



# 2021 Annual Groundwater Monitoring and Corrective Action Report - Waste Disposal Area

*NIPSCO LLC R. M. Schahfer Generating Station*

Prepared Pursuant to 40 CFR §257.90(e) and Corresponding Regulations under 329 Indiana Administrative Code 10-9-1

Submitted to:

**Northern Indiana Public Service Company LLC**

R.M. Schahfer Generating Station  
Wheatfield, Indiana

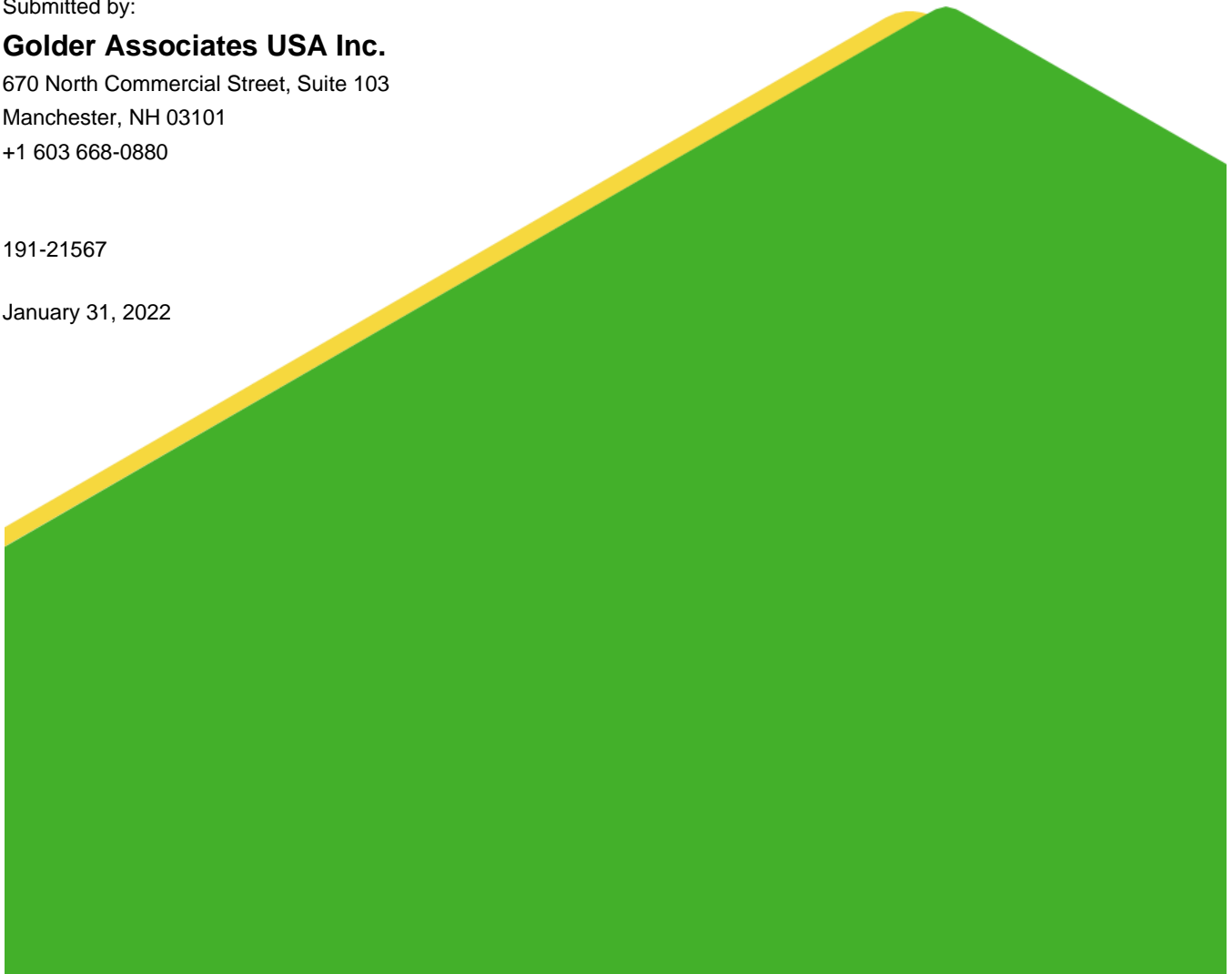
Submitted by:

**Golder Associates USA Inc.**

670 North Commercial Street, Suite 103  
Manchester, NH 03101  
+1 603 668-0880

191-21567

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## 1.0 INTRODUCTION

On behalf of Northern Indiana Public Service Company LLC (NIPSCO), Golder Associates USA Inc., a member of WSP (Golder), prepared this 2021 Annual Groundwater Monitoring and Corrective Action Report (2021 Annual Report) for the Rollin M. Schahfer Generating Station (RMSGs, Schahfer) Waste Disposal Area (WDA, the CCR Unit) located at 2723 E 1500 N, Wheatfield, Jasper County, Indiana (Latitude 41° 12' 36" and Longitude 87° 01' 48", see Figure 1). As shown in Figure 2, the WDA is an approximately 80-acre impoundment located in the southwest portion of the RMSGs facility. Golder prepared the 2021 Annual Report in accordance with 40 Code of Federal Regulations (CFR) Parts 257 and 261, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule" (CCR Rule), as amended, and corresponding regulations under 329 Indiana Administrative Code (IAC) 10-9-1.

The CCR Unit is currently in Assessment Monitoring pursuant to 40 CFR §257.95. Routine monitoring activities performed during the reporting period include inspection of wells for integrity and security, measurement of groundwater levels prior to sample collection to assess groundwater flow direction, and collection of groundwater samples for laboratory analysis.

In conformance with the applicable requirements of 40 CFR §257.90(e)(1) through (5) and corresponding State of Indiana requirements, the 2021 Annual Report:

- Documents the status of the groundwater monitoring and corrective action program
- Provides figures showing the CCR Unit and monitoring well locations
- Summarizes key CCR Rule groundwater activities completed during calendar year 2021
- Includes CCR Rule groundwater monitoring data obtained in calendar year 2021
- Describes any problems encountered during the monitoring activities
- Discusses actions taken to resolve the problems, if applicable
- Projects key activities for the upcoming year

## 2.0 GROUNDWATER MONITORING AND CORRECTIVE ACTION PROGRAM OVERVIEW OF CURRENT STATUS

Starting in 2016 following the installation of a groundwater monitoring system (Table 1) and throughout calendar year 2017, Golder collected background groundwater samples and performed Detection Monitoring at the CCR Unit pursuant to the requirements of 40 CFR §257.94. Due to the identification of significantly statistical increases (SSIs) in January 2018, NIPSCO established an Assessment Monitoring program in April 2018 pursuant to the requirements of 40 CFR §257.95. In 2018, Golder performed the first and second Assessment Monitoring sampling events. Following the first Assessment Monitoring sampling event, including verification sampling, Golder prepared an alternative source demonstration (ASD) indicating that the detections of Appendix IV parameters downgradient of the WDA are not due to a release from the WDA. In 2019, Golder completed the third and fourth Assessment Monitoring sampling events and completed ASDs following each sampling event. In 2020, Golder performed the fifth and sixth Assessment Monitoring sampling events and completed ASDs following each sampling event. In 2021, Golder performed the seventh and eighth Assessment Monitoring sampling events. The WDA began and ended the current annual reporting period in Assessment Monitoring pursuant to 40 CFR §257.95. Appendix IV constituents statistically significant levels (SSLs) identified in 2021 include molybdenum and

lithium in groundwater samples collected from well GAMW-51B and molybdenum in well GAMW-60B. In May 2021, Golder prepared an ASD indicating that the SSLs for molybdenum and lithium were not due to a release from the WDA; therefore, the CCR Unit remained in Assessment Monitoring. Pursuant to 40 CFR §257.94, a qualified Indiana-licensed professional engineer recertified the ASD in November 2021. The sampling dates, number of groundwater samples collected from each background and downgradient well, and the purpose of sampling associated with the seventh and eighth Assessment Monitoring events are provided in Table 2. The 2021 analytical results are presented in Table 3. Based upon groundwater monitoring results collected pursuant to the CCR Rule to date, no corrective action program requirements as outlined in 40 CFR §257.96-98 have either been triggered or implemented at this CCR Unit.

## 2.1 Key Actions Completed - 2021

NIPSCO completed the following key actions relative to CCR Rule groundwater monitoring at the WDA during calendar year 2021:

- Preparation of the of 2020 Groundwater Monitoring and Corrective Action Annual Report in January 2021 (2020 Annual Report, 40 CFR §257.90(e))
- Evaluation of the results of the sixth Assessment Monitoring event in February 2021 (40 CFR §257.95)
- Notification that constituents in 40 CFR Part 257 Appendix IV exceeded the groundwater protection standard (GWPS) in March 2021 (40 CFR §257.95(g))
- Performance of the seventh Assessment Monitoring event in April 2021 (40 CFR §257.95)
- Recertification of the ASD in May 2021 (40 CFR §257.95(g))
- Evaluation of the results of the seventh Assessment Monitoring event in August 2021 (40 CFR §257.95)
- Notification that constituents in 40 CFR Part 257 Appendix IV exceeded the GWPS in September 2021 (40 CFR §257.95(g))
- Performance of the eighth Assessment Monitoring event in September 2021 (40 CFR §257.95)
- Recertification of the ASD in November 2021 (40 CFR §257.95(g))

## 2.2 Monitoring System Modifications

The groundwater monitoring system did not require any modifications in 2021 (see Figure 2). Table 1 provides a summary of the well rationale/purpose and date of installation. An overview of the modified groundwater monitoring network is provided in the embedded table below.

Background Monitoring Wells	Downgradient Monitoring Wells	Assessment Monitoring Wells
GAMW03, GAMW-03B, GAMW-68, and GAMW-68B	GAMW-01, GAMW-01B, GAMW-12, GAMW-12B, GAMW-13, GAMW-13B, GAMW-14, and GAMW-14B	GAMW-42, GAMW-42B, GAMW-42C, GAMW-43, GAMW-43B, GAMW-44, GAMW-44B, GAMW-51, GAMW-51B, GAMW-57, GAMW-57B, GAMW-58, GAMW-58B, GAMW-59, GAMW-59B, GAMW-60, and GAMW-60B

## 2.3 Background Monitoring (2016 to 2017)

Per the requirements of 40 CFR §257.94, Golder collected eight independent background groundwater samples from each background and downgradient well between July 2016 and August 2017. Golder used the results of the background monitoring phase to develop appropriate, statistically valid background values for each constituent/monitoring well. Golder submitted the samples to a contract laboratory, in accordance with chain of custody and quality assurance/quality control procedures, for analysis of 40 CFR Part 257 Appendix III and Appendix IV constituents. In addition, Golder personnel measured field water quality parameters including specific conductance, temperature, dissolved oxygen, turbidity, oxidation-reduction potential, and pH. The background data set was included in the 2017 CCR Annual Groundwater Monitoring and Corrective Action Report, dated January 31, 2018 (2017 Annual Report, Golder 2018).

Golder performed a periodic update of background datasets, which includes incorporation of additional background data, to improve statistical power and accuracy by providing a more conservative estimate of the true background populations. The CCR Rule Groundwater Monitoring Program Implementation Manual (GMPIM, Golder 2017) allows for the statistical limits to be updated after four to eight new measurements are available (i.e., every two to four years of semi-annual monitoring). Golder incorporated the new data into the background dataset, updated the GWPS, in March 2020 (see Table 4).

## 2.4 Detection Monitoring

Golder performed the first Detection Monitoring event in October 2017, followed by a statistical evaluation and data analysis in January 2018. Golder collected groundwater samples from the CCR Unit background and downgradient monitoring wells for analysis of Appendix III constituents per 40 CFR §257.94 and included the results in the 2017 Annual Report. Following receipt and validation of laboratory results, Golder evaluated the results of the first Detection Monitoring sampling event to compare the concentration of 40 CFR Part 257 Appendix III constituents relative to facility background concentrations. Using Sanitas™ software, Golder pooled the background data to calculate prediction limits and compared the October 2017 results to the calculated prediction limits to identify SSIs. Due to the identification of SSIs, NIPSCO established an Assessment Monitoring program in April 2018.

## 2.5 Assessment Monitoring

Golder performed the first Assessment Monitoring event (i.e., Assessment and Verification sampling) in March and April 2018, followed by a statistical evaluation and data analysis in August 2018. In March 2018, Golder collected groundwater samples from each background and downgradient monitoring well for analysis of Appendix IV constituents per 40 CFR §257.95. In April 2018, Golder collected groundwater samples from the downgradient monitoring well locations for analysis of Appendix III and detected Appendix IV constituents per 40 CFR §257.95. In August 2018, Golder developed GWPS to compare against the Assessment Monitoring results. Following receipt and validation of laboratory results, Golder evaluated the 40 CFR Part 257 Appendix IV constituent results relative to CCR Unit-specific GWPS (Table 4). At the time of the statistical evaluation, the GWPS was the higher value of either the Maximum Contaminant Level (MCL) or the CCR Unit-specific background concentration for each analyte calculated using a tolerance/prediction limit procedure in accordance with 40 CFR §257.95(h)(2). Golder assessed the groundwater results obtained from the downgradient monitoring wells by comparing the lower confidence limit (LCL) to the CCR Unit-specific GWPS for each Appendix IV analyte at each well. If the LCL exceeds the GWPS, there is statistical evidence of an SSL. Golder determined that SSLs existed for the WDA (molybdenum in GAMW-01, GAMW-13B, and GAMW-14B) but identified an alternative natural source for the

elevated levels of molybdenum detected in downgradient monitoring wells and prepared an ASD. A qualified Indiana-licensed professional engineer certified the ASD in November 2018 (Appendix A of the 2018 CCR Annual Groundwater Monitoring and Corrective Action Report, dated January 31, 2019 (2018 Annual Report, Golder 2019)).

Golder performed the second and third Assessment Monitoring events in October 2018 and April 2019, respectively, by collecting groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and Appendix IV constituents per 40 CFR §257.95. The results from the first and second Assessment Monitoring events are included in the 2018 Annual Report and the results from the third Assessment Monitoring event is included in the 2019 CCR Annual Groundwater Monitoring and Corrective Action Report, dated January 31, 2020 (2019 Annual Report, Golder 2020). Golder performed the statistical evaluation of the analytical results of the second and third Assessment Monitoring sampling events in February 2019 and August 2019, respectively. Golder identified SSLs for arsenic (GAMW-01) and cobalt (GAMW-14). In May 2019, Golder prepared, and a qualified Indiana-licensed professional engineer certified an ASD demonstrating that the arsenic and cobalt concentrations observed in the downgradient monitoring wells were due to natural variation and not to a release from the WDA (Appendix A of the 2019 Annual Report, Golder 2020). A qualified-licensed professional engineer recertified the ASD in November 2019 (Appendix B of the 2019 Annual Report).

Golder collected groundwater samples from the following property boundary Assessment Monitoring wells (see Figure 2):

- GAMW-42/42B, GAMW-43/43B, and GAMW-44/44B in March, April, June, July, August, October, and November 2019
- GAMW-42C, GAMW-57/57B, and GAMW-58/58B installed in June 2019 in July, August, October, and November 2019.

SSLs were not identified in groundwater samples collected from these property boundary wells.

Golder performed the fourth and fifth Assessment Monitoring event in November 2019 and April/May 2020, respectively, by collecting groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and detected Appendix IV constituents per 40 CFR §257.95. The results from the fourth Assessment Monitoring events are included in the 2019 Annual Report. In March 2020, Golder performed the statistical evaluation of the analytical results of the fourth Assessment Monitoring sampling event and identified an SSL for molybdenum in well GAMW-51B. In June 2020, Golder prepared, and a qualified Indiana-licensed professional engineer certified, an ASD demonstrating that the SSL for molybdenum and observed lithium levels above the GWPS in GAMW-51B were not due to a release from the WDA (Appendix A of the 2020 Annual Report, Golder 2021). Golder performed the statistical evaluation of the analytical results of the fifth Assessment Monitoring sampling event in September 2020 and identified SSLs for molybdenum and lithium in well GAMW-51B. As these results were consistent with the previous Assessment Monitoring event, a qualified Indiana-licensed professional engineer recertified the ASD in December 2020 (Appendix B of the 2020 Annual Report, Golder 2021).

Golder performed the sixth Assessment Monitoring event in October 2020 by collecting groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and detected Appendix IV constituents per 40 CFR §257.95. Golder performed the statistical evaluation of the analytical results from the sixth Assessment Monitoring sampling event in February 2021 and identified SSLs for molybdenum and lithium in well GAMW-51B and molybdenum in GAMW-60B. As described in the 2019 Annual Report (Golder 2020), GAMW-60B was installed

downgradient of GAMW-51/51B in 2019 to further assess the nature and extent of groundwater quality further downgradient of the WDA. The October 2020 Assessment Monitoring event was the fourth round of sampling at this location, and therefore, was the first event for which SSLs were calculated. As these results are consistent with the primary lines of evidence presented in the June 2020 ASD, a qualified Indiana-licensed professional engineer recertified the ASD in May 2021 (Appendix A). The results from the fifth and sixth Assessment Monitoring events are included in the 2020 Annual Report (Golder, 2021).

Golder performed the seventh Assessment Monitoring event in April 2021 by collecting groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and Appendix IV constituents per 40 CFR §257.95. Golder performed the statistical evaluation of the analytical results of the seventh Assessment Monitoring sampling event in August 2021 and identified SSLs for molybdenum and lithium in well GAMW-51B and molybdenum in GAMW-60B. As these results were consistent with the previous Assessment Monitoring event, a qualified Indiana-licensed professional engineer recertified the ASD in November 2021 (Appendix B).

Golder performed the eighth Assessment Monitoring event in September 2021 by collecting groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and detected Appendix IV constituents per 40 CFR §257.95. Golder will perform the statistical evaluation of the analytical results from the eighth Assessment Monitoring event in January 2022.

## 2.6 Statistical Evaluation

After each monitoring event, Golder assessed the analytical data for outliers, anomalies, and trends that might be an indication of a sampling or analytical error. Outliers and anomalies are generally defined as inconsistently large or small values that can occur because of sampling, laboratory, transportation, or transcription errors, or even by chance alone. Significant trends may indicate natural geochemical variability, a source of systematic error, influence of an upgradient/off-site source, or an actual occurrence of CCR Unit influence upon groundwater quality. Appropriate statistical methods are used to remove outliers from the database and manage trends with detrending routines, prior to the calculation of statistical limits. To assess the data for outliers, anomalies, and trends, Golder assessed the data using time vs. concentration graphs, and statistical routines included in the Sanitas™ statistical analysis software package. Golder has not identified any additional outliers since the 2020 Annual Report.

Golder evaluated the background data set for trends using Sanitas™ software. Golder will continue to monitor all trends and apply detrending routines, if applicable, before using these data to calculate GWPS. Golder identified the following 40 CFR Part 257 Appendix IV parameter trends in background monitoring wells:

- Arsenic concentrations detected in groundwater samples collected from GAMW-03B show a decreasing trend and arsenic has never been detected above the MCL in this well. No detrending routines are required.
- Beryllium concentrations detected in groundwater samples collected from GAMW-03 and GAMW-03B show a decreasing trend, beryllium has never been detected above the laboratory reporting limit in these wells, and all background beryllium results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Cadmium concentrations detected in groundwater samples collected from GAMW-03 and GAMW-03B show a decreasing trend, cadmium has never been detected above the laboratory reporting limit in these wells, and all background cadmium results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.

- Chromium concentrations detected in groundwater samples collected from GAMW-03 show a decreasing trend, chromium has never been detected above the laboratory reporting limit in this well, and all background chromium results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Lead concentrations detected in groundwater samples collected from GAMW-03B show a decreasing trend, lead has never been detected above the laboratory reporting limit in this well, and all background lead results are below the health-based standard, therefore the GWPS is equal to the health-based standard. No detrending routines are required.
- Molybdenum concentrations detected in groundwater samples collected from GAMW-03B show an increasing trend, all background results are below the health-based standard, therefore, the GWPS is equal to the health-based standard. No detrending routines are required.
- Thallium concentrations detected in groundwater samples collected from GAMW-03 and GAMW-03B show a decreasing trend, thallium has never been detected above the laboratory reporting limit in these wells, and all background thallium results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.

## 2.7 Problems Encountered and Follow-Up Corrective Actions

One cooler containing the radium samples collected from GAMW-13/13B and GAMW-14/14B in the seventh Assessment Monitoring event (April 2021), was delayed during shipping (i.e., FedEx issue). The laboratory received the radium samples approximately one month after the sample collection date. Since the radium analyses have no temperature requirements and the laboratory received the samples within the method holding time, the samples were run despite the shipping delay. No follow up corrective action was required.

Golder encountered elevated turbidity levels (i.e., >5 nephelometric turbidity units - NTUs) during the 2021 Assessment Monitoring events including:

- Seventh Assessment Monitoring event (April 2021); Golder collected groundwater samples from monitoring wells GAMW-03 and GAMW-42C at turbidity levels of 5.99 and 7.69 NTUs, respectively.
- Eighth Assessment Monitoring event (September 2021); Golder collected the groundwater sample from monitoring well GAMW-42C at a turbidity level of 5.86 NTUs.

According to the CCR Groundwater Monitoring Program Implementation Manual (Golder 2017), groundwater samples are to be collected once groundwater has achieved a turbidity level below 5 NTUs. Due to time constraints in the field, Golder purged groundwater from the wells for a minimum of two hours and collected groundwater samples when turbidity appeared to stabilize (e.g., no downward or upward trend over three consecutive readings five minutes apart). Evaluation of the analytical results from these wells suggests that the slightly elevated turbidity levels had no significant effect on the representativeness of groundwater quality. During future monitoring events, Golder will purge groundwater for two hours or five well volumes, whichever is shorter and use professional judgement to assess whether the purge water is representative of groundwater for sampling. If an acceptable turbidity level cannot be achieved within a reasonable timeframe (i.e., three hours), Golder will redevelop the affected monitoring wells prior to the next sampling event.



### 3.0 KEY ACTIVITIES PROJECTED FOR 2022

During calendar year 2022, NIPSCO anticipates conducting the following key CCR Rule groundwater monitoring activities for the WDA:

- Prepare and submit the appropriate notifications according to the CCR Rule;
- Continue semi-annual Assessment Monitoring groundwater sampling per CCR Rule requirements; and,
- Inspect and maintain the monitoring system including wells, pumps, and equipment.

### 4.0 REFERENCES

Golder Associates, "2017 Annual Groundwater Monitoring and Corrective Action Report - Waste Disposal Area, NIPSCO R. M. Schafer Generating Station", January 31, 2018.

Golder Associates, "2018 Annual Groundwater Monitoring and Corrective Action Report - Waste Disposal Area, NIPSCO R. M. Schafer Generating Station", January 31, 2019.

Golder Associates, "2019 Annual Groundwater Monitoring and Corrective Action Report - Waste Disposal Area, NIPSCO R. M. Schafer Generating Station", January 31, 2020.

Golder Associates 2020, "2020 Annual Groundwater Monitoring and Corrective Action Report – Waste Disposal Area, NIPSCO R. M. Schahfer Generating Station", January 31, 2021.

Golder Associates, "CCR Groundwater Monitoring Program Implementation Manual," October 2017.

Golder Associates, "Waste Disposal Area Alternative Source Demonstration," November 19, 2018.

Golder Associates, "Alternative Source Demonstration - Waste Disposal Area," May 17, 2019.

Golder Associates, "Recertification of R. M. Schahfer Waste Disposal Area Alternative Source Demonstration," November 26, 2019.

Golder Associates, "Alternative Source Demonstration – Waste Disposal Area," June 9, 2020.

Golder Associates, "Recertification of R. M. Schahfer Waste Disposal Area Alternative Source Demonstration," December 4, 2020.

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[https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared documents/rmsgsrpts/annual report- 2021/wda/draft/draft\\_2021 annual report rmsgsrpts wda.docx](https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared%20documents/rmsgsrpts/annual%20report-2021/wda/draft/draft_2021%20annual%20report%20rmsgsrpts%20wda.docx)

Tables

**Table 1: Monitoring Well Network**  
**CCR Unit Schahfer Waste Disposal Area**  
**NIPSCO LLC Rollin M. Schahfer Generating Station**  
**Wheatfield, Indiana**

CCR Unit	Well Purpose	Monitoring Well ID	Installation Date	Decommission Date (If Applicable)	Basis For Action
Waste Disposal Area	Background Monitoring Well	GAMW-03	6/27/2015	-	Installed for groundwater quality monitoring <sup>(1)</sup>
		GAMW-03B	5/24/2016	-	
		GAMW-68	8/27/2020	-	
		GAMW-68B	8/27/2020	-	
	Downgradient Monitoring Well	GAMW-01	6/26/2015	-	Installed for groundwater quality monitoring <sup>(1)</sup>
		GAMW-12	5/23/2016	-	
		GAMW-13	5/24/2016	-	
		GAMW-13B	5/23/2016	-	
		GAMW-14	5/23/2016	-	
		GAMW-14B	5/23/2016	-	
		GAMW-01B	7/31/2018	-	Installed to characterize the nature and extent of a potential release <sup>(2)</sup>
		GAMW-12B	7/31/2018	-	
		GAMW-51	7/25/2018	-	
		GAMW-51B	7/25/2018	-	Installed to monitor groundwater quality at the property boundary <sup>(3)</sup>
		GAMW-42	7/24/2018	-	
		GAMW-42B	7/24/2018	-	
		GAMW-42C	6/8/2019	-	
		GAMW-43	5/16/2018	-	
		GAMW-43B	5/16/2018	-	
		GAMW-44	5/16/2018	-	
		GAMW-44B	5/16/2018	-	
		GAMW-57	6/7/2019	-	
		GAMW-57B	6/7/2019	-	
		GAMW-58	6/6/2019	-	Installed to characterize the nature and extent of a potential release <sup>(2)</sup>
	GAMW-58B	6/6/2019	-		
	GAMW-59	6/8/2019	-		
GAMW-59B	6/6/2019	-			
GAMW-60	6/8/2019	-			
GAMW-60B	6/4/2019	-			

1) Per 40 CFR §257.93, Golder collected eight rounds of background data prior to October 17, 2017, excluding wells GAMW-68 and GAMW-68B.

2) Per 40 CFR §257.95(g)(1)(i) Rule requirements, Golder collected additional data to further characterize the nature and extent of potential groundwater impacts.

3) Per 40 CFR §257.95(g)(1)(iii), Golder collected data to monitor groundwater quality in the direction of flow at the property boundary.

Prepared by: KMC  
 Checked by: DFSC  
 Reviewed by: MAH

**Table 2: Summary of Sampling Events**  
**CCR Unit Schahfer Waste Disposal Area**  
**NIPSCO LLC Rollin M. Schahfer Generating Station**  
**Wheatfield, Indiana**

Well Purpose	Monitoring Well ID	Sample Event #16	Sample Event #17	Total Number of Samples
Purpose of Sample		Annual Assessment Monitoring	Semi-Annual Assessment Monitoring	
Sample Parameters		Appendix III and Appendix IV	Appendix III and detected Appendix IV	
Background Monitoring Well	GAMW03	4/14/2021	9/17/2021	2
	GAMW03B	4/15/2021	9/17/2021	2
	GAMW68	4/22/2021	9/17/2021	2
	GAMW68B	4/22/2021	9/17/2021	2
Downgradient Monitoring Well	GAMW01	4/14/2021	9/16/2021	2
	GAMW01B	4/14/2021	9/16/2021	2
	GAMW12	4/15/2021	9/16/2021	2
	GAMW12B	4/15/2021	9/16/2021	2
	GAMW13	4/19/2021	9/17/2021	2
	GAMW13B	4/19/2021	9/17/2021	2
	GAMW14	4/19/2021	9/17/2021	2
	GAMW14B	4/19/2021	9/17/2021	2
	GAMW42	4/23/2021	9/14/2021	2
	GAMW42B	4/23/2021	9/14/2021	2
	GAMW42C	4/23/2021	9/15/2021	2
	GAMW43	4/23/2021	9/14/2021	2
	GAMW43B	4/27/2021	9/14/2021	2
	GAMW44	4/27/2021	9/15/2021	2
	GAMW44B	4/27/2021	9/15/2021	2
	GAMW51	4/21/2021	9/29/2021	2
	GAMW51B	4/21/2021	9/29/2021	2
	GAMW57	4/23/2021	9/15/2021	2
	GAMW57B	4/23/2021	9/15/2021	2
	GAMW58	4/23/2021	9/15/2021	2
	GAMW58B	4/23/2021	9/15/2021	2
	GAMW59	4/21/2021	9/29/2021	2
GAMW59B	4/22/2021	9/29/2021	2	
GAMW60	4/21/2021	9/24/2021	2	
GAMW60B	4/21/2021	9/24/2021	2	
Total Number of Samples		29	29	58

**Notes:**

Sample counts do not include QC/QA samples.

(1) Sample events #1-15 were completed prior to 2021. The purpose, sample parameters, and sample dates are included in the 2017, 2018, 2019, and 2020 Annual Reports.

(2) Semi-annual assessment monitoring parameters did not include radium.

(3) Sample events #16 and 17 correspond to the seventh and eighth Assessment Monitoring events, respectively.

Prepared by: KMC  
 Checked by: DFSC  
 Reviewed by: JSP

**Table 3: Analytical Data**  
**CCR Unit R. M. Schahfer Waste Disposal Area**  
**NIPSCO LLC R. M. Schahfer Generating Station**  
**Wheatfield, Indiana**

Location		GAMW01		GAMW01B		GAMW03		GAMW03B		GAMW12		GAMW12B			GAMW13		GAMW13B	
Sample Date		2021-04-14	2021-09-16	2021-04-14	2021-09-16	2021-04-14	2021-09-17	2021-04-15	2021-09-17	2021-04-15	2021-09-16	2021-04-15		2021-09-16	2021-04-19	2021-09-17	2021-04-19	2021-09-17
Sample Type		N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N
Chemical Name	Unit																	
<b>CCR Appendix III</b>																		
Boron	mg/L	0.78	0.24	0.35	0.29	0.22	0.13	0.25	0.27	0.1 U	0.1 U	0.29	0.31	0.32	0.16	0.19	0.71	0.6
Calcium	mg/L	95.2	76.7	103	112	90.3	70.2	96.4	102	87	80.7	103	104	107	95.6	71.2	82.7	77.8
Chloride	mg/L	10.1	5.9	20.8	18.6	4.3	4.2	20.1	23.1	2.3	3.2	20.5	20.8	20.6	4.3	10.5	28.3	26
Fluoride	mg/L	0.29	0.36 J-	0.076	0.094 J-	0.13	0.2	0.2	0.23	0.16	0.19 J-	0.079	0.082	0.079 J-	0.27	0.31	0.31	0.25
pH	SU	7.11	6.61	6.96	6.5	6.77	6.9	7.03	6.97	7.31	6.49		7.55	6.99	6.95	6.67	7.73	7.32
Sulfate	mg/L	157	42.3	85.2	69.3	97.5	40.2	58	78.6	9.2	24.2	63.8	66.5	57.5	48.6	49.3	146	137
Total Dissolved Solids	mg/L	574	294	450	443	390	298	400	439	336	325	435	430	451	355	317	376	395
<b>CCR Appendix IV</b>																		
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	mg/L	0.012	0.02	0.001 U	0.001 U	0.0094	0.019	0.001 U	0.001 U	0.012	0.043	0.001 U	0.001 U	0.001 U	0.027	0.0076	0.0012	0.001
Barium	mg/L	0.051	0.049	0.17	0.17	0.074	0.08	0.11	0.12	0.095	0.094	0.13	0.13	0.14	0.11	0.08	0.081	0.077
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Cadmium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	mg/L	0.0019	0.001	0.001	0.001 U	0.0055	0.001 U	0.001 U	0.001 U	0.0025	0.0028	0.001 U	0.001 U	0.001 U	0.0012	0.001 U	0.001 U	0.001 U
Fluoride	mg/L	0.29	0.36 J-	0.076	0.094 J-	0.13	0.2	0.2	0.23	0.16	0.19 J-	0.079	0.082	0.079 J-	0.27	0.31	0.31	0.25
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	mg/L	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.011	0.0076	0.001 U	0.001 U	0.011	0.0084	0.0051	0.0066	0.0028	0.0041	0.0012	0.0012	0.0013	0.0096	0.004	0.016	0.016
Radium, Total	pci/l	0.642 U		2.02		0.158 U		1.08 U		1.1 U		1.65	2.42		1.06 U		0.82 U	
Selenium	mg/L	0.01	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
<b>Field Parameters</b>																		
Dissolved Oxygen	mg/L	0.6	0.49	0.51	0.51	1.47	0.27	0.95	0.28	0.2	0.28		0.13	0.46	0.46	0.29	0.23	0.32
Oxidation-Reduction Potential	millivolts	-37.2	-240.2	-88	-217.6	-33.4	-225.9	-81.8	-255.4	-90.7	-191.9		-107.1	-265.3	-16.8	-155.2	-120.6	-259.6
pH	SU	7.11	6.61	6.96	6.5	6.77	6.9	7.03	6.97	7.31	6.49		7.55	6.99	6.95	6.67	7.73	7.32
Specific Conductance	uS/cm	721	524	752	705	605	479	695	634	583	625		709	704	461	580	527	568
Temperature	deg c	9.7	18.23	12.1	14.36	9.5	16.85	11.8	13.22	9.04	19.11		11.67	14.81	9.5	18.84	11.97	14.15
Turbidity	ntu	4.06	3.51	3.19	2.19	5.99	2.8	4.08	3.19	4.78	4.53		3.58	3.64	3.79	2.17	3.92	0.5

Note:  
 mg/L = milligrams per liter  
 uS/cm = micro Siemens per centimeter  
 deg C = degrees Celsius  
 NTU = Nephelometric Turbidity Units  
 SU = Standard Units  
 pCi/L = picocuries per liter  
 "U" = Indicates the result was not detected above the method detection limit (MDL) for the sample; the quantitation limit (RL) is provided.  
 "J" = Indicates the result is estimated.  
 "J-" = Indicates the result is estimated and may be biased low.  
 "J+" = Indicates the result is estimated and may be biased high.  
 "UJ" = Indicates the result was not detected above MDL for the sample and the RL is estimated. The estimated RL is provided.

**Table 3: Analytical Data**  
**CCR Unit R. M. Schahfer Waste Disposal Area**  
**NIPSCO LLC R. M. Schahfer Generating Station**  
**Wheatfield, Indiana**

Location		GAMW14		GAMW14B			GAMW42		GAMW42B		GAMW42C		GAMW43		GAMW43B			GAMW44	
Sample Date		2021-04-19	2021-09-17	2021-04-19		2021-09-17	2021-04-23	2021-09-14	2021-04-23	2021-09-14	2021-04-23	2021-09-15	2021-04-23	2021-09-14	2021-04-27		2021-09-14	2021-04-27	2021-09-15
Sample Type		N	N	FD	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N
Chemical Name	Unit																		
<b>CCR Appendix III</b>																			
Boron	mg/L	0.29	0.2	2.8	2.8	2.7	0.1 U	0.1 U	0.1 U	0.1 U	0.69	0.62	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Calcium	mg/L	67.7	82.6	146	143	112	47.1	59.9	57.9	62.6	48.6	53.9	28	32.6	41.2	40.4	38.2	21.5	20.2
Chloride	mg/L	11.3	10.6	112	108	85.2	4.2	11.4	8.6	10.3	6.3	8.3	0.53	0.85	1.7	1.7	1.8	2.3	1.7
Fluoride	mg/L	0.26	0.26	0.29	0.29	0.28	0.17 J-	0.19	0.15 J-	0.12	0.2 J-	0.22	0.13 J-	0.11	0.19	0.19	0.15	0.19	0.13
pH	SU	7.03	6.61		7.71	7.39	7.62	7	7.72	8	7.59	7.36	7.22	7.22		8.04	7.64	6.21	6.21
Sulfate	mg/L	40.6	31.8	1330	1350	841	29.9	66.5	37.7	31.8	4.4	4.3	30	28.4	28.9 J+	27.9 J+	22.2	63.9 J+	44.8
Total Dissolved Solids	mg/L	270	330	1730	1740	1660	148	253	193	241	203	254	86	137	145	151	137	165	136
<b>CCR Appendix IV</b>																			
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	mg/L	0.018	0.039	0.001 U	0.001 U	0.001 U	0.0012	0.0011	0.001 U	0.001 U	0.001 U	0.001 U	0.0016	0.0028	0.001 U	0.001 U	0.001 U	0.095	0.052
Barium	mg/L	0.061	0.081	0.08	0.08	0.059	0.018	0.023	0.016	0.021	0.0092	0.0089	0.019	0.026	0.012	0.011	0.011	0.018	0.02
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Cadmium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0034	0.002 U
Cobalt	mg/L	0.017	0.024	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0024	0.0022	0.001 U	0.001 U	0.001 U	0.0026	0.0029
Fluoride	mg/L	0.26	0.26	0.29	0.29	0.28	0.17 J-	0.19	0.15 J-	0.12	0.2 J-	0.22	0.13 J-	0.11	0.19	0.19	0.15	0.19	0.13
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	mg/L	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.032	0.024	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.0073	0.0077	0.028	0.028	0.04	0.0022	0.0033	0.0029	0.0027	0.0026	0.0021	0.0018	0.002	0.0023	0.0021	0.0024	0.0044	0.004
Radium, Total	pci/l	0.883 U		1.92	1.85		0 U		0.853 U		0.802 U		0.568 U		0.985 U	0.731 U		0.365 U	
Selenium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
<b>Field Parameters</b>																			
Dissolved Oxygen	mg/L	0.2	0.29		0.29	0.42	0.59	0.17	0.49	0.15	0.43	0.12	0.7	0.64		0.51	0.27	1.07	0.83
Oxidation-Reduction Potential	millivolts	-31.7	-234.5		-103.5	-193.7	-80.9	-191	-125.5	-261	-123.3	-231	35.1	-329		-108.7	-323.9	-8.1	-294.6
pH	SU	7.03	6.61		7.71	7.39	7.62	7	7.72	8	7.59	7.36	7.22	7.22		8.04	7.64	6.21	6.21
Specific Conductance	uS/cm	377	568		2128	2053	326.1	413	407	414	455.1	475	209	226		282	191	257.8	192
Temperature	deg c	10.2	16.83		12.37	13.98	9.9	14.9	11.8	13.1	11.8	12.7	9.7	17.01		11.4	12.88	11.2	16.11
Turbidity	ntu	4.19	0.85		1.86	1.1	2.56	1.76	4.87	3.98	7.69	5.86	4.3	2.99		2.38	1.37	4.66	2.04

Note:  
 mg/L = milligrams per liter  
 uS/cm = micro Siemens per centimeter  
 deg C = degrees Celsius  
 NTU = Nephelometric Turbidity Units  
 SU = Standard Units  
 pCi/L = picocuries per liter  
 "U" = Indicates the result was not detected above the method detection limit (MDL) for the sample; the quantitation limit (RL) is provided.  
 "J" = Indicates the result is estimated.  
 "J-" = Indicates the result is estimated and may be biased low.  
 "J+" = Indicates the result is estimated and may be biased high.  
 "UJ" = Indicates the result was not detected above MDL for the sample and the RL is estimated. The estimated RL is provided.

**Table 3: Analytical Data**  
**CCR Unit R. M. Schahfer Waste Disposal Area**  
**NIPSCO LLC R. M. Schahfer Generating Station**  
**Wheatfield, Indiana**

Location		GAMW44B		GAMW51			GAMW51B		GAMW57		GAMW57B		GAMW58		GAMW58B			GAMW59	
Sample Date		2021-04-27	2021-09-15	2021-04-21	2021-09-29		2021-04-21	2021-09-29	2021-04-23	2021-09-15	2021-04-23	2021-09-15	2021-04-23	2021-09-15	2021-04-23	2021-09-15		2021-04-21	2021-09-29
Sample Type		N	N	N	FD	N	N	N	N	N	N	N	N	N	N	FD	N	N	N
Chemical Name	Unit																		
<b>CCR Appendix III</b>																			
Boron	mg/L	0.1 U	0.1 U	0.43	0.51	0.5	7.2	7	0.1 U	0.1 U	0.1 U	0.13	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U	0.89	1
Calcium	mg/L	31.2	31.7	144	148	147	261	282	13.9	21.8	43.1	47.5	7.3	10.9	37.8	29.2	38.6	209	217
Chloride	mg/L	1.6	1.5	1.5	2.3	2.3	54.8	53.2	1.6	1	11.2	12.4	0.95	1.1	3.6	2.1	4	11.3	21.1
Fluoride	mg/L	0.14	0.18	0.26	0.34	0.34	0.45	0.82	0.05 UJ	0.073	0.13 J-	0.17	0.22 J-	0.35	0.15 J-	0.12	0.19	0.42	0.7
pH	SU	8.22	7.81	7.19		7.04	8.11	7.83	6.22	8.03	7.95	7.33	4.4	5.87	7.92		7.32	7.53	7.26
Sulfate	mg/L	12.3 J+	7.5	196	191	193	1490	1480	38	25.8	19.1	24.4	45	38.9	24.9	32.1	23.6	473	434
Total Dissolved Solids	mg/L	85	113	604	597	600	2180 J	2270	58	101	150	205	44 J	82	124	135	161	756	866
<b>CCR Appendix IV</b>																			
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	mg/L	0.001 U	0.001 U	0.0016	0.0016	0.0016	0.004	0.0044	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0012	0.002
Barium	mg/L	0.0084	0.0082	0.1	0.11	0.11	0.072	0.077	0.014	0.0055	0.02	0.022	0.059	0.041	0.015	0.0044	0.015	0.048	0.055
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0012	0.00075	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Cadmium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00025	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	mg/L	0.001 U	0.001 U	0.0033	0.0031	0.0031	0.001 U	0.001 U	0.0014	0.001 U	0.001 U	0.001 U	0.01	0.0093	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Fluoride	mg/L	0.14	0.18	0.26	0.34	0.34	0.45	0.82	0.05 UJ	0.073	0.13 J-	0.17	0.22 J-	0.35	0.15 J-	0.12	0.19	0.42	0.7
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	mg/L	0.008 U	0.008 U	0.008 U	0.012	0.012	0.071	0.078	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.008 U	0.012	0.018
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.0022	0.002	0.011	0.0092	0.0098	0.16	0.15	0.0011	0.003	0.0028	0.0067	0.001 U	0.001 U	0.0034	0.001 U	0.0041	0.03	0.045
Radium, Total	pci/l	1.03 U		1.23 U			3.57		0.194 U		0.368 U		1.95		0.703 U			1.17 U	
Selenium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.0025	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
<b>Field Parameters</b>																			
Dissolved Oxygen	mg/L	0.5	0.36	0.48		0.27	0.55	0.29	4.93	6.33	0.22	0.37	4.1	0.98	0.3		0.73	0.21	0.28
Oxidation-Reduction Potential	millivolts	-125.8	-318	-100.6		0.197	-108.7	0.246	111.6	-297.7	-132.7	-316.7	291.1	-314	-140.4		-298.9	-105.5	0.202
pH	SU	8.22	7.81	7.19		7.04	8.11	7.83	6.22	8.03	7.95	7.33	4.4	5.87	7.92		7.32	7.53	7.26
Specific Conductance	uS/cm	210.9	158	873		937	3094	303.9	124	136	291	284	110	102	252		218	1038	125.5
Temperature	deg c	11.5	12.16	11.1		15.9	12.4	14.2	10.25	12.45	11.2	11.54	9.27	13.67	10.84		11.37	11.28	22.2
Turbidity	ntu	2.15	1.19	4.2		4.12	1.82	1.43	2.7	2.63	3.04	1.65	0.84	1.27	2.96		2.66	4.8	4.52

Note:  
 mg/L = milligrams per liter  
 uS/cm = micro Siemens per centimeter  
 deg C = degrees Celsius  
 NTU = Nephelometric Turbidity Units  
 SU = Standard Units  
 pCi/L = picocuries per liter  
 "U" = Indicates the result was not detected above the method detection limit (MDL) for the sample; the quantitation limit (RL) is provided.  
 "J" = Indicates the result is estimated.  
 "J-" = Indicates the result is estimated and may be biased low.  
 "J+" = Indicates the result is estimated and may be biased high.  
 "UJ" = Indicates the result was not detected above MDL for the sample and the RL is estimated. The estimated RL is provided.

**Table 3: Analytical Data**  
**CCR Unit R. M. Schahfer Waste Disposal Area**  
**NIPSCO LLC R. M. Schahfer Generating Station**  
**Wheatfield, Indiana**

Location		GAMW59B		GAMW60		GAMW60B		GAMW68		GAMW68B	
Sample Date		2021-04-22	2021-09-29	2021-04-21	2021-09-24	2021-04-21	2021-09-24	2021-04-22	2021-09-17	2021-04-22	2021-09-17
Sample Type		N	N	N	N	N	N	N	N	N	N
Chemical Name	Unit										
<b>CCR Appendix III</b>											
Boron	mg/L	5.4	6.3	1	0.97	6.5	7.3	0.1 U	0.1 U	0.1 U	0.1 U
Calcium	mg/L	292	253	343	379	351	309	60.7	66.4	43.5	44.7
Chloride	mg/L	52	51.3	17.2	16.5	14.3	69.6	22.8	20.4	19.5	18.4
Fluoride	mg/L	0.45	0.53	0.3	0.51	0.34	1.1	0.16	0.28	0.1	0.2
pH	SU	7.6	7.57	7.05	7.01	7.74	7.76	7.82	7.75	8.35	7.99
Sulfate	mg/L	1180	1180	748	1050	1140	443	68.6	81.3	62.5	63.5
Total Dissolved Solids	mg/L	1860	1950	1300	1540	2710	1440	320	315	2040	242
<b>CCR Appendix IV</b>											
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Arsenic	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Barium	mg/L	0.037	0.04	0.027	0.031	0.077	0.063	0.085	0.1	0.11	0.1
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Cadmium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	mg/L	0.001 U	0.001 U	0.0013	0.002	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Fluoride	mg/L	0.45	0.53	0.3	0.51	0.34	1.1	0.16	0.28	0.1	0.2
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Lithium	mg/L	0.017	0.019	0.012	0.015	0.034	0.045	0.008 U	0.0081	0.008 U	0.008 U
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.044	0.05	0.013	0.015	0.35	0.37	0.0035	0.0045	0.0022	0.0027
Radium, Total	pci/l	1.76		1.29 U		3.02		0.285 U		1.35 U	
Selenium	mg/L	0.001 U	0.001 U	0.0017	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
<b>Field Parameters</b>											
Dissolved Oxygen	mg/L	0.49	0.29	1.34	0.29	0.56	0.25	0.51	0.28	0.5	0.21
Oxidation-Reduction Potential	millivolts	-119.4	0.231	84.3	0.56	-101.3	0.238	-39.2	0.187	-154.3	0.216
pH	SU	7.6	7.57	7.05	7.01	7.74	7.76	7.82	7.75	8.35	7.99
Specific Conductance	uS/cm	2650	264.7	1747	187.2	2181	209.8	490	515	410.1	413
Temperature	deg c	13.1	17.4	11.5	20.7	12.2	14.9	9.7	16	11.6	13.5
Turbidity	ntu	1.46	1.58	0.9	1.56	1.04	2.05	2.02	3.99	3.57	3.56

Note:

mg/L = milligrams per liter  
 uS/cm = micro Siemens per centimeter  
 deg C = degrees Celsius  
 NTU = Nephelometric Turbidity Units  
 SU = Standard Units  
 pCi/L = picocuries per liter

"U" = Indicates the result was not detected above the method detection limit (MDL) for the sample; the quantitation limit (RL) is provided.

"J" = Indicates the result is estimated.

"J-" = Indicates the result is estimated and may be biased low.

"J+" = Indicates the result is estimated and may be biased high.

"UJ" = Indicates the result was not detected above MDL for the sample and the RL is estimated. The estimated RL is provided.

Prepared by: SLG  
 Checked by: DFSC  
 Reviewed by: JSP



**Table 4: Groundwater Protection Standards  
CCR Unit Schahfer Waste Disposal Area  
NIPSCO LLC Rollin M. Schahfer Generating Station  
Wheatfield, Indiana**

Analyte	MCL (mg/L)	GWPS (mg/L) <sup>(2)</sup>	GWPS (mg/L) <sup>(3)</sup>
Antimony	0.006	0.006	0.006
Arsenic	0.01	0.015	0.018
Barium	2	2	2
Beryllium	0.004	0.004	0.004
Cadmium	0.005	0.005	0.005
Chromium	0.1	0.1	0.1
Cobalt <sup>(1)</sup>	0.006	0.015	0.015
Fluoride	4	4	4
Lead <sup>(1)</sup>	0.015	0.015	0.015
Lithium <sup>(1)</sup>	0.04	0.04	0.04
Mercury	0.002	0.002	0.002
Molybdenum <sup>(1)</sup>	0.1	0.1	0.1
Radium 226+228	5	5	5
Selenium	0.05	0.05	0.05
Thallium	0.002	0.002	0.002

**Notes:**

MCL= Environmental Protection Agency Maximum Contaminant Level

GWPS= Groundwater Protection Standard

mg/L= milligrams per liter

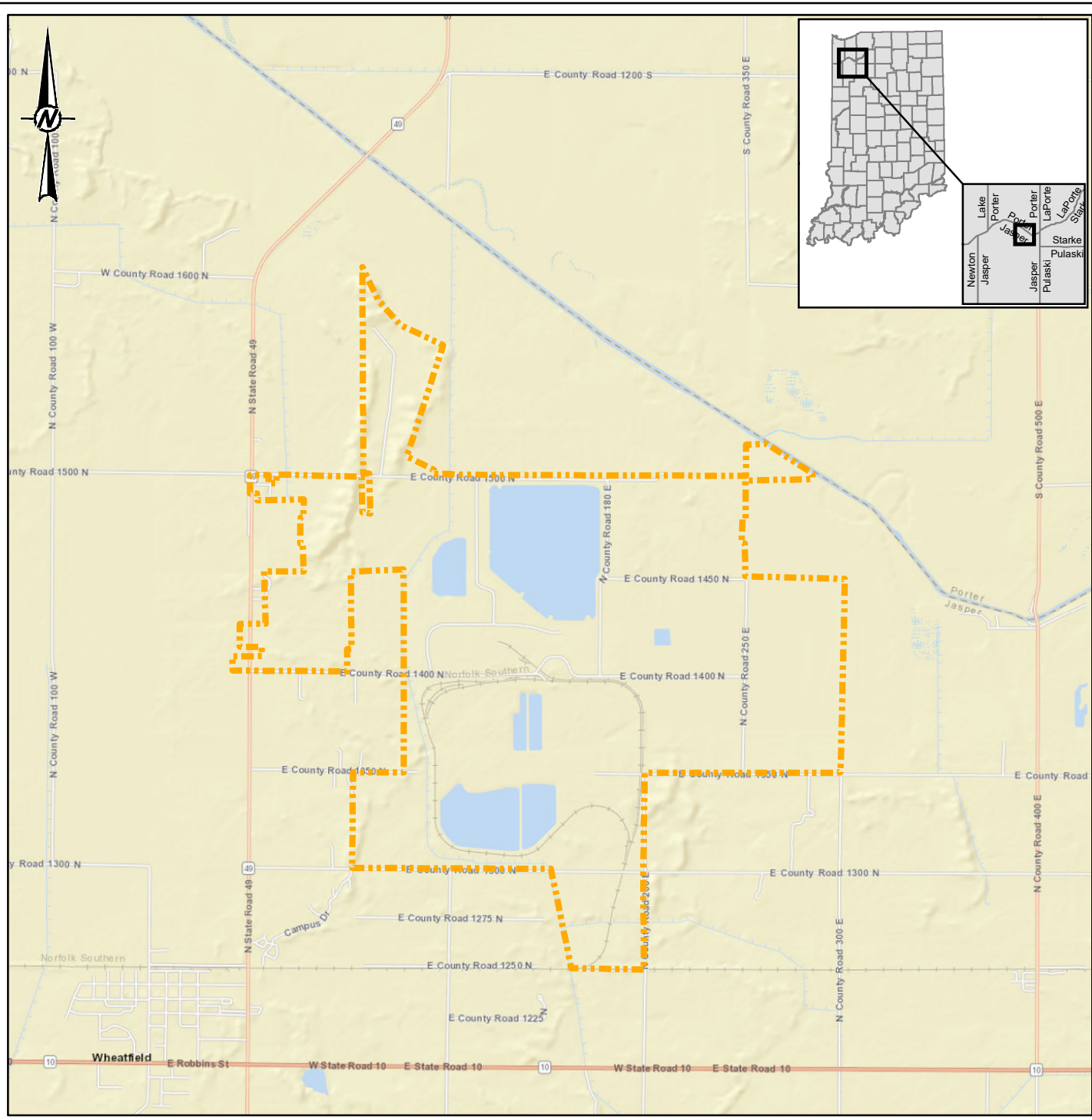
1) As of August 29, 2018, these four constituents have health-based standards that can be used when calculating the GWPS, these health-based standards are not MCLs but are provided in the MCL column.

2) GWPS calculated in August 2018.

3) GWPS calculated in March 2020.

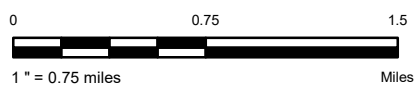
Prepared by: KMC  
Checked by: DFSC  
Reviewed by: JSP

## Figures



**LEGEND**

Approximate Property Line



**REFERENCE(S)**

SERVICE LAYER CREDITS: SOURCES: ESRI, HERE, GARMIN, USGS, INTERMAP, INCREMENT P, NRCAN, ESRI JAPAN, METI, ESRI CHINA (HONG KONG), ESRI KOREA, ESRI (THAILAND), NGCC, © OPENSTREETMAP CONTRIBUTORS, AND THE GIS USER COMMUNITY

**CLIENT**

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

**PROJECT**

R.M. SCHAFER GENERATING STATION  
WHEATFIELD, INDIANA

**TITLE**

**SITE LOCATION MAP**

**CONSULTANT**

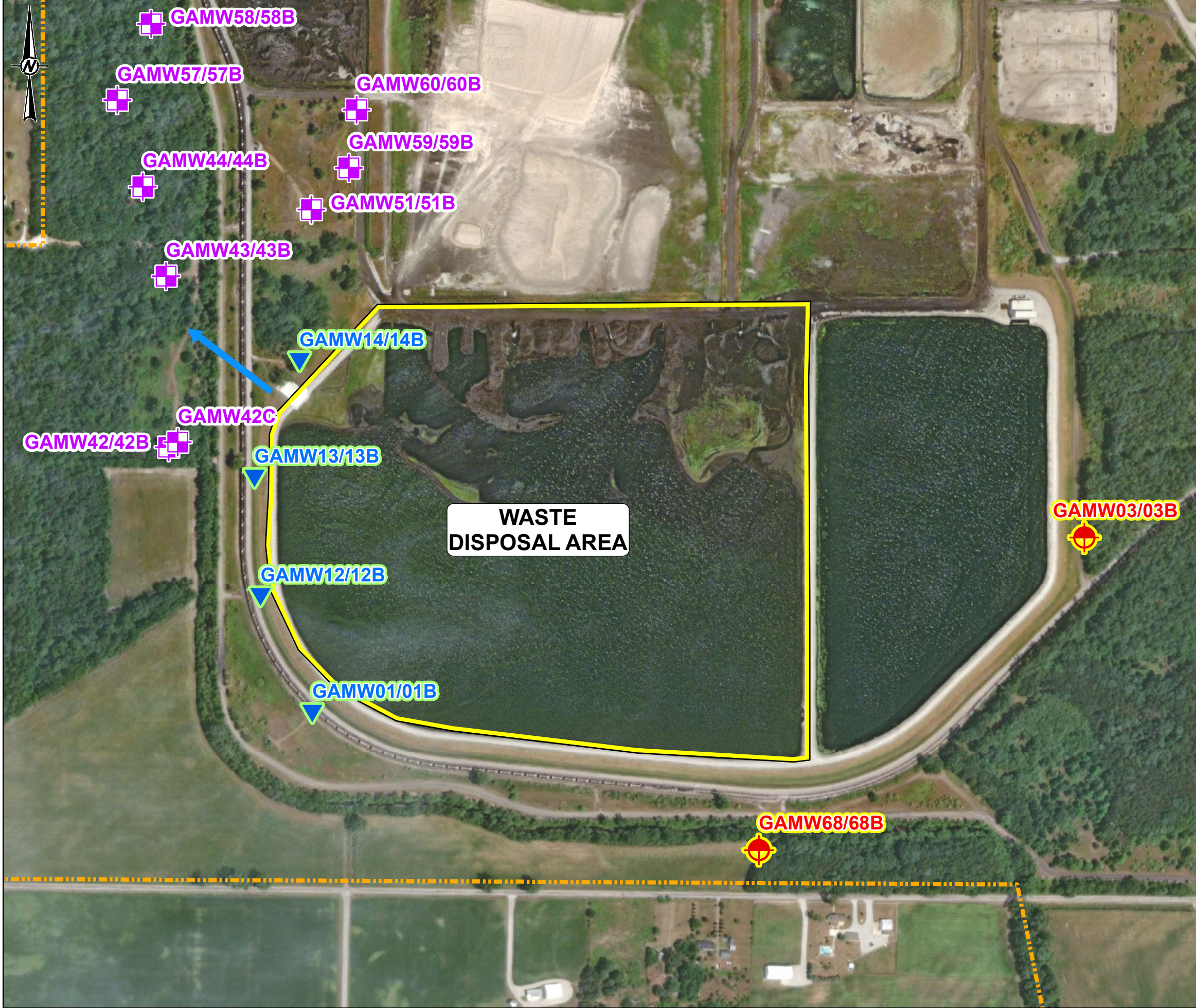


YYYY-MM-DD	1/4/2021
DESIGNED	DFS
PREPARED	SHL
REVIEWED	JSP
APPROVED	MAH

PROJECT NO.	CONTROL	REV.	FIGURE
19121567	A	0	1

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**LEGEND**

- Assessment Monitoring Well
- Background Monitoring Well
- Downgradient Monitoring Well
- Generalized Groundwater Flow Direction
- Approximate Property Line
- CCR Unit

**NOTE(S)**

**REFERENCE(S)**

1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY

**CLIENT**

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

**PROJECT**

R.M. SCHAFER GENERATING STATION  
WHEATFIELD, INDIANA

**TITLE**

**WELL LOCATION MAP  
WASTE DISPOSAL AREA**

CONSULTANT	YYYY-MM-DD	1/5/2022
GOLDER MEMBER OF WSP	DESIGNED	DFS
	PREPARED	TBH
	REVIEWED	DFS
	APPROVED	MAH

PROJECT NO. 19121567 CONTROL A REV. 0 FIGURE 2

0 400 800  
1" = 400 feet Feet

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANS I B

**APPENDIX A**

# Waste Disposal Area Alternative Source Demonstration May 2021

**Northern Indiana Public Service Company LLC (NIPSCO LLC)**

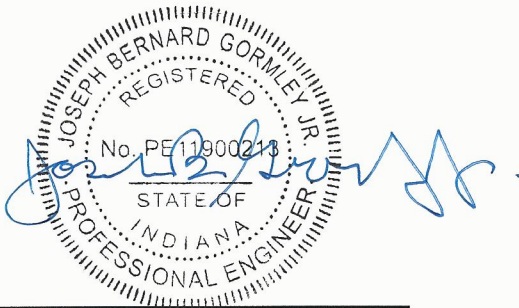
**R. M. Schahfer Generating Station – Waste Disposal Area**

**Wheatfield, Indiana**

**Recertification of Alternative Source Demonstration**

**40 CFR §257.95**

I have personally reviewed this recertification of the alternative source demonstration (ASD), the subject of which is the Waste Disposal Area (WDA) at the NIPSCO LLC R. M. Schahfer Generating Station, prepared by Golder Associates Inc. and dated May 2021. Based on an inquiry of those individuals immediately responsible and on supporting data that I understand to be true, accurate, and complete, I verify the information in this recertification of the ASD is accurate and meets the applicable requirements of the CCR Final Rule. In consideration of the above, I certify to the best of my knowledge, information, and belief, that the ASD for the regulated CCR management unit referred to as the WDA meets the applicable requirements of 40 CFR §257.95.



---

**Joseph Bernard Gormley, Jr.**  
**Indiana Professional Engineer**  
**License #: PE11900213**

5/18/2021  
Date

## TECHNICAL MEMORANDUM

**DATE** May 18, 2021 **Project No.** 19121567

**TO** Jeff Loewe, Dan Sullivan, NIPSCO LLC

**CC** Maggie Rice, Maureen Turman, Joe Kutch, Mark Haney, Jim Peace, Joe Gormley

**FROM** Danielle Sylvia Cofelice **EMAIL** dsylvia@golder.com

**RE: RECERTIFICATION OF R.M. SCHAHFER WASTE DISPOSAL AREA ALTERNATIVE SOURCE DEMONSTRATION**

On behalf of Northern Indiana Public Service Company LLC (NIPSCO LLC), Golder Associates Inc. (Golder) performed a statistical evaluation of groundwater analytical results from the sixth (October 2020) groundwater Assessment Monitoring event at the Rollin M. Schahfer Generating Station (RMSGs) Waste Disposal Area (WDA, CCR Unit). This evaluation was conducted in accordance with 40 Code of Federal Regulations (CFR) Parts 257 and 261, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule" (CCR Rule), as amended, and corresponding regulations under 329 Indiana Administrative Code (IAC) 10-9-1.

The statistical evaluation of analytical data from the sixth Assessment Monitoring event was completed on February 17, 2021. The results of the statistical evaluation indicated the lower confidence level (LCL) exceeded the background concentrations for lithium and molybdenum in assessment monitoring well GAMW51B and the background concentration for molybdenum in assessment monitoring well GAMW60B, which are interpreted as apparent evidence of a statistically-significant levels (SSLs). Although determination of an SSL generally indicates that the groundwater monitoring program should transition from Assessment Monitoring to Assessment of Corrective Measures, 40 CFR §257.95(g)(3) allows the owner or operator (i.e., NIPSCO LLC) to demonstrate that a source other than the CCR Unit or another condition caused the apparent SSL.

Golder identified similar concentrations of lithium and molybdenum in groundwater samples collected from GAMW51B after the fourth (October 2019) Assessment Monitoring event at the WDA and submitted an Alternative Source Demonstration (ASD) on June 9, 2020 (Golder 2020). As described in the ASD, the source material characteristics and site hydrogeology indicated that the source of the lithium and molybdenum SSLs observed in GAMW51B was not due to a release from the WDA. Golder recertified this ASD after the fifth Assessment Monitoring event (April 2020), which confirmed the molybdenum and lithium results observed in GAMW-51B.

### 1.0 SUMMARY OF OCTOBER 2020 RESULTS

The lithium and molybdenum concentrations in samples collected from GAMW51B in October 2020 were 0.063 milligrams per liter (mg/L) and 0.17 mg/L, respectively. These results are less than two times the Groundwater Protection Standards (GWPS) of 0.04 mg/L and 0.1 mg/L for lithium and molybdenum, respectively, which are equal to the risk-based levels included in the CCR Rule, Part 1 Phase 1 Addendum. The molybdenum concentrations in the samples collected to date from GAMW60B range from 0.38 mg/L to 0.49 mg/L (approximately four times the GWPS of 0.1 mg/L). The October 2020 Assessment Monitoring event was the fourth

round of sampling at this location. The most recent molybdenum and lithium results collected at both locations are within the range of the previous data. Overall, the data are consistent with the previous Assessment Monitoring event.

## **2.0 ALTERNATIVE SOURCE DEMONSTRATION**

As described in the June 2020 ASD, Assessment Monitoring well GAMW60B was installed downgradient of GAMW51/51B in 2019 to further assess the nature and extent and overall groundwater quality farther downgradient of the WDA. Monitoring wells GAMW14, GAMW14B, GAMW51, and GAMW51B are all located between the WDA and Assessment Monitoring well GAMW60B (see Figure 1). The WDA has generally received and managed the same waste streams and been operated in a consistent manner since its opening more than 35 years ago. Given the lengthy time horizon of operations and geochemical fingerprints of the source materials within the CCR Unit, if the WDA was the source of molybdenum in groundwater at GAMW60B, it would be expected that upgradient wells would have similar or higher concentrations of molybdenum, which they do not.

The 2020 WDA ASD discusses three primary lines of evidence: 1) the low concentrations of molybdenum in the WDA source materials and porewater, 2) the relative major ion abundance in groundwater that demonstrates a distinct difference between WDA porewater and downgradient groundwater samples, with no indications of mixing, and 3) the waste management boundary monitoring wells GAMW14 and GAMW14B, which are located upgradient of monitoring wells GAMW51B and GAMW60B, do not indicate molybdenum above the GWPS, . Considered individually and together, these lines of evidence indicate the CCR Unit is not the source of the molybdenum in the groundwater monitored by GAMW51B and GAMW60B.

The information presented above confirms the results of the sixth Assessment Monitoring event are consistent with the previous Assessment Monitoring event, and the rationale presented in the June 9, 2020 ASD is still applicable. Golder prepared the current ASD in accordance with 40 CFR 257.95(g)(3) and it supports the finding that the SSLs determined in the February 17, 2021 statistical evaluation are not due to release from the CCR Unit. As described above and in the June 9, 2020 ASD, the source material characteristics and site hydrogeology indicate that the source of the lithium and molybdenum SSLs observed in GAMW51B and the molybdenum SSL in GAMW60B are due to a different condition and not due to a release from the WDA. Therefore, no further action (i.e., Assessment of Corrective Measures) is warranted, and the WDA will remain in Assessment Monitoring.

## **3.0 REFERENCES**







Golder 2020. Alternative Source Demonstration - Waste Disposal Area, Golder Associates Inc., June 9, 2020.

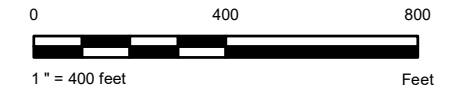
[https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared documents/rmsgs/reports/wda asd spring 2021/wda recertification 2021-05.docx](https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared%20documents/rmsgs/reports/wda%20asd%20spring%202021/wda%20recertification%202021-05.docx)





LEGEND

-  Assessment Monitoring Well
-  Background Monitoring Well
-  Downgradient Monitoring Well
-  Generalized Groundwater Flow Direction
-  Approximate Property Line
-  CCR Unit



NOTE(S)

REFERENCE(S)  
 1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AERGRID, IGN, AND THE GIS USER COMMUNITY

CLIENT

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

PROJECT

R.M. SCHAFER GENERATING STATION  
WHEATFIELD, INDIANA

TITLE

WELL LOCATION MAP  
WASTE DISPOSAL AREA

CONSULTANT



YYYY-MM-DD	1/8/2021
DESIGNED	DFS
PREPARED	TBH
REVIEWED	DFS
APPROVED	MAH

PROJECT NO.  
19121567

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**APPENDIX B**

Waste Disposal Area Alternative  
Source Demonstration November  
2021

**Northern Indiana Public Service Company LLC (NIPSCO LLC)**

**R. M. Schahfer Generating Station – Waste Disposal Area**

**Wheatfield, Indiana**

**Recertification of Alternative Source Demonstration**

**40 CFR §257.95**

I have personally reviewed this recertification of the alternative source demonstration (ASD), the subject of which is the Waste Disposal Area (WDA) at the NIPSCO LLC R. M. Schahfer Generating Station, prepared by Golder Associates Inc. and dated November 2021. Based on an inquiry of those individuals immediately responsible and on supporting data that I understand to be true, accurate, and complete, I verify the information in this recertification of the ASD is accurate and meets the applicable requirements of the CCR Final Rule. In consideration of the above, I certify to the best of my knowledge, information, and belief, that the ASD for the regulated CCR management unit referred to as the WDA meets the applicable requirements of 40 CFR §257.95.



---

**Joseph Bernard Gormley, Jr.**  
**Indiana Professional Engineer**  
**License #: PE11900213**

11/12/2021

**Date**

## TECHNICAL MEMORANDUM

**DATE** November 12, 2021 **Project No.** 19121567

**TO** Jeff Loewe, Dan Sullivan, NIPSCO LLC

**CC** Maggie Rice, Maureen Turman, Joe Kutch, Mark Haney, Jim Peace, Joe Gormley

**FROM** Danielle Sylvia Cofelice **EMAIL** dsylvia@golder.com

**RE: RECERTIFICATION OF R.M. SCHAHFER WASTE DISPOSAL AREA ALTERNATIVE SOURCE DEMONSTRATION**

On behalf of Northern Indiana Public Service Company LLC (NIPSCO), Golder Associates Inc. (Golder) performed a statistical evaluation of groundwater analytical results from the seventh (April 2021) groundwater Assessment Monitoring event at the Rollin M. Schahfer Generating Station (RMSGs) Waste Disposal Area (WDA, CCR Unit). This evaluation was conducted in accordance with 40 Code of Federal Regulations (CFR) Parts 257 and 261, "Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule" (CCR Rule), as amended, and corresponding regulations under 329 Indiana Administrative Code (IAC) 10-9-1.

The statistical evaluation of analytical data from the seventh Assessment Monitoring event was completed on August 19, 2021. The results of the statistical evaluation indicated the lower confidence level (LCL) concentrations for lithium and molybdenum in assessment monitoring well GAMW51B and molybdenum in assessment monitoring well GAMW60B exceeded background concentrations, which are interpreted as apparent evidence of statistically-significant levels (SSLs) in those wells. Although determination of apparent SSLs generally indicates that the groundwater monitoring program should transition from Assessment Monitoring to Assessment of Corrective Measures, 40 CFR §257.95(g)(3) allows the owner or operator (e.g., NIPSCO) to demonstrate that a source other than the CCR Unit or another condition caused the apparent SSLs.

Golder identified similar concentrations of lithium and molybdenum in GAMW51B after the fourth (October 2019) Assessment Monitoring event at the WDA and submitted an Alternative Source Demonstration (ASD) on June 9, 2020 (Golder 2020). As described in the ASD, the source material characteristics and site hydrogeology indicated that the apparent lithium and molybdenum SSLs observed in GAMW51B were not due to a release from the WDA. Golder recertified this ASD after the fifth Assessment Monitoring event (April 2020) and sixth Assessment Monitoring event (October 2020), which confirmed the molybdenum and lithium results observed previously in GAMW51B.

### 1.0 SUMMARY OF APRIL 2021 RESULTS

The lithium and molybdenum concentrations in samples collected from GAMW51B in April 2021 were 0.071 milligrams per liter (mg/L) and 0.16 mg/L, respectively. These results are less than two times the Groundwater Protection Standards (GWPS) of 0.04 mg/L and 0.1 mg/L for lithium and molybdenum, respectively, which are equal to the risk-based levels included in the CCR Rule, Part 1 Phase 1 Addendum. The molybdenum concentrations in the samples collected to date from GAMW60B range from 0.35 mg/L to 0.49 mg/L (approximately four times the GWPS of 0.1 mg/L). The most recent molybdenum and lithium results collected at

both locations are within the range of the previous concentrations and are consistent with the previous Assessment Monitoring event.

## **2.0 ALTERNATIVE SOURCE DEMONSTRATION**

As described in the June 2020 ASD, Assessment Monitoring well GAMW60B was installed downgradient of wells GAMW51 and GAMW51B in 2019 to further assess the nature and extent and overall groundwater quality farther downgradient of the WDA. Monitoring wells GAMW14, GAMW14B, GAMW51, and GAMW51B are all located between the WDA and Assessment Monitoring well GAMW60B (see Figure 1). The WDA has generally received and managed the same waste streams and been operated in a consistent manner since its opening more than 35 years ago. Given the lengthy time horizon of operations and geochemical fingerprints of the source materials within the CCR Unit, if the WDA was the source of molybdenum in groundwater at GAMW60B, it would be expected that wells upgradient of GAMW60B would have similar or higher concentrations of molybdenum, which they do not.

The June 2020 WDA ASD discusses three primary lines of evidence: 1) the low concentrations of molybdenum in the WDA source materials and porewater, 2) the relative major ion abundance in groundwater that demonstrates a distinct difference between WDA porewater and downgradient groundwater samples, with no indications of mixing, and 3) the waste management boundary monitoring wells GAMW14 and GAMW14B, which are located upgradient of monitoring wells GAMW51B and GAMW60B, do not indicate molybdenum above the GWPS. Considered individually and together, these lines of evidence indicate the CCR Unit is not the source of the molybdenum in the groundwater monitored by GAMW51B and GAMW60B.

The information presented above confirms the results of the seventh Assessment Monitoring event are consistent with the previous Assessment Monitoring event, and the rationale presented in the June 9, 2020 ASD is still applicable. Golder prepared the current ASD in accordance with 40 CFR 257.95(g)(3) and it supports the finding that the SSLs determined in the August 19, 2021 statistical evaluation are not due to release from the CCR Unit. As described above and in the June 9, 2020 ASD, the source material characteristics and site hydrogeology indicate that the source of the apparent lithium and molybdenum SSLs observed in GAMW51B and the apparent molybdenum SSL in GAMW60B are due to a different condition and not due to a release from the WDA. Therefore, no further action (i.e., Assessment of Corrective Measures) is warranted, and the WDA will remain in Assessment Monitoring.

## **3.0 REFERENCES**

Golder 2020. Alternative Source Demonstration – Waste Disposal Area, Golder Associates Inc., June 9, 2020.

Golder 2020. Recertification of R.M. Schahfer Waste Diposal Area Alternative Source Demonstration, Golder Associates Inc., December 4, 2020.

Golder 2021. Recertification of R.M. Schahfer Waste Disposal Area Alternative Source Demonstration, Golder Associates Inc., May 18, 2021.

[https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared documents/rmsgs/reports/wda asd recertifications/fall 2021/wda recertification 2021-11.docx](https://golderassociates.sharepoint.com/sites/nipsocccrgwmonitoring/shared%20documents/rmsgs/reports/wda%20asd%20recertifications/fall%202021/wda%20recertification%202021-11.docx)



**LEGEND**

- Assessment Monitoring Well
- Background Monitoring Well
- Downgradient Monitoring Well
- Generalized Groundwater Flow Direction
- Approximate Property Line
- CCR Unit

0 400 800  
1" = 400 feet Feet

**NOTE(S)**

**REFERENCE(S)**  
1. SERVICE LAYER CREDITS: SOURCE: ESRI, MAXAR, GEOEYE, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEROGRIID, IGN, AND THE GIS USER COMMUNITY

**CLIENT**  
NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

**PROJECT**  
R.M. SCHAFER GENERATING STATION  
WHEATFIELD, INDIANA

**TITLE**  
WELL LOCATION MAP  
WASTE DISPOSAL AREA

CONSULTANT	YYYY-MM-DD	1/8/2021
	DESIGNED	DFS
	PREPARED	TBH
	REVIEWED	DFS
	APPROVED	MAH

PROJECT NO. 19121567 CONTROL A REV. 0 FIGURE 1

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**[golder.com](http://golder.com)**