | :bogru¶ omi∏ | DNK ID #: | зсомист:         | nott \ smrN tnio4 | NF2 Fup#:     |

### NLS FIELD QUALITY ASSURANCE RECORD

|                |                        |                      |                               |                |                                      |                 |   |              | Comments:  |
|----------------|------------------------|----------------------|-------------------------------|----------------|--------------------------------------|-----------------|---|--------------|--|
|                |                        |                      | 80                            | ardized Readin | bnsi2 = S ;gr                        | ibesA Isitinl = | N N                                     |              | (Gor)  |
|                |                        |                      |                               |                |                                      |                 |   |              | (R/A)  |
|                |                        |                      |                               |                |                                      |                 |   |              | 718 urriho @ 25° C   |
|                |                        |                      |                               |                | <u> </u>                             |                 |   |              | SLD BA:  |
|                |                        |                      |                               |                |                                      |                 |   |              | TIME:  |
|                |                        |                      |                               |                |                                      |                 |   |              | DATE:  |
| 11             |                        |                      | <u> </u>                      |                | J                                    |                 | l                                       | L            |  |
|                |                        |                      |                               | WBEK           | NETER NU                             | CTIVITY I       | СОИDЛ                                   |              |  |
|                |                        |                      |                               |                |                                      |                 |   |              | (R/S)  |
|                |                        |                      |                               |                |                                      |                 |   |              | BUFFER <u>10.01</u>  |
|                |                        |                      |                               |                |                                      |                 |   |              | (S/A)  |
|                |                        |                      |                               |                |                                      |                 |   |              | (RVS)<br>BUFFER <u>7.00</u>  |
|                |                        |                      |                               |                |                                      |                 |   |              | (8/4)  |
|                |                        |                      |                               |                |                                      |                 |   |              | BUFFER 4.01  |
|                |                        |                      |                               |                |                                      |                 |   |              | SPOÞE:   |
|                |                        |                      |                               |                |                                      |                 |   |              | SLD BX:  |
|                |                        |                      |                               |                |                                      |                 |   |              | LIME:  |
|                |                        |                      |                               |                |                                      |                 |   |              | DATE:  |
| effud Hq bus s | qq<br>9H sample<br>90, | I wol roi<br>0.7 bas | i 00.7 rəîlid<br>10.4 srəîlid | asis use pH    | -<br>pH buffer 4.0<br>n a routine ba | O .Hq dgid      | s gaived səl                            | ing the appr | rr oner toner mogno<br>en seldense senples us<br>7 Tethud Hq thiw 10.0 |
|                |                        |                      |                               |                |                                      | -               |   |              | eagent Water Date Fi   |
|                |                        |                      | ol Tiliter log                |                |                                      |                 |   |              | eagent Grade Water,  |
|                | ·····                  | qe] #:               | om rəilif oq                  | gid 24. da     | ð                                    |                 | *************************************** | Made:        | TDs & Buffers, Date  |
|                |                        | :# io[ ]             | micron filter                 | . ₹₽. dəətoə€  | )                                    |                 |   | ·}.          | struments Checked B  |
|                |                        |                      | :# STN - 1                    | hermometer     | L                                    |                 | 841                                     | ndarin*      | otiles Prepared By:  |
|                |                        |                      |                               | 28 -           |                                      | 2///            | ,<br>(                                  | 1 94/        | :Signature:  |
| 31-            | 91.01                  | s):                  | Date(s                        | <b>3</b> u     | nagement<br>Monitorin                |                 |   |              | Depriment / Site: Mai  |

### ATTACHMENT G

### EXCEEDANCE REPORTS FOR BRRDF GROUNDWATER MONITORING APRIL AND OCTOBER 2019



### Marathon County Solid Waste Department 172900 E. Hwy 29 Ringle, WI 54471

Director:
Site Supervisor:
Administrative Office:
Scale Master
Solid Waste & Recycling Info Line

715-446-3101 X104 715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 877-270-3989 toll-free

May 22, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill: License No. 2892 Area A

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2019. An exceedance table has been attached for the Area A landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area A Groundwater Well Exceedance Table April 2019

|          |                  | Marathon Cour  | nty Solid Waste: Area A | A Groundwate | r Monitori | ng Wells |      |     |          |
|----------|------------------|----------------|-------------------------|--------------|------------|----------|------|-----|----------|
|          | Area A           | Facility #2892 | Exceedances             |              |            |          |      |     |          |
| Project# | Date             | Well#          | Parameter               | Units        | Result     | PAL      | ES   | ACL | Comments |
| 318721   | April 2 & 3 2019 | Dup 040319     | Tetrachloroethylene     | ug/L         | 3.90       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | Dup 040319     | Trichloroethylene       | ug/L         | 3.80       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R12R           | Tetrachloroethylene     | ug/L         | 0.71       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R12R           | Trichloroethylene       | ug/L         | 0.63       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R13R           | Tetrachloroethylene     | ug/L         | 3.50       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R13R           | Trichloroethylene       | ug/L         | 3.40       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R38            | Tetrachloroethylene     | ug/L         | 1.20       | 0.50     | 5.00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R38            | Trichloroethylene       | ug/L         | 1.20       | 0.50     | 5,00 |     | NR140.10 |
| 318721   | April 2 & 3 2019 | R50P           | Tetrachloroethylene     | ug/L         | 0.64       | 0.50     | 5.00 |     | NR140,10 |
| 318721   | April 2 & 3 2019 | R35            | Conductivity            | umho@25C     | 770.00     | 510.00   |      |     | Well     |

The Area A exceedances that were detected during the April 2019 sampling event are consistent with the exceedances that were detected in previous sampling events.

Groundwater contamination was detected southeast of Area A during the late 1980s. By May of 1993, Marathon County completed a groundwater quality investigation and submitted a report to WDNR titled "Marathon County, Area A Landfill – Environmental Contamination Assessment (ECA) report". The ECA report suggested that contaminants may have been released to the environment from one or more of the leachate collection basins and other source locations. Consequently, several improvements were made and both leachate collection basins were removed in 1995. The identified groundwater contaminants of primary concern at this facility are VOCs, specifically the chlorinated aliphatic hydrocarbons (CAHs) and vinyl chloride. Since the remedial work from 1993 to 1996, significant reductions of CAH concentration have been measured near the suspected source zone.

It is the opinion of Marathon County that the exceedances are related to the leachate basins that were removed in 1995. The overall general concentrations reported at wells within the core of the plume are stable to decreasing. Marathon County will continue to monitor these wells for exceedances as required, and report any anomalies to the WDNR. Marathon County has installed groundwater monitoring wells along State Highway 29, just southeast of the site. If these particular wells begin showing signs of contamination, the County has a contingency plan in place and will respond to protect residents.

### State of Wisconsin

### Department of Natural Resources

### ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

### Instructions:

- Prepare one form for each license or monitoring ID.
- Please type or print legibly.
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact WA/5

Wisconsin Department of Natural Resources

P.O. Box 7921

Madison, WI 53707 - 7921

| Name of entity submitting data (laboratory, consultant, Northern Lake Service, Inc.  | facility owner):  |   |   |
|--|---|---|---|
| Contact for questions about data formatting. Include d   | ata preparer's name, telephone nu   | mber and E-mail add                         | ress:                                       |
| Name: Chris Geske  | Phone: 715-47   |   |   |
| E-mail: lims@nlslab.com  |   |   |   |
| Facility Name  | License No. / Monitoring ID   | Facility ID [FID]                           | Actual sampling dates (e.g., July 2-6, 200  |
| Marathon County Landfill - Area A  | 02892   | 737054890                                   | APRIL -02-2019<br>through<br>APRIL -03-2019 |
| Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.   |   |   |   |
| L The enclosed results are for sampling required in the r APRIL -2019  | nonth(s) of: (e.g., June 2003)  |   |   |
| Type of Data Submitted (Check all that apply)  Groundwater monitoring data from monitoring well Groundwater monitoring data from private water s Leachate monitoring data  |   | itoring data<br>oring data<br>pecify)       |   |
| Notification attached?  No. No groundwater standards or explosive gas limits were exceed yes, a notification of values exceeding a groundwater standard is a groundwater standard and preliminary analysis of the cause and yes, a notification of values exceeding an explosive gas limit is attached.  explosive gas limits. | attached. It includes a list of monitoring points<br>I significance of any concentration. |   |   |
| Certification  |   |   | $\mathbb{R}^{n} = \mathbb{R}^{n}$           |
| To the best of my knowledge, the information repo<br>are true and correct. Furthermore, I have attached<br>groundwater standards or explosive gas levels, an<br>concentrations exceeding groundwater standards.  | complete notification of any sa<br>d a preliminary analysis of the o                      | mpling values meeti<br>eause and significan | ng or exceeaing                             |
| Facility Representative Name (Print)   | Title   |   | (Area Code) Telephone No.                   |
| D - K M  | 15/22/19  |   |   |
| Signature  | Date  |   |   |
| FOR DNR USE ONLY. Check action take Found uploading problems on Notified contact of problems on  | Initials  | · 人名 人名 是 每 / 1886年 ( 吴岩 ) [60              | oack side if necessary.                     |

### Marathon County Solid Waste Mgmnt Dept Marathon County Landfill - Area A 04-01-2019

Lab ID: 721026460

NLS Project: 318721

Collected: 04-01-2019

License: 02892 FID: 737054890

### EXCEEDANCES:

|                     |          |        |           | -  |          |
|---------------------|----------|--------|-----------|----|----------|
| Parameter           | Units    | Result | PAL / ACL | ES | Comments |
| Tetrachloroethylene | ug/L     | 3.9    | ī.        | 5  | NR140.10 |
| Trichloroethylene   | ng/L     | 3.8    | rć.       | 5  | NR140.10 |
| Tetrachloroethylene | ng/L     | 0.71   | ł,        | 5  | NR140.10 |
| Trichloroethylene   | ng/L     | 0.63   | τĊ        | 5  | NR140.10 |
| Tetrachloroethylene | ng/L     | 3.5    | τĊ        | 5  | NR140.10 |
| Trichloroethylene   | ng/L     | 3.4    | τċ        | 5  | NR140.10 |
| Tetrachloroethylene | ng/L     | 1.2    | τć        | 2  | NR140.10 |
| Trichloroethylene   | ng/L     | 1.2    | Ċ,        | 2  | NR140.10 |
| Tetrachloroethylene | ng/L     | 0.64   | 3.        | 5  | NR140.10 |
| Conductivity        | umho@25C | 770    | 510       |    | well     |



### Marathon County Solid Waste Department 172900 E. Hwy 29 Ringle, WI 54471

Director:
Site Supervisor:
Administrative Office:
Scale Master
Solid Waste & Recycling Info Line

715-446-3101 X104 715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 877-270-3989 toll-free

May 22, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 3338 Area B.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2019. An exceedance table has been attached for the Area B landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

### Area B Groundwater Well Exceedance Table April 2019

|           |                  | Marathon Cour  | nty Solid Waste: Area | a B Groundw | ater Monitori | ng Wells |       |     |          |
|-----------|------------------|----------------|-----------------------|-------------|---------------|----------|-------|-----|----------|
|           | Area B           | Facility #3338 | Exceedances           |             |               |          |       |     |          |
| Project # | Date             | Well#          | Parameter             | Units       | Result        | PAL      | ES    | ACL | Comments |
| 318722    | April 2 & 3 2019 | Dup 040319     | Nitrate+Nitrite       | mg/L        | 2.20          | 2,00     | 10.00 |     | NR140.10 |
| 318722    | April 2 & 3 2019 | R45            | Nitrate+Nitrite       | mg/L        | 2.20          | 2.00     | 10.00 |     | NR140.10 |

The Area B Nitrate/Nitrite levels at well R45 can be a result of improper farming practices. Throughout the past few years, Area B has had ongoing vegetation management to establish growth on slopes. Seed, fertilizer, and mulch have all been applied in an effort to control erosion. Well R45 has indicated a very slight increase in concentration since the previous sampling event in October. The well will continue to be monitored closely to ensure that levels decrease. In effort to ensure that levels decrease, Marathon County will evaluate their erosion control methods in addition to continued observation of well R45. Current site plans include the installation of a final cap on the Area B landfill within the next few years; this will also control erosion and potential runoff issues at the wells around the landfill.

### State of Wisconsin

### ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

Department of Natural Resources

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### Instructions:

- Prepare one form for each license or monitoring ID.
- Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value,
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to:

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

Monitoring Data Submittal Information Name of entity submitting data (laboratory, consultant, facility owner): Northern Lake Service, Inc. Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address: Phone: 715-478-2777 Chris Geske Name: lims@nlslab.com E-mail: Actual sampling dates (e.g., July 2-6, 2003 Facility ID [FID] License No. / Monitoring ID APRIL -02-2019 Facility Name 737092730 03338 Marathon County Landfill - Area B through APRIL -03-2019 The enclosed results are for sampling required in the month(s) of: (e.g., June 2003) APRIL -2019 Type of Data Submitted (Check all that apply) Gas monitoring data ☑ Groundwater monitoring data from monitoring wells Air monitoring data Groundwater monitoring data from private water supply wells Other (specify) Leachate monitoring data Notification attached? No. No groundwater standards or explosive gas limits were exceeded. Yes, a notification of values exceeding a groundwater standard is attached. It includes a list of monitoring points, dates, sample values, groundwater standard and preliminary analysis of the cause and significance of any concentration. Yes, a notification of values exceeding an explosive gas limit is attached. It includes the monitoring points, dates, sample values and explosive gas limits. n Certification To the best of my knowledge, the information reported and statements made on this data submittal and attachements are true and correct. Furthermore, I have attached complete notification of any sampling values meeting or exceeding groundwater standards or explosive gas levels, and a preliminary analysis of the cause and significant of concentrations exceeding groundwater standards. 7/5-55/-5869 (Area Code) Telephone No. Solid Waste Monager 05/22/19 Date Facility Representative Name Signature FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary. Initials Found uploading problems on Uploaded data successfully on Notified contact of problems on EDD format(s): Diskette DD (initial submittal and follow-up) E-mail (follow-up only) Other

### Marathon County Solid Waste Mgmnt Dept Marathon County Landfill - Area B 04-01-2019

Lab ID: 721026460

NLS Project: 318722 Collected: 04-01-2019

License: 03338

FID: 737092730

### EXCEEDANCES:

| sc (Point ID) | Parameter             | Units | Result | PAL / ACL | ES | Comments |
|---------------|-----------------------|-------|--------|-----------|----|----------|
| 19 (208)      | Nitrate+Nitrite, dis. | mg/L  | 2.2    | 2         | 10 | NR140.10 |
| 45 (208)      | Nitrate+Nitrite, dis. | mg/L  | 2.2    | 2         | 10 | NR140.10 |



### **Marathon County Solid Waste Department**

172900 E. Hwy 29 Ringle, WI 54471

Director:
Site Supervisor:
Administrative Office:
Scale Master
Solid Waste & Recycling Info Line

715-446-3101 X104 715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 877-270-3989 toll-free

May 22, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No.4228 BRRDF.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of April 2019. An exceedance table has been attached for the Bluebird Ridge Landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Amanda Dehmlow, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

### Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table April 2019

|          | M                | arathon County S | olid Waste: Bluebird | Ridge Groundy | vater Mon | itoring We | lls |     |          |
|----------|------------------|------------------|----------------------|---------------|-----------|------------|-----|-----|----------|
|          | BRRDF            | Facility #4228   | Exceedances          |               |           |            |     |     |          |
| Project# | Date             | Well#            | Parameter            | Units         | Result    | PAL        | ES  | ACL | Comments |
| 318859   | April 3 & 4 2019 | R59P             | Alkalinity           | mg/L          | 330.00    | 230.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59P             | Conductivity         | umhos@25C     | 590.00    | 470,00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59P             | Hardness             | mg/L          | 360.00    | 230,00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Alkalinity           | mg/L          | 420.00    | 230,00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Conductivity         | umhos@25C     | 680.00    | 470.00     |     |     | well     |
| 318859   | April 3 & 4 2019 | R59WT            | Hardness             | mg/L          | 420.00    | 230.00     |     |     | well     |

Groundwater hardness can exhibit natural fluctuation over time. In addition, a typical indicator of hard water can be increased levels of calcium. Over the past few years, Marathon County has utilized liquid Calcium Chloride solution for dust control on main haul roads. It is a possibility that small amounts of Calcium Chloride may have leached into groundwater due to runoff from haul roads. This solution may be contributing to slight increases in conductivity. In addition to the Calcium Chloride application, this particular well is located within 50 feet of a major soil stockpile. During 2016, this stockpile received over 250,000 cubic yards of soil from the 10 acre cell expansion of the Bluebird Ridge Landfill. R59WT and R59P are directly at the toe of the slope of a 500,000+ cubic yard soil stockpile. The stockpile has been properly vegetated; however, the construction activity may be a contributing factor. The levels have not changed significantly since the last monitoring event, but this well will continue to be monitored to evaluate the source of the exceedances.

### State of Wisconsin

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Department of Natural Resources

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### Instructions:

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- \* Please type or print legibly.
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- \* Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact WA/5

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

| ne, telephone number and E-mail address:  Phone: 715-478-2777  Monitoring ID Facility ID [FID] Actual sampling dates (e.g., July 2-6, 2)  APRIL -03-2019 through APRIL -04-2019  June 2003)  Gas monitoring data Air monitoring data Other (specify) |
|--|
| Monitoring ID Facility ID [FID] Actual sampling dates (e.g., July 2-6, 20 APRIL -03-2019 through APRIL -04-2019  June 2003)  Gas monitoring data  Air monitoring data  |
| 337005680 APRIL -03-2019 through APRIL -04-2019  June 2003)  Gas monitoring data Air monitoring data   |
| 337005680 APRIL -03-2019 through APRIL -04-2019  June 2003)  Gas monitoring data Air monitoring data   |
| through APRIL -04-2019  June 2003)  Gas monitoring data Air monitoring data  |
| Gas monitoring data Air monitoring data  |
| Air monitoring data  |
| st of monitoring points, dates, sample values, centration. onitoring points, dates, sample values and  |
|  |
| nts made on this data submittal and attachements ation of any sampling values meeting or exceeding nalysis of the cause and significant of   |
| Waste Manager 715-551-5864  e (Area Code) Telephone No.  |
| te   |
|  |

## Marathon County Solid Waste Mgmnt Dept Marathon County - BRRDF 04-01-2019

Lab ID: 721026460

NLS Project: 318859 Collected: 04-01-2019

License: 04228

FID: 337005680

## **EXCEEDANCES:**

| Well Desc (Point ID) | Parameter    | Units     | Result | PAL / ACL | ES | Comments |
|----------------------|--------------|-----------|--------|-----------|----|----------|
| R59P (237)           | Alkalinity   | mg/L      | 330    | 230       |    | well     |
| R59P (237)           | Conductivity | umhos@25C | 590    | 470       |    | well     |
| R59P (237)           | Hardness     | mg/L      | 360    | 230       |    | well     |
| R59WT (234)          | Alkalinity   | mg/L      | 420    | 230       |    | well     |
| R59WT (234)          | Conductivity | umhos@25C | 089    | 470       |    | well     |
| R59WT (234)          | Hardness     | mg/L      | 420    | 230       |    | well     |
|                      |              |           |        |           |    |          |



#### **Marathon County Solid Waste Department**

172900 E. Hwy 29 Ringle, WI 54471

Director: 715-446-3101 X104 Site Supervisor: Administrative Office: Scale Master Solid Waste & Recycling Info Line

715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 877-270-3989 toll-free

Dec 6, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill: License No. 2892 Area A

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2019. An exceedance table has been attached for the Area A landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

Area A Groundwater Well Exceedance Table October 2019

|          |                 | Marathon Cour  | nty Solid Waste: Area A | A Groundwate | r Monitori | ng Wells |      |     |          |
|----------|-----------------|----------------|-------------------------|--------------|------------|----------|------|-----|----------|
| •        | Area A          | Facility #2892 | Exceedances             |              |            |          |      |     |          |
| Project# | Date            | Well#          | Parameter               | Units        | Result     | PAL      | ES   | ACL | Comments |
| 333080   | October 14 & 15 | Dup 101519     | Tetrachloroethylene     | ug/L         | 0.63       | 0.50     | 5.00 |     | NR140,10 |
| 333080   | October 14 & 15 | Dup 101519     | Trichloroethylene       | ug/L         | 7.20       | 0.50     | 5.00 | -   | NR140.10 |
| 333080   | October 14 & 15 | Dup 101519     | Vinyl Chloride          | ug/L         | 0.50       | 0.02     | 0.20 |     | NR140.10 |
| 333080   | October 14 & 15 | R13R           | Tetrachloroethylene     | ug/L         | 0.74       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R13R           | Trichloroethylene       | ug/L         | 7.20       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R13R           | Vinyl Chloride          | ug/L         | 0.49       | 0.02     | 0.20 |     | NR140.10 |
| 333080   | October 14 & 15 | R38            | Tetrachloroethylene     | ug/L         | 0.88       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R38            | Trichloroethylene       | ug/L         | 1.30       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R47            | Trichloroethylene       | ug/L         | 0.63       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R50P           | Tetrachloroethylene     | ug/L         | 0.57       | 0.50     | 5.00 |     | NR140.10 |
| 333080   | October 14 & 15 | R35            | Conductivity            | umho@25C     | 770.00     | 510.00   |      |     | well     |

The Area A exceedances that were detected during the October 2019 sampling event are consistent with the exceedances that were detected in previous sampling events.

Groundwater contamination was detected southeast of Area A during the late 1980s. By May of 1993, Marathon County completed a groundwater quality investigation and submitted a report to WDNR titled "Marathon County, Area A Landfill – Environmental Contamination Assessment (ECA) report". The ECA report suggested that contaminants may have been released to the environment from one or more of the leachate collection basins and other source locations. Consequently, several improvements were made and both leachate collection basins were removed in 1995. The identified groundwater contaminants of primary concern at this facility are VOCs, specifically the chlorinated aliphatic hydrocarbons (CAHs) and vinyl chloride. Since the remedial work from 1993 to 1996, significant reductions of CAH concentration have been measured near the suspected source zone.

It is the opinion of Marathon County that the exceedances are related to the leachate basins that were removed in 1995. The overall general concentrations reported at wells within the core of the plume are stable to decreasing. Marathon County will continue to monitor these wells for exceedances as required, and report any anomalies to the WDNR. Marathon County has installed groundwater monitoring wells along State Highway 29, just southeast of the site. If these particular wells begin showing signs of contamination, the County has a contingency plan in place and will respond to protect residents.

#### State of Wisconsin

**ENVIRONMENTAL MONITORING DATA CERTIFICATION** 

Form 4400-231(R 1/04)

Department of Natural Resources

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#### Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- \* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- \* Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to:

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921

Madison, WI 53707 - 7921

| Monitoring Data Submittal Information   |   |  | <b>计图 300%的 明治,特别的</b> 是                        |
|---|---|--|---|
| Name of entity submitting data (laboratory, consultant, fa  | acility owner):   |  | 7.0.  |
| Northern Lake Service, Inc.  Contact for questions about data formatting. Include da  | ta preparer's name, telephone nu  | mber and E-mail addr                               | ress:   |
| Name: Chris Geske   | Phone: 7.15-47  |  |   |
| E-mail: lims@nlslab.com   |   |  | S41 - 30  |
| Facility Name   | License No. / Monitoring ID   | Facility ID [FID]                                  | Actual sampling dates (e.g., July 2-6, 200      |
| Marathon County Landfill - Area A   | 02892   | 737054890  | OCTOBER -14-2019<br>through<br>OCTOBER -16-2019 |
| Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.  | :81<br>to-  |  |   |
| The enclosed results are for sampling required in the mo  | onth(s) of: (e.g., June 2003)   |  | ij de   |
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| Notification attached?  No. No groundwater standards or explosive gas limits were exceeded yes, a notification of values exceeding a groundwater standard is attack groundwater standard and preliminary enalysis of the cause and siyes, a notification of values exceeding an explosive gas limit is attack explosive gas limits. | ached. It includes a list of monitoring points<br>ignificance of any concentration. |  | n si 🙀 = 100                                    |
| Certification   | <b>建能量對於以關於關係</b>   |  | $n^{\prime\prime}$                              |
| To the best of my knowledge, the information report are true and correct. Furthermore, I have attached a groundwater standards or explosive gas levels, and concentrations exceeding groundwater standards.   | omplete notification of any sar   | mpling values meetin<br>ause and significant<br>// | ig or exceeding                                 |
| Facility Representative Name (Print)  | Title 12 /06 /19  | 0  | (Area Code) Telephone No.                       |
| Signature   | Date  | 245  |   |
| FOR DNR USE ONLY: Check action takes Found uploading problems on Notified contact of problems on EDD format(s): Diskette CD (Initial  | Initials<br>Uploade   | ed data successfully                               | on  |

# Marathon County Solid Waste Mgmnt Dept Marathon County Landfill - Area A 10-01-2019

Lab ID: 721026460 NLS Project: 333080

Collected: 10-01-2019

License: 02892 FID: 737054890

## EXCEEDANCES:

| Well Desc (Point ID) | Parameter           | Units    | Result | PAL / ACL   | ES | Comments |
|----------------------|---------------------|----------|--------|-------------|----|----------|
| Dup-101519 (074)     | Tetrachloroethylene | ug/L     | 0.63   | Sī          | O1 | NR140.10 |
| Dup-101519 (074)     | Trichloroethylene   | ug/L ≒   | 7.2    | 51          | S) | NR140.10 |
| Dup-101519 (074)     | Vinyl Chloride      | ug/L     | 0.50   | .02         | 2  | NR140.10 |
| R13R (074)           | Tetrachloroethylene | ug/L     | 0.74   | <b>.</b> 51 | Oi | NR140.10 |
| R13R (074)           | Trichloroethylene   | ug/L     | 7.2    | .5ī         | ъ  | NR140.10 |
| R13R (074)           | Vinyl Chloride      | ug/L     | 0.49   | .02         | .2 | NR140.10 |
| R38 (053)            | Tetrachloroethylene | ug/L     | 0.88   | .5          | ហ  | NR140.10 |
| R38 (053)            | Trichloroethylene   | ug/L     | 1.3    | .თ          | ហ  | NR140.10 |
| R47 (062)            | Trichloroethylene   | ng/L     | 0.63   | ;ი          | ហ  | NR140.10 |
| R50P (068)           | Tetrachloroethylene | ug/L     | 0.57   | .თ          | 51 | NR140.10 |
| R35 (050)            | Conductivity        | umho@25C | 770    | 510         |    | well     |



#### **Marathon County Solid Waste Department**

172900 E. Hwy 29 Ringle, WI 54471

Director: 715-446-3101 X104 Site Supervisor: Administrative Office: Scale Master Solid Waste & Recycling Info Line

715-446-3101 X102 715-446-3101 X100 715-446-3101 X103 877-270-3989 toll-free

Dec 6, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No. 3338 Area B.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2019. An exceedance table has been attached for the Area B landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

#### Area B Groundwater Well Exceedance Table October 2019

|          |                 | Marathon Cou   | nty Solid Waste: Are | a B Groundw | ater Monitori | ng Wells |       |     |  |
|----------|-----------------|----------------|----------------------|-------------|---------------|----------|-------|-----|--|
|          | Area B          | Facility #3338 | Exceedances          |             |               |          |       |     | S.M.N. Communication of the Co |
| Project# | Date            | Well#          | Parameter            | Units       | Result        | PAL      | ES    | ACL | Comments   |
| 332917   | October 14 & 15 | Dup 10151901   | Nitrate+Nitrite      | mg/L        | 2.10          | 2,00     | 10.00 | -   | NR140.10   |
| 332917   | October 14 & 15 | R27            | Nitrate+Nitrite      | mg/L        | 4.80          | 2.00     | 10.00 |     | NR140.10   |
| 332917   | October 14 & 16 | R45            | Nitrate+Nitrite      | mg/L        | 2.10          | 2,00     | 10.00 |     | NR140.11   |

The Area B Nitrate/Nitrite levels at wells R45 and R27 can be a result of improper farming practices. Throughout the past few years, Area B has had ongoing vegetation management to establish growth on slopes. Seed, fertilizer, and mulch have all been applied in an effort to control erosion. Well R45 has indicated a slight decrease in concentration since the previous sampling event in April 2019. R27 has indicated a slight increase since sampling in October of 2018. Significant precipitation and historic rainfalls also contributed to erosion around Area B, and may be a contributing factor to these exceedances. The wells will continue to be monitored closely to ensure that levels decrease. In an effort to ensure that levels decrease, Marathon County will evaluate their erosion control methods in addition to continued observation of well R45 and well R27. Current site plans include the installation of a final cap on the Area B landfill within the next few years; this will also control erosion and potential runoff issues at the wells around the landfill.

#### **ENVIRONMENTAL MONITORING DATA CERTIFICATION**

Form 4400-231(R 1/04)

Department of Natural Resources

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats.

also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

#### Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- \* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- \* Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to: GEMS Data Submittal Contact WA/5

GEMS Data Submittal Contact - WA/5
Wisconsin Department of Natural Resources
P.O. Box 7921

Madison, WI 53707 - 7921

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| Name: Chris Geske   |  | 78-2777  | franker :  |
| E-mail: lims@nlslab.com   | The second second  | (  | A WATER T  |
| Facility Name   | License No. / Monitoring ID  | Facility ID [FID] A  | Actual sampling dates (e.g., July 2-6, 20  |
| Marathon County Landfill - Area B   | 03338  | 737092730  | OCTOBER -14-2019   |
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| Signature   | Date   | 1 *  | 7  |
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# Marathon County Solid Waste Mgmnt Dept Marathon County Landfill - Area B 10-01-2019

Lab ID: 721026460

NLS Project: 332917 Collected: 10-01-2019

License: 03338 FID: 737092730

## EXCEEDANCES:

| NR140.10 | 10 | 2         | 2.1    | mg/L  | Nitrate+Nitrite, dis. | R45 (208)            |
|----------|----|-----------|--------|-------|-----------------------|----------------------|
| NR140.10 | 10 | 2         | 4.8    | mg/L  | Nitrate+Nitrite, dis. | R27 (156)            |
| NR140.10 | 10 | 2         | 2.1    | mg/L  | Nitrate+Nitrite, dis. | Dup- 10151901 (208)  |
| Comments | ES | PAL / ACL | Result | Units | Parameter             | Well Desc (Point ID) |



#### **Marathon County Solid Waste Department**

172900 E. Hwy 29 Ringle, WI 54471

 Director:
 715-446-3101 X104

 Site Supervisor:
 715-446-3101 X102

 Administrative Office:
 715-446-3101 X100

 Scale Master
 715-446-3101 X103

 Solid Waste & Recycling Info Line
 877-270-3989 toll-free

Dec 6th, 2019

Wisconsin Department of Natural Resources Bureau of Solid Waste Management GEMS Data Submittal Contact, WA/3 P.O. Box 7921 Madison, WI 53707-7921

RE: Exceedance of Groundwater Standards for Marathon County Landfill, License No.4228 BRRDF.

In accordance with NR 140, please accept this notification of groundwater monitoring results for the reporting period of October 2019. An exceedance table has been attached for the Bluebird Ridge Landfill and can be found on the following page.

If you have any questions, please contact me.

Thank you,

David Hagenbucher Operations Manager Marathon County Solid Waste

C.c: Nathan Coller, Megan Ballweg, Sally Hronek, Meleesa Johnson, Lee Daigle, Mark Torresani.

#### Bluebird Ridge Recycling and Disposal Facility Groundwater Well Exceedance Table October 2019

|          | Ma              | arathon County S | olid Waste: Bluebird | Ridge Groundy | vater Mon | itoring We | lls |     |          |
|----------|-----------------|------------------|----------------------|---------------|-----------|------------|-----|-----|----------|
|          | BRRDF           | Facility #4228   | Exceedances          |               |           |            |     |     |          |
| Project# | Date            | Well#            | Parameter            | Units         | Result    | PAL        | ES  | ACL | Comments |
| 333066   | October 14 & 15 | R59P             | Alkalinity           | mg/L          | 380,00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59P             | Conductivity         | umhos@25C     | 670.00    | 470.00     |     |     | well     |
| 333066   | October 14 & 15 | R59P             | Hardness             | mg/L          | 430.00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59WT            | Alkalinity           | mg/L          | 420.00    | 230.00     |     |     | well     |
| 333066   | October 14 & 15 | R59WT            | Conductivity         | umhos@25C     | 710.00    | 470.00     |     | ,   | well     |
| 333066   | October 14 & 15 | R59WT            | Hardness             | mg/L          | 470.00    | 230.00     |     |     | well     |

Groundwater hardness can exhibit natural fluctuation over time. In addition, a typical indicator of hard water can be increased levels of calcium. Over the past few years, Marathon County has utilized liquid Calcium Chloride solution for dust control on main haul roads. It is a possibility that small amounts of Calcium Chloride may have leached into groundwater due to runoff from haul roads. This solution may be contributing to slight increases in conductivity. In addition to the Calcium Chloride application, this particular well is located within 50 feet of a major soil stockpile. During 2016, this stockpile received over 250,000 cubic yards of soil from the 10 acre cell expansion of the Bluebird Ridge Landfill. R59WT and R59P are directly at the toe of the slope of a 500,000+ cubic yard soil stockpile. The stockpile has been properly vegetated; however, the construction activity may be a contributing factor. The levels have not changed significantly since the last monitoring event, but this well will continue to be monitored to evaluate the source of the exceedances.

#### ENVIRONMENTAL MONITORING DATA CERTIFICATION Form 4400-231(R 1/04)

Department of Natural Resources

Notice: Personally identifiable information collected will be used for program administration and enforcement purposes. The department may also provide this information to requesters as required under Wisconsin's Open Records law, ss. 19.31 to 19.39, Wis. Stats. When submitting monitoring data, the owner or operator of the facility, practice or activity is required to notify the Department in writing that a groundwater standard or an explosive gas level has been attained or exceeded, as specified in ss. NR 140.24(1)(a); NR 140.26(1)(a); NR 507.30; NR635.14(9)(a); NR 635.18(20) and NR 507.30, Wis. Adm. Code. Failure to report may result in fines, forfeitures or other penalties resulting from enforcement under ss. 289.97, 291.97 or 299.95, Wis. Stats.

#### Instructions:

- \* Prepare one form for each license or monitoring ID.
- \* Please type or print legibly.
- \* Attach a notification of any values that attain or exceed groundwater standards (that is, preventive action limits, enforcement standards or alternative concentration limits). The notification must include a preliminary analysis of the cause and significance of each value.
- Attach a notification of any gas values that attain or exceed explosive gas levels.
- \* Send the original signed form, any notification, and Electronic Data Deliverable [EDD] to:

GEMS Data Submittal Contact - WA/5 Wisconsin Department of Natural Resources P.O. Box 7921 Madison, WI 53707 - 7921

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| E-mail: lims@nlslab.com  |  |   | त्राप्तर देन्द्री न भाग व  |
| Facility Name  | License No. / Monitoring ID  | Facility ID [FID]   | Actual sampling dates (e.g., July 2-6, 20  |
| Marathon County - BRRDF  | 04228  | 337005680   | OCTOBER -15-2019   |
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| Notification attached?  No. No groundwater standards or explosive gas limits were exceeded.  Yes, a notification of values exceeding a groundwater standard is attacked.  Yes, a notification of values exceeding an explosive gas limit is attacked.  Certification  To the best of my knowledge, the information report are true and correct. Furthermore, I have attached a groundwater standards or explosive gas levels, and concentrations exceeding groundwater standards.  | eched. It includes a list of monitoring points gnificance of any concentration.  ned. It includes the monitoring points, date and statements made on the complete notification of any sail a preliminary analysis of the control of the | s, dates, sample values, s, sample values and significant   | 715 551 5864   |
| Notification attached?  No. No groundwater standards or explosive gas limits were exceeded.  Yes, a notification of values exceeding a groundwater standard is altour groundwater standard and preliminary analysis of the cause and since yes, a notification of values exceeding an explosive gas limit is attacked explosive gas limits.  Certification  To the best of my knowledge, the information report are true and correct. Furthermore, I have attached of groundwater standards or explosive gas levels, and concentrations exceeding groundwater standards.  David Hagam by the Content of the provided that the provided the provided that the provi | eched. It includes a list of monitoring points gnificance of any concentration.  ned. It includes the monitoring points, date and statements made on the complete notification of any sai a preliminary analysis of the control  | s, dates, sample values, s, sample values and significant   | 715 551 5864   |

## Marathon County Solid Waste Mgmnt Dept Marathon County - BRRDF 10-01-2019

Lab ID: 721026460 NLS Project: 333066 Collected: 10-01-2019

License: 04228 FID: 337005680

**EXCEEDANCES:** 

|    | 230       | 470    | mg/L      | Hardness     | R59WT (234)          |
|----|-----------|--------|-----------|--------------|----------------------|
|    | 470       | 710    | umhos@25C | Conductivity | R59WT (234)          |
|    | 230       | 420    | mg/L      | Alkalinity   | R59WT (234)          |
|    | 230       | 430    | mg/L      | Hardness     | R59P (237)           |
|    | 470       | 670    | umhos@25C | Conductivity | R59P (237)           |
|    | 230       | 380    | mg/L      | Alkalinity   | R59P (237)           |
| ES | PAL / ACL | Result | Units     | Parameter    | Well Desc (Point ID) |

#### ATTACHMENT H

2017 to 2019 THREE YEAR GROUNDWATER ASSESSMENT

### Area A Landfill, Area B Landfill and Bluebird Ridge Recycling & Disposal Facility

3 - Year Groundwater Assessment(2017 - 2019)

MARCH 2020 209-4201418

#### **PRESENTED TO**

**Marathon County Solid Waste Department** 

172900 State Highway 29 Ringle, WI 54471

#### PREPARED BY

Cornerstone Environmental Group – a Tetra Tech Company 8413 Excelsior Drive, Suite 160 Madison, WI 53717 P +1.877.294.9070 tetratech.com

#### REPORT CERTIFICATION

I, <u>John C. Oswald</u>, hereby certify that I am a licensed professional geologist in the State of Wisconsin in accordance with the requirements of ch. GHSS 2, Wis. Adm. Code; that the preparation of this document has not involved any unprofessional conduct as detailed in ch. GHSS 5, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 500 to 538, Wis. Adm. Code.

| John C. Oswald, P.G. No. 1126-13          |
|---|
| Name                                      |
| Operations Director/Senior Hydrogeologist |
| Title                                     |

Table 1

Table 2

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|     | 2.1 Area A Landfill                      |             |
|     | 2.2 Area B Landfill                      |             |
|     | 2.3 Bluebird Ridge RDF                   |             |
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|     |  |             |

Marathon County NR 140 Exceedances (2017-2019)

Marathon County Well-Specific Exceedances (2017-2019)

#### ACRONYMS/ABBREVIATIONS

| Acronyms/Abbreviations | Definition                                     |
|------------------------|--|
| BRRDF                  | Bluebird Ridge Recycling and Disposal Facility |
| MCSWD                  | Marathon County Solid Waste Department         |
| NLS                    | Northern Lake Services                         |
| N+N                    | Nitrite + Nitrate as Nitrogen                  |
| PAL                    | Preventative Action Limit                      |
| PCE                    | Tetrachloroethylene                            |
| TCE                    | Trichloroethylene                              |
| VC                     | Vinyl Chloride                                 |
| VOC                    | Volatile Organic Compound                      |
| WDNR                   | Wisconsin Department of Natural Resources      |

#### 1.0 INTRODUCTION

#### 1.1 BACKGROUND INFORMATION

The report provides a three year summary of groundwater quality conditions at the closed Area A Landfill, Area B Landfill, and Bluebird Ridge Recycling and Disposal Facility (BRRDF) Landfill, located in Marathon County, for the years 2017 through 2019. Marathon County Solid Waste Department (MCSWD) owns, operates, and manages the closed Area A Landfill, Area B Landfill and the BRRDF, with MCSWD staff directing all facets of the operation. Area A is a 27.3-acre closed landfill that accepted and disposed of waste from December 1980 until December 1993. Area B Landfill is a 32-acre active landfill which opened in 1993 and is located north of Area A. The Area B Landfill is scheduled for closure in 2021. The BRRDF began receiving waste in July 2014 and is situated on the southeast corner of the 574 acre site owned by the MCSWD. The MCSWD property is located along the north side of State Highway 29, in the Town of Ringle, Wisconsin.

This report meets the three year groundwater assessment requirements of Condition No. 35 of the Wisconsin Department of Natural Resources (WDNR) January 31, 2013 Plan of Operation for BRRDF. The content of this report is also based on subsequent correspondence between MCSWD personnel and the WDNR. Condition No. 35 states:

Annual reports should include an assessment every third year of groundwater and other environmental monitoring data that may identify trends supporting conclusions or recommendations in the annual report, explain outliers in data, or reason other observations the data presents with regard to the landfill and its impact locally on the environment. This report should provide an evaluation of the changes in groundwater characteristics or quality at the facility. The evaluation should address, at a minimum, groundwater flow direction, velocity, trends in groundwater quality, as well as the need for additional monitoring program improvements and the need for remedial actions, if warranted. (The RD&D and OSP plans require annual reporting that maybe summarized for the gas and leachate systems environmental monitoring assessment). A professional geologist shall certify this environmental monitoring assessment in accordance with s. NR 500.05, Wis. Adm. Code.

#### 1.2 GROUNDWATER MONITORING AND ANALYSIS

MCSWD has a total of 90 groundwater monitoring wells for monitoring; 45 wells are monitored as part of the Area A Landfill monitoring network, 25 wells are monitored as part of the Area B Landfill monitoring network, and 20 wells are monitored as part of the BRRDF monitoring network. Of the 90 groundwater monitoring wells, 4 wells are monitored for both the Area A Landfill and the BRRDF. The groundwater monitoring regimen for Area A and Area B Landfills were conducted according to the February 7, 2013 WDNR approved groundwater, lysimeter and leachate monitoring plans. The groundwater monitoring program for BRRDF was conducted according to the January 31, 2013 WDNR approved environmental monitoring plan. Per the approved monitoring plans, the groundwater wells in the approved monitoring plans are sampled semiannually in April and October. Sampling and laboratory analysis are conducted by personnel from Northern Lake Service, Inc. (NLS) of Crandon, Wisconsin.

Six additional groundwater monitoring wells were installed for the BRRDF in 2018 as part of the proposed expansion of BRRDF but have not yet been included in the approval environmental monitoring program for BRRDF. The baseline analytical results from these 6 new expansion wells are not discussed as part of this three year groundwater assessment.

Last Revised Date: March 20, 2020

The analytical results were compared to Wisconsin Administrative Code (WAC) NR 140 Groundwater Quality Standard Preventive Action Limits (PALs) and Enforcement Standards (ESs) and well-specific indicator PALs provided in the respective approved monitoring plans. Sampling results with concentrations at or above the NR 140 Groundwater Quality Standards or the well-specific indicator PALs during the 2017 to 2019 period are summarized on Table 1 and Table 2, respectively. Groundwater monitoring results and exceedances were submitted electronically by NLS to the WDNR's Groundwater Environmental Monitoring System (GEMS) at the conclusion of each sampling period. The following is a summary of the groundwater quality exceedances reported at each respective landfill from 2017 to 2019.

#### 2.0 GROUNDWATER QUALITY ANALYSIS

#### 2.1 AREA A LANDFILL

WDNR License No. 2892

Exceedances of the NR 140 Groundwater Quality Standards were reported for several volatile organic compounds (VOCs) in groundwater samples collected at Area A downgradient monitoring wells R12R, R13R, R38, R38A, R47 and R50P during the 2017 to 2019 period. The following volatile organic compounds (VOCs) were reported above their respective NR 140 PAL at the monitoring wells noted on Table 1: tetrachloroethene (PCE), trichloroethene (TCE) and vinyl chloride (VC). Concentrations of PCE and TCE decreased in samples collected from well R12R during 2017-2019. At well R13R, concentrations of PCE have exhibited a decreasing trend since 2011. Concentrations of TCE at R13R have shown a decreasing trend since 2013 but has recently exhibited some upward fluctuations in concentrations. VC concentrations at well R13R have been decreasing since 2011 but has recently exhibited one upward fluctuation in concentration (October 2019) during the three year period. The most elevated concentrations of these constituents on the MCSWD property are reported at R13R. Concentrations of PCE remained relatively stable while TCE concentrations decreased in samples collected from well R38. Well R38A reported a single PCE exceedance (April 2018) from 2017 to 2019. Concentrations for PCE and TCE in samples collected from well R47 have exhibited decreasing trends during the three year period. At piezometer R50P, concentrations of PCE have remained relatively stable to slightly decreasing while TCE concentrations have decreased from 2017 to 2019. The groundwater quality exceedances are associated with a plume of chlorinated VOCs that extends from the eastern side the Area A Landfill to the southeast toward well R-66WT where it generally dissipates. This plume of VOC impacted groundwater has been documented since the late 1980s and the margins of the plume appear to be generally stationary or receding based on the well-specific VOC groundwater trends and results at wells adjacent to the plume.

Specific conductance has exceeded the well-specific PAL in samples collected from well R35 during each monitoring event for this three year period (see Table 2). Specific conductance at well R35 has doubled in concentration since 2016. Specific conductance measurements in monitoring wells (R36, R41, R59WT and R59P) in the vicinity of well R35 are also exhibiting increasing trends. The most elevated specific conductance readings in the on-site monitoring wells have been recorded at well R13R which is located between the Area A Landfill and monitoring well R35. Specific conductance at wells R59WT and R59P, which located are downgradient of well R35, have also more than doubled since 2015. Hardness and alkalinity are also increasing at wells R59WT and R59P. An apparent groundwater mound centered around well R35 appears to correlate with a bedrock ridge or pinnacle in this area. Yet the elevated specific conductance concentrations appear to be migrating through this mound from the well R13R area. Despite the migration of the specific conductance in this area, PCE and TCE have not been detected in samples collected at wells R35, R59WT or R59P. The cause of the increasing specific conductance is somewhat unclear given the groundwater mound in this area but likely correlates with the elevated concentrations reported at well R13R. The groundwater samples collected at R13R have been impacted by the plume associated with the Area A Landfill.

#### 2.2 AREA B LANDFILL

WDNR License No. 3338

Groundwater quality in the vicinity of the Area B Landfill generally remains consistent with historical data with the following exceptions. Exceedances of the WAC NR 140 PAL were reported for nitrite + nitrate as nitrogen (N+N) in samples collected from downgradient wells R27, R45 and R52 during the three year period. The concentrations of N+N at well R27 have exhibited an increasing trend since 2013 and reached a historical high concentration for

this well in October 2019. Historical N+N concentrations collected from well R45 initially rose in 2004 and has fluctuated between 0.6 and 2.2 mg/L but has generally remained below the PAL of 2.0 mg/L. More recent concentrations at R45 have met or marginally exceeded the PAL in October 2017 and from October 2018 to October 2019. N+N concentrations in samples collected from well R52 have been historically below the PAL with a one-time exceedance at the PAL in October 2017.

Analytical data from groundwater monitoring wells located upgradient of the Area B Landfill (R20AR and R30) were reviewed to assess historical N+N concentrations. N+N concentrations in samples collected from these upgradient wells were detected below the PAL of 2.0 mg/L. N+N concentrations in samples collected from wells R20AR and R30 have historically been reported below 1.0 mg/L. However, N+N has exhibited an increasing trend in samples collected from upgradient well R20AR but the concentrations remain below the downgradient well concentrations and the NR 140 PAL.

The Private Wells Water Quality viewer available on the UW Stevens Point Center for Watershed Science and Education website (<a href="https://www.uwsp.edu/cnr-ap/watershed/Pages/wellwaterviewer.aspx">https://www.uwsp.edu/cnr-ap/watershed/Pages/wellwaterviewer.aspx</a>) showed background nitrate concentrations upgradient and downgradient of the Area B Landfill were at or below 2.0 mg/L. However, nitrate concentrations upgradient of the Area B Landfill by approximately 3 miles have been reported greater than 10 mg/L.

Based on the levels of N+N at monitoring wells upgradient of the Area B Landfill, the concentrations of N+N in samples collected from the monitoring wells downgradient of the Area B Landfill are likely attributable to activities associated with the Area B Landfill.

An exceedance of the well specific standard for hardness occurred in the sample collected from downgradient well R52 in October 2017. Concentrations of hardness at well R52 have exhibited a slight increasing trend since approximately 2009. However, concentrations since 2015 have stabilized and have mostly remained below the well-specific PAL of 290 mg/L. The hardness exceedance appears to have been an anomaly.

#### 2.3 BLUEBIRD RIDGE RDF

#### WDNR License No. 4228

As noted above under the Area A Landfill discussion, PCE and TCE concentrations exceeded the NR 140 PAL in samples collected from piezometer R50P during the three year period. The well is located to the southwest/sidegradient of the BRRDF and concentrations of these constituents are associated with the documented plume of chlorinated constituents that originated from the area east of the Area A Landfill. This well is sampled jointly for both the Area A Landfill and the BRRDF.

Alkalinity, hardness and specific conductance were reported above well-specific PAL standards in samples collected at wells R59WT and R59P during the three year period. One-time exceedances also occurred for hardness at wells R54, R55WTR and R68P from 2017 to 2019. The hardness concentrations and specific conductance readings at wells R59WT and R59P have been increasing since 2015. Concentrations of alkalinity and specific conductance readings at well R13R immediately downgradient of the Area A Landfill are two to three times higher than the levels of these constituents at R59WT. Well R35, located between R13R and R59WT and hydraulically upgradient of well R59WT, has also exhibited increasing specific conductance concentrations since 2016 with levels slightly higher than those reported at R59WT. Well R59WT is situated on the opposite side of a groundwater mound that includes well R13R and may be hydraulically downgradient of the area near R13R. The cause of the elevated specific conductance and other indicator parameters are likely associated with the elevated plume of specific conductance that appears to be migrating to the southeast. No VOCs have been detected for the constituents of concern (associated with the Area A contaminant plume) in samples collected from wells R59WT and R59P or well R35.

#### 3.0 GROUNDWATER ELEVATIONS AND FLOW ANALYSIS

Groundwater elevations are measured across the site during the semiannual groundwater monitoring events. Over the 2017-2019 period, the groundwater flow direction was consistent with historical data. In general, the direction of shallow groundwater flow across the site is from the northwest to the southeast. A northwest/southeast trending groundwater mound occurs along a bedrock ridge that extends from the eastern portion of the Area A Landfill toward the northwestern edge of the BRRDF. Along this mound, the groundwater appears to flow to the northeast (north of the mound) and to the southwest (south of the mound) before gradually turning to the east (north of the mound) and to the southeast (south of the mound). The localized groundwater flow direction under the Area B Landfill is generally west-northwest to east-southeast, which is likely a result of the groundwater mound discussed above, located south of the Area B Landfill. The direction of shallow groundwater flow under the BRRDF is generally northwest to southeast.

The water table elevations recorded across the site in 2019 were generally higher (approximately 2-5 feet) compared to the previously recorded high water table elevations in April 2016. The groundwater velocity calculated for the 2017 to 2019 period was consistent with historical data. Based on the October 2019 elevation data, groundwater velocities calculated across the MCSWD property ranged from approximately 0.08 to 0.25 ft/day. The groundwater velocity was approximately 0.08 ft/day across the majority of the site, approximately 0.12 ft/day across the BRRDF area and approximately 0.25 ft/day across the area west of the BRRDF.

#### 4.0 OTHER ENVIRONMENTAL MONITORING

#### 4.1 GAS MIGRATION MONITORING

A review of gas probe measurements collected quarterly during the three year period from 2017 through 2019 at the BRRDF, Area A and Area B Landfills indicate no evidence of gas migration based on the methane readings. One gas probe (GP-101 of BRRDF) reported a percent methane reading of 0.1% on January 23, 2019 but all other methane readings from 2017 through 2019 were non-detectable.

#### 4.2 LEACHATE MONITORING

The leachate monitoring regimen for Area A and Area B Landfills were conducted according to the February 7, 2013 approved environmental monitoring plans. The leachate monitoring program for BRRDF was conducted according to the January 31, 2013 approved environmental monitoring plan. Measurements and sampling results of the leachate monitoring network during the three year period were consistent with historical data.

#### 5.0 SUMMARY AND RECOMMENDATIONS

Most of the reported exceedances of the WAC NR 140 Groundwater Quality Standards at the three landfills occur in samples collected from the Area A Landfill monitoring wells. The constituents are associated with the plume of chlorinated compound impacted groundwater that has been present since the late 1980s. The margins of the plume are stationary to receding based on PCE and TCE results at wells on the plume periphery. The overall general concentrations of health-related constituents reported at wells within the core of the plume are also stable to decreasing.

N+N exceedances of NR 140 Groundwater Quality Standards at two Area B Landfill downgradient wells have continued during the three year period. Upgradient wells R20AR and R30 have reported historical N+N concentrations below 1.0 mg/L. The upgradient well R20AR has exhibited an increasing trend in N+N concentrations but the concentrations are still below the downgradient well concentrations and the NR 140 PAL. As a result, the elevated N+N downgradient of the Area B Landfill appears to be attributable to the Area B Landfill. The N+N concentrations downgradient of the Area B Landfill will continue to be monitored to further assess the current trends.

Indicator parameters hardness, alkalinity and specific conductance concentrations are exhibiting increasing trends at the BRRDF upgradient well nest R59WT/P. Wells upgradient of R59WT/P include the Area A Landfill wells R13R and R35. Well R35 has also reported well-specific exceedances for specific conductance with an increasing trend in specific conductance concentrations. Well R13R has recorded specific conductance between 1,310 to 1,410 umho/cm during the three year period. The increase in concentrations at the R59WT/P well nest may be associated with the elevated readings for these parameters occurring upgradient of this well nest in the VOC plume.

Based on the data collected through 2019, ongoing monitoring in accordance with each landfill's WDNR approved monitoring program is recommended. Additional analysis of the groundwater quality was submitted as part of the Proposed BRRDF Expansion Feasibility Report in February 2019 and subsequent addendums in November 2019 and March 2020.

#### 6.0 LIMITATIONS

The work product included in the attached was undertaken in full conformity with generally accepted professional consulting principles and practices and to the fullest extent as allowed by law we expressly disclaim all warranties, express or implied, including warranties of merchantability or fitness for a particular purpose. The work product was completed in full conformity with the contract with our client and this document is solely for the use and reliance of our client (unless previously agreed upon that a third party could rely on the work product) and any reliance on this work product by an unapproved outside party is at such party's risk.

The work product herein (including opinions, conclusions, suggestions, etc.) was prepared based on the situations and circumstances as found at the time, location, scope and goal of our performance and thus should be relied upon and used by our client recognizing these considerations and limitations. Cornerstone Environmental Group, LLC shall not be liable for the consequences of any change in environmental standards, practices, or regulations following the completion of our work and there is no warrant to the veracity of information provided by third parties, or the partial utilization of this work product.

#### **TABLES**

Table 1 Marathon County NR 140 Exceedances (2017-2019)

Table 2 Marathon County Well-Specific Exceedances (2017-2019)

Table 1
Parameters that Exceed Current NR 140 Standards
Marathon County Solid Waste Department
Areas A, B, and Bluebird Ridge RDF
2017 - 2019

|                             |        | NR 140 | NR 140 |       |            |        | Data  |            | Area        | Withir |
|-----------------------------|--------|--------|--------|-------|------------|--------|-------|------------|-------------|--------|
| Parameter                   | Unit   | PAL    | ES     | Well  | Date       | Result | Flags | Exceedance | Designation | DMZ    |
| Nitrate+Nitrite (dissolved) | (mg/L) | 2      | 10     | R-27  | 04/18/2017 | 4.7    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 10/17/2017 | 4.3    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 04/18/2018 | 2.2    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 10/23/2018 | 3.6    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 10/14/2019 | 4.8    |       | PAL        | В           | Υ      |
|                             |        |        |        | R-45  | 10/17/2017 | 2.0    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 10/23/2018 | 2.1    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 04/3/2019  | 2.2    |       | PAL        | В           | Υ      |
|                             |        |        |        |       | 10/14/2019 | 2.1    |       | PAL        | В           | Υ      |
|                             |        |        |        | R-52  | 10/16/2017 | 2.0    |       | PAL        | В           | Ν      |
| Tetrachloroethene           | (µg/L) | 0.5    | 5      | R-12R | 04/18/2017 | 1.1    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/17/2017 | 0.57   | J     | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/18/2018 | 0.56   | J     | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/23/2018 | 0.78   | J     | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/3/2019  | 0.71   | J     | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/16/2019 | 0.50   | J     | PAL        | Α           | Υ      |
|                             |        |        |        | R-13R | 04/18/2017 | 4.2    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/17/2017 | 1.7    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/18/2018 | 3.6    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/23/2018 | 3.5    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/3/2019  | 3.5    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/15/2019 | 0.74   | J     | PAL        | Α           | Υ      |
|                             |        |        |        | R-38  | 04/18/2017 | 0.84   |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/17/2017 | 1.0    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/18/2018 | 0.95   |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/23/2018 | 1.1    | J     | PAL        | Α           | Υ      |
|                             |        |        |        |       | 04/3/2019  | 1.2    |       | PAL        | Α           | Υ      |
|                             |        |        |        |       | 10/16/2019 | 0.88   | J     | PAL        | Α           | Υ      |
|                             |        |        |        | R-38A | 04/18/2018 | 0.82   |       | PAL        | Α           | Υ      |
|                             |        |        |        | R-47  | 04/18/2017 | 0.56   | J     | PAL        | Α           | N      |
|                             |        |        |        |       | 10/17/2017 | 0.66   |       | PAL        | Α           | N      |
|                             |        |        |        | R-50P | 04/17/2017 | 0.70   |       | PAL        | A, BRRDF    | Υ      |
|                             |        |        |        |       | 10/16/2017 | 0.80   |       | PAL        | A, BRRDF    | Υ      |
|                             |        |        |        |       | 04/17/2018 | 0.67   |       | PAL        | A, BRRDF    | Y      |
|                             |        |        |        |       | 10/22/2018 | 0.75   | J     | PAL        | A, BRRDF    | Y      |
|                             |        |        |        |       | 04/2/2019  | 0.64   | -     | PAL        | A, BRRDF    | Y      |
|                             |        |        |        |       | 10/14/2019 | 0.57   | J     | PAL        | A, BRRDF    | Y      |

### Table 1 Parameters that Exceed Current NR 140 Standards Marathon County Solid Waste Department Areas A, B, and Bluebird Ridge RDF 2017 - 2019

| _               |        |      | NR 140 |       | _          |           | Data  | _          | Area        | Within |
|-----------------|--------|------|--------|-------|------------|-----------|-------|------------|-------------|--------|
| Parameter       | Unit   | PAL  | ES     | Well  | Date       | Result    | Flags | Exceedance | Designation | DMZ    |
| Trichloroethene | (µg/L) | 0.5  | 5      | R-12R | 4/18/2017  | 1.8       |       | PAL        | Α           | Υ      |
|                 | (10)   |      |        |       | 4/18/2018  | 0.6       | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/23/2018 | 0.86      | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 04/3/2019  | 0.63      | J     | PAL        | Α           | Υ      |
|                 |        |      |        | R-13R | 4/18/2017  | 5.6 / 5.4 |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/17/2017 | 4.6 / 4.5 |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 04/18/2018 | 5.3 / 3.5 |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/23/2018 | 5.1 / 4.8 |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 04/3/2019  | 3.4 / 3.8 |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/15/2019 | 7.2 / 7.2 |       | PAL        | Α           | Υ      |
|                 |        |      |        | R-38  | 04/18/2017 | 1.2       |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/17/2017 | 1.5       |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 4/18/2018  | 0.97      | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/23/2018 | 1.3       | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 04/3/2019  | 1.2       |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/16/2019 | 1.3       | J     | PAL        | Α           | Υ      |
|                 |        |      |        | R-38A | 4/18/2018  | 0.83      | J     | PAL        | Α           | Υ      |
|                 |        |      |        | R-47  | 4/18/2017  | 0.81      | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/17/2017 | 1.5       |       | PAL        | Α           | Υ      |
|                 |        |      |        |       | 4/18/2018  | 0.51      | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/15/2019 | 0.63      | J     | PAL        | Α           | Υ      |
|                 |        |      |        | R-50P | 4/17/2017  | 0.54      | J     | PAL        | A, BRRDF    | Υ      |
|                 |        |      |        |       | 10/16/2017 | 0.56      | J     | PAL        | A, BRRDF    | Υ      |
|                 |        |      |        |       | 04/17/2018 | 0.50      | J     | PAL        | A, BRRDF    | Υ      |
| Vinyl Chloride  | (µg/L) | 0.02 | 0.2    | R-12R | 04/18/2017 | 0.17      | J     | PAL        | Α           | Υ      |
|                 |        |      |        | R-13R | 10/17/2017 | 0.19      | J     | PAL        | Α           | Υ      |
|                 |        |      |        |       | 10/15/2019 | 0.50      |       | PAL        | Α           | Υ      |

Notes:

Prepared by: TD Checked by: LS

<sup>1.</sup> J = Estimated concentration between the limit of detection and limit of quantitation.

<sup>2.</sup> NR 140 PAL = Preventive Action Limit

<sup>3.</sup> NR 140 ES = Enforcement Standard

<sup>4.</sup> DMZ = Design Management Zone. Wells are located within 150 feet of landfill footprint. NR 140 ES does not apply within DMZ per NR 140.22(2)(b)(3).

<sup>5.</sup> A = Area A, B= Area B and BRRDF = Bluebird Ridge Recycling and Disposal Facility

<sup>6.</sup> Dual results per monitoring event reports duplicate sample results.

Table 2
Parameters that Exceed Well Specific Standards
Marathon County Solid Waste Department
Areas A, B, and Bluebird Ridge RDF
2017 - 2019

| Parameter            | Unit        | PAL | ACL | Well   | Date       | Result | Data<br>Flags | Exceedance | Area<br>Designation | Within<br>DMZ |
|----------------------|-------------|-----|-----|--------|------------|--------|---------------|------------|---------------------|---------------|
| Alkalinity           | (mg/L)      | 230 | _   | R-59WT | 04/18/2017 | 270    |               | PAL (I)    | BRRDF               | N             |
|                      | ( 0 )       |     |     |        | 10/17/2017 | 330    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/18/2018 | 320    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/23/2018 | 300    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/3/2019  | 420    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/15/2019 | 420    |               | PAL (I)    | BRRDF               | N             |
|                      |             | 230 | -   | R-59P  | 04/18/2017 | 250    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/17/2017 | 280    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/18/2018 | 290    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/23/2018 | 290    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/3/2019  | 330    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/15/2019 | 380    |               | PAL (I)    | BRRDF               | N             |
| Specific Conductance | (umhos@25C) | 470 | -   | R-59WT | 04/18/2017 | 505    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/17/2017 | 621    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/18/2018 | 614    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/23/2018 | 577    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/3/2019  | 682    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/15/2019 | 712    |               | PAL (I)    | BRRDF               | N             |
|                      |             | 470 | -   | R-59P  | 04/18/2017 | 498    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/17/2017 | 531    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/18/2018 | 522    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/23/2018 | 542    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 04/3/2019  | 593    |               | PAL (I)    | BRRDF               | N             |
|                      |             |     |     |        | 10/15/2019 | 667    |               | PAL (I)    | BRRDF               | N             |
|                      |             | 510 | -   | R-35   | 04/18/2017 | 628    |               | PAL (I)    | Α                   | Υ             |
|                      |             |     |     |        | 10/17/2017 | 559    |               | PAL (I)    | Α                   | Υ             |
|                      |             |     |     |        | 04/18/2018 | 553    |               | PAL (I)    | Α                   | Υ             |
|                      |             |     |     |        | 10/23/2018 | 718    |               | PAL (I)    | Α                   | Υ             |
|                      |             |     |     |        | 04/3/2019  | 772    |               | PAL (I)    | Α                   | Υ             |
|                      |             |     |     |        | 10/15/2019 | 774    |               | PAL (I)    | Α                   | Υ             |

Table 2
Parameters that Exceed Well Specific Standards
Marathon County Solid Waste Department
Areas A, B, and Bluebird Ridge RDF
2017 - 2019

|           |        |     |     |         |            |        | Data  |            | Area        | Within |
|-----------|--------|-----|-----|---------|------------|--------|-------|------------|-------------|--------|
| Parameter | Unit   | PAL | ACL | Well    | Date       | Result | Flags | Exceedance | Designation | DMZ    |
|           | ( (1)  | 050 |     | D 00D   | 10/10/0017 | 000    |       | DAL (I)    | 22225       |        |
| Hardness  | (mg/L) | 250 | -   | R-68P   | 10/18/2017 | 260    |       | PAL (I)    | BRRDF       | N      |
|           |        | 230 | -   | R-59WT  | 04/18/2017 | 300    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/17/2017 | 360    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 04/18/2018 | 360    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/23/2018 | 360    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 04/3/2019  | 420    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/15/2019 | 470    |       | PAL (I)    | BRRDF       | N      |
|           |        | 230 | -   | R-59P   | 04/18/2017 | 280    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/17/2017 | 310    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 04/18/2018 | 310    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/23/2018 | 340    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 04/3/2019  | 360    |       | PAL (I)    | BRRDF       | N      |
|           |        |     |     |         | 10/15/2019 | 430    |       | PAL (I)    | BRRDF       | N      |
|           |        | 420 | -   | R-55WTR | 04/19/2018 | 420    |       | PAL (I)    | BRRDF       | N      |
|           |        | 290 | -   | R-54    | 04/4/2019  | 290    |       | PAL (I)    | BRRDF       | Υ      |
|           |        | 290 | -   | R-52    | 10/16/2017 | 300    |       | PAL (I)    | В           | N      |

Notes:

Prepared by: TD

1. J = Estimated concentration between the limit of detection and limit of quantitation

Checked by: LS

- 2. PAL (I) = Preventive Action Limit for Indicator Parameters
- 3. ACL = Alternate Concentration Limit
- 4. DMZ = Design Management Zone. Wells are located within 150 feet of landfill footprint. NR 140 ES does not apply within DMZ per NR 140.22(2)(b)(3).
- 5. A = Area A, B= Area B and BRRDF = Bluebird Ridge Recycling and Disposal Facility