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October 30, 2020

Ms. Candace Sykora
Hydrogeologist
Remediation & Redevelopment Program
Wisconsin Department of Natural Resources
890 Spruce St, Baldwin, WI 54002

Subject: **September 2020 Residential Well Groundwater Quality Analytical Results**
Residential Wells RW-2550 & RW-2551
Round 49 Long Term Groundwater Monitoring Event
Spickler Landfill Site
Spencer, Wisconsin
EPA ID# WID980902969
EarthCon Project No. 02.20090034

Dear Ms. Sykora:

On September 30, 2020, EarthCon Consultants, Inc. (EarthCon) completed the residential water sampling as part of the Round 49 Long-term Groundwater Monitoring Event at the Spickler Landfill, Spencer, Wisconsin. During the fall event, Residential Wells RW-2550 and RW-2551 were sampled, a trip blank was analyzed, and a duplicate sample was collected. EarthCon was not able to obtain permission to sample residential well RW-2543.

The residential well samples were analyzed by Pace Analytical Services, Inc. (Pace) at their Green Bay, Wisconsin and Mt. Juliet, Tennessee facilities, and Davy Laboratories in La Crosse, Wisconsin. The data were reviewed against the Final Quality Assurance Project Plan (QAPP), Spickler Landfill Site, Marathon County, Wisconsin (STS 1995), to ensure that the sampling and analysis meets the objectives of the QAPP.

The analytical results from Round 49 Residential Well Sampling are summarized on the attached Table 1 for organic constituents and Table 2 for inorganic constituents. The VOCs analyzed by Method 8260 and SIM 8260 (low-level vinyl chloride) were not detected above the respective level of quantification limits in residential well samples RW-2550 and RW-2551.

At the request of the US Environmental Protection Agency and the Wisconsin Department of Natural Resources, 1,4-dioxane was added to the list of analytes for the residential wells. 1,4-dioxane, analyzed by Method 8270C-mod (Method 8270-SIM), was not detected in residential well samples RW-2550 or RW-2551.

Inorganic constituents arsenic and barium were not detected or were detected at concentrations below their respective PALs in both of the residential well samples.

The following presents a summary of the constituents that were detected at concentrations above their respective PAL or ES:

- Iron was detected at an estimated concentration of 215 ug/L in residential well RW-2551. This detection is above the PAL but below the ES.
- Iron and manganese were detected at concentrations of 3,880 ug/L and 69.7 ug/L, respectively, in the sample from residential well RW-2550. These concentrations, detected above their respective ESs, are consistent with previous results. Both iron and manganese are naturally occurring in the area.
- Lead was detected at a concentration of 3.7 ug/L, above the PAL but below the ES in the sample collected from residential well RW-2550. The lead detections are likely due to the water coming in contact with well plumbing/piping that contains lead.

The data have been validated by the laboratory and by our Senior Quality Assurance Chemist and have been found to be acceptable. Attached to this letter is the Data Quality Review, applicable pages from the Pace Report of Laboratory Analysis with validation qualifiers noted as appropriate and the chain-of-custody record.

If you have any questions regarding this report, please contact Alison Levinson at (770) 973-2100.

Sincerely,
EarthCon Consultants, Inc.

Alison Levinson, P.G.
License No. 1319-13
Senior Geologist

Carol D. Northern
Project Principal

CC: Mr. Dale Wonn, Weyerhaeuser NR Company
Ms. Megan Ballweg, WDNR-WMM/Eau Claire
Ms. Mary Tierney, USEPA Region 5

Attachments:
Table 1 and Table 2
Data Quality Review
Laboratory Analytical Reports
Chain-of-custody

TABLE 1
LONG-TERM GROUNDWATER MONITORING
VOLATILE ORGANIC COMPOUND SUMMARY
RESIDENTIAL MONITORING WELLS
SPICKLER LANDFILL

Parameter	UNITS	NR140 PAL	NR140 ES	Method Detection Limit	Standard Reporting Limit	SLLT-RW2550 (WDNR Pt. ID No. 804) LTGWM Rnd 49 09/30/2020	SLLT-RW2550 DUP (WDNR Pt. ID No. 804) LTGWM Rnd 49 09/30/2020	SLLT-RW2551 (WDNR Pt. ID No. 802) LTGWM Rnd 49 09/30/2020	SLLT-RW Trip Blank (WDNR Pt. ID No. 999) LTGWM Rnd 49 09/30/2020
1,1-Dichloroethane	ug/L	85.0	850	0.27	1.0	ND	ND	ND	ND
1,2-Dichloroethane	ug/L	0.5	5	0.28	1.0	ND	ND	ND	ND
1,4-Dichlorobenzene	ug/L	15	75	0.94	3.1	ND	ND	ND	ND
1,4-Dioxane	ug/L	0.3	3	0.045	0.1	ND	ND	ND	NA
Benzene	ug/L	0.5	5	0.25	1.0	ND	ND	ND	ND
Chloroethane	ug/L	80	400	1.30	5.0	ND	ND	ND	ND
cis-1,2-Dichloroethylene	ug/L	7	70	0.27	1.0	ND	ND	ND	ND
Methylene chloride	ug/L	0.5	5	0.58	5.0	ND	ND	ND	ND
Tetrachloroethylene (PCE)	ug/L	0.5	5	0.33	1.1	ND	ND	ND	ND
Trichloroethylene (TCE)	ug/L	0.5	5	0.26	1.0	ND	ND	ND	ND
Vinyl chloride	ug/L	0.02	0.2	0.17	1.0	ND	ND	ND	ND

Notes:
Laboratory analyses peformed by Pace Analytical Services.
ND - Non Detect
NA- Not analyzed.

Prepared By: GAJ 10/28/2020
Checked By: AGL 10/28/2020

TABLE 2
LONG-TERM GROUNDWATER MONITORING
INORGANIC COMPOUND SUMMARY
RESIDENTIAL MONITORING WELLS
SPICKLER LANDFILL

PARAMETER	UNITS	NR140 PAL	NR140 ES	METHOD DETECTION LIMIT	STANDARD REPORTING LIMIT	SLLT-RW2550 (WDNR Pt. ID No. 804)	SLLT-RW2550 DUP (WDNR Pt. ID No. 804)	SLLT-RW2551 (WDNR Pt. ID No. 802)
						LTGWM	LTGWM	LTGWM
						Rnd 49	Rnd 49	Rnd 49
						09/30/2020	09/30/2020	09/30/2020
Arsenic, total (As)	ug/L	1	10	0.280	1.0	ND	ND	ND
Barium, total (Ba)	ug/L	400	2000	0.700	2.3	15.2	15.2	7.6
Iron, total (Fe)	ug/L	0.15	0.3	58	250	3880	3840	215 J
Lead, total (Pb)	ug/L	1.5	15	0.240	1.0	3.7	3.6	0.25 J
Manganese, total (Mn)	ug/L	60	300	1.2	4.0	69.7	68.9	4.9

Notes:
Laboratory analyses peformed by Pace Analytical Services.
J - Estimated value based on QC data.
ND - Non Detect

Prepared By: GAJ 10/28/2020
Checked By: AGL 10/28/2020

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MEMORANDUM

TO: Alison Levinson, EarthCon Consultants

FROM: Kathy J. Gunderson, Senior Scientist

DATE: October 27, 2020

SUBJECT: Data Quality Review of Residential Water Samples Collected September 2020

PROJECT: Site Monitoring, Spickler Landfill, Marathon County, Wisconsin

PROJECT #: 02.20170334.20-50

1.0 Introduction

This memorandum presents the cursory validation of the analytical data from samples collected near the Spickler Landfill. Two residential water samples, one field duplicate, and one trip blank were collected September 30, 2020. The analyses were performed by Pace Analytical Services (Pace), in their Green Bay, Wisconsin and Mt. Juliet, Tenseness laboratories. Pace subcontracted the low-level vinyl chloride analyses to Davy Laboratories of La Crosse, Wisconsin. The samples were analyzed for site-specific volatile organic compounds (VOCs), 1,4-dioxane, and total metals following the methods referenced in Table 1.

The quality assurance criteria used to assess the data are from the *Final Quality Assurance Project Plan Spickler Landfill Site Marathon County, Wisconsin* (STS 1995), the *Contract Laboratory Program National Functional Guidelines for Organic and Inorganic Data Review* (USEPA 1999, 1994), the analytical methods, or the professional judgment of the validation chemist. The following laboratory deliverables were evaluated during the review process:

- Chain-of-custody (COC) documentation to assess holding times and verify report completeness
- Laboratory quality control (QC) sample results, including method blanks, surrogate spikes, laboratory control sample/laboratory control sample duplicates (LCS/LCSDs), matrix spike/matrix spike duplicates (MS/MSDs), and laboratory duplicates
- Field QC samples to assess trip blank contamination and field duplicate precision

Field duplicate precision is presented in Table 2 at the end of this memorandum.

2.0 Data Validation Findings

2.1 Custody, Preservation, and Completeness – Acceptable

Sample custody was maintained as required from sample collection to receipt at the laboratory. The samples were received intact and were properly preserved. The reports are complete and contain results for the samples and tests requested on the COC form.

2.2 Volatile Organic Analyses

The field samples and trip blank were analyzed for the site-specific VOCs benzene, chloroethane, 1.4-dichlorobenzene, 1,1-dichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethene, methylene chloride, tetrachloroethene, and trichloroethene by Method 8260 at Pace's Green Bay, Wisconsin facility. The field samples and trip blank were analyzed for low-level vinyl chloride by Method 8260B by Davy Laboratories.

2.2.1 Holding Times – Acceptable

The samples were analyzed within the method-required holding time of 14 days from collection for preserved water samples.

2.2.2 Blank Analyses – Acceptable

2.2.2.1 Method Blanks

Method blanks were analyzed at the required frequency by both laboratories. VOCs were not detected in the method blanks above the limits of detection (LOD, aka method detection limits).

2.2.2.2 Trip Blanks

One trip blank is associated with the samples. VOCs were not detected in the trip blank.

2.2.3 Surrogate Analyses – Acceptable

Surrogate compounds were added to the samples, blanks, and QC samples as required. The recovery values are within the laboratory control limits.

2.2.4 Laboratory Control Sample Analyses – Acceptable

LCS analyses were performed at the required frequency by both laboratories. The recovery values are within the laboratory control limits.

2.2.5 Matrix Spike/Matrix Spike Duplicate Analyses – Acceptable with Discussion

Except as noted below, MS/MSDs were reported at the method specified frequency of one pair per batch. The recovery and relative percent difference (RPD) values are within the laboratory control limits for MS/MSD analyses of project samples.

- MS/MSD results were not reported by Pace Green Bay. Data qualifiers are not required due to a lack of laboratory QC results.

2.2.6 Laboratory Reporting Limits – Acceptable with Discussion

The site-specific VOCs were reported and, with one exception, the quantitation limits listed in Table 3-3 of the QAPP were met.

- The chloroethane LOD is 1.3 µg/L, which is greater than the quantitation limit of 1 µg/L listed in the QAPP.

2.2.7 Field Duplicates – Acceptable

Sample SLLT-RWDUP01-4999 is a field duplicate of sample SLLT-RW2550-4901. An RPD value less than or equal to 30 is considered acceptable precision for water samples. RPD values could not be calculated because positive results were not reported in either sample.

2.2.8 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here, the data are acceptable for their intended use.

2.3 Semivolatile Organic Analyses

The sample and field duplicate were analyzed for 1,4-dioxane at Pace's Mt. Juliet, Tennessee facility via Method 3510C/8270C.

2.3.1 Holding Times – Acceptable

The samples were extracted within the method holding time of seven days from collection. The sample extracts were analyzed within the method holding time of 40 days from extraction.

2.3.2 Blank Analyses – Acceptable

2.3.2.1 Method Blanks

Method blanks were analyzed at the required frequency of one per extraction batch. 1,4-dioxane was not detected in the method blank above the LOD.

2.3.3 Surrogate Analyses – Acceptable

Surrogate compounds were added to the samples, blanks, and QC samples as required. The recovery values are within the laboratory control limits.

2.3.4 Laboratory Control Sample Analyses – Acceptable

LCS/LCSD analyses were performed at the required frequency of one per extraction batch. The recovery and RPD values are within the laboratory control limits.

2.3.5 Matrix Spike/Matrix Spike Duplicate Analyses – Acceptable with Discussion

Except as noted below, MS/MSDs were analyzed at the required frequency and the recovery and RPD values are within the laboratory control limits.

- MS/MSD results were not reported for 1,4-dioxane. Data qualifiers are not required due to a lack of laboratory QC results.

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2.3.6 Laboratory Reporting Limits – Acceptable

1,4-dioxane was reported as requested on the COC. The LOD is less than or equal to 0.0590 µg/L. The QAPP does not list a detection limit goal for 1,4-dioxane.

2.3.7 Field Duplicates – Acceptable

Sample SLLT-RWDUP01-4999 is a field duplicate of sample SLLT-RW2550-4901. An RPD value less than or equal to 30 is considered acceptable precision for water samples. RPD values could not be calculated because 1,4-dioxane was not detected in the original sample or field duplicate.

2.3.8 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here, the data are acceptable for their intended use.

2.4 Total Metals Analyses

The samples and the field duplicate were analyzed for the site-specific total metals arsenic, barium, iron, lead, and manganese by Method 3010/6020 at Pace's Green Bay facility.

2.4.1 Holding Times – Acceptable

The samples were analyzed within the method-required holding time of 180 days from collection.

2.4.2 Blank Analyses – Acceptable

2.4.2.1 Method Blanks

Method blanks were analyzed at the required frequency of one per digestion batch. Target metals were not detected above the LOD.

2.4.3 Laboratory Control Sample Analyses – Acceptable

LCSs were analyzed at the required frequency of one per digestion batch. The recovery values are within Functional Guidelines criteria of 80 to 120 percent.

2.4.4 Spiked Sample Analyses – Acceptable

Matrix spike analyses were performed at the required frequency of one per digestion batch. The recovery values are within the QAPP criteria of 75 to 125 percent.

2.4.5 Laboratory Duplicate Sample Analyses – Acceptable

Duplicate sample analyses, in the form of MSDs, were performed at the required frequency of one per digestion batch. The RPD values are within the QAPP precision criteria of less than 20.

2.4.6 Laboratory Reporting Limits – Acceptable

The project-specific metals were reported as required. The project detection limits listed in Table 3-2 of the QAPP were met.

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2.4.7 Field Duplicates – Acceptable

Sample SLLT-RWDUP01-4999 is a field duplicate of sample SLLT-RW-2550-4901. An RPD value less than or equal to 30 is considered acceptable precision for water samples. Field duplicate precision is acceptable as shown in Table 2.

2.4.8 Overall Assessment of Data Usability

The usability of the data is based on the EPA guidance documents noted previously. Upon consideration of the information presented here, the data are acceptable for their intended use.

3.0 Completeness – Acceptable

Completeness is a measure of the amount of valid data collected for the sampling event. Completeness is expressed as the ratio of valid results to the amount of data expected to be obtained under normal conditions. Valid results are results that are determined to be usable during the data validation review process.

The completeness of the second half 2020 monitoring data in Pace report 40215857 is 100 percent, which meets the QAPP criteria of greater than 95 percent.

4.0 Data Qualifier Definitions

4.1 Inorganic Data Qualifiers

The following data validation qualifiers were used in the review of this data set. These qualifiers are from the *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*.

U The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

J The associated value is an estimated quantity.

UJ The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.

R The data are unusable. (Note: Analyte may or may not be present)

4.2 Organic Data Qualifiers

The following data validation qualifiers were used in the review of the organic analyses in this data set. These qualifiers are from the *Contract Laboratory Program National Functional Guidelines for Organic Data Review*.

U The analyte was analyzed for but not detected above the reported sample quantitation limit.

J The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

UJ The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

N The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.

NJ The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents its approximate concentration.

R The sample results are rejected due to serious deficiencies in the ability to analyze the samples and meet quality control criteria. The presence or absence of the analyte cannot be verified.

5.0 References

STS. 1995. Final Quality Assurance Project Plan Spickler Landfill Site Marathon County, Wisconsin. November 3, 1995.

USEPA. 1994. Contract Laboratory Program National Functional Guidelines for Inorganic Data Review. United States Environmental Protection Agency. Office of Solid Waste and Emergence Response. February 1994.

USEPA. 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846) Third Edition, Updates I, II, IIA, IIB, and III. United States Environmental Protection Agency. Office of Solid Waste. December 1996.

USEPA. 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency Office of Emergency and Remedial Response. EPA540/R-99/008. October 1999.

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Table 1 – Sample Data Reviewed

Sample ID	Pace Green Bay Laboratory ID	Davy Laboratories ID	VOCs[a]	1,4-D[b]	VC[c]	Total Metals[d]
SLLT-RW-2551-4901	40215857001	20J0158-01	X	X	X	X
SLLT-RW-2550-4901	40215857002	20J0158-02	X	X	X	X
SLLT-RWTB01-4901	40215857003	20J0158-03	X		X	
SLLT-RWDUP01-4999	40215857004	20J0158-04	X	X	X	X

[a] Volatile Organic Compounds by Method 8260 (USEPA 1996)
[b] 1,4-dioxane by Method 3510C/8270C (USEPA 1996)
[c] Vinyl chloride by Method 8260B low level (USEPA 1996)
[d] Total arsenic, lead, barium, chromium, manganese, and iron by Method 3010/6020 (USEPA 1996)

Table 2 – Field Duplicate Precision

Analyte	Sample Result[a] SLLT-RW2550-4901	Duplicate Result[a] SLLT-RWDUP01-4999	RPD[b]
Total barium	15.2	15.2	0
Total iron	3880	3840	1.0
Total lead	3.7	3.6	2.7
Total manganese	69.7	68.9	1.2

[a] Units are µg/L
[b] Relative percent difference

Text and tables reviewed by: CLC 10/27/2020

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ANALYTICAL RESULTS

Project: 02.20170334.20 SPICKLER LF LIC
Pace Project No.: 40215857

Sample: POINT 802 SLLT-RW-2551-4901 **Lab ID: 40215857001** Collected: 09/30/20 15:45 Received: 10/03/20 09:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/06/20 05:19	10/08/20 14:58	7440-38-2	
Barium	**7.6**	ug/L	2.3	0.70	1	10/06/20 05:19	10/08/20 14:58	7440-39-3	
Iron	**215J**	ug/L	250	58.0	1	10/06/20 05:19	10/08/20 14:58	7439-89-6	
Lead	**0.25J**	ug/L	1.0	0.24	1	10/06/20 05:19	10/08/20 14:58	7439-92-1	
Manganese	**4.9**	ug/L	4.0	1.2	1	10/06/20 05:19	10/08/20 14:58	7439-96-5	
SVOA (GC/MS) 8270 C-mod	Analytical Method: EPA 8270C Modified Preparation Method: 3510C Pace National - Mt. Juliet								
1,4-Dioxane (p-Dioxane)	**<0.0447**	ug/L	0.149	0.0447	1	10/07/20 12:02	10/07/20 20:20	123-91-1	
Surrogates									
Nitrobenzene-d5 (S)	55.3	%	10.0-120		1	10/07/20 12:02	10/07/20 20:20	4165-60-0	
8260 MSV	Analytical Method: EPA 8260 Pace Analytical Services - Green Bay								
Benzene	**<0.25**	ug/L	1.0	0.25	1		10/07/20 13:15	71-43-2	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		10/07/20 13:15	75-00-3	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		10/07/20 13:15	106-46-7	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		10/07/20 13:15	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		10/07/20 13:15	107-06-2	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		10/07/20 13:15	156-59-2	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		10/07/20 13:15	75-09-2	
Tetrachloroethene	**<0.33**	ug/L	1.1	0.33	1		10/07/20 13:15	127-18-4	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		10/07/20 13:15	79-01-6	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		10/07/20 13:15	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/07/20 13:15	460-00-4	
Dibromofluoromethane (S)	106	%	70-130		1		10/07/20 13:15	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		10/07/20 13:15	2037-26-5	

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KAJ 10-23-20

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ANALYTICAL RESULTS

Project: 02.20170334.20 SPICKLER LF LIC
Pace Project No.: 40215857

Sample: POINT 804 SSLT-RW-2550-4901 **Lab ID: 40215857002** Collected: 09/30/20 17:05 Received: 10/03/20 09:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010 Pace Analytical Services - Green Bay								
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/06/20 05:19	10/08/20 15:05	7440-38-2	
Barium	**15.2**	ug/L	2.3	0.70	1	10/06/20 05:19	10/08/20 15:05	7440-39-3	
Iron	**3880**	ug/L	250	58.0	1	10/06/20 05:19	10/08/20 15:05	7439-89-6	
Lead	**3.7**	ug/L	1.0	0.24	1	10/06/20 05:19	10/08/20 15:05	7439-92-1	
Manganese	**89.7**	ug/L	4.0	1.2	1	10/06/20 05:19	10/08/20 15:05	7439-96-5	
SVOA (GC/MS) 8270 C-mod	Analytical Method: EPA 8270C Modified Preparation Method: 3510C Pace National - Mt. Juliet								
1,4-Dioxane (p-Dioxane)	**<0.0447**	ug/L	0.149	0.0447	1	10/07/20 12:02	10/07/20 20:40	123-91-1	
Surrogates									
Nitrobenzene-d5 (S)	52.6	%	10.0-120		1	10/07/20 12:02	10/07/20 20:40	4165-60-0	
8260 MSV	Analytical Method: EPA 8260 Pace Analytical Services - Green Bay								
Benzene	**<0.25**	ug/L	1.0	0.25	1		10/07/20 13:38	71-43-2	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		10/07/20 13:38	75-00-3	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		10/07/20 13:38	106-46-7	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		10/07/20 13:38	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		10/07/20 13:38	107-06-2	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		10/07/20 13:38	156-59-2	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		10/07/20 13:38	75-09-2	
Tetrachloroethene	**<0.33**	ug/L	1.1	0.33	1		10/07/20 13:38	127-18-4	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		10/07/20 13:38	79-01-6	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		10/07/20 13:38	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/07/20 13:38	460-00-4	
Dibromofluoromethane (S)	108	%	70-130		1		10/07/20 13:38	1868-53-7	
Toluene-d8 (S)	101	%	70-130		1		10/07/20 13:38	2037-26-5	

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RJD 10-23-20

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ANALYTICAL RESULTS

Project: 02.20170334.20 SPICKLER LF LIC
Pace Project No.: 40215857

Sample: PCINT 999 SLLT-RWTB01-4901 **Lab ID: 40215857003** Collected: 09/30/20 00:00 Received: 10/03/20 09:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
8260 MSV	Analytical Method: EPA 8260 Pace Analytical Services - Green Bay								
Benzene	**<0.25**	ug/L	1.0	0.25	1		10/07/20 18:41	71-43-2	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		10/07/20 18:41	75-00-3	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		10/07/20 18:41	106-46-7	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		10/07/20 18:41	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		10/07/20 18:41	107-06-2	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		10/07/20 18:41	156-59-2	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		10/07/20 18:41	75-09-2	
Tetrachloroethene	**<0.33**	ug/L	1.1	0.33	1		10/07/20 18:41	127-18-4	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		10/07/20 18:41	79-01-6	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		10/07/20 18:41	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	99	%	70-130		1		10/07/20 18:41	460-00-4	
Dibromofluoromethane (S)	107	%	70-130		1		10/07/20 18:41	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		10/07/20 18:41	2037-26-5	

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Pace Analytical Services, LLC
1241 Bellevue Street - Suite 9
Green Bay, WI 54302
(920)469-2436

ANALYTICAL RESULTS

Project: 02.20170334.20 SPICKLER LF LIC
Pace Project No.: 40215857

Sample: SLLT-RWDUP01-4999 **Lab ID: 40215857004** Collected: 09/30/20 00:00 Received: 10/03/20 09:35 Matrix: Water

Parameters	Results	Units	LOQ	LOD	DF	Prepared	Analyzed	CAS No.	Qual
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 3010								
	Pace Analytical Services - Green Bay								
Arsenic	**<0.28**	ug/L	1.0	0.28	1	10/06/20 05:19	10/08/20 15:12	7440-38-2	
Barium	**15.2**	ug/L	2.3	0.70	1	10/06/20 05:19	10/08/20 15:12	7440-39-3	
Iron	**3840**	ug/L	250	56.0	1	10/06/20 05:19	10/08/20 15:12	7439-89-6	
Lead	**3.6**	ug/L	1.0	0.24	1	10/06/20 05:19	10/08/20 15:12	7439-92-1	
Manganese	**68.9**	ug/L	4.0	1.2	1	10/06/20 05:19	10/08/20 15:12	7439-96-5	
SVOA (GC/MS) 8270 C-mod	Analytical Method: EPA 8270C Modified Preparation Method: 3510C								
	Pace National - Mt. Juliet								
1,4-Dioxane (p-Dioxane)	**<0.0447**	ug/L	0.149	0.0447	1	10/07/20 12:02	10/07/20 21:00	123-91-1	
Surrogates									
Nitrobenzene-d5 (S)	27.6	%	10.0-120		1	10/07/20 12:02	10/07/20 21:00	4165-60-0	
8260 MSV	Analytical Method: EPA 8260								
	Pace Analytical Services - Green Bay								
Benzene	**<0.25**	ug/L	1.0	0.25	1		10/07/20 14:00	71-43-2	
Chloroethane	**<1.3**	ug/L	5.0	1.3	1		10/07/20 14:00	75-00-3	
1,4-Dichlorobenzene	**<0.94**	ug/L	3.1	0.94	1		10/07/20 14:00	106-46-7	
1,1-Dichloroethane	**<0.27**	ug/L	1.0	0.27	1		10/07/20 14:00	75-34-3	
1,2-Dichloroethane	**<0.28**	ug/L	1.0	0.28	1		10/07/20 14:00	107-06-2	
cis-1,2-Dichloroethene	**<0.27**	ug/L	1.0	0.27	1		10/07/20 14:00	156-59-2	
Methylene Chloride	**<0.58**	ug/L	5.0	0.58	1		10/07/20 14:00	75-09-2	
Tetrachloroethene	**<0.33**	ug/L	1.1	0.33	1		10/07/20 14:00	127-18-4	
Trichloroethene	**<0.26**	ug/L	1.0	0.26	1		10/07/20 14:00	79-01-6	
Vinyl chloride	**<0.17**	ug/L	1.0	0.17	1		10/07/20 14:00	75-01-4	
Surrogates									
4-Bromofluorobenzene (S)	97	%	70-130		1		10/07/20 14:00	460-00-4	
Dibromofluoromethane (S)	109	%	70-130		1		10/07/20 14:00	1868-53-7	
Toluene-d8 (S)	100	%	70-130		1		10/07/20 14:00	2037-26-5	

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10/23/20

DAVY LABORATORIES
A Division of Davy Engineering Co., Inc.
115 6th Street South
La Crosse, WI 54601
(608) 782-3130
www.davyinc.com

Division of Davy Engineering Co.

LABORATORY ANALYSIS REPORT

Pace Analytical-Green Bay
Attn: Steven Mleczko
1241 Bellevue St. Suite 9
Green Bay, WI 54302

Date: October 23, 2020
Client No: 11128

Sample No: 2010158-01
Sample Site: SLLT-RW-2551-4901

Sample Collected: 30-Sep-20 15:45

Sample Received: 06-Oct-20 12:19

Parameter	Result	Units	LOD	LOQ/RL	Dilution	Prepared	Analyzed	Method	Qualifier
Laboratory Results									
Vinyl chloride	**<0.02**	µg/L	0.02	0.06	1	09-Oct-20 00:53	09-Oct-20 00:53	EPA 8260 B 1996	
Surrogate: 4-Bromofluorobenzene			*83.2 %*	*70-130*			*09-Oct-20 00:53*	*EPA 8260 B 1996*	
Surrogate: Dibromofluoromethane			*95.2 %*	*70-130*			*09-Oct-20 00:53*	*EPA 8260 B 1996*	
Surrogate: 1,2-Dichloroethane-d4			*103 %*	*70-130*			*09-Oct-20 00:53*	*EPA 8260 B 1996*	
Surrogate: Toluene-d8			*95.4 %*	*70-130*			*09-Oct-20 00:53*	*EPA 8260 B 1996*	

KM 10.23.20

Submitted by:
Davy Laboratories

Jennifer M. Buchholz
Jennifer M. Buchholz, Laboratory Director

The laboratory analyses reported were determined in accordance with methods from approved authoritative sources. Approved authoritative sources are defined and listed within the respective state certification codes. The results are representative of the samples only; conditions can be expected to vary at different times and under different sampling conditions. This report may not be reproduced, except in full, without the written approval of the laboratory. WI Certification 632021390 and WI DATCP 105-216, MN NELAC Certification 055-999-151, IA Certification 304. Revision #2 -07/29/2019

DAVY LABORATORIES
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115 6th Street South
La Crosse, WI 54601
(608) 782-3130
www.davyinc.com

Division of Davy Engineering Co.

LABORATORY ANALYSIS REPORT

Pace Analytical-Green Bay
Attn: Steven Mleczko
1241 Bellevue St. Suite 9
Green Bay, WI 54302

Date: October 23, 2020
Client No: 11128

Sample No: 2010158-02
Sample Site: SSLT-RW-2550-4901

Sample Collected: 30-Sep-20 17:05

Sample Received: 06-Oct-20 12:19

Parameter	Result	Units	LOD	LOQ/RL	Dilution	Prepared	Analyzed	Method	Qualifier
Laboratory Results									
Vinyl chloride	<0.02	µg/L	0.02	0.06	1	09-Oct-20 01:22	09-Oct-20 01:22	EPA 8260 B 1996	
Surrogate: 4-Bromofluorobenzene			*84.8 %*	*70-130*			*09-Oct-20 01:22*	*EPA 8260 B 1996*	
Surrogate: Dibromofluoromethane			*95.7 %*	*70-130*			*09-Oct-20 01:22*	*EPA 8260 B 1996*	
Surrogate: 1,2-Dichloroethane-d4			*98.7 %*	*70-130*			*09-Oct-20 01:22*	*EPA 8260 B 1996*	
Surrogate: Toluene-d8			*95.6 %*	*70-130*			*09-Oct-20 01:22*	*EPA 8260 B 1996*	

KP 10-23-20

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LABORATORY ANALYSIS REPORT

Pace Analytical-Green Bay
Attn: Steven Mieczko
1241 Bellevue St. Suite 9
Green Bay, WI 54302

Date: October 23, 2020
Client No: 11128

Sample No: 20J0158-03
Sample Site: SLLT-RWTB01-4901

Sample Collected: 30-Sep-20 00:00

Sample Received: 06-Oct-20 12:19

Parameter	Result	Units	LOD	LOQ/RL	Dilution	Prepared	Analyzed	Method	Qualifier
Laboratory Results									
Vinyl chloride	<0.02	µg/L	0.02	0.06	1	09-Oct-20 01:52	09-Oct-20 01:52	EPA 8260 B 1996	
Surrogate: 4-Bromofluorobenzene			*84.9 %*	*70-130*			*09-Oct-20 01:52*	*EPA 8260 B 1996*	
Surrogate: Dibromofluoromethane			*99.2 %*	*70-130*			*09-Oct-20 01:52*	*EPA 8260 B 1996*	
Surrogate: 1,2-Dichloroethane-d4			*99.0 %*	*70-130*			*09-Oct-20 01:52*	*EPA 8260 B 1996*	
Surrogate: Toluene-d8			*98.2 %*	*70-130*			*09-Oct-20 01:52*	*EPA 8260 B 1996*	

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LABORATORY ANALYSIS REPORT

Pace Analytical-Green Bay
Attn: Steven Mleczko
1241 Bellevue St. Suite 9
Green Bay, WI 54302

Date: October 23, 2020
Client No: 11128

Sample No: 2030158-04
Sample Site: SLLT-RWDUP01-4999

Sample Collected: 30-Sep-20 17:05

Sample Received: 06-Oct-20 12:19

Parameter	Result	Units	LOD	LOQ/RL	Dilution	Prepared	Analyzed	Method	Qualifier
Laboratory Results									
Vinyl chloride	**<0.02**	**µg/L**	0.02	0.06	1	09-Oct-20 02:21	09-Oct-20 02:21	EPA 8260 B 1996	
Surrogate: 4-Bromofluorobenzene			*85.1 %*	*70-130*			*09-Oct-20 02:21*	*EPA 8260 B 1996*	
Surrogate: Dibromofluoromethane			*95.3 %*	*70-130*			*09-Oct-20 02:21*	*EPA 8260 B 1996*	
Surrogate: 1,2-Dichloroethane-d4			*99.3 %*	*70-130*			*09-Oct-20 02:21*	*EPA 8260 B 1996*	
Surrogate: Toluene-d8			*95.8 %*	*70-130*			*09-Oct-20 02:21*	*EPA 8260 B 1996*	

KM 102320

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CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed accurately.

40215771

Page: 1 of 1

Section A Required Client Information:

Company:	EarthCon Consultants, Inc.
Address:	1880 West Oak Parkway, Bld. 100, Suite 106
	Marietta, GA 30062
Email To:	alevinson@earthcon.com
Phone: 770-973-2100	Fax: 770-973-7395
Requested Due Date/TAT:	STANDARD TAT

Section B Required Project Information:

Report To:	Alison Levinson
Copy To:	Kathy Gunderson
	Corinne Severn
Purchase Order No.:	309034.14
Project Name:	Spickler LF License No. 4077 ID No. 737154550
Project Number:	02.20170334.20

Section C Invoice Information:

Attention:	Alison Levinson
Company Name:	EarthCon Consultants, Inc.
Address:	1880 W Oak Pkwy Bld100 Ste106 MarietteGA 30
Pace Quote Reference:	090210
Pace Project Manager:	Steve Mleczko
Pace Profile #:	

REGULATORY AGENCY

☐ NPDES ☒ GROUND WATER ☐ DRINKING WATER
☐ UST ☐ RCRA ☐ OTHER

Site Location STATE: Wisconsin

Section D Required Client Information

Valid Matrix Codes

MATRIX	CODE
DRINKING WATER	DW
WATER	WT
WASTE WATER	WW
PRODUCT	P
SOIL/SOLID	SL
OIL	OL
WIPE	WP
AIR	AR
OTHER	OT
TISSUE	TS

SAMPLE ID (A-Z, 0-9 / ,-) Sample IDs MUST BE UNIQUE

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED Composite Start DATE	COLLECTED Composite Start TIME	COLLECTED Composite End/Grab DATE	COLLECTED Composite End/Grab TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H_2SO_4	HNO_3	HCl	NaOH	$Na_2S_2O_3$	Methanol	Other	Analysis Test (Y/N)	VOCs(8260-Site-Specific)	As, Ba, Fe, Mn, Pb	1,4-dioxane (8270-SIM)	Residual Chlorine (Y/N)	Pace Project No./ Lab I.D.
										Preservatives									N	Y	N		
1	Point No. 041 SLLT-MW-14S-4901	WT	G			9/30/20	1145	1.5°C	6	2		1	3						X	X	X		001
2	Point No. 043 SLLT-MW-14D-4901	WT	G			9/30/20	0950	1.6°C	6	2		1	3						X	X	X		002
3	Point No. 057 SLLT-MW-20S-4901	WT	G			9/30/20	1340	1.2°C	6	2		1	3						X	X	X		003
4	Point No. 999 SLLT-MWTB01-4901	WT	G			-	-		2				2						X				004
5	SLLT-MW-DUP01-4999	WT	G			9/30/20	-		6	2		1	3						X	X	X		005
6		WT	G																				
7		WT	G																				
8		WT	G																				
9		WT	G																				
10		WT	G																				
11		WT	G																				
12		WT	G																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
Site-Specific VOCs: 1,2-DCA, PCE, TCE, methylene chloride, vinyl chloride, benzene, cis-1,2-dichloroethene, 1,1-dichloroethane, 1,4-dichlorobenzene, and chloroethane.	Bernadette Greenwood / Earthcon	10-1-2020	1520							
	Fed Ex	10/2/20	0955	Susan Wyle Pace	10/2/20	0955	ROI	Y	N	Y

SAMPLER NAME AND SIGNATURE		Temp in °C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	Bernadette Greenwood				
SIGNATURE of SAMPLER:	Bernadette Greenwood	DATE Signed (MM/DD/YY):	9-30-2020		

*Important Note: By signing this form you are accepting Pace's NET 30 day payment terms and agreeing to late charges of 1.5% per month for any invoices not paid within 30 days.

F-ALL-Q-020rev.08, 12-Oct-2007

Sample Preservation Receipt Form

Pace Analytical Services, LLC
1241 Bellevue Street, Suite 9
Green Bay, WI 54302

Client Name: Earth Con Project # 40215771

All containers needing preservation have been checked and noted below: ☑Yes ☐No ☐N/A Initial when completed: SKW Date/Time:

Lab Lot# of pH paper: 10D4194 Lab Std #ID of preservation (if pH adjusted):

Pace Lab #	Glass								Plastic					Vials						Jars				General			VOA Vials (>6mm) *	H2SO4 pH ≤2	NaOH+Zn Act pH ≥9	NaOH pH ≥12	HNO3 pH ≤2	pH after adjusted	Volume (mL)
	AG1U	BG1U	AG1H	AG4S	AG4U	AG5U	AG2S	BG3U	BP1U	BP3U	BP3B	BP3N	BP3S	VG9A	DG9T	VG9U	VG9H	VG9M	VG9D	JGFU	JG9U	WGFU	WPFU	SP5T	ZPLC	GN							
001						2						1					3														X		2.5 / 5 / 10
002						2						1					3														X		2.5 / 5 / 10
003						2						1					3														X		2.5 / 5 / 10
004																	23	19%+2.05N															2.5 / 5 / 10
005						2						1					3														X		2.5 / 5 / 10
006																																	2.5 / 5 / 10
007																																	2.5 / 5 / 10
008																																	2.5 / 5 / 10
009																																	2.5 / 5 / 10
010																																	2.5 / 5 / 10
011																																	2.5 / 5 / 10
012																																	2.5 / 5 / 10
013																																	2.5 / 5 / 10
014																																	2.5 / 5 / 10
015																																	2.5 / 5 / 10
016																																	2.5 / 5 / 10
017																																	2.5 / 5 / 10
018																											10/2/20						2.5 / 5 / 10
019																																	2.5 / 5 / 10
020																													SKW				2.5 / 5 / 10

Exceptions to preservation check: (VOA) Coliform, TOC, TOX, TOH, O&G, WI DRO, Phenolics, Other:_____ Headspace in VOA Vials (>6mm) : ☐Yes ☑No ☐N/A ***If yes look in headspace column**

AG1U	1 liter amber glass
BG1U	1 liter clear glass
AG1H	1 liter amber glass HCL
AG4S	125 mL amber glass H2SO4
AG4U	120 mL amber glass unpres
AG5U	100 mL amber glass unpres
AG2S	500 mL amber glass H2SO4
BG3U	250 mL clear glass unpres

BP1U	1 liter plastic unpres
BP3U	250 mL plastic unpres
BP3B	250 mL plastic NaOH
BP3N	250 mL plastic HNO3
BP3S	250 mL plastic H2SO4

VG9A	40 mL clear ascorbic
DG9T	40 mL amber Na Thio
VG9U	40 mL clear vial unpres
VG9H	40 mL clear vial HCL
VG9M	40 mL clear vial MeOH
VG9D	40 mL clear vial DI

JGFU	4 oz amber jar unpres
JG9U	9 oz amber jar unpres
WGFU	4 oz clear jar unpres
WPFU	4 oz plastic jar unpres
SP5T	120 mL plastic Na Thiosulfate
ZPLC	ziploc bag
GN	

Chain of Custody

PASI Green Bay Laboratory

Pace Analytical®
www.pacelabs.com

Workorder: 40215857 **Workorder Name:** 02.20170334.20 SPICKLER LF LIC **Results Requested By:** 10/19/2020

Report / Invoice To

Steven Mleczko
Pace Analytical Green Bay
1241 Bellevue Street
Suite 9
Green Bay, WI 54302
Phone (920)469-2436
Email: steve.mleczko@pacelabs.com

Subcontract To

P.O._____

Davy Labs
115 6th Street South,
La Crosse, WI 54601

State of Sample Origin: WI LOD/LOQ

Requested Analysis

Item	Sample ID	Collect Date/Time	Lab ID	Matrix	Preserved Containers: HCL						LL Vinly Chloride by 8260												LAB USE ONLY
1	SLLT-RW-2551-4901	9/30/2020 15:45	40215857001	Water	3						X												
2	SSLT-RW-2550-4901	9/30/2020 17:05	40215857002	Water	3						X												
3	SLLT-RWTB01-4901	9/30/2020 00:00	40215857003	Water	1						X												
4	SLLT-RWDUP01-4999	9/30/2020 00:00	40215857004	Water	3						X												
5																							

Transfers	Released By	Date/Time	Received By	Date/Time
1	[illegible]	10/5/2016		
2				
3				

Cooler Temperature on Receipt _____ °C **Custody Seal** Y or N **Received on Ice** Y

20J0158

Received By: Eddie Clark
Date/Time Received: 06-Oct-2020 12:19
Temp. Received at: 0.8°C Therm #: 744
Received on Ice Yes Carrier: Fed Ex