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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
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

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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	John Peralta
• Waste Specialist	Justin Brooks
• Intern	Kyle Isakson
• Intern	Lily Koss
• 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

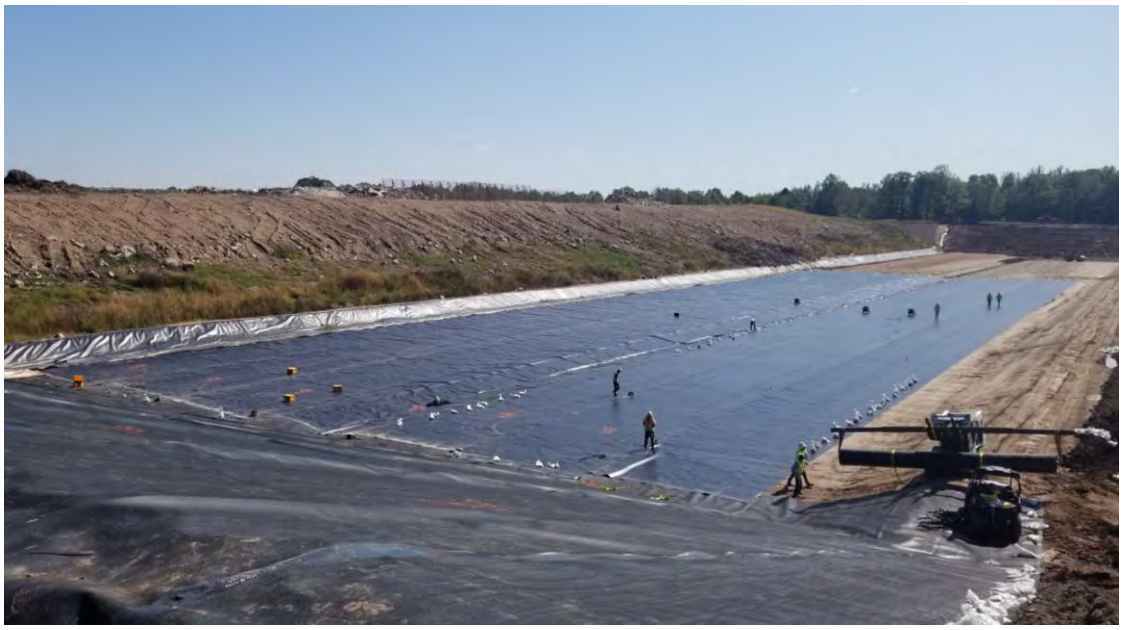
- Daily operations
  - Safety and health management
  - Compaction & cover operations
  - Supplemental cover added to control odors
  - Litter and wind-blown debris control
  - Plowing roads
  - Grading roads
  - Water roads & also add calcium chloride for dust control
  - Vegetation management including screening
  - Intermediate cover placement and maintenance
  - 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 23rd 2020, and approved February 13th 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.

Additional Waste & Recycling Services Information

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 (negative inches water column)	Ave 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	0.8
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 (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
WDNR Parameter #		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 (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
WDNR Parameter #		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 Quarter Probe Data (July 26, 2019):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
WDNR Parameter #		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 Quarter Probe Data (October 14, 2019):

Gas Probe [Depth in feet]	Location	Methane (%CH4 by Vol.)	Oxygen (%O2 by Vol.)	Pressure (inch W.C.)	Notes:
WDNR Parameter #		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 force-main within a side slope riser. A pump within the riser pipes transfers leachate through a force-main 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:

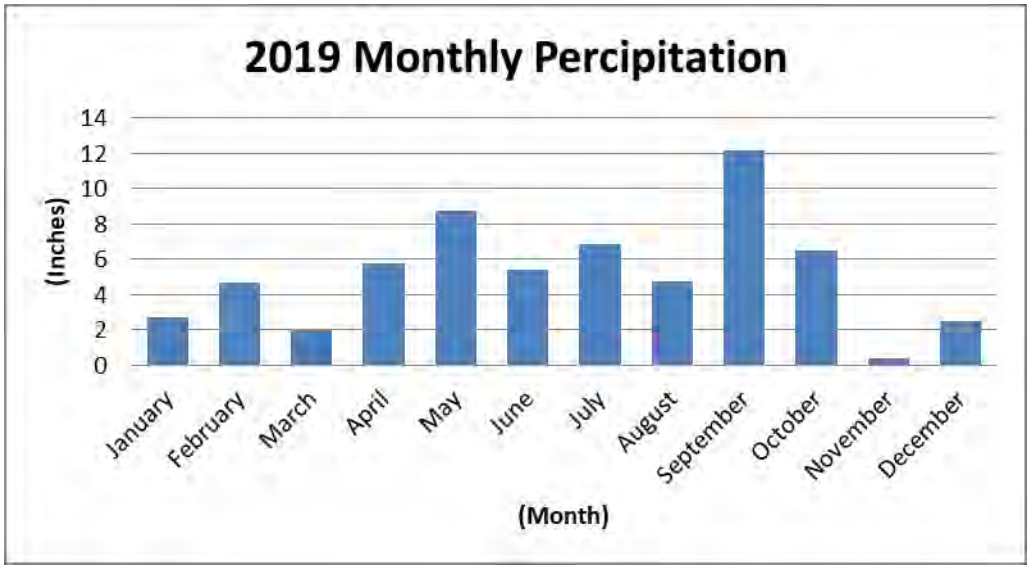
Leachate Volume (gallons) hauled off site:

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 Precipitation (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

** Snow converted to liquid precipitation by dividing by 10*



<u>Leachate Line Jetting</u>

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 Recycling and Disposal Facility - 4228				
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	Depth to Liquid	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	pH
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

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	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

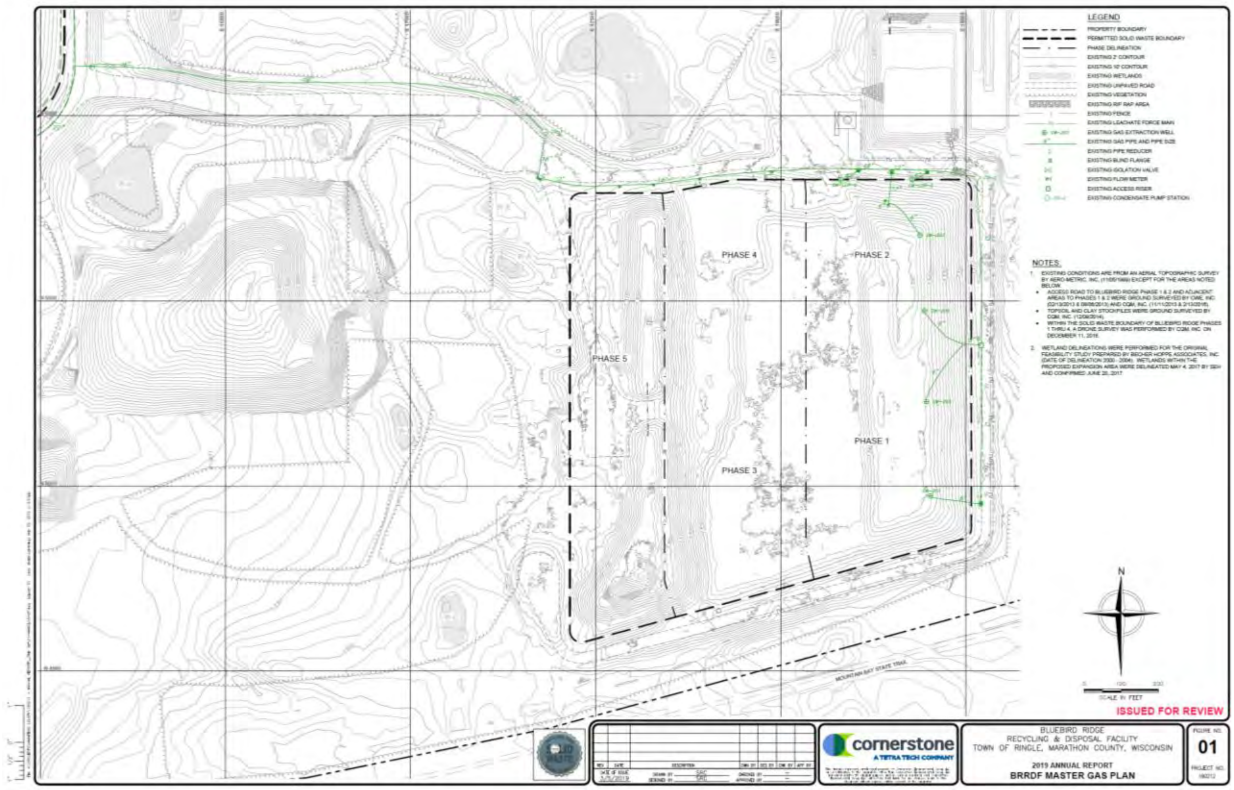
Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	BRRDF	Facility #4228	Exceedances						
Project #	Date	Well #	Parameter	Units	Result	PAL	ES	ACL	Comments
333066	October 14 & 15	R59P	Alkalinity	mg/L	380.00	230.00			well
333066	October 14 & 15	R59P	Conductivity	umhos@25C	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


PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
LEGEND
PROPERTY BOUNDARY
PERMITTED SOLID WASTE BOUNDARY
PHASE DELINEATION
EXISTING 2' CONTOUR
EXISTING 10' CONTOUR
EXISTING WETLANDS
EXISTING UNPAVED ROAD
EXISTING VEGETATION
EXISTING RIP RAP AREA
EXISTING FENCE
EXISTING LEACHATE FORCE MAIN
EXISTING GAS EXTRACTION WELL
EXISTING GAS PIPE AND PIPE SIZE
EXISTING PIPE REDUCER
EXISTING BLIND FLANGE
EXISTING ISOLATION VALVE
EXISTING FLOW METER
EXISTING ACCESS RISER
EXISTING CONDENSATE PUMP STATION
NOTES:
1. EXISTING CONDITIONS ARE FROM AN AERIAL TOPOGRAPHIC SURVEY BY AERO-METRIC, INC. EXCEPT FOR THE AREAS NOTED BELOW.
• ACCESS ROAD TO BLUEBIRD RIDGE PHASE 1 & 2 AND ADJACENT AREAS TO PHASES 1 & 2 WERE GROUND SURVEYED BY OME, INC AND CQM, INC.
• TOPSOIL AND CLAY STOCKPILES WERE GROUND SURVEYED BY CQM, INC.
• WITHIN THE SOLID WASTE BOUNDARY OF BLUEBIRD RIDGE PHASES 1 THRU 4, A DRONE SURVEY WAS PERFORMED BY CQM, INC. ON DECEMBER 11, 2018.
2. WETLAND DELINEATIONS WERE PERFORMED FOR THE ORIGINAL FEASIBILITY STUDY PREPARED BY BECHER HOPPE ASSOCIATES, INC. WETLANDS WITHIN THE PROPOSED EXPANSION AREA WERE DELINEATED MAY 4, 2017 BY SEH AND CONFIRMED JUNE 20, 2017.
N
SCALE IN FEET
ISSUED FOR REVIEW
cornerstone
A TETRA TECH COMPANY
BLUEBIRD RIDGE
RECYCLING & DISPOSAL FACILITY
TOWN OF RINGLE, MARATHON COUNTY, WISCONSIN
2019 ANNUAL REPORT
BRRDF MASTER GAS PLAN
FIGURE NO.
01
PROJECT NO.

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)

Area B

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 1.81 ppm (1)
2. Downwind Reading (highest in 30 seconds): 4.68 ppm (2)

Calculate Background Value: (1)+(2) / 2 = 3.24

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

11. Press (1= Run)

RBR

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 1.63 ppm (1)

2. Downwind Reading (highest in 30 seconds): 23.13 ppm (2)

Calculate Background Value: (1)+(2) = 12.38

2

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

Marathon County Solid Waste

Daily Surface Monitoring Log

Landfill Name: Marathon County Landfill BBR

Performed By: RoN S **Date:** 3/28/19 **Time:** 0800

Temperature: 38 **Sky:** Sunny **Ground:** damp

Barometric Pressure: 29.98 **Barometric Pressure end:** 30.04

Barometric Trend: rising **Wind:** 7 NNW

Location of Leak: No Detects

Garbage Odor

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

_____

_____

_____

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

_____

_____

_____

Time: _____ **Concentration of leak:** _____ **(ppm)**

Marathon County Solid Waste

Daily Surface Monitoring Log

Landfill Name: Marathon County Landfill Area B

Performed By: RW S **Date:** 3/28/19 **Time:** 0800

Temperature: 38 **Sky:** Sunny **Ground:** damp

Barometric Pressure: 29.98 **Barometric Pressure end:** 30.04

Barometric Trend: rising **Wind:** 7 NNW

Location of Leak: No Detects

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

1st Qtr. 2019

Marathon County Solid Waste

SEM Calibration Precision Test Record

Landfill Name: Marathon County LF

Monitoring Date: 3/28/19 Performed By Ron Smith

Expiration Date: June 2019 Time 0800

Instrument Make: Thermo Fisher Scientific Model: TVA1000B

S/N: 0115248137

Measurement #1:

Meter Reading for Zero Air: -0.14 ppm(1)

Meter Reading for Calibration Gas: 494 pmm (2)

Measurement #2:

Meter Reading for Zero Air: -0.10 ppm (3)

Meter Reading for Calibration Gas: 495 ppm (4)

Measurement #3:

Meter Reading for Zero Air: -0.9 ppm (5)

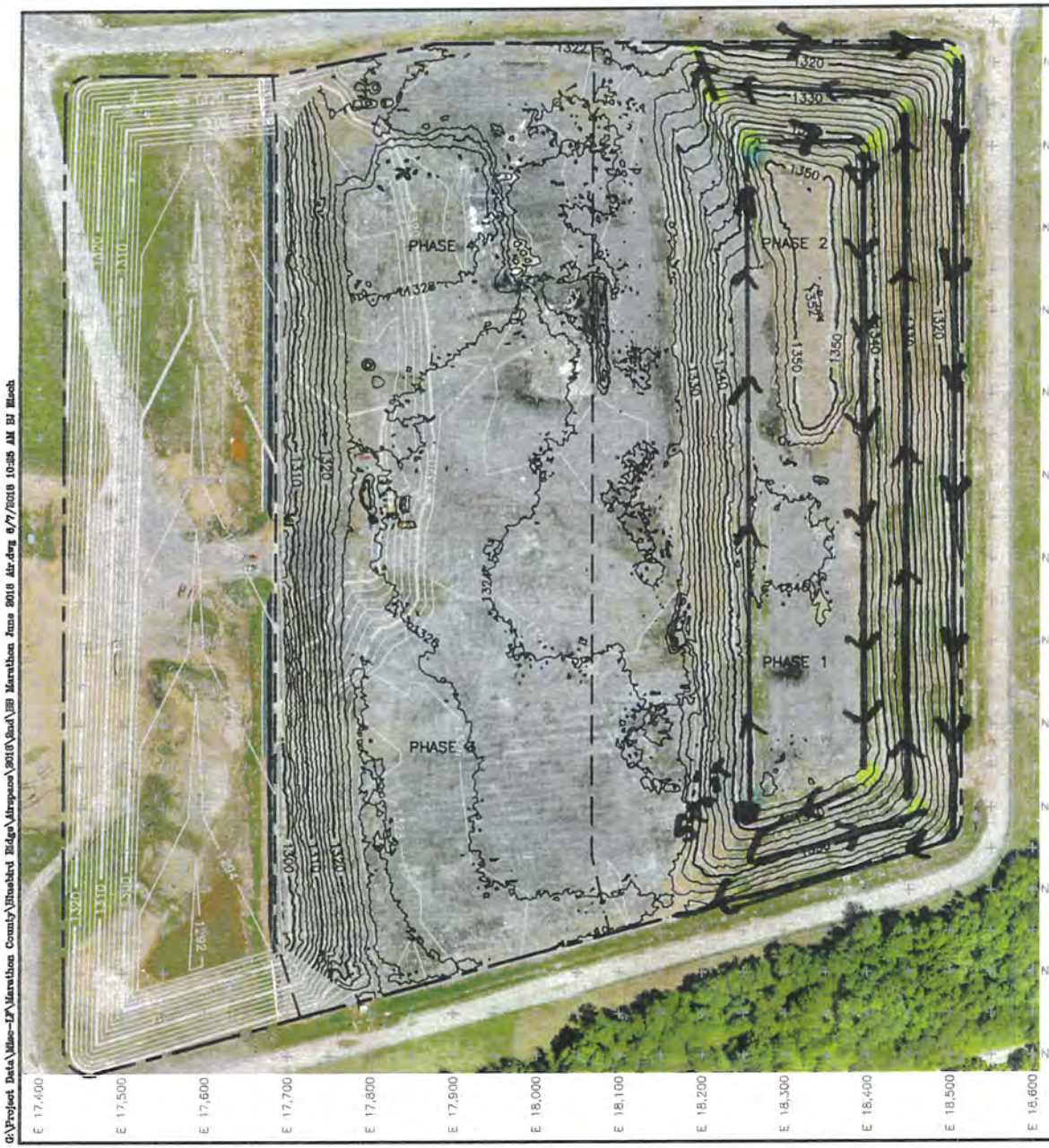
Meter Reading for Calibration Gas: 496 ppm (6)

Calculate Precision:

$$\frac{[500-(2)]+[500-(4)]+[500-(6)]}{3} \times \frac{1}{500} \times \frac{100}{1} \times (.002)$$

= 1 % (must be less than 10%)

3/28/19 No Detects Garbage odor
BBR SEM Trail



G:\Project Data\Misc-EF\Marathon County\Bluebird Ridge\Airspace\2018\Acad\BB Marathon June 2018 Airdrg 8/7/2018 10:25 AM BJ Hoch

2017 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	SECOND QUARTER
Original Surface Model: 12-19-16 Final Surface Model: 3-21-17 Total Cut Volume: 5,282 C.Y. Total Fill Volume: 74,276 C.Y.	Original Surface Model: 3-21-17 Final Surface Model: 6-19-17 Total Cut Volume: 6,918 C.Y. Total Fill Volume: 62,183 C.Y.
THIRD QUARTER	FOURTH QUARTER
Original Surface Model: 6-19-17 Final Surface Model: 9-14-17 Total Cut Volume: 6,697 C.Y. Total Fill Volume: 58,516 C.Y.	Original Surface Model: 9-14-17 Final Surface Model: 12-14-17 Total Cut Volume: 11,395 C.Y. Total Fill Volume: 52,884 C.Y.

2018 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	SECOND QUARTER
Original Surface Model: 12-14-17 Final Surface Model: 3-21-18 Total Cut Volume: 6,191 C.Y. Total Fill Volume: 56,905 C.Y.	Original Surface Model: 3-21-18 Final Surface Model: 6-5-18 Total Cut Volume: 4,071 C.Y. Total Fill Volume: 60,357 C.Y.
THIRD QUARTER	FOURTH QUARTER
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:

LEGEND

N

710 — FINAL SURFACE CONTOURS (6-5-18)

ORIGINAL SURFACE CONTOURS (3-21-18)

LIMIT OF WASTE

PHASE LIMITS

NOTES:

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

EXISTING CONDITIONS

SCALE: 1"=130'	APPROVED BY: APS	DRAWN BY: WBE
DATE: JUNE 2018		REVISED:

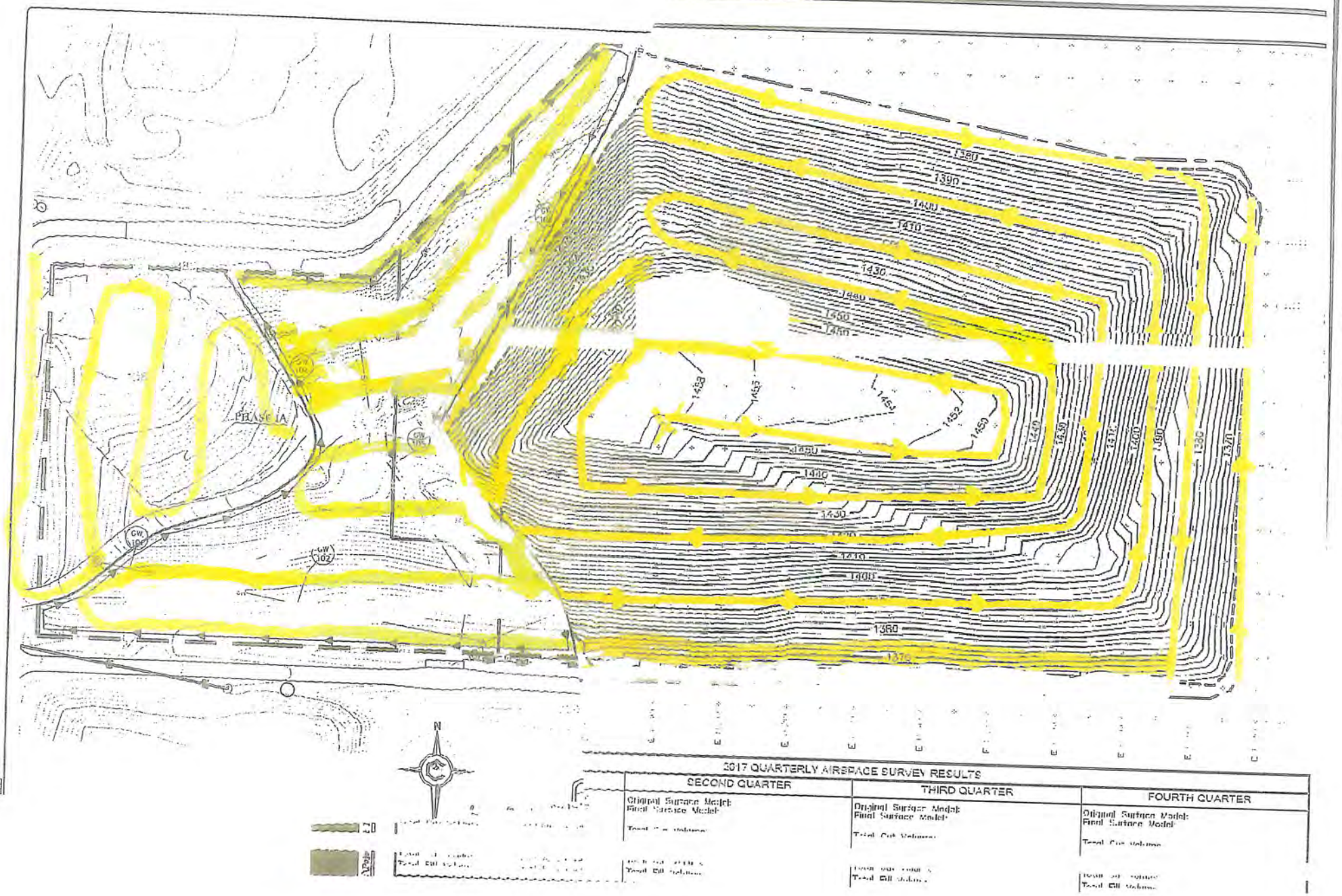
MARATHON COUNTY LANDFILL – BLUEBIRD RINGLE, WISCONSIN

CQM, INC. FIGURE: 1

h 2017 Air.pdf - Adobe Reader

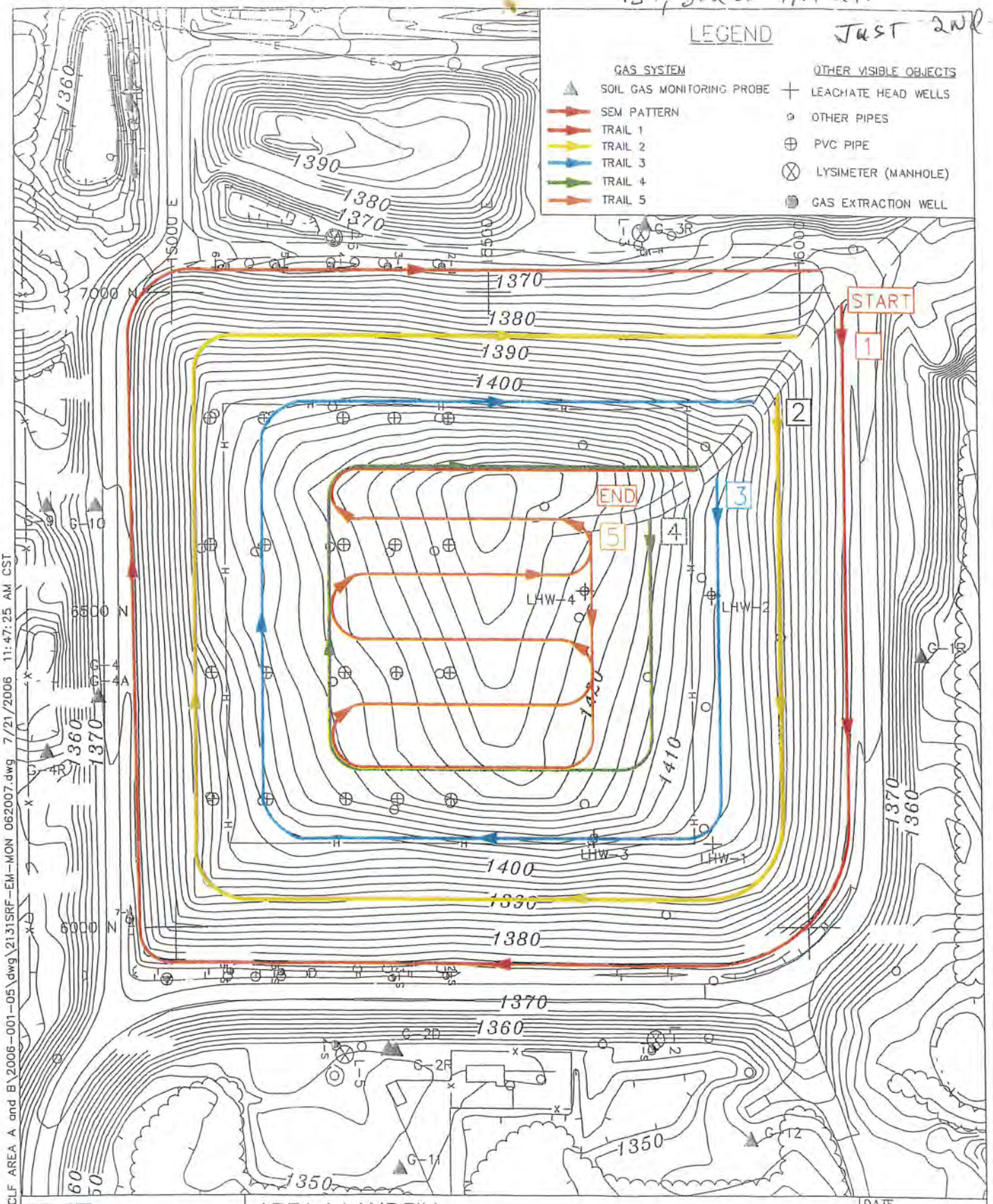
No Detects 3/28/19

r-1 | (1 of 4) | 36%



Not Monitored during 1st, 3rd or 4th Qtr

Just 2nd Qtr.



P:\BHA Projects\MCLF AREA A and B\2006-001-05\dwg\2131SRF-EM-MON 062007.dwg 7/21/2006 11:47:25 AM CST

BECHER-HOPPE ASSOCIATES INC.
ENGINEERS ARCHITECTS SCIENTISTS
330 Fourth Street · P.O. Box 8000 · Wausau, WI · 54402-8000
Tel 715-845-8000 · Fax 715-845-8008 · www.bhassoc.com

AREA A LANDFILL
SURFACE EMISSION MONITORING

MARATHON COUNTY
SOLID WASTE DEPARTMENT

DATE: JULY 2006
SCALE: 1" = 200'
SHEET: 1
INITIALS: KRS
PROJECT: 2006.001.05

1st Qtr 2019

Marathon County Solid Waste

Instrument Response Time Test Record

Landfill Name: Marathon County LF **Monitoring Date:** 3/28/19

Time: 0800 **Instrument Make:** Thermo Fisher Scientific

Model: TVA1000B **S/N:** 0115248137

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: 495 **ppm**

90% of the Stabilized Reading = 445.5 **ppm**

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 3 **seconds (2)**

Measurement #3:

Stabilize Reading Using Calibration Gas: 496 **ppm**

90% of the Stabilized Reading = 446.4 **ppm**

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 4 **seconds (3)**

Calculate Response Time:

(1)+ (2) + (3) = 3.66 **seconds (must be less than 30 sec)**

3

Performed By: Ron 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.**
10. **Press (EXIT) twice to return to main menu**
11. **Press (1= Run)**

Background Determination Procedure

ATB

1. **Upwind Reading (highest in 30 seconds):** 1.65 **ppm (1)**
2. **Downwind Reading (highest in 30 seconds):** 4.83 **ppm (2)**

Calculate Background Value: **(1)+(2)** = 3.24

2

Performed By: R.o.N.S **Time:** 0800 **Date:** 5/20/19

BBR

1. Upwind Reading 0.94 ppm (1)
2. Downwind Reading 7.33 ppm (2)

Calculate Background Value $\frac{1+2}{2} = 4.24$

Marathon County Solid Waste

SEM Calibration Precision Test Record

Landfill Name: Marathon County LF

Monitoring Date: 5/20/19 Performed By Ron Smith

Expiration Date: 9/19 Time 0800

Instrument Make: Thermo Fisher Scientific Model: TVA1000B

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: 0.55 ppm (3)

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~~ 494 RS ppm (6)

Calculate Precision:

$$\frac{[500-(2)]+[500-(4)]+[500-(6)]}{3} \times \frac{1}{500} \times \frac{100}{1} \times (.002)$$

= 1.12 % (must be less than 10%)

Marathon County Solid Waste

Instrument Response Time Test Record

Landfill Name: Marathon County LF **Monitoring Date:** 5/20/19

Time: 0800 **Instrument Make:** Thermo Fisher Scientific

Model: TVA1000B **S/N:** 0115248137

Measurement #1:

Stabilize Reading Using Calibration Gas: 495 ppm

90% of the Stabilized Reading = 445.50 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 3 seconds (1)

Measurement #2:

Stabilize Reading Using Calibration Gas: 494 ppm

90% of the Stabilized Reading = 444.60 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 4 seconds (2)

Measurement #3:

Stabilize Reading Using Calibration Gas: 494 ppm

90% of the Stabilized Reading = 444.60 ppm

Time to reach 90% of stabilized reading after switching from zero air to calibration gas: 3 seconds (3)

Calculate Response Time:

(1)+ (2) + (3) / 3 = 3.33 seconds (must be less than 30 sec)

Performed By: Ron Smith

Marathon County Solid Waste

Daily Surface Monitoring Log

Area A

Landfill Name: Marathon County Landfill

Performed By: Ron S **Date:** 5/20/19 **Time:** 0800

Temperature: 46 **Sky:** Partly Cldy **Ground:** damp

Barometric Pressure: 30.18 **Barometric Pressure end:** 30.16

Barometric Trend: ↓ **Wind:** E 5mph

Location of Leak: No Detect

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

Marathon County Solid Waste

Daily Surface Monitoring Log

Area B

Landfill Name: Marathon County Landfill

Performed By: RonS **Date:** 5/20/19 **Time:** 0800

Temperature: 46 **Sky:** Partly Cldy **Ground:** damp

Barometric Pressure: 30.18 **Barometric Pressure end:** 30.16

Barometric Trend: ↓ **Wind:** E 5mph

Location of Leak: No Detects

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

Time: _____ **Concentration of leak:** _____ **(ppm)**

BBR

Marathon County Solid Waste

Daily Surface Monitoring Log

Landfill Name: Marathon County Landfill

Performed By: RonS **Date:** 5/20/19 **Time:** 0800

Temperature: 46 **Sky:** Partly Cldy **Ground:** damp

Barometric Pressure: 30.18 **Barometric Pressure end:** 30.16

Barometric Trend: ↓ **Wind:** E 5mph

Location of Leak: No Detects

Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

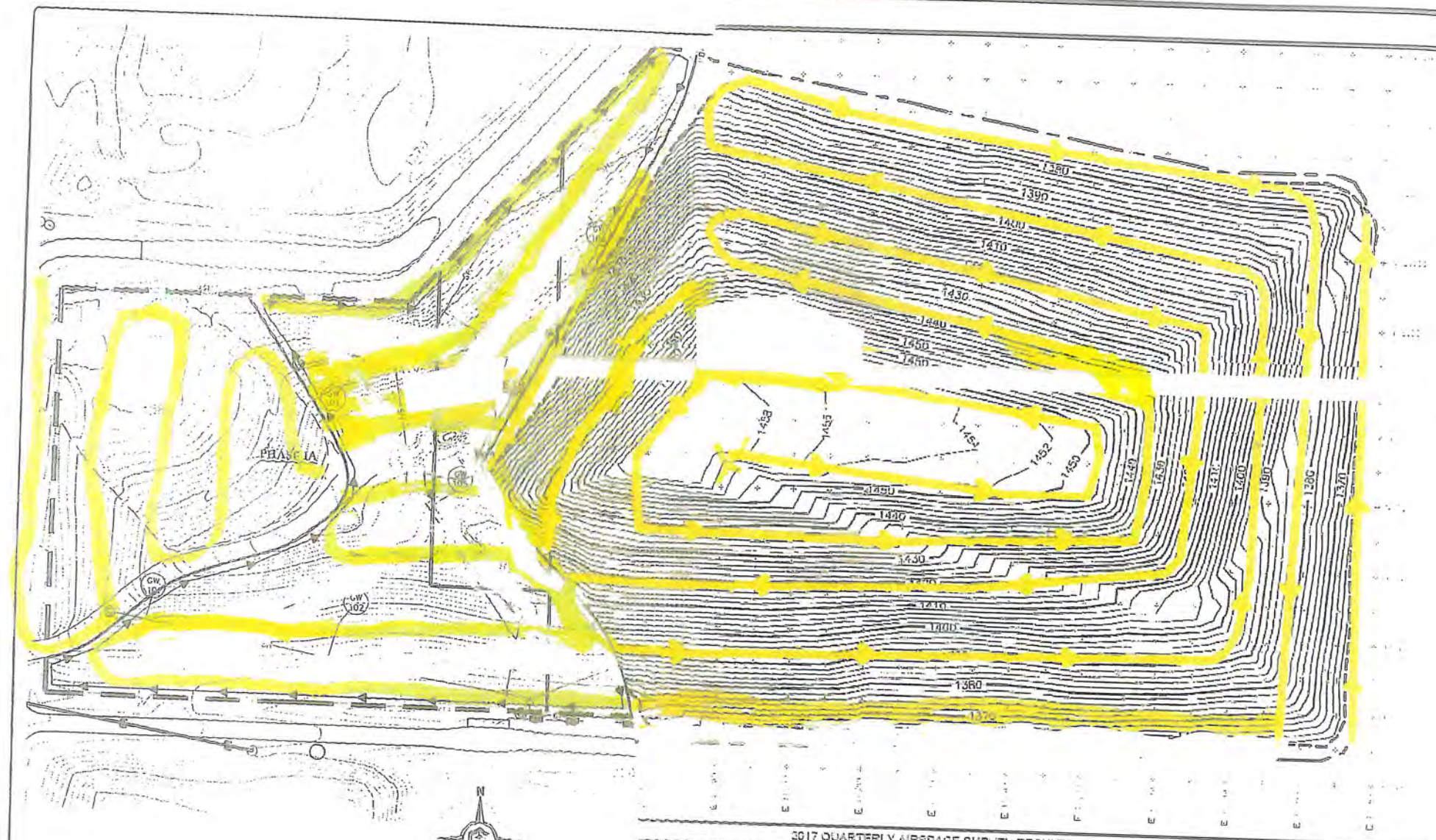
Time: _____ **Concentration of leak:** _____ **(ppm)**

Location of leak:

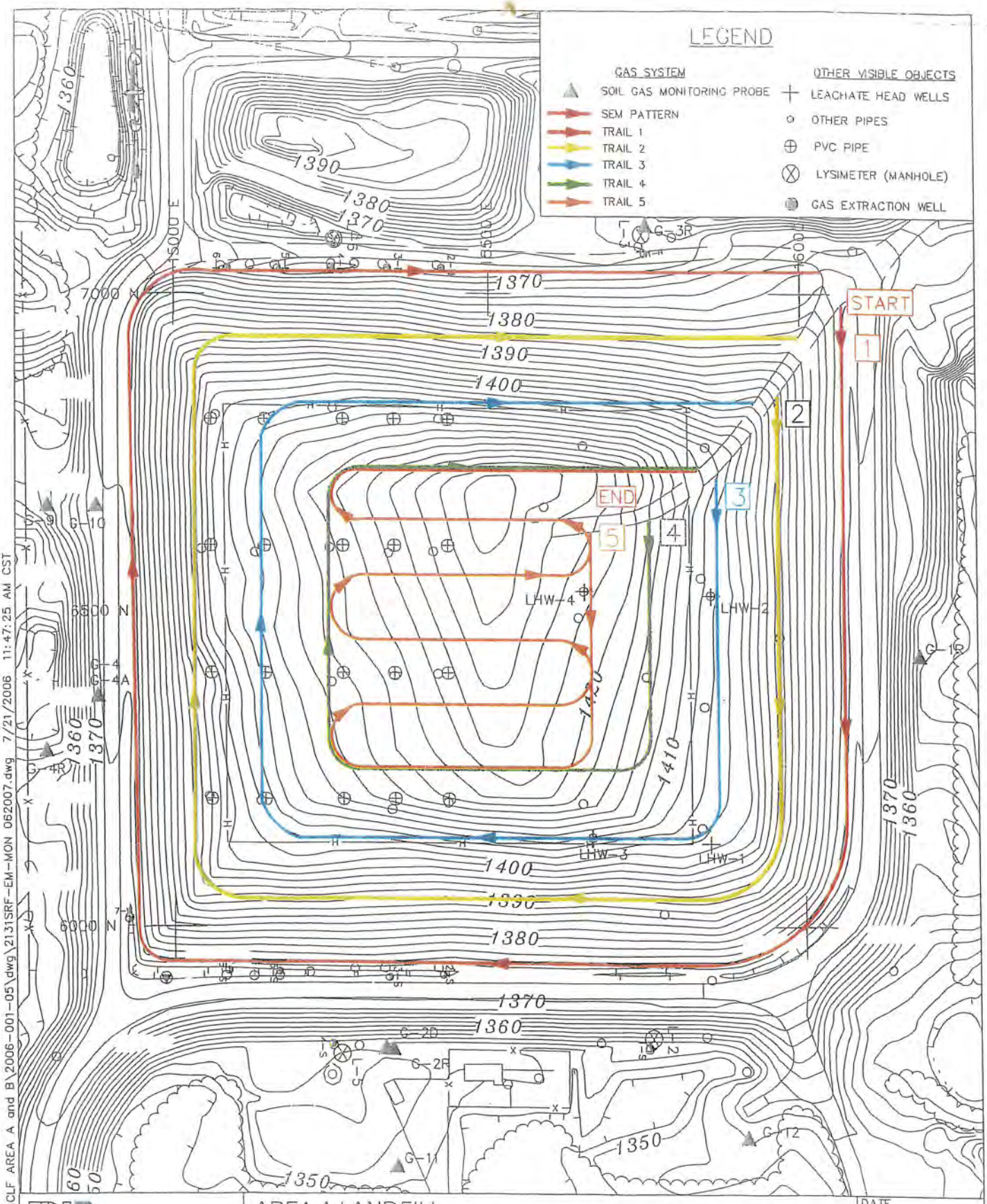
Time: _____ **Concentration of leak:** _____ **(ppm)**

5/20/19

No Detects



2017 QUARTERLY AIRSPACE SURVEY RESULTS			
SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:



P:\BHA Projects\MCLF AREA A and B\2006-001-05\dwg\2131SRF-EM-MON 062007.dwg 7/21/2006 11:47:25 AM CST

BECHER-HOPPE ASSOCIATES INC.
ENGINEERS ARCHITECTS SCIENTISTS
330 Fourth Street · P.O. Box 8000 · Wausau, WI · 54402-8000
Tel 715-845-8000 · Fax 715-845-8008 · www.bhassoc.com

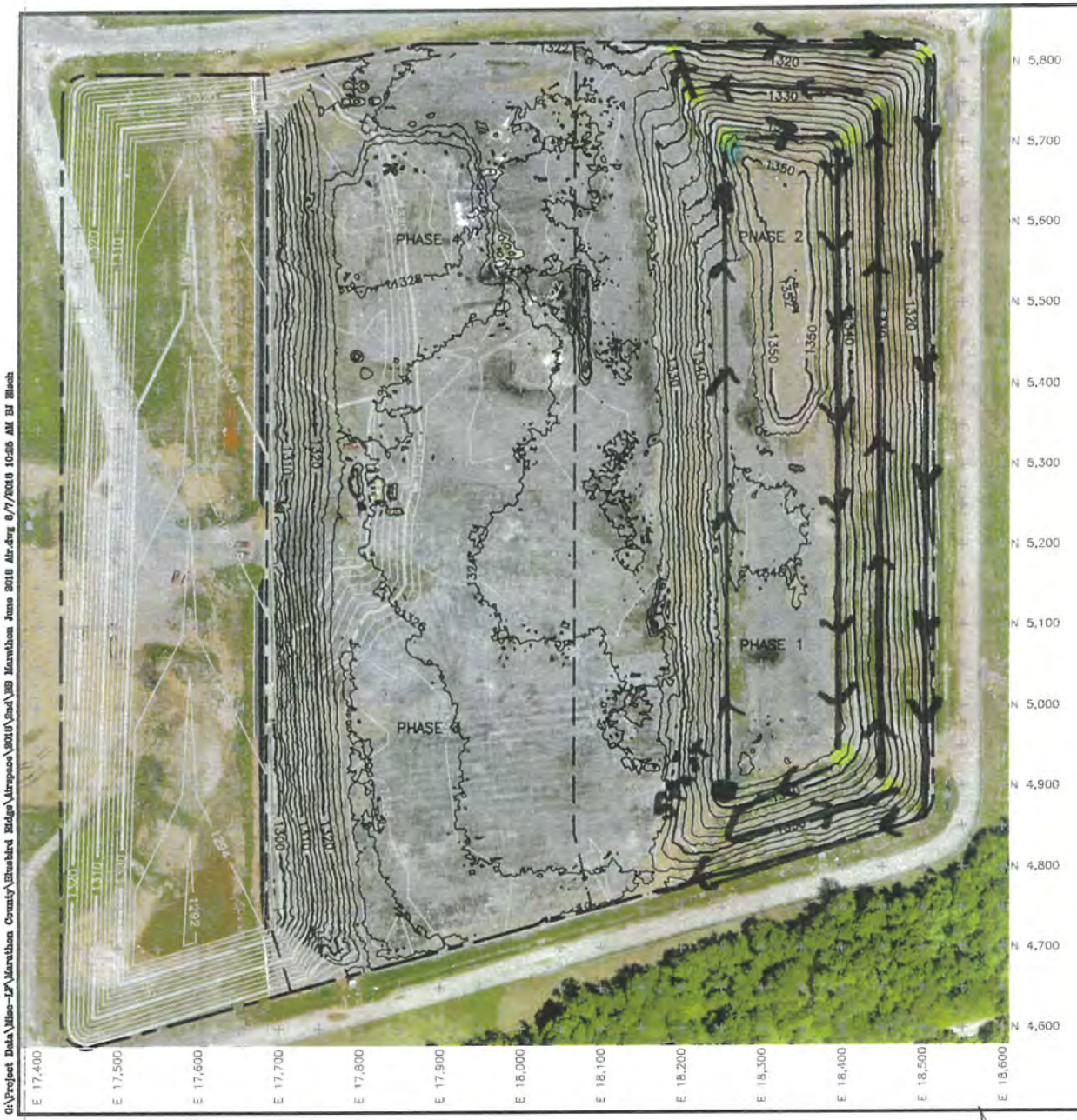
AREA A LANDFILL
SURFACE EMISSION MONITORING

MARATHON COUNTY
SOLID WASTE DEPARTMENT

5/20/19
No Detects

DATE	JULY 2006
SCALE	1" = 200'
SHEET	1
INITIALS	KRS
PROJECT	2006.001.05

BBR SEM Trail



2017 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	**SECOND QUARTER**
Original Surface Model: 12–19–16 Final Surface Model: 3–21–17 Total Cut Volume: 5,282 C.Y. Total Fill Volume: 74,276 C.Y.	Original Surface Model: 3–21–17 Final Surface Model: 6–19–17 Total Cut Volume: 6,918 C.Y. Total Fill Volume: 62,183 C.Y.
THIRD QUARTER	**FOURTH QUARTER**
Original Surface Model: 6–19–17 Final Surface Model: 9–14–17 Total Cut Volume: 6,697 C.Y. Total Fill Volume: 58,516 C.Y.	Original Surface Model: 9–14–17 Final Surface Model: 12–14–17 Total Cut Volume: 11,395 C.Y. Total Fill Volume: 52,884 C.Y.

2018 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	**SECOND QUARTER**
Original Surface Model: 12–14–17 Final Surface Model: 3–21–18 Total Cut Volume: 6,191 C.Y. Total Fill Volume: 56,905 C.Y.	Original Surface Model: 3–21–18 Final Surface Model: 6–5–18 Total Cut Volume: 4,071 C.Y. Total Fill Volume: 60,357 C.Y.
THIRD QUARTER	**FOURTH QUARTER**
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:

LEGEND

N

710 — FINAL SURFACE CONTOURS (6–5–18)

ORIGINAL SURFACE CONTOURS (3–21–18)

LIMIT OF WASTE

PHASE LIMITS

NOTES:

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

EXISTING CONDITIONS		
SCALE: 1"=130'	APPROVED BY: APS	DRAWN BY: WBE
DATE: JUNE 2018		REVISED:
MARATHON COUNTY LANDFILL – BLUEBIRD RINGLE, WISCONSIN		
CQM, INC.		FIGURE: 1

G:\Project Data\Misc-LF\Marathon County\Bluebird Ridge\Airspace\2018\Dwg\MB Marathon June 2018 Air.dwg 6/7/2018 10:25 AM BJ Bloch

No Detects
5/20/19

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): 0.0 ppm (1)**

2. **Downwind Reading (highest in 30 seconds): 0.0 ppm (2)**

Calculate Background Value:

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

Background = 0.0 ppm

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

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: 0.0 **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:

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

= 2.2 % (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

90% of the Stabilized Reading: 432 ppm

Time to Reach 90% of Stabilized Reading After switching from Zero Air to Calibration Gas 3.5 seconds (3)

CALCULATE RESPONSE TIME:

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

= 3.43 SECONDS (MUST BE LESS THAN 30 SECONDS)

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

DAILY SURFACE MONITORING LOG

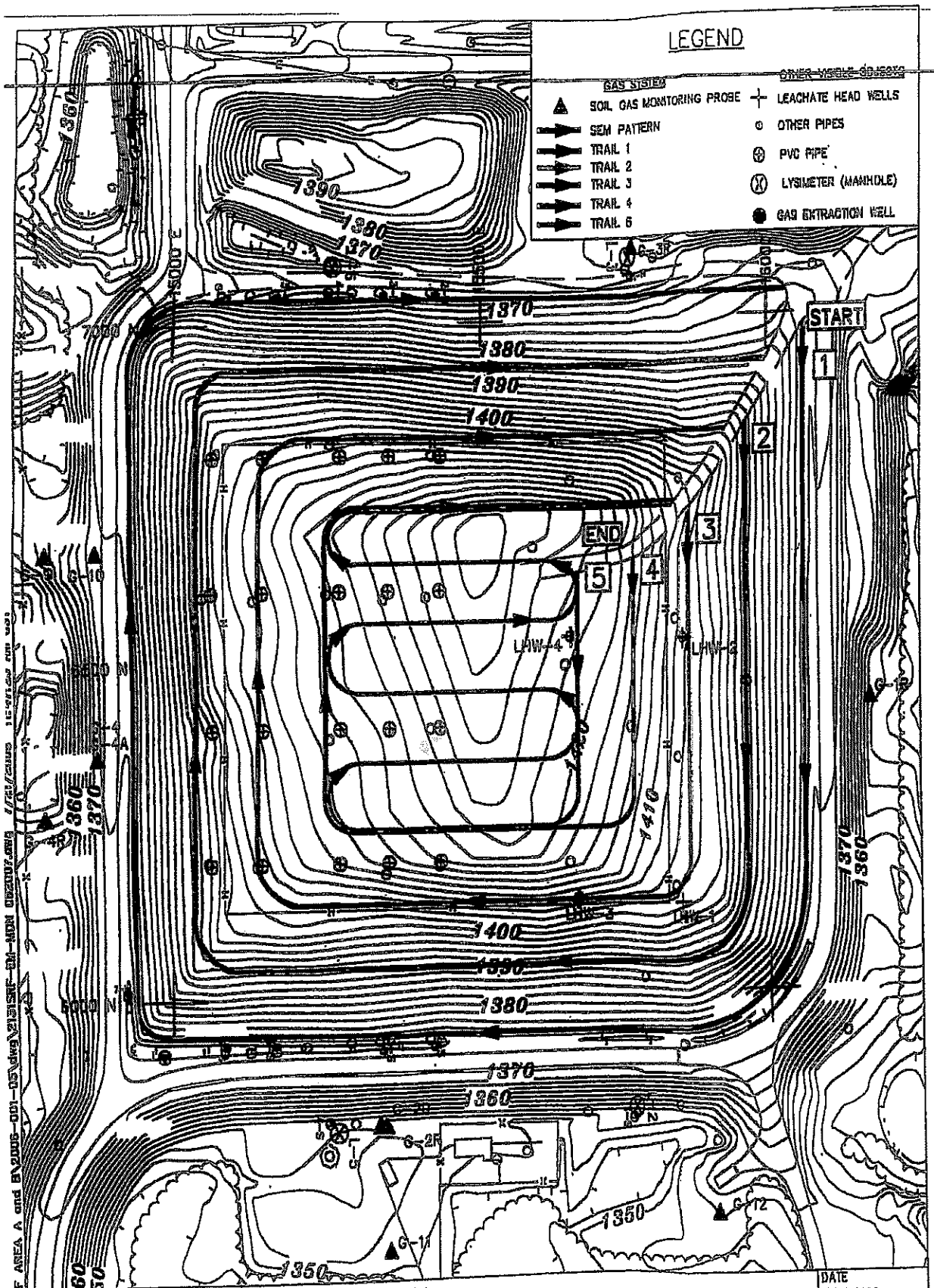
PERFORMED BY: Jalen Thomas

START TIME: 10:00 AM

DATE: 9/4/2019

LANDFILL NAME: Marathon County Landfill - Area A

Location Identifier of Leak	Location and Time	Concentration of Leak (ppm)
No detections on site		



BECHER-HOPPE ASSOCIATES INC.
ENGINEERS ARCHITECTS SCIENTISTS

AREA A LANDFILL
SURFACE EMISSION MONITORING

MARATHON COUNTY

DATE	JULY 2006
SCALE	1"= 200'
SHEET	1
INITIALS	KRS
PROJECT	

6/1/18
No
Detects

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): 0.0 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: Jalen Thomas TIME: 11:00 AM DATE: 9/25/2019

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: 0.0 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: 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: 480 ppm

90% of the Stabilized Reading: 432 ppm

Time to Reach 90% of Stabilized reading After switching from Zero Air to Calibration Gas 3.5 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 3.5 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	Location and Time	Concentration of Leak (ppm)
No detections on site		

n 2017 Airpdf - Adobe Reade

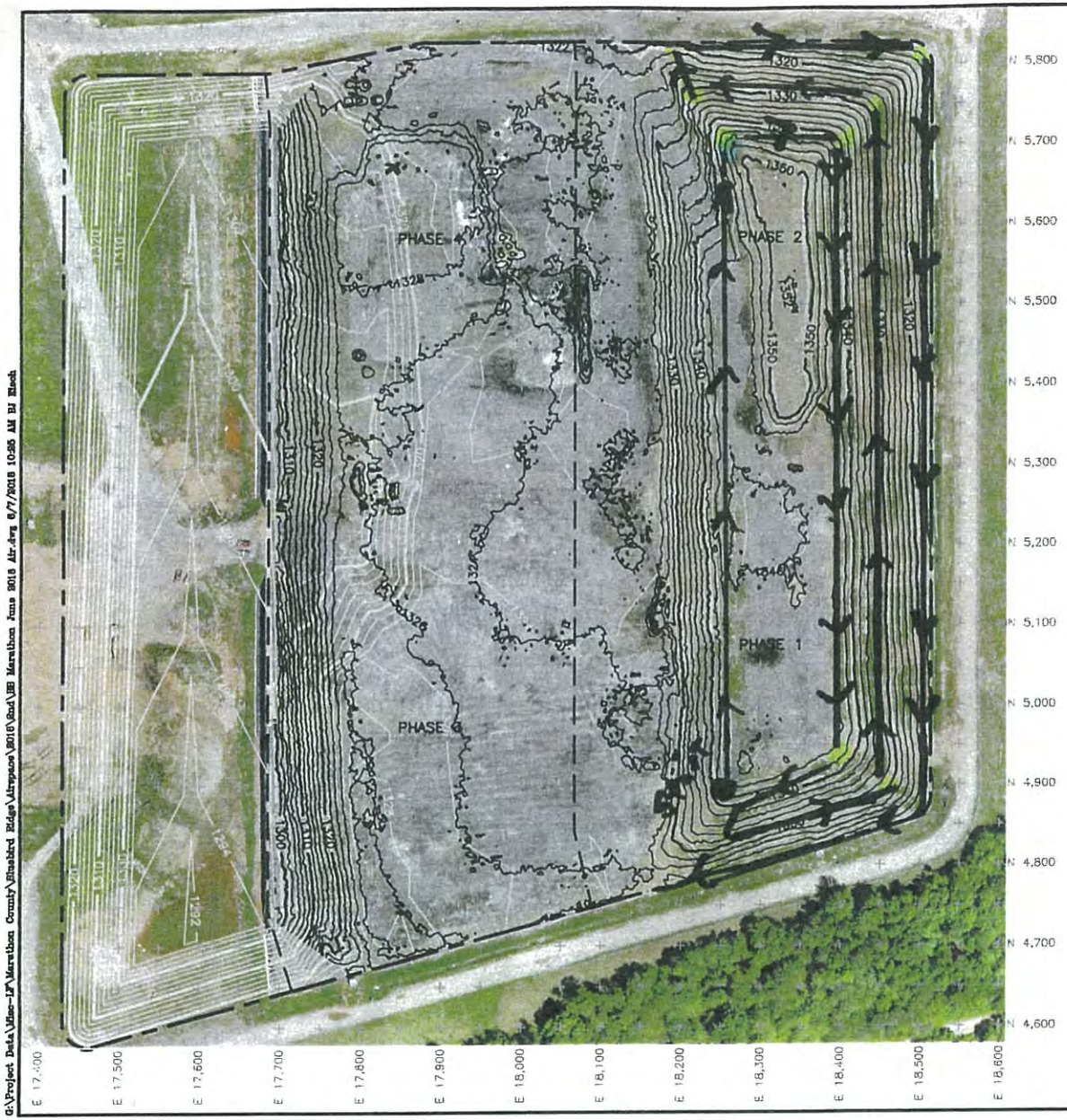
No Detec
8/8/18

r-1 | (1 of 4) | 36%

2017 QUARTERLY AIRSPACE SURVEY RESULTS		
SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:

8/8/18

BBR SEM Trail - No Detects



G:\Project Data\Misc-IP\Marathon County\Bluebird Ridge\Airspace\2016\Dwg\BB Marathon June 2018 Air.dwg 8/7/2018 10:25 AM BJ Bleck

2017 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	SECOND QUARTER
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THIRD QUARTER	FOURTH QUARTER
Original Surface Model: 6-19-17 Final Surface Model: 9-14-17 Total Cut Volume: 6,697 C.Y. Total Fill Volume: 58,516 C.Y.	Original Surface Model: 9-14-17 Final Surface Model: 12-14-17 Total Cut Volume: 11,395 C.Y. Total Fill Volume: 52,884 C.Y.

2018 QUARTERLY AIRSPACE SURVEY RESULTS	
FIRST QUARTER	SECOND QUARTER
Original Surface Model: 12-14-17 Final Surface Model: 3-21-18 Total Cut Volume: 6,191 C.Y. Total Fill Volume: 56,905 C.Y.	Original Surface Model: 3-21-18 Final Surface Model: 6-5-18 Total Cut Volume: 4,071 C.Y. Total Fill Volume: 60,357 C.Y.
THIRD QUARTER	FOURTH QUARTER
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:

LEGEND

N

710 — FINAL SURFACE CONTOURS (6-5-18)

ORIGINAL SURFACE CONTOURS (3-21-18)

LIMIT OF WASTE

PHASE LIMITS

NOTES:

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

EXISTING CONDITIONS

SCALE: 1"=130'	APPROVED BY: APS	DRAWN BY: WBE
DATE: JUNE 2018		REVISED:

MARATHON COUNTY LANDFILL – BLUEBIRD RINGLE, WISCONSIN

CQM, INC. FIGURE: 1

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): 0.0 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: Jalen Thomas TIME: 8:00 AM DATE: 12/24/2019

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: 0.0 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:

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

= 2.8 % (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 3.5 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: 12/24/2019

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

Location Identifier of Leak	Location and Time	Concentration of Leak (ppm)
	N/a	

n 2017 Airpdf - Adobe Reade

No Detec
8/8/18

r-1 | (1 of 4) | 36%

2017 QUARTERLY AIRSPACE SURVEY RESULTS		
SECOND QUARTER	THIRD QUARTER	FOURTH QUARTER
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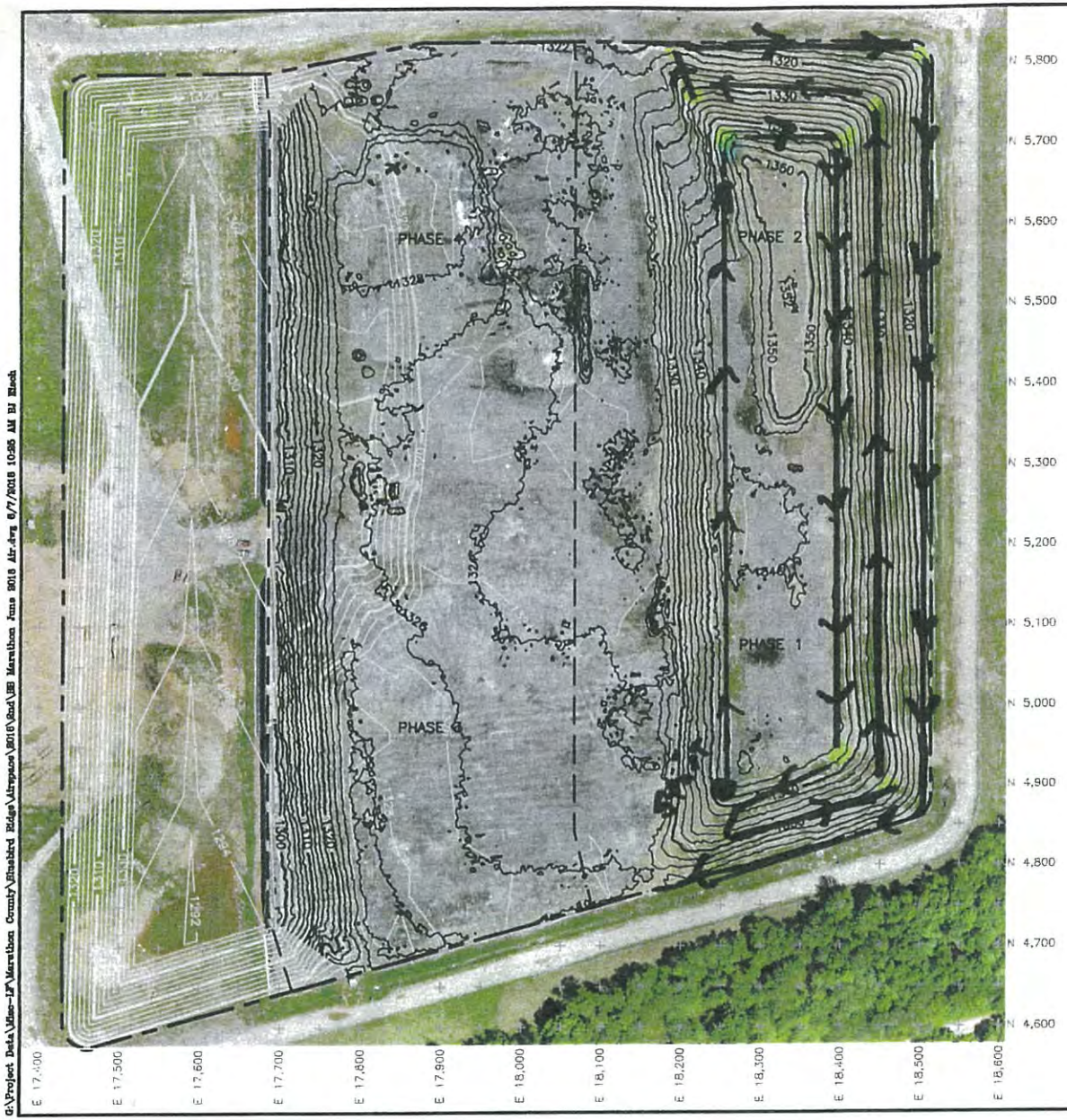
8/8/18

BBR SEM Trail - No Detects



G:\Project Data\Misc-IP\Marathon County\Bluebird Ridge\Airspace\2016\Dwg\BB Marathon June 2018 Air.dwg 8/7/2018 10:25 AM BJ Bleck

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2018 QUARTERLY AIRSPACE SURVEY RESULTS	
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THIRD QUARTER	FOURTH QUARTER
Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:	Original Surface Model: Final Surface Model: Total Cut Volume: Total Fill Volume:

LEGEND

N

710 — FINAL SURFACE CONTOURS (6-5-18)

ORIGINAL SURFACE CONTOURS (3-21-18)

LIMIT OF WASTE

PHASE LIMITS

NOTES:

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

EXISTING CONDITIONS

SCALE: 1"=130'	APPROVED BY: APS	DRAWN BY: WBE
DATE: JUNE 2018		REVISED:

MARATHON COUNTY LANDFILL – BLUEBIRD RINGLE, WISCONSIN

CQM, INC. FIGURE: 1

ATTACHMENT C

2019 LANDFILL GAS MAINLINE TO-15 LAB REPORT

Air TECHNOLOGY Laboratories, Inc.

November 4, 2019

LA Cert #04140
EPA Methods TO3, TO14A, TO15, 25C/3C, RSK-175
TX Cert T104704450-14-6
EPA Methods TO14A, TO15
UT Cert CA0133332015-3
EPA Methods TO3, TO14A, TO15, RSK-175

Tetra Tech
ATTN: Lee Daigle
8413 Excelsior Dr., Suite 160
Madison, WI 53717

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.

AirTECHNOLOGY Laboratories, Inc.

18501 E. Gale Ave., Suite 130
City of Industry, CA 91748
Ph: 626-964-4032
Fx: 626-964-5832

CHAIN OF CUSTODY RECORD

TURNAROUND TIME

Standard ☒ 48 hours ☐
Same Day ☐ 72 hours ☐
24 hours ☐ 96 hours ☐
Other:

DELIVERABLES

EDD ☒ (EDD in EXCEL for LD)
EDF ☐
LEVEL 3 ☐
LEVEL 4 ☐

PAGE: OF

Condition upon receipt:
Sealed Yes ☐ No ☐
Intact Yes ☐ No ☐
Chilled _____ deg C

Project No.:	MCLF - 2019 - VOC
Project Name:	MARATHON CO VOC
Report To:	LEE DAIGLE
Company:	TETRA TECH
Street:	8413 EXCELSIOR DR SUITE 160
City/State/Zip:	MADISON WI 53717
Phone& Fax:	951-236-2526
e-mail:	LEE.DAIGLE@TETRATECH.COM

BILLING

P.O. No.: 10201901 PD 10/25/19
Bill to: Marathon Co. Solid Wast
172900 State Highway 29
Ringle WI

ANALYSIS REQUEST

LAB USE ONLY	SAMPLE IDENTIFICATION	SAMPLE DATE	SAMPLE TIME	MATRIX	CONTAINER TYPE	EPA TO-15	3C + CO				
K101506-01	MAINLINE VOC #1 (N4127)	10/9/19	11:25AM	LFG	C	X	X				
↓ -02	" " #2 (1378)	"	10:08A	"	"	X	X				

	COMPANY	DATE/TIME
AUTHORIZATION TO PERFORM WORK: DAVE HAGENBUCHER	MARATHON CO.	10/9/19
SAMPLED BY: JALEN THOMAS	TETRA TECH	10/9/19

RELINQUISHED BY	DATE/TIME	RECEIVED BY	DATE/TIME
KAY TURGESON	10/10/19	FED EX	
UPS	10/15/19 1140	Kathy Caverly	10/15/19 1140

METHOD OF TRANSPORT (circle one): Walk-In FedEx UPS Courier ATLI Other _____

COMMENTS

TO 15 in ug/L

DISTRIBUTION: White & Yellow - Lab Copies / Pink - Customer Copy

Preservation: **H**=HCL **N**=None / Container: **B**=Bag **C**=Can **V**=VOA **O**=Other

Rev. 03 - 5/7/09

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		K101506-02					
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:	10/17/19 11:57		10/17/19 12:11					
QC Batch No.:	191017GC8A1		191017GC8A1					
Analyst Initials:	CM		CM					
Dilution Factor:	4.4		4.2					
ANALYTE (Units)	**Result**	**RL**	**Result**	**RL**				
Nitrogen (% v/v)	12	4.4	12	4.2				
Oxygen/Argon (% v/v)	ND	2.2	ND	2.1				
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: _____ Date 10-31-19
Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

Client: Tetra Tech
Attn: Lee Daigle
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.:	K101506-01		K101506-02					
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.:	191025MS2A1		191025MS2A1					
Analyst Initials:	AS		AS					
Dilution Factor:	44		42					
ANALYTE	Result ug/L	RL ug/L	Result ug/L	RL ug/L				
Dichlorodifluoromethane (12)	1.0	0.22	1.1	0.21				
Chloromethane	ND	0.18	ND	0.17				
1,2-Cl-1,1,2,2-F ethane (114)	ND	0.31	0.30	0.29				
Vinyl Chloride	2.4	0.11	3.2	0.11				
Bromomethane	ND	0.17	ND	0.16				
Chloroethane	ND	0.12	0.17	0.11				
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				
1,2-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				
t1,3-Dichloropropene	ND	0.20	ND	0.19				

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Tetra Tech
Attn: Lee Daigle
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.:	K101506-01		K101506-02					
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.:	191025MS2A1		191025MS2A1					
Analyst Initials:	AS		AS					
Dilution Factor:	44		42					
ANALYTE	**Result ug/L**	**RL ug/L**	**Result ug/L**	**RL ug/L**				
1,1,2-Trichloroethane	ND	0.24	ND	0.23				
Tetrachloroethene	0.82	0.30	1.00	0.29				
2-Hexanone	ND	0.18	ND	0.17				
Dibromochloromethane	ND	0.37	ND	0.36				
1,2-Dibromoethane	ND	0.34	ND	0.32				
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				
1,2,4-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: _____ Date 10-31-19

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

Client: Tetra Tech
Attn: Lee Daigle
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:	-							
Date/Time Analyzed:	10/25/19 9:31							
QC Batch No.:	191025MS2A1							
Analyst Initials:	AS							
Dilution Factor:	0.20							

ANALYTE	Result ug/L	RL ug/L						
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						
Chloroethane	ND	0.00053						
Trichlorofluoromethane (11)	ND	0.0011						
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						
Methylene Chloride	ND	0.00069						
t-1,2-Dichloroethene	ND	0.00079						
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						
1,2-Dichloroethane	ND	0.00081						
Trichloroethene	ND	0.0011						
1,2-Dichloropropane	ND	0.00092						
Bromodichloromethane	ND	0.0013						
c-1,3-Dichloropropene	ND	0.00091						
4-Methyl-2-Pentanone	ND	0.00082						
Toluene	ND	0.00075						
t-1,3-Dichloropropene	ND	0.00091						

Client: Tetra Tech
Attn: Lee Daigle
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:	-
Date/Time Analyzed:	10/25/19 9:31
QC Batch No.:	191025MS2A1
Analyst Initials:	AS
Dilution Factor:	0.20

ANALYTE	Result ug/L	RL ug/L
1,1,2-Trichloroethane	ND	0.0011
Tetrachloroethene	ND	0.0014
2-Hexanone	ND	0.00082
Dibromochloromethane	ND	0.0017
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: _____ Date 10-31-19

Mark Johnson
Operations Manager

The cover letter is an integral part of this analytical report

18501 E. Gale Avenue, Suite 130 ♦ City of Industry, CA 91748 ♦ Ph: (626) 964-4032 ♦ Fx: (626) 964-5832

LCS/LCSD Recovery and RPD Summary Report

QC Batch #: 191025MS2A1

Matrix: Air

EPA Method TO-14/TO-15

Lab No:	Method Blank		LCS		LCSD						
Date/Time Analyzed:	10/25/19 9:31		10/25/19 8:19		10/25/19 8:54						
Data File ID:	25OCT015.D		25OCT013.D		25OCT014.D						
Analyst Initials:	VM		VM		VM						
Dilution Factor:	0.2		1.0		1.0			Limits			
ANALYTE	Result ppbv	Spike Amount	Result ppbv	% Rec	Result ppbv	% Rec	RPD	Low %Rec	High %Rec	Max. RPD	Pass/ 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: _____ Date: 10-31-19

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

NORTHERN PIPE, INC.
CLEAN - INSPECT - REPAIR
1772 S Vandenberg Road
Green Bay, Wisconsin 54311
920-468-7074 | info@northernpipeinc.com

Marathon County Landfill
Leachate Cleaning
6/10/2019 - 6/12/2019
Vactor w/ 1,200' of 3/4'' hose

AREA A

CLEANOUT ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (S)	FT JETTED (N)	TOTAL 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 Line		280	-	-	280	Line is good
		7,260			7,115	

3,000 gallons of water used

AREA B

CLEANOUT ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (E/S)	FT JETTED (W/N)	TOTAL 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 ACCESS POINT	PIPE SIZE	TOTAL LENGTH (FT)	FT JETTED (N)	FT JETTED (S)	TOTAL 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)

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 below)	**State**	**ZIP Code**
172900 State Highway 29	WI	54471
○ City ◉ Township ○ Village of Ringle	Facility Identification Number (FID) and/or FIN Number if known: FID 337005680 FIN	

Section II: Facility/Site Contact Person

Local Contact Person	Mailing Address (if different than site location address)	
Meleesa Johnson		
Title	**Municipality (if different than above)**	
Director		
Telephone (include area code)	**State**	**ZIP Code (if different from above)**
(715) 446-3101	WI	
E-mail address or Website (if applicable)	**Fax (include area code)**	
Meleesa.Johnson@co.marathon.wi.us	(715) 446-2906	

Section III: Certification & Signature

(Person attesting to the accuracy and completeness of Annual Facility Site Compliance Inspection Report.)

This form must be signed by an official representative of the permitted facility in accordance with s. NR 216.22(7), Wis. Adm. Code. See instructions on page 4. If this form is not signed, or is found to be incomplete, it will be returned.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative	Telephone Number (include area code)		
David Hagenbucher	(715) 446-3101		
Type or Print Name	**Company Name**		
David Hagenbucher	Marathon County Solid Waste		
Position Title	**Mailing Address**		
Manager	172900 State Highway 29		
Date Signed	**Municipality**	**State**	**ZIP Code**
12/09/19	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.

Section IV: Annual Facility Site Compliance Inspection

The Annual Facility Site Compliance Inspection shall be adequate to verify that: your Storm Water Pollution Prevention Plan (SWPPP) remains current; potential pollution sources at your facility are identified; the facility site map and drainage map remain accurate; and that the Best Management Practices prescribed in your SWPPP are being implemented, properly operated, and adequately maintained.

Name of Person Conducting Inspection	Inspection Date
David Hagenbucher	06/12/2019
Employer	Telephone Number
Marathon County Solid Waste	(715) 446-3101

Your inspection should start with a review of your written SWPPP kept at your facility. The SWPPP should be amended if, through these inspections, you find that the provisions in your SWPPP are ineffective in controlling contaminated storm water from being discharged from your facility.

1.	Has your SWPPP been updated to include current Non-Storm Water Discharge Evaluation results?	○ Yes ○ No	◉ N/A
2.	Has your SWPPP been amended for any new construction that would affect the site map or drainage conditions at the facility?	○ Yes ◉ No	○ N/A
3.	Has your SWPPP been amended for any changes in facility operations that could be identified as new source areas for contamination of storm water?	○ Yes ◉ No	○ N/A
4.	Are there any materials at the facility that are handled, stored, or disposed in a manner to allow exposure to storm water that are not currently addressed in your SWPPP?	○ Yes ◉ No	○ N/A
5.	Are there any maintenance or material handling activities conducted outdoors that have not been addressed in your SWPPP?	○ Yes ◉ 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, grease, or other chemicals on the ground?	○ Yes ◉ No	○ N/A
9.	Are particulates on the ground from industrial operations or processes being controlled?	◉ Yes ○ No	○ N/A
10.	Do you see leaking equipment, pipes or containers?	○ Yes ◉ No	○ N/A
11.	Do drips, spills, or leaks occur when materials are being transferred from one source to another?	○ Yes ◉ No	○ N/A
12.	Are drips or leaks from equipment or machinery being 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.) regularly used in certain areas to absorb spills?	◉ Yes ○ No	○ N/A
15.	Can you find discoloration, residue, or corrosion on the roof or around vents or pipes that ventilate or drain work areas?	○ Yes ◉ No	○ N/A
16.	Are Best Management Practices implemented to reduce or eliminate contamination of storm water from source areas at the facility?	◉ 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 correct plan inadequacies to effectively control a discharge of contaminated storm water from your facility?	○ Yes ◉ No	○ N/A

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			
Outfall Number	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Bluebird Ridge Landfill Outfall 1	03/13/2019	06/12/2018	09/11/2018	12/09/2018

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:

NORTHERN REGION (NOR)			
Ashland	Forest	Price	WDNR Baldwin Service Center 890 Spruce Street Baldwin, WI 54002 715-684-2914 ext. 109
Barron	Iron	Rusk	
Bayfield	Langlade	Sawyer	
Burnett	Lincoln	Taylor	
Douglas	Oneida	Vilas	
Florence	Polk	Washburn	

NORTHEAST REGION (NER)			
Brown	Manitowoc	Shawano	WDNR Northeast Regional Headquarters 2984 Shawano Avenue Green Bay, WI 54313-6727 (920) 662-5100
Calumet	Marinette	Waupaca	
Door	Marquette	Waushara	
Fond du Lac	Menominee	Winnebago	
Green Lake	Oconto		
Kewaunee	Outagamie		

WEST CENTRAL REGION (WCR)			
Adams	Jackson	Pierce	WDNR Baldwin Service Center 890 Spruce Street Baldwin, WI 54002 715-684-2914 ext. 109
Buffalo	Juneau	Portage	
Chippewa	La Crosse	St. Croix	
Clark	Marathon	Trempealeau	
Crawford	Monroe	Vernon	
Dunn	Pepin	Wood	
Eau Claire			

SOUTH CENTRAL REGION (SCR)			
Columbia	Green	Richland	WDNR South Central Regional Headquarters 3911 Fish Hatchery Road Fitchburg, WI 53711 (608) 275-3266
Dane	Iowa	Rock	
Dodge	Jefferson	Sauk	
Grant	LaFayette		

SOUTHEAST REGION (SER)			
Kenosha	Racine	Washington	WDNR Waukesha Service Center 141 N.W. Barstow Street, Room 180 Waukesha, WI 53188 (262) 574-2100
Milwaukee	Sheboygan	Waukesha	
Ozaukee	Walworth		

ATTACHMENT F

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

marathoncountysolidwaste.org
marathoncountysolidwaste

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

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.

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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Area A Private Wells (Semi-annual)	02892		APRIL -04-2019

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)

- ☐ Groundwater monitoring data from monitoring wells
- ☒ Groundwater monitoring data from private water supply wells
- ☐ Leachate monitoring data
- ☐ Gas monitoring data
- ☐ Air monitoring data
- ☐ Other (specify)

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 Hagenbucher	Solid Waste Manager	715-551-5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	05/22/19	
Signature	Date	

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 ☐ CD (initial submittal and follow-up) ☐ E-mail (follow-up only) Other _____

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:

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

Notes: site = site assigned PAL/ES ; well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County BRRDF Private Wells	04228	337005680	APRIL -04-2019

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)

- ☐ Groundwater monitoring data from monitoring wells
- ☒ Groundwater monitoring data from private water supply wells
- ☐ Leachate monitoring data
- ☐ Gas monitoring data
- ☐ Air monitoring data
- ☐ Other (specify)

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 Hagenbucher	Solid Waste Manager	715 551 5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	05/22/19	
Signature	Date	

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 ☐ CD (initial submittal and follow-up) ☐ E-mail (follow-up only) Other _____

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:

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

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

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

NLS Project: 318857
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Project: Marathon County BRRDF Private Wells April 2019

PW11 NLS ID: 1113402
Matrix: GW
Collected: 04/04/19 09:32 Received: 04/05/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field depth to water	4.86	ft.	1			04/04/19	NA	721026460
Field depth to bottom	5.85	ft.	1			04/04/19	NA	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

NLS Project: 318857
NLS Customer: 20080

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

Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County BRRDF Private Wells April 2019

PW26 NLS ID: 1113403
Matrix: GW
Collected: 04/04/19 09:43 Received: 04/05/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

NLS Project: 318857
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Project: Marathon County BRRDF Private Wells April 2019

PW8575 NLS ID: 1113404
Matrix: GW
Collected: 04/04/19 10:00 Received: 04/05/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318857
Project Description: Marathon County BRRDF Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 04:22

Sample: 1113403 PW26 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	112%		1				S
Toluene-d8 (SURR)	108%		1				S
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318857
Project Description: Marathon County BRRDF Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 04:22

Sample: 1113404 PW8575 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	114%		1				S
Toluene-d8 (SURR)	111%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

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

NLS Private Well Sampling Form and Chain Of Custody

SITE: Marathon Co. Solid Waste Management Dept. / BRRDF – Private Wells 1A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
1113-402	PW11 William Kasten R222780 Duncan Road, Hatley	027	X	X	X	X

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
4.4.19	0932	North of House Well.	X

Comments:

DEPTH OF WATER 4.86

DEPTH OF BOTTOM 5.85

4/13: South house faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
403	PW26 James Glodowski R222470 Duncan Road, Hatley	029	2 min	CLEAR	ND	NP

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
4.4.19	0943	Kitchen Sink	N

Comments:

As of 11/06: Kitchen Sink (hand dug well, owner may want us to purge little or no water before sampling)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
404	PW8575 Jerry and Krista Bates R221615 Silk, Ringle	367	5 min	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
4.4.19	1000	Outside faucet side of house	N

Comments:

Outside faucet side of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
~~405~~	Trip Blank	999				

Date Sampled:	Time Sampled:	Sample Location:	

Comments:

Rev 10/18

See reverse side for sample custody information

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

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW25 NLS ID: 1113406
Matrix: GW
Collected: 04/04/19 08:35 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW68 NLS ID: 1113407
Matrix: GW
Collected: 04/04/19 08:08 Received: 04/04/19

Parameter	Result	Units	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 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.

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MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW18 NLS ID: 1113408
Matrix: GW
Collected: 04/04/19 08:24 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW19 NLS ID: 1113409
Matrix: GW
Collected: 04/04/19 07:52 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

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	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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Authorized by:
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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW17 NLS ID: 1113411
Matrix: GW
Collected: 04/04/19 09:18 Received: 04/04/19

Parameter	Result	Units	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 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.

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

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW64 NLS ID: 1113412
Matrix: GW
Collected: 04/04/19 09:05 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW88 NLS ID: 1113413
Matrix: GW
Collected: 04/04/19 08:52 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

PW48 NLS ID: 1113414
Matrix: GW
Collected: 04/04/19 07:10 Received: 04/04/19

Parameter	Result	Units	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 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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
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President

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ANALYTICAL REPORT

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

NLS Project: 318858
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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 April 2019

Trip Blank NLS ID: 1113415
Matrix: TB
Collected: 04/04/19 00:00 Received: 04/04/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
VOCs (water) by GC/MS	see attached					04/12/19	NA	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.

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

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113406 PW25 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	113%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113407 PW68 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	[0.18]	ug/L	1	0.17	0.58	5	J
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	[4.5]	ug/L	1	4.2	12		J
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	116%		1				S
Toluene-d8 (SURR)	112%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

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 Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113408 PW18 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	119%		1				S
Toluene-d8 (SURR)	108%		1				S
1-Bromo-4-Fluorobenzene (SURR)	108%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113409 PW19 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	113%		1				S
Toluene-d8 (SURR)	111%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113410 PW24 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	106%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SAT3APP3 Printed: 05/01/2019 03:51

Sample: 1113411 PW17 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	107%		1				S

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)

Customer: Marathon County Solid Waste Mgmnt Dept **NLS Project: 318858**
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 **Template: SAT3APP3 Printed: 05/01/2019 03:51**

Sample: 1113412 PW64 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	[5.3]	ug/L	1	4.2	12		J MD
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	116%		1				S
Toluene-d8 (SURR)	105%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SATAPP3 Printed: 05/01/2019 03:53

Sample: 1113413 PW88 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		CC
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Chloromethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81		
Dibromomethane	ND	ug/L	1	0.22	0.78		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75	
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58		
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67		
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5	
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100	
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69		
Ethylbenzene	ND	ug/L	1	0.19	0.69	700	
Methylene chloride	ND	ug/L	1	0.24	0.84	5	
Naphthalene	ND	ug/L	1	0.43	1.5		
Styrene	ND	ug/L	1	0.19	0.66	100	
ortho-Xylene	ND	ug/L	1	0.19	0.66		
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5	
Toluene	ND	ug/L	1	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	5	
Trichloroethene	ND	ug/L	1	0.32	1.1	5	
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71		
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2	
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000	
MTBE	ND	ug/L	1	0.21	0.73		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.17	0.59		
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0		
Tetrahydrofuran	ND	ug/L	1	0.58	2.0		
Dibromofluoromethane (SURR)	116%		1				S
Toluene-d8 (SURR)	100%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SATAPP3 Printed: 05/01/2019 03:53

Sample: 1113414 PW48 Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		CC
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Chloromethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81		
Dibromomethane	ND	ug/L	1	0.22	0.78		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75	
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58		
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67		
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5	
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100	
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69		
Ethylbenzene	ND	ug/L	1	0.19	0.69	700	
Methylene chloride	ND	ug/L	1	0.24	0.84	5	
Naphthalene	ND	ug/L	1	0.43	1.5		
Styrene	ND	ug/L	1	0.19	0.66	100	
ortho-Xylene	ND	ug/L	1	0.19	0.66		
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5	
Toluene	ND	ug/L	1	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	5	
Trichloroethene	ND	ug/L	1	0.32	1.1	5	
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71		
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2	
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000	
MTBE	ND	ug/L	1	0.21	0.73		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.17	0.59		
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0		
Tetrahydrofuran	ND	ug/L	1	0.58	2.0		
Dibromofluoromethane (SURR)	101%		1				S
Toluene-d8 (SURR)	113%		1				S
1-Bromo-4-Fluorobenzene (SURR)	106%		1				S

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)
Customer: Marathon County Solid Waste Mgmnt Dept NLS Project: 318858
Project Description: Marathon County Area A Private Wells
Project Title: April 2019 Template: SATAPP3 Printed: 05/01/2019 03:53

Sample: 1113415 Trip Blank Collected: 04/04/19 Analyzed: 04/12/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		CC
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Chloromethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81		
Dibromomethane	ND	ug/L	1	0.22	0.78		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75	
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58		
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67		
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5	
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100	
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69		
Ethylbenzene	ND	ug/L	1	0.19	0.69	700	
Methylene chloride	ND	ug/L	1	0.24	0.84	5	
Naphthalene	ND	ug/L	1	0.43	1.5		
Styrene	ND	ug/L	1	0.19	0.66	100	
ortho-Xylene	ND	ug/L	1	0.19	0.66		
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5	
Toluene	ND	ug/L	1	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	5	
Trichloroethene	ND	ug/L	1	0.32	1.1	5	
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71		
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2	
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000	
MTBE	ND	ug/L	1	0.21	0.73		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.17	0.59		
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0		
Tetrahydrofuran	ND	ug/L	1	0.58	2.0		
Dibromofluoromethane (SURR)	105%		1				S
Toluene-d8 (SURR)	113%		1				S
1-Bromo-4-Fluorobenzene (SURR)	104%		1				S

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 (pg 1 of 3)

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

1A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
1113406	PW25 Levandoski, Mike R221828 Duncan Road, Hatley	353	5 MIN	CLEAR	NO	ND.

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0835	FAUCET NORTH SIDE OF HOUSE.	N

Comments:

Softener - no Collect from - outside faucet, north side of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
407	PW68 Andraschko, Anthony R221630 Duncan Road, Hatley	361	5 MIN	CLEAR	NO	NO

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4:4-19	0808	NORT OUT SIDE FAUCET.	N

Comments: NEW OWNER DEREK PIONKE

Softener – yes but not in use Collect from – kitchen sink or North outside faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
408	PW18 Falkowski, Janet R221765 Duncan Road, Hatley	350	5 MIN	CLEAR	NO	NO

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0824	EAST OUT SIDE FAUCET BACK OF HOUSE	N

Comments:

Softener – no Collect from - kitchen sink or outside back faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
409	PW19 Jozwiak-Popp, Rose R221561 Duncan Road, Hatley	351	5 MIN	CLEAR	ND.	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4-4-19	0752	OUT SIDE FAUCET ACROSS DRIVEWAY.	N.

Comments:

Softerer – Yes. Collect from – outside faucet across driveway from house (not softened – should be on year round)

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 #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
410	PW24 Kluck, Mark R221950 Duncan Road, Hatley	352	5 MIN	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0844	FRONT of HOUSE OUTSIDE FAUCET	N

Comments:

Softener – no Collect from – front outside faucet (4/21/10 – owner said front faucet now works and is closer to the well)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
411	PW17 Liebe, Neal R174825 Willow Lane, Hatley	028	5 MIN	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0918	FRONT of HOUSE EAST SIDE By DRIVEWAY	N

Comments:

Softener – no Collect from – East side of house near driveway

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
412	PW64 Sheehan, Carol R221524 Duncan Road, Hatley	359	5 MIN	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0905	BASEMENT BEFORE SOFTENER	N

Comments:

Softener – yes Collect from – faucet in basement before softener

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
413	PW88 Zogata, Aaron R222036 Duncan Road, Hatley	365	5 MIN	ND CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0852	OUTSIDE FAUCET FRONT of HOUSE	N

Comments:

Softener – yes Collect from – outside faucet, front of house

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

3A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
414	PW48 Marathon Co. Hwy Dept. R222005 Duncan Road, Hatley	356	5 MIN	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
4.4.19	0710	BATHROOM LOCKER ROOM SINK	N

Comments:

Softener – No. Collect from – bathroom/locker room sink

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
415	Trip Blank	999	N/A	N/A	N/A	N/A

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)
	N/A	N/A	N/A

Comments:

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)

Comments:

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N)

Comments:

See reverse side for sample custody information

marathoncountysolidwaste.org
marathoncountysolidwaste

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
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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Area A Private Wells	02892		OCTOBER -16-2019

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- ☐ Groundwater monitoring data from monitoring wells
- ☒ Groundwater monitoring data from private water supply wells
- ☐ Leachate monitoring data
- ☐ Gas monitoring data
- ☐ Air monitoring data
- ☐ Other (specify)

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 Hagenbucker	Operations Manager	715 551 5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucker	12/06/19	
Signature	Date	

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 ☐ CD (initial submittal and follow-up) ☐ E-mail (follow-up only) Other _____

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:

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

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

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:

Name: Chris Geske Phone: 715-478-2777

E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County BRRDF Private Wells	04228	337005680	OCTOBER -16-2019

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- ☐ Groundwater monitoring data from monitoring wells
- ☒ Groundwater monitoring data from private water supply wells
- ☐ Leachate monitoring data
- ☐ Gas monitoring data
- ☐ Air monitoring data
- ☐ Other (specify)

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 Hagenbucher — Facility Representative Name (Print)

Operations Manager — Title

715 551 5864 — (Area Code) Telephone No.

David Hagenbucher — Signature

12/06/19 — Date

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 ☐ CD (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:

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

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

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

NLS Project: 333072
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Project: Marathon County BRRDF Private Wells October 2019

PW11 NLS ID: 1155378
Matrix: GW
Collected: 10/16/19 14:12 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field depth to water	4.85	ft.	1			10/16/19	NA	721026460
Field depth to bottom	6.82	ft.	1			10/16/19	NA	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

NLS Project: 333072
NLS Customer: 20080

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

Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County BRRDF Private Wells October 2019

PW26 NLS ID: 1155379
Matrix: GW
Collected: 10/16/19 13:52 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

NLS Project: 333072
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Project: Marathon County BRRDF Private Wells October 2019

PW8575 NLS ID: 1155380
Matrix: GW
Collected: 10/16/19 12:25 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

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R. T. Krueger
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ANALYTICAL REPORT

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

NLS Project: 333072
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Project: Marathon County BRRDF Private Wells October 2019

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

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
VOCs (water) by GC/MS	see attached					10/22/19	EPA 624	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.

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

Reviewed by:

Authorized by:
R. T. Krueger
President

ANALYTICAL RESULTS: VOC's by P&T/GCMS - Water - (VarSat3)
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: 1155379 PW26 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	122%		1				S
Toluene-d8 (SURR)	116%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

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

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	120%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	107%		1				S

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)
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 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	[0.29]	ug/L	1	0.20	0.70	5	J LB
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	104%		1				S
Toluene-d8 (SURR)	122%		1				S
1-Bromo-4-Fluorobenzene (SURR)	113%		1				S

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 1A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
55378	PW11 William Kasten R222780 Duncan Road, Hatley	027	—	—	—	—

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1412		—

Comments:
Depth of WATER 04.85
Depth of BOTTOM 06.82

4/13: South house faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
379	PW26 James Glodowski R222470 Duncan Road, Hatley	029	5min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1352	FAUCET SIDE of HOUSE	N

Comments:
"Russ" FAUCET WEST SIDE of HOUSE

~~As of 11/06: Kitchen Sink (hand dug well, owner may want us to purge little or no water before sampling)~~

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
380	PW8575 Jerry and Krista Bates R221615 Silk, Ringle	367	5min	ND.	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1225	FRONT of HOUSE	N.

Comments:

Outside faucet side of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
	Trip Blank	999				

Date Sampled:	Time Sampled:	Sample Location:	

Comments:

See reverse side for sample custody information

NLS FIELD QUALITY ASSURANCE RECORD

CLIENT / SITE: Marathon County Solid Waste Management
Department / Annual Private Well Monitoring

Date(s): 10·16·19

Initials / Signature: VAC / [signature] & ____ / ____

Bottles Prepared By: VAC

Instruments Checked By: VAC

STDs & Buffers, Date Made: —

Reagent Grade Water, Jug #: —

Reagent Water Date Filled: —

Thermometer – NLS #: —

Geotech .45 micron filter lot #: —

QED .45 Dispo Filter model #: —

GWV 1.0 Dispo Filter lot #: —

Bracket test samples using the appropriate pH buffers. Use pH buffer 4.01 with pH buffer 7.00 for low pH samples and pH buffer 10.01 with pH buffer 7.00 for samples having a high pH. On a routine basis use pH buffers 4.01 and 7.00.

pH METER NUMBER —

DATE:									
TIME:									
STD BY:									
SLOPE:									
BUFFER 4.01 (R/S)									
BUFFER 7.00 (R/S)									
BUFFER 10.01 (R/S)									

CONDUCTIVITY METER NUMBER —

DATE:									
TIME:									
STD BY:									
718 umho @ 25° C (R/S)									

R = Initial Reading; S = Standardized Reading

Comments:

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW48 NLS ID: 1155386
Matrix: GW
Collected: 10/16/19 10:55 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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.

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

Reviewed by:

Authorized by:
R. T. Krueger
President

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW88 NLS ID: 1155387
Matrix: GW
Collected: 10/16/19 12:17 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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.

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

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ANALYTICAL REPORT

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NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW24 NLS ID: 1155388
Matrix: GW
Collected: 10/16/19 12:09 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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ANALYTICAL REPORT

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NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW25 NLS ID: 1155389
Matrix: GW
Collected: 10/16/19 12:00 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	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 = Limit of Quantitation NA = Not Applicable
DWB = Dry Weight Basis %DWB = (mg/kg DWB) / 10000 1000 ug/L = 1 mg/L
MCL = Maximum Contaminant Levels for Drinking Water Samples. Shaded results indicate >MCL.

Reviewed by:

Authorized by:
R. T. Krueger
President

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

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

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

Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW18 NLS ID: 1155390
Matrix: GW
Collected: 10/16/19 11:40 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW68 NLS ID: 1155391
Matrix: GW
Collected: 10/16/19 11:28 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/22/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW19 NLS ID: 1155392
Matrix: GW
Collected: 10/16/19 11:20 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

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

Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW64 NLS ID: 1155393
Matrix: GW
Collected: 10/16/19 11:10 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW27 NLS ID: 1155394
Matrix: GW
Collected: 10/16/19 13:40 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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
Matrix: GW
Collected: 10/16/19 13:30 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

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

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW100 NLS ID: 1155396
Matrix: GW
Collected: 10/16/19 13:20 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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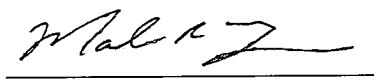
Reviewed by: 

Authorized by:
R. T. Krueger
President

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Analytical Laboratory and Environmental Services
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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW80 NLS ID: 1155397
Matrix: GW
Collected: 10/16/19 12:57 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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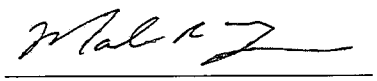
Reviewed by: 

Authorized by:
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NORTHERN LAKE SERVICE, INC.
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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW53 NLS ID: 1155398
Matrix: GW
Collected: 10/16/19 13:06 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	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.

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Authorized by:
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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

PW29 NLS ID: 1155399
Matrix: GW
Collected: 10/16/19 12:45 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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Authorized by:
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ANALYTICAL REPORT

WDNR Laboratory ID No. 721026460
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Client: Marathon County Solid Waste Mgmnt Dept
Attn: Dave Hagenbucher
Marathon County Landfill
R18500 East Highway 29
Ringle, WI 54471 9754

NLS Project: 333074
NLS Customer: 20080
Fax: 715 446 2906 Phone: 715 446 3339

Project: Marathon County Area A Private Wells October 2019

PW54 NLS ID: 1155400
Matrix: GW
Collected: 10/16/19 12:35 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
Field color	none detected					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					10/28/19	SW846 8260C	721026460

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ANALYTICAL REPORT

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

NLS Project: 333074
NLS Customer: 20080

Fax: 715 446 2906 Phone: 715 446 3339

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

Trip Blank NLS ID: 1155402
Matrix: TB
Collected: 10/16/19 00:00 Received: 10/16/19

Parameter	Result	Units	Dilution	LOD	LOQ/MCL	Analyzed	Method	Lab
VOCs (water) by GC/MS	see attached					10/28/19	NA	721026460

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Reviewed by:

Authorized by:
R. T. Krueger
President

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

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	109%		1				S
Toluene-d8 (SURR)	116%		1				S
1-Bromo-4-Fluorobenzene (SURR)	117%		1				S

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)
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: 1155387 PW88 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	117%		1				S
Toluene-d8 (SURR)	114%		1				S
1-Bromo-4-Fluorobenzene (SURR)	107%		1				S

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)
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: 1155388 PW24 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	123%		1				S
Toluene-d8 (SURR)	110%		1				S
1-Bromo-4-Fluorobenzene (SURR)	109%		1				S

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)
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: 1155389 PW25 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	106%		1				S
Toluene-d8 (SURR)	115%		1				S
1-Bromo-4-Fluorobenzene (SURR)	111%		1				S

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)
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: 1155390 PW18 Collected: 10/16/19 Analyzed: 10/22/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	101%		1				S
Toluene-d8 (SURR)	114%		1				S
1-Bromo-4-Fluorobenzene (SURR)	110%		1				S

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)
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: 1155391 PW68 Collected: 10/16/19 Analyzed: 10/22/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.19	0.69	5	
Bromodichloromethane	ND	ug/L	1	0.19	0.68	80	
Bromoform	ND	ug/L	1	0.16	0.56	80	
Bromomethane	ND	ug/L	1	0.22	0.79		
Carbon Tetrachloride	ND	ug/L	1	0.19	0.66	5	
Chlorobenzene	ND	ug/L	1	0.16	0.56	100	
Chloroethane	ND	ug/L	1	1.5	5.4		
Chloroform	ND	ug/L	1	0.17	0.60	80	
Chloromethane	ND	ug/L	1	0.19	0.68		
Dibromochloromethane	ND	ug/L	1	0.17	0.61	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.21	0.73		
1,2-Dibromoethane	ND	ug/L	1	0.12	0.43		
Dibromomethane	ND	ug/L	1	0.21	0.73		
1,2-Dichlorobenzene	ND	ug/L	1	0.22	0.76	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.72		
1,4-Dichlorobenzene	ND	ug/L	1	0.21	0.76	75	
Dichlorodifluoromethane	ND	ug/L	1	0.14	0.49		
1,1-Dichloroethane	ND	ug/L	1	0.18	0.64		
1,2-Dichloroethane	ND	ug/L	1	0.19	0.69	5	
1,1-Dichloroethene	ND	ug/L	1	0.16	0.57	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.18	0.62	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.15	0.51	100	
1,2-Dichloropropane	ND	ug/L	1	0.24	0.84	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.19	0.68		
trans-1,3-Dichloropropene	ND	ug/L	1	0.14	0.51		
Ethylbenzene	ND	ug/L	1	0.30	1.1	700	
Methylene chloride	ND	ug/L	1	0.20	0.70	5	
Naphthalene	ND	ug/L	1	0.29	1.0		
Styrene	ND	ug/L	1	0.16	0.56	100	
ortho-Xylene	ND	ug/L	1	0.16	0.56		
Tetrachloroethene	ND	ug/L	1	0.17	0.58	5	
Toluene	ND	ug/L	1	0.19	0.68	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.17	0.61	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.17	0.59	5	
Trichloroethene	ND	ug/L	1	0.24	0.84	5	
Trichlorofluoromethane	ND	ug/L	1	0.17	0.60		
Vinyl chloride	ND	ug/L	1	0.16	0.57	.2	
meta,para-Xylene	ND	ug/L	1	0.32	1.1	10000	
MTBE	ND	ug/L	1	0.22	0.76		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.16	0.58		
Methyl Ethyl Ketone	ND	ug/L	1	0.50	1.8		
Tetrahydrofuran	ND	ug/L	1	0.97	3.5		
Dibromofluoromethane (SURR)	113%		1				S
Toluene-d8 (SURR)	120%		1				S
1-Bromo-4-Fluorobenzene (SURR)	111%		1				S

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/GC/MS - Appendix III - (VarSat2200)
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: 1155392 PW19 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	89.13%		1				S
Toluene-d8 (SURR)	97.11%		1				S
1-Bromo-4-Fluorobenzene (SURR)	96.31%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155393 PW64 Collected: 10/16/19 Analyzed: 10/28/19 Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	82.8%		1				S
Toluene-d8 (SURR)	92.18%		1				S
1-Bromo-4-Fluorobenzene (SURR)	94.99%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	85.04%		1				S
Toluene-d8 (SURR)	89.77%		1				S
1-Bromo-4-Fluorobenzene (SURR)	93.24%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155395 PW65 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	82.78%		1				S
Toluene-d8 (SURR)	96.1%		1				S
1-Bromo-4-Fluorobenzene (SURR)	100.15%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155396 PW100 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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				S
Toluene-d8 (SURR)	92.36%		1				S
1-Bromo-4-Fluorobenzene (SURR)	96.57%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	79.22%		1				S
Toluene-d8 (SURR)	90.74%		1				S
1-Bromo-4-Fluorobenzene (SURR)	95.35%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155398 PW53 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	81.84%		1				S
Toluene-d8 (SURR)	92.55%		1				S
1-Bromo-4-Fluorobenzene (SURR)	94.75%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155399 PW29 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	81.74%		1				S
Toluene-d8 (SURR)	90.18%		1				S
1-Bromo-4-Fluorobenzene (SURR)	95.57%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	83.59%		1				S
Toluene-d8 (SURR)	92.04%		1				S
1-Bromo-4-Fluorobenzene (SURR)	99.18%		1				S

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%

ANALYTICAL RESULTS: VOC's by P&T/GC/MS - Appendix III - (VarSat2200)
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: 1155401 PW17 Collected: 10/16/19 Analyzed: 10/28/19 - Analytes: 43

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.41	1.3	5	
Bromodichloromethane	ND	ug/L	1	0.45	1.4	80	
Bromoform	ND	ug/L	1	0.36	1.1	80	
Bromomethane	ND	ug/L	1	0.14	0.46		
Carbon Tetrachloride	ND	ug/L	1	0.46	1.5	5	
Chlorobenzene	ND	ug/L	1	0.45	1.4	100	
Chloroethane	ND	ug/L	1	2.1	6.7		CC
Chloroform	ND	ug/L	1	0.42	1.3	80	
Chloromethane	ND	ug/L	1	0.42	1.3		
Dibromochloromethane	ND	ug/L	1	0.40	1.3	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.27	0.90		
1,2-Dibromoethane	ND	ug/L	1	0.41	1.3		
Dibromomethane	ND	ug/L	1	0.36	1.1		
1,2-Dichlorobenzene	ND	ug/L	1	0.42	1.3	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.45	1.4		
1,4-Dichlorobenzene	ND	ug/L	1	0.46	1.5	75	
Dichlorodifluoromethane	ND	ug/L	1	0.40	1.3		
1,1-Dichloroethane	ND	ug/L	1	0.47	1.5		
1,2-Dichloroethane	ND	ug/L	1	0.41	1.3	5	
1,1-Dichloroethene	ND	ug/L	1	0.48	1.5	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.41	1.3	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.35	1.1	100	
1,2-Dichloropropane	ND	ug/L	1	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	ug/L	1	0.43	1.4	700	
Methylene chloride	ND	ug/L	1	0.44	1.4	5	
Naphthalene	ND	ug/L	1	0.20	0.62		
ortho-Xylene	ND	ug/L	1	0.44	1.4		
Styrene	ND	ug/L	1	0.25	0.79	100	
Tetrachloroethene	ND	ug/L	1	0.43	1.4	5	
Toluene	ND	ug/L	1	0.43	1.4	1000	
1,1,1-Trichloroethane	ND	ug/L	1	0.49	1.6	200	
1,1,2-Trichloroethane	ND	ug/L	1	0.46	1.5	5	
Trichloroethene	ND	ug/L	1	0.50	1.6	5	
Trichlorofluoromethane	ND	ug/L	1	0.45	1.4		
Vinyl chloride	ND	ug/L	1	0.13	0.42	.2	
meta,para-Xylene	ND	ug/L	1	0.89	2.8	10000	
MTBE	ND	ug/L	1	0.44	1.4		
Acetone	ND	ug/L	1	2.1	6.7		
Carbon disulfide	ND	ug/L	1	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)	80.59%		1				S
Toluene-d8 (SURR)	87.83%		1				SR S
1-Bromo-4-Fluorobenzene (SURR)	96.08%		1				S

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%
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 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

ANALYTE NAME	RESULT	UNITS	DIL	LOD	LOQ	MCL	Note
Benzene	ND	ug/L	1	0.24	0.84	5	
Bromodichloromethane	ND	ug/L	1	0.27	0.94	80	
Bromoform	ND	ug/L	1	0.21	0.73	80	
Bromomethane	ND	ug/L	1	0.27	0.96		
Carbon Tetrachloride	ND	ug/L	1	0.16	0.55	5	
Chlorobenzene	ND	ug/L	1	0.25	0.87	100	
Chloroethane	ND	ug/L	1	0.93	3.3		
Chloroform	ND	ug/L	1	0.22	0.78	80	
Chloromethane	ND	ug/L	1	0.22	0.78		
Dibromochloromethane	ND	ug/L	1	0.16	0.56	80	
1,2-Dibromo-3-Chloropropane	ND	ug/L	1	0.18	0.63		
1,2-Dibromoethane	ND	ug/L	1	0.23	0.81		
Dibromomethane	ND	ug/L	1	0.22	0.78		
1,2-Dichlorobenzene	ND	ug/L	1	0.21	0.73	600	
1,3-Dichlorobenzene	ND	ug/L	1	0.20	0.70		
1,4-Dichlorobenzene	ND	ug/L	1	0.27	0.95	75	
Dichlorodifluoromethane	ND	ug/L	1	0.17	0.58		
1,1-Dichloroethane	ND	ug/L	1	0.19	0.67		
1,2-Dichloroethane	ND	ug/L	1	0.22	0.78	5	
1,1-Dichloroethene	ND	ug/L	1	0.20	0.69	7	
cis-1,2-Dichloroethene	ND	ug/L	1	0.24	0.84	70	
trans-1,2-Dichloroethene	ND	ug/L	1	0.17	0.60	100	
1,2-Dichloropropane	ND	ug/L	1	0.28	0.98	5	
cis-1,3-Dichloropropene	ND	ug/L	1	0.26	0.91		
trans-1,3-Dichloropropene	ND	ug/L	1	0.19	0.69		
Ethylbenzene	ND	ug/L	1	0.19	0.69	700	
Methylene chloride	[0.29]	ug/L	1	0.24	0.84	5	J LB
Naphthalene	ND	ug/L	1	0.43	1.5		
Styrene	ND	ug/L	1	0.19	0.66	100	
ortho-Xylene	ND	ug/L	1	0.19	0.66		
Tetrachloroethene	ND	ug/L	1	0.22	0.78	5	
Toluene	ND	ug/L	1	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	5	
Trichloroethene	ND	ug/L	1	0.32	1.1	5	
Trichlorofluoromethane	ND	ug/L	1	0.20	0.71		
Vinyl chloride	ND	ug/L	1	0.17	0.60	.2	
meta,para-Xylene	ND	ug/L	1	0.37	1.3	10000	
MTBE	ND	ug/L	1	0.21	0.73		
Acetone	ND	ug/L	1	4.2	12		
Carbon Disulfide	ND	ug/L	1	0.17	0.59		
Methyl Ethyl Ketone	ND	ug/L	1	0.57	2.0		
Tetrahydrofuran	ND	ug/L	1	0.58	2.0		
Dibromofluoromethane (SURR)	112%		1				S
Toluene-d8 (SURR)	121%		1				S
1-Bromo-4-Fluorobenzene (SURR)	98%		1				S

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. / Area A – Private Wells (page 1 of 5)

1A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
1155386	PW48 Marathon Co. Highway Dept. 222005 Duncan Road, Hayley	356	5 MIN	CLEAR	ND.	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1055	BATH ROOM SINK LOCKER ROOM -	N

Comments:

Softener – no Collect from – bathroom/locker room sink

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
387	PW88 Christensen Troy R222036 Duncan Road, Hatley	365	5MIN	NO	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1217	FRONT OF HOUSE	N

Comments:

Softener – yes Collect from – outside faucet, front of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
388	PW24 Kluck, Mark R221950 Duncan Road, Hatley	352	5MIN.	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1209	FRONT FAUCET	N

Comments:

Softener – no Collect from – front outside faucet (4/21/10 – owner said front faucet now works and is closer to the well)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
389	PW25 Levandoski, Mike R221828 Duncan Road, Hatley	353	5MIN	ND	ND.	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1200	OUTSIDE FAUCET NO SIDE OF HOUSE	N

Comments:

CODY & KIMBERLY SCHMIDT (NEW OWNER'S)

Softener - no Collect from - outside faucet, north side of house

See reverse side for sample custody information

NLS Private Well Sampling Form and Chain Of Custody

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

2A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
390	PW18 Falkowski, Janet R221765 Duncan Road, Hatley	350	5 min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10.16.19	1140	OUTSIDE BACK FAUCET	N

Comments:

Softener – no Collect from - kitchen sink or outside back faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
391	PW68 Andraschko, Anthony R221630 Duncan Road, Hatley	361	5 min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10.16.19	1128	NORTH OUTSIDE FAUCET	N

Comments:

Softener – yes but not in use Collect from – kitchen sink or North outside faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
392	PW19 Jozwiak-Popp, Rose R221561 Duncan Road, Hatley	351	5 min	CLEAR	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10.16.19	1120	OUTSIDE FAUCET ACROSS DRIVEWAY	N

Comments:

Softerer – Yes. Collect from – outside faucet across driveway from house (not softened – should be on year round

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
393	PW64 Sheehan, Carol R221524 Duncan Road, Hatley	359	5 min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1110	BASEMENT FAUCET	N

Comments:

Softener – yes Collect from – faucet in basement before softener

NLS Private Well Sampling Form and Chain Of Custody

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

3A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
394	PW27 Fraaza, Ivan R222050 Silk Road, Ringle	354	5min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10·16·19	1340	OUTSIDE FAUCET - SO SIDE of HOUSE	N

Comments:

Softener – no Collect from – outside faucet, south side of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
395	PW65 Finlan, Andy R221978 Silk Road, Ringle	360	5MIN	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10·16·19	1330	FRONT of HOUSE	N

Comments:

Softener – no Collect from – outside front faucet

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
396	PW100 Fraaza, Brandon R221915 & R221917 Silk Road, Ringle	366	5min	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10·16·19	1320	BACK of HOUSE.	N

Comments:

"BEWARE of Dogs"

Softener – No Collect from – outside faucet, back west side of apartments (1 well shared by both apartments in duplex)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
397	PW80 Gaedtke, Heath R221760 Silk Road, Ringle	364	5MIN	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10·16·19	1257	FRONT of HOUSE	N

Comments:

Softener – no Collect from – outside faucet, west side of house

See reverse side for sample custody information

NLS Private Well Sampling Form and Chain Of Custody

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

4A

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
398	PW53 Buchkowski, Michael R221771 Silk Road, Ringle	357	5 MIN	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10·17·19	1306	SIDE of HOUSE FACING ROAD	N

Comments:

Softener – yes ~~Collect from – basement well entry (only unsoftened point)~~ OUTSIDE (NEW FAUCET NOT SOFTENED)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
399	PW29 Porter, James R221704 Silk Road, Ringle	355	5 MIN	ND.	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10.16.19.	1245	OUTSIDE FAUCET So SIDE of HOUSE	~~N~~ ?

Comments: DOES NOT WORK

COLLECTED FROM FAUCET ON BACK of HOUSE

Softener – yes Collect from – outside faucet, south side of house

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
400	PW54 Baur, Daniel R221657 Silk, Ringle	358	5 MIN	ND	ND	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10-16-19	1235	BACK of HOUSE So SIDE	N

Comments:

→ LEAVE FAUCET ON A LONG WHILE WATER WILL EVENTUALLY ARRIVE

Softener – no Collect from – faucet in garage, on year round or outside/south faucet)

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
401	PW17 Liebe, Neal R174825 Willow Lane, Hatley	028	5 MIN -	ND.	NO	ND

Date Sampled:	Time Sampled:	Sample Location:	Treated (Y/N):
10 16 19	1405	FRONT FAUCET IS FINE	N

Comments:

Softener – no Collect from – back outside faucet (front faucet by brick deck broken – per owner 4/21/10)

See reverse side for sample custody information

NLS Private Well Sampling Form and Chain Of Custody

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

5A

NLS Lab #:	Point Name / Homeowner: Trip Blank	DNR ID #: 999	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N):
Comments:						

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N):
Comments:						

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N):
Comments:						

NLS Lab #:	Point Name / Homeowner:	DNR ID #:	Time Purged:	Color:	Odor:	Turbidity (quant,text,color):
Date Sampled:	Time Sampled:	Sample Location:				Treated (Y/N):
Comments:						

NLS FIELD QUALITY ASSURANCE RECORD

CLIENT / SITE: **Marathon County Solid Waste Management Department / Annual Private Well Monitoring** Date(s): 10-16-19

Initials / Signature: VAG / [signature] & ____ / ____

Bottles Prepared By: VAG

Instruments Checked By: —

STDs & Buffers, Date Made: —

Reagent Grade Water, Jug #: —

Reagent Water Date Filled: —

Thermometer – NLS #: —

Geotech .45 micron filter lot #: —

QED .45 Dispo Filter model #: ____

GWV 1.0 Dispo Filter lot #: ____

Bracket test samples using the appropriate pH buffers. Use pH buffer 4.01 with pH buffer 7.00 for low pH samples and pH buffer 10.01 with pH buffer 7.00 for samples having a high pH. On a routine basis use pH buffers 4.01 and 7.00.

pH METER NUMBER ____

DATE:									
TIME:									
STD BY:									
SLOPE:									
BUFFER 4.01 (R/S)									
BUFFER **7.00** (R/S)									
BUFFER **10.01** (R/S)									

CONDUCTIVITY METER NUMBER ____

DATE:									
TIME:									
STD BY:									
718 umho @ 25° C (R/S)									

R = Initial Reading; S = Standardized Reading

Comments:

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:	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

marathoncountysolidwaste.org
marathoncountysolidwaste

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 County Solid Waste: Area A Groundwater Monitoring 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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area A	02892	737054890	APRIL -02-2019 through APRIL -03-2019
Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.			

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)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] 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 Hagenbucker — Facility Representative Name (Print)
Solid Waste Manager — Title
715-551-5864 — (Area Code) Telephone No.

David Hagenbucker — Signature
05/22/19 — Date

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 [ ] CD (initial submittal and follow-up) [ ] E-mail (follow-up only) Other _____

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:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup-040319 (074)	Tetrachloroethylene	ug/L	3.9	.5	5	NR140.10
Dup-040319 (074)	Trichloroethylene	ug/L	3.8	.5	5	NR140.10
R12R (049)	Tetrachloroethylene	ug/L	0.71	.5	5	NR140.10
R12R (049)	Trichloroethylene	ug/L	0.63	.5	5	NR140.10
R13R (074)	Tetrachloroethylene	ug/L	3.5	.5	5	NR140.10
R13R (074)	Trichloroethylene	ug/L	3.4	.5	5	NR140.10
R38 (053)	Tetrachloroethylene	ug/L	1.2	.5	5	NR140.10
R38 (053)	Trichloroethylene	ug/L	1.2	.5	5	NR140.10
R50P (068)	Tetrachloroethylene	ug/L	0.64	.5	5	NR140.10
R35 (050)	Conductivity	umho@25C	770	510		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

marathoncountysolidwaste.org
marathoncountysolidwaste

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

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 County Solid Waste: Area B Groundwater Monitoring 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
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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area B	03338	737092730	APRIL -02-2019 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)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] 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 Hagenbucher — Facility Representative Name (Print)
Solid Waste Manager — Title
715-551-5864 — (Area Code) Telephone No.

Signature
05/22/19 — Date

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 [ ] CD (initial submittal and follow-up) [E] Email (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:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup-040319 (208)	Nitrate+Nitrite, dis.	mg/L	2.2	2	10	NR140.10
R45 (208)	Nitrate+Nitrite, dis.	mg/L	2.2	2	10	NR140.10

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

marathoncountysolidwaste.org
marathoncountysolidwaste

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

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	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
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

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Instructions:

* **Prepare one form for each license or monitoring ID.**
* **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
  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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County - BRRDF	04228	337005680	APRIL -03-2019 through APRIL -04-2019

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)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify) _____

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [X] 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 Hagenbucher	Solid Waste Manager	715-551-5864
Facility Representative Name (Print)	Title	(Area Code) Telephone No.
David Hagenbucher	05/22/19	
Signature	Date	

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** [ ] **CD (initial submittal and follow-up)** [ ] **E-mail (follow-up only)** **Other** _____

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	680	470		well
R59WT (234)	Hardness	mg/L	420	230		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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

marathoncountysolidwaste.org
marathoncountysolidwaste

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 County Solid Waste: Area A Groundwater Monitoring 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
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

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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area A	02892	737054890	OCTOBER -14-2019 through OCTOBER -16-2019
Some Area A wells are linked to BRRDF site (Lic. 04228) but reported here.			

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [x] 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.
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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 Hagenbucher — Facility Representative Name (Print)
Operations Manager — Title
715 551 5864 — (Area Code) Telephone No.
David Hagenbucher — Signature
12/06/19 — Date

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 [ ] CD (initial submittal and follow-up) [ ] E-mail (follow-up only) Other _____

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	.5	5	NR140.10
Dup-101519 (074)	Trichloroethylene	ug/L	7.2	.5	5	NR140.10
Dup-101519 (074)	Vinyl Chloride	ug/L	0.50	.02	.2	NR140.10
R13R (074)	Tetrachloroethylene	ug/L	0.74	.5	5	NR140.10
R13R (074)	Trichloroethylene	ug/L	7.2	.5	5	NR140.10
R13R (074)	Vinyl Chloride	ug/L	0.49	.02	.2	NR140.10
R38 (053)	Tetrachloroethylene	ug/L	0.88	.5	5	NR140.10
R38 (053)	Trichloroethylene	ug/L	1.3	.5	5	NR140.10
R47 (062)	Trichloroethylene	ug/L	0.63	.5	5	NR140.10
R50P (068)	Tetrachloroethylene	ug/L	0.57	.5	5	NR140.10
R35 (050)	Conductivity	umho@25C	770	510		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

marathoncountysolidwaste.org
marathoncountysolidwaste

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. 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 County Solid Waste: Area B Groundwater Monitoring Wells									
	Area B	Facility #3338	Exceedances						
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.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

Form 4400-231(R 1/04)

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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:

Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County Landfill - Area B	03338	737092730	OCTOBER -14-2019 through OCTOBER -15-2019

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- [X] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

- [ ] No. No groundwater standards or explosive gas limits were exceeded.
- [X] 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.
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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 Hagenbucher — Facility Representative Name (Print)
Manager — Title
715 551 5864 — (Area Code) Telephone No.

David Hagenbucher — Signature
12/06/19 — Date

FOR DNR USE ONLY. Check action taken, and record date and your initials. Describe on back side if necessary.

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- EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [ ] E-mail (follow-up only) Other _____

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:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
Dup- 10151901 (208)	Nitrate+Nitrite, dis.	mg/L	2.1	2	10	NR140.10
R27 (156)	Nitrate+Nitrite, dis.	mg/L	4.8	2	10	NR140.10
R45 (208)	Nitrate+Nitrite, dis.	mg/L	2.1	2	10	NR140.10

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

marathoncountysolidwaste.org
marathoncountysolidwaste

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

Marathon County Solid Waste: Bluebird Ridge Groundwater Monitoring Wells									
	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.

State of Wisconsin
Department of Natural Resources

ENVIRONMENTAL MONITORING DATA CERTIFICATION

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Northern Lake Service, Inc.

Contact for questions about data formatting. Include data preparer's name, telephone number and E-mail address:
Name: Chris Geske Phone: 715-478-2777
E-mail: lims@nlslab.com

Facility Name	License No. / Monitoring ID	Facility ID [FID]	Actual sampling dates (e.g., July 2-6, 2003
Marathon County - BRRDF	04228	337005680	OCTOBER -15-2019 through OCTOBER -16-2019

The enclosed results are for sampling required in the month(s) of: (e.g., June 2003)
OCTOBER -2019

Type of Data Submitted (Check all that apply)

- [x] Groundwater monitoring data from monitoring wells
- [ ] Groundwater monitoring data from private water supply wells
- [ ] Leachate monitoring data
- [ ] Gas monitoring data
- [ ] Air monitoring data
- [ ] Other (specify)

Notification attached?

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Certification

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David Hagenbucher — Facility Representative Name (Print)
Operations Manager — Title
715 551 5864 — (Area Code) Telephone No.
David Hagenbucher — Signature
12/06/19 — Date

FOR DNR USE ONLY: Check action taken, and record date and your initials. Describe on back side if necessary:

- [ ] Found uploading problems on _____ Initials _____
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EDD format(s): [ ] Diskette [ ] CD (initial submittal and follow-up) [ ] E-mail (follow-up only) Other _____

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:

Well Desc (Point ID)	Parameter	Units	Result	PAL / ACL	ES	Comments
R59P (237)	Alkalinity	mg/L	380	230		well
R59P (237)	Conductivity	umhos@25C	670	470		well
R59P (237)	Hardness	mg/L	430	230		well
R59WT (234)	Alkalinity	mg/L	420	230		well
R59WT (234)	Conductivity	umhos@25C	710	470		well
R59WT (234)	Hardness	mg/L	470	230		well

Notes: site = site assigned PAL/ES : well = well assigned PAL/ES : NR140.10 = NR140 Public Health PAL/ES : NR140.12 = NR140 Public Welfare PAL/ES

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, John C. Oswald, 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 OF CONTENTS

LIST OF TABLES

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.

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 (https://www.uwsp.edu/cnr-ap/watershed/Pages/wellwaterviewer.aspx) 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
Parameters that Exceed Current NR 140 Standards
Marathon County Solid Waste Department
Areas A, B, and Bluebird Ridge RDF
2017 - 2019

Parameter	Unit	NR 140 PAL	NR 140 ES	Well	Date	Result	Data Flags	Exceedance	Area Designation	Within DMZ
Nitrate+Nitrite (dissolved)	(mg/L)	2	10	R-27	04/18/2017	4.7		PAL	B	Y
					10/17/2017	4.3		PAL	B	Y
					04/18/2018	2.2		PAL	B	Y
					10/23/2018	3.6		PAL	B	Y
					10/14/2019	4.8		PAL	B	Y
				R-45	10/17/2017	2.0		PAL	B	Y
					10/23/2018	2.1		PAL	B	Y
					04/3/2019	2.2		PAL	B	Y
					10/14/2019	2.1		PAL	B	Y
				R-52	10/16/2017	2.0		PAL	B	N
Tetrachloroethene	(µg/L)	0.5	5	R-12R	04/18/2017	1.1		PAL	A	Y
					10/17/2017	0.57	J	PAL	A	Y
					04/18/2018	0.56	J	PAL	A	Y
					10/23/2018	0.78	J	PAL	A	Y
					04/3/2019	0.71	J	PAL	A	Y
					10/16/2019	0.50	J	PAL	A	Y
				R-13R	04/18/2017	4.2		PAL	A	Y
					10/17/2017	1.7		PAL	A	Y
					04/18/2018	3.6		PAL	A	Y
					10/23/2018	3.5		PAL	A	Y
					04/3/2019	3.5		PAL	A	Y
					10/15/2019	0.74	J	PAL	A	Y
				R-38	04/18/2017	0.84		PAL	A	Y
					10/17/2017	1.0		PAL	A	Y
					04/18/2018	0.95		PAL	A	Y
					10/23/2018	1.1	J	PAL	A	Y
					04/3/2019	1.2		PAL	A	Y
					10/16/2019	0.88	J	PAL	A	Y
				R-38A	04/18/2018	0.82		PAL	A	Y
				R-47	04/18/2017	0.56	J	PAL	A	N
					10/17/2017	0.66		PAL	A	N
				R-50P	04/17/2017	0.70		PAL	A, BRRDF	Y
					10/16/2017	0.80		PAL	A, BRRDF	Y
					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

Parameter	Unit	NR 140 PAL	NR 140 ES	Well	Date	Result	Data Flags	Exceedance	Area Designation	Within DMZ
Trichloroethene	(µg/L)	0.5	5	R-12R	4/18/2017	1.8		PAL	A	Y
					4/18/2018	0.6	J	PAL	A	Y
					10/23/2018	0.86	J	PAL	A	Y
					04/3/2019	0.63	J	PAL	A	Y
				R-13R	4/18/2017	5.6 / 5.4		PAL	A	Y
					10/17/2017	4.6 / 4.5		PAL	A	Y
					04/18/2018	5.3 / 3.5		PAL	A	Y
					10/23/2018	5.1 / 4.8		PAL	A	Y
					04/3/2019	3.4 / 3.8		PAL	A	Y
					10/15/2019	7.2 / 7.2		PAL	A	Y
				R-38	04/18/2017	1.2		PAL	A	Y
					10/17/2017	1.5		PAL	A	Y
					4/18/2018	0.97	J	PAL	A	Y
					10/23/2018	1.3	J	PAL	A	Y
					04/3/2019	1.2		PAL	A	Y
					10/16/2019	1.3	J	PAL	A	Y
				R-38A	4/18/2018	0.83	J	PAL	A	Y
				R-47	4/18/2017	0.81	J	PAL	A	Y
					10/17/2017	1.5		PAL	A	Y
					4/18/2018	0.51	J	PAL	A	Y
					10/15/2019	0.63	J	PAL	A	Y
				R-50P	4/17/2017	0.54	J	PAL	A, BRRDF	Y
					10/16/2017	0.56	J	PAL	A, BRRDF	Y
					04/17/2018	0.50	J	PAL	A, BRRDF	Y
Vinyl Chloride	(µg/L)	0.02	0.2	R-12R	04/18/2017	0.17	J	PAL	A	Y
				R-13R	10/17/2017	0.19	J	PAL	A	Y
					10/15/2019	0.50		PAL	A	Y

Notes:

Prepared by: TD
Checked by: LS

1. J = Estimated concentration between the limit of detection and limit of quantitation.
2. NR 140 PAL = Preventive Action Limit
3. NR 140 ES = Enforcement Standard
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
6. 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 Flags	Exceedance	Area Designation	Within DMZ
Alkalinity	(mg/L)	230	-	R-59WT	04/18/2017	270		PAL (I)	BRRDF	N
					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)	A	Y
					10/17/2017	559		PAL (I)	A	Y
					04/18/2018	553		PAL (I)	A	Y
					10/23/2018	718		PAL (I)	A	Y
					04/3/2019	772		PAL (I)	A	Y
					10/15/2019	774		PAL (I)	A	Y

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 Flags	Exceedance	Area Designation	Within DMZ
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	Y
		290	-	R-52	10/16/2017	300		PAL (I)	B	N

Notes:

Prepared by: TD

Checked by: LS

1. J = Estimated concentration between the limit of detection and limit of quantitation
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