

2017 Annual Groundwater Monitoring and Corrective Action Report

Hennepin Landfill – CCR Unit ID 801

Hennepin Power Station

13498 East 800th Street

Hennepin, Illinois 61327

Dynegy Midwest Generation, LLC

January 31, 2018

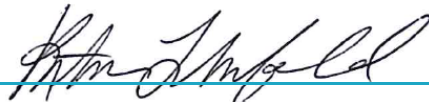


JANUARY 31, 2018 | PROJECT #67719

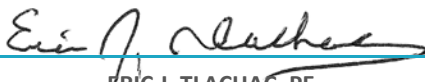
2017 Annual Groundwater Monitoring and Corrective Action Report

Hennepin Landfill – CCR Unit ID 801
Hennepin Power Station
Hennepin, Illinois

Prepared for:
Dynegy Midwest Generation, LLC



KRISTEN L. THEESFELD
Hydrogeologist



ERIC J. TLACHAC, PE
Senior Engineer

TABLE OF CONTENTS

LIST OF TABLES	i
LIST OF FIGURES	i
ACRONYMS AND ABBREVIATIONS	ii
1 INTRODUCTION	1
1.1 Overview	1
1.2 Monitoring and Corrective Action Program Status	1
2 KEY ACTIONS COMPLETED IN 2017	2
2.1 Summary.....	2
2.2 Problems Encountered and Actions to Resolve the Problems	2
3 KEY ACTIVITIES PLANNED FOR 2018	3
3.1 Summary.....	3
REFERENCES	4

LIST OF TABLES

Table 1	Hennepin Landfill: Appendix III Analytical Results
Table 2	Hennepin Landfill: Appendix IV Analytical Results

LIST OF FIGURES

Figure 1	Groundwater Sampling Well Location Map
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ACRONYMS AND ABBREVIATIONS

CCR	Coal Combustion Residuals
CFR	Code of Federal Regulations
mg/L	milligrams per liter
NRT/OBG	Natural Resource Technology, an OBG Company
OBG	O'Brien & Gere Engineers, Inc.
SSI	statistically significant increase
STD	standard units



1 INTRODUCTION

1.1 OVERVIEW

This report has been prepared on behalf of Dynegy Midwest Generation, LLC by O'Brien & Gere Engineers, Inc. (OBG), to provide the information required by 40 CFR 257.90(e) for the Hennepin Landfill located at Hennepin Power Station near Hennepin, Illinois.

In accordance with 40 CFR 257.90(e), the owner or operator of an existing CCR unit must prepare an annual groundwater monitoring and corrective action report, for the preceding calendar year, that documents the status of the groundwater monitoring and corrective action program for the CCR unit, summarizes key actions completed, describes any problems encountered, discusses actions to resolve the problems, and projects key activities for the upcoming year. At a minimum, the annual report must contain the following information, to the extent available:

1. A map, aerial image, or diagram showing the CCR unit and all background (or upgradient) and downgradient monitoring wells, to include the well identification numbers, that are part of the groundwater monitoring program for the CCR unit.
2. Identification of any monitoring wells that were installed or decommissioned during the preceding year, along with a narrative description of why those actions were taken.
3. In addition to all the monitoring data obtained under §§ 257.90 through 257.98, a summary including the number of groundwater samples that were collected for analysis for each background and downgradient well, the dates the samples were collected, and whether the sample was required by the detection monitoring or assessment monitoring programs.
4. A narrative discussion of any transition between monitoring programs (*e.g.*, the date and circumstances for transitioning from detection monitoring to assessment monitoring in addition to identifying the constituent(s) detected at a statistically significant increase over background levels).
5. Other information required to be included in the annual report as specified in §§ 257.90 through 257.98.¹

This report provides the required information for the Hennepin Landfill for calendar year 2017.

1.2 MONITORING AND CORRECTIVE ACTION PROGRAM STATUS

The final three independent samples of the minimum eight required by 40 CFR 257.94(b) were collected and analyzed from each background and downgradient well in 2017 before October 17. The other five independent samples were collected and analyzed in 2015 and 2016.

The first semi-annual monitoring sample for the Detection Monitoring Program was collected in November 2017 from each well.

Using the last of the minimum eight samples required to be collected by October 17, 2017 to determine whether a statistically significant increase (SSI) of Appendix III parameters over background concentrations has occurred, evaluation of analytical data from the downgradient wells was initiated beginning no later than October 17, 2017 for the initial eight samples. SSI determinations will be completed within 90 days (January 15, 2018). In addition, SSI determinations will be completed within 90 days of completion of analysis for the first semi-annual detection monitoring sample collected on November 16, 2017, for which analytical data was received on December 8, 2017.

¹ For calendar year 2017, corrective action and other information required to be included in the annual report as specified in §§ 257.90 through 257.98 is inapplicable.

2 KEY ACTIONS COMPLETED IN 2017

2.1 SUMMARY

Three groundwater sampling events were completed in 2017 as part of an effort initiated in 2015 to collect eight independent samples from background and downgradient monitoring wells in accordance with 40 CFR 257.94(b).

Subsequent to collection of the eight independent samples, an additional sampling event was completed in November 2017 for parameters listed in Appendix III, 40 CFR Part 257, to supplement the background data set and as the first semi-annual monitoring sampling event for the Detection Monitoring Program.

A map showing the groundwater monitoring system, including the CCR unit and all background and downgradient monitoring wells with well identification numbers, for the Hennepin Landfill is presented in Figure 1. No monitoring wells were installed or decommissioned from the monitoring system in 2017.

Samples were collected and analyzed in accordance with the Sampling and Analysis Plan (NRT/OBG, 2017a) prepared for the Hennepin Landfill.

All monitoring data obtained under 40 CFR §§ 257.90 through 257.98 (as applicable) in 2017, as well as monitoring data for the previously collected five independent samples are presented in Tables 1 and 2. Sample collection dates in 2017 were February 22, April 26-27, June 8-9, and November 16. Sample collection dates for previously collected five independent samples are identified in Tables 1 and 2. One ground water sample was collected from each background and downgradient well in each sampling event.

Statistical evaluation of analytical data from the eight independent samples required to be collected by October 17, 2017 and the first semi-annual detection monitoring event on November 16, 2017 was initiated and will be completed within 90 days of October 17, 2017 (January 15, 2018) or 90 days from receipt of the data from the first semi-annual detection monitoring event (March 8, 2018), respectively. Statistical evaluation of analytical data is being performed in accordance with the Statistical Analysis Plan, Hennepin Power Station, Dynegy Midwest Generation, LLC (NRT/OBG, 2017b).

2.2 PROBLEMS ENCOUNTERED AND ACTIONS TO RESOLVE THE PROBLEMS

No problems were encountered with the groundwater monitoring program during 2017. Groundwater samples were collected and analyzed in accordance with the Sampling and Analysis Plan, and all data was accepted.

3 KEY ACTIVITIES PLANNED FOR 2018

3.1 SUMMARY

The following key activities are planned for 2018:

- Continuation of the Detection Monitoring Program with semi-annual sampling scheduled for the 2nd and 4th quarters of 2018.
- Complete evaluation of analytical data from the downgradient wells, using both the eight samples required to be collected by October 17, 2017 and the first semi-annual detection monitoring sample taken in November 2017 to determine whether a SSI of Appendix III parameters over background concentrations has occurred.
- If an SSI is identified, potential alternate sources (*i.e.*, a source other than the CCR unit caused the SSI or that that SSI resulted from error in sampling, analysis, statistical evaluation, or natural variation in groundwater quality) will be evaluated. If an alternate source is demonstrated to be the cause of the SSI, a written demonstration will be completed within 90 days of SSI detection and included in the annual groundwater monitoring and corrective action report for 2018.
 - » If an alternate source(s) is not identified to be the cause of the SSI, the applicable requirements of 40 CFR §§ 257.94 through 257.98 (*e.g.*, assessment monitoring) as may apply in 2018 will be met, including associated recordkeeping/notifications required by 40 CFR §§ 257.105 through 257.108.

REFERENCES

Natural Resource Technology, an OBG Company, 2017a, Sampling and Analysis Plan, Hennepin Landfill, Hennepin Power Station, Hennepin, Illinois, Project No. 2285, Revision 0, October 17, 2017.

Natural Resource Technology, an OBG Company, 2017b, Statistical Analysis Plan, Baldwin Energy Complex, Havana Power Station, Hennepin Power Station, Wood River Power Station, Dynegy Midwest Generation, LLC, October 17, 2017.



Tables



Hennepin

January 12, 2018

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date						
		B, tot, mg/L	Ca, tot, mg/L	Cl, tot, mg/L	F, tot, mg/L	pH (field), STD	SO4, tot, mg/L
05DR	12/9/2015	1.450	89.50	74.00	0.1100	7.540	92.00
	3/9/2016	1.370	81.80	81.00	0.1000	7.400	96.00
	6/8/2016	1.280	87.90	91.00	<0.1000	7.580	99.00
	8/31/2016	1.250	77.10	88.00	0.1000	7.590	88.00
	12/8/2016	1.360	83.10	87.00	0.1100	7.280	82.00
	2/22/2017	1.150	77.20	69.00	0.1100	7.590	72.00
	4/26/2017	1.420	74.60	71.00	0.1100	7.200	77.00
	6/9/2017	1.090	74.10	76.00	0.1100	7.540	82.00
	11/16/2017	1.110	75.00	63.00	0.1300	7.720	71.00
05R	12/9/2015	1.430	81.20	64.00	0.1100	7.690	104.0
	3/9/2016	1.380	84.70	77.00	0.1100	7.490	99.00
	6/8/2016	1.650	78.50	84.00	0.1100	7.760	102.0
	8/31/2016	1.430	76.70	85.00	0.1200	7.750	89.00
	12/8/2016	1.750	81.40	90.00	0.1200	7.270	88.00
	2/22/2017	1.410	74.50	78.00	0.1100	7.700	81.00
	4/26/2017	1.550	69.50	74.00	0.1100	7.440	90.00
	6/9/2017	1.320	71.20	71.00	0.1200	7.750	90.00
	11/16/2017	0.9780	71.60	63.00	0.1300	7.820	67.00

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date	TDS, mg/L
05DR	12/9/2015	586.0
	3/9/2016	468.0
	6/8/2016	560.0
	8/31/2016	552.0
	12/8/2016	532.0
	2/22/2017	486.0
	4/26/2017	510.0
	6/9/2017	480.0
	11/16/2017	466.0
05R	12/9/2015	584.0
	3/9/2016	466.0
	6/8/2016	516.0
	8/31/2016	516.0
	12/8/2016	276.0
	2/22/2017	482.0
	4/26/2017	502.0
	6/9/2017	468.0
	11/16/2017	474.0

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January 12, 2018

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date						
		B, tot, mg/L	Ca, tot, mg/L	Cl, tot, mg/L	F, tot, mg/L	pH (field), STD	SO4, tot, mg/L
07	3/10/2016	0.06290	126.0	51.00	0.1000	6.900	70.00
	6/7/2016	0.06730	154.0	55.00	<0.1000	6.640	82.00
	7/29/2016	0.07450	131.0	48.00	<0.1000	7.500	71.00
	9/1/2016	0.06970	150.0	49.00	0.1000	6.940	75.00
	12/9/2016	0.09390	158.0	63.00	0.1000	6.750	82.00
	2/22/2017	0.05440	137.0	46.00	<0.1000	6.950	66.00
	4/27/2017	0.05880	125.0	48.00	<0.1000	6.670	69.00
	6/8/2017	0.07010	118.0	56.00	0.1000	6.870	75.00
	11/16/2017	0.07020	136.0	48.00	0.1200	7.200	68.00
08	12/8/2015	0.09720	198.0	216.0	<0.1000	6.820	164.0
	3/10/2016	0.08780	213.0	145.0	<0.1000	6.730	133.0
	6/7/2016	0.07500	191.0	202.0	<0.1000	6.600	129.0
	9/1/2016	0.1420	299.0	312.0	<0.1000	6.690	209.0
	12/9/2016	0.1030	244.0	241.0	<0.1000	6.630	198.0
	2/22/2017	0.08730	208.0	223.0	<0.1000	6.850	140.0
	4/27/2017	0.1210	182.0	300.0	<0.1000	6.680	139.0
	6/9/2017	0.1330	152.0	127.0	<0.1000	6.910	134.0
	11/16/2017	0.1350	243.0	277.0	0.1000	6.990	167.0

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date	TDS, mg/L
07	3/10/2016	536.0
	6/7/2016	758.0
	7/29/2016	632.0
	9/1/2016	574.0
	12/9/2016	718.0
	2/22/2017	660.0
	4/27/2017	630.0
	6/8/2017	572.0
	11/16/2017	658.0
08	12/8/2015	1170.
	3/10/2016	918.0
	6/7/2016	1060.
	9/1/2016	1370.
	12/9/2016	1200.
	2/22/2017	1160.
	4/27/2017	1310.
	6/9/2017	972.0
	11/16/2017	1370.

Hennepin

January 12, 2018

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date						
		B, tot, mg/L	Ca, tot, mg/L	Cl, tot, mg/L	F, tot, mg/L	pH (field), STD	SO4, tot, mg/L
08D	12/8/2015	0.1090	174.0	184.0	0.1200	6.890	119.0
	3/10/2016	0.1220	187.0	209.0	0.1000	6.730	130.0
	6/7/2016	0.1110	177.0	217.0	0.1000	6.640	113.0
	9/1/2016	0.1390	287.0	325.0	0.1200	6.630	161.0
	12/9/2016	0.1250	233.0	313.0	0.1000	6.590	164.0
	2/22/2017	0.1150	220.0	262.0	<0.1000	6.800	124.0
	4/27/2017	0.1180	175.0	315.0	0.1000	6.600	119.0
	6/9/2017	0.1390	208.0	366.0	<0.1000	6.800	123.0
	11/16/2017	0.1220	189.0	200.0	0.1200	6.960	157.0
40S	12/9/2015	2.810	64.80	69.00	0.1700	8.150	120.0
	3/9/2016	2.260	59.10	80.00	0.1900	7.770	101.0
	6/8/2016	2.450	59.00	88.00	0.1800	7.990	124.0
	8/31/2016	2.500	62.60	86.00	0.1900	8.040	104.0
	12/8/2016	3.350	62.90	83.00	0.2000	7.860	109.0
	2/22/2017	2.400	58.00	66.00	0.2000	7.960	99.00
	4/26/2017	3.550	74.70	69.00	0.1700	7.400	148.0
	6/9/2017	3.330	77.70	69.00	0.1700	7.770	162.0
	11/16/2017	3.020	68.90	57.00	0.2000	8.010	103.0

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date	TDS, mg/L
08D	12/8/2015	1050.
	3/10/2016	1060.
	6/7/2016	1090.
	9/1/2016	1340.
	12/9/2016	954.0
	2/22/2017	1220.
	4/27/2017	1250.
	6/9/2017	1320.
	11/16/2017	1200.
40S	12/9/2015	488.0
	3/9/2016	400.0
	6/8/2016	466.0
	8/31/2016	448.0
	12/8/2016	460.0
	2/22/2017	426.0
	4/26/2017	524.0
	6/9/2017	486.0
	11/16/2017	492.0

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date						
		B, tot, mg/L	Ca, tot, mg/L	Cl, tot, mg/L	F, tot, mg/L	pH (field), STD	SO4, tot, mg/L
48	12/9/2015	1.520	79.90	70.00	0.1100	7.840	103.0
	3/9/2016	2.000	78.40	79.00	0.1200	7.560	99.00
	6/8/2016	1.320	78.20	89.00	0.1300	7.810	100.0
	8/31/2016	1.280	74.50	87.00	0.1400	7.770	89.00
	12/8/2016	1.160	75.50	79.00	0.1500	7.460	83.00
	2/22/2017	1.080	70.90	59.00	0.1500	7.760	69.00
	4/26/2017	1.020	64.20	64.00	0.1500	7.420	74.00
	6/9/2017	1.220	72.40	65.00	0.1500	7.710	93.00
	11/16/2017	1.040	72.30	59.00	0.1800	7.920	66.00

Table 1. Hennepin Landfill: Appendix III Analytical Results

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Location ID	Sample Date	TDS, mg/L
48	12/9/2015	524.0
	3/9/2016	420.0
	6/8/2016	526.0
	8/31/2016	502.0
	12/8/2016	480.0
	2/22/2017	438.0
	4/26/2017	488.0
	6/9/2017	462.0
	11/16/2017	396.0

Hennepin

January 12, 2018

Table 2. Hennepin Landfill : Appendix IV Analytical Results

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Location ID	Sample Date						
		As, tot, mg/L	Ba, tot, mg/L	Bc, tot, mg/L	Cd,tot, mg/L	Co, tot, mg/L	Cr, tot, mg/L
05DR	12/9/2015	<0.001000	0.06480	<0.001000	<0.001000	0.001700	<0.001000
	3/9/2016	<0.001000	0.06050	<0.001000	<0.001000	0.001800	<0.001000
	6/8/2016	<0.001000	0.06330	<0.001000	<0.001000	0.001600	<0.001000
	8/31/2016	<0.001000	0.05720	<0.001000	<0.001000	0.001300	<0.001000
	12/8/2016	<0.001000	0.06110	<0.001000	<0.001000	0.001400	<0.001000
	2/22/2017	<0.001000	0.05230	<0.001000	<0.001000	0.001200	<0.001000
	4/26/2017	<0.001000	0.04980	<0.001000	<0.001000	0.001300	<0.001000
	6/9/2017	<0.001000	0.05040	<0.001000	<0.001000	0.001400	<0.001000
05R	12/9/2015	0.001000	0.05960	<0.001000	0.002000	0.001400	<0.001000
	3/9/2016	0.001100	0.06240	<0.001000	0.001800	0.001300	<0.001000
	6/8/2016	<0.001000	0.05790	<0.001000	0.001300	<0.001000	0.001400
	8/31/2016	0.001100	0.05710	<0.001000	0.001200	<0.001000	<0.001000
	12/8/2016	0.001600	0.07090	<0.001000	0.001200	<0.001000	<0.001000
	2/22/2017	0.001200	0.05400	<0.001000	<0.001000	<0.001000	<0.001000
	4/26/2017	0.001200	0.05310	<0.001000	<0.001000	<0.001000	<0.001000
	6/9/2017	0.001200	0.05040	<0.001000	<0.001000	<0.001000	0.001500
07	3/10/2016	<0.001000	0.1040	<0.001000	<0.001000	<0.001000	<0.001000
	6/7/2016	<0.001000	0.1300	<0.001000	<0.001000	<0.001000	<0.001000

Hennepin

January 12, 2018

Table 2. Hennepin Landfill : Appendix IV Analytical Results

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Location ID	Sample Date						
		F, tot, mg/L	Hg, tot, mg/L	Li, tot, mg/L	Mo, tot, mg/L	Pb, tot, mg/L	Ra-226,228, tot, pCi/L
05DR	12/9/2015	0.1100	<0.0002000	0.03710	0.01180	<0.001000	1.000
	3/9/2016	0.1000	<0.0002000	0.03430	0.01140	<0.001000	1.004
	6/8/2016	<0.1000	<0.0002000	0.03920	0.01150	<0.001000	0.6100
	8/31/2016	0.1000	<0.0002000	0.03900	0.01070	<0.001000	0.7100
	12/8/2016	0.1100	<0.0002000	0.03180	0.01350	<0.001000	0.2800
	2/22/2017	0.1100	<0.0002000	0.03230	0.01140	<0.001000	1.680
	4/26/2017	0.1100	<0.0002000	0.03600	0.01120	<0.001000	1.430
	6/9/2017	0.1100	<0.0002000	0.03160	0.01160	<0.001000	0.9700
05R	12/9/2015	0.1100	<0.0002000	0.05680	0.02400	<0.001000	1.000
	3/9/2016	0.1100	<0.0002000	0.05630	0.02370	<0.001000	0.5150
	6/8/2016	0.1100	<0.0002000	0.05820	0.02730	<0.001000	0.6200
	8/31/2016	0.1200	<0.0002000	0.06480	0.02700	<0.001000	0.07000
	12/8/2016	0.1200	<0.0002000	0.05020	0.03570	<0.001000	1.420
	2/22/2017	0.1100	<0.0002000	0.05480	0.03000	<0.001000	0.1700
	4/26/2017	0.1100	<0.0002000	0.05470	0.03070	<0.001000	0.8600
	6/9/2017	0.1200	<0.0002000	0.05130	0.02900	<0.001000	0.1100
07	3/10/2016	0.1000	<0.0002000	0.007900	<0.001000	<0.001000	0.1200
	6/7/2016	<0.1000	<0.0002000	0.008500	<0.001000	<0.001000	1.090

Table 2. Hennepin Landfill : Appendix IV Analytical Results

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Location ID	Sample Date			
		Sb, tot, mg/L	Se, tot, mg/L	Tl, tot, mg/L
05DR	12/9/2015	<0.001000	0.001100	<0.001000
	3/9/2016	<0.001000	0.001600	<0.001000
	6/8/2016	<0.001000	0.001200	<0.001000
	8/31/2016	<0.001000	<0.001000	<0.001000
	12/8/2016	<0.001000	0.001600	<0.001000
	2/22/2017	<0.001000	0.001500	<0.001000
	4/26/2017	<0.001000	0.001100	<0.001000
	6/9/2017	<0.001000	0.001600	<0.001000
05R	12/9/2015	<0.001000	0.004700	<0.001000
	3/9/2016	<0.001000	0.002400	<0.001000
	6/8/2016	<0.001000	0.007600	<0.001000
	8/31/2016	<0.001000	0.004500	<0.001000
	12/8/2016	<0.001000	0.005600	<0.001000
	2/22/2017	<0.001000	0.007500	<0.001000
	4/26/2017	<0.001000	0.008100	<0.001000
	6/9/2017	<0.001000	0.007300	<0.001000
07	3/10/2016	<0.001000	<0.001000	<0.001000
	6/7/2016	<0.001000	0.001100	<0.001000

Hennepin

January 12, 2018

Table 2. Hennepin Landfill : Appendix IV Analytical Results

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Location ID	Sample Date	As, tot, mg/L	Ba, tot, mg/L	Bc, tot, mg/L	Cd,tot, mg/L	Co, tot, mg/L	Cr, tot, mg/L
07	7/29/2016	<0.001000	0.1110	<0.001000	<0.001000	<0.001000	<0.001000
	9/1/2016	<0.001000	0.1300	<0.001000	<0.001000	<0.001000	<0.001000
	12/9/2016	<0.001000	0.1680	<0.001000	<0.001000	<0.001000	0.001000
	2/22/2017	<0.001000	0.1150	<0.001000	<0.001000	<0.001000	<0.001000
	4/27/2017	<0.001000	0.1040	<0.001000	<0.001000	<0.001000	<0.001000
	6/8/2017	<0.001000	0.1010	<0.001000	<0.001000	<0.001000	<0.001000
08	12/8/2015	<0.001000	0.1180	<0.001000	<0.001000	0.002900	<0.001000
	3/10/2016	<0.001000	0.1480	<0.001000	<0.001000	0.001700	<0.001000
	6/7/2016	<0.001000	0.1270	<0.001000	<0.001000	0.003400	<0.001000
	9/1/2016	<0.001000	0.1460	<0.001000	<0.001000	0.02850	<0.001000
	12/9/2016	<0.001000	0.1070	<0.001000	<0.001000	0.02160	<0.001000
	2/22/2017	<0.001000	0.1110	<0.001000	<0.001000	0.01390	<0.001000
	4/27/2017	<0.001000	0.1190	<0.001000	<0.001000	0.01580	<0.001000
	6/9/2017	<0.001000	0.09920	<0.001000	<0.001000	0.008300	<0.001000
08D	12/8/2015	<0.001000	0.1330	<0.001000	<0.001000	0.01220	<0.001000
	3/10/2016	<0.001000	0.1550	<0.001000	<0.001000	0.003600	<0.001000
	6/7/2016	<0.001000	0.1380	<0.001000	<0.001000	0.002800	<0.001000
	9/1/2016	<0.001000	0.2300	<0.001000	0.001100	0.01300	<0.001000

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date						
		F, tot, mg/L	Hg, tot, mg/L	Li, tot, mg/L	Mo, tot, mg/L	Pb, tot, mg/L	Ra-226,228, tot, pCi/L
07	7/29/2016	<0.1000	<0.0002000	0.009000	<0.001000	<0.001000	1.100
	9/1/2016	0.1000	<0.0002000	0.009100	<0.001000	<0.001000	0.3600
	12/9/2016	0.1000	<0.0002000	0.008400	0.001000	<0.001000	1.210
	2/22/2017	<0.1000	<0.0002000	0.008400	<0.001000	<0.001000	0.6700
	4/27/2017	<0.1000	<0.0002000	0.008800	<0.001000	<0.001000	0.8100
	6/8/2017	0.1000	<0.0002000	0.008100	<0.001000	<0.001000	0.7900
08	12/8/2015	<0.1000	<0.0002000	0.01000	0.001500	<0.001000	0.8900
	3/10/2016	<0.1000	<0.0002000	0.009100	0.001600	<0.001000	0.7200
	6/7/2016	<0.1000	<0.0002000	0.009200	0.001300	<0.001000	0.7400
	9/1/2016	<0.1000	<0.0002000	0.01270	0.001400	<0.001000	0.3300
	12/9/2016	<0.1000	<0.0002000	0.009500	0.001400	<0.001000	0.6300
	2/22/2017	<0.1000	<0.0002000	0.009300	0.001400	<0.001000	0.8500
	4/27/2017	<0.1000	<0.0002000	0.01180	0.001300	<0.001000	1.010
	6/9/2017	<0.1000	<0.0002000	0.009400	0.001500	<0.001000	0.8500
08D	12/8/2015	0.1200	<0.0002000	0.01210	0.001400	<0.001000	0.9400
	3/10/2016	0.1000	<0.0002000	0.01430	0.001300	<0.001000	0.1200
	6/7/2016	0.1000	<0.0002000	0.01080	0.001100	<0.001000	0.3500
	9/1/2016	0.1200	<0.0002000	0.01640	0.001400	<0.001000	0.5500

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date	Sb, tot, mg/L	Se, tot, mg/L	Tl, tot, mg/L
07	7/29/2016	<0.001000	<0.001000	<0.001000
	9/1/2016	<0.001000	0.001400	<0.001000
	12/9/2016	<0.001000	0.001100	<0.001000
	2/22/2017	<0.001000	<0.001000	<0.001000
	4/27/2017	<0.001000	0.001000	<0.001000
	6/8/2017	<0.001000	0.001000	<0.001000
08	12/8/2015	<0.001000	<0.001000	<0.001000
	3/10/2016	<0.001000	<0.001000	<0.001000
	6/7/2016	<0.001000	<0.001000	<0.001000
	9/1/2016	<0.001000	<0.001000	<0.001000
	12/9/2016	<0.001000	<0.001000	<0.001000
	2/22/2017	<0.001000	<0.001000	<0.001000
	4/27/2017	<0.001000	<0.001000	<0.001000
	6/9/2017	<0.001000	<0.001000	<0.001000
08D	12/8/2015	<0.001000	<0.001000	<0.001000
	3/10/2016	<0.001000	<0.001000	<0.001000
	6/7/2016	<0.001000	<0.001000	<0.001000
	9/1/2016	<0.001000	<0.001000	<0.001000

Hennepin

January 12, 2018

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date						
		As, tot, mg/L	Ba, tot, mg/L	Be, tot, mg/L	Cd,tot, mg/L	Co, tot, mg/L	Cr, tot, mg/L
08D	12/9/2016	<0.001000	0.1810	<0.001000	<0.001000	0.01520	<0.001000
	2/22/2017	<0.001000	0.1670	<0.001000	<0.001000	0.007800	<0.001000
	4/27/2017	<0.001000	0.1580	<0.001000	0.002300	0.03850	<0.001000
	6/9/2017	<0.001000	0.1840	<0.001000	0.001100	0.01620	<0.001000
40S	12/9/2015	0.002100	0.04440	<0.001000	<0.001000	<0.001000	<0.001000
	3/9/2016	0.002300	0.04020	<0.001000	<0.001000	<0.001000	<0.001000
	6/8/2016	0.002200	0.03940	<0.001000	<0.001000	<0.001000	<0.001000
	8/31/2016	0.002100	0.03680	<0.001000	<0.001000	<0.001000	<0.001000
	12/8/2016	0.002900	0.04630	<0.001000	<0.001000	<0.001000	<0.001000
	2/22/2017	0.002200	0.03660	<0.001000	<0.001000	<0.001000	<0.001000
	4/26/2017	0.001800	0.04840	<0.001000	<0.001000	<0.001000	<0.001000
	6/9/2017	0.001900	0.04570	<0.001000	<0.001000	<0.001000	<0.001000
48	12/9/2015	0.001100	0.04820	<0.001000	<0.001000	<0.001000	<0.001000
	3/9/2016	0.001200	0.04480	<0.001000	<0.001000	<0.001000	<0.001000
	6/8/2016	0.001000	0.04440	<0.001000	<0.001000	<0.001000	<0.001000
	8/31/2016	0.001100	0.04250	<0.001000	<0.001000	<0.001000	<0.001000
	12/8/2016	0.001300	0.04360	<0.001000	<0.001000	<0.001000	<0.001000
	2/22/2017	0.001100	0.03830	<0.001000	<0.001000	<0.001000	<0.001000

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date						
		F, tot, mg/L	Hg, tot, mg/L	Li, tot, mg/L	Mo, tot, mg/L	Pb, tot, mg/L	Ra-226,228, tot, pCi/L
08D	12/9/2016	0.1000	<0.0002000	0.01310	0.001200	<0.001000	0.3500
	2/22/2017	<0.1000	<0.0002000	0.01360	0.001100	<0.001000	0.3800
	4/27/2017	0.1000	<0.0002000	0.01710	0.001000	0.001500	1.410
	6/9/2017	<0.1000	<0.0002000	0.01660	0.001700	<0.001000	0.9400
40S	12/9/2015	0.1700	<0.0002000	0.06000	0.1190	<0.001000	0.1000
	3/9/2016	0.1900	<0.0002000	0.05810	0.08680	<0.001000	0.09000
	6/8/2016	0.1800	<0.0002000	0.06130	0.09350	<0.001000	0.8200
	8/31/2016	0.1900	<0.0002000	0.06590	0.1210	<0.001000	0.4300
	12/8/2016	0.2000	<0.0002000	0.06080	0.1290	<0.001000	0.1800
	2/22/2017	0.2000	<0.0002000	0.06370	0.09380	<0.001000	0.6900
	4/26/2017	0.1700	<0.0002000	0.07190	0.08990	<0.001000	0.4000
	6/9/2017	0.1700	<0.0002000	0.06900	0.09760	<0.001000	0.3000
48	12/9/2015	0.1100	<0.0002000	0.04600	0.1300	<0.001000	1.000
	3/9/2016	0.1200	<0.0002000	0.04890	0.1220	<0.001000	0.3610
	6/8/2016	0.1300	<0.0002000	0.04630	0.1010	<0.001000	0.8200
	8/31/2016	0.1400	<0.0002000	0.04720	0.09130	<0.001000	0.2500
	12/8/2016	0.1500	<0.0002000	0.04070	0.1180	<0.001000	0.5000
	2/22/2017	0.1500	<0.0002000	0.04130	0.1040	<0.001000	0.7600

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date			
		Sb, tot, mg/L	Se, tot, mg/L	Tl, tot, mg/L
08D	12/9/2016	<0.001000	<0.001000	<0.001000
	2/22/2017	<0.001000	<0.001000	<0.001000
	4/27/2017	<0.001000	<0.001000	<0.001000
	6/9/2017	<0.001000	<0.001000	<0.001000
40S	12/9/2015	<0.001000	0.01160	<0.001000
	3/9/2016	0.001100	0.006700	<0.001000
	6/8/2016	0.001000	0.01320	<0.001000
	8/31/2016	<0.001000	0.009900	<0.001000
	12/8/2016	<0.001000	0.01430	<0.001000
	2/22/2017	<0.001000	0.008300	<0.001000
	4/26/2017	<0.001000	0.01560	<0.001000
	6/9/2017	<0.001000	0.01500	<0.001000
48	12/9/2015	<0.001000	0.009000	<0.001000
	3/9/2016	<0.001000	0.01290	<0.001000
	6/8/2016	<0.001000	0.01010	<0.001000
	8/31/2016	<0.001000	0.007900	<0.001000
	12/8/2016	<0.001000	0.007400	<0.001000
	2/22/2017	<0.001000	0.009100	<0.001000

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date						
		As, tot, mg/L	Ba, tot, mg/L	Be, tot, mg/L	Cd,tot, mg/L	Co, tot, mg/L	Cr, tot, mg/L
48	4/26/2017	0.001300	0.03690	<0.001000	<0.001000	<0.001000	<0.001000
	6/9/2017	0.001200	0.03910	<0.001000	<0.001000	<0.001000	<0.001000

Hennepin

January 12, 2018

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date						
		F, tot, mg/L	Hg, tot, mg/L	Li, tot, mg/L	Mo, tot, mg/L	Pb, tot, mg/L	Ra-226,228, tot, pCi/L
48	4/26/2017	0.1500	<0.0002000	0.03920	0.09930	<0.001000	0.09600
	6/9/2017	0.1500	<0.0002000	0.03940	0.09690	<0.001000	0.3700

Table 2. Hennepin Landfill : Appendix IV Analytical Results

1:48:47 PM

Location ID	Sample Date			
		Sb, tot, mg/L	Se, tot, mg/L	Tl, tot, mg/L
48	4/26/2017	<0.001000	0.007900	<0.001000
	6/9/2017	<0.001000	0.01430	<0.001000



Figures

Y:\Mapping\Projects\22\2285\MXD\2017_AnnualGWM_CAR\Figure 1_GWS_WellLoc_HentlEmxd Author: stolbst Date/Time: 1/29/2018, 3:59:48 PM



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DRAWN BY/DATE:
SDS 1/9/18
REVIEWED BY/DATE:
KLT 1/9/18
APPROVED BY/DATE:
SJC 1/25/18

GROUNDWATER SAMPLING WELL LOCATION MAP
HENNEPIN LANDFILL
UNIT ID: 801
2017 ANNUAL GROUNDWATER MONITORING AND CORRECTIVE ACTION REPORT
DYNEGY CCR RULE GROUNDWATER MONITORING
HENNEPIN POWER STATION
HENNEPIN, ILLINOIS

PROJECT NO: 67719

FIGURE NO: 1



OBG

THERE'S A WAY

