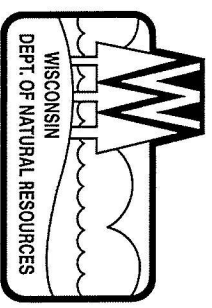


**ATTACHMENT 12 – WDNR LETTER -REQUEST FOR ADDITIONAL  
INFORMATION PAL-ACL PLAN MODIFICATION, AUGUST 29, 2022**

**State of Wisconsin**  
**DEPARTMENT OF NATURAL RESOURCES**  
Milwaukee Service Center  
1207 West St. Paul Avenue  
Milwaukee, WI 53233

Tony Evers, Governor  
Preston D. Cole, Secretary  
Telephone 608-266-2621  
Toll Free 1-888-936-7463  
TTY Access via relay - 711



August 29, 2022

File Ref: FID 268244130  
Waukesha County  
SW / CORR

Daniel Otzelberger  
GFL Emerald Park Landfill  
W124 S10629 South 124<sup>th</sup> Street  
Muskego, WI 53150

Subject: Request for Additional Information, Plan of Operation Modification for GFL Emerald Park Landfill, W124 S10629 South 124<sup>th</sup> Street, Muskego, Wisconsin, License No. 3290

Dear Mr. Otzelberger:

As you know, GFL's predecessor at the facility submitted a plan modification request dated 10/11/16 that proposed alternative concentration limits (ACLs) and site-specific preventive action limits (PALs) for select wells/parameters. An email from the department on 1/18/19 documented our suspension of this plan review, pending additional information. In response, a revised set of tables (attached) was submitted on 3/15/22 that were intended to replace/supersede those in Appendix C of the initial 2016 submittal request.

The department has completed its review of the collective submittal. Please refer to attached Tables 1 and 2 summarizing our review of proposed ACLs and PALs, respectively. At this time, we have the following comments on GFL's request:

**General**

- In consideration of the analytical suite already in place [e.g., volatile organic compounds (VOCs)], the **department intends to remove chemical oxygen demand (COD) as a required parameter**. This is consistent with a change to Waste program policy circa-2002, which was made in the interest of reducing mercury waste as a by-product of its lab analysis.
- Three of the wells included as part of the request (MW-104B, MW-125D, and MW0-126A) appear to be located **within the waste footprint for proposed expansion**. As such, they would not be eligible for ACLs or site-specific PALs.
- Overall, there are 4 main issues identified with the submittal that need to be resolved. Each general item is listed below, followed by the specific list identified in the department's review.
  - a. The submittal does not specify which NR 140 groundwater standard exemptions are being requested for each well and substance. That includes whether the requested exemption is for a PAL in accordance with s. NR 140.28 (3), Wis. Adm. Code, or for an ES in accordance with s. NR 140.28 (4), Wis. Adm. Code.

- b. The submittal does not explain why the requested NR 140 groundwater standard exemptions are warranted, beyond similar exemptions being having been granted for the facility. To demonstrate why an exemption is warranted, evidence to support the conclusion that exceedances are not related to the landfill or its operations should be provided. For example, a discussion on leachate data, well position relative to groundwater flow, etc.
- c. For several of the wells and parameters, result values that failed a quality control flag were used in the calculation without addressing why using those values is warranted.
- d. For some of the PAL or ACL calculations, outlier data or data that displayed a high variability (not stabilized) were used in the calculation without an explanation.

### Specific Items

NR 140 Standard Exemptions for Substances with Baseline Concentrations Above an Established PAL or ES

### ACLs

- Arsenic in MW-4C: As stated in department guidance on calculating PALs and ACLs (publication WA1105, revised 2007), “high sample variability” indicates “a problem with data quality or quantity” and warrants further evaluation (e.g., additional sample collection). Based on the current information, we don’t believe there are adequate data to approve an ACL at this time.
- Arsenic in MW-5A: The proposed ACL was calculated using an apparent “outlier” with a high bias (refer to attached box plot), as a well as a second result with “QC Flag I” indicating questionable data quality (e.g., due to detection in lab method blank). Exclusion of these results in less than the required 8 rounds of data.
- Arsenic in MW-104B and MW-106D: The proposed ACL for each was calculated using an apparent “outlier” with a high bias (refer to attached box plots). Exclusion of these results in less than the required 8 rounds of data.
- Boron in MW-303D, MW-305D, and MW-313D: The proposed ACL for each was calculated using a result with “QC Flag I” (discussed above). Exclusion of these results in less than the required 8 rounds of data.
- Fluoride in MW-120DR: Using the same subset as specified in proposal, the department arrived at a different calculated value.

### PALs

- Alkalinity in MW-19AR: The proposed PAL was calculated using a result with “QC Flag III” indicating questionable data quality (e.g., failed to meet analytical method standards or NR 149 requirements). Exclusion of this results in less than the required 8 rounds of data.
- Specific Conductivity in MW-19AR: Using the same subset as specified in proposal, the department arrived at a different calculated value.
- Total Hardness in MW-19AR and MW-120DR: Using the same subsets as specified in proposal, the department arrived at different calculated values.

- Total Hardness in MW-302A, MW-302C, MW-304A, MW-305B, and MW-305C: The proposed PAL for each was calculated using a result with “QC Flag I” (discussed above). The department arrived at a different calculated value for each, likely due to excluding “flagged” results in our calculations.
- Total Hardness in MW-301B and MW-301C: The proposed PALs were calculated using results with “QC Flag I” (discussed above). Exclusion of these results in less than the required 8 rounds of data.
- Sodium in MW-302A: We identified two separate issues related to the subset specified in the proposal as the basis for calculation. These include (1) one of the results used differs slightly from what is in the department’s Groundwater and Environmental Monitoring System (GEMS) database; and (2) a result in GEMS (for January 2011) that appears absent and unaccounted for in the specified subset used to calculate the proposed standard.
- Sodium in MW-303C, MW-304A, MW-304B, and MW-305A: The proposed PAL for each was calculated using a result with “QC Flag I” (discussed above). The department arrived at a different calculated value for each, likely due to excluding “flagged” results in our calculations.
- Sodium in MW-313D: Using the same subset as specified in proposal, the department arrived at a different calculated value.

Given the prevalence of similar “QC Flag I” data failures cited above and based on the age of some the data used in calculations, the department wanted to reiterate that our criteria associated with this specific data-quality flag were “relaxed” in 2009. It is possible that the department may be able to use some/all of these data in our approved PAL and ACL calculations; however, additional explanation would be needed. Please refer to the second footnote to Table 2 on page 11 of guidance publication WA1357, dated 2017.

At this time, the department is not able to approve the requested PALs and ACLs because the proposal does not specify which NR 140 groundwater standard exemptions are being requested (e.g., whether it’s a PAL or ES exemption for a given substance and well); and furthermore, the request does not adequately explain why such exemptions are warranted. In addition, some of the proposed values were calculated using data with quality control flag failures, appear to be outliers, or do not represent stabilized concentrations, and which were not addressed in the submittal. If such values are excluded from PAL/ACL calculations, in many cases that results in a subset containing less than the minimum 8 sampling rounds required.

Please provide a response to the items identified in this letter. If you have any questions regarding this letter, please contact David Buser at (414) 550-8189 or by email at [David.Buser@wisconsin.gov](mailto:David.Buser@wisconsin.gov).

Sincerely,



David M. Buser  
Waste Management Hydrogeologist  
Southeast Region

Attachment – Appendix C tables (revised)  
Tables 1 and 2  
Box plots (arsenic) – MW-5A, MW-104B, and MW-106D

cc: SER File

Chad Siegle – GFL ([chad.siegle@gflenv.com](mailto:chad.siegle@gflenv.com))  
Luke Specketer – Tetra Tech ([luke.specketer@tetratech.com](mailto:luke.specketer@tetratech.com))  
Scott Freimark – ESC ([escstaff@yahoo.com](mailto:escstaff@yahoo.com))  
Ann Bekta – WDNR (electronic)  
Joe Lourigan – WDNR (electronic)

## Appendix C Tables (Revised)

Environmental Sampling Corporation  
Advanced Disposal Services Emerald Park Landfill  
Arsenic

DATE	MW-4C (028)	MW-5A (030)	MW-104B (118)	MW-106B (122)	MW-106D (126)	MW-115E (149)	MW-117C (152)	MW-117D (154)	MW-120C (158)	MW-121D (166)	MW-125D (172)	MW-126A (174)	MW-131A (178)	MW-131D (182)
Jan-00	--	--	--	--	--	5.8	--	--	--	--	--	--	--	--
Feb-00	--	--	--	--	--	5.4	--	--	--	--	--	--	--	--
Mar-00	--	--	--	--	--	3.3	--	--	--	--	--	--	--	--
Jun-00	--	--	--	--	--	4.3	--	--	--	--	--	--	--	--
Jul-00	--	--	--	--	--	3.1	--	--	--	--	--	--	--	--
Aug-00	--	--	--	--	--	4.3	--	--	--	--	--	--	--	--
Oct-13	19.4	3.1	2.0	1.4	1.1	5.9	2.0	5.5	1.7	1.3	3.5	5.8	2.5	4.1
Feb-14	12.4	0.52	0.92	1.5	1.1	5.0	1.7	6.1	1.6	1.2	1.5	3.4	1.3	5.0
Mar-14	5.6	0.48	0.98	1.3	1.1	5.5	2.3	5.7	1.6	1.2	3.0	4.9	1.1	5.4
Apr-14	3.1	8.2	8.2	2.5	1.0	7.1	1.5	5.7	1.3	1.4	1.8	4	1	3.5
Jun-14	11.4	2.3	3.9	1.0	1.2	5.4	1.5	4.8	1.4	1.0	2.7	1.7	1.3	3.2
Sep-14	10.8	1.5	1.3	1.1	0.78	7.3	1.6	5.4	1.4	0.91	2.8	2.4	2.7	2.3
Oct-14	4.6	1.0	2	1.4	7.1	7.2	1.6	4.9	1.7	1.3	2.5	3.7	2.4	3.3
Apr-15	3.7	2.1	2.8	1.6	2.4	6.9	2.9	5.2	2.0	1.1	3.0	2.8	2.5	3.7

Calculated Background + 2 Standard Deviations

Sum	71.0	19.2	22.1	11.8	15.8	76.5	15.1	43.3	12.7	9.4	20.8	28.7	14.8	30.5
Count	8	8	8	8	8	14	8	8	8	8	8	8	8	8
Mean	8.88	2.40	2.76	1.48	1.97	5.46	1.89	5.41	1.59	1.18	2.60	3.59	1.85	3.81
Standard Dev	5.64	2.51	2.41	0.46	2.13	1.38	0.49	0.44	0.22	0.16	0.66	1.33	0.73	1.00
2*Standard Dev + Mean	20.15	7.43	7.59	2.39	6.23	8.22	2.88	6.28	2.03	1.51	3.92	6.25	3.32	5.82
Proposed ACL	21	7.5	7.6	2.4	6.3	8.3	2.9	6.3	2.1	1.6	4.0	6.3	3.4	5.9

Notes:

Groundwater samples analyzed for arsenic are field filtered.

ug/L = micrograms per liter

(201) = WDNR well number

WDNR NR140 Public Health Standards: arsenic

1.0 = Preventive Action Limit (PAL) exceedance  
10.0 = Enforcement Standard (ES) exceedance

NR 140 Wisconsin Administrative Code (WAC).  
NR 140 Wisconsin Administrative Code (WAC).

Environmental Sampling Corporation  
Advanced Disposal Services Emerald Park Landfill  
Chemical Oxygen Demand (mg/L)

DATE	MW-301A (184)	MW-301B (186)	MW-301C (188)	MW-302A (190)	MW-302B (192)	MW-302C (194)	MW-303A (196)	MW-303B (198)	MW-303C (200)	MW-304A (202)	MW-304B (204)	MW-304C (206)	MW-305A (208)	MW-305B (210)	MW-305C (2012)
Mar-07	Groundwater Elevation Round Only														
Apr-07	17.1	14.3	5.0	5.0	17.1	5.0	5.0	120	5.0	5.0	5.0	5.0	20	5.0	5.0
May-07	22.9	37.2	91.5	22.9	40	109	22.9	37.2	17.1	14.3	25.7	85.8	45.7	31.4	22.9
Jul-07	Groundwater Elevation Round Only														
Aug-07	5.0	14.3	486	5.0	17.1	88.6	11.4	20	5.0	5.0	5.0	37.2	28.6	17.1	11.4
Sep-07	5.0	15.5	477	12.6	18.3	52.5	5.0	24	5.0	5.0	5.0	5.0	24	95.3	15.5
Mar-08	41.7	10.6	24.7	13.4	21.9	44.5	257	27.5	16.2	58.7	13.4	5.0	33.2	41.7	16.2
Apr-08	13.4	24.7	27.5	107	21.9	21.9	13.4	24.7	10.6	30.4	13.4	5.0	30.4	21.9	13.4
May-08	5.0	10.6	33.2	10.6	21.9	13.4	5.0	13.4	5.0	5.0	10.6	5.0	21.9	19	10.6
Jul-08	21.9	27.5	47.4	21.9	33.2	19	19	27.5	5.0	16.2	21.9	13.4	30.4	21.9	16.2
Dec-10	NA	NA	NA	82.7	NA	NA	5.0	10.3	NA	NA	NA	5.0	NA	5.0	NA

Calculated Background + 3 Standard Deviations

Sum	132	155	1,192	281	191	354	87	185	69	140	100	81	234	163	111
Count	8	8	8	9	8	8	8	8	8	8	8	8	8	8	8
Mean	16.50	19.34	149.04	31.23	23.93	44.24	10.84	23.08	8.61	17.45	12.50	10.08	29.28	20.38	13.90
Standard Dev	12.60	9.51	206.72	37.10	8.29	37.53	7.12	8.52	5.33	18.90	7.90	11.35	8.07	12.34	5.22
3*Standard Dev + Mean	54.31	47.86	769.21	142.54	48.81	156.81	32.21	48.64	24.60	74.15	36.19	44.12	53.50	57.40	29.56
Calculated PAL	55	48	770	150	49	160	33	49	25	75	37	45	54	58	30

Calculated Background + Table 3 Increments

Mean	16.50	19.34	149.04	31.23	23.93	44.24	10.84	23.08	8.61	17.45	12.50	10.08	29.28	20.38	13.90
NR140 Table 3 Increment	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
Mean + NR140	41.50	44.34	174.04	56.23	48.93	69.24	35.84	48.08	33.61	42.45	37.50	35.08	54.28	45.38	38.90
Calculated PAL	42	45	180	57	49	70	36	49	34	43	38	36	55	46	39

Proposed PAL

Proposed PAL	55	48	770	150	49	160	36	49	34	75	38	45	55	58	39
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Notes:

Groundwater samples analyzed for COD are field filtered.

mg/L = milligrams per liter

(201) = WDNR well number

NA = Not applicable (No sample collected)

5.0 = Nondetect 1/2 value used

100.0 = outlier



Environmental Sampling Corporation  
Advanced Disposal Services Emerald Park Landfill  
Total Hardness

DATE	MW-301A (184)	MW-301B (186)	MW-301C (188)	MW-302A (190)	MW-302B (192)	MW-302C (194)	MW-303A (196)	MW-303B (198)	MW-303C (200)	MW-304A (202)	MW-304B (204)	MW-304C (206)	MW-305A (208)	MW-305B (210)	MW-305C (2012)
Mar-07	Groundwater Elevation Round Only														
Apr-07	1,400	129	29.4	72.6	122	439	849	2,030	54	545	160	57.4	1,420	164	87.8
May-07	1,360	117	243	416	125	80	876	170	52.2	524	164	347	1,300	175	93.2
Jul-07	Groundwater Elevation Round Only														
Aug-07	1,410	119	370	465	128	336	871	154	50.4	503	167	227	1,360	184	97
Sep-07	1,350	105	2,360	452	145	361	902	148	55.4	538	159	62.4	1,380	283	90.5
Mar-08	1,470	473	71.8	350	124	244	863	146	50.8	546	162	57.1	1,310	311	84.9
Apr-08	1,460	124	29.4	369	117	66.2	912	145	50.6	548	170	56.1	1,310	203	86.9
May-08	1,430	119	35.5	365	121	63.5	890	155	51.7	532	166	55	1,370	242	84.9
Jul-08	1,460	136	83.5	447	124	63.5	1,000	173	54.1	579	181	64.1	1,370	205	90.1
Dec-10	NA	125	NA	399	NA	NA	NA	155	NA	NA	NA	NA	NA	NA	NA
Jan-11	NA	NA	28.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-11	NA	NA	NA	383	109	59.7	775	149	149	563	191	62.1	1,380	752	138
Apr-12	NA	NA	NA	320	127	66.9	896	152	138	542	184	58.5	1,360	246	123
Oct-12	NA	NA	NA	422	122	65.8	809	154	47.9	493	191	56.3	1,220	211	119
Apr-13	NA	NA	NA	196	129	51.6	837	172	50.3	582	200	78	1,420	225	183
Oct-13	NA	NA	NA	617	139	62.1	937	183	44.9	592	209	65.5	1,810	209	131
Apr-14	NA	NA	NA	354	126	65	779	156	44.2	480	173	53.6	1,250	230	122
Oct-14	NA	NA	NA	451	116	67.6	791	167	47.9	496	180	58.0	1,130	222	121
Apr-15	NA	NA	NA	407	127	67	726	146	45.9	467	166	54.7	1,260	190	116
Oct-15	NA	NA	NA	491	114	62.9	773	149	45.6	459	170	54.4	1,240	191	121

Calculated Background + 3 Standard Deviations

Sum	11,340	974	891	6,904	2,115	2,686	14,486	2,674	746	8,989	2,993	955	21,080	3,491	1,706
Count	8	8	8	17	17	17	17	17	15	17	17	16	16	16	16
Mean	1417.50	121.75	111.40	406.12	124.41	158.01	852.12	157.29	49.73	528.76	176.06	59.71	1317.50	218.19	106.64
Standard Dev	45.90	9.18	126.83	87.45	8.80	159.16	70.20	11.38	3.53	40.18	14.72	6.29	80.37	38.64	18.67
3*Standard Dev + Mean	1555.21	149.28	491.89	668.48	150.20	635.49	1062.71	191.43	60.32	649.30	220.22	78.58	1558.62	334.12	162.67
Calculated PAL	1,600	150	500	670	160	640	1,100	200	61	650	230	79	1,600	340	170

Calculated Background + Table 3 Increments

Mean	1417.50	121.75	111.40	406.12	124.41	158.01	852.12	157.29	49.73	528.76	176.06	59.71	1317.50	218.19	106.64
NR140 Table 3 Increment		100	100	100	100	100	100	100	100	100	100	100	100	100	100
Mean + NR140	1517.50	221.75	211.40	506.12	224.41	258.01	952.12	257.29	149.73	628.76	276.06	159.71	1417.50	318.19	206.64
Calculated PAL	1,600	230	220	510	230	260	960	260	150	630	280	160	1,500	320	210

Proposed PAL

Proposed PAL	1,600	230	500	670	230	640	1,100	260	150	650	280	160	1,600	340	210
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Notes:  
Groundwater samples analyzed for Total Hardness are field filtered.  
mg/L = milligrams per liter  
(201) = WDNR well number  
NA = Not applicable (No sample collected)  
5.0 = Nondetect 1/2 value used  
100.0 = outlier

Environmental Sampling Corporation  
Advanced Disposal Services Emerald Park Landfill  
Sodium

DATE	MW-301A (184)	MW-301B (186)	MW-301C (188)	MW-302A (190)	MW-302B (192)	MW-302C (194)	MW-303A (196)	MW-303B (198)	MW-303C (200)	MW-304A (202)	MW-304B (204)	MW-304C (206)	MW-305A (208)	MW-305B (210)	MW-305C (2012)
Mar-07	Groundwater Elevation Round Only														
Apr-07	62	120	60.2	55.9	110	7.59	60.2	112	56.9	35.1	130	62.7	161	112	85.1
May-07	63.9	145	63.1	8.75	105	56.1	62.2	118	57.3	30	134	63.2	164	125	84.7
Jul-07	Groundwater Elevation Round Only														
Aug-07	61.8	124	62.6	20.9	106	65.4	68.5	117	56	33.6	140	60.6	134	125	86.2
Sep-07	55.2	107	56.4	18.1	99.1	55.4	59	95.3	51.3	32.3	119	60.4	165	121	79
Mar-08	55.6	134	61	19.3	110	56.7	65.4	123	55.4	19.7	137	59.2	155	138	87.3
Apr-08	68.8	120	60.3	16.9	106	55.7	67.6	116	56.6	18.5	145	61.2	154	145	89.3
May-08	69.1	119	60.7	25.6	112	56.2	67.2	122	58	18.9	130	58	131	124	86.4
Jul-08	67.6	130	64.1	23.7	113	57.6	72	122	57.7	21.3	146	59.6	144	136	88.4
Dec-10	NA	NA	NA	48.0	NA	55.8	NA	NA	NA	NA	NA	NA	NA	NA	NA
Oct-11	NA	NA	NA	41.7	106	54.4	76.7	124	88.2	30.3	NA	59.5	101	115	93.5
Apr-12	NA	NA	NA	20.1	102	51.9	62.3	111	64.8	28.8	123	61	115	117	83.3
Oct-12	NA	NA	NA	36.8	108	57.3	70.9	120	60.5	36	134	62.2	127	133	91.2
Apr-13	NA	NA	NA	17.6	113	58	150	124	65.3	29	139	63.5	178	138	54.4
Oct-13	NA	NA	NA	31.1	121	55.8	155	132	56.1	35	146	67.6	236	126	87.9
Apr-14	NA	NA	NA	21.1	103	52.6	118	109	54.5	26.6	121	56	213	121	89
Oct-14	NA	NA	NA	27.4	113	62	177	122	61	29.8	139	63.1	186	127	92.5
Apr-15	NA	NA	NA	18	104	57.5	155	114	52.9	19.7	124	56.6	140	132	93.7
Oct-15	NA	NA	NA	30.9	106	59.5	148	118	56.8	30.8	132	61.7	138	123	97.9

Calculated Background + 3 Standard Deviations

Sum	504	999	488	426	1,837	968	1,633	1,999	921	475	2,139	1,036	2,642	2,158	1,415
Count	8	8	8	17	17	17	17	17	16	17	16	17	17	17	16
Mean	63.00	124.88	61.05	25.06	108.06	56.94	96.06	117.61	57.57	27.96	133.69	60.95	155.41	126.94	88.46
Standard Dev	5.49	11.44	2.36	9.99	5.30	3.20	42.99	8.08	3.78	6.09	8.77	2.80	34.08	8.95	4.61
3*Standard Dev + Mean	79.47	159.21	68.13	55.02	123.96	66.55	225.04	141.85	68.91	46.23	159.99	69.34	257.65	153.80	102.30
Calculated PAL	80	160	69	56	130	67	230	150	69	47	160	70	260	160	110

Calculated Background + Table 3 Increments

Mean	63.00	124.88	61.05	25.06	108.06	56.94	96.06	117.61	57.57	27.96	133.69	60.95	155.41	126.94	88.46
NR140 Table 3 Increment	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
Mean + NR140	73.00	134.88	71.05	35.06	118.06	66.94	106.06	127.61	67.57	37.96	143.69	70.95	165.41	136.94	98.46
Calculated PAL	73	140	72	36	120	67	110	130	68	38	150	71	170	140	99

Proposed PAL

Proposed PAL	80	160	72	56	130	67	230	150	69	47	160	71	260	160	110
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Notes:  
Groundwater samples analyzed for Sodium are field filtered.  
mg/L = milligrams per liter  
(201) = WDNR well number  
NA = Not applicable (No sample collected)  
5.0 = Nondetect 1/2 value used  
100.0 = outlier

Environmental Sampling Corporation  
 ADS - EMERALD PARK LANDFILL  
 Baseline Monitoring Data

MW-303D (201)	DETECTION MONITORING PARAMETERS (PAL/ES)												
	Alkalinity	NH <sub>3</sub>	B	Cd	Chloride	COD	F	Hardness	Pb	NO <sub>3</sub> +NO <sub>2</sub> N	Se	Na	SO <sub>4</sub>
	NS mg/L	(0.97 / 9.7) mg/L	(200 / 1000) ug/L	(0.5 / 5) ug/L	(125/250) mg/L	NS mg/L	(0.8 / 4) mg/L	NS mg/L	(1.5 / 15) ug/L	(2 / 10) mg/L	(10 / 50) ug/L	NS mg/L	(125/250) mg/L
DATE/unit													
Nov-11	136	0.206	359	<0.20	5.46	5.0	1.26	102	<0.30	<0.10	<0.60	52.4	60.4
Dec-11	128	0.222	333	<0.20	4.95	5.0	1.32	82.8	<0.30	<0.10	<0.60	51.9	64.8
Jan-12	140	0.205	327	<0.20	4.67	5.0	1.39	82.1	<0.30	<0.10	<0.60	51.5	65.0
Feb-12	123	0.201	342	<0.20	4.81	5.0	1.23	84.2	<0.30	<0.10	<0.60	51.4	66.5
Mar-12	120	0.226	364	<0.20	4.72	5.0	1.09	87.4	<0.30	<0.10	<0.60	53.1	68.1
Apr-12	129	0.227	326	<0.20	4.07	5.0	1.09	84.3	<0.30	<0.10	<0.60	52.6	64.8
May-12	126	<0.25	355	<0.13	4.7	6.0	1.1	80.8	<0.061	<0.12	<0.40	51.8	61.0
Jun-12	118	<0.25	345	<0.13	5.2	5.7	1.2	75.7	0.18J	<0.12	<0.40	50.2	60.2
Oct-12	120	--	--	--	4.5	--	--	76.1	--	--	--	49	54.7
Apr-13	129	--	--	--	5.4	--	--	87.7	--	--	--	56.2	60.8
Oct-13	131	--	--	--	5.3	--	--	73.5	--	--	--	48.7	65.6
Apr-14	126	--	--	--	5.6	--	--	77.6	--	--	--	48.8	60.5
Oct-14	133	--	--	--	5.6	--	--	72.3	--	--	--	48.9	60.4
Apr-15	123	--	--	--	5.6	--	--	79	--	--	--	48.1	60.5
Oct-15	132	--	--	--	5.5	--	--	77.7	--	--	--	51.8	59.4
Mean	128	--	344	--	--	5.2	1.21	81.5	--	--	--	51.1	--
NR140 Min.Incr.	100	--	--	--	--	25	--	100	--	--	--	10	--
Std Dev	6.23	--	14.6	--	--	0.4	0.11	7.4	--	--	--	2.2	--
3X Std Dev	18.7	--	--	--	--	1.1	--	22.1	--	--	--	6.5	--
Mean+3XSD	146	--	--	--	--	6.3	--	104	--	--	--	57.6	--
Mean+Min.Incr.	228	--	--	--	--	30.2	--	181.5	--	--	--	61.1	--
<b>Proposed PAL</b>	<b>230</b>	--	--	--	--	<b>31</b>	--	<b>190</b>	--	--	--	<b>62</b>	--
2X Std Dev	--	--	29.1	--	--	--	0.22	--	--	--	--	--	--
Mean+2XSD	--	--	373	--	--	--	1.43	--	--	--	--	--	--
<b>Proposed ACL</b>	--	NA	380	NA	NA	--	1.5	--	NA	NA	NA	--	NA

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

**235** = Preventive Action Limit (PAL) exceedance

NR 140 Wisconsin Administrative Code (WAC)

**590** = Enforcement Standard (ES) exceedance

NR 140 Wisconsin Administrative Code (WAC)

**0.3J**

= Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-303D total depth (feet):

141.5 ft.

MW-303D bottom of well elevation (ft. MSL):

638.56 ft.MSL

MW-303D top of well elevation (ft. MSL):

780.06 ft.MSL

Environmental Sampling Corporation  
 ADS - EMERALD PARK LANDFILL  
 Baseline Monitoring Data

MW-303D (201)	FIELD PARAMETERS (No Standards)					BASELINE PARAMETERS (PAL/ES)									
	pH NS s.u.	Conductivity NS umhos @ 25C	Temp. NS deg. C	Depth to Water feet	Groundwater Elevation (ft. MSL)	As (1 / 10) ug/L	Ba (400 / 2,000) ug/L	Cr (10 / 100) ug/L	Cu (130 / 1,300) ug/L	Mn # (25 / 50) ug/L	Ag (10 / 50) ug/L	Zn (2,500 / 5,000) ug/L	Hg (0.2 / 2) ug/L	TSS NS mg/L	
DATE/unit															
Nov-11	7.89	399	11.5	24.60	755.46	3.7	33.7	<1.60	<0.60	13.6	<0.20	<2.0	<0.07	48.5	
Dec-11	7.45	384	9.8	23.40	756.66	4.15	32.7	<1.60	<0.60	3.0J	<0.20	<2.0	<0.07	--	
Jan-12	7.58	398	7.6	22.70	757.36	4.54	35.3	<1.60	<0.60	3.5	<0.20	<2.0	<0.07	--	
Feb-12	7.27	554	8.6	22.35	757.71	4.43	34.6	<1.60	<0.60	3.1J	<0.20	<2.0	<0.07	--	
Mar-12	7.78	434	13.3	21.90	758.16	4.29	--	--	--	--	--	--	--	--	
Apr-12	7.28	344	10.5	22.85	757.21	4.66	--	--	--	--	--	--	--	--	
May-12	7.51	404	12.3	33.25	746.81	3.9	--	--	--	--	--	--	--	--	
Jun-12	7.62	473	13.8	45.30	734.76	4.1	--	--	--	--	--	--	--	--	
Oct-12	7.85	215	10.6	36.64	743.42	--	--	--	--	--	--	--	--	--	
Apr-13	8.73	375	14.8	22.45	757.61	--	--	--	--	--	--	--	--	--	
Oct-13	7.62	360	11.0	27.90	762.16	--	--	--	--	--	--	--	--	--	
Apr-14	7.70	502	11.2	22.55	757.51	--	--	--	--	--	--	--	--	--	
Oct-14	7.47	321	10.9	23.30	756.76	--	--	--	--	--	--	--	--	--	
Apr-15	8.32	380	10.6	22.98	757.08	--	--	--	--	--	--	--	--	--	
Oct-15	8.46	366	12.6	29.95	750.11	--	--	--	--	--	--	--	--	--	
Mean	--	393	--	--	--	4.22	--	--	--	--	--	--	--	--	
NR140 Min.Incr.	--	200	--	--	--	--	--	--	--	--	--	--	--	--	
Std Dev	--	79.5	--	--	--	0.32	--	--	--	--	--	--	--	--	
3X Std Dev	--	239	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+3XSD	--	632	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+Min.Incr.	--	593	--	--	--	--	--	--	--	--	--	--	--	--	
Proposed PAL	--	640	--	--	--	--	--	--	--	--	--	--	--	--	
2X Std Dev	--	--	--	--	--	0.65	--	--	--	--	--	--	--	--	
Mean+2XSD	--	--	--	--	--	4.87	--	--	--	--	--	--	--	--	
Proposed ACL	NA	NA	NA	NA	NA	4.9	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-303D total depth (feet): 141.5 ft.

MW-303D bottom of well elevation (ft. MSL): 638.56 ft.MSL

MW-303D top of well elevation (ft. MSL): 780.06 ft.MSL



Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-305D (213)	DETECTION MONITORING PARAMETERS													
	(PAL/ES)													
	Alkalinity NS mg/L	NH <sub>3</sub> (0.97 / 9.7) mg/L	B (200 / 1000) ug/L	Cd (0.5 / 5) ug/L	Chloride (125/250) mg/L	COD NS mg/L	F (0.8 / 4) mg/L	Hardness NS mg/L	Pb (1.5 / 15) ug/L	NO <sub>2</sub> +NO <sub>2</sub> N (2 / 10) mg/L	Se (10 / 50) ug/L	Na NS mg/L	SO <sub>4</sub> (125/250) mg/L	
DATE/unit	Nov-11	120	0.175J	349	<0.20	5.55	5.0	1.26	89.3	<0.30	<0.10	<0.60	50.7	69.4
Dec-11	112	0.203	344	<0.20	5.46	5.0	1.21	80.9	<0.30	<0.10	<0.60	51.1	71.6	
Jan-12	111	0.168J	324	<0.20	4.91	5.0	1.34	79.6	<0.30	<0.10	<0.60	50.4	70.2	
Feb-12	120	0.196J	340	<0.20	5.03	5.0	1.23	83.1	<0.30	<0.10	<0.60	49.9	71.6	
Mar-12	114	0.181J	341	<0.20	5.04	5.0	1.13	84.2	<0.30	<0.10	<0.60	51.8	72.7	
Apr-12	122	0.205	339	0.26	4.79	5.0	1.09	82.2	<0.30	<0.10	<0.60	49.9	68.9	
May-12	116	<0.25	345	<0.13	5.1	5.7	1.1	76.2	0.11J	<0.12	<0.40	48.8	64.0	
Jun-12	106	<0.25	342	<0.13	5.6	5.7	1.2	76	0.12J	<0.12	<0.40	49.2	63.3	
Oct-12	111	--	--	--	5.3	--	--	82.2	--	--	--	52.6	65.8	
Apr-13	118	--	--	--	6.2	--	--	87.1	--	--	--	55	68.8	
Oct-13	114	--	--	--	6.0	--	--	75.2	--	--	--	48.8	65.2	
Apr-14	104	--	--	--	5.8	--	--	76.9	--	--	--	46.9	65.5	
Oct-14	120	--	--	--	6.0	--	--	72.9	--	--	--	48.1	65.9	
Apr-15	112	--	--	--	5.8	--	--	75.4	--	--	--	49	64.8	
Oct-15	120	--	--	--	6.0	--	--	78.2	--	--	--	50.9	67.0	
Mean	115	--	341	--	--	5.2	1.20	80.0	--	--	--	50.2	--	
NR140 Min.Incr.	100	--	--	--	--	25	--	100	--	--	--	10	--	
Std Dev	5.42	--	7.4	--	--	0.32	0.09	4.7	--	--	--	1.98	--	
3X Std Dev	16.3	--	--	--	--	0.97	--	14.2	--	--	--	5.93	--	
Mean+3XSD	131	--	--	--	--	6.15	--	94	--	--	--	56.1	--	
Mean+Min.Incr.	215	--	--	--	--	30.2	--	180	--	--	--	60.2	--	
<b>Proposed PAL</b>	<b>220</b>	--	--	--	--	<b>31</b>	--	<b>180</b>	--	--	--	<b>61</b>	--	
2X Std Dev	--	--	14.8	--	--	0.17	--	--	--	--	--	--	--	
Mean+2XSD	--	--	355	--	--	1.37	--	--	--	--	--	--	--	
<b>Proposed ACL</b>	<b>--</b>	<b>NA</b>	<b>360</b>	<b>NA</b>	<b>NA</b>	<b>--</b>	<b>1.40</b>	<b>--</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>--</b>	<b>NA</b>	

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-305D total depth (feet): 146.8 ft.

MW-305D bottom of well elevation (ft. MSL): 634.13 ft.MSL

MW-305D top of well elevation (ft. MSL): 780.93 ft.MSL

Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-305D (213)	FIELD PARAMETERS (No Standards)					BASELINE PARAMETERS (PAL/ES)									
	pH	Conductivity	Temp.	Depth to	Groundwater	As	Ba	Cr	Cu	Mn #	Ag	Zn	Hg	TSS	
	NS	NS	NS	Water	Elevation	(1 / 10)	(400 / 2,000)	(10 / 100)	(130 / 1,300)	(25 / 50)	(10 / 50)	(2,500 / 5,000)	(0.2 / 2)	NS	
DATE/unit	s.u.	umhos @ 25C	deg. C	feet	(ft. MSL)	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	
Nov-11	7.91	388	11.5	28.20	752.73	5.76	17.6	<1.60	0.60J	3.5	<0.20	<2.0	<0.07	29.0	
Dec-11	7.55	379	8.4	26.70	754.23	4.93	16.8	<1.60	<0.60	7.1	<0.20	<2.0	<0.07	--	
Jan-12	7.70	355	8.1	25.80	755.13	6.07	19.1	<1.60	<0.60	4.4	<0.20	<2.0	<0.07	--	
Feb-12	7.51	369	8.8	25.50	755.43	5.79	17.6	<1.60	<0.60	2.6J	<0.20	<2.0	<0.07	--	
Mar-12	7.85	407	13.5	25.05	755.88	6.0	--	--	--	--	--	--	--	--	
Apr-12	7.37	333	10.2	25.80	755.13	6.94	--	--	--	--	--	--	--	--	
May-12	7.21	396	14.6	36.45	744.48	5.4	--	--	--	--	--	--	--	--	
Jun-12	7.52	469	15.4	50.90	730.03	4.5	--	--	--	--	--	--	--	--	
Oct-12	7.80	294	9.6	42.04	738.89	--	--	--	--	--	--	--	--	--	
Apr-13	8.47	355	14.0	25.40	755.53	--	--	--	--	--	--	--	--	--	
Oct-13	7.56	363	11.1	31.36	749.58	--	--	--	--	--	--	--	--	--	
Apr-14	7.35	389	9.2	25.35	755.58	--	--	--	--	--	--	--	--	--	
Oct-14	7.63	309	10.2	26.45	754.48	--	--	--	--	--	--	--	--	--	
Apr-15	7.46	388	10.8	25.46	755.47	--	--	--	--	--	--	--	--	--	
Oct-15	7.68	374	12.4	32.15	748.78	--	--	--	--	--	--	--	--	--	
Mean	--	371	--	--	--	5.67	--	--	--	--	--	--	--	--	
NR140 Min.Incr.	--	200	--	--	--	--	--	--	--	--	--	--	--	--	
Std Dev	--	41.7	--	--	--	0.75	--	--	--	--	--	--	--	--	
3X Std Dev	--	125	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+3XSD	--	496	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+Min.Incr.	--	571	--	--	--	--	--	--	--	--	--	--	--	--	
Proposed PAL	--	580	--	--	--	--	--	--	--	--	--	--	--	--	
2X Std Dev	--	--	--	--	--	1.49	--	--	--	--	--	--	--	--	
Mean+2XSD	--	--	--	--	--	7.17	--	--	--	--	--	--	--	--	
Proposed ACL	NA	NA	NA	NA	NA	7.20	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

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# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance

NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance

NR 140 Wisconsin Administrative Code (WAC)

0.3J

= Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-305D total depth (feet): 146.8 ft.

MW-305D bottom of well elevation (ft. MSL): 634.13 ft.MSL

MW-305D top of well elevation (ft. MSL): 780.93 ft.MSL





Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-313D (217)	DETECTION MONITORING PARAMETERS (PAL/ES)												
	Alkalinity	NH <sub>3</sub>	B	Cd	Chloride	COD	F	Hardness	Pb	NO <sub>2</sub> +NO <sub>2</sub> N	Se	Na	SO <sub>4</sub>
	NS mg/L	(0.97 / 9.7) mg/L	(200 / 1000) ug/L	(0.5 / 5) ug/L	(125/250) mg/L	NS mg/L	(0.8 / 4) mg/L	NS mg/L	(1.5 / 15) ug/L	(2 / 10) mg/L	(10 / 50) ug/L	NS mg/L	(125/250) mg/L
DATE/unit													
Nov-11	108	0.194J	420	<0.20	10.4	5.0	1.12	131	0.32J	<0.10	<0.60	85.9	157
Dec-11	105	0.226	382	<0.20	10.7	5.0	1.07	109	<0.30	<0.10	<0.60	84.3	163
Jan-12	110	0.188J	360	<0.20	10.1	5.0	1.23	106	<0.30	<0.10	<0.60	86.2	168
Feb-12	112	0.164J	392	<0.20	10.2	11.2	1.09	112	<0.30	<0.10	<0.60	80.6	167
Mar-12	109	0.170J	393	<0.20	9.98	5.0	1	113	<0.30	<0.10	<0.60	83.8	168
Apr-12	101	0.156J	375	<0.20	9.15	5.0	1	111	<0.30	<0.10	<0.60	83.7	159
May-12	97.6	<0.25	387	<0.13	9.9	5.7	0.99	103	<0.061	<0.12	<0.40	79.3	159
Jun-12	116	<0.25	385	<0.13	10.4	6.0	1	98.6	<0.061	<0.12	<0.40	76.5	162
Oct-12	101	--	--	--	10	--	--	110	--	--	--	84.2	157
Apr-13	111	--	--	--	10.1	--	--	115	--	--	--	90.2	160
Oct-13	88.9	--	--	--	10.8	--	--	102	--	--	--	78.9	164
Apr-14	108	--	--	--	10.5	--	--	102	--	--	--	76.4	164
Oct-14	102	--	--	--	10.7	--	--	94.9	--	--	--	76.8	166
Apr-15	98.2	--	--	--	10.4	--	--	98.2	--	--	--	79.5	161
Oct-15	101	--	--	--	10.5	--	--	101	--	--	--	80.6	169
Mean	105	--	387	--	--	6.0	1.06	107	--	--	--	81.8	163
NR140 Min.Incr.	100	--	--	--	--	25	--	100	--	--	--	10	--
Std Dev	6.97	--	17.1	--	--	2.14	0.08	9.0	--	--	--	4.07	4.06
3X Std Dev	20.9	--	--	--	--	6.43	--	26.9	--	--	--	12.20	--
Mean+3XSD	125	--	--	--	--	12.41	--	134	--	--	--	94.0	--
Mean+Min.Incr.	205	--	--	--	--	31.0	--	207	--	--	--	91.8	--
<b>Proposed PAL</b>	<b>210</b>	--	--	--	--	<b>31</b>	--	<b>210</b>	--	--	--	<b>95</b>	--
2X Std Dev	--	--	34.2	--	--	--	0.17	--	--	--	--	--	8.12
Mean+2XSD	--	--	421	--	--	--	1.23	--	--	--	--	--	171
<b>Proposed ACL</b>	<b>--</b>	<b>NA</b>	<b>430</b>	<b>NA</b>	<b>NA</b>	<b>--</b>	<b>1.30</b>	<b>--</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>--</b>	<b>180</b>

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance

NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance

NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-313D total depth (feet): 145.92 ft.

MW-313D bottom of well elevation (ft. MSL): 638.56 ft.MSL

MW-313D top of well elevation (ft. MSL): 784.48 ft.MSL

Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-313D (217)	FIELD PARAMETERS (No Standards)					BASELINE PARAMETERS (PAL/ES)									
	pH	Conductivity	Temp.	Depth to	Groundwater	As	Ba	Cr	Cu	Mn #	Ag	Zn	Hg	TSS	
	NS	NS	NS	Water	Elevation	(1 / 10)	(400 / 2,000)	(10 / 100)	(130 / 1,300)	(25 / 50)	(10 / 50)	(2,500 / 5,000)	(0.2 / 2)	NS	
DATE/unit	s.u.	umhos @ 25C	deg. C	feet	(ft. MSL)	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	mg/L	
Nov-11	7.94	605	11.0	48.38	736.10	4.37	27.6	<0.20	<0.60	16.0	<0.20	<2.0	<0.07	148	
Dec-11	7.61	604	9.7	47.45	737.03	4.73	23.2	<1.60	<0.60	9.9	<0.20	<2.0	<0.07	--	
Jan-12	7.63	548	9.1	45.30	739.18	4.46	26.2	<1.60	<0.60	14.9	<0.20	<2.0	<0.07	--	
Feb-12	7.68	568	8.0	44.90	739.58	4.75	24.3	<1.60	<0.60	12.6	<0.20	<2.0	<0.07	--	
Mar-12	7.90	600	12.9	43.75	740.73	4.94	--	--	--	--	--	--	--	--	
Apr-12	7.19	572	11.1	44.10	740.38	5.67	--	--	--	--	--	--	--	--	
May-12	7.42	595	13.3	45.50	738.98	4.5	--	--	--	--	--	--	--	--	
Jun-12	7.65	658	16.3	54.15	730.33	4.8	--	--	--	--	--	--	--	--	
Oct-12	7.56	482	9.9	50.95	733.53	--	--	--	--	--	--	--	--	--	
Apr-13	7.90	602	9.9	44.50	739.98	--	--	--	--	--	--	--	--	--	
Oct-13	7.96	623	10.6	47.90	736.68	--	--	--	--	--	--	--	--	--	
Apr-14	7.35	591	9.6	44.15	740.33	--	--	--	--	--	--	--	--	--	
Oct-14	7.68	476	10.8	43.80	740.68	--	--	--	--	--	--	--	--	--	
Apr-15	7.70	434	12.1	44.96	739.52	--	--	--	--	--	--	--	--	--	
Oct-15	7.40	551	12.2	50.3	734.18	--	--	--	--	--	--	--	--	--	
Mean	--	567	--	--	--	4.78	--	--	--	--	--	--	--	--	
NR140 Min.Incr.	--	200	--	--	--	--	--	--	--	--	--	--	--	--	
Std Dev	--	60.8	--	--	--	0.41	--	--	--	--	--	--	--	--	
3X Std Dev	--	182	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+3XSD	--	750	--	--	--	--	--	--	--	--	--	--	--	--	
Mean+Min.Incr.	--	767	--	--	--	--	--	--	--	--	--	--	--	--	
Proposed PAL	--	770	--	--	--	--	--	--	--	--	--	--	--	--	
2X Std Dev	--	--	--	--	--	0.82	--	--	--	--	--	--	--	--	
Mean+2XSD	--	--	--	--	--	5.60	--	--	--	--	--	--	--	--	
Proposed ACL	NA	NA	NA	NA	NA	5.6	NA	NA	NA	NA	NA	NA	NA	NA	

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

ND = not detected

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-313D total depth (feet): 145.92 ft.

MW-313D bottom of well elevation (ft. MSL): 638.56 ft.MSL

MW-313D top of well elevation (ft. MSL): 784.48 ft.MSL



Environmental Sampling Corporation  
 ADS - EMERALD PARK LANDFILL  
 Baseline Monitoring Data

MW-19AR (91)	DETECTION MONITORING PARAMETERS (PAL/ES)												
	Alkalinity NS	NH <sub>3</sub> (0.97 / 9.7)	B (200 / 1000)	Cd (0.5 / 5)	Chloride (125/250)	COD NS	F (0.8 / 4)	Hardness NS	Pb (1.5 / 15)	NO <sub>3</sub> +NO <sub>2</sub> N (2 / 10)	Se (10 / 50)	Na NS	SO <sub>4</sub> (125/250)
DATE/units	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	ug/L	mg/L	mg/L
Feb-14	527	<0.25	36.4	<0.057	7.7	15.3J	0.37J	919	0.14J	0.17J	1.7	18.2	455
Mar-14	489	<0.25	34.9	<0.057	7.7	12.2J	0.33J	951	0.10J	0.29	1.7	17.6	503
Apr-14	522	<0.25	34.1	0.13J	8.4	19.0J	0.37J	985	0.22J	0.91	1.9	26.1	444
Jun-14	471	<0.25	32.6	0.094J	8.3	16.8J	0.46	1,500	0.093J	0.30	1.7	19.4	410
Sep-14	464	<0.25	38.8	<0.089	9.1	5.8	0.49	898	<0.040	0.46	1.6	23.2	386
Oct-14	490	<0.25	41.0	<0.089	7.2	5.8	0.29J	925	<0.040	0.25	1.4	19.6	435
Dec-14	515	<0.25	37.2	<0.089	8.0	5.8	0.35J	882	<0.040	0.31	1.8	22.3	400
Apr-15	560	<0.25	35.9	<0.089	42.5J	5.8	0.32J	857	<0.040	0.40	1.8	32.0	346
Mean	505	--	--	--	--	10.8	--	989.6	--	--	--	22.3	422
NR140 Min.Incr.	100	--	--	--	--	25	--	100	--	--	--	10	--
Std Dev	32.11	--	--	--	--	5.7	--	210.0	--	--	--	4.8	47.8
3X Std Dev	96.3	--	--	--	--	17.0	--	630.0	--	--	--	14.5	--
Mean+3XSD	601	--	--	--	--	27.8	--	1,620	--	--	--	36.8	--
Mean+Min.Incr.	605	--	--	--	--	35.8	--	1,090	--	--	--	32.3	--
PAL	610	--	--	--	--	36	--	1,700	--	--	--	37	--
2X Std Dev	--	--	--	--	--	--	--	--	--	--	--	--	95.6
Mean+2XSD	--	--	--	--	--	--	--	--	--	--	--	--	518.0
ACL	--	NA	NA	NA	NA	--	NA	--	NA	NA	NA	--	520

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-19AR total depth (feet): 22.00 ft.

MW-19AR bottom of well elevation (ft. MSL): 768.89 ft.MSL

MW-19AR top of well elevation (ft. MSL): 790.89 ft.MSL

Environmental Sampling Corporation  
 ADS - EMERALD PARK LANDFILL  
 Baseline Monitoring Data

MW-19AR (91)	FIELD PARAMETERS (No Standards)					BASELINE PARAMETERS (PAL/ES)							
	pH NS	Conductivity NS	Temp. NS	Depth to Water	Groundwater Elevation	As (1 / 10)	Ba (400 / 2,000)	Cr (10 / 100)	Cu (130 / 1,300)	Mn # (25 / 50)	Ag (10 / 50)	Zn (2,500 / 5,000)	Hg (0.2 / 2)
DATE/units	s.u.	umhos @ 25C	deg. C	feet	(ft. MSL)	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Feb-14	7.60	1,280	4.5	11.30	779.59	0.55J	46.4	0.43J	2.1	6.5	<0.025	22.4	<0.10
Mar-14	6.88	1,134	3.7	8.15	782.74	0.45J	42.8	0.25J	1.5	2.8	<0.025	36.2	<0.10
Apr-14	7.25	1,444	10.2	6.50	784.39	0.70J	42.7	<0.39	1.4	1.3	0.049J	7.1J	<0.10
Jun-14	7.37	1,408	11.2	5.10	785.79	0.89J	40.2	<0.39	0.83J	3.6	0.030J	18.2	<0.10
Sep-14	7.64	1,037	11.4	8.70	782.19	0.30J	51.3	<0.39	0.72J	49.3	<0.016	25.5	<0.10
Oct-14	7.12	1,207	12.8	8.80	782.09	0.89J	44.8	<0.39	1.4	0.36J	<0.016	6.5J	<0.10
Dec-14	7.55	1,185	9.0	10.50	780.39	0.62J	45.2	<0.39	1.9	5.0	<0.016	18.6	<0.10
Apr-15	7.63	1,351	9.5	5.23	785.66	0.65J	43.1	<0.39	1.5	3.2	<0.016	24.0	<0.10
Mean	--	1,256	--	--	--	--	--	--	--	--	--	--	--
NR140 Min.Incr.	--	200	--	--	--	--	--	--	--	--	--	--	--
Std Dev	--	140.6	--	--	--	--	--	--	--	--	--	--	--
3X Std Dev	--	422	--	--	--	--	--	--	--	--	--	--	--
Mean+3XSD	--	1,677	--	--	--	--	--	--	--	--	--	--	--
Mean+Min.Incr.	--	1,456	--	--	--	--	--	--	--	--	--	--	--
PAL	--	1,700	--	--	--	--	--	--	--	--	--	--	--
2X Std Dev	--	--	--	--	--	--	--	--	--	--	--	--	--
Mean+2XSD	--	--	--	--	--	--	--	--	--	--	--	--	--
ACL	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-19AR total depth (feet): 22.00 ft.

MW-19AR bottom of well elevation (ft. MSL): 768.89 ft.MSL

MW-19AR top of well elevation (ft. MSL): 790.89 ft.MSL



Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-120DR (161)	DETECTION MONITORING PARAMETERS (PAL/ES)												
	Alkalinity NS	NH <sub>3</sub> (0.97 / 9.7)	B (200 / 1000)	Cd (0.5 / 5)	Chloride (125/250)	COD NS	F (0.8 / 4)	Hardness NS	Pb (1.5 / 15)	NO <sub>3</sub> +NO <sub>2</sub> N (2 / 10)	Se (10 / 50)	Na NS	SO <sub>4</sub> (125/250)
	mg/L	mg/L	ug/L	ug/L	mg/L	mg/L	mg/L	mg/L	ug/L	mg/L	ug/L	mg/L	mg/L
Feb-14	114	<0.25	438	<0.057	8.7	12.2J	0.66	186	0.97J	0.4	0.30J	98.2	221
Mar-14	126	<0.25	436	<0.057	8.3	21.3J	0.66	186	1.4	0.19J	0.39J	90.2	224
Apr-14	174	<0.25	410	<0.089	17.8	21.3J	0.58	306	1.2	0.42	0.25J	83.3	224
Jun-14	191	<0.25	347	<0.089	11.2	5.8	0.66	370	0.082J	0.18J	<0.21	80.0	179
Sep-14	105	<0.25	445	<0.089	9.0	6.1	0.61	175	<0.040	0.23J	<0.21	96.6	215
Oct-14	111	<0.25	439	<0.089	8.5	5.8	0.88	133	0.045J	<0.095	<0.21	91.4	214
Dec-14	115	<0.25	425	<0.089	9.0	5.8	0.89	190	<0.040	<0.095	<0.21	96.5	225
Apr-15	109	<0.25	400	<0.089	8.5	5.8	0.65	150	<0.040	<0.095	<0.21	99.4	228
Mean	131	--	418	--	--	10.5	0.70	212.0	--	--	--	92.0	216
NR140 Min.Incr.	100	--	--	--	--	25	--	100	--	--	--	10	--
Std Dev	32.90	--	32.4	--	--	7.01	0.12	82.0	--	--	--	7.15	15.8
3X Std Dev	98.7	--	--	--	--	21.03	--	246.1	--	--	--	21.45	--
Mean+3XSD	229	--	--	--	--	31.54	--	458	--	--	--	113.4	--
Mean+Min.Incr.	231	--	--	--	--	35.5	--	312	--	--	--	102.0	--
PAL	240	--	--	--	--	36	--	460	--	--	--	120	--
2X Std Dev	--	--	64.9	--	--	--	0.24	--	--	--	--	--	31.6
Mean+2XSD	--	--	482	--	--	--	0.94	--	--	--	--	--	248
ACL	--	NA	490	NA	NA	--	1.00	--	NA	NA	NA	--	250

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-120DR total depth (feet): 127.00 ft.

MW-120DR bottom of well elevation (ft. MSL): 668.53 ft.MSL

MW-120DR top of well elevation (ft. MSL): 795.53 ft.MSL

Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-120DR (161)	FIELD PARAMETERS (No Standards)					BASELINE PARAMETERS (PAL/ES)							
	pH NS	Conductivity NS	Temp. NS	Depth to Water	Groundwater Elevation	As (1 / 10)	Ba (400 / 2,000)	Cr (10 / 100)	Cu (130 / 1,300)	Mn # (25 / 50)	Ag (10 / 50)	Zn (2,500 / 5,000)	Hg (0.2 / 2)
	DATE/units s.u.	umhos @ 25C	deg. C	feet	(ft. MSL)	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Feb-14	8.39	723	8.1	25.20	770.33	1.60	26.6	2.3	3.8	50.4	<0.025	16.7	<0.10
Mar-14	6.61	306	5.1	39.40	756.13	1.70	32.0	4.4	4.3	36.5	<0.025	14.5	<0.10
Apr-14	7.73	881	12.2	20.00	775.53	1.60	31.0	1.9	4.2	51.5	<0.016	13.0	<0.10
Jun-14	7.49	826	11.9	11.60	783.93	1.40	21.2	0.49J	3.2	3.4	<0.016	9.0J	<0.10
Sep-14	7.39	635	11.0	12.55	782.98	1.10	21.2	<0.39	1.9	1.5	<0.016	12.4	<0.10
Oct-14	7.09	593	12.9	34.60	760.93	1.50	15.9	0.47J	1.1	6.3	<0.016	<3.1	<0.10
Dec-14	7.65	810	9.0	28.75	766.78	1.65	18.6	<0.39	1.5	7.1	<0.016	<3.1	<0.10
Apr-15	7.98	721	11.2	16.43	779.10	1.55	20.1	<0.39	2.8	5.5	<0.016	<3.1	<0.10
Mean	--	687	--	--	--	1.51	--	--	--	20.3	--	--	--
NR140 Min.Incr.	--	200	--	--	--	--	--	--	--	--	--	--	--
Std Dev	--	181.8	--	--	--	0.19	--	--	--	21.9	--	--	--
3X Std Dev	--	545	--	--	--	--	--	--	--	--	--	--	--
Mean+3XSD	--	1232	--	--	--	--	--	--	--	--	--	--	--
Mean+Min.Incr.	--	887	--	--	--	--	--	--	--	--	--	--	--
PAL	--	1,300	--	--	--	--	--	--	--	--	--	--	--
2X Std Dev	--	--	--	--	--	0.38	--	--	--	43.9	--	--	--
Mean+2XSD	--	--	--	--	--	1.89	--	--	--	64.2	--	--	--
ACL	NA	NA	NA	NA	NA	1.90	NA	NA	NA	65	NA	NA	NA

Notes:

Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.

mg/L = milligrams per liter

ug/L = micrograms per liter

C = degrees Centigrade

umhos = micromhos

(201) = WDNR well number

J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.

NS = no standard established

s.u. = standard units

ft.MSL = feet above Mean Sea Level

WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc

WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs

# -Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).

235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)

590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)

0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.

(0.97/9.7) = PAL/ES

-- = No PAL or ACL calculation needed (NA)

MW-120DR total depth (feet): 127.00 ft.

MW-120DR bottom of well elevation (ft. MSL): 668.53 ft.MSL

MW-120DR top of well elevation (ft. MSL): 795.53 ft.MSL



Environmental Sampling Corporation

ADS - EMERALD PARK LANDFILL  
Baseline Monitoring Data

MW-120DR (161)	VOCs (PAL/ES)	
	Acetone (1,800 / 9,000)	Toluene
DATE/units	ug/L	ug/L
Feb-14	3.7J	--
Mar-14	2.9J	0.53J
Apr-14	3.2J	--
Jun-14	--	--
Sep-14	--	--
Oct-14	3.4J	--
Dec-14	--	--
Apr-15	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
--	--	--
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Notes:  
 Groundwater samples analyzed for alkalinity, chloride, sulfate, and hardness are field filtered.  
 mg/L = milligrams per liter  
 ug/L = micrograms per liter  
 C = degrees Centigrade  
 umhos = micromhos  
 (201) = WDNR well number  
 J = Concentration between the limit of Detection and Limit of Quantitation. Result is considered an estimate.  
 NS = no standard established  
 s.u. = standard units  
 ft.MSL = feet above Mean Sea Level  
 WDNR NR140 Public Welfare Standards: chloride, manganese, sulfate, and zinc  
 WDNR NR140 Public Health Standards: fluoride, arsenic, barium, cadmium, chromium, copper, lead, selenium, silver, mercury, VOCs  
 #-Manganese has NR140 standards for both Public Welfare (25 ug/L and 50 ug/L) and Public Health (60 ug/L and 300 ug/L).  
 235 = Preventive Action Limit (PAL) exceedance NR 140 Wisconsin Administrative Code (WAC)  
 590 = Enforcement Standard (ES) exceedance NR 140 Wisconsin Administrative Code (WAC)  
 0.3J = Concentration in excess of the NR140 PAL, but less than the LOQ. This concentration is not considered an exceedance of NR140 standards.  
 (0.97/9.7) = PAL/ES  
 -- = No PAL or ACL calculation needed (NA)  
 MW-120DR total depth (feet): 127.00 ft.  
 MW-120DR bottom of well elevation (ft. MSL): 668.53 ft.MSL  
 MW-120DR top of well elevation (ft. MSL): 795.53 ft.MSL

Tables 1 and 2

Table 1 - ACLs

Well name	DNR ID	Eligible? (footprint)	Arsenic (µg/L)		Boron (µg/L)		Fluoride (mg/L)		Manganese (µg/L)		Sulfate (mg/L)	
			proposed	DNR	proposed	DNR	proposed	DNR	proposed	DNR	proposed	DNR
MW-4C	(028)	✓	21	---								
MW-5A	(030)	✓	7.5	3.8 (6)*								
MW-104B	(118)	✗	7.6	4.2 (7)**								
MW-106B	(122)	✓	2.4	2.4								
MW-106D	(126)	✓	6.3	6.3								
MW-115E	(149)	✓	8.3	8.3								
MW-117C	(152)	✓	2.9	2.9								
MW-117D	(154)	✓	6.3	6.3								
MW-120C	(158)	✓	2.1	2.1								
MW-121D	(166)	✓	1.6	1.6								
MW-125D	(172)	✗	4.0	4.0								
MW-126A	(174)	✗	6.3	6.3								
MW-131A	(178)	✓	3.4	3.4								
MW-131D	(182)	✓	5.9	5.9								
MW-303D	(201)	✓	4.9	4.9	380	380 (7)***	1.5	1.5				
MW-305D	(213)	✓	7.2	7.2	360	360 (7)***	1.4	1.4				
MW-313D	(217)	✓	5.6	5.6	430	430 (7)***	1.3	1.3			1.8	1.8
MW-19AR	(091)	✓									5.2	5.2
MW-120DR	(161)	✓	1.9	1.9	490	490	1.00	0.94	65	65	2.5	2.5

\*excludes outlier (Apr-14) and QC 1 failure (Oct-14)

\*\*excludes outlier (Apr-14)

\*\*\*excludes QC 1 failure (May-12)

	high variability
	discrepancy w/ DNR calc
	<8 rounds (# of rounds)

Table 2 - PALs

Well name	DNR ID	Eligible? (footprint)	Alkalinity (mg/L)		SpC (µmhos @ 25C)		Hardness (mg/L)		Sodium (mg/L)	
			proposed	DNR	proposed	DNR	proposed	DNR	proposed	DNR
MW-301A	(184)	✓					1,600	1,600	80	80
MW-301B	(186)	✓					230	230 (2)*	160	160
MW-301C	(188)	✓					500	400 (4)*	72	72
MW-302A	(190)	✓					670	690*	56**	---
MW-302B	(192)	✓					230	230	130	130
MW-302C	(194)	✓					640	550*	67	67
MW-303A	(196)	✓					1,100	1,100	230	230
MW-303B	(198)	✓					260	260	150	150
MW-303C	(200)	✓					150	150	69	70*
MW-303D	(201)	✓	230	230	640	640	190	190	62	62
MW-304A	(202)	✓					650	670*	47	46*
MW-304B	(204)	✓					280	280	160	170*
MW-304C	(206)	✓					160	160	71	71
MW-305A	(208)	✓					1,600	1,600	260	270*
MW-305B	(210)	✓					340	330*	160	160
MW-305C	(212)	✓					210	220*	110	110
MW-305D	(213)	✓	220	220	580	580	180	180	61	61
MW-313D	(217)	✓	210	210	770	770	210	210	95	94
MW-19AR	(091)	✓	610	610 (7)***	1,700	1,800	1,700	1,100	37	37
MW-120DR	(161)	✓	240	240	1,300	1,300	460	360	120	120

\*excludes QC 1 failures

\*\*Oct-13 datum conflicts w/ GEMS; Jan-11 datum not accounted for

\*\*\*excludes QC 3 failure (Mar-14)

unresolved data conflict (GEMS)  
 discrepancy w/ DNR calcs  
 <8 rounds (# of rounds)

## Box Plots

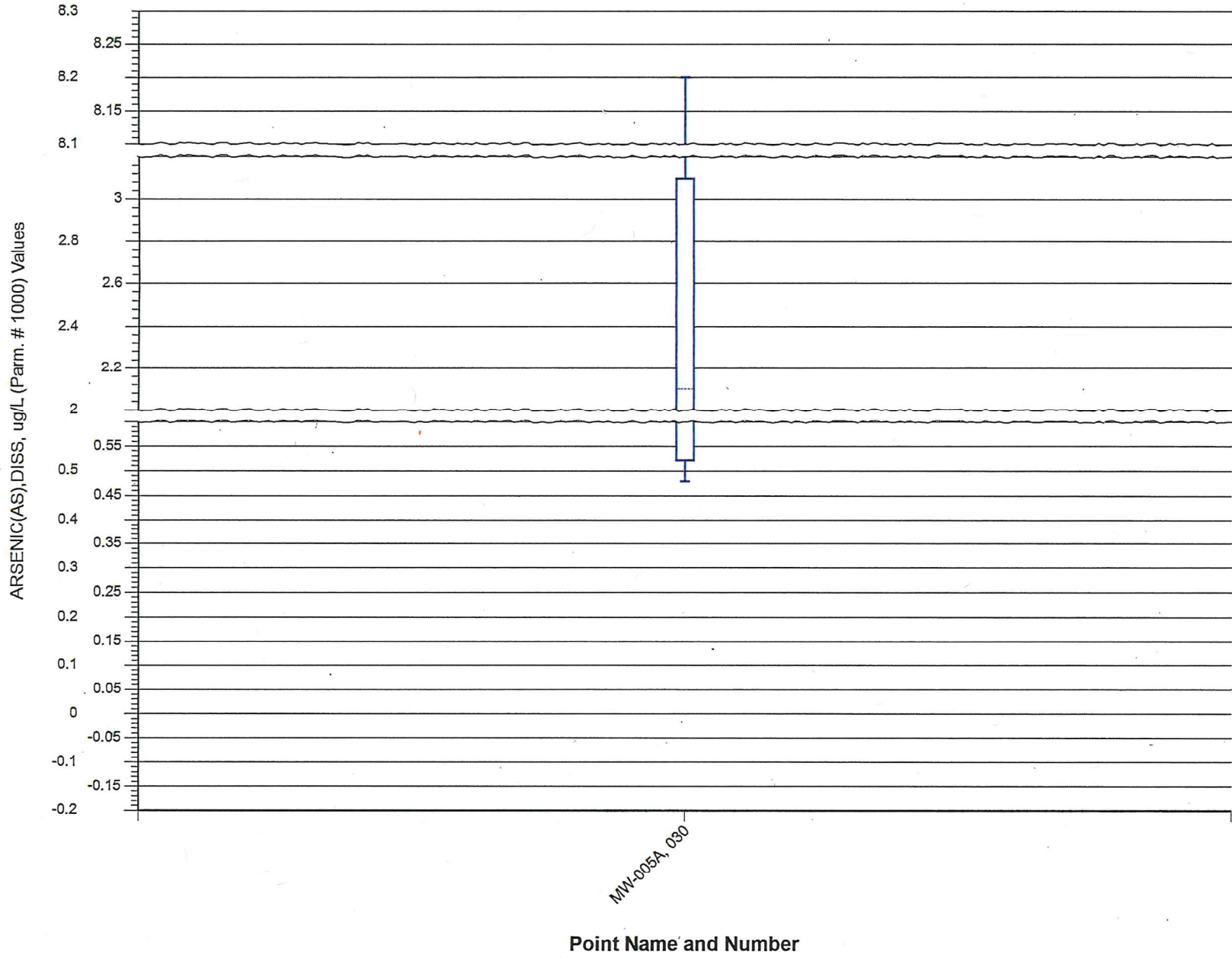
**GEMS Box Plot**

EMERALD PARK LANDFILL LLC, (Lic # 3290)

Report run date=8/16/2022

Selected Point(s)

Sample Dates: 10/1/2013 - 4/30/2015



NOTE: X - Marks are outside 10% or 90% whisker range.

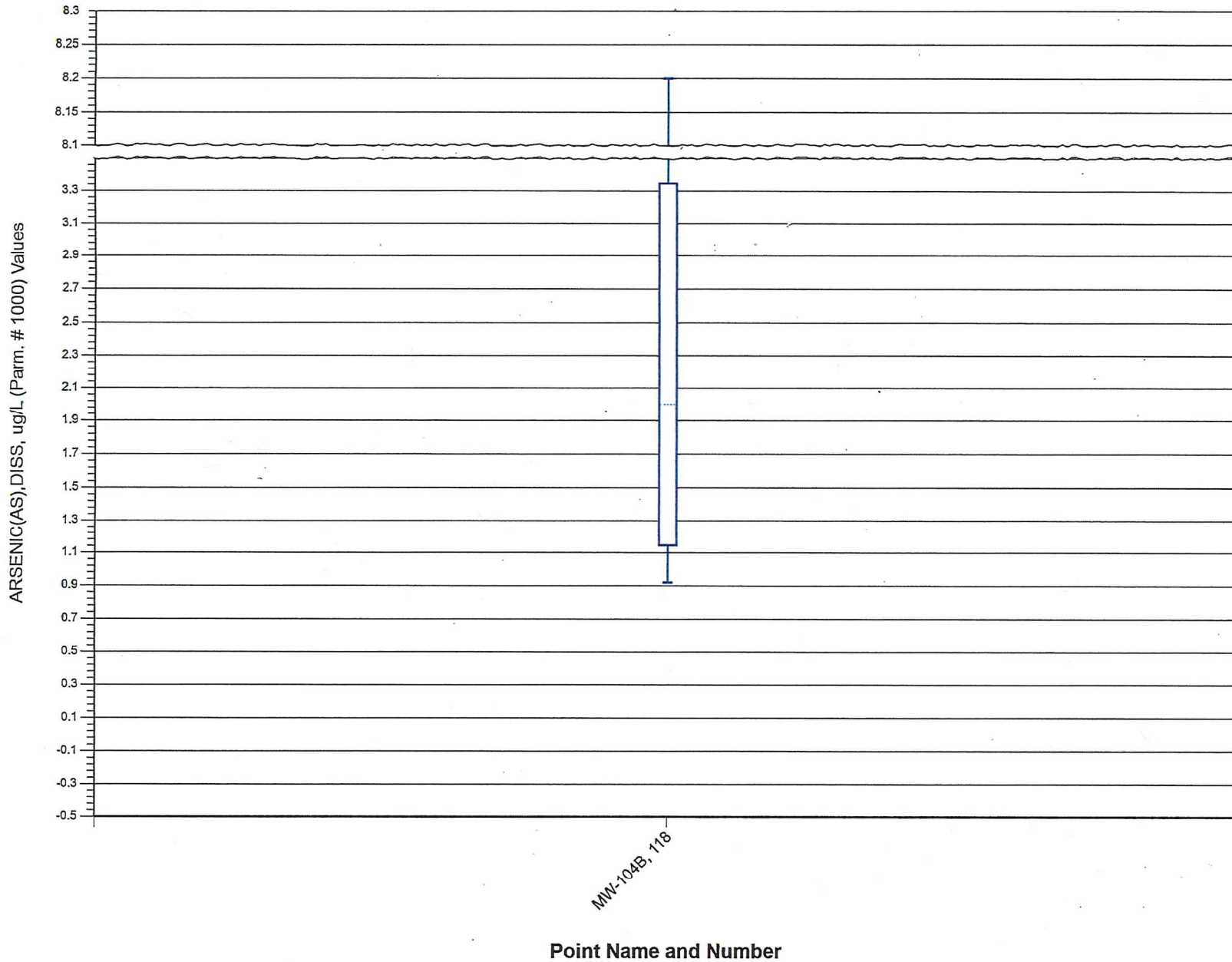
**GEMS Box Plot**

EMERALD PARK LANDFILL LLC, (Lic # 3290)

Report run date=8/16/2022

Selected Point(s)

Sample Dates: 10/1/2013 - 4/30/2015



NOTE: X - Marks are outside 10% or 90% whisker range.

# GEMS Box Plot

EMERALD PARK LANDFILL LLC, (Lic # 3290)

Report run date=8/16/2022

Selected Point(s)

Sample Dates: 10/1/2013 - 4/30/2015

