REPORT

2022-2023 Annual Groundwater Monitoring and Corrective Action Report - Primary 2

NIPSCO LLC Michigan City Generating Station

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

Submitted to:

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APPENDICES

1.0 INTRODUCTION

On behalf of Northern Indiana Public Service Company LLC (NIPSCO), WSP USA Inc., (WSP), previously Golder Associates USA Inc., (Golder), prepared this 2022-2023 Coal Combustion Residuals (CCR) Rule Annual Groundwater Monitoring and Corrective Action Report (2022-2023 Annual Report) for the Michigan City Generating Station (MCGS) surface impoundment referred to as Primary Settling Pond 2 or Primary 2 (P2, the CCR Unit), 101 Wabash Street, Michigan City, LaPorte County, Indiana (Latitude 41° 43' 15" N and Longitude 86° 54' 30" W, see Figure 1). P2 was an approximately 2.7-acre unlined impoundment, as shown in Figure 2. P2 is nearing closure commensurate with the requirements of 40 Code of Federal Regulations (40 CFR) §257.102(d).

WSP prepared the 2022-2023 Annual Report in accordance with 40 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. P2 is subject to the October 4, 2016 extended compliance deadline of 547 days as the result of an August 5, 2016 U.S. Environmental Protection Agency (EPA) rulemaking. The final rule, which became effective October 4, 2016, extended the deadlines for the owners and operators of those inactive CCR surface impoundments (e.g., P2) that had taken advantage of the "early closure" provisions of 40 CFR 257.100, and who then became newly subject to the CCR Rule's requirements for existing CCR surface impoundments on June 14, 2016 when the U.S. Court of Appeals for the District of Columbia Circuit (D.C. Circuit) ordered the vacatur of those provisions. The August 5, 2016 rulemaking provided time for these owners and operators to bring their units into compliance with the CCR Rule's substantive requirements, but did not otherwise amend the CCR Rule or otherwise impose new requirements on those units. Consequently, WSP prepared and NIPSCO submitted the first annual groundwater monitoring and corrective action report on August 1, 2019. Each subsequent report has been and will be submitted annually by August 1st.

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 2022-2023 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 between August 2022 and July 2023
- Includes CCR Rule groundwater monitoring data obtained between August 2022 and July 2023
- 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 OVERVIEW OF CURRENT PROGRAM STATUS

Starting in 2016, following the installation of a groundwater monitoring system (Table 1), and throughout calendar years 2017 and 2018, WSP collected background groundwater samples pursuant to the requirements of 40 CFR §257.94 and corresponding State of Indiana requirements. In April 2019, WSP performed the first Detection Monitoring sampling event. Due to the identification of statistically significant increases (SSIs), NIPSCO established an Assessment Monitoring Program in October 2019, pursuant to the requirements of 40 CFR §257.95. In October 2019, WSP performed the first Assessment Monitoring sampling event. Following the first Assessment Monitoring event, including verification sampling in February 2020, NIPSCO posted a notification to the publicly-accessible website that there were detections of Appendix IV parameters downgradient of Primary 2 above applicable groundwater protection standards (GWPS). Consequently, NIPSCO initiated the assessment of corrective measures process in September 2020. WSP performed subsequent monitoring events including:

- Second and third Assessment Monitoring events in 2020
- Fourth and fifth Assessment Monitoring events in 2021
- Sixth and Seventh Assessment Monitoring events in 2022
- Eighth Assessment Monitoring event in April 2023

On March 10, 2021, Indiana Department of Environmental Management (IDEM) approved a Closure Application for P2 and four additional impoundments at MCGS. Construction activities, including source removal as a component of the overall Site groundwater remedy, began in April 2022. As part of the IDEM-approved Closure Application, NIPSCO installed and began sampling four new background monitoring wells (PC-MW-110, PC-MW-113, PC-MW-114, and PC-MW-115; see Figure 1) in early 2021. As of December 2022, eight rounds of background data have been collected from each of these monitoring wells, and as such, these new monitoring wells will replace the existing background monitoring wells for all future monitoring events.

The groundwater elevations recorded in September 2022 and March 2023 are provided in Table 2. The corresponding contour maps are provided in Figure 3 and Figure 4, respectively. The sample 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 3a, and for the eight Background Monitoring events associated with the new post-closure monitoring wells in Table 3b. The associated analytical results are presented in Table 4a and Table 4b. P2 began and ended the current annual reporting period in Assessment Monitoring. The statistically significant levels (SSLs) identified since the last annual report include arsenic at monitoring wells GAMW-14, GAMW-15, GAMW-16, and GMMW-1, selenium at GAMW-14 and GMMW-1, and thallium at GAMW-14. On behalf of NIPSCO, Wood Environmental and Infrastructure Solutions (Wood) completed the Assessment of Corrective Measures Report in December 2020 and is continuing to evaluate the feasibility and design of potential groundwater remedial alternatives in accordance with the provisions of 40 CFR §257.97.

2.1 Key Actions Completed – August 2022 - July 2023

NIPSCO completed the following CCR Rule groundwater monitoring-related activities for P2 between August 2022 and July 2023:

- Preparation of the 2021-2022 Annual Groundwater Monitoring and Corrective Action Report in August 2022 (2021-2022 Annual Report, 40 CFR §257.90(e))
- Performance of the seventh Assessment Monitoring event in September 2022 (40 CFR §257.94)
- Preparation of the fourth semi-annual Selection of Remedy Progress Report in December 2022 (40 CFR §257.97)
- Evaluation of the results of the seventh Assessment Monitoring event in December 2022 (40 CFR §257.95)
- Notification that constituents in 40 CFR Part 257 Appendix IV exceeded the GWPS in January 2023 (40 CFR §257.95(g))
- Performance of the eighth Assessment Monitoring event in April 2023 (40 CFR §257.94)
- Preparation of the fifth semi-annual Selection of Remedy Progress Report in June 2023 (40 CFR §257.97)
- Evaluation of the results of the eighth Assessment Monitoring event in July 2023 (40 CFR §257.95)

2.2 Monitoring System Modification

Consistent with conditions of the IDEM-approved Closure Application, NIPSCO installed and began sampling four new background monitoring wells (PC-MW-110, PC-MW-113, PC-MW-114, and PC-MW-115) in early 2021. As of December 2022, eight rounds of background data had been collected from each of these monitoring wells, and as such, these new monitoring wells have replaced the existing background monitoring wells (GAMW-05, GAMW-12, and GAMW-18).

To prepare for construction activities related to closure of the CCR Units, WSP decommissioned monitoring wells GAMW-08 and GAMW-13 in November 2021 (after the completion of the fifth Assessment Monitoring event). Following the decommissioning of GAMW-08 and GAMW-13, the P2 monitoring well network contains four downgradient Assessment Monitoring wells. By their nature and intent, dewatering activities performed as a component of the P2 impoundment closure activities that began in April 2022 are expected to have affected groundwater flow direction(s). Accordingly, groundwater data collected during the closure dewatering and construction activities will not be representative of natural conditions nor necessarily indicative of a release from P2. Following closure of the impoundment, which is scheduled for completion in August 2023, implementation of the Corrective Action monitoring program will include installation of at least one new downgradient monitoring well, consistent with the IDEM-approved Closure Application conditions. The current monitoring well network is shown in Figure 2. Table 1 provides a summary of the well rationale/purpose and date of installation. An overview of the groundwater monitoring network is provided in the embedded table below.

CCR Unit	Background Monitoring Wells	Downgradient Monitoring Wells
Primary 2	GAMW-05, GAMW-12, GAMW-18, PC-MW-110**, PC-MW-113**, PC-MW-114**, PC-MW-115**	GAMW-08*, GAMW-13*, GAMW-14, GAMW-15, GAMW-16, GMMW-1

*Decommissioned in November 2021

**Post-closure background monitoring well installed in early 2021. As of December 2022, the post-closure background monitoring wells have replaced the previous background monitoring wells (GAMW-05, GAMW-12, and GAMW-18).

2.3 Background Monitoring (2016 to 2018)

Per the requirements of 40 CFR §257.94, WSP collected eleven independent background groundwater samples from each background and downgradient well between July 2016 and October 2018. The background samples were collected at intervals of at least 49 days to account for both seasonal and spatial variability in groundwater quality. WSP used the results of the background monitoring phase to develop appropriate, statistically valid background values for each constituent/monitoring well. WSP submitted the samples to a contract laboratory, in accordance with standard chain of custody and quality assurance/quality control procedures, for analysis of 40 CFR Part 257 Appendix III and Appendix IV constituents. In addition, WSP personnel measured field water quality parameters including specific conductance, temperature, dissolved oxygen, turbidity, oxidation-reduction potential, and pH. The background data set is included in the 2018-2019 CCR Rule Annual Groundwater Monitoring and Corrective Action Report, dated August 1, 2019 (2018-2019 Annual Report).

The periodic update of background datasets, during which additional data are incorporated into the background dataset, improves 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). Since October 2018, more than four new samples have been collected from each of the background wells, allowing WSP to evaluate the newer data relative to the historical data and to update the GWPS. Prior to incorporating the new data into the background dataset, WSP preformed a Mann-Whitney test and prepared time series graphs to assess if the new data are from the same statistical population as the existing background data. WSP excluded the cobalt results collected from GAMW-12 between October 2018 and March 2022. The first 12 data points collected from GAWM-12 were <0.001 mg/L while the most recent six data points were above 0.02 mg/L. Excluding these datapoints provided a more conservative GWPS. WSP calculated the updated GWPS (Table 5) using the remaining data collected between July 2016 and March 2022. These GWPS were used in the evaluation of data collected from the sixth and seventh Assessment Monitoring events.

As part of the IDEM-approved Closure Application, NIPSCO installed and began sampling four new background monitoring wells (PC-MW-110, PC-MW-113, PC-MW-114, and PC-MW-115; see Figure 1) in early 2021. Between March 2021 and December 2022, eight rounds of background data have been collected from each of these monitoring wells. WSP used the results of the background monitoring phase to develop appropriate, statistically valid background values for each constituent/monitoring well. Using these data, WSP calculated new GWPS (Table 5) which were applied in the evaluation of the eighth Assessment Monitoring event.

2.4 Detection Monitoring

WSP performed the first Detection Monitoring event in April 2019, followed by a statistical evaluation and data analysis in July 2019. WSP collected groundwater samples from the P2 background and downgradient monitoring wells for analysis of Appendix III constituents per 40 CFR §257.94 and included the results in the 2018-2019 Annual Report. Following receipt and validation of laboratory results, WSP evaluated the results of the first Detection Monitoring sampling event to compare the concentrations of Appendix III constituents relative to facility background concentrations. Using Sanitas™ software, WSP pooled the background data to calculate prediction limits and compared the April 2019 results to the calculated prediction limits to determine SSIs. Based on the SSIs identified in the first Detection Monitoring event, NIPSCO established an Assessment Monitoring Program in October 2019. The results from the first Detection Monitoring event are included in the 2018-2019 Annual

Groundwater Monitoring and Corrective Action Report, dated August 1, 2019 (2018-2019 Annual Report, Golder 2019).

2.5 Assessment Monitoring

WSP performed the first Assessment Monitoring event (i.e., Assessment and Verification sampling) in October 2019 (Assessment) and February 2020 (Verification). WSP collected groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and Appendix IV constituents per 40 CFR §257.95 in October 2019. In February 2020, WSP collected groundwater samples from each background and downgradient monitoring well for analysis of Appendix III and detected Appendix IV constituents per 40 CFR §257.95. In June 2020, WSP developed GWPS to use as a comparison against the Assessment Monitoring Results. Following receipt and validation of laboratory results, WSP evaluated the Appendix IV constituent results relative to the CCR Unit-specific GWPS (see Table 5). At the time of statistical evaluation, the GWPS was the highest value of the Maximum Contaminant Level (MCL) or the CCR Unit-specific background concentration for each analyte based on the tolerance/prediction limit procedure under 40 CFR §257.95(h)(2). Results from the downgradient monitoring wells were evaluated 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. WSP determined that SSLs existed for arsenic at all downgradient monitoring wells and for thallium in monitoring wells GAMW-14 and GMMW-1.

WSP performed additional Assessment Monitoring events 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 including:

- Second Assessment Monitoring Event – April 2020: WSP performed the statistical evaluation of the analytical results of the second Assessment Monitoring sampling event in July 2020. The results confirmed the SSLs for arsenic at all downgradient monitoring wells and thallium at monitoring well GAMW-14 and GMMW-1. The results from the first and second Assessment Monitoring events are included in the 2019-2020 Annual Report (Golder 2020).
- Third Assessment Monitoring Event – September-October 2020: WSP performed the statistical evaluation of the analytical results of the third Assessment Monitoring event in January 2021. WSP determined that SSLs existed for arsenic in all downgradient monitoring wells and thallium in GMMW-1.
- Fourth Assessment Monitoring Event – May 2021: WSP performed the statistical evaluation of the analytical results of the fourth Assessment Monitoring event in September 2021. WSP determined that SSLs existed for arsenic in all downgradient monitoring wells and thallium in GAMW-14 and GMMW-1. The results from the third and fourth Assessment Monitoring events are included in the 2020-2021 Annual Report (Golder 2021).
- Fifth Assessment Monitoring Event – October 2021: WSP performed the statistical evaluation of the analytical results of the fifth Assessment Monitoring event in February 2022. The results confirmed that SSLs existed for arsenic in all downgradient monitoring wells and thallium in GAMW-14 and GMMW-1.
- Sixth Assessment Monitoring Event – March 2022: WSP performed the statistical evaluation of the analytical results of the sixth Assessment Monitoring event in July 2022. The results confirmed that SSLs existed for arsenic in all downgradient monitoring wells. New selenium SSLs were identified in GAMW-14 and GMMW-1. Thallium was no longer identified as an SSL in either GAMW-14 and GMMW-1 due to decreasing

trends in thallium concentrations. The results from the fifth and sixth Assessment Monitoring events are included in the 2021-2022 Annual Report (Golder 2022).

- Seventh Assessment Monitoring Event – September 2022: WSP performed the statistical evaluation of the analytical results of the seventh Assessment Monitoring event in December 2022. The results confirmed the SSLs for arsenic and selenium. Additionally, thallium was identified as an SSL in GAMW-14.
- Eighth Assessment Monitoring Event – April 2023: WSP performed the statistical evaluation of the analytical results of the eighth Assessment Monitoring event in July 2023. The results confirmed the arsenic, selenium, and thallium SSLs identified in the seventh Assessment Monitoring event.

The analytical laboratory reports for the September 2022 and April 2023 Assessment Monitoring events are provided in Appendix A and Appendix B, respectively. The analytical laboratory reports for the eight background events from the new post-closure background wells are provided in Appendix C. The data usability assessment reports are provided in Appendix D and Appendix E for the current monitoring well network and the new post-closure background monitoring wells, respectively. The results from the statistical evaluations completed in December 2022 and July 2023 are attached in Appendix F.

2.6 Corrective Action

NIPSCO is evaluating the feasibility and preliminary design of potential groundwater remedial alternatives presented in the Assessment of Corrective Measures (ACM) report (Wood 2020). As discussed in the ACM, NIPSCO is closing this CCR Unit in accordance with 40 CFR §257.102(d). Construction activities, including dewatering in select areas of the Site and source removal as a component of the overall Site groundwater remedy, began in summer 2022 and are expected to be completed in the summer 2023.

The ACM identified groundwater extraction and treatment, a permeable reactive barrier, and monitored natural attenuation as potential groundwater corrective measures. Since the submittal of the ACM, Wood has developed a three-dimensional numerical groundwater flow model using United States Geological Survey finite difference code MODLOW-NWT. Modeling will be used to simulate the groundwater flow system post-closure, evaluate the effectiveness of the potential groundwater remedial alternatives, and to assess the estimated times to achieve corrective action objectives for groundwater (Wood 2021).

In 2022, after the detection of selenium SSLs in two downgradient monitoring wells in the March 2022 event, Wood prepared the ACM Addendum No. 1 (Wood 2022), to provide an update on hydrogeologic conditions and the concentrations and chemical characteristics of arsenic, selenium, and thallium in groundwater since the CCR monitoring program was initiated, and to review prior information on the remediation technologies for these three constituents of concern.

In March 2023, 29 wells were sampled, including seven deep wells installed in the native sand aquifer during the 2018 investigation and 22 wells installed during the Resource Conservation and Recovery Act (RCRA) Facility Investigations and as required by the CCR Rule. Wood is using this data to perform a plume stability evaluation (currently in progress) to assess whether the plume is expanding, shrinking, or stable. In May 2023, WSP remediation engineers visited the Site to initiate a constructability evaluation of the potential remedies, focusing on space limitations between the closed impoundments and nearby features (e.g., the Final Pond, sheet pile along Lake Michigan), the potential influence of sheet pile around Secondary 1 and 2, limitation on construction equipment due to overhead transmission lines, the presence of underground utilities (e.g., recirculation lines to the cooling tower that pass beneath the central portion of the Boiler Slag Pond and south along Primary 2), and

limitations/requirements to protect transmission tower foundations. WSP is currently evaluating the findings of the site visit for inclusion in a summary technical memorandum.

After the completion of surface impoundment closure construction activities, NIPSCO will install a new post-closure monitoring well network. By their nature and intent, dewatering and other construction activities performed as a component of the P2 impoundment closure activities that began in April 2022 are expected to have affected historical groundwater flow direction(s). Accordingly, NIPSCO anticipates that several months will be required for the groundwater system to rebound from the drawdown associated with dewatering and to equilibrate, reflecting stable post-construction conditions. After stabilization of the groundwater system, NIPSCO anticipates performing additional studies of soil and groundwater to assess sorption/desorption of CCR constituents. Wood will modify the flow and transport model with this additional information. Wood will continue to prepare a detailed evaluation/comparison of groundwater corrective measure alternatives, including conceptual designs and engineering cost estimates, that will provide NIPSCO with sufficient information to select a remedy that effectively meets the requirements of 40 CFR §257.97 including protection of public health and the environment. This detailed evaluation/comparison of corrective measures will be documented in a future Selection of Remedy Report for the CCR Unit.

2.7 Statistical Evaluation

Methods used during this statistical evaluation are described in the GMPIM (Golder 2017), were certified by a qualified engineer in October 2017, and are summarized in this section. WSP utilized the Sanitas™ statistical analysis software package to complete this statistical evaluation.

2.7.1 Data Evaluation

Subsequent to each monitoring event, WSP assessed the analytical data for outliers, anomalies, and trends that may be an indication of a sampling or analytical error. Outliers and anomalies are generally defined as inconsistently large or small values that can occur as a result 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. 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.

WSP identified outliers in the 2018-2019 Annual Report, 2019-2020 Annual Report, 2020-2021 Annual Report, and 2021-2022 Annual Report. In addition to these outliers, WSP identified the March 2021 lithium result from upgradient monitoring well PC-MW-110 as an outlier and removed the result from the dataset for the following reasons:

- Trend charts indicated that this result was inconsistent with other concentrations for lithium detected in this monitoring well.

- The result was significantly lower than subsequent data points and the only non-detect result from this well. Removal of this data point did not change the calculated GWPS.

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

- Barium concentrations detected in groundwater samples collected from well PC-MW-114 show a decreasing trend; however, all 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 well PC-MW-115 show an increasing trend; however, all 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 well PC-MW-110 show an increasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Fluoride concentrations detected in groundwater samples collected from well PC-MW-110 show an increasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Lithium concentrations detected in groundwater samples collected from well PC-MW-110 show an increasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Lithium concentrations detected in groundwater samples collected from well PC-MW-115 show a decreasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Molybdenum concentrations detected in groundwater samples collected from well PC-MW-113 show an increasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.
- Thallium concentrations detected in groundwater samples collected from well PC-MW-115 show an increasing trend; however, all results are below the MCL, therefore, the GWPS is equal to the MCL. No detrending routines are required.

2.7.2 Development of Groundwater Protection Standard

Pursuant to CFR §257.95(h), GWPS were developed for each of the Appendix IV analytes. The GWPS is set equal to the MCL or health-based standard or a limit based on background data, whichever is greater, as described in 40 CFR §257.95(h)(2). The CCR Rule and *Unified Guidance* provide two acceptable approaches for establishing a background-based GWPS (unless all values are non-detect, in which the background-based GWPS is set equal to the laboratory reporting limit (RL)); tolerance interval approach or prediction limit approach.

If the background dataset is normally or transformed normally distributed, the GMPIM states that the tolerance limit approach is used. The background-based GWPS will be based on a 95 percent coverage/95 percent confidence tolerance interval. If the background data are non-normal (even after transformation) than a non-parametric Prediction Interval approach is used.

As described in Section 2.3, WSP 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 GMPIM 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). WSP incorporated the new data into the background dataset and updated the GWPS in July 2020 and July 2022. Additionally, due to the replacement of the background monitoring wells (see Section 2.2), GWPS were calculated in December 2022 using the eight rounds of data collected from PC-MW-110, PC-MW-113, PC-MW-114, and PC-MW-115 in 2021 and 2022.

A summary of the GWPS and the method used to calculate the limits is provided in Table 5. The corresponding tolerance limits and/or prediction limits are provided in Appendix F.

2.7.3 Results of Appendix IV Downgradient Statistical Comparisons

An interwell statistical evaluation was used to identify SSLs. An interwell evaluation compares the most recent values from downgradient compliance wells to a background dataset composed of upgradient well data. Because the CCR Unit is in Assessment Monitoring, no statistical evaluations were conducted on Appendix III (Detection Monitoring) constituents.

For Assessment Monitoring the Unified Guidance recommends the confidence interval method to evaluate for potential exceedances or SSLs. Using confidence intervals, SSLs are identified by comparing the calculated confidence interval against the GWPS. A confidence interval statistically defines the upper and lower bounds of a specified population within a stipulated level of confidence. If the lower confidence limit exceeds the GWPS, there is statistical evidence that an SSL has been triggered.

Based on the comparisons outlined above, the results of the statistical analysis completed in December 2022 and July 2023 identify arsenic SSLs in all downgradient monitoring wells (GAMW-14, GAMW-15, GAMW-16, and GMMW-1) and a thallium SSL in GAMW-14. Trend analysis indicates that there is a statistically significant decreasing trend for thallium in well GMMW-1 and the upper confidence band is below the GWPS, therefore, this result has not been identified as an SSL. Additionally, statistically significant increasing trends for selenium were identified in all four downgradient wells. For wells GAMW-14 and GMMW-1, the lower confidence band is above the GWPS, resulting in SSLs for these locations. For wells GAMW-15 and GAMW-16, the lower confidence band is below the GWPS, therefore, therefore these results have not been identified as SSLs. These trends will be evaluated after each sample event. The calculated confidence intervals and selenium and thallium confidence bands are provided in Appendix F.

2.8 Problems Encountered and Follow-Up Corrective Actions

During the seventh Assessment Monitoring event (September 2022), WSP was unable to collect a sample from background monitoring well GAMW-18. The water column in the well at the time of sampling was below the intake of the dedicated sample pump, and field personnel were unable to reposition the pump or introduce new tubing into the casing below the pump. This well has been replaced with the new post-closure background monitoring wells. During the eighth Assessment Monitoring event (April 2023), WSP was unable to collect a sample from downgradient monitoring wells GAMW-14 and GAMW-15 due to insufficient water in the water column to fill the sample bottles (dry). After the completion of closure construction activities, should these wells remain dry after the hydrogeologic regime has stabilized, the wells will be replaced in the new post-closure monitoring well network.

WSP encountered an elevated turbidity level (i.e., >5 nephelometric turbidity units – NTUs) during the eighth Assessment Monitoring event (April 2023) at PC-MW-110 (8.45 NTUs). According to the GMPIM (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, WSP purged groundwater from this well for a minimum of two hours or five well volumes (whichever was less) and collected the groundwater samples when turbidity appeared to stabilize (e.g.,

no downward or upward trend over three consecutive reading five minutes apart). Evaluation of the analytical results from this well suggests that the slightly elevated turbidity level had no significant effect on the representativeness of groundwater quality.

3.0 KEY ACTIVITIES PROJECTED FOR 2023-2024

From August 2023 to July 2024, NIPSCO anticipates conducting the following key CCR Rule groundwater monitoring activities for P2:

- Prepare and submit the appropriate notifications according to the CCR Rule;
- Complete semi-annual Assessment Monitoring groundwater sampling per CCR Rule requirements;
- Complete closure construction activities;
- Install at least one new well as a component of the post-closure monitoring well network;
- Continue to evaluate potential remedial alternatives and prepare semi-annual reports describing the progress in selecting and designing the remedy; and
- Inspect and maintain the monitoring system including wells, pumps, and equipment.

4.0 REFERENCES

Golder Associates, “2018-2019 Annual Groundwater Monitoring and Corrective Action Report – Primary 2 NIPSCO Michigan City Generating Station,” August 1, 2019.

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Wood Environmental & Infrastructure Solutions, Inc. “Northern Indiana Public Service Company LLC Michigan City Generating Station – Primary Settling Pond No. 2 Corrective Measures Selection of Remedy Semi-Annual Progress report #21-01” June 8, 2021.

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Wood Environmental & Infrastructure Solutions, Inc. “Assessment of Corrective Measures Primary Settling Pond No. 2 Addendum No. 1 Michigan City Generating Station” October 19, 2022.

Wood Environmental & Infrastructure Solutions, Inc. “Supplemental Addendum, Monitoring Well Network, Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application, Michigan City Generating Station, Northern Indiana Public Service Company, Merrillville, Indiana” February 28, 2019.

Wood Environmental & Infrastructure Solutions, Inc. “Surface Impoundment Closures (CCR Final Rule and RCRA Regulated) Closure Application, Volume 1 – Closure Plan and Drawings, Michigan City Generating Station, Northern Indiana Public Service Company, Merrillville, Indiana” December 20, 2018.

Tables

Table 1: Monitoring Well Network
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

CCR Unit	Well Purpose	Monitoring Well ID	Installation Date (If Applicable)	Decommission Date (If Applicable)	Basis For Action
Primary 2	Background Monitoring Well	GAMW-05	-	-	Installed for Groundwater Quality Monitoring[1]
		GAMW-12	6/14/2016	-	
		GAMW-18	6/14/2016	-	
	Post-Closure Background Monitoring Well	PC-MW-110	7/20/2018	-	Installed as part of the Indiana Department of Environmental Management-approved Closure Application [2]
		PC-MW-113	3/26/2021	-	
		PC-MW-114	3/25/2021	-	
		PC-MW-115	3/26/2021	-	
	Downgradient Monitoring Well	GAMW-08	-	11/4/2021	Decommissioned to prepare for closure construction activities.
		GAMW-09	-	11/21/2019	
		GAMW-13	6/13/2016	11/4/2021	
		GAMW-14	6/13/2016	-	Installed for Groundwater Quality Monitoring[1]
		GAMW-15	6/13/2016	-	
		GAMW-16	6/13/2016	-	
		GAMW-17	6/10/2016	11/21/2019	Decommissioned to prepare for closure construction activities.
		GMMW-1	-	-	Installed for Groundwater Quality Monitoring[1]

1) Per 40 CFR §257.93, WSP collected eight rounds of background data prior to October 17, 2017.

2) WSP collected eight rounds of background data between March 2021 and December 2022.

Prepared by: DFSC
Checked by: TG
Reviewed by: MAH

Table 2: Groundwater Elevations
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

										Measurement Date	2022-09-06		2023-03-17	
Monitoring Well Location	Northing (ft)	Easting (ft)	Groundwater Surface Elevation	Top of Casing Elevation (ft-msl)	Total Depth of Well (ft-bgs)	Screen Interval Top (ft-bgs)	Screen Interval Bottom (ft-bgs)	Well Diameter (in)	Stickup (ft)		Depth to Water (ft-btoc)	Groundwater Elevation (ft-msl)	Depth to Water (ft-btoc)	Groundwater Elevation (ft-msl)
GAMW-01A	2355961.69	2998265.8	609.70	612.67	40.33	32	37	2	2.97		28.94	583.73	29.6	583.07
GAMW-01B	2355958.01	2998262.12	609.70	612.57	52.90	45	50	2	2.87		28.84	583.73	29.5	583.07
GAMW-02	2356476.27	2998577.14	609.80	612.81	33.19	25	30	2	3.01		25.5	587.31	26.05	586.76
GAMW-03A	2357207.74	2998800.81	592.90	595.98	18.35	10	15	2	3.08		9.65	586.33	10.72	585.26
GAMW-03B	2357204.25	2998799.18	593.10	596.01	29.23	21	26	2	2.91		9.5	586.51	11.1	584.91
GAMW-04	2358170.78	2999183.36	588.30	591.28	29.22	21	26	2	2.98		5.6	585.68	5.52	585.76
GAMW-05	2356980.98	2999434.53	596.90	600.02	18.41	10	15	2	3.12		11.62	588.4	11.1	588.92
GAMW-06	2357814.29	2999533.39	589.70	592.63	20.57	12.5	17.5	2	2.93		7.2	585.43	7	585.63
GAMW-07A	2358807.23	3000039.97	588.10	590.96	18.27	10	15	2	2.86		7.55	583.41	6.9	584.06
GAMW-07B	2358810.65	3000037.14	588.10	590.93	29.27	21	26	2	2.83		7.52	583.41	6.9	584.03
GAMW-08	2356688.4	2998994.14	609.52	612.06	27.38	20	25	2	2.54		NM	-	NM	-
GAMW-10	2357307.65	2999232.39	591.13	594.24	7.18	10	15	2	3.11		8	586.24	8.7	585.54
GAMW-11	2357291.39	2999387.04	591.60	594.26	5.85	10	15	2	2.66		NM	-	NM	-
GAMW-12	2356783.52	2999184.55	597.73	600.79	8.94	10	15	2	3.06		12.4	588.39	12.86	587.93
GAMW-13	2356952.22	2998955.02	609.32	612.22	22.41	19	24	2	2.90		NM	-	NM	-
GAMW-14	2357028.66	2998809.05	609.71	612.66	23.68	19	24	2	2.95		25.74	586.92	DRY	-
GAMW-15	2356911.35	2998738.39	610.01	613.08	22.54	19	24	2	3.07		25.6	587.48	DRY	-
GAMW-16	2356660.83	2998645.09	610.21	613.29	20.28	20	25	2	3.08		25.07	588.22	BP	-
GAMW-18	2356557.6	2999093.25	600.44	603.36	10.90	5	15	2	2.92		DRY	-	DRY	-
GAMW-20	2355477.31	2998040.97	603.39	606.01	16.46	15	25	2	2.62		16.13	589.88	NM	-
GAMW-22	2358636.51	3000180.19	588.50	591.42	6.82	5	15	2	2.92		8.14	583.28	NM	-
GMMW-01	2356772.05	2998689.37	610.00	612.31	28.45	18.3	28.3	2	2.31		24.35	587.96	25.08	587.23
GMMW-02	2357197.67	2999058.16	594.40	596.48	19.47	14.3	19.3	2	2.08		10.3	586.18	14.28	582.2
MW-2	2356128.85	2998395.68	609.30	610.20	31.42	NA	NA	1.5	0.90		26.45	583.75	NM	-
MW-3	2356115.87	2998411.82	609.80	610.84	31.63	NA	NA	1.5	1.04		27	583.84	27.7	583.14
MW-30	2355935.67	2998272.42	609.90	612.86	27.90	20	25	1	2.96		27.32	585.54	NM	-
MW-36	2357883.32	3000730.78	588.30	591.89	10.99	3	8	1	3.59		5.3	586.59	NM	-
MW-37	2357659.33	2998979.58	591.00	594.38	13.33	5	10	1	3.38		8.46	585.92	8.48	585.9
MW-37D	2357662.4	2998980.62	590.90	594.51	26.10	17.5	22.5	1	3.61		8.62	585.89	8.62	585.89
MW-38	2355248.7	2997913.82	603.90	607.49	19.49	11	16	1	3.59		15.85	591.64	NM	-
MW-38D	2355246.45	2997916.7	604.00	607.51	26.47	18	23	1	3.51		21.4	586.11	NM	-
MW-39	2357782.38	2999545.81	590.00	593.70	17.21	9	14	1	3.70		8.13	585.57	NM	-
MW-4	2356456.05	2998568.76	609.70	610.88	23.90	NA	NA	1.5	1.18		23.65	587.23	NM	-
MW-40	2358096.48	2999299.67	589.00	592.65	13.15	5	10	1	3.65		7	585.65	NM	-
MW-41R	2355511.94	2998687.04	605.58	608.48	26.95	10	15	1	2.90		16.7	591.78	NM	-
PC-MW-110	2355980.84	2999267.83	603.32	606.31	22.73	20.00	30	2	2.88		15.95	590.36	15.75	590.56
PC-MW-113	2356385.06	2999726.15	599.92	603.01	16.45	9.50	19.5	2	3.09		11.15	591.86	11	592.01
PC-MW-114	2357151.57	3000591.13	601.63	604.55	18.56	5.00	15	2	2.92		13.27	591.28	12.7	591.85
PC-MW-115	2357565.77	2999872.26	598.60	601.35	17.34	7.50	17.5	2	2.75		14.32	587.03	14.08	587.27

Notes:

Locations surveyed in US State Plane Indiana West Zone NAD 1983, NAVD 1988 (ft)
ft-bgs = feet below ground surface
ft-msl = feet above mean sea level
ft-btoc = feet below top of casing
NA = not available
BP = water level was below top of pump
DRY = no water inside of well column
NM= not measured

Reviewed By TMG
Prepared By TG
Approved By MAH

Table 3a: Summary of Sampling Events
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

Well Purpose	Monitoring Well ID	Sample Event #20	Sample Event #21	Total Number of Samples
Purpose of Sample		Assessment Monitoring	Assessment Monitoring	
Sample Parameters		Appendix III and Appendix IV	Appendix III and Appendix IV	
Background Monitoring Well	GAMW-05	9/15/2022	NA	1
	GAMW-12	9/13/2022	NA	1
	GAMW-18	DRY	NA	0
Post-Closure Background Monitoring Wells	PC-MW-110	NA	3/30/2023	1
	PC-MW-113	NA	3/30/2023	1
	PC-MW-114	NA	3/30/2023	1
	PC-MW-115	NA	3/30/2023	1
Downgradient Montoring Wells	GAMW-14	9/12/2022	DRY	1
	GAMW-15	9/13/2022	DRY	1
	GAMW-16	9/9/2022	4/10/2023	2
	GMMW-1	9/9/2022	4/10/2023	2
Total Number of Samples		6	6	12

Notes:
Sample counts do not include QC/QA samples.
DRY - Insufficent water to sample well
NA - Not applicable, well was not part of the well network during the indicated sampling event.

Prepared by: TMG
Checked by: DFSC
Reviewed by: MAH

Table 3b: Summary of Post-Closure Background Monitoring Wells Sampling Events
CCR Unit Primary 2
NIPSCO LLC Michigan City Generating Station
Michigan City, Indiana

Well Purpose	Monitoring Well ID	Sample Event #1	Sample Event #2	Sample Event #3	Sample Event #4	Sample Event #5	Sample Event #6	Sample Event #7	Sample Event #8	Total Number of Samples
Purpose of Sample		Background Monitoring	Background Monitoring	Background Monitoring	Background Monitoring	Background Monitoring	Background Monitoring	Background Monitoring	Background Monitoring	
Sample Parameters		Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	Appendix III and Appendix IV	
Background Monitoring Well	PC-MW-110	4/30/2021	6/23/2021	9/7/2021	12/16/2021	3/8/2022	6/20/2022	9/14/2022	12/5/2022	8
	PC-MW-113	5/3/2021	6/23/2021	9/7/2021	12/16/2021	3/8/2022	6/20/2022	9/14/2022	12/5/2022	8
	PC-MW-114	5/3/2021	6/23/2021	9/7/2021	12/16/2021	3/8/2022	6/20/2022	9/14/2022	12/5/2022	8
	PC-MW-115	4/30/2021	6/23/2021	9/7/2021	12/16/2021	3/8/2022	6/20/2022	9/14/2022	12/5/2022	8
Total Number of Samples		4	4	4	4	4	4	4	4	32

Notes:
Sample counts do not include QA/QC samples.

Prepared by: DFSC
Checked by: GRD
Reviewed by: MAH

Table 4a: Analytical Data
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

Analyte	Unit	GAMW-05	GAMW-12		GAMW-14		GAMW-15		GAMW-16			GAMW-18
		2022-09-15	2022-09-13	2022-09-13	2022-09-12	2023-04-10	2022-09-13	2023-04-10	2022-09-09	2023-04-10	2023-04-10	9/13/2022
		N	N	FD	N		N		N	FD	N	N
CCR Appendix III												
Boron	mg/L	560	660	640	790		1900		1300	1000	1000	
Calcium	mg/L	211000	209000	207000	93900		105000		87500	88300	88100	
Chloride	mg/L	170	103	104	8.1		59.2		11.4	10.6	10.3	
Fluoride	mg/L	0.71	0.89	0.9	1.2		1.4		0.86	0.66	0.67	
pH	SU	7.1 J	6.5 J	6.6 J	8.1 J		9 J		8.7 J	8.5 J	8.5 J	
Sulfate	mg/L	457	983	975	139		318		167	142 J-	144 J-	
Total Dissolved Solids	mg/L	1270	1750	1730	453		622		379	391	393	
CCR Appendix IV												
Antimony	mg/L	1 U	1 U	0.16 J	2.1		2.2		2.3	6.9	6.9	
Arsenic	mg/L	1.8	12	12	33		27		33	32	32	
Barium	mg/L	44	41	40	30		20		12	17 J+	17 J+	
Beryllium	mg/L	0.2 U	0.049 J	0.034 J	0.2 U		0.2 U		0.2 U	0.2 U	0.2 U	
Cadmium	mg/L	0.2 U	0.13 J	0.12 J	0.2 U		0.035 J		0.2 U	0.038 J	0.028 J	
Chromium	mg/L	2 U	0.34 J	0.33 J	2.4		1.2 J		0.82 J	2 U	2 U	
Cobalt	mg/L	0.24 J	14	14	0.13 J	DRY	0.13 J	DRY	0.13 J	0.12 J	0.12 J	DRY
Fluoride	mg/L	0.71	0.89	0.9	1.2		1.4		0.86	0.66	0.67	
Lead	mg/L	1 U	1 U	1 U	1 U		1 U		1 U	1 U	1 U	
Lithium	mg/L	23	66	64	26		23		32	54	51	
Mercury	mg/L	0.2 U	0.2 U	0.2 U	0.2 U		0.2 U		0.2 U	0.2 U	0.2 U	
Molybdenum	mg/L	1.5	30	29	31		110		23	420	410	
Radium, Total	pci/L	1.83 U	2.55 U	1.76 U	1.88 U		2.26 U		1.2 UJ	1.95 U	1.8 U	
Selenium	mg/L	1 U	1 U	1 U	100		63		170	140	140	
Thallium	mg/L	1 U	0.089 J	0.084 J	2.1		1.7		0.79 J	1.3	1.4	
Sample Parameters												
Dissolved Oxygen	mg/L	0.11	0.21	-	3.83		0.85		0.21	-	1.07	
Oxidation-Reduction Potential	millivolts	-107.1	-315	-	59.4		34.2		-71.4	-	7.2	
pH	SU	7.44	6.17	-	8.42		9.57		9.25	-	8.96	
Specific Conductance	mS/cm	1.487	1.746	-	0.519		0.741		0.489	-	.406	
Temperature	deg C	16.9	16.99	-	15.3		15.6		17.3	-	12.8	
Turbidity	NTU	1.62	1.03	-	1.18		1.22		1.01	-	1.54	

Note:
mg/L = milligrams per liter
mS/cm = milli 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.
"UJ" = Indicates the result was not detected above the MDL, the estimated RL is provided.
"J" = Indicates the result was estimated.
"J+" = Indicates the result was estimated and may be biased
"J-" = Indicates the result was estimated and may be biased

Table 4a: Analytical Data
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

Analyte	Unit	GMMW-01		PC-MW-110	PC-MW-113	PC-MW-114	PC-MW-115
		2022-09-09	2023-04-10	2023-03-30	2023-03-30	2023-03-30	2023-03-30
		N	N	N	N	N	N
CCR Appendix III							
Boron	mg/L	1300	1600	190	220	230	180
Calcium	mg/L	97300	88200	89600	71200	91100	111000
Chloride	mg/L	22.8	23.8	359	126	134	322
Fluoride	mg/L	0.4	0.21	0.84	1.1	0.31	0.65
pH	SU	8.4 J	8.3 J	7.2 J	6.9 J	7 J	7.2 J
Sulfate	mg/L	147	193 J-	43.3	147	167	136
Total Dissolved Solids	mg/L	417	465	948	648	688	992
CCR Appendix IV							
Antimony	mg/L	3.8	4.1	0.043 J	0.35 J	0.26 J	3.5
Arsenic	mg/L	22	21	7	0.86 J	0.22 J	4.4
Barium	mg/L	38	28	360	29	35	40
Beryllium	mg/L	0.2 U	0.2 U	0.031 J	0.2 U	0.2 U	0.2 U
Cadmium	mg/L	0.2 U	0.034 J	0.2 U	0.43	0.075 J	0.052 J
Chromium	mg/L	2.9	2 U	0.75 J	0.4 J	0.27 J	1.3 J
Cobalt	mg/L	0.17 J	0.11 J	0.2 J	2	1.3	0.58 J
Fluoride	mg/L	0.4	0.21	0.84	1.1	0.31	0.65
Lead	mg/L	1 U	1 U	0.084 J	0.1 J	1 U	0.077 J
Lithium	mg/L	25	27	21	18	9.1	10
Mercury	mg/L	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U	0.2 U
Molybdenum	mg/L	38	140	4.3	0.56 J	1.4	2.8
Radium, Total	pci/L	1.53 R	1.87 U	2.12	1.56 U	1.31 U	1.51 U
Selenium	mg/L	500	330	1 U	13	3.1	4.9
Thallium	mg/L	1.4	1.9	1 U	1 U	1 U	0.049 J
Sample Parameters							
Dissolved Oxygen	mg/L	1.19	2.09	0.23	4.83	5.99	3.71
Oxidation-Reduction Potential	millivolts	61.2	26.9	-132.6	30.6	3.2	40.1
pH	SU	9.02	9.03	7.66	6.95	7	7.19
Specific Conductance	mS/cm	0.491	.429	1.084	0.572	0.639	0.928
Temperature	deg C	16.3	13	11.6	7.9	9	10.6
Turbidity	NTU	2.09	2.04	8.45	4.42	3.29	4.42

Note:
mg/L = milligrams per liter
mS/cm = milli 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.
"UJ" = Indicates the result was not detected above the MDL, the estimated RL is provided.
"J" = Indicates the result was estimated.
"J+" = Indicates the result was estimated and may be biased
"J-" = Indicates the result was estimated and may be biased

Prepared by: TMG
Checked by: DFSC
Reviewed by: MAH

Table 4b: 2021-2022 Post-Closure Background Monitoring Well Analytical Data
CCR Unit Michigan City Poiler Slag Pond
NIPSCO LLC Michigan City Generating Station
Michigan City, Indiana

Location		PC-MW-110								PC-MW-113										
Sample Date		2021-04-30	2021-06-23	2021-09-07	2021-12-16	2022-03-08	2022-06-20	2022-09-14	2022-12-05	2021-05-03	2021-06-23	2021-09-07	2021-12-16	2022-03-08	2022-03-08	2022-06-20	2022-06-20	2022-09-14	2022-12-05	2022-12-05
Sample Type		N	N	N	N	N	N	N	N	N	N	N	N	FD	N	FD	N	N	FD	N
Chemical	Unit																			
CCR Appendix III																				
Boron	mg/L	0.21	0.21	0.2	0.23	0.26	0.23	0.22	0.2	0.26	0.27	0.26	0.33	0.28	0.28	0.32	0.3	0.39	0.45	0.47
Calcium	mg/L	97.9	97.3	97.9	95.4	98.3	107	107	94.9	86.7	88.3	100	96.2	127	125	118	109	112	111	115
Chloride	mg/L	456	315	309	298	300	333	350	402	82.7	62.1	77.8	55.4	253	267	128	127	107	117	118
Fluoride	mg/L	0.54	0.56	0.55	0.51	0.6	0.58	0.66	0.82	1.2	1.1	1.1	0.83	0.89	0.89	1	1	1.2	1	1
pH	SU	7.52	7.17	7.36	7.29	7.21	7.44	7.04	7.47	7.27	6.86	7.06	7.01		6.91		7.05	6.76		7.04
Sulfate	mg/L	36.1	33.5	33.3	37	35.9	43.4	44.9	42.1	131	136	160	143	183	185	187	187	177	183	183
Total Dissolved Solids	mg/L	802	878	878	818	852	964	1000	940	573	558	611	556	956	982	737	767	691	672	640
CCR Appendix IV																				
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001	0.001 U	8.1E-05 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.00032 J	0.00033 J	0.00044 J	0.00047 J	0.00041 J	0.00045 J	0.00049 J
Arsenic	mg/L	0.0059	0.0071	0.0061	0.006	0.006	0.0071	0.0066	0.0069	0.0016	0.0041	0.0017	0.002	0.00092 J	0.0013	0.0017	0.0017	0.00078 J	0.00078 J	0.00094 J
Barium	mg/L	0.29	0.28	0.29	0.33	0.32	0.38	0.37	0.38	0.032	0.036	0.036	0.036	0.044	0.045	0.041	0.041	0.038	0.039	0.039
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002 U	3E-05 J	0.0002 U	3.4E-05 J	0.0002 U	0.0002 U	0.0002 U	0.0002	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	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.00033	0.00075	0.00078	0.0011	0.0011	0.00049	0.00029	0.00026
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002	0.00054 J	0.002 U	0.00071 J	0.00086 J	0.002 U	0.002 U	0.002 U	0.002	0.00029 J	0.00048 J	0.00048 J	0.002 U	0.002 U	0.002 U	0.002 U
Cobalt	mg/L	0.001 U	0.001 U	0.001 U	0.001	0.00017 J	0.00022 J	0.00024 J	0.00018 J	0.001 U	0.001 U	0.0011	0.0026	0.003	0.0033	0.0062	0.0059	0.00099 J	0.0016	0.0015
Fluoride	mg/L	0.54	0.56	0.55	0.51	0.6	0.58	0.66	0.82	1.2	1.1	1.1	0.83	0.89	0.89	1	1	1.2	1	1
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.00011 J	0.00019 J	0.00016 J	0.001 U	0.001 U	0.001 U
Lithium	mg/L	0.008 U	0.012	0.009	0.015	0.016 J	0.017 J	0.022	0.019	0.017	0.026	0.025	0.019	0.025	0.024	0.016 J	0.016 J	0.029	0.016	0.017
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.0042	0.0043	0.0038	0.0037	0.0039	0.0041	0.0041	0.0055	0.001 U	0.001 U	0.001 U	0.001	0.00038 J	0.00039 J	0.0006 J	0.00059 J	0.00045 J	0.001 U	0.001 U
Radium-226	pci/l	0.769	0.899	0.985	0.89	0.523 U	0.48 U	0.843 J	0.715	-0.0322 U	0.404 U	0.869 U	0.775	0 U	0.137 U	0.295 U	0.164 U	1.08 UJ	1.35 U	1.67 U
Radium-228	pci/l	0.99 R	1.64	1.49	1.02	1.55	1.57	1.63	0.934 J-	0.906	0.916	0.75	1.13	0.771	0.727	0.797 U	0.819 U	0.832	1.69 J-	0.699 UJ
Radium, Total	pci/l	1.76 R	2.54	2.48	1.91	2.07	2.05	2.47 J	1.65 J-	1.4 U	1.22 U	1.61 U	1.91	1.61 U	1.48 U	1.1 U	1.21 U	1.84 UJ	2.35 UJ	2.37 UJ
Selenium	mg/L	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.00037 J	0.001 U	0.001 U	0.015	0.019	0.017	0.034	0.019	0.019	0.022	0.021	0.01	0.022	0.021
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Field Parameters																				
Dissolved Oxygen	mg/L	0.19	0.52	0.03	0.52	0.48	0.14	0.12	0.21	1.29	1.03	0.34	1.24		4.5		1.19	0.5		2.44
Oxidation-Reduction Potential	millivolts	-132.9	-124.1	-186	-158	-131	-107.2	-314.2	-222.7	-22.2	23.6	-58	-38.7		59.4		32	-295.5		-2.6
pH	SU	7.52	7.17	7.36	7.29	7.21	7.44	7.04	7.47	7.27	6.86	7.06	7.01		6.91		7.05	6.76		7.04
Specific Conductance	uS/cm	1477	1595	1662	1591	1447	880	1384	1370	830	867	1005	870		1347		610	864		810
Temperature	deg C	12.43	13.4	14.1	12.8	12.6	14.7	13.85	12.1	10.71	13.6	17.3	14.1		8.8		14	16.17		13.1
Turbidity	NTU	5.56	4.77	4.32	2.45	4.55	3.99	3.88	2.31	4.54	4.86	4.94	4.09		4.5		3.78	3.78		2.71

Notes:
mg/L = milligrams per liter
uS/cm = micro Siemens per centimeter
ug/L = micrograms per liter
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 that the result is an estimated value.
"R" = Indicates that the result was rejected.
"J-" = Indicates that the result is estimated and potentially biased low.
"UJ" = Indicates that the result was not detected above the MDL, the

Table 4b: 2021-2022 Post-Closure Background Monitoring Well Ana
CCR Unit Michigan City Poiler Slag Pond
NIPSCO LLC Michigan City Generating Station
Michigan City, Indiana

	Location	PC-MW-114											PC-MW-115									
	Sample Date	2021-05-03	2021-05-03	2021-06-23	2021-09-07	2021-09-07	2021-12-16	2021-12-16	2022-03-08	2022-06-20	2022-09-14	2022-12-05	2021-04-30	2021-06-23	2021-06-23	2021-09-07	2021-12-16	2022-03-08	2022-06-20	2022-09-14	2022-09-14	2022-12-05
	Sample Type	FD	N	N	FD	N	FD	N	N	N	N	N	N	FD	N	N	N	N	N	N	FD	N	N
Chemical	Unit																						
CCR Appendix III																							
Boron	mg/L	0.17	0.17	0.16	0.17	0.17	0.25	0.24	0.22	0.25	0.3	0.32	0.15	0.14	0.14	0.18	0.37	0.33	0.18	0.21	0.21	0.23
Calcium	mg/L	81.4	79.6	85.2	103	104	115	117	120	88.2	82.1	84.1	127	93.2	92.2	82.5	90.1	93.9	92.1	87.9	85.3	110
Chloride	mg/L	239	208	226	194	196	294	297	366	314	232	205	410	123	125	148	191	124	341	147	146	185
Fluoride	mg/L	0.29	0.3	0.27	0.25	0.24	0.27	0.26	0.23	0.25	0.33	0.31	0.58	0.71	0.71	0.76	0.8	0.83	0.67	0.8	0.81	0.59
pH	SU		7.28	6.84		7.1		6.95	6.95	7.22	7.08	7.15	7.18		6.93	7.25	7.22	7.27	7.44		7.22	7.21
Sulfate	mg/L	58.3	57.2	56.6	204	204	201	221	196	140	142	170	75.9	107	107	99.2	118	127	91.4	118	117	155
Total Dissolved Solids	mg/L	644	622	700	808	784	1030	1000	1160	964	812	696	780	568	581	588	696	615	924	630	633	704
CCR Appendix IV																							
Antimony	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001	0.00037 J	0.00037 J	0.00038 J	0.00039 J	0.0026	0.0035	0.0034	0.0042	0.0045	0.0037	0.0042	0.0037	0.0038	0.0038
Arsenic	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001	0.00021 J	0.00023 J	0.00028 J	0.00033 J	0.0021	0.0031	0.0029	0.0029	0.0039	0.0029	0.0055	0.0039	0.0037	0.003
Barium	mg/L	0.061	0.061	0.064	0.064	0.063	0.068	0.069	0.058	0.047	0.039	0.039	0.042	0.027	0.026	0.026	0.032	0.027	0.04	0.028	0.027	0.031
Beryllium	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002	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	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	0.0002	5.9E-05 J	2.9E-05 J	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002	3.9E-05 J	3E-05 J	5.8E-05 J	0.0002 U	4E-05 J
Chromium	mg/L	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002	0.002	0.00031 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.0025	0.0027	0.0015 J	0.0028	0.0025	0.0021	0.0014 J
Cobalt	mg/L	0.0017	0.0017	0.0013	0.0014	0.0014	0.0012	0.0013	0.0014	0.0011	0.001	0.0012	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.00068 J	0.00025 J	0.00058 J	0.00027 J	0.00042 J
Fluoride	mg/L	0.29	0.3	0.27	0.25	0.24	0.27	0.26	0.23	0.25	0.33	0.31	0.58	0.71	0.71	0.76	0.8	0.83	0.67	0.8	0.81	0.59
Lead	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001	0.00016 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001 U	0.001 U	0.00011 J	0.001 U	0.001 U
Lithium	mg/L	0.008 U	0.008 U	0.01	0.01	0.011	0.012	0.013	0.011 J	0.008 U	0.0092 J	0.008 U	0.014	0.011	0.015	0.013	0.015	0.012 J	0.013 J	0.01 J	0.013 J	0.01
Mercury	mg/L	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002	0.0002	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	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0002 U
Molybdenum	mg/L	0.002	0.002	0.0017	0.002	0.002	0.0018	0.0019	0.0019	0.0019	0.0019	0.0018	0.0026	0.0039	0.0038	0.0034	0.0043	0.0042	0.0033	0.0031	0.0032	0.0029
Radium-226	pci/l	0.13 U	0.808 U	0.344	0.926 U	0.911 U	0.481	0.931	0.0792 U	-0.178 U	0.319 J	0.814 U	0.189 U	0.515	0.558 U	1.23 U	0.894	0.405 U	0.507	0.924 UJ	1.05 UJ	1.04 U
Radium-228	pci/l	0.771	0.675 U	0.904 U	0.784 U	0.877 U	1.25	0.992	0.618 U	0.801 U	0.926 U	0.599 UJ	0.726 U	0.87 U	0.939 U	1.49	1.26	0.696 U	0.786 U	0.77 U	0.809 U	0.616 UJ
Radium, Total	pci/l	1.66 U	1.56 U	1.02 U	1.71 U	1.79 U	1.69	1.92	1.81 U	1.3 U	1.1 UJ	1.41 UJ	1.55 U	1.34 U	1.5 U	2.12 U	2.15	1.45 U	1.05 U	1.69 UJ	1.86 UJ	1.66 UJ
Selenium	mg/L	0.0018	0.0019	0.0023	0.0038	0.0038	0.0041	0.0045	0.0036	0.0033	0.0036	0.0037	0.002	0.0016	0.0014	0.0029	0.0036	0.0029	0.003	0.0025	0.0023	0.0047
Thallium	mg/L	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001	0.001	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	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Field Parameters																							
Dissolved Oxygen	mg/L		3.96	5		4.97		3.73	5.06	5.15	4.5	5.29	3.87		2.96	4.25	3.87	3	5.76		2.72	3.43
Oxidation-Reduction Potential	millivolts		-53.3	-34.7		-93.3		-55.7	-30.8	4.8	-195	-113.4	179.8		55.9	30.1	35.4	27.8	99.8		-234.8	-22.9
pH	SU		7.28	6.84		7.1		6.95	6.95	7.22	7.08	7.15	7.18		6.93	7.25	7.22	7.27	7.44		7.22	7.21
Specific Conductance	uS/cm		1096	1220		1383		1751	1734	880	1169	1010	1617		1001	1070	1311	941	880		882	960
Temperature	deg C		11.91	12.9		15.6		13.4	10.9	13.6	15.28	12.8	12.3		13.8	17.2	15.1	11.9	14.6		17.15	14.3
Turbidity	NTU		2.31	3.56		2.41		2.42	2.16	2.06	1.56	1.29	2.35		4.11	2.15	2.3	2.06	1.18		0.85	1.21

Notes:
mg/L = milligrams per liter
uS/cm = micro Siemens per centimeter
ug/L = micrograms per liter
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 that the result is an estimated value.
"R" = Indicates that the result was rejected.
"J-" = Indicates that the result is estimated and potentially biased low.
"UJ" = Indicates that the result was not detected above the MDL, the

Prepared by: GRD
Checked by: DFSC
Reviewed by: MAH

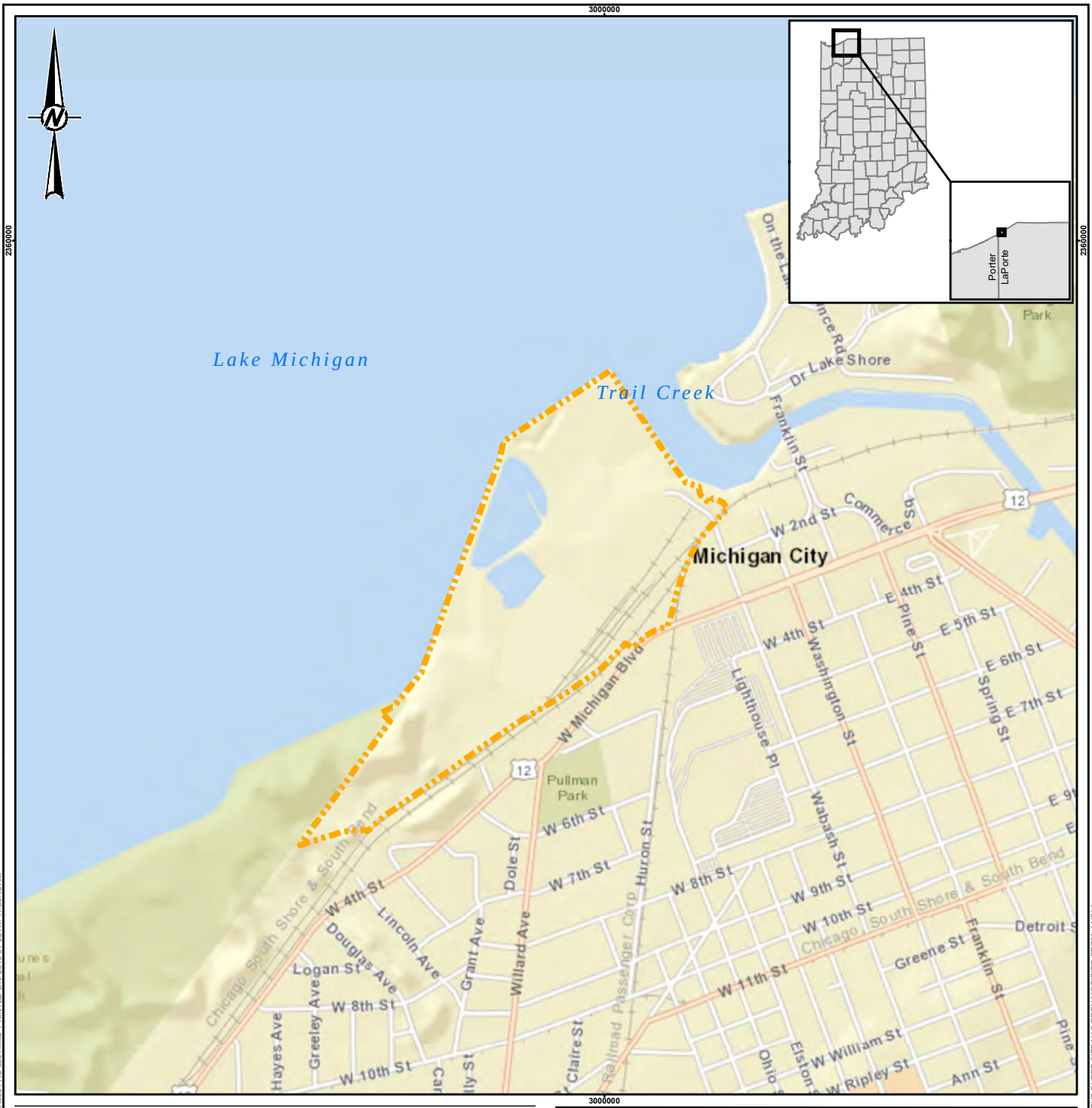
Table 5: Groundwater Protection Standards
CCR Unit Primary 2
NIPSCO Michigan City Generating Station
Michigan City, Indiana

Analyte	MCL (mg/L)	GWPS (mg/L)[2]	GWPS (mg/L)[3]	GWPS (mg/L)[4]
Antimony	0.006	0.006	0.006	0.006
Arsenic	0.01	0.014	0.017	0.01
Barium	2	2	2	2
Beryllium	0.004	0.004	0.004	0.004
Cadmium	0.005	0.005	0.005	0.005
Chromium	0.1	0.1	0.1	0.1
Cobalt[1]	0.006	0.006	0.006	0.006
Fluoride	4	4	4	4
Lead[1]	0.015	0.015	0.015	0.015
Lithium[1]	0.04	0.095	0.1	0.04
Mercury	0.002	0.002	0.002	0.002
Molybdenum[1]	0.1	0.15	0.15	0.1
Radium 226+228	5	5	5	5
Selenium	0.05	0.05	0.05	0.05
Thallium	0.002	0.002	0.002	0.002

Notes:
MCL= Environmental Protection Agency Maximum Contaminant Level
GWPS= Groundwater Protection Standard, calculated in May 2019, July 2020, June 2022, and December 2022
mg/L= milligrams per liter
1) As of August 29, 2018, these four constituents have health-based standards (not MCLs) that can be used when calculating the GWPS.
2) GWPS calculated in May 2019.
3) GWPS calculated in July 2020 and June 2022 (no changes in the GWPS from July 2020 to June 2022).
4) GWPS calculated in December 2022.

Prepared by: DFSC
Checked by: TMG
Reviewed by: MAH

Figures



LEGEND

Approximate Property Line

0 1,250 2,500

1 " = 1,250 feet Feet

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

PROJECT

NORTHERN INDIANA PUBLIC SERVICE COMPANY
MICHIGAN CITY GENERATING STATION
MICHIGAN CITY, INDIANA

TITLE

SITE LOCATION MAP

CONSULTANT

wsp

YYYY-MM-DD	7/22/2019
DESIGNED	DFS
PREPARED	SHL
REVIEWED	DFS
APPROVED	MAH

PROJECT NO.	CONTROL	REV.	FIGURE
31404789	A	0	1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI A

1 in

0

PATH: V:\001 GIS Projects\NIPSCO\MichiganCity\99_PROJ\164917101_EA\40_PROD\001_EA\164917101-A00001-HS-0001.mxd PRINTED ON: 2019-07-22 AT: 11:36:43 AM

LEGEND

- CCR Background Groundwater Monitoring Well
- CCR Downgradient Groundwater Monitoring Well
- Post December 2022 CCR Background Groundwater Monitoring Well
- Decommissioned Monitoring Well
- Generalized Groundwater Flow Direction
- Existing Sheet Piles
- Approximate Property Line
- CCR Unit

0 180 360

1 inch = 182 feet Feet

NOTE(S)

REFERENCE(S)

SERVICE LAYER CREDITS: © 2023 MICROSOFT CORPORATION © 2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS

CLIENT

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

PROJECT

MICHIGAN CITY GENERATING STATION
MICHIGAN CITY, INDIANA

TITLE

WELL LOCATION MAP
PRIMARY 2

CONSULTANT

wsp

YYYY-MM-DD	7/28/2023
DESIGNED	DFS
PREPARED	EMM
REVIEWED	DFS
APPROVED	MAH

PROJECT NO.	CONTROL	REV.	FIGURE
31404789	-	1	2

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

PATH: V:\001 GIS Projects\NIPSCO\Michigan\City\99_PROJ\119121568_MCGSClosure\v40_PROD\00011_Closure_Support_Plan_update\d20231912156B-0001-HS-0011.mxd PRINTED ON: 2023-07-28 AT: 8:54:44 AM

LEGEND

- Non-CCR Well
- CCR Background Groundwater Monitoring Well
- CCR Downgradient Groundwater Monitoring Well
- Post Closure Monitoring Well
- Existing Sheet Piles
- September 2022 Groundwater Elevation Contour (ft NAVD88)
- Approximate Property Line
- CCR Units

0 400 800

1 inch = 400 feet

Feet

FIGURE NARRATIVE

THIS FIGURE DEPICTS THE GROUNDWATER ELEVATION, AS MEASURED IN 30 MONITORING WELLS SCREENED WITHIN THE UPPER PORTION OF THE SURFICIAL AQUIFER, AND IS INTENDED TO REPRESENT THE APPROXIMATE ELEVATION OF THE GROUNDWATER POTENTIOMETRIC SURFACE. THE POSTED DATA WERE CALCULATED FROM DEPTH TO WATER MEASUREMENTS MADE BY WSP IN SEPTEMBER 2022. THE DIRECTION OF HORIZONTAL GROUNDWATER FLOW AT AND NEAR THE POTENTIOMETRIC SURFACE CAN BE GENERALLY INTERPRETED AS BEING PERPENDICULAR TO THE GROUNDWATER ELEVATION CONTOURS.

WSP INFERRED THE ELEVATION CONTOURS BASED ON THE DATA ILLUSTRATED. THE ACTUAL ELEVATION OF THE POTENTIOMETRIC SURFACE IS LIKELY MORE HETEROGENEOUS THAN SHOWN AND ACTUAL CONDITIONS WILL VARY. OTHER INTERPRETATIONS ARE POSSIBLE. THE DEPTH TO GROUNDWATER IS KNOWN TO VARY WITH TIME.

NOTE(S)

* = VALUE WAS NOT USED FOR CONTOUR GENERATION

REFERENCE(S)

SERVICE LAYER CREDITS: © 2023 MICROSOFT CORPORATION © 2023 MAXAR ©CNES (2023) DISTRIBUTION AIRBUS DS

CLIENT

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

PROJECT

MICHIGAN CITY GENERATING STATION
MICHIGAN CITY, INDIANA

TITLE

GROUNDWATER ELEVATION - SEPTEMBER 2022

CONSULTANT

wsp

YYYY-MM-DD	2023-07-28
DESIGNED	DFS
PREPARED	EMM
REVIEWED	DFS
APPROVED	MAH

PROJECT NO.	CONTROL	REV.	FIGURE
19121568	-	1	3

PATH: V:\001 GIS Projects\NIPSCO\MichiganCity\99_PRO\19184817101_EAI40_PROD\0007_GWE\19184817101-0007-HS-0014.mxd PRINTED ON: 2023-07-28 AT: 8:59:40 AM

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

1 in
0

LEGEND

- Non-CCR Well
- CCR Background Groundwater Monitoring Well
- CCR Downgradient Groundwater Monitoring Well
- March 2023 Groundwater Elevation Contour (ft NAVD88)
- Existing Sheet Piles
- Approximate Property Line
- CCR

0 400 800

1 inch = 400 feet

Feet

FIGURE NARRATIVE

THIS FIGURE DEPICTS THE GROUNDWATER ELEVATION, AS MEASURED IN MONITORING WELLS SCREENED WITHIN THE UPPER PORTION OF THE SURFICIAL AQUIFER, AND IS INTENDED TO REPRESENT THE APPROXIMATE ELEVATION OF THE GROUNDWATER POTENTIOMETRIC SURFACE. THE POSTED DATA WERE CALCULATED FROM DEPTH TO WATER MEASUREMENTS MADE BY WSP ON MARCH 17, 2023. THE DIRECTION OF HORIZONTAL GROUNDWATER FLOW AT AND NEAR THE POTENTIOMETRIC SURFACE CAN BE GENERALLY INTERPRETED AS BEING PERPENDICULAR TO THE GROUNDWATER ELEVATION CONTOURS.

WSP INFERRED THE ELEVATION CONTOURS BASED ON THE DATA ILLUSTRATED. THE ACTUAL ELEVATION OF THE POTENTIOMETRIC SURFACE IS LIKELY MORE HETEROGENEOUS THAN SHOWN AND ACTUAL CONDITIONS WILL VARY. OTHER INTERPRETATIONS ARE POSSIBLE. THE DEPTH TO GROUNDWATER IS KNOWN TO VARY WITH TIME.

NOTE(S)

BP= BELOW PUMP
* = GROUNDWATER ELEVATION WAS NOT USED IN CONTOURING

REFERENCE(S)

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CLIENT

NORTHERN INDIANA PUBLIC SERVICE COMPANY LLC

PROJECT

MICHIGAN CITY GENERATING STATION
MICHIGAN CITY, INDIANA

TITLE

GROUNDWATER ELEVATION - MARCH 2023

CONSULTANT

wsp

YYYY-MM-DD	2023-07-28
DESIGNED	DFS
PREPARED	EMM
REVIEWED	DFS
APPROVED	MAH

PROJECT NO.	CONTROL	REV.	FIGURE
31404789	-	1	4

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

0 1in

PATH: V:\001 GIS Projects\NIPSCO\MichiganCity\99_PROJ\184817101_EA\40_PROD\00\07_GW\E\20231164817101-0007-HS-0001_March.mxd PRINTED ON: 2023-07-28 AT: 9:03:49 AM

APPENDIX A

September 2022 Analytical Laboratory Reports

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

September 30, 2022

Mr. Tom Haskins
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Dear Mr. Haskins:

Enclosed are the analytical results for sample(s) received by the laboratory between September 10, 2022 and September 16, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Gabe Dixon, WSP
Ms. Sarah Gilles, WSP Golder
Ms. Danielle Sylvia, WSP Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50325558001	**GAMW-16-090922**	Water	09/09/22 13:55	09/10/22 09:35
50325558002	**GMMW-1-090922**	Water	09/09/22 15:25	09/10/22 09:35
50325663001	**GAMW-14-091222**	Water	09/12/22 15:10	09/13/22 12:32
50325804001	**GAMW-10-091322**	Water	09/13/22 14:20	09/14/22 08:50
50325804002	**GAMW-12-091322**	Water	09/13/22 11:35	09/14/22 08:50
50325804003	**GAMW-15-091322**	Water	09/13/22 11:15	09/14/22 08:50
50325804004	**GMMW-2-091322**	Water	09/13/22 13:10	09/14/22 08:50
50325804005	**FD-01-091322**	Water	09/13/22 12:00	09/14/22 08:50
50326078001	**GAMW-05-091522**	Water	09/15/22 10:10	09/16/22 09:10
50326078002	**FB-01-091522**	Water	09/15/22 10:20	09/16/22 09:10

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50325558001	**GAMW-16-090922**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325558002	**GMMW-1-090922**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325663001	**GAMW-14-091222**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325804001	**GAMW-10-091322**	EPA 9056	RMR	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325804002	**GAMW-12-091322**	EPA 9056	RMR	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325804003	**GAMW-15-091322**	EPA 9056	RMR	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325804004	**GMMW-2-091322**	EPA 9056	RMR	3	PASI-I

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SAMPLE ANALYTE COUNT

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50325804005	**FD-01-091322**	EPA 9056	RMR	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50326078001	**GAMW-05-091522**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I
50326078002	**FB-01-091522**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TRK	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325558001	**GAMW-16-090922**					
EPA 9056	Chloride	11.4	mg/L	0.25	09/14/22 00:47	
EPA 9056	Fluoride	0.86	mg/L	0.050	09/14/22 00:47	
EPA 9056	Sulfate	167	mg/L	2.5	09/14/22 01:05	
EPA 6010	Boron	1.3	mg/L	0.10	09/20/22 12:16	
EPA 6010	Calcium	87.5	mg/L	1.0	09/20/22 12:16	
EPA 6010	Lithium	0.032	mg/L	0.0080	09/20/22 12:16	
EPA 6010	Total Hardness by 2340B	258	mg/L	10.0	09/20/22 12:16	
EPA 6020	Antimony	0.0023	mg/L	0.0010	09/14/22 17:11	
EPA 6020	Arsenic	0.033	mg/L	0.0010	09/14/22 17:11	
EPA 6020	Barium	0.012	mg/L	0.0010	09/14/22 17:11	
EPA 6020	Chromium	0.00082J	mg/L	0.0020	09/14/22 17:11	
EPA 6020	Cobalt	0.00013J	mg/L	0.0010	09/14/22 17:11	
EPA 6020	Molybdenum	0.023	mg/L	0.0010	09/14/22 17:11	
EPA 6020	Selenium	0.17	mg/L	0.0010	09/20/22 16:21	
EPA 6020	Thallium	0.00079J	mg/L	0.0010	09/14/22 17:11	
SM 2540C	Total Dissolved Solids	379	mg/L	10.0	09/15/22 12:31	
SM 4500-H+B	pH at 25 Degrees C	8.7	Std. Units	0.10	09/12/22 16:28	H3
50325558002	**GMMW-1-090922**					
EPA 9056	Chloride	22.8	mg/L	2.5	09/14/22 01:57	
EPA 9056	Fluoride	0.40	mg/L	0.050	09/14/22 01:40	
EPA 9056	Sulfate	147	mg/L	2.5	09/14/22 01:57	
EPA 6010	Boron	1.3	mg/L	0.10	09/20/22 12:28	
EPA 6010	Calcium	97.3	mg/L	1.0	09/20/22 12:28	
EPA 6010	Lithium	0.025	mg/L	0.0080	09/20/22 12:28	
EPA 6010	Total Hardness by 2340B	294	mg/L	10.0	09/20/22 12:28	
EPA 6020	Antimony	0.0038	mg/L	0.0010	09/14/22 17:40	
EPA 6020	Arsenic	0.022	mg/L	0.0010	09/14/22 17:40	
EPA 6020	Barium	0.038	mg/L	0.0010	09/14/22 17:40	
EPA 6020	Chromium	0.0029	mg/L	0.0020	09/14/22 17:40	
EPA 6020	Cobalt	0.00017J	mg/L	0.0010	09/14/22 17:40	
EPA 6020	Molybdenum	0.038	mg/L	0.0010	09/14/22 17:40	
EPA 6020	Selenium	0.50	mg/L	0.0010	09/20/22 16:42	
EPA 6020	Thallium	0.0014	mg/L	0.0010	09/14/22 17:40	
SM 2540C	Total Dissolved Solids	417	mg/L	10.0	09/15/22 12:32	
SM 4500-H+B	pH at 25 Degrees C	8.4	Std. Units	0.10	09/12/22 16:31	H3
50325663001	**GAMW-14-091222**					
EPA 9056	Chloride	8.1	mg/L	0.25	09/17/22 05:54	
EPA 9056	Fluoride	1.2	mg/L	0.050	09/17/22 05:54	
EPA 9056	Sulfate	139	mg/L	2.5	09/17/22 06:11	
EPA 6010	Boron	0.79	mg/L	0.10	09/24/22 14:29	
EPA 6010	Calcium	93.9	mg/L	1.0	09/24/22 14:29	
EPA 6010	Lithium	0.026	mg/L	0.0080	09/24/22 14:29	
EPA 6010	Total Hardness by 2340B	304	mg/L	10.0	09/24/22 14:29	
EPA 6020	Antimony	0.0021	mg/L	0.0010	09/14/22 18:29	
EPA 6020	Arsenic	0.033	mg/L	0.0010	09/14/22 18:29	
EPA 6020	Barium	0.030	mg/L	0.0010	09/14/22 18:29	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325663001	**GAMW-14-091222**					
EPA 6020	Chromium	0.0024	mg/L	0.0020	09/14/22 18:29	
EPA 6020	Cobalt	0.00013J	mg/L	0.0010	09/14/22 18:29	
EPA 6020	Molybdenum	0.031	mg/L	0.0010	09/14/22 18:29	
EPA 6020	Selenium	0.10	mg/L	0.0010	09/15/22 17:10	
EPA 6020	Thallium	0.0021	mg/L	0.0010	09/14/22 18:29	
SM 2540C	Total Dissolved Solids	453	mg/L	10.0	09/16/22 11:19	
SM 4500-H+B	pH at 25 Degrees C	8.1	Std. Units	0.10	09/15/22 12:14	H3
50325804001	**GAMW-10-091322**					
EPA 9056	Chloride	132	mg/L	25.0	09/17/22 16:15	
EPA 9056	Fluoride	0.78	mg/L	0.050	09/17/22 15:44	
EPA 9056	Sulfate	501	mg/L	25.0	09/17/22 16:15	
EPA 6010	Boron	0.60	mg/L	0.10	09/24/22 14:47	
EPA 6010	Calcium	166	mg/L	1.0	09/24/22 14:47	
EPA 6010	Lithium	0.061	mg/L	0.0080	09/24/22 14:47	
EPA 6010	Total Hardness by 2340B	617	mg/L	10.0	09/24/22 14:47	
EPA 6020	Antimony	0.00015J	mg/L	0.0010	09/20/22 19:35	
EPA 6020	Arsenic	0.024	mg/L	0.0010	09/20/22 19:35	
EPA 6020	Barium	0.090	mg/L	0.0010	09/20/22 19:35	
EPA 6020	Beryllium	0.000040J	mg/L	0.00020	09/20/22 19:35	
EPA 6020	Cadmium	0.000072J	mg/L	0.00020	09/20/22 19:35	
EPA 6020	Chromium	0.00036J	mg/L	0.0020	09/20/22 19:35	
EPA 6020	Cobalt	0.00019J	mg/L	0.0010	09/20/22 19:35	
EPA 6020	Lead	0.00032J	mg/L	0.0010	09/20/22 19:35	
EPA 6020	Molybdenum	0.0085	mg/L	0.0010	09/20/22 19:35	
SM 2540C	Total Dissolved Solids	1190	mg/L	20.0	09/16/22 11:44	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	09/15/22 14:11	H3
50325804002	**GAMW-12-091322**					
EPA 9056	Chloride	103	mg/L	2.5	09/17/22 16:49	
EPA 9056	Fluoride	0.89	mg/L	0.050	09/17/22 16:33	
EPA 9056	Sulfate	983	mg/L	25.0	09/17/22 17:05	
EPA 6010	Boron	0.66	mg/L	0.10	09/24/22 14:49	
EPA 6010	Calcium	209	mg/L	2.0	09/24/22 14:51	
EPA 6010	Lithium	0.066	mg/L	0.0080	09/24/22 14:49	
EPA 6010	Total Hardness by 2340B	859	mg/L	20.0	09/24/22 14:51	
EPA 6020	Antimony	0.00014J	mg/L	0.0010	09/20/22 19:40	
EPA 6020	Arsenic	0.012	mg/L	0.0010	09/20/22 19:40	
EPA 6020	Barium	0.041	mg/L	0.0010	09/20/22 19:40	
EPA 6020	Beryllium	0.000049J	mg/L	0.00020	09/20/22 19:40	
EPA 6020	Cadmium	0.00013J	mg/L	0.00020	09/20/22 19:40	
EPA 6020	Chromium	0.00034J	mg/L	0.0020	09/20/22 19:40	
EPA 6020	Cobalt	0.014	mg/L	0.0010	09/20/22 19:40	
EPA 6020	Molybdenum	0.030	mg/L	0.0010	09/20/22 19:40	
EPA 6020	Thallium	0.000089J	mg/L	0.0010	09/20/22 19:40	
SM 2540C	Total Dissolved Solids	1750	mg/L	20.0	09/16/22 11:45	
SM 4500-H+B	pH at 25 Degrees C	6.5	Std. Units	0.10	09/15/22 14:16	H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325804003	**GAMW-15-091322**					
EPA 9056	Chloride	59.2	mg/L	2.5	09/17/22 17:37	
EPA 9056	Fluoride	1.4	mg/L	0.050	09/17/22 17:21	
EPA 9056	Sulfate	318	mg/L	25.0	09/17/22 17:54	
EPA 6010	Boron	1.9	mg/L	0.10	09/24/22 14:54	
EPA 6010	Calcium	105	mg/L	1.0	09/24/22 14:54	
EPA 6010	Lithium	0.023	mg/L	0.0080	09/24/22 14:54	
EPA 6010	Total Hardness by 2340B	293	mg/L	10.0	09/24/22 14:54	
EPA 6020	Antimony	0.0022	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Arsenic	0.027	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Barium	0.020	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Cadmium	0.000035J	mg/L	0.00020	09/20/22 19:45	
EPA 6020	Chromium	0.0012J	mg/L	0.0020	09/20/22 19:45	
EPA 6020	Cobalt	0.00013J	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Molybdenum	0.11	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Selenium	0.063	mg/L	0.0010	09/20/22 19:45	
EPA 6020	Thallium	0.0017	mg/L	0.0010	09/20/22 19:45	
SM 2540C	Total Dissolved Solids	622	mg/L	10.0	09/16/22 11:45	
SM 4500-H+B	pH at 25 Degrees C	9.0	Std. Units	0.10	09/15/22 14:16	H3
50325804004	**GMMW-2-091322**					
EPA 9056	Chloride	188	mg/L	25.0	09/17/22 19:15	
EPA 9056	Fluoride	0.35	mg/L	0.050	09/17/22 18:42	
EPA 9056	Sulfate	417	mg/L	25.0	09/17/22 19:15	
EPA 6010	Boron	1.6	mg/L	0.10	09/24/22 14:56	
EPA 6010	Calcium	134	mg/L	1.0	09/24/22 14:56	
EPA 6010	Lithium	0.029	mg/L	0.0080	09/24/22 14:56	
EPA 6010	Total Hardness by 2340B	548	mg/L	10.0	09/24/22 14:56	
EPA 6020	Antimony	0.00029J	mg/L	0.0010	09/20/22 18:57	
EPA 6020	Arsenic	0.013	mg/L	0.0010	09/20/22 18:57	
EPA 6020	Barium	0.21	mg/L	0.0020	09/20/22 18:23	
EPA 6020	Cadmium	0.0016	mg/L	0.00020	09/20/22 18:57	
EPA 6020	Chromium	0.00028J	mg/L	0.0020	09/20/22 18:57	
EPA 6020	Cobalt	0.00028J	mg/L	0.0010	09/20/22 18:57	
EPA 6020	Molybdenum	0.053	mg/L	0.0010	09/20/22 18:57	
EPA 6020	Selenium	0.00034J	mg/L	0.0010	09/20/22 18:57	
EPA 6020	Thallium	0.0012	mg/L	0.0010	09/20/22 18:57	
SM 2540C	Total Dissolved Solids	952	mg/L	20.0	09/16/22 11:46	
SM 4500-H+B	pH at 25 Degrees C	8.2	Std. Units	0.10	09/15/22 14:18	H3
50325804005	**FD-01-091322**					
EPA 9056	Chloride	104	mg/L	2.5	09/17/22 19:47	
EPA 9056	Fluoride	0.90	mg/L	0.050	09/17/22 19:31	
EPA 9056	Sulfate	975	mg/L	25.0	09/17/22 20:03	
EPA 6010	Boron	0.64	mg/L	0.10	09/24/22 14:58	
EPA 6010	Calcium	207	mg/L	2.0	09/24/22 15:04	
EPA 6010	Lithium	0.064	mg/L	0.0080	09/24/22 14:58	
EPA 6010	Total Hardness by 2340B	850	mg/L	20.0	09/24/22 15:04	
EPA 6020	Antimony	0.00016J	mg/L	0.0010	09/20/22 20:04	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325804005	**FD-01-091322**					
EPA 6020	Arsenic	0.012	mg/L	0.0010	09/20/22 20:04	
EPA 6020	Barium	0.040	mg/L	0.0010	09/20/22 20:04	
EPA 6020	Beryllium	0.000034J	mg/L	0.00020	09/20/22 20:04	
EPA 6020	Cadmium	0.00012J	mg/L	0.00020	09/20/22 20:04	
EPA 6020	Chromium	0.00033J	mg/L	0.0020	09/20/22 20:04	
EPA 6020	Cobalt	0.014	mg/L	0.0010	09/20/22 20:04	
EPA 6020	Molybdenum	0.029	mg/L	0.0010	09/20/22 20:04	
EPA 6020	Thallium	0.000084J	mg/L	0.0010	09/20/22 20:04	
SM 2540C	Total Dissolved Solids	1730	mg/L	20.0	09/16/22 11:47	
SM 4500-H+B	pH at 25 Degrees C	6.6	Std. Units	0.10	09/15/22 14:19	H3
50326078001	**GAMW-05-091522**					
EPA 9056	Chloride	170	mg/L	25.0	09/25/22 03:14	
EPA 9056	Fluoride	0.71	mg/L	0.050	09/25/22 02:07	
EPA 9056	Sulfate	457	mg/L	25.0	09/25/22 03:14	
EPA 6010	Boron	0.56	mg/L	0.10	09/28/22 13:28	
EPA 6010	Calcium	211	mg/L	2.0	09/28/22 12:18	
EPA 6010	Lithium	0.023	mg/L	0.0080	09/28/22 13:28	
EPA 6010	Total Hardness by 2340B	779	mg/L	20.0	09/28/22 12:18	
EPA 6020	Arsenic	0.0018	mg/L	0.0010	09/28/22 00:53	
EPA 6020	Barium	0.044	mg/L	0.0010	09/28/22 00:53	
EPA 6020	Cobalt	0.00024J	mg/L	0.0010	09/28/22 00:53	
EPA 6020	Molybdenum	0.0015	mg/L	0.0010	09/28/22 00:53	
SM 2540C	Total Dissolved Solids	1270	mg/L	20.0	09/22/22 09:55	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	09/20/22 13:33	H3
50326078002	**FB-01-091522**					
EPA 9056	Chloride	0.13J	mg/L	0.25	09/25/22 03:31	
EPA 6020	Barium	0.0024	mg/L	0.0010	09/28/22 01:29	C0
SM 4500-H+B	pH at 25 Degrees C	5.6	Std. Units	0.10	09/20/22 13:38	H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 695807

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50325821002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3198940)
  - Sulfate
- MSD (Lab ID: 3198941)
  - Sulfate

QC Batch: 697185

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50325927003,50326466002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3205364)
  - Sulfate
- MSD (Lab ID: 3205365)
  - Sulfate

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_WSP
Date: September 30, 2022

Analyte Comments:

QC Batch: 695476

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3197579)
  - Chloride
- MSD (Lab ID: 3197580)
  - Chloride

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 696662

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50326062001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3203189)
  - Boron
  - Calcium
- MSD (Lab ID: 3203190)
  - Boron
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 695358

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50325558001,50325568002

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MSD (Lab ID: 3197209)
  - Selenium
- MSD (Lab ID: 3197211)
  - Selenium

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_WSP
Date: September 30, 2022

Analyte Comments:

QC Batch: 696846

C0: Result confirmed by second analysis.

- FB-01-091522 (Lab ID: 50326078002)
  - Barium

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 696771

2d: The recovery of the analyte in the CRDL standard (also known as the reporting limit verification) did not meet NiSource acceptance criteria (opening CRDL = 125%)

- FB-01-091522 (Lab ID: 50326078002)
  - Mercury
- GAMW-05-091522 (Lab ID: 50326078001)
  - Mercury

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 697091

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

- FB-01-091522 (Lab ID: 50326078002)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_WSP
Date: September 30, 2022

General Information:
10 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-091522 (Lab ID: 50326078002)
- FD-01-091322 (Lab ID: 50325804005)
- GAMW-05-091522 (Lab ID: 50326078001)
- GAMW-10-091322 (Lab ID: 50325804001)
- GAMW-12-091322 (Lab ID: 50325804002)
- GAMW-14-091222 (Lab ID: 50325663001)
- GAMW-15-091322 (Lab ID: 50325804003)
- GAMW-16-090922 (Lab ID: 50325558001)
- GMMW-1-090922 (Lab ID: 50325558002)
- GMMW-2-091322 (Lab ID: 50325804004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-16-090922 **Lab ID: 50325558001** Collected: 09/09/22 13:55 Received: 09/10/22 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**11.4**	mg/L	0.25	0.067	1		09/14/22 00:47	16887-00-6	
Fluoride	**0.86**	mg/L	0.050	0.017	1		09/14/22 00:47	16984-48-8	
Sulfate	**167**	mg/L	2.5	0.85	10		09/14/22 01:05	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.3**	mg/L	0.10	0.061	1	09/17/22 14:44	09/20/22 12:16	7440-42-8	
Calcium	**87.5**	mg/L	1.0	0.088	1	09/17/22 14:44	09/20/22 12:16	7440-70-2	
Lithium	**0.032**	mg/L	0.0080	0.0062	1	09/17/22 14:44	09/20/22 12:16	7439-93-2	
Total Hardness by 2340B	**258**	mg/L	10.0	10.0	1	09/17/22 14:44	09/20/22 12:16		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0023**	mg/L	0.0010	0.00013	1	09/13/22 15:45	09/14/22 17:11	7440-36-0	
Arsenic	**0.033**	mg/L	0.0010	0.00011	1	09/13/22 15:45	09/14/22 17:11	7440-38-2	
Barium	**0.012**	mg/L	0.0010	0.00098	1	09/13/22 15:45	09/14/22 17:11	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000033	1	09/13/22 15:45	09/14/22 17:11	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000034	1	09/13/22 15:45	09/14/22 17:11	7440-43-9	
Chromium	**0.00082J**	mg/L	0.0020	0.00063	1	09/13/22 15:45	09/14/22 17:11	7440-47-3	
Cobalt	**0.00013J**	mg/L	0.0010	0.000086	1	09/13/22 15:45	09/14/22 17:11	7440-48-4	
Lead	ND	mg/L	0.0010	0.000080	1	09/13/22 15:45	09/14/22 17:11	7439-92-1	
Molybdenum	**0.023**	mg/L	0.0010	0.000095	1	09/13/22 15:45	09/14/22 17:11	7439-98-7	
Selenium	**0.17**	mg/L	0.0010	0.00035	1	09/13/22 15:45	09/20/22 16:21	7782-49-2	
Thallium	**0.00079J**	mg/L	0.0010	0.000073	1	09/13/22 15:45	09/14/22 17:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/12/22 20:01	09/13/22 11:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**379**	mg/L	10.0	10.0	1		09/15/22 12:31		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.7**	Std. Units	0.10	0.10	1		09/12/22 16:28		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GMMW-1-090922 **Lab ID: 50325558002** Collected: 09/09/22 15:25 Received: 09/10/22 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**22.8**	mg/L	2.5	0.67	10		09/14/22 01:57	16887-00-6	
Fluoride	**0.40**	mg/L	0.050	0.017	1		09/14/22 01:40	16984-48-8	
Sulfate	**147**	mg/L	2.5	0.85	10		09/14/22 01:57	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.3**	mg/L	0.10	0.061	1	09/17/22 14:44	09/20/22 12:28	7440-42-8	
Calcium	**97.3**	mg/L	1.0	0.088	1	09/17/22 14:44	09/20/22 12:28	7440-70-2	
Lithium	**0.025**	mg/L	0.0080	0.0062	1	09/17/22 14:44	09/20/22 12:28	7439-93-2	
Total Hardness by 2340B	**294**	mg/L	10.0	10.0	1	09/17/22 14:44	09/20/22 12:28		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0038**	mg/L	0.0010	0.00013	1	09/13/22 15:45	09/14/22 17:40	7440-36-0	
Arsenic	**0.022**	mg/L	0.0010	0.00011	1	09/13/22 15:45	09/14/22 17:40	7440-38-2	
Barium	**0.038**	mg/L	0.0010	0.00098	1	09/13/22 15:45	09/14/22 17:40	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000033	1	09/13/22 15:45	09/14/22 17:40	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000034	1	09/13/22 15:45	09/14/22 17:40	7440-43-9	
Chromium	**0.0029**	mg/L	0.0020	0.00063	1	09/13/22 15:45	09/14/22 17:40	7440-47-3	
Cobalt	**0.00017J**	mg/L	0.0010	0.000086	1	09/13/22 15:45	09/14/22 17:40	7440-48-4	
Lead	ND	mg/L	0.0010	0.000080	1	09/13/22 15:45	09/14/22 17:40	7439-92-1	
Molybdenum	**0.038**	mg/L	0.0010	0.000095	1	09/13/22 15:45	09/14/22 17:40	7439-98-7	
Selenium	**0.50**	mg/L	0.0010	0.00035	1	09/13/22 15:45	09/20/22 16:42	7782-49-2	
Thallium	**0.0014**	mg/L	0.0010	0.000073	1	09/13/22 15:45	09/14/22 17:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/12/22 20:01	09/13/22 11:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**417**	mg/L	10.0	10.0	1		09/15/22 12:32		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.4**	Std. Units	0.10	0.10	1		09/12/22 16:31		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-14-091222 **Lab ID: 50325663001** Collected: 09/12/22 15:10 Received: 09/13/22 12:32 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**8.1**	mg/L	0.25	0.067	1		09/17/22 05:54	16887-00-6	
Fluoride	**1.2**	mg/L	0.050	0.017	1		09/17/22 05:54	16984-48-8	
Sulfate	**139**	mg/L	2.5	0.85	10		09/17/22 06:11	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.79**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:29	7440-42-8	
Calcium	**93.9**	mg/L	1.0	0.16	1	09/21/22 09:36	09/24/22 14:29	7440-70-2	
Lithium	**0.026**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:29	7439-93-2	
Total Hardness by 2340B	**304**	mg/L	10.0	10.0	1	09/21/22 09:36	09/24/22 14:29		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0021**	mg/L	0.0010	0.00013	1	09/13/22 15:45	09/14/22 18:29	7440-36-0	
Arsenic	**0.033**	mg/L	0.0010	0.00011	1	09/13/22 15:45	09/14/22 18:29	7440-38-2	
Barium	**0.030**	mg/L	0.0010	0.00098	1	09/13/22 15:45	09/14/22 18:29	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000033	1	09/13/22 15:45	09/14/22 18:29	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000034	1	09/13/22 15:45	09/14/22 18:29	7440-43-9	
Chromium	**0.0024**	mg/L	0.0020	0.00063	1	09/13/22 15:45	09/14/22 18:29	7440-47-3	
Cobalt	**0.00013J**	mg/L	0.0010	0.000086	1	09/13/22 15:45	09/14/22 18:29	7440-48-4	
Lead	ND	mg/L	0.0010	0.000080	1	09/13/22 15:45	09/14/22 18:29	7439-92-1	
Molybdenum	**0.031**	mg/L	0.0010	0.000095	1	09/13/22 15:45	09/14/22 18:29	7439-98-7	
Selenium	**0.10**	mg/L	0.0010	0.00035	1	09/13/22 15:45	09/15/22 17:10	7782-49-2	
Thallium	**0.0021**	mg/L	0.0010	0.000073	1	09/13/22 15:45	09/14/22 18:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/16/22 10:45	09/19/22 12:23	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**453**	mg/L	10.0	10.0	1		09/16/22 11:19		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.1**	Std. Units	0.10	0.10	1		09/15/22 12:14		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-10-091322 **Lab ID: 50325804001** Collected: 09/13/22 14:20 Received: 09/14/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**132**	mg/L	25.0	6.7	100		09/17/22 16:15	16887-00-6	
Fluoride	**0.78**	mg/L	0.050	0.017	1		09/17/22 15:44	16984-48-8	
Sulfate	**501**	mg/L	25.0	8.5	100		09/17/22 16:15	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.60**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:47	7440-42-8	
Calcium	**166**	mg/L	1.0	0.16	1	09/21/22 09:36	09/24/22 14:47	7440-70-2	
Lithium	**0.061**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:47	7439-93-2	
Total Hardness by 2340B	**617**	mg/L	10.0	10.0	1	09/21/22 09:36	09/24/22 14:47		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00015J**	mg/L	0.0010	0.000075	1	09/16/22 07:00	09/20/22 19:35	7440-36-0	
Arsenic	**0.024**	mg/L	0.0010	0.00017	1	09/16/22 07:00	09/20/22 19:35	7440-38-2	
Barium	**0.090**	mg/L	0.0010	0.000093	1	09/16/22 07:00	09/20/22 19:35	7440-39-3	
Beryllium	**0.000040J**	mg/L	0.00020	0.000021	1	09/16/22 07:00	09/20/22 19:35	7440-41-7	
Cadmium	**0.000072J**	mg/L	0.00020	0.000022	1	09/16/22 07:00	09/20/22 19:35	7440-43-9	
Chromium	**0.00036J**	mg/L	0.0020	0.00010	1	09/16/22 07:00	09/20/22 19:35	7440-47-3	
Cobalt	**0.00019J**	mg/L	0.0010	0.000041	1	09/16/22 07:00	09/20/22 19:35	7440-48-4	
Lead	**0.00032J**	mg/L	0.0010	0.00014	1	09/16/22 07:00	09/20/22 19:35	7439-92-1	
Molybdenum	**0.0085**	mg/L	0.0010	0.00026	1	09/16/22 07:00	09/20/22 19:35	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00033	1	09/16/22 07:00	09/20/22 19:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	09/16/22 07:00	09/20/22 19:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/20/22 16:56	09/21/22 09:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**1190**	mg/L	20.0	20.0	1		09/16/22 11:44		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		09/15/22 14:11		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-12-091322 **Lab ID: 50325804002** Collected: 09/13/22 11:35 Received: 09/14/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**103**	mg/L	2.5	0.67	10		09/17/22 16:49	16887-00-6	
Fluoride	**0.89**	mg/L	0.050	0.017	1		09/17/22 16:33	16984-48-8	
Sulfate	**983**	mg/L	25.0	8.5	100		09/17/22 17:05	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.66**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:49	7440-42-8	
Calcium	**209**	mg/L	2.0	0.33	2	09/21/22 09:36	09/24/22 14:51	7440-70-2	
Lithium	**0.066**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:49	7439-93-2	
Total Hardness by 2340B	**859**	mg/L	20.0	20.0	2	09/21/22 09:36	09/24/22 14:51		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00014J**	mg/L	0.0010	0.000075	1	09/16/22 07:00	09/20/22 19:40	7440-36-0	
Arsenic	**0.012**	mg/L	0.0010	0.00017	1	09/16/22 07:00	09/20/22 19:40	7440-38-2	
Barium	**0.041**	mg/L	0.0010	0.000093	1	09/16/22 07:00	09/20/22 19:40	7440-39-3	
Beryllium	**0.000049J**	mg/L	0.00020	0.000021	1	09/16/22 07:00	09/20/22 19:40	7440-41-7	
Cadmium	**0.00013J**	mg/L	0.00020	0.000022	1	09/16/22 07:00	09/20/22 19:40	7440-43-9	
Chromium	**0.00034J**	mg/L	0.0020	0.00010	1	09/16/22 07:00	09/20/22 19:40	7440-47-3	
Cobalt	**0.014**	mg/L	0.0010	0.000041	1	09/16/22 07:00	09/20/22 19:40	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	09/16/22 07:00	09/20/22 19:40	7439-92-1	
Molybdenum	**0.030**	mg/L	0.0010	0.00026	1	09/16/22 07:00	09/20/22 19:40	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00033	1	09/16/22 07:00	09/20/22 19:40	7782-49-2	
Thallium	**0.000089J**	mg/L	0.0010	0.000038	1	09/16/22 07:00	09/20/22 19:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/20/22 16:56	09/21/22 09:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**1750**	mg/L	20.0	20.0	1		09/16/22 11:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**6.5**	Std. Units	0.10	0.10	1		09/15/22 14:16		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-15-091322 **Lab ID: 50325804003** Collected: 09/13/22 11:15 Received: 09/14/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**59.2**	mg/L	2.5	0.67	10		09/17/22 17:37	16887-00-6	
Fluoride	**1.4**	mg/L	0.050	0.017	1		09/17/22 17:21	16984-48-8	
Sulfate	**318**	mg/L	25.0	8.5	100		09/17/22 17:54	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.9**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:54	7440-42-8	
Calcium	**105**	mg/L	1.0	0.16	1	09/21/22 09:36	09/24/22 14:54	7440-70-2	
Lithium	**0.023**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:54	7439-93-2	
Total Hardness by 2340B	**293**	mg/L	10.0	10.0	1	09/21/22 09:36	09/24/22 14:54		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0022**	mg/L	0.0010	0.000075	1	09/16/22 07:00	09/20/22 19:45	7440-36-0	
Arsenic	**0.027**	mg/L	0.0010	0.00017	1	09/16/22 07:00	09/20/22 19:45	7440-38-2	
Barium	**0.020**	mg/L	0.0010	0.000093	1	09/16/22 07:00	09/20/22 19:45	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	09/16/22 07:00	09/20/22 19:45	7440-41-7	
Cadmium	**0.000035J**	mg/L	0.00020	0.000022	1	09/16/22 07:00	09/20/22 19:45	7440-43-9	
Chromium	**0.0012J**	mg/L	0.0020	0.00010	1	09/16/22 07:00	09/20/22 19:45	7440-47-3	
Cobalt	**0.00013J**	mg/L	0.0010	0.000041	1	09/16/22 07:00	09/20/22 19:45	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	09/16/22 07:00	09/20/22 19:45	7439-92-1	
Molybdenum	**0.11**	mg/L	0.0010	0.00026	1	09/16/22 07:00	09/20/22 19:45	7439-98-7	
Selenium	**0.063**	mg/L	0.0010	0.00033	1	09/16/22 07:00	09/20/22 19:45	7782-49-2	
Thallium	**0.0017**	mg/L	0.0010	0.000038	1	09/16/22 07:00	09/20/22 19:45	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/20/22 16:56	09/21/22 09:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**622**	mg/L	10.0	10.0	1		09/16/22 11:45		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**9.0**	Std. Units	0.10	0.10	1		09/15/22 14:16		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GMMW-2-091322 **Lab ID: 50325804004** Collected: 09/13/22 13:10 Received: 09/14/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**188**	mg/L	25.0	6.7	100		09/17/22 19:15	16887-00-6	
Fluoride	**0.35**	mg/L	0.050	0.017	1		09/17/22 18:42	16984-48-8	
Sulfate	**417**	mg/L	25.0	8.5	100		09/17/22 19:15	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.6**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:56	7440-42-8	
Calcium	**134**	mg/L	1.0	0.16	1	09/21/22 09:36	09/24/22 14:56	7440-70-2	
Lithium	**0.029**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:56	7439-93-2	
Total Hardness by 2340B	**548**	mg/L	10.0	10.0	1	09/21/22 09:36	09/24/22 14:56		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00029J**	mg/L	0.0010	0.000075	1	09/16/22 07:00	09/20/22 18:57	7440-36-0	
Arsenic	**0.013**	mg/L	0.0010	0.00017	1	09/16/22 07:00	09/20/22 18:57	7440-38-2	
Barium	**0.21**	mg/L	0.0020	0.00019	2	09/16/22 07:00	09/20/22 18:23	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	09/16/22 07:00	09/20/22 18:57	7440-41-7	
Cadmium	**0.0016**	mg/L	0.00020	0.000022	1	09/16/22 07:00	09/20/22 18:57	7440-43-9	
Chromium	**0.00028J**	mg/L	0.0020	0.00010	1	09/16/22 07:00	09/20/22 18:57	7440-47-3	
Cobalt	**0.00028J**	mg/L	0.0010	0.000041	1	09/16/22 07:00	09/20/22 18:57	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	09/16/22 07:00	09/20/22 18:57	7439-92-1	
Molybdenum	**0.053**	mg/L	0.0010	0.00026	1	09/16/22 07:00	09/20/22 18:57	7439-98-7	
Selenium	**0.00034J**	mg/L	0.0010	0.00033	1	09/16/22 07:00	09/20/22 18:57	7782-49-2	
Thallium	**0.0012**	mg/L	0.0010	0.000038	1	09/16/22 07:00	09/20/22 18:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/20/22 16:56	09/21/22 09:14	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**952**	mg/L	20.0	20.0	1		09/16/22 11:46		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.2**	Std. Units	0.10	0.10	1		09/15/22 14:18		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: FD-01-091322 **Lab ID: 50325804005** Collected: 09/13/22 12:00 Received: 09/14/22 08:50 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**104**	mg/L	2.5	0.67	10		09/17/22 19:47	16887-00-6	
Fluoride	**0.90**	mg/L	0.050	0.017	1		09/17/22 19:31	16984-48-8	
Sulfate	**975**	mg/L	25.0	8.5	100		09/17/22 20:03	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.64**	mg/L	0.10	0.038	1	09/21/22 09:36	09/24/22 14:58	7440-42-8	
Calcium	**207**	mg/L	2.0	0.33	2	09/21/22 09:36	09/24/22 15:04	7440-70-2	
Lithium	**0.064**	mg/L	0.0080	0.0062	1	09/21/22 09:36	09/24/22 14:58	7439-93-2	
Total Hardness by 2340B	**850**	mg/L	20.0	20.0	2	09/21/22 09:36	09/24/22 15:04		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00016J**	mg/L	0.0010	0.000075	1	09/16/22 07:00	09/20/22 20:04	7440-36-0	
Arsenic	**0.012**	mg/L	0.0010	0.00017	1	09/16/22 07:00	09/20/22 20:04	7440-38-2	
Barium	**0.040**	mg/L	0.0010	0.000093	1	09/16/22 07:00	09/20/22 20:04	7440-39-3	
Beryllium	**0.000034J**	mg/L	0.00020	0.000021	1	09/16/22 07:00	09/20/22 20:04	7440-41-7	
Cadmium	**0.00012J**	mg/L	0.00020	0.000022	1	09/16/22 07:00	09/20/22 20:04	7440-43-9	
Chromium	**0.00033J**	mg/L	0.0020	0.00010	1	09/16/22 07:00	09/20/22 20:04	7440-47-3	
Cobalt	**0.014**	mg/L	0.0010	0.000041	1	09/16/22 07:00	09/20/22 20:04	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	09/16/22 07:00	09/20/22 20:04	7439-92-1	
Molybdenum	**0.029**	mg/L	0.0010	0.00026	1	09/16/22 07:00	09/20/22 20:04	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00033	1	09/16/22 07:00	09/20/22 20:04	7782-49-2	
Thallium	**0.000084J**	mg/L	0.0010	0.000038	1	09/16/22 07:00	09/20/22 20:04	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/20/22 16:56	09/21/22 09:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**1730**	mg/L	20.0	20.0	1		09/16/22 11:47		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**6.6**	Std. Units	0.10	0.10	1		09/15/22 14:19		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: GAMW-05-091522 **Lab ID: 50326078001** Collected: 09/15/22 10:10 Received: 09/16/22 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**170**	mg/L	25.0	6.7	100		09/25/22 03:14	16887-00-6	
Fluoride	**0.71**	mg/L	0.050	0.017	1		09/25/22 02:07	16984-48-8	
Sulfate	**457**	mg/L	25.0	8.5	100		09/25/22 03:14	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.56**	mg/L	0.10	0.038	1	09/27/22 08:53	09/28/22 13:28	7440-42-8	
Calcium	**211**	mg/L	2.0	0.33	2	09/27/22 08:53	09/28/22 12:18	7440-70-2	
Lithium	**0.023**	mg/L	0.0080	0.0062	1	09/27/22 08:53	09/28/22 13:28	7439-93-2	
Total Hardness by 2340B	**779**	mg/L	20.0	20.0	2	09/27/22 08:53	09/28/22 12:18		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.00013	1	09/21/22 17:20	09/28/22 00:53	7440-36-0	
Arsenic	**0.0018**	mg/L	0.0010	0.00011	1	09/21/22 17:20	09/28/22 00:53	7440-38-2	
Barium	**0.044**	mg/L	0.0010	0.00098	1	09/21/22 17:20	09/28/22 00:53	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000033	1	09/21/22 17:20	09/28/22 00:53	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000034	1	09/21/22 17:20	09/28/22 00:53	7440-43-9	
Chromium	ND	mg/L	0.0020	0.00063	1	09/21/22 17:20	09/28/22 00:53	7440-47-3	
Cobalt	**0.00024J**	mg/L	0.0010	0.000086	1	09/21/22 17:20	09/28/22 00:53	7440-48-4	
Lead	ND	mg/L	0.0010	0.000080	1	09/21/22 17:20	09/28/22 00:53	7439-92-1	
Molybdenum	**0.0015**	mg/L	0.0010	0.000095	1	09/21/22 17:20	09/28/22 00:53	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00035	1	09/21/22 17:20	09/28/22 00:53	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000073	1	09/21/22 17:20	09/28/22 00:53	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/21/22 18:29	09/22/22 08:45	7439-97-6	2d
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**1270**	mg/L	20.0	20.0	1		09/22/22 09:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		09/20/22 13:33		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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ANALYTICAL RESULTS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Sample: FB-01-091522 **Lab ID: 50326078002** Collected: 09/15/22 10:20 Received: 09/16/22 09:10 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**0.13J**	mg/L	0.25	0.067	1		09/25/22 03:31	16887-00-6	
Fluoride	ND	mg/L	0.050	0.017	1		09/25/22 03:31	16984-48-8	
Sulfate	ND	mg/L	0.25	0.085	1		09/25/22 03:31	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	ND	mg/L	0.10	0.038	1	09/27/22 08:53	09/28/22 12:12	7440-42-8	CU
Calcium	ND	mg/L	1.0	0.16	1	09/27/22 08:53	09/28/22 12:12	7440-70-2	
Lithium	ND	mg/L	0.0080	0.0062	1	09/27/22 08:53	09/28/22 12:12	7439-93-2	
Total Hardness by 2340B	ND	mg/L	10.0	10.0	1	09/27/22 08:53	09/28/22 12:12		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.00013	1	09/21/22 17:20	09/28/22 01:29	7440-36-0	
Arsenic	ND	mg/L	0.0010	0.00011	1	09/21/22 17:20	09/28/22 01:29	7440-38-2	
Barium	**0.0024**	mg/L	0.0010	0.00098	1	09/21/22 17:20	09/28/22 01:29	7440-39-3	C0
Beryllium	ND	mg/L	0.00020	0.000033	1	09/21/22 17:20	09/28/22 01:29	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000034	1	09/21/22 17:20	09/28/22 01:29	7440-43-9	
Chromium	ND	mg/L	0.0020	0.00063	1	09/21/22 17:20	09/28/22 01:29	7440-47-3	
Cobalt	ND	mg/L	0.0010	0.000086	1	09/21/22 17:20	09/28/22 01:29	7440-48-4	
Lead	ND	mg/L	0.0010	0.000080	1	09/21/22 17:20	09/28/22 01:29	7439-92-1	
Molybdenum	ND	mg/L	0.0010	0.000095	1	09/21/22 17:20	09/28/22 01:29	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00035	1	09/21/22 17:20	09/28/22 01:29	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000073	1	09/21/22 17:20	09/28/22 01:29	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.00012	1	09/21/22 18:29	09/22/22 08:48	7439-97-6	2d
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		09/22/22 09:55		PL
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**5.6**	Std. Units	0.10	0.10	1		09/20/22 13:38		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695476
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002

METHOD BLANK: 3197577 Matrix: Water
Associated Lab Samples: 50325558001, 50325558002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	09/13/22 10:26	
Fluoride	mg/L	ND	0.050	0.017	09/13/22 10:26	
Sulfate	mg/L	ND	0.25	0.085	09/13/22 10:26	

LABORATORY CONTROL SAMPLE: 3197578

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.3	103	80-120	
Fluoride	mg/L	0.5	0.54	108	80-120	
Sulfate	mg/L	2.5	2.8	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197579 3197580

Parameter	Units	50325558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	11.4	1.2	1.2	12.8	12.8	116	115	80-120	0	15	E
Fluoride	mg/L	0.86	0.5	0.5	1.4	1.4	108	104	80-120	2	15	
Sulfate	mg/L	167	25	25	188	188	86	86	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695807 | Analysis Method: EPA 9056
QC Batch Method: EPA 9056 | Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

METHOD BLANK: 3198938 Matrix: Water
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	09/17/22 11:23	
Fluoride	mg/L	ND	0.050	0.017	09/17/22 11:23	
Sulfate	mg/L	ND	0.25	0.085	09/17/22 11:23	

LABORATORY CONTROL SAMPLE: 3198939

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	94	80-120	
Fluoride	mg/L	0.5	0.52	104	80-120	
Sulfate	mg/L	2.5	2.5	101	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3198940 3198941

Parameter	Units	50325821002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	11.8	12.5	12.5	22.5	22.6	86	86	80-120	0	15	
Fluoride	mg/L	1.6	0.5	0.5	2.2	2.2	111	110	80-120	0	15	
Sulfate	mg/L	83.6	25	25	101	101	70	71	80-120	0	15	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696139
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50325663001

METHOD BLANK: 3200723 Matrix: Water
Associated Lab Samples: 50325663001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	09/17/22 09:31	
Fluoride	mg/L	ND	0.050	0.017	09/17/22 09:31	
Sulfate	mg/L	ND	0.25	0.085	09/17/22 09:31	

LABORATORY CONTROL SAMPLE: 3200724

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	91	80-120	
Fluoride	mg/L	0.5	0.48	97	80-120	
Sulfate	mg/L	2.5	2.5	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3200725 3200726

Parameter	Units	50325568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	362	125	125	485	476	99	92	80-120	2	15	
Fluoride	mg/L	0.44	0.5	0.5	0.90	0.90	92	92	80-120	0	15	
Sulfate	mg/L	46.8	25	25	69.1	68.8	89	88	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 697185
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50326078001, 50326078002

METHOD BLANK: 3205360 Matrix: Water
Associated Lab Samples: 50326078001, 50326078002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	09/24/22 16:17	
Fluoride	mg/L	ND	0.050	0.017	09/24/22 16:17	
Sulfate	mg/L	ND	0.25	0.085	09/24/22 16:17	

LABORATORY CONTROL SAMPLE: 3205361

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	91	80-120	
Fluoride	mg/L	0.5	0.49	98	80-120	
Sulfate	mg/L	2.5	2.4	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3205362 3205363

Parameter	Units	50326466002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	39.1	12.5	12.5	50.7	50.8	93	94	80-120	0	15	
Fluoride	mg/L	ND	0.5	0.5	0.58	0.56	96	92	80-120	4	15	
Sulfate	mg/L	101	25	25	124	124	94	93	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3205364 3205365

Parameter	Units	50325927003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	232	125	125	359	358	102	101	80-120	0	15	
Fluoride	mg/L	0.33	0.5	0.5	0.82	0.82	96	98	80-120	1	15	
Sulfate	mg/L	142	25	25	161	161	77	75	80-120	0	15	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695368
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002

METHOD BLANK: 3197251 Matrix: Water
Associated Lab Samples: 50325558001, 50325558002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00012	09/13/22 11:31	

LABORATORY CONTROL SAMPLE: 3197252

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0051	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197253 3197254

Parameter	Units	50325558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0050	100	99	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197255 3197256

Parameter	Units	50325568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0049	101	98	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695622
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325663001

METHOD BLANK: 3198335 Matrix: Water
Associated Lab Samples: 50325663001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00012	09/19/22 11:54	

LABORATORY CONTROL SAMPLE: 3198336

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0049	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3198337 3198338

Parameter	Units	50325727004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0052	99	102	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696541 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

METHOD BLANK: 3202813 Matrix: Water
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00012	09/21/22 09:02	

LABORATORY CONTROL SAMPLE: 3202814

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0053	106	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3202815 3202816

Parameter	Units	50326080001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	<0.12 ug/L	0.005	0.005	0.0047	0.0048	94	96	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3202817 3202818

Parameter	Units	50325927003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0053	0.0053	105	106	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696771
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50326078001, 50326078002

METHOD BLANK: 3203645 Matrix: Water
Associated Lab Samples: 50326078001, 50326078002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.00012	09/22/22 07:56	

LABORATORY CONTROL SAMPLE: 3203646

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0053	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3203647 3203648

Parameter	Units	50325986004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0052	0.0049	102	96	75-125	6	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695617
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002

METHOD BLANK: 3198271 Matrix: Water
Associated Lab Samples: 50325558001, 50325558002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.061	09/20/22 12:47	
Calcium	mg/L	ND	1.0	0.088	09/20/22 12:47	
Lithium	mg/L	ND	0.0080	0.0062	09/20/22 12:47	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	09/20/22 12:47	

LABORATORY CONTROL SAMPLE: 3198272

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	103	80-120	
Calcium	mg/L	10	11.1	111	80-120	
Lithium	mg/L	1	1.1	109	80-120	
Total Hardness by 2340B	mg/L	66.2	70.5	107	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3198273 3198274

Parameter	Units	50325558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	1.3	1	1	2.3	2.3	100	103	75-125	2	20	
Calcium	mg/L	87.5	10	10	95.8	97.4	82	99	75-125	2	20	
Lithium	mg/L	0.032	1	1	1.1	1.2	110	114	75-125	3	20	
Total Hardness by 2340B	mg/L	258	66.2	66.2	318	324	91	99	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3198275 3198276

Parameter	Units	50325568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.28	1	1	1.3	1.3	104	106	75-125	1	20	
Calcium	mg/L	154	10	10	166	163	123	94	75-125	2	20	
Lithium	mg/L	0.021	1	1	1.2	1.2	115	118	75-125	3	20	
Total Hardness by 2340B	mg/L	560	66.2	66.2	634	623	113	95	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696044
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325663001, 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

METHOD BLANK: 3200141 Matrix: Water
Associated Lab Samples: 50325663001, 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.038	09/24/22 14:39	
Calcium	mg/L	ND	1.0	0.16	09/24/22 14:39	
Lithium	mg/L	ND	0.0080	0.0062	09/24/22 14:39	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	09/24/22 14:39	

LABORATORY CONTROL SAMPLE: 3200142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.99	99	80-120	
Calcium	mg/L	10	10.2	102	80-120	
Lithium	mg/L	1	1.0	102	80-120	
Total Hardness by 2340B	mg/L	66.2	66.5	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3200143 3200144

Parameter	Units	50325882001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	ND	1	1	1.1	1.1	97	101	75-125	4	20	
Calcium	mg/L	68700 ug/L	10	10	78.8	78.9	101	102	75-125	0	20	
Lithium	mg/L	58.9 ug/L	1	1	1.1	1.1	100	106	75-125	5	20	
Total Hardness by 2340B	mg/L	267000 ug/L	66.2	66.2	331	332	97	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696662
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50326078001, 50326078002

METHOD BLANK: 3203187 Matrix: Water
Associated Lab Samples: 50326078001, 50326078002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.038	09/28/22 12:04	
Calcium	mg/L	ND	1.0	0.16	09/28/22 12:04	
Lithium	mg/L	ND	0.0080	0.0062	09/28/22 12:04	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	09/28/22 12:04	

LABORATORY CONTROL SAMPLE: 3203188

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Calcium	mg/L	10	10	100	80-120	
Lithium	mg/L	1	1.0	102	80-120	
Total Hardness by 2340B	mg/L	66.2	64.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3203189 3203190

Parameter	Units	50326062001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	66.0	5	5	78.9	89.2	258	464	75-125	12	20	P6
Calcium	mg/L	603	50	50	760	852	315	498	75-125	11	20	P6
Lithium	mg/L	0.77	5	5	6.3	6.8	110	120	75-125	8	20	
Total Hardness by 2340B	mg/L	4050	331	331	5120	5770	324	519	75-125	12	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695358
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002, 50325663001

METHOD BLANK: 3197206 Matrix: Water
Associated Lab Samples: 50325558001, 50325558002, 50325663001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.00013	09/14/22 17:02	
Arsenic	mg/L	ND	0.0010	0.00011	09/14/22 17:02	
Barium	mg/L	ND	0.0010	0.00098	09/14/22 17:02	
Beryllium	mg/L	ND	0.00020	0.000033	09/14/22 17:02	
Cadmium	mg/L	ND	0.00020	0.000034	09/14/22 17:02	
Chromium	mg/L	ND	0.0020	0.00063	09/14/22 17:02	
Cobalt	mg/L	ND	0.0010	0.000086	09/14/22 17:02	
Lead	mg/L	ND	0.0010	0.000080	09/14/22 17:02	
Molybdenum	mg/L	ND	0.0010	0.000095	09/14/22 17:02	
Selenium	mg/L	ND	0.0010	0.00035	09/14/22 17:02	
Thallium	mg/L	ND	0.0010	0.000073	09/14/22 17:02	

LABORATORY CONTROL SAMPLE: 3197207

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.043	108	80-120	
Arsenic	mg/L	0.04	0.040	101	80-120	
Barium	mg/L	0.04	0.040	101	80-120	
Beryllium	mg/L	0.04	0.040	100	80-120	
Cadmium	mg/L	0.04	0.040	101	80-120	
Chromium	mg/L	0.04	0.042	106	80-120	
Cobalt	mg/L	0.04	0.041	103	80-120	
Lead	mg/L	0.04	0.042	105	80-120	
Molybdenum	mg/L	0.04	0.041	104	80-120	
Selenium	mg/L	0.04	0.040	101	80-120	
Thallium	mg/L	0.04	0.041	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197208 3197209

Parameter	Units	50325558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.0023	0.04	0.04	0.046	0.046	109	109	75-125	0	20	
Arsenic	mg/L	0.033	0.04	0.04	0.075	0.074	104	102	75-125	1	20	
Barium	mg/L	0.012	0.04	0.04	0.052	0.052	99	98	75-125	0	20	
Beryllium	mg/L	ND	0.04	0.04	0.041	0.041	103	102	75-125	2	20	
Cadmium	mg/L	ND	0.04	0.04	0.039	0.039	98	98	75-125	0	20	
Chromium	mg/L	0.00082J	0.04	0.04	0.042	0.042	102	103	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197208 3197209

Parameter	Units	50325558001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.00013J	0.04	0.04	0.039	0.040	98	99	75-125	1	20	
Lead	mg/L	ND	0.04	0.04	0.042	0.042	105	104	75-125	1	20	
Molybdenum	mg/L	0.023	0.04	0.04	0.066	0.066	107	106	75-125	1	20	
Selenium	mg/L	0.17	0.04	0.04	0.21	0.20	86	67	75-125	4	20	P6
Thallium	mg/L	0.00079J	0.04	0.04	0.043	0.043	105	104	75-125	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3197210 3197211

Parameter	Units	50325568002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.045	0.045	111	112	75-125	1	20	
Arsenic	mg/L	0.0054	0.04	0.04	0.047	0.046	103	101	75-125	2	20	
Barium	mg/L	0.11	0.04	0.04	0.15	0.15	101	101	75-125	0	20	
Beryllium	mg/L	ND	0.04	0.04	0.040	0.040	100	99	75-125	0	20	
Cadmium	mg/L	ND	0.04	0.04	0.039	0.039	98	98	75-125	0	20	
Chromium	mg/L	ND	0.04	0.04	0.041	0.041	100	100	75-125	0	20	
Cobalt	mg/L	0.00021J	0.04	0.04	0.038	0.038	94	94	75-125	0	20	
Lead	mg/L	ND	0.04	0.04	0.042	0.042	105	105	75-125	0	20	
Molybdenum	mg/L	0.0023	0.04	0.04	0.044	0.044	105	104	75-125	1	20	
Selenium	mg/L	0.00036J	0.04	0.04	0.040	0.038	100	95	75-125	5	20	P6
Thallium	mg/L	ND	0.04	0.04	0.042	0.042	106	106	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695893
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

METHOD BLANK: 3199278 Matrix: Water
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	0.000093J	0.0010	0.000075	09/20/22 18:13	
Arsenic	mg/L	ND	0.0010	0.00017	09/20/22 18:13	
Barium	mg/L	ND	0.0010	0.000093	09/20/22 18:13	
Beryllium	mg/L	ND	0.00020	0.000021	09/20/22 18:13	
Cadmium	mg/L	ND	0.00020	0.000022	09/20/22 18:13	
Chromium	mg/L	ND	0.0020	0.00010	09/20/22 18:13	
Cobalt	mg/L	ND	0.0010	0.000041	09/20/22 18:13	
Lead	mg/L	ND	0.0010	0.00014	09/20/22 18:13	
Molybdenum	mg/L	ND	0.0010	0.00026	09/20/22 18:13	
Selenium	mg/L	ND	0.0010	0.00033	09/20/22 18:13	
Thallium	mg/L	ND	0.0010	0.000038	09/20/22 18:13	

LABORATORY CONTROL SAMPLE: 3199279

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.042	104	80-120	
Arsenic	mg/L	0.04	0.038	95	80-120	
Barium	mg/L	0.04	0.039	98	80-120	
Beryllium	mg/L	0.04	0.039	96	80-120	
Cadmium	mg/L	0.04	0.039	98	80-120	
Chromium	mg/L	0.04	0.040	101	80-120	
Cobalt	mg/L	0.04	0.040	100	80-120	
Lead	mg/L	0.04	0.041	102	80-120	
Molybdenum	mg/L	0.04	0.039	99	80-120	
Selenium	mg/L	0.04	0.039	97	80-120	
Thallium	mg/L	0.04	0.041	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3199280 3199281

Parameter	Units	50325804004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00029J	0.04	0.04	0.042	0.043	104	106	75-125	1	20	
Arsenic	mg/L	0.013	0.04	0.04	0.051	0.051	94	94	75-125	1	20	
Barium	mg/L	0.21	0.04	0.04	0.25	0.26	86	105	75-125	3	20	
Beryllium	mg/L	ND	0.04	0.04	0.039	0.039	98	98	75-125	0	20	
Cadmium	mg/L	0.0016	0.04	0.04	0.040	0.039	95	95	75-125	0	20	
Chromium	mg/L	0.00028J	0.04	0.04	0.039	0.039	96	97	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3199280 3199281

Parameter	Units	50325804004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.00028J	0.04	0.04	0.038	0.038	95	94	75-125	2	20	
Lead	mg/L	ND	0.04	0.04	0.041	0.041	102	103	75-125	0	20	
Molybdenum	mg/L	0.053	0.04	0.04	0.093	0.092	101	98	75-125	1	20	
Selenium	mg/L	0.00034J	0.04	0.04	0.039	0.039	97	96	75-125	1	20	
Thallium	mg/L	0.0012	0.04	0.04	0.043	0.043	105	105	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696846
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50326078001, 50326078002

METHOD BLANK: 3203893 Matrix: Water
Associated Lab Samples: 50326078001, 50326078002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.00013	09/27/22 17:31	
Arsenic	mg/L	ND	0.0010	0.00011	09/27/22 17:31	
Barium	mg/L	ND	0.0010	0.00098	09/27/22 17:31	
Beryllium	mg/L	ND	0.00020	0.000033	09/27/22 17:31	
Cadmium	mg/L	ND	0.00020	0.000034	09/27/22 17:31	
Chromium	mg/L	ND	0.0020	0.00063	09/27/22 17:31	
Cobalt	mg/L	ND	0.0010	0.000086	09/27/22 17:31	
Lead	mg/L	ND	0.0010	0.000080	09/27/22 17:31	
Molybdenum	mg/L	ND	0.0010	0.000095	09/27/22 17:31	
Selenium	mg/L	ND	0.0010	0.00035	09/27/22 17:31	
Thallium	mg/L	ND	0.0010	0.000073	09/27/22 17:31	

LABORATORY CONTROL SAMPLE: 3203894

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.042	104	80-120	
Arsenic	mg/L	0.04	0.041	102	80-120	
Barium	mg/L	0.04	0.040	100	80-120	
Beryllium	mg/L	0.04	0.041	104	80-120	
Cadmium	mg/L	0.04	0.039	98	80-120	
Chromium	mg/L	0.04	0.041	103	80-120	
Cobalt	mg/L	0.04	0.040	100	80-120	
Lead	mg/L	0.04	0.040	101	80-120	
Molybdenum	mg/L	0.04	0.040	101	80-120	
Selenium	mg/L	0.04	0.040	99	80-120	
Thallium	mg/L	0.04	0.041	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3203895 3203896

Parameter	Units	50326078001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.042	0.042	106	105	75-125	0	20	
Arsenic	mg/L	0.0018	0.04	0.04	0.042	0.041	100	99	75-125	1	20	
Barium	mg/L	0.044	0.04	0.04	0.082	0.081	96	94	75-125	1	20	
Beryllium	mg/L	ND	0.04	0.04	0.039	0.039	98	99	75-125	1	20	
Cadmium	mg/L	ND	0.04	0.04	0.037	0.038	93	94	75-125	1	20	
Chromium	mg/L	ND	0.04	0.04	0.040	0.040	99	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3203895 3203896

Parameter	Units	50326078001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.00024J	0.04	0.04	0.037	0.037	91	93	75-125	2	20	
Lead	mg/L	ND	0.04	0.04	0.039	0.040	98	100	75-125	2	20	
Molybdenum	mg/L	0.0015	0.04	0.04	0.041	0.042	99	102	75-125	3	20	
Selenium	mg/L	ND	0.04	0.04	0.037	0.040	92	98	75-125	6	20	
Thallium	mg/L	ND	0.04	0.04	0.041	0.041	102	103	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695913
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002

METHOD BLANK: 3199352 Matrix: Water
Associated Lab Samples: 50325558001, 50325558002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/15/22 12:27	

LABORATORY CONTROL SAMPLE: 3199353

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	286	95	80-120	

SAMPLE DUPLICATE: 3199354

Parameter	Units	50325558001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	379	381	1	10	

SAMPLE DUPLICATE: 3199355

Parameter	Units	50325568002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1150	1140	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696116
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325663001

METHOD BLANK: 3200640 Matrix: Water
Associated Lab Samples: 50325663001

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/16/22 11:15	

LABORATORY CONTROL SAMPLE: 3200641

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	286	95	80-120	

SAMPLE DUPLICATE: 3200642

Parameter	Units	50325660001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	802	784	2	10	

SAMPLE DUPLICATE: 3200643

Parameter	Units	50325660003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	898	890	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696118 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

METHOD BLANK: 3200648 Matrix: Water
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/16/22 11:39	

LABORATORY CONTROL SAMPLE: 3200649

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	284	95	80-120	

SAMPLE DUPLICATE: 3200650

Parameter	Units	50325762001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	581	566	3	10	

SAMPLE DUPLICATE: 3200651

Parameter	Units	50325821002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	482	479	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 697091
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50326078001, 50326078002

METHOD BLANK: 3204975 Matrix: Water
Associated Lab Samples: 50326078001, 50326078002

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	09/22/22 09:48	

LABORATORY CONTROL SAMPLE: 3204976

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	274	91	80-120	

SAMPLE DUPLICATE: 3204977

Parameter	Units	50325935007 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	803	789	2	10	

SAMPLE DUPLICATE: 3204978

Parameter	Units	50326080001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	814	782	4	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695347
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325558001, 50325558002

SAMPLE DUPLICATE: 3197173

Parameter	Units	50325318005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.7	0	2	H3

SAMPLE DUPLICATE: 3197174

Parameter	Units	50325558001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.7	8.7	0	2	H3

SAMPLE DUPLICATE: 3197175

Parameter	Units	50325568002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695944
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50325663001

SAMPLE DUPLICATE: 3199611

Parameter	Units	50323135002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	9.9	9.9	0	2	H3

SAMPLE DUPLICATE: 3199612

Parameter	Units	50325663001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.1	8.1	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 695976
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50325804001, 50325804002, 50325804003, 50325804004, 50325804005

SAMPLE DUPLICATE: 3199766

Parameter	Units	50325762001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	2	H3

SAMPLE DUPLICATE: 3199767

Parameter	Units	50325402011 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.9	7.0	1	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

QC Batch: 696717
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50326078001, 50326078002

SAMPLE DUPLICATE: 3203435

Parameter	Units	50326020001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.4	8.3	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

2d	The recovery of the analyte in the CRDL standard (also known as the reporting limit verification) did not meet NiSource acceptance criteria (opening CRDL = 125%)
C0	Result confirmed by second analysis.
CU	The continuing calibration for this analyte is above laboratory acceptance limits. Analyte was not detected above the reporting limit in any of the associated samples.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50325558001	**GAMW-16-090922**	EPA 9056	695476		
50325558002	**GMMW-1-090922**	EPA 9056	695476		
50325663001	**GAMW-14-091222**	EPA 9056	696139		
50325804001	**GAMW-10-091322**	EPA 9056	695807		
50325804002	**GAMW-12-091322**	EPA 9056	695807		
50325804003	**GAMW-15-091322**	EPA 9056	695807		
50325804004	**GMMW-2-091322**	EPA 9056	695807		
50325804005	**FD-01-091322**	EPA 9056	695807		
50326078001	**GAMW-05-091522**	EPA 9056	697185		
50326078002	**FB-01-091522**	EPA 9056	697185		
50325558001	**GAMW-16-090922**	EPA 3010	695617	EPA 6010	696647
50325558002	**GMMW-1-090922**	EPA 3010	695617	EPA 6010	696647
50325663001	**GAMW-14-091222**	EPA 3010	696044	EPA 6010	697354
50325804001	**GAMW-10-091322**	EPA 3010	696044	EPA 6010	697354
50325804002	**GAMW-12-091322**	EPA 3010	696044	EPA 6010	697354
50325804003	**GAMW-15-091322**	EPA 3010	696044	EPA 6010	697354
50325804004	**GMMW-2-091322**	EPA 3010	696044	EPA 6010	697354
50325804005	**FD-01-091322**	EPA 3010	696044	EPA 6010	697354
50326078001	**GAMW-05-091522**	EPA 3010	696662	EPA 6010	698093
50326078002	**FB-01-091522**	EPA 3010	696662	EPA 6010	698093
50325558001	**GAMW-16-090922**	EPA 200.2	695358	EPA 6020	695633
50325558002	**GMMW-1-090922**	EPA 200.2	695358	EPA 6020	695633
50325663001	**GAMW-14-091222**	EPA 200.2	695358	EPA 6020	695633
50325804001	**GAMW-10-091322**	EPA 200.2	695893	EPA 6020	696236
50325804002	**GAMW-12-091322**	EPA 200.2	695893	EPA 6020	696236
50325804003	**GAMW-15-091322**	EPA 200.2	695893	EPA 6020	696236
50325804004	**GMMW-2-091322**	EPA 200.2	695893	EPA 6020	696236
50325804005	**FD-01-091322**	EPA 200.2	695893	EPA 6020	696236
50326078001	**GAMW-05-091522**	EPA 200.2	696846	EPA 6020	697066
50326078002	**FB-01-091522**	EPA 200.2	696846	EPA 6020	697066
50325558001	**GAMW-16-090922**	EPA 7470	695368	EPA 7470	695418
50325558002	**GMMW-1-090922**	EPA 7470	695368	EPA 7470	695418
50325663001	**GAMW-14-091222**	EPA 7470	695622	EPA 7470	696395
50325804001	**GAMW-10-091322**	EPA 7470	696541	EPA 7470	696833
50325804002	**GAMW-12-091322**	EPA 7470	696541	EPA 7470	696833
50325804003	**GAMW-15-091322**	EPA 7470	696541	EPA 7470	696833
50325804004	**GMMW-2-091322**	EPA 7470	696541	EPA 7470	696833
50325804005	**FD-01-091322**	EPA 7470	696541	EPA 7470	696833
50326078001	**GAMW-05-091522**	EPA 7470	696771	EPA 7470	697073
50326078002	**FB-01-091522**	EPA 7470	696771	EPA 7470	697073
50325558001	**GAMW-16-090922**	SM 2540C	695913		
50325558002	**GMMW-1-090922**	SM 2540C	695913		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325558

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50325663001	**GAMW-14-091222**	SM 2540C	696116		
50325804001	**GAMW-10-091322**	SM 2540C	696118		
50325804002	**GAMW-12-091322**	SM 2540C	696118		
50325804003	**GAMW-15-091322**	SM 2540C	696118		
50325804004	**GMMW-2-091322**	SM 2540C	696118		
50325804005	**FD-01-091322**	SM 2540C	696118		
50326078001	**GAMW-05-091522**	SM 2540C	697091		
50326078002	**FB-01-091522**	SM 2540C	697091		
50325558001	**GAMW-16-090922**	SM 4500-H+B	695347		
50325558002	**GMMW-1-090922**	SM 4500-H+B	695347		
50325663001	**GAMW-14-091222**	SM 4500-H+B	695944		
50325804001	**GAMW-10-091322**	SM 4500-H+B	695976		
50325804002	**GAMW-12-091322**	SM 4500-H+B	695976		
50325804003	**GAMW-15-091322**	SM 4500-H+B	695976		
50325804004	**GMMW-2-091322**	SM 4500-H+B	695976		
50325804005	**FD-01-091322**	SM 4500-H+B	695976		
50326078001	**GAMW-05-091522**	SM 4500-H+B	696717		
50326078002	**FB-01-091522**	SM 4500-H+B	696717		

WO#: 50325558

50325558

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[C]hain-of-Custody / Analytical [R]equest Document

[The Chain-of-Custody is a LEGAL DOCUMENT. All rel]evant fields must be completed accurately.

Page : Of

Section A
Required Client Information:

Company: NiSource_Golder
Address: 801 E 8th Ave
Merrillville, IN 46410
Email: jim_peace@golder.com
Phone: Fax:
Requested Due Date: 10 day TAT

Section B
Required Project Information:

Report To: Jim Peace
Copy To: thomas_haskins@golder.com, danielle_sylvia@golder.com
Purchase Order #: PO21343
Project Name: MCGS Assessment Monitoring
Project #: 21912-156822

Invoice Information:

Attention: Jeff Loewe-U12677
Company Name: NiSource
Address:
Pace Quote:
Pace Project Manager: tina.sayer@pacelabs.com,
Pace Profile #: 9047-1

Regulatory Agency:
State / Location: IN

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)		
1	[redacted]																										
2	[redacted]																										
3	[redacted]																										
4	[redacted]																										
5	[redacted]																										
6	GAMW-16 -090922	WT	G			9/9/22	1355		4	3		1							X	X	X	X	X	X		MS-01/MSD-01	001
7	[redacted]																										
8	GMMW-1 -090922	WT	G			9/9/22	1525		4	3		1							X	X	X	X	X	X		002	
9	[redacted]																										
10	[redacted]																										
11	[redacted]																										
12	[redacted]																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	[signature] / Golder	9/9/22		Fed Ex						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	Fed Ex			[signature]	9/10/22	0935	1.2	Y	Y	Y
LEVEL 4										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. Goldman
SIGNATURE of SAMPLER: [signature]
DATE Signed: 9/9/22

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 09/10/22 1110 JA

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B (C) D E F

4. **Cooler Temperature(s):** 1.5 | 1.2 | | | |
(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: ~~HNO3 (<2)~~ H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) ~~Any non-conformance~~ to pH recommendations will be noted on the container count form	✓ ~~DMP~~ DMP DMP		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:		Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A ✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 2

1 DMB

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only) / SBS / DI	VIALS					AMBER GLASS							PLASTIC									OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
																													Red	Yellow	Green	Black
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>8mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																															
2																															
3																															
4																															
5																															
6																		9	3									WT			
7																												~~WT~~			
8																		3	1									WT			
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	
GN	General	AG3C	250mL NaOH amber glass	

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

WO# : 50325663

50325663

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CHAIN-OF-CUSTODY / Analytical

The Chain-of-Custody is a LEGAL DOCUMENT. All r

Page : Of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	thomas_haskins@golder.com, danielle_sylvia@golder.com	Company Name:	NiSource
	Merrillville, IN 46410			Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO21343	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS Assessment Monitoring	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	10 day TAT	Project #:	6L1912156822	Pace Profile #:	9047-1

Regulatory Agency	
State / Location	IN

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)
1	GAMW-05																								
2	GAMW-10																								
3	GAMW-12																								
4	GAMW-14 - 091222	WT	G			9/12/22	1510		4	3		1							X	X	X	X	X		001
5	GAMW-15																								
6	GAMW-16																								
7	GAMW-18																								
8	GMMW-1																								
9	GMMW-2																								
10	FD-01																								
11	FB-01																								
12																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
* B, Ca, Li, Hardness by 6010	Fedex	9/12/22		Fedex						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	Fedex			amber Hardin	9/13/22	0900	0.9	Y	Y	Y
							0.8	Y	Y	Y
LEVEL 4										

SAMPLER NAME AND SIGNATURE		
PRINT Name of SAMPLER:		
SIGNATURE of SAMPLER:	DATE Signed: 9/12/22	

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 9/13/22 12:02 AH

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature(s):** (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

1.2/0.9	1.1/0.8		

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	MeOH (only) / SBS / DI / R	VIALS: DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AMBER GLASS: AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	PLASTIC: BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	OTHER: CG3H	Syringe Kit			Matrix	Nitric Red HNO3 <2	Sulfuric Yellow H2SO4 <2	Sodium Hydroxide Green NaOH >10	Sodium Hydroxide/ ZnAc Black NaOH/Zn Ac >9
1																																
2																																
3																																
4																		3	1									WT	✓			
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical
www.pacelabs.com

CHAIN-OF-CUSTODY / Analytical Request Document

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant

WO# : 50325804

50325804

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company	NiSource_Golder	Report To	Jim Peace	Attention	Jeff Loewe-U12677
Address	801 E 8th Ave	Copy To	thomas_haskins@golder.com,	Company Name	NiSource
Merrillville, IN 46410			danielle_sylvia@golder.com	Address	
Email	jim_peace@golder.com	Purchase Order #	PO21343	Pace Quote	
Phone	Fax	Project Name	MCGS Assessment Monitoring	Pace Project Manager	tina.sayer@pacelabs.com,
Requested Due Date	10 day TAT	Project #	BL1912156822	Pace Profile #	9047-1

State / Location: IN

Requested Analysis Filtered (Y/N)

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

ITEM #	SAMPLE ID	MATRIX CODE	SAMPLE TYPE (G=GRAB C=COMP)	START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)	
1	~~GAMW-08~~																									
2	GAMW-10 -091322	WT	G			9/13/22	1420		4	3		1							X	X	X	X	X	X		001
3	GAMW-12 -091322	WT	G			9/13/22	1135		4	3		1							X	X	X	X	X	X		002
4	~~GAMW-14~~																									
5	GAMW-15 -091322	WT	G			9/13/22	1115		4	3		1							X	X	X	X	X	X		003
6	~~GAMW-16~~																									
7	~~GAMW-18~~																									
8	~~GMMW-1~~																									
9	GMMW-2 -091322	WT	G			9/13/22	1310		4	3		1							X	X	X	X	X	X		004
10	FD-01 -091322	WT	G			9/13/22	1200		4	3		1							X	X	X	X	X	X		005
11	~~FD-01~~																									
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	[signature] / Golder	9/13/22	1700	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	9-14-22	850	[signature]	9-14-22	8:50	0.9 / 0.6	Y	Y	Y
LEVEL 4							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. Bluhm[?]

SIGNATURE of SAMPLER: [signature]

DATE Signed: 9/13/22

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: RC 9-14-22 11:10

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A (B) C D E F

4. **Cooler Temperature(s):** 0.9/0.9 | 0.6/0.6 | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	✓
Rush TAT Requested (4 days or less):	✓	
Custody Signatures Present?	✓	
Containers Intact?:	✓	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓	
Extra labels on Terracore Vials? (soils only)		

	Yes	No	N/A
All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: (HNO3 (<2)) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
	Present	Absent	N/A
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Headspace Wisconsin Sulfide?			
Headspace in VOA Vials (>6mm): See Containter Count form for details			No VOA Vials Sent ✓
Trip Blank Present?		✓	
Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS					AMBER GLASS							PLASTIC										OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																													Red	Yellow	Green	Black
		DI																																
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																																		
2																		3	1									WT	✓					
3																		1	1									1	1					
4																																		
5																		3	1									WT	✓					
6																																		
7																																		
8																																		
9																		3	1									WT	✓					
10																		1	1									1	1					
11																																		
12																																		

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Anal

The Chain-of-Custody is a LEGAL DOCUM

WO# : 50326078

50326078

Of

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U12677
Address: 801 E 8th Ave	Copy To: thomas_haskins@golder.com,	Company Name: NiSource
Merrillville, IN 46410	danielle_sylvia@golder.com	Address:
Email: jim_peace@golder.com	Purchase Order #: PO21343	Pace Quote:
Phone: Fax:	Project Name: MCGS Assessment Monitoring	Pace Project Manager: tina.sayer@pacelabs.com,
Requested Due Date: 10 day TAT	Project #: 619121568 22	Pace Profile #: 9047-1

Regulatory Agency	
State / Location	IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)	
1	GAMW-05 -091522	WT	G			9/15/22	1010		4	3		1							X	X	X	X	X	X		001
2	[redacted]																									
3	[redacted]																									
4	GAMW-14																									
5	GAMW-15																									
6	GAMW-16																									
7	[redacted]																									
8	[redacted]																									
9	[redacted]																									
10	[redacted]																									
11	FB-01 -091522	WT	G			9/15/22	1020		4	3		1	HCl						X	X	X	X	X	X		002
12	[redacted]																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010		9/15/22	1200							
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020					9/16/22	0910	0.4	Y	Y	Y
LEVEL 4										

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:						
SIGNATURE of SAMPLER:	DATE Signed: 9/15/22					

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 09/16/22 1320 JT

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 (A) B C D E F

4. **Cooler Temperature(s):** 0.5 | 0.4 **(Initial/Corrected)** RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle:** ~~HNO3 (<2)~~ **H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):	✓		Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS					AMBER GLASS							PLASTIC									OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																											Red	Yellow	Green	Black
		DI																														
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																		3	1									WT	U			
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																		3	1									WT	U			
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
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DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
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VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
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BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

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BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

October 04, 2022

Mr. Tom Haskins
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Dear Mr. Haskins:

Enclosed are the analytical results for sample(s) received by the laboratory between September 10, 2022 and September 16, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Gabe Dixon, WSP
Ms. Sarah Gilles, WSP Golder
Ms. Danielle Sylvia, WSP Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50325559001	**GAMW-16-090922**	Water	09/09/22 13:55	09/10/22 09:35
50325559002	**GAMW-16-090922 MS**	Water	09/09/22 13:55	09/10/22 09:35
50325559003	**GAMW-16-090922 MSD**	Water	09/09/22 13:55	09/10/22 09:35
50325559004	**GMMW-1-090922**	Water	09/09/22 15:25	09/10/22 09:35
50325664001	**GAMW-14-091222**	Water	09/12/22 15:10	09/13/22 09:00
50325810001	**GAMW-10-091322**	Water	09/13/22 14:20	09/14/22 08:50
50325810002	**GAMW-12-091322**	Water	09/13/22 11:35	09/14/22 08:50
50325810003	**GAMW-15-091322**	Water	09/13/22 11:15	09/14/22 08:50
50325810004	**GMMW-2-091322**	Water	09/13/22 13:10	09/14/22 08:50
50325810005	**FD-01-091322**	Water	09/13/22 12:00	09/14/22 08:50
50326070001	**GAMW-05-091522**	Water	09/15/22 10:10	09/16/22 09:10
50326070002	**FB-01-091522**	Water	09/15/22 10:20	09/16/22 09:10

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50325559001	**GAMW-16-090922**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325559002	**GAMW-16-090922 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50325559003	**GAMW-16-090922 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50325559004	**GMMW-1-090922**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325664001	**GAMW-14-091222**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325810001	**GAMW-10-091322**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325810002	**GAMW-12-091322**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325810003	**GAMW-15-091322**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325810004	**GMMW-2-091322**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50325810005	**FD-01-091322**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50326070001	**GAMW-05-091522**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50326070002	**FB-01-091522**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325559001	**GAMW-16-090922**					
EPA 903.1	Radium-226	0.263 ± 0.426 (0.741) C:NA T:93%	pCi/L		09/20/22 12:51	
EPA 904.0	Radium-228	0.112 ± 0.210 (0.463) C:75% T:99%	pCi/L		09/28/22 15:26	
Total Radium Calculation	Total Radium	0.375 ± 0.636 (1.20)	pCi/L		10/03/22 12:21	
50325559002	**GAMW-16-090922 MS**					
EPA 903.1	Radium-226	94.25 %REC ± NA (NA) C:NA T:NA	pCi/L		09/20/22 12:51	
EPA 904.0	Radium-228	94.46 %REC ± NA (NA) C:NA T:NA	pCi/L		09/28/22 15:27	
50325559003	**GAMW-16-090922 MSD**					
EPA 903.1	Radium-226	68.65 %REC 31.44 RPD ± NA (NA) C:NA T:NA	pCi/L		09/20/22 13:15	1d
EPA 904.0	Radium-228	102.43 %REC 8.10 RPD ± NA (NA) C:NA T:NA	pCi/L		09/28/22 15:27	
50325559004	**GMMW-1-090922**					
EPA 903.1	Radium-226	0.209 ± 0.493 (0.914) C:NA T:96%	pCi/L		09/20/22 13:15	
EPA 904.0	Radium-228	0.678 ± 0.356 (0.615) C:73% T:93%	pCi/L		09/28/22 15:27	
Total Radium Calculation	Total Radium	0.887 ± 0.849 (1.53)	pCi/L		10/03/22 12:21	
50325664001	**GAMW-14-091222**					
EPA 903.1	Radium-226	-0.0988 ± 0.513 (1.19) C:NA T:90%	pCi/L		09/23/22 14:45	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325664001	**GAMW-14-091222**					
EPA 904.0	Radium-228	0.419 ± 0.346 (0.690) C:74% T:91%	pCi/L		09/28/22 14:43	
Total Radium Calculation	Total Radium	0.419 ± 0.859 (1.88)	pCi/L		10/03/22 12:33	
50325810001	**GAMW-10-091322**					
EPA 903.1	Radium-226	-0.173 ± 0.416 (1.04) C:NA T:97%	pCi/L		09/24/22 13:38	
EPA 904.0	Radium-228	0.0611 ± 0.407 (0.943) C:69% T:86%	pCi/L		09/29/22 15:54	
Total Radium Calculation	Total Radium	0.0611 ± 0.823 (1.98)	pCi/L		09/30/22 14:40	
50325810002	**GAMW-12-091322**					
EPA 903.1	Radium-226	0.385 ± 0.624 (1.09) C:NA T:98%	pCi/L		09/24/22 13:38	
EPA 904.0	Radium-228	0.898 ± 0.720 (1.46) C:70% T:89%	pCi/L		09/29/22 15:59	
Total Radium Calculation	Total Radium	1.28 ± 1.34 (2.55)	pCi/L		09/30/22 14:40	
50325810003	**GAMW-15-091322**					
EPA 903.1	Radium-226	0.398 ± 0.519 (0.856) C:NA T:94%	pCi/L		09/24/22 13:38	
EPA 904.0	Radium-228	0.675 ± 0.670 (1.40) C:74% T:103%	pCi/L		09/29/22 15:59	
Total Radium Calculation	Total Radium	1.07 ± 1.19 (2.26)	pCi/L		09/30/22 14:40	
50325810004	**GMMW-2-091322**					
EPA 903.1	Radium-226	0.398 ± 0.470 (0.738) C:NA T:98%	pCi/L		09/24/22 13:38	

REPORT OF LABORATORY ANALYSIS

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SUMMARY OF DETECTION

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50325810004	**GMMW-2-091322**					
EPA 904.0	Radium-228	0.0694 ± 0.413 (0.954) C:71% T:88%	pCi/L		09/29/22 18:18	
Total Radium Calculation	Total Radium	0.467 ± 0.883 (1.69)	pCi/L		09/30/22 14:40	
50325810005	**FD-01-091322**					
EPA 903.1	Radium-226	0.0785 ± 0.358 (0.729) C:NA T:95%	pCi/L		09/24/22 13:38	
EPA 904.0	Radium-228	1.18 ± 0.592 (1.03) C:74% T:85%	pCi/L		09/29/22 18:18	
Total Radium Calculation	Total Radium	1.26 ± 0.950 (1.76)	pCi/L		09/30/22 14:40	
50326070001	**GAMW-05-091522**					
EPA 903.1	Radium-226	0.225 ± 0.531 (0.984) C:NA T:99%	pCi/L		09/25/22 15:06	
EPA 904.0	Radium-228	0.401 ± 0.406 (0.841) C:66% T:91%	pCi/L		09/30/22 15:23	
Total Radium Calculation	Total Radium	0.626 ± 0.937 (1.83)	pCi/L		10/03/22 12:42	
50326070002	**FB-01-091522**					
EPA 903.1	Radium-226	-0.229 ± 0.396 (1.000) C:NA T:93%	pCi/L		09/25/22 15:06	
EPA 904.0	Radium-228	0.227 ± 0.324 (0.695) C:70% T:91%	pCi/L		09/30/22 15:24	
Total Radium Calculation	Total Radium	0.227 ± 0.720 (1.70)	pCi/L		10/03/22 12:42	

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_WSP
Date: October 04, 2022

General Information:
12 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 532658

1d: Sample Matrix Spike Duplicate recovery is low and outside of the default acceptance criteria for MS recovery. Results reported based on acceptable RPD of the RQS pair.

- GAMW-16-090922 MSD (Lab ID: 50325559003)
  - Radium-226

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_WSP
Date: October 04, 2022

General Information:
12 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_WSP
Date: October 04, 2022

General Information:
10 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-16-090922 **Lab ID: 50325559001** Collected: 09/09/22 13:55 Received: 09/10/22 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.263 ± 0.426 (0.741) C:NA T:93%**	pCi/L	09/20/22 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.112 ± 0.210 (0.463) C:75% T:99%**	pCi/L	09/28/22 15:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.375 ± 0.636 (1.20)**	pCi/L	10/03/22 12:21	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-16-090922 MS **Lab ID: 50325559002** Collected: 09/09/22 13:55 Received: 09/10/22 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**94.25 %REC ± NA (NA) C:NA T:NA**	pCi/L	09/20/22 12:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**94.46 %REC ± NA (NA) C:NA T:NA**	pCi/L	09/28/22 15:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-16-090922 MSD **Lab ID: 50325559003** Collected: 09/09/22 13:55 Received: 09/10/22 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**68.65 %REC 31.44 RPD ± NA (NA) C:NA T:NA**	pCi/L	09/20/22 13:15	13982-63-3	1d
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**102.43 %REC 8.10 RPD ± NA (NA) C:NA T:NA**	pCi/L	09/28/22 15:27	15262-20-1	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GMMW-1-090922 **Lab ID: 50325559004** Collected: 09/09/22 15:25 Received: 09/10/22 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.209 ± 0.493 (0.914) C:NA T:96%**	pCi/L	09/20/22 13:15	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.678 ± 0.356 (0.615) C:73% T:93%**	pCi/L	09/28/22 15:27	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.887 ± 0.849 (1.53)**	pCi/L	10/03/22 12:21	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-14-091222 **Lab ID: 50325664001** Collected: 09/12/22 15:10 Received: 09/13/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0988 ± 0.513 (1.19) C:NA T:90%**	pCi/L	09/23/22 14:45	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.419 ± 0.346 (0.690) C:74% T:91%**	pCi/L	09/28/22 14:43	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.419 ± 0.859 (1.88)**	pCi/L	10/03/22 12:33	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-10-091322 **Lab ID: 50325810001** Collected: 09/13/22 14:20 Received: 09/14/22 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.173 ± 0.416 (1.04) C:NA T:97%**	pCi/L	09/24/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0611 ± 0.407 (0.943) C:69% T:86%**	pCi/L	09/29/22 15:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.0611 ± 0.823 (1.98)**	pCi/L	09/30/22 14:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-12-091322 **Lab ID: 50325810002** Collected: 09/13/22 11:35 Received: 09/14/22 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.385 ± 0.624 (1.09) C:NA T:98%**	pCi/L	09/24/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.898 ± 0.720 (1.46) C:70% T:89%**	pCi/L	09/29/22 15:59	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.28 ± 1.34 (2.55)**	pCi/L	09/30/22 14:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-15-091322 **Lab ID: 50325810003** Collected: 09/13/22 11:15 Received: 09/14/22 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.398 ± 0.519 (0.856) C:NA T:94%**	pCi/L	09/24/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.675 ± 0.670 (1.40) C:74% T:103%**	pCi/L	09/29/22 15:59	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.07 ± 1.19 (2.26)**	pCi/L	09/30/22 14:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GMMW-2-091322 **Lab ID: 50325810004** Collected: 09/13/22 13:10 Received: 09/14/22 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.398 ± 0.470 (0.738) C:NA T:98%**	pCi/L	09/24/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0694 ± 0.413 (0.954) C:71% T:88%**	pCi/L	09/29/22 18:18	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.467 ± 0.883 (1.69)**	pCi/L	09/30/22 14:40	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: FD-01-091322 **Lab ID: 50325810005** Collected: 09/13/22 12:00 Received: 09/14/22 08:50 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0785 ± 0.358 (0.729) C:NA T:95%**	pCi/L	09/24/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.18 ± 0.592 (1.03) C:74% T:85%**	pCi/L	09/29/22 18:18	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.26 ± 0.950 (1.76)**	pCi/L	09/30/22 14:40	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: GAMW-05-091522 **Lab ID: 50326070001** Collected: 09/15/22 10:10 Received: 09/16/22 09:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.225 ± 0.531 (0.984) C:NA T:99%**	pCi/L	09/25/22 15:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.401 ± 0.406 (0.841) C:66% T:91%**	pCi/L	09/30/22 15:23	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.626 ± 0.937 (1.83)**	pCi/L	10/03/22 12:42	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Sample: FB-01-091522 **Lab ID: 50326070002** Collected: 09/15/22 10:20 Received: 09/16/22 09:10 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.229 ± 0.396 (1.000) C:NA T:93%**	pCi/L	09/25/22 15:06	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.227 ± 0.324 (0.695) C:70% T:91%**	pCi/L	09/30/22 15:24	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.227 ± 0.720 (1.70)**	pCi/L	10/03/22 12:42	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533714 | Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 | Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325810001, 50325810002, 50325810003, 50325810004, 50325810005

METHOD BLANK: 2589572 Matrix: Water
Associated Lab Samples: 50325810001, 50325810002, 50325810003, 50325810004, 50325810005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.121 ± 0.290 (0.724) C:NA T:92%	pCi/L	09/24/22 13:21	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533715 | Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 | Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325810001, 50325810002, 50325810003, 50325810004, 50325810005

METHOD BLANK: 2589573 Matrix: Water
Associated Lab Samples: 50325810001, 50325810002, 50325810003, 50325810004, 50325810005

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.265 ± 0.319 (0.673) C:78% T:98%	pCi/L	09/29/22 16:25	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 532658
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325559001, 50325559002, 50325559003, 50325559004

METHOD BLANK: 2583985 Matrix: Water
Associated Lab Samples: 50325559001, 50325559002, 50325559003, 50325559004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.171 ± 0.370 (0.683) C:NA T:94%	pCi/L	09/20/22 13:04	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533722
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50326070001, 50326070002

METHOD BLANK: 2589584 Matrix: Water
Associated Lab Samples: 50326070001, 50326070002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.272 ± 0.342 (0.725) C:72% T:91%	pCi/L	09/30/22 15:21	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533720
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50326070001, 50326070002

METHOD BLANK: 2589583 Matrix: Water
Associated Lab Samples: 50326070001, 50326070002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.260 (0.419) C:NA T:98%	pCi/L	09/25/22 14:35	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 532659
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325559001, 50325559002, 50325559003, 50325559004

METHOD BLANK: 2583988 Matrix: Water
Associated Lab Samples: 50325559001, 50325559002, 50325559003, 50325559004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.627 ± 0.311 (0.523) C:72% T:105%	pCi/L	09/28/22 15:26	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533073
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325664001

METHOD BLANK: 2586466 Matrix: Water
Associated Lab Samples: 50325664001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.246 ± 0.317 (0.675) C:77% T:90%	pCi/L	09/28/22 14:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

QC Batch: 533071
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50325664001

METHOD BLANK: 2586463 Matrix: Water
Associated Lab Samples: 50325664001

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.210 ± 0.320 (0.190) C:NA T:95%	pCi/L	09/23/22 14:20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

1d	Sample Matrix Spike Duplicate recovery is low and outside of the default acceptance criteria for MS recovery. Results reported based on acceptable RPD of the RQS pair.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS Assessment Monitoring
Pace Project No.: 50325559

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50325559001	**GAMW-16-090922**	EPA 903.1	532658		
50325559002	**GAMW-16-090922 MS**	EPA 903.1	532658		
50325559003	**GAMW-16-090922 MSD**	EPA 903.1	532658		
50325559004	**GMMW-1-090922**	EPA 903.1	532658		
50325664001	**GAMW-14-091222**	EPA 903.1	533071		
50325810001	**GAMW-10-091322**	EPA 903.1	533714		
50325810002	**GAMW-12-091322**	EPA 903.1	533714		
50325810003	**GAMW-15-091322**	EPA 903.1	533714		
50325810004	**GMMW-2-091322**	EPA 903.1	533714		
50325810005	**FD-01-091322**	EPA 903.1	533714		
50326070001	**GAMW-05-091522**	EPA 903.1	533720		
50326070002	**FB-01-091522**	EPA 903.1	533720		
50325559001	**GAMW-16-090922**	EPA 904.0	532659		
50325559002	**GAMW-16-090922 MS**	EPA 904.0	532659		
50325559003	**GAMW-16-090922 MSD**	EPA 904.0	532659		
50325559004	**GMMW-1-090922**	EPA 904.0	532659		
50325664001	**GAMW-14-091222**	EPA 904.0	533073		
50325810001	**GAMW-10-091322**	EPA 904.0	533715		
50325810002	**GAMW-12-091322**	EPA 904.0	533715		
50325810003	**GAMW-15-091322**	EPA 904.0	533715		
50325810004	**GMMW-2-091322**	EPA 904.0	533715		
50325810005	**FD-01-091322**	EPA 904.0	533715		
50326070001	**GAMW-05-091522**	EPA 904.0	533722		
50326070002	**FB-01-091522**	EPA 904.0	533722		
50325559001	**GAMW-16-090922**	Total Radium Calculation	536982		
50325559004	**GMMW-1-090922**	Total Radium Calculation	536982		
50325664001	**GAMW-14-091222**	Total Radium Calculation	536986		
50325810001	**GAMW-10-091322**	Total Radium Calculation	536679		
50325810002	**GAMW-12-091322**	Total Radium Calculation	536679		
50325810003	**GAMW-15-091322**	Total Radium Calculation	536679		
50325810004	**GMMW-2-091322**	Total Radium Calculation	536679		
50325810005	**FD-01-091322**	Total Radium Calculation	536679		
50326070001	**GAMW-05-091522**	Total Radium Calculation	536988		
50326070002	**FB-01-091522**	Total Radium Calculation	536988		

WO# : 50325559

50325559

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quest Document

t fields must be completed accurately.

Page : Of

Section A Required Client Information:	Section B Required Project Information:	Invoice Information:	
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U126177	
Address: 801 E 86th Ave	Copy To: thomas_haskins@golder.com,	Company Name: NiSource	
Merrillville, IN 46410	danielle_sylvia@golder.com	Address:	Regulatory Agency
Email: jim_peace@golder.com	Purchase Order #: PO21343	Pace Quote:	
Phone: Fax:	Project Name: MCGS Assessment Monitoring	Pace Project Manager: tina.sayer@pacelabs.com,	State / Location
Requested Due Date: 16 day TAT	Project #: GL191215B022	Pace Profile #: 9047-2	IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium-226	Radium-228	Residual Chlorine (Y/N)	
1	[redacted]																					
2	[redacted]																					
3	[redacted]																					
4	[redacted]																					
5	[redacted]																					
6	GAMW-16 -090922	WT	G			9/9/22	1355		2			2							X	X		MS-01/MSD-01
7	[redacted]																					
8	GMMW-1 -090922	WT	G			9/9/22	1525		2			2							X	X		004
9	[redacted]																					
10	[redacted]																					
11	[redacted]																					
12	[redacted]																					

001/002/003

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
LEVEL 4	[signature] / GOLDER	9/9/22		[signature]						
Radium sub to Pace PA	[signature]			[signature]	9/10/22	0830	1.2	Y	Y	Y

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	R. GUZMAN					
SIGNATURE of SAMPLER:	[signature]	DATE Signed: 9/9/22				

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 09/10/22 1110 JT

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B (C) D E F

4. **Cooler Temperature(s):** 1.5 | 1.2 | | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	X DMP 9/10/22	✓	
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:		Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A ✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 2 of 2 DMP

Sample Container Count

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	VIALS: MeOH (only) / SBS / DI / R	VIALS: DG9H VG9H	VIALS: VOA VIAL HS (>6mm)	VIALS: VG9U	VIALS: DG9U	VIALS: VG9T	AMBER GLASS: AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	PLASTIC: BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	OTHER: CG3H	Syringe Kit			Matrix	Nitric Red HNO3 <2	Sulfuric Yellow H2SO4 <2	Sodium Hydroxide Green NaOH >10	Sodium Hydroxide/ ZnAc Black NaOH/Zn Ac >9
1																																
2																																
3																																
4																																
5																																
6																6												WT				
7																																
8																2												WT				
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	AG1T	1L Na Thiosulfate amber glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	AG1U	1liter unpres amber glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	AG2N	500mL HNO3 amber glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	AG2S	500mL H2SO4 amber glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	AG2U	500mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	AG3S	250mL H2SO4 amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	AG3SF	250mL H2SO4 amb glass-field filtered
VG9U	40mL unpreserved clear vial			AG3U	250mL unpres amber glass
I	40mL w/hexane wipe vial			AG3C	250mL NaOH amber glass
WGKU	8oz unpreserved clear jar				
WGFU	4oz clear soil jar				
JGFU	4oz unpreserved amber wide				
CG3H	250mL clear glass HCl				
BG1H	1L HCl clear glass				
BG1S	1L H2SO4 clear glass				
GN	General				

Plastic

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic		
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic		
BP2C	500mL NaOH plastic		
BP2S	500mL H2SO4 plastic		
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3F	250mL HNO3 plastic-field filtered		
BP3U	250mL unpreserved plastic		
BP3S	250mL H2SO4 plastic		
BP3Z	250mL NaOH, ZnAc plastic		

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

WO# : 50325664

50325664

CHAIN-OF-CUSTODY / Analytica

The Chain-of-Custody is a LEGAL DOCUMENT. All

Pace Analytical
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Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U126177
Address: 801 E 86th Ave	Copy To: thomas_haskins@golder.com,	Company Name: NiSource
Merrillville, IN 46410	danielle_sylvia@golder.com	Address:
Email: jim_peace@golder.com	Purchase Order #: PO21343	Pace Quote:
Phone: Fax:	Project Name: MCGS Assessment Monitoring	Pace Project Manager: tina.sayer@pacelabs.com,
Requested Due Date: 16 day TAT	Project #: 6219215608222	Pace Profile #: 9047-2

Page: Of

Regulatory Agency

State / Location: IN

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Radium-226	Radium-228	Residual Chlorine (Y/N)
1	GAMW-03																				
2	GAMW-10																				
3	GAMW-12																				
4	GAMW-14-09122	WT	G			9/12/22	1510		2			2							XX		001
5	GAMW-15																				
6	GAMW-16																				
7	GAMW-18																				
8	GMMW-1																				
9	GMMW-2																				
10	FD-01																				
11	FB-01																				
12																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
LEVEL 4	Fedex	9/12/22		fedex						
Radium sub to Pace PA				amber Hardin	9/13/22	0900	0.9	Y	Y	Y
							0.8	Y	Y	Y

	TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed: 9/12/22

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 9/13/22 12:20 AH

1. **Courier:** ☒ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☒ Yes ☐ No

(If yes)Seals Intact: ☒ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B (C) D E F

4. **Cooler Temperature(s):** (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

1.2/0.9	1.1/0.8		

5. **Packing Material:** ☒ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☒ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		VIALS						AMBER GLASS							PLASTIC									OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		MeOH (only)																											Red	Yellow	Green	Black
		SBS																													
		DI																													
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																															
2																															
3																															
4																2												WT	✓			
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Analytical Request

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields r

WO# : 50325810

50325810

Section A – Required Client Information:		Section B – Required Project Information:		Section C – Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U126177
Address:	801 E 86th Ave	Copy To:	thomas_haskins@golder.com,	Company Name:	NiSource
	Merrillville, IN 46410		danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO21343	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS Assessment Monitoring	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	16 day TAT	Project #:	GL91215B822	Pace Profile #:	9047-2

Regulatory Agency	
State / Location	IN

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Radium-226	Radium-228	Residual Chlorine (Y/N)	
1	[redacted]																					
2	GAMW-10-09/322	WT	G			9/13/22			2			2							X	X		001
3	GAMW-12-09/322	WT	G			9/13/22			2			2							X	X		002
4	[redacted]																					
5	GAMW-15-09/322	WT	G			9/13/22			2			2							X	X		003
6	[redacted]																					
7	[redacted]																					
8	[redacted]																					
9	GMMW-2-09/322	WT	G			9/13/22			2			2							X	X		004
10	FD-01-09/322	WT	G			9/13/22			2			2							X	X		005
11	[redacted]																					
12																						

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
LEVEL 4	[signature]	9/13/22	1700	FedEx						
Radium sub to Pace PA	FedEx	9-14-22	8:50	R. Chambers	9-14-22	8:50	0.9 / 0.6	y	y	y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	[signature]		
SIGNATURE of SAMPLER:	[signature]	DATE Signed:	9/13/22

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: RC 9-14-22 11:10

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A (B) C D E F
4. **Cooler Temperature(s):** 0.9/0.9 | 0.6/0.6 | | | **(Initial/Corrected)** RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)
5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
   Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle:** (HNO3 (<2)) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form RC 9/14/22	✓	✓	
Short Hold Time Analysis (48 hours or less)? **Analysis:**		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	✓		Present	Absent	N/A
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Custody Signatures Present?	✓		Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Containers Intact?:	✓		Headspace Wisconsin Sulfide?			✓
Sample Label (IDs/Dates/Times) Match COC? Except TCs, which only require sample ID	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Extra labels on Terracore Vials? (soils only)			Trip Blank Present?		✓	
			Trip Blank Custody Seals?:			✓

COMMENTS: Did not ph Rad samples. RC 9-14-22

Add times per D. Sylvia email: GAMW-10 1420

GAMW-12 1135 9/15/22tms

GAMW-15 1115

GMMW-2 1310

FD-01 1200

COC PAGE \ of \

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS					AMBER GLASS							PLASTIC										OTHER				Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																													Red	Yellow	Green	Black
		DI																																
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit					HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																																		
2																1-2													WT					
3																													1					
4																																		
5																2													WT					
6																																		
7																																		
8																																		
9																1-2													WT					
10																													1					
11																																		
12																																		

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

WO# : 50326070

50326070

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : Of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U126177
Address:	801 E 86th Ave	Copy To:	thomas_haskins@golder.com,	Company Name:	NiSource
	Merrillville, IN 46410		danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO21343	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS Assessment Monitoring	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	16 day TAT	Project #:	6119215G922	Pace Profile #:	9047-2

Regulatory Agency	
State / Location	
	IN

MATRIX	CODE
Drinking Water	DW
Water	WT
Waste Water	WW
Product	P
Soil/Solid	SL
Oil	OL
Wipe	WP
Air	AR
Other	OT
Tissue	TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Requested Analysis Filtered (Y/N): Radium-226	Radium-228	Residual Chlorine (Y/N)
1	GAMW-05 -091522	WT	G			9/15/22	1010		2			2							X	X	
2	[redacted]																				
3	[redacted]																				
4	[redacted]																				
5	[redacted]																				
6	[redacted]																				
7	GAMW-18																				
8	[redacted]																				
9	[redacted]																				
10	FD-01																				
11	FB-01 -091522	WT	G			9/15/22	1020		2			2							X	X	
12	[redacted]																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
LEVEL 4	Fed Ex	9/15/22	1200	Fedy Ex						
Radium sub to Pace PA				Jeff Frain	9/16/22	0910	0.4	Y	Y	Y

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	R. GILMAN
SIGNATURE of SAMPLER:	
DATE Signed:	9/15/22

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 09/16/22 1320 JT

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 (A) B C D E F

4. **Cooler Temperature(s):** 0.5 | 0.4 | | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle:** ~~HNO3 (<2)~~ **H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form			✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:		Residual Chlorine Check (SVOC 625 Pest/PCB 608)	Present	Absent	N/A ✓
Rush TAT Requested (4 days or less):	✓		Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?			Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS						AMBER GLASS							PLASTIC										OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																													Red	Yellow	Green	Black
COC Line Item	WGFU	DI	R	DG9H	VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																		2												WT				
2																																		
3																																		
4																																		
5																																		
6																																		
7																																		
8																																		
9																																		
10																																		
11																		2												WT				
12																																		

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic		
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic		
BP2C	500mL NaOH plastic		
BP2S	500mL H2SO4 plastic		
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3F	250mL HNO3 plastic-field filtered		
BP3U	250mL unpreserved plastic		
BP3S	250mL H2SO4 plastic		
BP3Z	250mL NaOH, ZnAc plastic		

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

APPENDIX B

April 2023 Analytical Laboratory Reports

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

June 21, 2023

Mr. Tom Haskins
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS CCR Assessment
Pace Project No.: 50340934

Dear Mr. Haskins:

Enclosed are the analytical results for sample(s) received by the laboratory between March 31, 2023 and April 11, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

Revised report replaces report dated 04/25/23. Sample ID for sample GAMW-02-040723 was adjusted to GMMW-02-040723.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Gabe Dixon, WSP
Ms. Sarah Gilles, WSP Golder
Ms. Danielle Sylvia, WSP Golder

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Pace Analytical Services Indianapolis
7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Foreign Soil Permit #: 525-23-13-23119
USDA Compliance Agreement #: IN-SL-22-001

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50340934001	**PC-MW-110-033023**	Water	03/30/23 11:45	03/31/23 09:15
50340934002	**PC-MW-113-033023**	Water	03/30/23 12:55	03/31/23 09:15
50340934003	**PC-MW-114-033023**	Water	03/30/23 14:05	03/31/23 09:15
50340934004	**PC-MW-115-033023**	Water	03/30/23 15:25	03/31/23 09:15
50341631001	**GAMW-10-040723**	Water	04/07/23 10:15	04/10/23 09:45
50341631002	**GMMW-2-040723**	Water	04/07/23 11:55	04/10/23 09:45
50341709001	**GAMW-16-041023**	Water	04/10/23 11:50	04/11/23 08:45
50341709002	**GMMW-1-041023**	Water	04/10/23 13:50	04/11/23 08:45
50341709003	**FD-01-041023**	Water	04/10/23 12:00	04/11/23 08:45
50341709004	**FB-01-041023**	Water	04/10/23 14:00	04/11/23 08:45

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50340934001	**PC-MW-110-033023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS, JPK	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50340934002	**PC-MW-113-033023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS, JPK	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50340934003	**PC-MW-114-033023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS, JPK	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50340934004	**PC-MW-115-033023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	DJS, JPK	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341631001	**GAMW-10-040723**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341631002	**GMMW-2-040723**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341709001	**GAMW-16-041023**	EPA 9056	ADM	3	PASI-I

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7726 Moller Road
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SAMPLE ANALYTE COUNT

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341709002	**GMMW-1-041023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341709003	**FD-01-041023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I
50341709004	**FB-01-041023**	EPA 9056	ADM	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	EAE	1	PASI-I
		SM 2540C	TRK	1	PASI-I
		SM 4500-H+B	BMS	1	PASI-I

PASI-I = Pace Analytical Services - Indianapolis

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SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50340934001	**PC-MW-110-033023**					
EPA 9056	Chloride	359	mg/L	25.0	04/02/23 07:25	
EPA 9056	Fluoride	0.84	mg/L	0.050	04/02/23 06:55	
EPA 9056	Sulfate	43.3	mg/L	2.5	04/02/23 07:10	
EPA 6010	Boron	0.19	mg/L	0.10	04/11/23 22:56	
EPA 6010	Calcium	89.6	mg/L	1.0	04/11/23 22:56	
EPA 6010	Lithium	0.021	mg/L	0.0080	04/12/23 13:17	
EPA 6010	Total Hardness by 2340B	342	mg/L	10.0	04/11/23 22:56	
EPA 6020	Antimony	0.000043J	mg/L	0.0010	04/05/23 19:00	
EPA 6020	Arsenic	0.0070	mg/L	0.0010	04/05/23 19:00	
EPA 6020	Barium	0.36	mg/L	0.0050	04/06/23 20:55	
EPA 6020	Beryllium	0.000031J	mg/L	0.00020	04/05/23 19:00	
EPA 6020	Chromium	0.00075J	mg/L	0.0020	04/05/23 19:00	
EPA 6020	Cobalt	0.00020J	mg/L	0.0010	04/05/23 19:00	
EPA 6020	Lead	0.000084J	mg/L	0.0010	04/05/23 19:00	
EPA 6020	Molybdenum	0.0043	mg/L	0.0010	04/05/23 19:00	
SM 2540C	Total Dissolved Solids	948	mg/L	20.0	04/03/23 15:53	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	04/06/23 13:53	H3
50340934002	**PC-MW-113-033023**					
EPA 9056	Chloride	126	mg/L	25.0	04/02/23 08:10	
EPA 9056	Fluoride	1.1	mg/L	0.050	04/02/23 07:40	
EPA 9056	Sulfate	147	mg/L	2.5	04/02/23 07:55	
EPA 6010	Boron	0.22	mg/L	0.10	04/11/23 22:59	
EPA 6010	Calcium	71.2	mg/L	1.0	04/11/23 22:59	
EPA 6010	Lithium	0.018	mg/L	0.0080	04/12/23 13:20	
EPA 6010	Total Hardness by 2340B	280	mg/L	10.0	04/11/23 22:59	
EPA 6020	Antimony	0.00035J	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Arsenic	0.00086J	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Barium	0.029	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Cadmium	0.00043	mg/L	0.00020	04/05/23 18:30	
EPA 6020	Chromium	0.00040J	mg/L	0.0020	04/05/23 18:30	
EPA 6020	Cobalt	0.0020	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Lead	0.00010J	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Molybdenum	0.00056J	mg/L	0.0010	04/05/23 18:30	
EPA 6020	Selenium	0.013	mg/L	0.0010	04/05/23 18:30	
SM 2540C	Total Dissolved Solids	648	mg/L	10.0	04/03/23 15:53	
SM 4500-H+B	pH at 25 Degrees C	6.9	Std. Units	0.10	04/06/23 13:55	H3
50340934003	**PC-MW-114-033023**					
EPA 9056	Chloride	134	mg/L	25.0	04/02/23 09:25	
EPA 9056	Fluoride	0.31	mg/L	0.050	04/02/23 08:55	
EPA 9056	Sulfate	167	mg/L	2.5	04/02/23 09:10	
EPA 6010	Boron	0.23	mg/L	0.10	04/11/23 23:01	
EPA 6010	Calcium	91.1	mg/L	1.0	04/11/23 23:01	
EPA 6010	Lithium	0.0091	mg/L	0.0080	04/12/23 13:22	
EPA 6010	Total Hardness by 2340B	318	mg/L	10.0	04/11/23 23:01	
EPA 6020	Antimony	0.00026J	mg/L	0.0010	04/05/23 18:37	
EPA 6020	Arsenic	0.00022J	mg/L	0.0010	04/05/23 18:37	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50340934003	**PC-MW-114-033023**					
EPA 6020	Barium	0.035	mg/L	0.0010	04/05/23 18:37	
EPA 6020	Cadmium	0.000075J	mg/L	0.00020	04/05/23 18:37	
EPA 6020	Chromium	0.00027J	mg/L	0.0020	04/05/23 18:37	
EPA 6020	Cobalt	0.0013	mg/L	0.0010	04/05/23 18:37	
EPA 6020	Molybdenum	0.0014	mg/L	0.0010	04/05/23 18:37	
EPA 6020	Selenium	0.0031	mg/L	0.0010	04/05/23 18:37	
SM 2540C	Total Dissolved Solids	688	mg/L	10.0	04/03/23 15:54	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	04/06/23 13:56	H3
50340934004	**PC-MW-115-033023**					
EPA 9056	Chloride	322	mg/L	25.0	04/02/23 10:10	
EPA 9056	Fluoride	0.65	mg/L	0.050	04/02/23 09:40	
EPA 9056	Sulfate	136	mg/L	2.5	04/02/23 09:55	
EPA 6010	Boron	0.18	mg/L	0.10	04/11/23 23:03	
EPA 6010	Calcium	111	mg/L	1.0	04/11/23 23:03	
EPA 6010	Lithium	0.010	mg/L	0.0080	04/12/23 13:24	
EPA 6010	Total Hardness by 2340B	386	mg/L	10.0	04/11/23 23:03	
EPA 6020	Antimony	0.0035	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Arsenic	0.0044	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Barium	0.040	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Cadmium	0.000052J	mg/L	0.00020	04/05/23 18:34	
EPA 6020	Chromium	0.0013J	mg/L	0.0020	04/05/23 18:34	
EPA 6020	Cobalt	0.00058J	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Lead	0.000077J	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Molybdenum	0.0028	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Selenium	0.0049	mg/L	0.0010	04/05/23 18:34	
EPA 6020	Thallium	0.000049J	mg/L	0.0010	04/05/23 18:34	
SM 2540C	Total Dissolved Solids	992	mg/L	20.0	04/03/23 15:54	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	04/06/23 13:57	H3
50341631001	**GAMW-10-040723**					
EPA 9056	Chloride	89.0	mg/L	2.5	04/20/23 02:37	
EPA 9056	Fluoride	0.49	mg/L	0.050	04/20/23 02:22	
EPA 9056	Sulfate	266	mg/L	2.5	04/20/23 02:37	
EPA 6010	Boron	0.44	mg/L	0.10	04/20/23 12:36	
EPA 6010	Calcium	114	mg/L	1.0	04/20/23 12:36	
EPA 6010	Lithium	0.027	mg/L	0.0080	04/20/23 12:36	
EPA 6010	Total Hardness by 2340B	402	mg/L	10.0	04/20/23 12:36	
EPA 6020	Antimony	0.000049J	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Arsenic	0.0092	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Barium	0.036	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Cadmium	0.000015J	mg/L	0.00020	04/14/23 18:55	
EPA 6020	Chromium	0.00017J	mg/L	0.0020	04/14/23 18:55	
EPA 6020	Cobalt	0.00011J	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Lead	0.000036J	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Molybdenum	0.068	mg/L	0.0010	04/14/23 18:55	
EPA 6020	Selenium	0.00024J	mg/L	0.0010	04/14/23 18:55	
SM 2540C	Total Dissolved Solids	658	mg/L	10.0	04/12/23 16:10	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50341631001	**GAMW-10-040723**					
SM 4500-H+B	pH at 25 Degrees C	7.7	Std. Units	0.10	04/25/23 10:03	H3
50341631002	**GMMW-2-040723**					
EPA 9056	Chloride	83.5	mg/L	2.5	04/20/23 03:08	
EPA 9056	Fluoride	0.60	mg/L	0.050	04/20/23 02:53	
EPA 9056	Sulfate	194	mg/L	2.5	04/20/23 03:08	
EPA 6010	Boron	0.42	mg/L	0.10	04/20/23 12:38	
EPA 6010	Calcium	96.5	mg/L	1.0	04/20/23 12:38	
EPA 6010	Lithium	0.018	mg/L	0.0080	04/20/23 12:38	
EPA 6010	Total Hardness by 2340B	335	mg/L	10.0	04/20/23 12:38	
EPA 6020	Antimony	0.00078J	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Arsenic	0.0087	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Barium	0.076	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Cadmium	0.00089	mg/L	0.00020	04/14/23 18:59	
EPA 6020	Chromium	0.00048J	mg/L	0.0020	04/14/23 18:59	
EPA 6020	Cobalt	0.000098J	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Molybdenum	0.057	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Selenium	0.0028	mg/L	0.0010	04/14/23 18:59	
EPA 6020	Thallium	0.0010J	mg/L	0.0010	04/14/23 18:59	
SM 2540C	Total Dissolved Solids	567	mg/L	10.0	04/12/23 16:10	
SM 4500-H+B	pH at 25 Degrees C	7.9	Std. Units	0.10	04/25/23 10:06	H3
50341709001	**GAMW-16-041023**					
EPA 9056	Chloride	10.3	mg/L	0.25	04/20/23 09:51	
EPA 9056	Fluoride	0.67	mg/L	0.050	04/20/23 09:51	
EPA 9056	Sulfate	144	mg/L	2.5	04/20/23 10:06	
EPA 6010	Boron	1.0	mg/L	0.10	04/20/23 12:56	
EPA 6010	Calcium	88.1	mg/L	1.0	04/20/23 12:56	
EPA 6010	Lithium	0.051	mg/L	0.0080	04/20/23 12:56	
EPA 6010	Total Hardness by 2340B	297	mg/L	10.0	04/20/23 12:56	
EPA 6020	Antimony	0.0069	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Arsenic	0.032	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Barium	0.017	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Cadmium	0.000028J	mg/L	0.00020	04/14/23 19:32	
EPA 6020	Chromium	0.00056J	mg/L	0.0020	04/14/23 19:32	
EPA 6020	Cobalt	0.00012J	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Lead	0.000060J	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Molybdenum	0.41	mg/L	0.0040	04/17/23 17:01	
EPA 6020	Selenium	0.14	mg/L	0.0010	04/14/23 19:32	
EPA 6020	Thallium	0.0014	mg/L	0.0010	04/14/23 19:32	
SM 2540C	Total Dissolved Solids	393	mg/L	10.0	04/12/23 16:16	
SM 4500-H+B	pH at 25 Degrees C	8.5	Std. Units	0.10	04/25/23 10:11	H3
50341709002	**GMMW-1-041023**					
EPA 9056	Chloride	23.8	mg/L	2.5	04/20/23 10:37	
EPA 9056	Fluoride	0.21	mg/L	0.050	04/20/23 10:22	
EPA 9056	Sulfate	193	mg/L	2.5	04/20/23 10:37	
EPA 6010	Boron	1.6	mg/L	0.10	04/20/23 12:59	
EPA 6010	Calcium	88.2	mg/L	1.0	04/20/23 12:59	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50341709002	**GMMW-1-041023**					
EPA 6010	Lithium	0.027	mg/L	0.0080	04/20/23 12:59	
EPA 6010	Total Hardness by 2340B	268	mg/L	10.0	04/20/23 12:59	
EPA 6020	Antimony	0.0041	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Arsenic	0.021	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Barium	0.028	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Cadmium	0.000034J	mg/L	0.00020	04/14/23 19:35	
EPA 6020	Chromium	0.0014J	mg/L	0.0020	04/14/23 19:35	
EPA 6020	Cobalt	0.00011J	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Lead	0.000056J	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Molybdenum	0.14	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Selenium	0.33	mg/L	0.0010	04/14/23 19:35	
EPA 6020	Thallium	0.0019	mg/L	0.0010	04/14/23 19:35	
SM 2540C	Total Dissolved Solids	465	mg/L	10.0	04/12/23 16:16	
SM 4500-H+B	pH at 25 Degrees C	8.3	Std. Units	0.10	04/25/23 10:26	H3
50341709003	**FD-01-041023**					
EPA 9056	Chloride	10.6	mg/L	0.25	04/20/23 11:24	
EPA 9056	Fluoride	0.66	mg/L	0.050	04/20/23 11:24	
EPA 9056	Sulfate	142	mg/L	2.5	04/20/23 11:39	
EPA 6010	Boron	1.0	mg/L	0.10	04/20/23 13:01	
EPA 6010	Calcium	88.3	mg/L	1.0	04/20/23 13:01	
EPA 6010	Lithium	0.054	mg/L	0.0080	04/20/23 13:01	
EPA 6010	Total Hardness by 2340B	298	mg/L	10.0	04/20/23 13:01	
EPA 6020	Antimony	0.0069	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Arsenic	0.032	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Barium	0.017	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Cadmium	0.000038J	mg/L	0.00020	04/14/23 19:38	
EPA 6020	Chromium	0.00061J	mg/L	0.0020	04/14/23 19:38	
EPA 6020	Cobalt	0.00012J	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Lead	0.000056J	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Molybdenum	0.42	mg/L	0.0040	04/17/23 17:05	
EPA 6020	Selenium	0.14	mg/L	0.0010	04/14/23 19:38	
EPA 6020	Thallium	0.0013	mg/L	0.0010	04/14/23 19:38	
SM 2540C	Total Dissolved Solids	391	mg/L	10.0	04/12/23 16:16	
SM 4500-H+B	pH at 25 Degrees C	8.5	Std. Units	0.10	04/25/23 10:12	H3
50341709004	**FB-01-041023**					
EPA 6020	Barium	0.0026	mg/L	0.0010	04/14/23 19:42	C0
EPA 6020	Chromium	0.00015J	mg/L	0.0020	04/14/23 19:42	
EPA 6020	Lead	0.000038J	mg/L	0.0010	04/14/23 19:42	
SM 4500-H+B	pH at 25 Degrees C	6.3	Std. Units	0.10	04/25/23 10:28	H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 727562

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50341631002

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 3338562)
  - Sulfate
- MSD (Lab ID: 3338563)
  - Sulfate

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 728516

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50341609009,50341631002

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3343185)
  - Calcium
- MS (Lab ID: 3343187)
  - Calcium

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 727458

C0: Result confirmed by second analysis.

- FB-01-041023 (Lab ID: 50341709004)
  - Barium

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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 727612

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

- FB-01-041023 (Lab ID: 50341709004)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-041023 (Lab ID: 50341709004)
- FD-01-041023 (Lab ID: 50341709003)
- GAMW-10-040723 (Lab ID: 50341631001)
- GAMW-16-041023 (Lab ID: 50341709001)
- GMMW-1-041023 (Lab ID: 50341709002)
- GMMW-2-040723 (Lab ID: 50341631002)
- PC-MW-110-033023 (Lab ID: 50340934001)
- PC-MW-113-033023 (Lab ID: 50340934002)
- PC-MW-114-033023 (Lab ID: 50340934003)
- PC-MW-115-033023 (Lab ID: 50340934004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: PC-MW-110-033023 **Lab ID: 50340934001** Collected: 03/30/23 11:45 Received: 03/31/23 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**359**	mg/L	25.0	6.7	100		04/02/23 07:25	16887-00-6	
Fluoride	**0.84**	mg/L	0.050	0.017	1		04/02/23 06:55	16984-48-8	
Sulfate	**43.3**	mg/L	2.5	0.85	10		04/02/23 07:10	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.19**	mg/L	0.10	0.038	1	04/11/23 14:03	04/11/23 22:56	7440-42-8	
Calcium	**89.6**	mg/L	1.0	0.16	1	04/11/23 14:03	04/11/23 22:56	7440-70-2	
Lithium	**0.021**	mg/L	0.0080	0.0062	1	04/11/23 14:03	04/12/23 13:17	7439-93-2	
Total Hardness by 2340B	**342**	mg/L	10.0	10.0	1	04/11/23 14:03	04/11/23 22:56		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.000043J**	mg/L	0.0010	0.000036	1	04/05/23 07:00	04/05/23 19:00	7440-36-0	
Arsenic	**0.0070**	mg/L	0.0010	0.000053	1	04/05/23 07:00	04/05/23 19:00	7440-38-2	
Barium	**0.36**	mg/L	0.0050	0.00026	5	04/05/23 07:00	04/06/23 20:55	7440-39-3	
Beryllium	**0.000031J**	mg/L	0.00020	0.000028	1	04/05/23 07:00	04/05/23 19:00	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.0000090	1	04/05/23 07:00	04/05/23 19:00	7440-43-9	
Chromium	**0.00075J**	mg/L	0.0020	0.00013	1	04/05/23 07:00	04/05/23 19:00	7440-47-3	
Cobalt	**0.00020J**	mg/L	0.0010	0.000032	1	04/05/23 07:00	04/05/23 19:00	7440-48-4	
Lead	**0.000084J**	mg/L	0.0010	0.000034	1	04/05/23 07:00	04/05/23 19:00	7439-92-1	
Molybdenum	**0.0043**	mg/L	0.0010	0.000048	1	04/05/23 07:00	04/05/23 19:00	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00023	1	04/05/23 07:00	04/05/23 19:00	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000033	1	04/05/23 07:00	04/05/23 19:00	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/10/23 18:29	04/11/23 17:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**948**	mg/L	20.0	20.0	1		04/03/23 15:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		04/06/23 13:53		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: PC-MW-113-033023 **Lab ID: 50340934002** Collected: 03/30/23 12:55 Received: 03/31/23 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**126**	mg/L	25.0	6.7	100		04/02/23 08:10	16887-00-6	
Fluoride	**1.1**	mg/L	0.050	0.017	1		04/02/23 07:40	16984-48-8	
Sulfate	**147**	mg/L	2.5	0.85	10		04/02/23 07:55	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.22**	mg/L	0.10	0.038	1	04/11/23 14:03	04/11/23 22:59	7440-42-8	
Calcium	**71.2**	mg/L	1.0	0.16	1	04/11/23 14:03	04/11/23 22:59	7440-70-2	
Lithium	**0.018**	mg/L	0.0080	0.0062	1	04/11/23 14:03	04/12/23 13:20	7439-93-2	
Total Hardness by 2340B	**280**	mg/L	10.0	10.0	1	04/11/23 14:03	04/11/23 22:59		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00035J**	mg/L	0.0010	0.000036	1	04/05/23 07:00	04/05/23 18:30	7440-36-0	
Arsenic	**0.00086J**	mg/L	0.0010	0.000053	1	04/05/23 07:00	04/05/23 18:30	7440-38-2	
Barium	**0.029**	mg/L	0.0010	0.000051	1	04/05/23 07:00	04/05/23 18:30	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/05/23 07:00	04/05/23 18:30	7440-41-7	
Cadmium	**0.00043**	mg/L	0.00020	0.0000090	1	04/05/23 07:00	04/05/23 18:30	7440-43-9	
Chromium	**0.00040J**	mg/L	0.0020	0.00013	1	04/05/23 07:00	04/05/23 18:30	7440-47-3	
Cobalt	**0.0020**	mg/L	0.0010	0.000032	1	04/05/23 07:00	04/05/23 18:30	7440-48-4	
Lead	**0.00010J**	mg/L	0.0010	0.000034	1	04/05/23 07:00	04/05/23 18:30	7439-92-1	
Molybdenum	**0.00056J**	mg/L	0.0010	0.000048	1	04/05/23 07:00	04/05/23 18:30	7439-98-7	
Selenium	**0.013**	mg/L	0.0010	0.00023	1	04/05/23 07:00	04/05/23 18:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000033	1	04/05/23 07:00	04/05/23 18:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/10/23 18:29	04/11/23 17:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**648**	mg/L	10.0	10.0	1		04/03/23 15:53		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**6.9**	Std. Units	0.10	0.10	1		04/06/23 13:55		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: PC-MW-114-033023 **Lab ID: 50340934003** Collected: 03/30/23 14:05 Received: 03/31/23 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**134**	mg/L	25.0	6.7	100		04/02/23 09:25	16887-00-6	
Fluoride	**0.31**	mg/L	0.050	0.017	1		04/02/23 08:55	16984-48-8	
Sulfate	**167**	mg/L	2.5	0.85	10		04/02/23 09:10	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 25 mL Final Volume/Weight: 25 mL Pace Analytical Services - Indianapolis								
Boron	**0.23**	mg/L	0.10	0.038	1	04/11/23 14:03	04/11/23 23:01	7440-42-8	
Calcium	**91.1**	mg/L	1.0	0.16	1	04/11/23 14:03	04/11/23 23:01	7440-70-2	
Lithium	**0.0091**	mg/L	0.0080	0.0062	1	04/11/23 14:03	04/12/23 13:22	7439-93-2	
Total Hardness by 2340B	**318**	mg/L	10.0	10.0	1	04/11/23 14:03	04/11/23 23:01		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00026J**	mg/L	0.0010	0.000036	1	04/05/23 07:00	04/05/23 18:37	7440-36-0	
Arsenic	**0.00022J**	mg/L	0.0010	0.000053	1	04/05/23 07:00	04/05/23 18:37	7440-38-2	
Barium	**0.035**	mg/L	0.0010	0.000051	1	04/05/23 07:00	04/05/23 18:37	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/05/23 07:00	04/05/23 18:37	7440-41-7	
Cadmium	**0.000075J**	mg/L	0.00020	0.0000090	1	04/05/23 07:00	04/05/23 18:37	7440-43-9	
Chromium	**0.00027J**	mg/L	0.0020	0.00013	1	04/05/23 07:00	04/05/23 18:37	7440-47-3	
Cobalt	**0.0013**	mg/L	0.0010	0.000032	1	04/05/23 07:00	04/05/23 18:37	7440-48-4	
Lead	ND	mg/L	0.0010	0.000034	1	04/05/23 07:00	04/05/23 18:37	7439-92-1	
Molybdenum	**0.0014**	mg/L	0.0010	0.000048	1	04/05/23 07:00	04/05/23 18:37	7439-98-7	
Selenium	**0.0031**	mg/L	0.0010	0.00023	1	04/05/23 07:00	04/05/23 18:37	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000033	1	04/05/23 07:00	04/05/23 18:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/10/23 18:29	04/11/23 17:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**688**	mg/L	10.0	10.0	1		04/03/23 15:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		04/06/23 13:56		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: PC-MW-115-033023 **Lab ID: 50340934004** Collected: 03/30/23 15:25 Received: 03/31/23 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**322**	mg/L	25.0	6.7	100		04/02/23 10:10	16887-00-6	
Fluoride	**0.65**	mg/L	0.050	0.017	1		04/02/23 09:40	16984-48-8	
Sulfate	**136**	mg/L	2.5	0.85	10		04/02/23 09:55	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.18**	mg/L	0.10	0.038	1	04/11/23 14:03	04/11/23 23:03	7440-42-8	
Calcium	**111**	mg/L	1.0	0.16	1	04/11/23 14:03	04/11/23 23:03	7440-70-2	
Lithium	**0.010**	mg/L	0.0080	0.0062	1	04/11/23 14:03	04/12/23 13:24	7439-93-2	
Total Hardness by 2340B	**386**	mg/L	10.0	10.0	1	04/11/23 14:03	04/11/23 23:03		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0035**	mg/L	0.0010	0.000036	1	04/05/23 07:00	04/05/23 18:34	7440-36-0	
Arsenic	**0.0044**	mg/L	0.0010	0.000053	1	04/05/23 07:00	04/05/23 18:34	7440-38-2	
Barium	**0.040**	mg/L	0.0010	0.000051	1	04/05/23 07:00	04/05/23 18:34	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/05/23 07:00	04/05/23 18:34	7440-41-7	
Cadmium	**0.000052J**	mg/L	0.00020	0.0000090	1	04/05/23 07:00	04/05/23 18:34	7440-43-9	
Chromium	**0.0013J**	mg/L	0.0020	0.00013	1	04/05/23 07:00	04/05/23 18:34	7440-47-3	
Cobalt	**0.00058J**	mg/L	0.0010	0.000032	1	04/05/23 07:00	04/05/23 18:34	7440-48-4	
Lead	**0.000077J**	mg/L	0.0010	0.000034	1	04/05/23 07:00	04/05/23 18:34	7439-92-1	
Molybdenum	**0.0028**	mg/L	0.0010	0.000048	1	04/05/23 07:00	04/05/23 18:34	7439-98-7	
Selenium	**0.0049**	mg/L	0.0010	0.00023	1	04/05/23 07:00	04/05/23 18:34	7782-49-2	
Thallium	**0.000049J**	mg/L	0.0010	0.000033	1	04/05/23 07:00	04/05/23 18:34	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/10/23 18:29	04/11/23 17:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**992**	mg/L	20.0	20.0	1		04/03/23 15:54		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		04/06/23 13:57		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: GAMW-10-040723 **Lab ID: 50341631001** Collected: 04/07/23 10:15 Received: 04/10/23 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**89.0**	mg/L	2.5	0.67	10		04/20/23 02:37	16887-00-6	
Fluoride	**0.49**	mg/L	0.050	0.017	1		04/20/23 02:22	16984-48-8	
Sulfate	**266**	mg/L	2.5	0.85	10		04/20/23 02:37	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.44**	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 12:36	7440-42-8	
Calcium	**114**	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 12:36	7440-70-2	
Lithium	**0.027**	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 12:36	7439-93-2	
Total Hardness by 2340B	**402**	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 12:36		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.000049J**	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 18:55	7440-36-0	
Arsenic	**0.0092**	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 18:55	7440-38-2	
Barium	**0.036**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 18:55	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 18:55	7440-41-7	
Cadmium	**0.000015J**	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 18:55	7440-43-9	
Chromium	**0.00017J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 18:55	7440-47-3	
Cobalt	**0.00011J**	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 18:55	7440-48-4	
Lead	**0.000036J**	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 18:55	7439-92-1	
Molybdenum	**0.068**	mg/L	0.0010	0.000048	1	04/13/23 07:02	04/14/23 18:55	7439-98-7	
Selenium	**0.00024J**	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 18:55	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 18:55	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**658**	mg/L	10.0	10.0	1		04/12/23 16:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.7**	Std. Units	0.10	0.10	1		04/25/23 10:03		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: GMMW-2-040723 **Lab ID: 50341631002** Collected: 04/07/23 11:55 Received: 04/10/23 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**83.5**	mg/L	2.5	0.67	10		04/20/23 03:08	16887-00-6	
Fluoride	**0.60**	mg/L	0.050	0.017	1		04/20/23 02:53	16984-48-8	
Sulfate	**194**	mg/L	2.5	0.85	10		04/20/23 03:08	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.42**	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 12:38	7440-42-8	
Calcium	**96.5**	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 12:38	7440-70-2	
Lithium	**0.018**	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 12:38	7439-93-2	
Total Hardness by 2340B	**335**	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 12:38		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00078J**	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 18:59	7440-36-0	
Arsenic	**0.0087**	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 18:59	7440-38-2	
Barium	**0.076**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 18:59	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 18:59	7440-41-7	
Cadmium	**0.00089**	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 18:59	7440-43-9	
Chromium	**0.00048J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 18:59	7440-47-3	
Cobalt	**0.000098J**	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 18:59	7440-48-4	
Lead	ND	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 18:59	7439-92-1	
Molybdenum	**0.057**	mg/L	0.0010	0.000048	1	04/13/23 07:02	04/14/23 18:59	7439-98-7	
Selenium	**0.0028**	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 18:59	7782-49-2	
Thallium	**0.0010J**	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 18:59	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:31	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**567**	mg/L	10.0	10.0	1		04/12/23 16:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.9**	Std. Units	0.10	0.10	1		04/25/23 10:06		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: GAMW-16-041023 **Lab ID: 50341709001** Collected: 04/10/23 11:50 Received: 04/11/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**10.3**	mg/L	0.25	0.067	1		04/20/23 09:51	16887-00-6	
Fluoride	**0.67**	mg/L	0.050	0.017	1		04/20/23 09:51	16984-48-8	
Sulfate	**144**	mg/L	2.5	0.85	10		04/20/23 10:06	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.0**	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 12:56	7440-42-8	
Calcium	**88.1**	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 12:56	7440-70-2	
Lithium	**0.051**	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 12:56	7439-93-2	
Total Hardness by 2340B	**297**	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 12:56		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0069**	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 19:32	7440-36-0	
Arsenic	**0.032**	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 19:32	7440-38-2	
Barium	**0.017**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 19:32	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 19:32	7440-41-7	
Cadmium	**0.000028J**	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 19:32	7440-43-9	
Chromium	**0.00056J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 19:32	7440-47-3	
Cobalt	**0.00012J**	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 19:32	7440-48-4	
Lead	**0.000060J**	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 19:32	7439-92-1	
Molybdenum	**0.41**	mg/L	0.0040	0.00019	4	04/13/23 07:02	04/17/23 17:01	7439-98-7	
Selenium	**0.14**	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 19:32	7782-49-2	
Thallium	**0.0014**	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 19:32	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:46	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**393**	mg/L	10.0	10.0	1		04/12/23 16:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.10	1		04/25/23 10:11		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: GMMW-1-041023 **Lab ID: 50341709002** Collected: 04/10/23 13:50 Received: 04/11/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**23.8**	mg/L	2.5	0.67	10		04/20/23 10:37	16887-00-6	
Fluoride	**0.21**	mg/L	0.050	0.017	1		04/20/23 10:22	16984-48-8	
Sulfate	**193**	mg/L	2.5	0.85	10		04/20/23 10:37	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.6**	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 12:59	7440-42-8	
Calcium	**88.2**	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 12:59	7440-70-2	
Lithium	**0.027**	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 12:59	7439-93-2	
Total Hardness by 2340B	**268**	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 12:59		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0041**	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 19:35	7440-36-0	
Arsenic	**0.021**	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 19:35	7440-38-2	
Barium	**0.028**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 19:35	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 19:35	7440-41-7	
Cadmium	**0.000034J**	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 19:35	7440-43-9	
Chromium	**0.0014J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 19:35	7440-47-3	
Cobalt	**0.00011J**	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 19:35	7440-48-4	
Lead	**0.000056J**	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 19:35	7439-92-1	
Molybdenum	**0.14**	mg/L	0.0010	0.000048	1	04/13/23 07:02	04/14/23 19:35	7439-98-7	
Selenium	**0.33**	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 19:35	7782-49-2	
Thallium	**0.0019**	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 19:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:48	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**465**	mg/L	10.0	10.0	1		04/12/23 16:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.3**	Std. Units	0.10	0.10	1		04/25/23 10:26		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: FD-01-041023 **Lab ID: 50341709003** Collected: 04/10/23 12:00 Received: 04/11/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**10.6**	mg/L	0.25	0.067	1		04/20/23 11:24	16887-00-6	
Fluoride	**0.66**	mg/L	0.050	0.017	1		04/20/23 11:24	16984-48-8	
Sulfate	**142**	mg/L	2.5	0.85	10		04/20/23 11:39	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**1.0**	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 13:01	7440-42-8	
Calcium	**88.3**	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 13:01	7440-70-2	
Lithium	**0.054**	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 13:01	7439-93-2	
Total Hardness by 2340B	**298**	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 13:01		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0069**	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 19:38	7440-36-0	
Arsenic	**0.032**	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 19:38	7440-38-2	
Barium	**0.017**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 19:38	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 19:38	7440-41-7	
Cadmium	**0.000038J**	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 19:38	7440-43-9	
Chromium	**0.00061J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 19:38	7440-47-3	
Cobalt	**0.00012J**	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 19:38	7440-48-4	
Lead	**0.000056J**	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 19:38	7439-92-1	
Molybdenum	**0.42**	mg/L	0.0040	0.00019	4	04/13/23 07:02	04/17/23 17:05	7439-98-7	
Selenium	**0.14**	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 19:38	7782-49-2	
Thallium	**0.0013**	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 19:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:50	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**391**	mg/L	10.0	10.0	1		04/12/23 16:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**8.5**	Std. Units	0.10	0.10	1		04/25/23 10:12		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Sample: FB-01-041023 **Lab ID: 50341709004** Collected: 04/10/23 14:00 Received: 04/11/23 08:45 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	ND	mg/L	0.25	0.067	1		04/14/23 07:22	16887-00-6	
Fluoride	ND	mg/L	0.050	0.017	1		04/14/23 07:22	16984-48-8	
Sulfate	ND	mg/L	0.25	0.085	1		04/14/23 07:22	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	ND	mg/L	0.10	0.038	1	04/19/23 08:16	04/20/23 13:03	7440-42-8	
Calcium	ND	mg/L	1.0	0.16	1	04/19/23 08:16	04/20/23 13:03	7440-70-2	
Lithium	ND	mg/L	0.0080	0.0062	1	04/19/23 08:16	04/20/23 13:03	7439-93-2	
Total Hardness by 2340B	ND	mg/L	10.0	10.0	1	04/19/23 08:16	04/20/23 13:03		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.000036	1	04/13/23 07:02	04/14/23 19:42	7440-36-0	
Arsenic	ND	mg/L	0.0010	0.000053	1	04/13/23 07:02	04/14/23 19:42	7440-38-2	
Barium	**0.0026**	mg/L	0.0010	0.000051	1	04/13/23 07:02	04/14/23 19:42	7440-39-3	C0
Beryllium	ND	mg/L	0.00020	0.000028	1	04/13/23 07:02	04/14/23 19:42	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.0000090	1	04/13/23 07:02	04/14/23 19:42	7440-43-9	
Chromium	**0.00015J**	mg/L	0.0020	0.00013	1	04/13/23 07:02	04/14/23 19:42	7440-47-3	
Cobalt	ND	mg/L	0.0010	0.000032	1	04/13/23 07:02	04/14/23 19:42	7440-48-4	
Lead	**0.000038J**	mg/L	0.0010	0.000034	1	04/13/23 07:02	04/14/23 19:42	7439-92-1	
Molybdenum	ND	mg/L	0.0010	0.000048	1	04/13/23 07:02	04/14/23 19:42	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00023	1	04/13/23 07:02	04/14/23 19:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000033	1	04/13/23 07:02	04/14/23 19:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	04/19/23 10:14	04/19/23 19:53	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		04/12/23 16:16		PL
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**6.3**	Std. Units	0.10	0.10	1		04/25/23 10:28		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 725927
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

METHOD BLANK: 3331679 Matrix: Water
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	04/01/23 17:19	
Fluoride	mg/L	ND	0.050	0.017	04/01/23 17:19	
Sulfate	mg/L	ND	0.25	0.085	04/01/23 17:19	

LABORATORY CONTROL SAMPLE: 3331680

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	94	80-120	
Fluoride	mg/L	0.5	0.49	99	80-120	
Sulfate	mg/L	2.5	2.5	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3331681 3331682

Parameter	Units	50341041004 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	23.9	12.5	12.5	34.6	34.5	85	85	80-120	0	15	
Fluoride	mg/L	0.14	0.5	0.5	0.62	0.62	97	97	80-120	0	15	
Sulfate	mg/L	9.1	2.5	2.5	11.7	11.7	104	104	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 727562
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003

METHOD BLANK: 3338560 Matrix: Water
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	04/19/23 23:16	
Fluoride	mg/L	ND	0.050	0.017	04/19/23 23:16	
Sulfate	mg/L	ND	0.25	0.085	04/19/23 23:16	

LABORATORY CONTROL SAMPLE: 3338561

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.5	2.3	91	80-120	
Fluoride	mg/L	1	0.92	92	80-120	
Sulfate	mg/L	5	4.7	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3338562 3338563

Parameter	Units	50341631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	83.5	25	25	106	107	92	94	80-120	1	15	
Fluoride	mg/L	0.60	1	1	1.6	1.6	101	102	80-120	1	15	
Sulfate	mg/L	194	50	50	232	231	76	75	80-120	0	15	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 727563
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50341709004

METHOD BLANK: 3338566 Matrix: Water
Associated Lab Samples: 50341709004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	04/14/23 18:44	
Fluoride	mg/L	ND	0.050	0.017	04/14/23 18:44	
Sulfate	mg/L	ND	0.25	0.085	04/14/23 18:44	

LABORATORY CONTROL SAMPLE: 3338567

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	2.5	2.3	91	80-120	
Fluoride	mg/L	1	1.0	101	80-120	
Sulfate	mg/L	5	4.7	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3338568 3338569

Parameter	Units	50341802006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	8.6	2.5	2.5	11.2	11.1	101	100	80-120	0	15	
Fluoride	mg/L	0.11	1	1	1.1	1.1	97	99	80-120	2	15	
Sulfate	mg/L	141	50	50	187	186	92	91	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 726492
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

METHOD BLANK: 3333525 Matrix: Water
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000091	04/11/23 17:03	

LABORATORY CONTROL SAMPLE: 3333526

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0053	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3333527 3333528

Parameter	Units	50340934003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0053	0.0052	106	105	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 728502 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

METHOD BLANK: 3343107 Matrix: Water
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000091	04/19/23 19:24	

LABORATORY CONTROL SAMPLE: 3343108

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0049	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3343109 3343110

Parameter	Units	50341631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0052	0.0051	103	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 727304
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

METHOD BLANK: 3337333 Matrix: Water
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.061	04/11/23 22:26	
Calcium	mg/L	ND	1.0	0.088	04/11/23 22:26	
Lithium	mg/L	ND	0.0080	0.0062	04/12/23 13:13	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	04/11/23 22:26	

LABORATORY CONTROL SAMPLE: 3337334

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.89	89	80-120	
Calcium	mg/L	10	9.4	94	80-120	
Lithium	mg/L	1	0.99	99	80-120	
Total Hardness by 2340B	mg/L	66.2	61.4	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3337335 3337336

Parameter	Units	50340969002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	ND	1	1	0.90	0.90	90	90	75-125	0	20	
Calcium	mg/L	ND	10	10	9.9	9.8	99	98	75-125	1	20	
Lithium	mg/L	ND	1	1	0.97	0.99	97	98	75-125	2	20	
Total Hardness by 2340B	mg/L	ND	66.2	66.2	63.0	63.0	95	95	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 728516
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

METHOD BLANK: 3343183 Matrix: Water
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.038	04/20/23 11:37	
Calcium	mg/L	ND	1.0	0.16	04/20/23 11:37	
Lithium	mg/L	ND	0.0080	0.0062	04/20/23 11:37	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	04/20/23 11:37	

LABORATORY CONTROL SAMPLE: 3343184

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.96	96	80-120	
Calcium	mg/L	10	10.1	101	80-120	
Lithium	mg/L	1	1.0	101	80-120	
Total Hardness by 2340B	mg/L	66.2	65.5	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3343185 3343186

Parameter	Units	50341609009 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	494 ug/L	1	1	1.5	1.5	98	101	75-125	2	20	
Calcium	mg/L	139000 ug/L	10	10	146	150	72	109	75-125	3	20	P6
Lithium	mg/L	ND	1	1	1.1	1.1	105	105	75-125	0	20	
Total Hardness by 2340B	mg/L	472000 ug/L	66.2	66.2	526	539	83	103	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3343187 3343188

Parameter	Units	50341631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.42	1	1	1.4	1.4	100	98	75-125	1	20	
Calcium	mg/L	96.5	10	10	102	104	58	79	75-125	2	20	P6
Lithium	mg/L	0.018	1	1	1.1	1.1	107	106	75-125	1	20	
Total Hardness by 2340B	mg/L	335	66.2	66.2	387	393	78	86	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 726182
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

METHOD BLANK: 3332397 Matrix: Water
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.000036	04/05/23 18:20	
Arsenic	mg/L	ND	0.0010	0.000053	04/05/23 18:20	
Barium	mg/L	ND	0.0010	0.000051	04/05/23 18:20	
Beryllium	mg/L	ND	0.00020	0.000028	04/05/23 18:20	
Cadmium	mg/L	ND	0.00020	0.0000090	04/05/23 18:20	
Chromium	mg/L	ND	0.0020	0.00013	04/05/23 18:20	
Cobalt	mg/L	ND	0.0010	0.000032	04/05/23 18:20	
Lead	mg/L	ND	0.0010	0.000034	04/05/23 18:20	
Molybdenum	mg/L	ND	0.0010	0.000048	04/05/23 18:20	
Selenium	mg/L	ND	0.0010	0.00023	04/05/23 18:20	
Thallium	mg/L	ND	0.0010	0.000033	04/05/23 18:20	

LABORATORY CONTROL SAMPLE: 3332398

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.042	105	80-120	
Arsenic	mg/L	0.04	0.038	96	80-120	
Barium	mg/L	0.04	0.040	99	80-120	
Beryllium	mg/L	0.04	0.042	104	80-120	
Cadmium	mg/L	0.04	0.040	99	80-120	
Chromium	mg/L	0.04	0.040	101	80-120	
Cobalt	mg/L	0.04	0.041	103	80-120	
Lead	mg/L	0.04	0.041	102	80-120	
Molybdenum	mg/L	0.04	0.042	104	80-120	
Selenium	mg/L	0.04	0.040	100	80-120	
Thallium	mg/L	0.04	0.041	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3332399 3332400

Parameter	Units	50340934003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00026J	0.04	0.04	0.043	0.042	106	105	75-125	1	20	
Arsenic	mg/L	0.00022J	0.04	0.04	0.039	0.039	97	97	75-125	0	20	
Barium	mg/L	0.035	0.04	0.04	0.076	0.075	103	101	75-125	1	20	
Beryllium	mg/L	ND	0.04	0.04	0.042	0.041	104	104	75-125	1	20	
Cadmium	mg/L	0.000075J	0.04	0.04	0.039	0.038	96	95	75-125	1	20	
Chromium	mg/L	0.00027J	0.04	0.04	0.039	0.040	97	99	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3332399 3332400

Parameter	Units	50340934003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.0013	0.04	0.04	0.040	0.040	97	97	75-125	0	20	
Lead	mg/L	ND	0.04	0.04	0.041	0.041	102	102	75-125	0	20	
Molybdenum	mg/L	0.0014	0.04	0.04	0.044	0.044	107	106	75-125	1	20	
Selenium	mg/L	0.0031	0.04	0.04	0.043	0.043	99	99	75-125	0	20	
Thallium	mg/L	ND	0.04	0.04	0.042	0.042	106	104	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 727458
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

METHOD BLANK: 3338225 Matrix: Water
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.000036	04/14/23 18:29	
Arsenic	mg/L	ND	0.0010	0.000053	04/14/23 18:29	
Barium	mg/L	ND	0.0010	0.000051	04/14/23 18:29	
Beryllium	mg/L	ND	0.00020	0.000028	04/14/23 18:29	
Cadmium	mg/L	ND	0.00020	0.0000090	04/14/23 18:29	
Chromium	mg/L	ND	0.0020	0.00013	04/14/23 18:29	
Cobalt	mg/L	ND	0.0010	0.000032	04/14/23 18:29	
Lead	mg/L	ND	0.0010	0.000034	04/14/23 18:29	
Molybdenum	mg/L	ND	0.0010	0.000048	04/14/23 18:29	
Selenium	mg/L	ND	0.0010	0.00023	04/14/23 18:29	
Thallium	mg/L	ND	0.0010	0.000033	04/14/23 18:29	

LABORATORY CONTROL SAMPLE: 3338226

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.041	102	80-120	
Arsenic	mg/L	0.04	0.038	95	80-120	
Barium	mg/L	0.04	0.039	98	80-120	
Beryllium	mg/L	0.04	0.040	100	80-120	
Cadmium	mg/L	0.04	0.039	97	80-120	
Chromium	mg/L	0.04	0.040	101	80-120	
Cobalt	mg/L	0.04	0.041	102	80-120	
Lead	mg/L	0.04	0.041	102	80-120	
Molybdenum	mg/L	0.04	0.041	102	80-120	
Selenium	mg/L	0.04	0.039	97	80-120	
Thallium	mg/L	0.04	0.041	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3338227 3338228

Parameter	Units	50341631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.00078J	0.04	0.04	0.042	0.043	104	105	75-125	1	20	
Arsenic	mg/L	0.0087	0.04	0.04	0.047	0.047	95	95	75-125	0	20	
Barium	mg/L	0.076	0.04	0.04	0.12	0.12	102	102	75-125	0	20	
Beryllium	mg/L	ND	0.04	0.04	0.041	0.041	102	102	75-125	1	20	
Cadmium	mg/L	0.00089	0.04	0.04	0.039	0.039	95	96	75-125	1	20	
Chromium	mg/L	0.00048J	0.04	0.04	0.040	0.040	99	99	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3338227 3338228

Parameter	Units	50341631002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.000098J	0.04	0.04	0.039	0.039	97	97	75-125	1	20	
Lead	mg/L	ND	0.04	0.04	0.042	0.041	104	103	75-125	0	20	
Molybdenum	mg/L	0.057	0.04	0.04	0.098	0.098	102	102	75-125	0	20	
Selenium	mg/L	0.0028	0.04	0.04	0.042	0.042	98	98	75-125	0	20	
Thallium	mg/L	0.0010J	0.04	0.04	0.043	0.043	106	105	75-125	1	20	

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Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 726074
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

METHOD BLANK: 3332130 Matrix: Water
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	04/03/23 15:51	

LABORATORY CONTROL SAMPLE: 3332131

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	282	94	80-120	

SAMPLE DUPLICATE: 3332132

Parameter	Units	50340959003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	506	496	2	10	

SAMPLE DUPLICATE: 3332133

Parameter	Units	50340999003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	7230	7260	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 727612 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

METHOD BLANK: 3338794 Matrix: Water
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	04/12/23 16:09	

LABORATORY CONTROL SAMPLE: 3338795

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	283	94	80-120	

SAMPLE DUPLICATE: 3338796

Parameter	Units	50341631002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	567	558	2	10	

SAMPLE DUPLICATE: 3338797

Parameter	Units	50341677001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	13400	14300	6	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 726241
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50340934001, 50340934002, 50340934003, 50340934004

SAMPLE DUPLICATE: 3332527

Parameter	Units	50340801004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.3	8.3	0	2	H3

SAMPLE DUPLICATE: 3332528

Parameter	Units	50340934004 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	2	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS CCR Assessment
Pace Project No.: 50340934

QC Batch: 729663
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50341631001, 50341631002, 50341709001, 50341709002, 50341709003, 50341709004

SAMPLE DUPLICATE: 3348488

Parameter	Units	50341631001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.7	7.7	0	2	H3

SAMPLE DUPLICATE: 3348489

Parameter	Units	50341631002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.9	0	2	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS CCR Assessment
Pace Project No.: 50340934

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C0	Result confirmed by second analysis.
H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50340934001	**PC-MW-110-033023**	EPA 9056	725927		
50340934002	**PC-MW-113-033023**	EPA 9056	725927		
50340934003	**PC-MW-114-033023**	EPA 9056	725927		
50340934004	**PC-MW-115-033023**	EPA 9056	725927		
50341631001	**GAMW-10-040723**	EPA 9056	727562		
50341631002	**GMMW-2-040723**	EPA 9056	727562		
50341709001	**GAMW-16-041023**	EPA 9056	727562		
50341709002	**GMMW-1-041023**	EPA 9056	727562		
50341709003	**FD-01-041023**	EPA 9056	727562		
50341709004	**FB-01-041023**	EPA 9056	727563		
50340934001	**PC-MW-110-033023**	EPA 3010	727304	EPA 6010	727447
50340934002	**PC-MW-113-033023**	EPA 3010	727304	EPA 6010	727447
50340934003	**PC-MW-114-033023**	EPA 3010	727304	EPA 6010	727447
50340934004	**PC-MW-115-033023**	EPA 3010	727304	EPA 6010	727447
50341631001	**GAMW-10-040723**	EPA 3010	728516	EPA 6010	728962
50341631002	**GMMW-2-040723**	EPA 3010	728516	EPA 6010	728962
50341709001	**GAMW-16-041023**	EPA 3010	728516	EPA 6010	728962
50341709002	**GMMW-1-041023**	EPA 3010	728516	EPA 6010	728962
50341709003	**FD-01-041023**	EPA 3010	728516	EPA 6010	728962
50341709004	**FB-01-041023**	EPA 3010	728516	EPA 6010	728962
50340934001	**PC-MW-110-033023**	EPA 200.2	726182	EPA 6020	726487
50340934002	**PC-MW-113-033023**	EPA 200.2	726182	EPA 6020	726487
50340934003	**PC-MW-114-033023**	EPA 200.2	726182	EPA 6020	726487
50340934004	**PC-MW-115-033023**	EPA 200.2	726182	EPA 6020	726487
50341631001	**GAMW-10-040723**	EPA 200.2	727458	EPA 6020	727781
50341631002	**GMMW-2-040723**	EPA 200.2	727458	EPA 6020	727781
50341709001	**GAMW-16-041023**	EPA 200.2	727458	EPA 6020	727781
50341709002	**GMMW-1-041023**	EPA 200.2	727458	EPA 6020	727781
50341709003	**FD-01-041023**	EPA 200.2	727458	EPA 6020	727781
50341709004	**FB-01-041023**	EPA 200.2	727458	EPA 6020	727781
50340934001	**PC-MW-110-033023**	EPA 7470	726492	EPA 7470	727369
50340934002	**PC-MW-113-033023**	EPA 7470	726492	EPA 7470	727369
50340934003	**PC-MW-114-033023**	EPA 7470	726492	EPA 7470	727369
50340934004	**PC-MW-115-033023**	EPA 7470	726492	EPA 7470	727369
50341631001	**GAMW-10-040723**	EPA 7470	728502	EPA 7470	728833
50341631002	**GMMW-2-040723**	EPA 7470	728502	EPA 7470	728833
50341709001	**GAMW-16-041023**	EPA 7470	728502	EPA 7470	728833
50341709002	**GMMW-1-041023**	EPA 7470	728502	EPA 7470	728833
50341709003	**FD-01-041023**	EPA 7470	728502	EPA 7470	728833
50341709004	**FB-01-041023**	EPA 7470	728502	EPA 7470	728833
50340934001	**PC-MW-110-033023**	SM 2540C	726074		
50340934002	**PC-MW-113-033023**	SM 2540C	726074		
50340934003	**PC-MW-114-033023**	SM 2540C	726074		
50340934004	**PC-MW-115-033023**	SM 2540C	726074		

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS CCR Assessment
Pace Project No.: 50340934

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50341631001	**GAMW-10-040723**	SM 2540C	727612		
50341631002	**GMMW-2-040723**	SM 2540C	727612		
50341709001	**GAMW-16-041023**	SM 2540C	727612		
50341709002	**GMMW-1-041023**	SM 2540C	727612		
50341709003	**FD-01-041023**	SM 2540C	727612		
50341709004	**FB-01-041023**	SM 2540C	727612		
50340934001	**PC-MW-110-033023**	SM 4500-H+B	726241		
50340934002	**PC-MW-113-033023**	SM 4500-H+B	726241		
50340934003	**PC-MW-114-033023**	SM 4500-H+B	726241		
50340934004	**PC-MW-115-033023**	SM 4500-H+B	726241		
50341631001	**GAMW-10-040723**	SM 4500-H+B	729663		
50341631002	**GMMW-2-040723**	SM 4500-H+B	729663		
50341709001	**GAMW-16-041023**	SM 4500-H+B	729663		
50341709002	**GMMW-1-041023**	SM 4500-H+B	729663		
50341709003	**FD-01-041023**	SM 4500-H+B	729663		
50341709004	**FB-01-041023**	SM 4500-H+B	729663		

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CHAIN-OF-CUSTODY / Analytical Request Do

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 50340934

50340934

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:			
Company:	NiSource_Golder	Report To:	Tom Haskins	Attention:	Jeff Loewe-U12677		
Address:	801 E 8th Ave	Copy To:	Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name:	NiSource		
	Merrillville, IN 46410			Address:		Regulatory Agency	
Email:	thomas.haskins@wsp.com	Purchase Order #:	PO33926	Pace Quote:			
Phone:	Fax:	Project Name:	MCGS CCR Assessment	Pace Project Manager:	tina.sayer@pacelabs.com,	State / Location	
Requested Due Date:	10 day TAT	Project #:	31404789.004	Pace Profile #:	9047-1		IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)	
1	PC-MW-110-033023	WT	G			3/30/23	1145		4	3		1							X	X	X	X	X	X		001
2	PC-MW-113-033023	WT	G			3/30/23	1255		4	3		1							X	X	X	X	X	X		002
3	PC-MW-114-033023	WT	G			3/30/23	1405		4	3		1							X	X	X	X	X	X		003
4	PC-MW-115-033023	WT	G			3/30/23	1525		4	3		1							X	X	X	X	X	X		004
5	GAMW-13																									
6	GMMW-2																									
7	GAMW-14																									
8	GAMW-15																									
9	GAMW-16																									
10	GMMW-1																									
11	FD-01																									
12	FB-01																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	WSP	3/30/23	1700	Fed Ex						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	Fed Ex	3/31/23	0515		3/31/23	0515	1.8	4	4	4
LEVEL 4										

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	R. [illegible]					
SIGNATURE of SAMPLER:		DATE Signed: 3/30/23				

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DD 3/31/23

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☐ Yes ☐ No

(If yes)Seals Intact: ☐ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature(s):** 1.7/1.8 | | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.**			
Short Hold Time Analysis (48 hours or less)? Analysis:			Circle: **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):			Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE ____ of ____

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		VIALS						AMBER GLASS							PLASTIC									OTHER							
		MeOH (only)														RC 3-31-23													Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																											Red	Yellow	Green	Black
		DI																													
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																												WT	✓			
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mus

WO# : 50341631

50341631

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: NiSource_Golder	Report To: Tom Haskins	Attention: Jeff Loewe-U12677	
Address: 801 E 8th Ave	Copy To: Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name: NiSource	
Merrillville, IN 46410		Address:	Regulatory Agency
Email: thomas.haskins@wsp.com	Purchase Order #: PO33926	Pace Quote:	
Phone: Fax:	Project Name: MCGS CCR Assessment	Pace Project Manager: tina.sayer@pacelabs.com,	State / Location
Requested Due Date: 10 day TAT	Project #: 3140478 9.004	Pace Profile #: 9047-1	IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N)	Analyses Test	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N								
1	PC-MW-110																									
2	PC-MW-112																									
3	PC-MW-111																									
4	PC-MW-115																									
5	GAMW-10 – 040723	WT	G			4/7/23	1015		4	3		1								X	X	X	X	X		CCl
6	GMMW-2 – 040723	WT	G			4/7/23	1155		4	3		1								X	X	X	X	X		MS-01/MSD-01 002
7	GAMW-14																									
8	GAMW-15																									
9	GAMW-16																									
10	GMMW-1																									
11	FD-01																									
12	FB-01																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	WSP	4/7/23	1400							
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020		4/7/23	0445		4/7/23	995	0.3	Y	Y	Y
LEVEL 4										

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:			
SIGNATURE of SAMPLER:	DATE Signed: 4/7/23		

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

F-IN-Q-290-rev.22, 22Apr2022

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 04/10/23 1108 SMH

1. Courier: ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. Custody Seal on Cooler/Box Present: ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No (leave blank if no seals were present)

3. Thermometer: 1 2 3 4 5 6 A B C D E F

4. Cooler Temperature(s): 0.2/0.3 (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material: ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____

6. Ice Type: ☑ Wet ☐ Blue ☐ None

7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		VIALS						AMBER GLASS							PLASTIC										OTHER								
		MeOH (only)																														
		SBS																														
		DI																														
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix	Nitric Red HNO3 <2	Sulfuric Yellow H2SO4 <2	Sodium Hydroxide Green NaOH >10	Sodium Hydroxide/ ZnAc Black NaOH/Zn Ac >9
1																																
2																																
3																																
4																																
5																		3	1									M	✓			
6																		9	3									↓	↓			
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

WO# : 50341709

50341709

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: NiSource_Golder	Report To: Tom Haskins	Attention: Jeff Loewe-U12677	
Address: 801 E 8th Ave	Copy To: Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name: NiSource	
Merrillville, IN 46410		Address:	Regulatory Agency
Email: thomas.haskins@wsp.com	Purchase Order #: PO33926	Pace Quote:	
Phone: Fax:	Project Name: MCGS CCR Assessment	Pace Project Manager: tina.sayer@pacelabs.com,	State / Location
Requested Due Date: 10 day TAT	Project #: 31404709 - 004	Pace Profile #: 9047-1	IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)	
1	~~PC-MW-110~~																										
2	~~PC-MW-113~~																										
3	~~PC-MW-114~~																										
4	~~PC-MW-115~~																										
5	~~GAMW-10~~																										
6	~~GMMW-3~~																										
7	~~GAMW-14~~																										
8	~~GAMW-15~~																										
9	GAMW-16 - 041023	WT	G			4/10/23	1150		4	3		1							X	X	X	X	X			001
10	GMMW-1 - 041023	WT	G			4/10/23	1350		4	3		1							X	X	X	X	X			002
11	FD-01 - 041023	WT	G			4/10/23	1200		4	3		1							X	X	X	X	X			003
12	FB-01 - 041023	WT	G			4/10/23	1400		4	3		1							X	X	X	X	X			004

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	WSP	4/10/23	1630	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	4.11.23	0845	Nicole Stinde / PACE	4.11.23	0845	1.3	Y	Y	Y
LEVEL 4										

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER: R Gilmore						
SIGNATURE of SAMPLER:	DATE Signed: 4/10/23					

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: NMS 4.11.2023 1155

1. Courier: [X] FED EX [ ] UPS [ ] CLIENT [ ] PACE [ ] USPS [ ] OTHER _____

2. Custody Seal on Cooler/Box Present: [X] Yes [ ] No

(If yes)Seals Intact: [X] Yes [ ] No **(leave blank if no seals were present)**

3. Thermometer: 1 2 3 4 5 6 A B (C) D E F

4. Cooler Temperature(s): 1.3 / 1.3 | | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. Packing Material: [X] Bubble Wrap [ ] Bubble Bags [ ] None [X] Other Plastic Bag

6. Ice Type: [X] Wet [ ] Blue [ ] None

7. If temp. is over 6°C or under 0°C, was the PM notified?: [ ] Yes [ ] No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		X	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: **(HNO3 (<2)) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	X		
Short Hold Time Analysis (48 hours or less)? Analysis:		X				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			X
Rush TAT Requested (4 days or less):		X	Residual Chlorine Check (Total/Amenable/Free Cyanide)			X
Custody Signatures Present?	X		Headspace Wisconsin Sulfide?			X
Containers Intact?:	X		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent X
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID		X	Trip Blank Present?		X	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			X

COMMENTS: Some times not included on sample labels for 1L Nitrates, refer to COC for times.

COC PAGE 1 of 2

Sample Container Count

** Place a RED dot on containers that are out of conformance **

			VIALS						AMBER GLASS							PLASTIC									OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		MeOH (only)																											Red	Yellow	Green	Black
		SBS																														
		DI																														
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																		3	1									WT	✓			
10																		|	|									|	✓			
11																		|	|									|	✓			
12																		|	|									|	✓			

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic		
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic		
BP2C	500mL NaOH plastic		
BP2S	500mL H2SO4 plastic		
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3F	250mL HNO3 plastic-field filtered		
BP3U	250mL unpreserved plastic		
BP3S	250mL H2SO4 plastic		
BP3Z	250mL NaOH, ZnAc plastic		

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

June 21, 2023

Mr. Tom Haskins
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS CCR Assessment
Pace Project No.: 50340935

Dear Mr. Haskins:

Enclosed are the analytical results for sample(s) received by the laboratory between March 31, 2023 and April 11, 2023. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

Revised report replaces report dated 05/03/23. Sample ID for GAMW-02-040723 was adjusted to GMMW-02-040723.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Gabe Dixon, WSP
Ms. Sarah Gilles, WSP Golder
Ms. Danielle Sylvia, WSP Golder

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50340935001	**PC-MW-110-033023**	Water	03/30/23 11:45	03/31/23 09:15
50340935002	**PC-MW-113-033023**	Water	03/30/23 12:55	03/31/23 09:15
50340935003	**PC-MW-114-033023**	Water	03/30/23 14:05	03/31/23 09:15
50340935004	**PC-MW-115-033023**	Water	03/30/23 15:25	03/31/23 09:15
50341632001	**GAMW-10-040723**	Water	04/07/23 10:15	04/10/23 09:45
50341632002	**GMMW-2-040723**	Water	04/07/23 11:55	04/10/23 09:45
50341632003	**GMMW-2-040723 MS**	Water	04/07/23 11:55	04/10/23 09:45
50341632004	**GMMW-2-040723 MSD**	Water	04/07/23 11:55	04/10/23 09:45
50341710001	**GAMW-16-041023**	Water	04/10/23 11:50	04/11/23 08:45
50341710002	**GMMW-1-041023**	Water	04/10/23 13:50	04/11/23 08:45
50341710003	**FD-01-041023**	Water	04/10/23 12:00	04/11/23 08:45
50341710004	**FB-01-041023**	Water	04/10/23 14:00	04/11/23 08:45

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50340935001	**PC-MW-110-033023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50340935002	**PC-MW-113-033023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50340935003	**PC-MW-114-033023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50340935004	**PC-MW-115-033023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341632001	**GAMW-10-040723**	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341632002	**GMMW-2-040723**	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341632003	**GMMW-2-040723 MS**	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
50341632004	**GMMW-2-040723 MSD**	EPA 903.1	GDH	1	PASI-PA
		EPA 904.0	JGH	1	PASI-PA
50341710001	**GAMW-16-041023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341710002	**GMMW-1-041023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341710003	**FD-01-041023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50341710004	**FB-01-041023**	EPA 903.1	JDZ	1	PASI-PA
		EPA 904.0	ZPC	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50340935001	**PC-MW-110-033023**					
EPA 903.1	Radium-226	0.915 ± 0.868 (1.37) C:NA T:94%	pCi/L		05/01/23 13:10	
EPA 904.0	Radium-228	1.20 ± 0.468 (0.719) C:77% T:88%	pCi/L		04/12/23 12:30	
Total Radium Calculation	Total Radium	2.12 ± 1.34 (2.09)	pCi/L		05/03/23 12:57	
50340935002	**PC-MW-113-033023**					
EPA 903.1	Radium-226	0.000 ± 0.456 (0.965) C:NA T:85%	pCi/L		05/01/23 13:26	
EPA 904.0	Radium-228	0.642 ± 0.345 (0.596) C:83% T:79%	pCi/L		04/12/23 12:30	
Total Radium Calculation	Total Radium	0.642 ± 0.801 (1.56)	pCi/L		05/03/23 12:57	
50340935003	**PC-MW-114-033023**					
EPA 903.1	Radium-226	0.321 ± 0.419 (0.692) C:NA T:95%	pCi/L		05/01/23 13:26	
EPA 904.0	Radium-228	0.420 ± 0.319 (0.613) C:80% T:78%	pCi/L		04/12/23 12:30	
Total Radium Calculation	Total Radium	0.741 ± 0.738 (1.31)	pCi/L		05/03/23 12:57	
50340935004	**PC-MW-115-033023**					
EPA 903.1	Radium-226	0.370 ± 0.515 (0.870) C:NA T:95%	pCi/L		05/01/23 13:26	
EPA 904.0	Radium-228	0.387 ± 0.324 (0.639) C:76% T:79%	pCi/L		04/12/23 12:31	
Total Radium Calculation	Total Radium	0.757 ± 0.839 (1.51)	pCi/L		05/03/23 12:57	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50341632001	**GAMW-10-040723**					
EPA 903.1	Radium-226	0.483 ± 0.502 (0.748) C:NA T:86%	pCi/L		04/24/23 16:02	
EPA 904.0	Radium-228	0.115 ± 0.279 (0.623) C:82% T:82%	pCi/L		04/21/23 15:15	
Total Radium Calculation	Total Radium	0.598 ± 0.781 (1.37)	pCi/L		04/25/23 11:12	
50341632002	**GMMW-2-040723**					
EPA 903.1	Radium-226	0.133 ± 0.319 (0.616) C:NA T:85%	pCi/L		04/24/23 16:02	
EPA 904.0	Radium-228	0.437 ± 0.371 (0.747) C:77% T:88%	pCi/L		04/21/23 15:15	
Total Radium Calculation	Total Radium	0.570 ± 0.690 (1.36)	pCi/L		04/25/23 11:12	
50341632003	**GMMW-2-040723 MS**					
EPA 903.1	Radium-226	90.19 %REC ± NA (NA) C:NA T:NA%	pCi/L		04/24/23 16:02	
EPA 904.0	Radium-228	70.00 %REC ± NA (NA) C:NA T:NA	pCi/L		04/21/23 15:15	
50341632004	**GMMW-2-040723 MSD**					
EPA 903.1	Radium-226	100.27 %REC 10.58RPD ± NA (NA) C:NA T:NA%	pCi/L		04/24/23 16:02	
EPA 904.0	Radium-228	78.64 %REC 11.63RPD ± NA (NA) C:NA T:NA	pCi/L		04/21/23 15:15	
50341710001	**GAMW-16-041023**					
EPA 903.1	Radium-226	0.207 ± 0.498 (0.962) C:NA T:85%	pCi/L		04/22/23 15:04	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50341710001	**GAMW-16-041023**					
EPA 904.0	Radium-228	-0.00463 ± 0.355 (0.840) C:77% T:74%	pCi/L		04/20/23 15:17	
Total Radium Calculation	Total Radium	0.207 ± 0.853 (1.80)	pCi/L		04/26/23 16:18	
50341710002	**GMMW-1-041023**					
EPA 903.1	Radium-226	0.000 ± 0.479 (1.07) C:NA T:88%	pCi/L		04/22/23 15:04	
EPA 904.0	Radium-228	0.280 ± 0.375 (0.801) C:83% T:75%	pCi/L		04/20/23 15:17	
Total Radium Calculation	Total Radium	0.280 ± 0.854 (1.87)	pCi/L		04/26/23 16:18	
50341710003	**FD-01-041023**					
EPA 903.1	Radium-226	0.000 ± 0.550 (1.19) C:NA T:88%	pCi/L		04/22/23 15:04	
EPA 904.0	Radium-228	0.211 ± 0.350 (0.761) C:78% T:76%	pCi/L		04/20/23 15:13	
Total Radium Calculation	Total Radium	0.211 ± 0.900 (1.95)	pCi/L		04/26/23 16:18	
50341710004	**FB-01-041023**					
EPA 903.1	Radium-226	0.708 ± 0.470 (0.213) C:NA T:97%	pCi/L		04/22/23 15:04	
EPA 904.0	Radium-228	0.200 ± 0.389 (0.856) C:71% T:86%	pCi/L		04/20/23 15:17	
Total Radium Calculation	Total Radium	0.908 ± 0.859 (1.07)	pCi/L		04/26/23 16:18	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
12 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
12 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_WSP Golder
Date: June 21, 2023

General Information:
10 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: PC-MW-110-033023 **Lab ID: 50340935001** Collected: 03/30/23 11:45 Received: 03/31/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.915 ± 0.868 (1.37) C:NA T:94%**	pCi/L	05/01/23 13:10	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.20 ± 0.468 (0.719) C:77% T:88%**	pCi/L	04/12/23 12:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.12 ± 1.34 (2.09)**	pCi/L	05/03/23 12:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: PC-MW-113-033023 **Lab ID: 50340935002** Collected: 03/30/23 12:55 Received: 03/31/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.456 (0.965) C:NA T:85%**	pCi/L	05/01/23 13:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.642 ± 0.345 (0.596) C:83% T:79%**	pCi/L	04/12/23 12:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.642 ± 0.801 (1.56)**	pCi/L	05/03/23 12:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: PC-MW-114-033023 **Lab ID: 50340935003** Collected: 03/30/23 14:05 Received: 03/31/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.321 ± 0.419 (0.692) C:NA T:95%**	pCi/L	05/01/23 13:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.420 ± 0.319 (0.613) C:80% T:78%**	pCi/L	04/12/23 12:30	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.741 ± 0.738 (1.31)**	pCi/L	05/03/23 12:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: PC-MW-115-033023 **Lab ID: 50340935004** Collected: 03/30/23 15:25 Received: 03/31/23 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.370 ± 0.515 (0.870) C:NA T:95%**	pCi/L	05/01/23 13:26	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.387 ± 0.324 (0.639) C:76% T:79%**	pCi/L	04/12/23 12:31	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.757 ± 0.839 (1.51)**	pCi/L	05/03/23 12:57	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GAMW-10-040723 **Lab ID: 50341632001** Collected: 04/07/23 10:15 Received: 04/10/23 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.483 ± 0.502 (0.748) C:NA T:86%**	pCi/L	04/24/23 16:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.115 ± 0.279 (0.623) C:82% T:82%**	pCi/L	04/21/23 15:15	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.598 ± 0.781 (1.37)**	pCi/L	04/25/23 11:12	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GMMW-2-040723 **Lab ID: 50341632002** Collected: 04/07/23 11:55 Received: 04/10/23 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.133 ± 0.319 (0.616) C:NA T:85%**	pCi/L	04/24/23 16:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.437 ± 0.371 (0.747) C:77% T:88%**	pCi/L	04/21/23 15:15	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.570 ± 0.690 (1.36)**	pCi/L	04/25/23 11:12	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GMMW-2-040723 MS **Lab ID: 50341632003** Collected: 04/07/23 11:55 Received: 04/10/23 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**90.19 %REC ± NA (NA) C:NA T:NA%**	pCi/L	04/24/23 16:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**70.00 %REC ± NA (NA) C:NA T:NA**	pCi/L	04/21/23 15:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GMMW-2-040723 MSD **Lab ID: 50341632004** Collected: 04/07/23 11:55 Received: 04/10/23 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**100.27 %REC 10.58RPD ± NA (NA) C:NA T:NA%**	pCi/L	04/24/23 16:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**78.64 %REC 11.63RPD ± NA (NA) C:NA T:NA**	pCi/L	04/21/23 15:15	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GAMW-16-041023 **Lab ID: 50341710001** Collected: 04/10/23 11:50 Received: 04/11/23 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.207 ± 0.498 (0.962) C:NA T:85%**	pCi/L	04/22/23 15:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.00463 ± 0.355 (0.840) C:77% T:74%**	pCi/L	04/20/23 15:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.207 ± 0.853 (1.80)**	pCi/L	04/26/23 16:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: GMMW-1-041023 **Lab ID: 50341710002** Collected: 04/10/23 13:50 Received: 04/11/23 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.479 (1.07) C:NA T:88%**	pCi/L	04/22/23 15:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.280 ± 0.375 (0.801) C:83% T:75%**	pCi/L	04/20/23 15:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.280 ± 0.854 (1.87)**	pCi/L	04/26/23 16:18	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: FD-01-041023 **Lab ID: 50341710003** Collected: 04/10/23 12:00 Received: 04/11/23 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.550 (1.19) C:NA T:88%**	pCi/L	04/22/23 15:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.211 ± 0.350 (0.761) C:78% T:76%**	pCi/L	04/20/23 15:13	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.211 ± 0.900 (1.95)**	pCi/L	04/26/23 16:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Sample: FB-01-041023 **Lab ID: 50341710004** Collected: 04/10/23 14:00 Received: 04/11/23 08:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.708 ± 0.470 (0.213) C:NA T:97%**	pCi/L	04/22/23 15:04	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.200 ± 0.389 (0.856) C:71% T:86%**	pCi/L	04/20/23 15:17	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.908 ± 0.859 (1.07)**	pCi/L	04/26/23 16:18	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 580995
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50341710001, 50341710002, 50341710003, 50341710004

METHOD BLANK: 2822056 Matrix: Water
Associated Lab Samples: 50341710001, 50341710002, 50341710003, 50341710004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0667 ± 0.304 (0.619) C:NA T:93%	pCi/L	04/22/23 14:52	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 580998
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50341710001, 50341710002, 50341710003, 50341710004

METHOD BLANK: 2822064 Matrix: Water
Associated Lab Samples: 50341710001, 50341710002, 50341710003, 50341710004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.575 ± 0.365 (0.680) C:78% T:87%	pCi/L	04/20/23 15:22	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 579274
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50340935001, 50340935002, 50340935003, 50340935004

METHOD BLANK: 2813235 Matrix: Water
Associated Lab Samples: 50340935001, 50340935002, 50340935003, 50340935004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.512 ± 0.327 (0.607) C:81% T:84%	pCi/L	04/12/23 12:26	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 580765
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50341632001, 50341632002, 50341632003, 50341632004

METHOD BLANK: 2820802 Matrix: Water
Associated Lab Samples: 50341632001, 50341632002, 50341632003, 50341632004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	-0.0394 ± 0.269 (0.637) C:85% T:93%	pCi/L	04/21/23 11:42	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 580764
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50341632001, 50341632002, 50341632003, 50341632004

METHOD BLANK: 2820799 Matrix: Water
Associated Lab Samples: 50341632001, 50341632002, 50341632003, 50341632004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.000 ± 0.260 (0.419) C:NA T:93%	pCi/L	04/24/23 15:10	

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS CCR Assessment
Pace Project No.: 50340935

QC Batch: 578991
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50340935001, 50340935002, 50340935003, 50340935004

METHOD BLANK: 2811499 Matrix: Water
Associated Lab Samples: 50340935001, 50340935002, 50340935003, 50340935004

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.0509 ± 0.232 (0.548) C:NA T:94%	pCi/L	05/01/23 13:10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALIFIERS

Project: MCGS CCR Assessment
Pace Project No.: 50340935

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS CCR Assessment
Pace Project No.: 50340935

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50340935001	**PC-MW-110-033023**	EPA 903.1	578991		
50340935002	**PC-MW-113-033023**	EPA 903.1	578991		
50340935003	**PC-MW-114-033023**	EPA 903.1	578991		
50340935004	**PC-MW-115-033023**	EPA 903.1	578991		
50341632001	**GAMW-10-040723**	EPA 903.1	580764		
50341632002	**GMMW-2-040723**	EPA 903.1	580764		
50341632003	**GMMW-2-040723 MS**	EPA 903.1	580764		
50341632004	**GMMW-2-040723 MSD**	EPA 903.1	580764		
50341710001	**GAMW-16-041023**	EPA 903.1	580995		
50341710002	**GMMW-1-041023**	EPA 903.1	580995		
50341710003	**FD-01-041023**	EPA 903.1	580995		
50341710004	**FB-01-041023**	EPA 903.1	580995		
50340935001	**PC-MW-110-033023**	EPA 904.0	579274		
50340935002	**PC-MW-113-033023**	EPA 904.0	579274		
50340935003	**PC-MW-114-033023**	EPA 904.0	579274		
50340935004	**PC-MW-115-033023**	EPA 904.0	579274		
50341632001	**GAMW-10-040723**	EPA 904.0	580765		
50341632002	**GMMW-2-040723**	EPA 904.0	580765		
50341632003	**GMMW-2-040723 MS**	EPA 904.0	580765		
50341632004	**GMMW-2-040723 MSD**	EPA 904.0	580765		
50341710001	**GAMW-16-041023**	EPA 904.0	580998		
50341710002	**GMMW-1-041023**	EPA 904.0	580998		
50341710003	**FD-01-041023**	EPA 904.0	580998		
50341710004	**FB-01-041023**	EPA 904.0	580998		
50340935001	**PC-MW-110-033023**	Total Radium Calculation	585496		
50340935002	**PC-MW-113-033023**	Total Radium Calculation	585496		
50340935003	**PC-MW-114-033023**	Total Radium Calculation	585496		
50340935004	**PC-MW-115-033023**	Total Radium Calculation	585496		
50341632001	**GAMW-10-040723**	Total Radium Calculation	583426		
50341632002	**GMMW-2-040723**	Total Radium Calculation	583426		
50341710001	**GAMW-16-041023**	Total Radium Calculation	583891		
50341710002	**GMMW-1-041023**	Total Radium Calculation	583891		
50341710003	**FD-01-041023**	Total Radium Calculation	583891		
50341710004	**FB-01-041023**	Total Radium Calculation	583891		

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

WO# : 50340935

50340935

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:	
Company: NiSource_Golder	Report To: Tom Haskins	Attention: Jeff Loewe-U126177	
Address: 801 E 8th Ave	Copy To: Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name: NiSource	
Merrillville, IN 46410		Address:	Regulatory Agency
Email: thomas.haskins@wsp.com	Purchase Order #: PO33926	Pace Quote:	
Phone: Fax:	Project Name: MCGS CCR Assessment	Pace Project Manager: tina.sayer@pacelabs.com,	State / Location
Requested Due Date: 16 day TAT	Project #: 31404789.004	Pace Profile #: 9047-2	IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium-226	Radium-228	Residual Chlorine (Y/N)	
1	PC-MW-110-033023	WT	G			3/30/23	1145		2			2						X	X		001
2	PC-MW-113-033023	WT	G			3/30/23	1255		2			2						X	X		002
3	PC-MW-114-033023	WT	G			3/30/23	1405		2			2						X	X		003
4	PC-MW-115-033023	WT	G			3/30/23	1525		2			2						X	X		004
5	GMW-10																				
6	GMW-13																				
7	GMW-14																				
8	GMW-15																				
9	GMW-16																				
10	GMW-2																				
11	FB-01																				
12	FB-01																				

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
LEVEL 4	WSP	3/30/23	1700							
Radium sub to Pace PA	FedEx	3/31/23	0915	FedEx	3/31/23	0915	1.8	4	4	4

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. Gilmore

SIGNATURE of SAMPLER: DATE Signed: 3/30/23

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DD 3/31/23

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☐ Yes ☐ No

(If yes)Seals Intact: ☐ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature(s):** 1.7/1.8 | | | |
(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☐ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):			Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?			✓

COMMENTS:

COC PAGE ____ of ____

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		VIALS						AMBER GLASS							PLASTIC									OTHER				
COC Line Item	WGFU	MeOH (only) SBS DI R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix
1																2												
2																|											
3																|											
4																↓												
5																												
6																												
7																												
8																												
9																												
10																												
11																												
12																												

Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
Red	Yellow	Green	Black
HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields m

WO# : 50341632

50341632

Section A – Required Client Information:		Section B – Required Project Information:		Section C – Invoice Information:		
Company:	NiSource_Golder	Report To:	Tom Haskins	Attention:	Jeff Loewe-U126177	
Address:	801 E 8th Ave	Copy To:	Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name:	NiSource	
	Merrillville, IN 46410			Address:		Regulatory Agency
Email:	thomas.haskins@wsp.com	Purchase Order #:	PO33926	Pace Quote:		
Phone:	Fax:	Project Name:	MCGS CCR Assessment	Pace Project Manager:	tina.sayer@pacelabs.com,	State / Location
Requested Due Date:	16 day TAT	Project #:	31404709.004	Pace Profile #:	9047-2	IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium-226	Radium-228	Residual Chlorine (Y/N)	
1	PC-MW-110																					
2	PC-MW-113																					
3	PC-MW-114																					
4	PC-MW-115																					
5	GAMW-10 – 040723	WT	G			4/7/23	1015		2			2							X	X		001
6	GMMW-2 – 040723	WT	G			4/7/23	1155		2			2							X	X		MS-01/MSD-01 002
7	GAMW-14																					003 004
8	GAMW-15																					
9	GAMW-16																					
10	GMMW-1																					
11	FD-01																					
12	FB-01																					

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS
LEVEL 4	WSP	4/7/23	1400				
Radium sub to Pace PA	FedEx	4/10	0995		4/10	0995	0.3 y y y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. GARMAN

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/7/23

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

F-IN-Q-290-rev.22, 22Apr2022

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: 04/10/23 1108 SMH

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature(s):** 0.2/0.3 (Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)
5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
   Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle:** **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form			
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				✓
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 **of** 1

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS					AMBER GLASS							PLASTIC										OTHER								
		SBS																												Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		DI																												Red	Yellow	Green	Black
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																																	
2																																	
3																																	
4																																	
5																2												W					
6																6												↓					
7																																	
8																																	
9																																	
10																																	
11																																	
12																																	

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

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CHAIN-OF-CUSTODY / Analytical Request D

The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields mu

WO# : 50341710

50341710

Section A – Required Client Information:		Section B – Required Project Information:		Section C – Invoice Information:	
Company:	NiSource_Golder	Report To:	Tom Haskins	Attention:	Jeff Loewe-U126177
Address:	801 E 8th Ave	Copy To:	Gabe Dixon, Danielle Sylvia, Sarah Gilles	Company Name:	NiSource
	Merrillville, IN 46410			Address:	
Email:	thomas.haskins@wsp.com	Purchase Order #:	PO33926	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS CCR Assessment	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	16 day TAT	Project #:	31404789-004	Pace Profile #:	9047-2

Regulatory Agency	
State / Location	
	IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Radium-226	Radium-228	Residual Chlorine (Y/N)
1	~~PC-MW-110~~																				
2	~~PC-MW-113~~																				
3	~~PC-MW-114~~																				
4	~~PC-MW-115~~																				
5	~~GAMW-10~~																				
6	~~GMMW-2~~																				
7	~~GAMW-14~~																				
8	~~GAMW-15~~																				
9	GAMW-16 – 041023	WT	G			4/10/23	1150		2			2							X	X	CO1
10	GMMW-1 – 041023	WT	G			4/10/23	1350		2			2							X	X	CO2
11	FD-01 – 041023	WT	G			4/10/23	1200		2			2							X	X	CO3
12	FB-01 – 041023	WT	G			4/10/23	1400		2			2							X	X	CO4

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
LEVEL 4	WSP	4/10/23	1630	FedEx						
Radium sub to Pace PA	FedEx	4-11-23	0845	Nicole Shields / PACE	4-11-23	0845	1.3	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: [signature]

SIGNATURE of SAMPLER: [signature]

DATE Signed: 4/10/23

TEMP in C | Received on Ice Y/N | Custody Sealed Cooler Y/N | Samples Intact Y/N

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: NMS 4·11·2023 1155

1. **Courier:** [X] FED EX [ ] UPS [ ] CLIENT [ ] PACE [ ] USPS [ ] OTHER ____

2. **Custody Seal on Cooler/Box Present:** [X] Yes [ ] No

(If yes)Seals Intact: [X] Yes [ ] No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B (C) D E F

4. **Cooler Temperature(s):** 1.3 / 1.3 | | | |

(Initial/Corrected) RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)

5. **Packing Material:** [X] Bubble Wrap [ ] Bubble Bags [ ] None [X] Other Plastic Bag

6. **Ice Type:** [X] Wet [ ] Blue [ ] None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** [ ] Yes [ ] No

Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		X	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2)** **H2SO4 (<2)** **NaOH (>10)** **NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	X		
Short Hold Time Analysis (48 hours or less)? **Analysis:**		X				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			X
Rush TAT Requested (4 days or less):		X	Residual Chlorine Check (Total/Amenable/Free Cyanide)			X
Custody Signatures Present?	X		Headspace Wisconsin Sulfide?			X
Containers Intact?:	X		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent X
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID		X	Trip Blank Present?		X	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			X

COMMENTS: Some times not included on sample labels for 1L Nitrates, refer to COC for times.

COC PAGE 2 of 2

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)		VIALS					AMBER GLASS							PLASTIC									OTHER					Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																												Red	Yellow	Green	Black
		DI																														
COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	CG3F	Syringe Kit		Matrix	HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
1																																
2																																
3																																
4																																
5																																
6																																
7																																
8																																
9																2												WT				
10																|												|				
11																|												|				
12																|												|				

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
CG3F	250mL clear glass HCl, Field Filter	AG3SF	250mL H2SO4 amb glass -field filtered
BG1H	1L HCl clear glass	AG3U	250mL unpres amber glass
BG1S	1L H2SO4 clear glass	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic
BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
GN	General Container
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL:	Oil
NAL	Non-aqueous liquid
WP	Wipe

APPENDIX C

March 2021-December 2022 Post-Closure Background Monitoring Well Analytical Laboratory Reports

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

May 18, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC April 2021
Pace Project No.: 50286280

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory between May 01, 2021 and May 04, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50286280001	**PC-MW-115-043021**	Water	04/30/21 16:05	05/01/21 09:15
50286280002	**PC-MW-110-043021**	Water	04/30/21 17:00	05/01/21 09:15
50286431001	**PC-MW-113-050321**	Water	05/03/21 09:45	05/04/21 09:40
50286431002	**PC-MW-114-050321**	Water	05/03/21 11:30	05/04/21 09:40
50286431003	**FD-01-050321**	Water	05/03/21 12:00	05/04/21 09:40
50286431004	**FB-01-050321**	Water	05/03/21 12:45	05/04/21 09:40

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(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50286280001	**PC-MW-115-043021**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	WDB	1	PASI-I
50286280002	**PC-MW-110-043021**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	WDB	1	PASI-I
50286431001	**PC-MW-113-050321**	EPA 9056	LWG	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	WDB	1	PASI-I
50286431002	**PC-MW-114-050321**	EPA 9056	LWG, RMR	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	WDB	1	PASI-I
50286431003	**FD-01-050321**	EPA 9056	LWG, RMR	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	WDB	1	PASI-I
50286431004	**FB-01-050321**	EPA 9056	LWG	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	LBT	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I

Pace Analytical Services, LLC
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SAMPLE ANALYTE COUNT

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50286280001	**PC-MW-115-043021**					
EPA 9056	Chloride	410	mg/L	25.0	05/13/21 22:20	
EPA 9056	Fluoride	0.58	mg/L	0.050	05/13/21 21:48	
EPA 9056	Sulfate	75.9	mg/L	2.5	05/13/21 22:04	
EPA 6010	Boron	0.15	mg/L	0.10	05/10/21 08:56	
EPA 6010	Calcium	127	mg/L	1.0	05/10/21 08:56	
EPA 6010	Lithium	0.014	mg/L	0.0080	05/10/21 08:56	
EPA 6010	Total Hardness by 2340B	442	mg/L	1.0	05/10/21 08:56	
EPA 6020	Antimony	0.0026	mg/L	0.0010	05/06/21 09:18	
EPA 6020	Arsenic	0.0021	mg/L	0.0010	05/06/21 09:18	
EPA 6020	Barium	0.042	mg/L	0.0010	05/06/21 09:18	
EPA 6020	Molybdenum	0.0026	mg/L	0.0010	05/06/21 09:18	
EPA 6020	Selenium	0.0020	mg/L	0.0010	05/06/21 09:18	
SM 2540C	Total Dissolved Solids	780	mg/L	20.0	05/05/21 10:16	
SM 4500-H+B	pH at 25 Degrees C	7.5	Std. Units	0.10	05/05/21 13:12	H3
50286280002	**PC-MW-110-043021**					
EPA 9056	Chloride	456	mg/L	25.0	05/13/21 23:10	
EPA 9056	Fluoride	0.54	mg/L	0.050	05/13/21 22:37	
EPA 9056	Sulfate	36.1	mg/L	2.5	05/13/21 22:53	
EPA 6010	Boron	0.21	mg/L	0.10	05/10/21 08:58	
EPA 6010	Calcium	97.9	mg/L	1.0	05/10/21 08:58	
EPA 6010	Total Hardness by 2340B	356	mg/L	1.0	05/10/21 08:58	
EPA 6020	Arsenic	0.0059	mg/L	0.0010	05/06/21 09:32	
EPA 6020	Barium	0.29	mg/L	0.0020	05/07/21 00:58	
EPA 6020	Molybdenum	0.0042	mg/L	0.0010	05/06/21 09:32	
SM 2540C	Total Dissolved Solids	802	mg/L	20.0	05/05/21 10:17	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	05/05/21 13:13	H3
50286431001	**PC-MW-113-050321**					
EPA 9056	Chloride	82.7	mg/L	2.5	05/16/21 00:48	
EPA 9056	Fluoride	1.2	mg/L	0.050	05/16/21 00:33	
EPA 9056	Sulfate	131	mg/L	2.5	05/16/21 00:48	
EPA 6010	Boron	0.26	mg/L	0.10	05/10/21 09:00	
EPA 6010	Calcium	86.7	mg/L	1.0	05/10/21 09:00	
EPA 6010	Lithium	0.017	mg/L	0.0080	05/10/21 09:00	
EPA 6010	Total Hardness by 2340B	315	mg/L	1.0	05/10/21 09:00	
EPA 6020	Arsenic	0.0016	mg/L	0.0010	05/06/21 09:37	
EPA 6020	Barium	0.032	mg/L	0.0010	05/06/21 09:37	
EPA 6020	Selenium	0.015	mg/L	0.0010	05/06/21 09:37	
SM 2540C	Total Dissolved Solids	573	mg/L	10.0	05/05/21 10:55	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	05/05/21 13:14	H3
50286431002	**PC-MW-114-050321**					
EPA 9056	Chloride	208	mg/L	25.0	05/17/21 14:17	
EPA 9056	Fluoride	0.30	mg/L	0.050	05/16/21 02:06	
EPA 9056	Sulfate	57.2	mg/L	2.5	05/16/21 02:21	
EPA 6010	Boron	0.17	mg/L	0.10	05/10/21 09:13	
EPA 6010	Calcium	79.6	mg/L	1.0	05/10/21 09:13	
EPA 6010	Total Hardness by 2340B	290	mg/L	1.0	05/10/21 09:13	

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50286431002	**PC-MW-114-050321**					
EPA 6020	Barium	0.061	mg/L	0.0010	05/06/21 10:09	
EPA 6020	Cobalt	0.0017	mg/L	0.0010	05/06/21 10:09	
EPA 6020	Molybdenum	0.0020	mg/L	0.0010	05/06/21 10:09	
EPA 6020	Selenium	0.0019	mg/L	0.0010	05/06/21 10:09	
SM 2540C	Total Dissolved Solids	622	mg/L	20.0	05/05/21 10:55	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	05/05/21 13:19	H3
50286431003	**FD-01-050321**					
EPA 9056	Chloride	239	mg/L	25.0	05/17/21 14:33	
EPA 9056	Fluoride	0.29	mg/L	0.050	05/16/21 03:07	
EPA 9056	Sulfate	58.3	mg/L	2.5	05/16/21 03:23	
EPA 6010	Boron	0.17	mg/L	0.10	05/10/21 09:15	
EPA 6010	Calcium	81.4	mg/L	1.0	05/10/21 09:15	
EPA 6010	Total Hardness by 2340B	296	mg/L	1.0	05/10/21 09:15	
EPA 6020	Barium	0.061	mg/L	0.0010	05/06/21 10:14	
EPA 6020	Cobalt	0.0017	mg/L	0.0010	05/06/21 10:14	
EPA 6020	Molybdenum	0.0020	mg/L	0.0010	05/06/21 10:14	
EPA 6020	Selenium	0.0018	mg/L	0.0010	05/06/21 10:14	
SM 2540C	Total Dissolved Solids	644	mg/L	20.0	05/05/21 10:56	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	05/05/21 13:27	H3
50286431004	**FB-01-050321**					
SM 4500-H+B	pH at 25 Degrees C	7.5	Std. Units	0.10	05/07/21 12:48	H3

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PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 620581

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50286431001

M0: Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

- MS (Lab ID: 2859777)
  - Chloride
  - Sulfate
- MSD (Lab ID: 2859778)
  - Chloride
  - Sulfate

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_Golder
Date: May 18, 2021

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-050321 (Lab ID: 50286431004)
- FD-01-050321 (Lab ID: 50286431003)
- PC-MW-110-043021 (Lab ID: 50286280002)
- PC-MW-113-050321 (Lab ID: 50286431001)
- PC-MW-114-050321 (Lab ID: 50286431002)
- PC-MW-115-043021 (Lab ID: 50286280001)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: PC-MW-115-043021 **Lab ID: 50286280001** Collected: 04/30/21 16:05 Received: 05/01/21 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**410**	mg/L	25.0	100		05/13/21 22:20	16887-00-6	
Fluoride	**0.58**	mg/L	0.050	1		05/13/21 21:48	16984-48-8	
Sulfate	**75.9**	mg/L	2.5	10		05/13/21 22:04	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.15**	mg/L	0.10	1	05/07/21 07:00	05/10/21 08:56	7440-42-8	
Calcium	**127**	mg/L	1.0	1	05/07/21 07:00	05/10/21 08:56	7440-70-2	
Lithium	**0.014**	mg/L	0.0080	1	05/07/21 07:00	05/10/21 08:56	7439-93-2	
Total Hardness by 2340B	**442**	mg/L	1.0	1	05/07/21 07:00	05/10/21 08:56		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	**0.0026**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7440-36-0	
Arsenic	**0.0021**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7440-38-2	
Barium	**0.042**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:18	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:18	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 09:18	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7439-92-1	
Molybdenum	**0.0026**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7439-98-7	
Selenium	**0.0020**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/10/21 07:21	05/10/21 19:37	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**780**	mg/L	20.0	1		05/05/21 10:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		05/05/21 13:12		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: PC-MW-110-043021 **Lab ID: 50286280002** Collected: 04/30/21 17:00 Received: 05/01/21 09:15 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**456**	mg/L	25.0	100		05/13/21 23:10	16887-00-6	
Fluoride	**0.54**	mg/L	0.050	1		05/13/21 22:37	16984-48-8	
Sulfate	**36.1**	mg/L	2.5	10		05/13/21 22:53	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.21**	mg/L	0.10	1	05/07/21 07:00	05/10/21 08:58	7440-42-8	
Calcium	**97.9**	mg/L	1.0	1	05/07/21 07:00	05/10/21 08:58	7440-70-2	
Lithium	ND	mg/L	0.0080	1	05/07/21 07:00	05/10/21 08:58	7439-93-2	
Total Hardness by 2340B	**356**	mg/L	1.0	1	05/07/21 07:00	05/10/21 08:58		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7440-36-0	
Arsenic	**0.0059**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7440-38-2	
Barium	**0.29**	mg/L	0.0020	2	05/05/21 17:30	05/07/21 00:58	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:32	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:32	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 09:32	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7439-92-1	
Molybdenum	**0.0042**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7439-98-7	
Selenium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:32	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/10/21 07:21	05/10/21 19:40	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**802**	mg/L	20.0	1		05/05/21 10:17		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		05/05/21 13:13		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: PC-MW-113-050321 **Lab ID: 50286431001** Collected: 05/03/21 09:45 Received: 05/04/21 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**82.7**	mg/L	2.5	10		05/16/21 00:48	16887-00-6	
Fluoride	**1.2**	mg/L	0.050	1		05/16/21 00:33	16984-48-8	
Sulfate	**131**	mg/L	2.5	10		05/16/21 00:48	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.26**	mg/L	0.10	1	05/07/21 07:00	05/10/21 09:00	7440-42-8	
Calcium	**86.7**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:00	7440-70-2	
Lithium	**0.017**	mg/L	0.0080	1	05/07/21 07:00	05/10/21 09:00	7439-93-2	
Total Hardness by 2340B	**315**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:00		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7440-36-0	
Arsenic	**0.0016**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7440-38-2	
Barium	**0.032**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:37	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 09:37	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 09:37	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7439-98-7	
Selenium	**0.015**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 09:37	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/11/21 13:32	05/11/21 18:29	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**573**	mg/L	10.0	1		05/05/21 10:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		05/05/21 13:14		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: PC-MW-114-050321 **Lab ID: 50286431002** Collected: 05/03/21 11:30 Received: 05/04/21 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**208**	mg/L	25.0	100		05/17/21 14:17	16887-00-6	
Fluoride	**0.30**	mg/L	0.050	1		05/16/21 02:06	16984-48-8	
Sulfate	**57.2**	mg/L	2.5	10		05/16/21 02:21	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.17**	mg/L	0.10	1	05/07/21 07:00	05/10/21 09:13	7440-42-8	
Calcium	**79.6**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:13	7440-70-2	
Lithium	ND	mg/L	0.0080	1	05/07/21 07:00	05/10/21 09:13	7439-93-2	
Total Hardness by 2340B	**290**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:13		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7440-38-2	
Barium	**0.061**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:09	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:09	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 10:09	7440-47-3	
Cobalt	**0.0017**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7439-92-1	
Molybdenum	**0.0020**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7439-98-7	
Selenium	**0.0019**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:09	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/11/21 13:32	05/11/21 18:35	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**622**	mg/L	20.0	1		05/05/21 10:55		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		05/05/21 13:19		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: FD-01-050321 **Lab ID: 50286431003** Collected: 05/03/21 12:00 Received: 05/04/21 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**239**	mg/L	25.0	100		05/17/21 14:33	16887-00-6	
Fluoride	**0.29**	mg/L	0.050	1		05/16/21 03:07	16984-48-8	
Sulfate	**58.3**	mg/L	2.5	10		05/16/21 03:23	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.17**	mg/L	0.10	1	05/07/21 07:00	05/10/21 09:15	7440-42-8	
Calcium	**81.4**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:15	7440-70-2	
Lithium	ND	mg/L	0.0080	1	05/07/21 07:00	05/10/21 09:15	7439-93-2	
Total Hardness by 2340B	**296**	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:15		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7440-38-2	
Barium	**0.061**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:14	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:14	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 10:14	7440-47-3	
Cobalt	**0.0017**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7439-92-1	
Molybdenum	**0.0020**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7439-98-7	
Selenium	**0.0018**	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:14	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/11/21 13:32	05/11/21 18:37	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**644**	mg/L	20.0	1		05/05/21 10:56		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		05/05/21 13:27		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC April 2021
Pace Project No.: 50286280

Sample: FB-01-050321 **Lab ID: 50286431004** Collected: 05/03/21 12:45 Received: 05/04/21 09:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	ND	mg/L	0.25	1		05/16/21 03:38	16887-00-6	
Fluoride	ND	mg/L	0.050	1		05/16/21 03:38	16984-48-8	
Sulfate	ND	mg/L	0.25	1		05/16/21 03:38	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	ND	mg/L	0.10	1	05/07/21 07:00	05/10/21 09:17	7440-42-8	
Calcium	ND	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:17	7440-70-2	
Lithium	ND	mg/L	0.0080	1	05/07/21 07:00	05/10/21 09:17	7439-93-2	
Total Hardness by 2340B	ND	mg/L	1.0	1	05/07/21 07:00	05/10/21 09:17		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7440-38-2	
Barium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:19	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	05/05/21 17:30	05/06/21 10:19	7440-43-9	
Chromium	ND	mg/L	0.0020	1	05/05/21 17:30	05/06/21 10:19	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7440-48-4	
Lead	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7439-98-7	
Selenium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7782-49-2	
Thallium	ND	mg/L	0.0010	1	05/05/21 17:30	05/06/21 10:19	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	05/11/21 13:32	05/11/21 18:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	ND	mg/L	10.0	1		05/05/21 10:57		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.5**	Std. Units	0.10	1		05/07/21 12:48		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 620578
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002

METHOD BLANK: 2859759 Matrix: Water
Associated Lab Samples: 50286280001, 50286280002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	05/13/21 12:49	
Fluoride	mg/L	ND	0.050	05/13/21 12:49	
Sulfate	mg/L	ND	0.25	05/13/21 12:49	

LABORATORY CONTROL SAMPLE: 2859760

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	99	80-120	
Fluoride	mg/L	0.5	0.47	95	80-120	
Sulfate	mg/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2859761 2859762

Parameter	Units	50286245002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	244	125	125	368	368	99	99	80-120	0	15	
Fluoride	mg/L	0.50	0.5	0.5	0.98	0.98	96	96	80-120	0	15	
Sulfate	mg/L	10.3	2.5	2.5	12.6	12.6	95	95	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 620581
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286431001, 50286431002, 50286431003, 50286431004

METHOD BLANK: 2859775 Matrix: Water
Associated Lab Samples: 50286431001, 50286431002, 50286431003, 50286431004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	05/15/21 22:29	
Fluoride	mg/L	ND	0.050	05/15/21 22:29	
Sulfate	mg/L	ND	0.25	05/15/21 22:29	

LABORATORY CONTROL SAMPLE: 2859776

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	92	80-120	
Fluoride	mg/L	0.5	0.52	105	80-120	
Sulfate	mg/L	2.5	2.4	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2859777 2859778

Parameter	Units	50286431001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	82.7	12.5	12.5	113	108	241	201	80-120	4	15	M0
Fluoride	mg/L	1.2	0.5	0.5	1.7	1.7	104	105	80-120	0	15	
Sulfate	mg/L	131	25	25	181	175	199	177	80-120	3	15	M0

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 619163
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002

METHOD BLANK: 2852817 Matrix: Water
Associated Lab Samples: 50286280001, 50286280002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	05/10/21 18:42	

LABORATORY CONTROL SAMPLE: 2852818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0048	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852819 2852820

Parameter	Units	50286053006 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	<0.12 ug/L	0.005	0.005	0.0047	0.0051	95	102	75-125	7	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2852821 2852822

Parameter	Units	50286245002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0049	99	98	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 619797
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286431001, 50286431002, 50286431003, 50286431004

METHOD BLANK: 2856575 Matrix: Water
Associated Lab Samples: 50286431001, 50286431002, 50286431003, 50286431004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	05/11/21 17:53	

LABORATORY CONTROL SAMPLE: 2856576

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0052	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2856577 2856578

Parameter	Units	50286431001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0049	0.0050	98	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 618891
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

METHOD BLANK: 2851518 Matrix: Water
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	05/10/21 08:19	
Calcium	mg/L	ND	1.0	05/10/21 08:19	
Lithium	mg/L	ND	0.0080	05/10/21 08:19	
Total Hardness by 2340B	mg/L	ND	1.0	05/10/21 08:19	

LABORATORY CONTROL SAMPLE: 2851519

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.98	98	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	mg/L	1	0.97	97	80-120	
Total Hardness by 2340B	mg/L	66.2	63.1	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851520 2851521

Parameter	Units	50286245002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.24	1	1	1.2	1.2	100	101	75-125	1	20	
Calcium	mg/L	69.4	10	10	77.9	79.2	84	98	75-125	2	20	
Lithium	mg/L	ND	1	1	0.98	0.99	97	98	75-125	1	20	
Total Hardness by 2340B	mg/L	245	66.2	66.2	302	307	86	94	75-125	2	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851522 2851523

Parameter	Units	50286431001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.26	1	1	1.3	1.3	101	101	75-125	0	20	
Calcium	mg/L	86.7	10	10	95.9	96.8	92	101	75-125	1	20	
Lithium	mg/L	0.017	1	1	0.99	1.0	97	99	75-125	1	20	
Total Hardness by 2340B	mg/L	315	66.2	66.2	375	379	91	96	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 618975
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

METHOD BLANK: 2851824 Matrix: Water
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	05/06/21 08:18	
Arsenic	mg/L	ND	0.0010	05/06/21 08:18	
Barium	mg/L	ND	0.0010	05/06/21 08:18	
Beryllium	mg/L	ND	0.00020	05/06/21 08:18	
Cadmium	mg/L	ND	0.00020	05/06/21 08:18	
Chromium	mg/L	ND	0.0020	05/06/21 08:18	
Cobalt	mg/L	ND	0.0010	05/06/21 08:18	
Lead	mg/L	ND	0.0010	05/06/21 08:18	
Molybdenum	mg/L	ND	0.0010	05/06/21 08:18	
Selenium	mg/L	ND	0.0010	05/06/21 08:18	
Thallium	mg/L	ND	0.0010	05/06/21 08:18	

LABORATORY CONTROL SAMPLE: 2851825

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.042	104	80-120	
Arsenic	mg/L	0.04	0.037	94	80-120	
Barium	mg/L	0.04	0.040	100	80-120	
Beryllium	mg/L	0.04	0.040	100	80-120	
Cadmium	mg/L	0.04	0.039	99	80-120	
Chromium	mg/L	0.04	0.041	102	80-120	
Cobalt	mg/L	0.04	0.041	103	80-120	
Lead	mg/L	0.04	0.041	102	80-120	
Molybdenum	mg/L	0.04	0.041	103	80-120	
Selenium	mg/L	0.04	0.039	97	80-120	
Thallium	mg/L	0.04	0.042	105	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851826 2851827

Parameter	Units	50286245002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.041	0.042	104	106	75-125	3	20	
Arsenic	mg/L	0.0066	0.04	0.04	0.045	0.044	96	93	75-125	3	20	
Barium	mg/L	0.12	0.04	0.04	0.16	0.17	94	107	75-125	3	20	
Beryllium	mg/L	ND	0.04	0.04	0.041	0.041	102	103	75-125	2	20	
Cadmium	mg/L	ND	0.04	0.04	0.038	0.039	95	98	75-125	3	20	
Chromium	mg/L	ND	0.04	0.04	0.042	0.040	103	99	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851826 2851827

Parameter	Units	50286245002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	ND	0.04	0.04	0.039	0.040	96	98	75-125	2	20	
Lead	mg/L	ND	0.04	0.04	0.041	0.043	102	106	75-125	4	20	
Molybdenum	mg/L	0.0012	0.04	0.04	0.042	0.044	102	107	75-125	5	20	
Selenium	mg/L	ND	0.04	0.04	0.038	0.038	95	94	75-125	2	20	
Thallium	mg/L	ND	0.04	0.04	0.042	0.044	106	109	75-125	3	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2851828 2851829

Parameter	Units	50286431001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.042	0.042	105	105	75-125	0	20	
Arsenic	mg/L	0.0016	0.04	0.04	0.038	0.039	92	93	75-125	1	20	
Barium	mg/L	0.032	0.04	0.04	0.072	0.072	100	99	75-125	0	20	
Beryllium	mg/L	ND	0.04	0.04	0.041	0.041	103	103	75-125	0	20	
Cadmium	mg/L	ND	0.04	0.04	0.038	0.039	96	96	75-125	1	20	
Chromium	mg/L	ND	0.04	0.04	0.040	0.041	99	101	75-125	1	20	
Cobalt	mg/L	ND	0.04	0.04	0.040	0.040	98	97	75-125	0	20	
Lead	mg/L	ND	0.04	0.04	0.041	0.041	103	103	75-125	0	20	
Molybdenum	mg/L	ND	0.04	0.04	0.042	0.042	103	102	75-125	1	20	
Selenium	mg/L	0.015	0.04	0.04	0.052	0.052	92	92	75-125	0	20	
Thallium	mg/L	ND	0.04	0.04	0.043	0.043	107	106	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 618958 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

METHOD BLANK: 2851757 Matrix: Water
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003, 50286431004

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	05/05/21 10:15	

LABORATORY CONTROL SAMPLE: 2851758

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	262	87	80-120	

SAMPLE DUPLICATE: 2851759

Parameter	Units	50286280001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	780	798	2	10	

SAMPLE DUPLICATE: 2851760

Parameter	Units	50286431001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	573	570	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 619006
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50286280001, 50286280002, 50286431001, 50286431002, 50286431003

SAMPLE DUPLICATE: 2851957

Parameter	Units	50286431001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	0	2	H3

SAMPLE DUPLICATE: 2851958

Parameter	Units	50286423003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC April 2021
Pace Project No.: 50286280

QC Batch: 619493
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis

Associated Lab Samples: 50286431004

SAMPLE DUPLICATE: 2854542

Parameter	Units	50286564008 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.0	7.0	0	2	H3

SAMPLE DUPLICATE: 2854543

Parameter	Units	50286675002 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.4	7.4	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALIFIERS

Project: MCGS PC April 2021
Pace Project No.: 50286280

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
M0	Matrix spike recovery and/or matrix spike duplicate recovery was outside laboratory control limits.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC April 2021
Pace Project No.: 50286280

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50286280001	**PC-MW-115-043021**	EPA 9056	620578		
50286280002	**PC-MW-110-043021**	EPA 9056	620578		
50286431001	**PC-MW-113-050321**	EPA 9056	620581		
50286431002	**PC-MW-114-050321**	EPA 9056	620581		
50286431003	**FD-01-050321**	EPA 9056	620581		
50286431004	**FB-01-050321**	EPA 9056	620581		
50286280001	**PC-MW-115-043021**	EPA 3010	618891	EPA 6010	619721
50286280002	**PC-MW-110-043021**	EPA 3010	618891	EPA 6010	619721
50286431001	**PC-MW-113-050321**	EPA 3010	618891	EPA 6010	619721
50286431002	**PC-MW-114-050321**	EPA 3010	618891	EPA 6010	619721
50286431003	**FD-01-050321**	EPA 3010	618891	EPA 6010	619721
50286431004	**FB-01-050321**	EPA 3010	618891	EPA 6010	619721
50286280001	**PC-MW-115-043021**	EPA 200.2	618975	EPA 6020	619167
50286280002	**PC-MW-110-043021**	EPA 200.2	618975	EPA 6020	619167
50286431001	**PC-MW-113-050321**	EPA 200.2	618975	EPA 6020	619167
50286431002	**PC-MW-114-050321**	EPA 200.2	618975	EPA 6020	619167
50286431003	**FD-01-050321**	EPA 200.2	618975	EPA 6020	619167
50286431004	**FB-01-050321**	EPA 200.2	618975	EPA 6020	619167
50286280001	**PC-MW-115-043021**	EPA 7470	619163	EPA 7470	619902
50286280002	**PC-MW-110-043021**	EPA 7470	619163	EPA 7470	619902
50286431001	**PC-MW-113-050321**	EPA 7470	619797	EPA 7470	620170
50286431002	**PC-MW-114-050321**	EPA 7470	619797	EPA 7470	620170
50286431003	**FD-01-050321**	EPA 7470	619797	EPA 7470	620170
50286431004	**FB-01-050321**	EPA 7470	619797	EPA 7470	620170
50286280001	**PC-MW-115-043021**	SM 2540C	618958		
50286280002	**PC-MW-110-043021**	SM 2540C	618958		
50286431001	**PC-MW-113-050321**	SM 2540C	618958		
50286431002	**PC-MW-114-050321**	SM 2540C	618958		
50286431003	**FD-01-050321**	SM 2540C	618958		
50286431004	**FB-01-050321**	SM 2540C	618958		
50286280001	**PC-MW-115-043021**	SM 4500-H+B	619006		
50286280002	**PC-MW-110-043021**	SM 4500-H+B	619006		
50286431001	**PC-MW-113-050321**	SM 4500-H+B	619006		
50286431002	**PC-MW-114-050321**	SM 4500-H+B	619006		
50286431003	**FD-01-050321**	SM 4500-H+B	619006		
50286431004	**FB-01-050321**	SM 4500-H+B	619493		

REPORT OF LABORATORY ANALYSIS

WO# : 50286280

50286280

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	krysta_cione@golder.com,	Company Name:	NiSource
	Merrillville, IN 46410		danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	~~PO12708~~ 12708	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS ~~Assessment Monitoring~~	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	Standard	Project #:	MCGSPC April 2021	Pace Profile #:	9047

Regulatory Agency: | State / Location: IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 9056	pH by 4500	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N	N	N	N	N	N	N		
1	PC-MW-115-043021 ~~GAMW-05~~					4/30/21	1605		4	3		1							X	X	X	X	X	X		001
2	PC-MW-116-043021 ~~GAMW-08~~					4/30/21	1700		4	3		1							X	X	X	X	X	X		002
3	~~GAMW-10~~																									
4	~~GAMW-11~~																									
5	~~GAMW-12~~																									
6	GAMW-13																									
7	~~GAMW-14~~																									
8	~~GAMW-15~~																									
9	GAMW-16																									
10	GAMW-18																									
11	~~GMMW-1~~																									
12	~~GMMW-2~~																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	Katherine Bartels/Golder FedEx	4/30/21	1800	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020					5/1/21	0915	1.3	Y	Y	Y
~~LEVEL 4~~ 5/6/21tms										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Katherine Bartels

SIGNATURE of SAMPLER: Katherine Bartels DATE Signed: 4/30/21

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DAP 5/1/21 1100

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature:** 1.3/1.3
Temp should be above freezing to 6°C **(Initial/Corrected)**

5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other ZPLC

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

Level 4 not needed per K. Cione email. 5/6/21tms

COC PAGE ____ of ____

Sample Container Count

Sample Line Item	WGFU	SBS DI BK Kit R	DG9H VG9H	VOA VIAL HS (>5mm)	VG9U	DG9U	DG9T	AG0U	AG1H	AG1U	AG3S	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H				Matrix	pH <2	pH >9	pH>10
1																3	1									WT	✓		
2																↓	↓									L	↓		
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpres amber glass
DG9H	40mL HCl amber voa vial	AG1H	1L HCl amber glass
DG9M	40mL MeOH clear vial	AG1S	1L H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1L Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpres amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCl clear vial	AG2U	500mL unpres amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 amber glass
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpres amber glass
VGFX	40mL w/hexane wipe vial	AG3C	250mL NaOH amber glass
VSG	Headspace septa vial & HCl	BG1H	1L HCl clear glass
WGKU	8oz unpreserved clear jar	BG1S	1L H2SO4 clear glass
WGFU	4oz clear soil jar	BG1T	1L Na Thiosulfate clear glass
JGFU	4oz unpreserved amber wide	BG1U	1L unpreserved glass
CG3H	250mL clear glass HCl	BG3H	250mL HCl Clear Glass

Plastic / Misc.

BG3U	250mL Unpres Clear Glass
BP1A	1L NaOH, Asc Acid plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2A	500mL NaOH, Asc Acid plastic
BP2N	500mL HNO3 plastic
BP2O	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic (field filtered)

BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Ac plastic

AF	Air Filter
C	Air Cassettes
R	Terra core kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT	Water
SL	Solid
NAL	Non-aqueous liquid
WP	Wipe

WO#:50286431

50286431

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page: 1 Of 1

Required Client Information:		Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	krysta_cione@golder.com,	Company Name:	NiSource
Merrillville, IN 46410			danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS PC April 2021	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	standard	Project #:		Pace Profile #:	9047

Regulatory Agency:

State / Location: IN

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

Requested Analysis Filtered (Y/N): N N N N N N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 9056	pH by 4500	Residual Chlorine (Y/N)	
1	~~PC-MW-110~~ (CH)	WT	G						4	3		1							X	X	X	X	X	X		
2	PC-MW-113 -050321	WT	G			5/3/21	9:45		4	3		1							X	X	X	X	X	X		MS/MSD
3	PC-MW-114 -050321	WT	G			⊥	11:30		4	3		1							X	X	X	X	X	X		
4	~~PC-MW-115~~ (CH)	WT	G						4	3		1							X	X	X	X	X	X		
5	FD-01 -050321	WT	G			5/3/21	12:00		4	3		1							X	X	X	X	X	X		
6	FB-01 -050321	WT	G			⊥	12:45		4	3		1							X	X	X	X	X	X		
7																										
8																										
9																										
10																										
11																										
12																										

Margin notes: 1 ~~[illegible]~~ [illegible]; 2 004; 3 002; 4 ~~[illegible]~~ [illegible]; 5 003; 6 004

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	Colby Howland	5/3/21	17:15							
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	Golder			FedEx				\		
	FedEx			W Slay	5-4-21	940	2.8	Y	Y	Y
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Colby Howland

SIGNATURE of SAMPLER: Colby Howland DATE Signed: 5/3/2021

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: WS 5-4-21 1355

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D (E) F
4. **Cooler Temperature:** 3.4/2.8
   Temp should be above freezing to 6°C **(Initial/Corrected)**
5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other Ziplock
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle:** **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
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Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
			Headspace in VOA Vials (>6mm):	Present	Absent	No VOA Vials Sent
Containers Intact?:	✓		See Containter Count form for details			✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:		✓	

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

Sample Line Item	WGFU	SBS DI BK Kit R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	DG9T	AG0U	AG1H	AG1U	AG3S	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H				Matrix	pH <2	pH >9	pH>10
1																													
2																9	3									WT	✓		
3																3	1									↓	↓		
4																													
5																3	1									WT	✓		
6																↓	↓									↓	↓		
7																													
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Container Codes

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BP2U	500mL unpreserved plastic
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BP3B	250mL NaOH plastic
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BP3F	250mL HNO3 plastic (field filtered)

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BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Ac plastic

AF	Air Filter
C	Air Cassettes
R	Terra core kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT	Water
SL	Solid
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

June 02, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC April 2021
Pace Project No.: 50286291

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory between May 01, 2021 and May 04, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC April 2021
Pace Project No.: 50286291

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50286291001	**PC-MW-115-043021**	Water	04/30/21 16:05	05/01/21 09:15
50286291002	**PC-MW-110-043021**	Water	04/30/21 17:00	05/01/21 09:15
50286416001	**PC-MW-113-050321**	Water	05/03/21 09:45	05/04/21 09:40
50286416002	**PC-MW-114-050321**	Water	05/03/21 11:30	05/04/21 09:40
50286416003	**FD-01-050321**	Water	05/03/21 12:00	05/04/21 09:40
50286416004	**FB-01-050321**	Water	05/03/21 12:45	05/04/21 09:40
50286416005	**PC-MW-113-050321 MS**	Water	05/03/21 09:45	05/04/21 09:40
50286416006	**PC-MW-113-050321 MSD**	Water	05/03/21 09:45	05/04/21 09:40

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC April 2021
Pace Project No.: 50286291

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50286291001	**PC-MW-115-043021**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50286291002	**PC-MW-110-043021**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50286416001	**PC-MW-113-050321**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50286416002	**PC-MW-114-050321**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50286416003	**FD-01-050321**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50286416004	**FB-01-050321**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50286416005	**PC-MW-113-050321 MS**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50286416006	**PC-MW-113-050321 MSD**	EPA 903.1	MK1	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC April 2021
Pace Project No.: 50286291

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50286291001	**PC-MW-115-043021**					
EPA 903.1	Radium-226	0.189 ± 0.446 (0.827) C:NA T:92%	pCi/L		05/26/21 13:16	
EPA 904.0	Radium-228	0.0836 ± 0.320 (0.726) C:69% T:83%	pCi/L		05/25/21 12:15	
Total Radium Calculation	Total Radium	0.273 ± 0.766 (1.55)	pCi/L		05/26/21 15:28	
50286291002	**PC-MW-110-043021**					
EPA 903.1	Radium-226	0.769 ± 0.530 (0.566) C:NA T:86%	pCi/L		05/31/21 13:51	
EPA 904.0	Radium-228	0.990 ± 0.487 (0.841) C:62% T:86%	pCi/L		05/25/21 12:15	
Total Radium Calculation	Total Radium	1.76 ± 1.02 (1.41)	pCi/L		06/01/21 15:58	
50286416001	**PC-MW-113-050321**					
EPA 903.1	Radium-226	-0.0322 ± 0.284 (0.618) C:NA T:94%	pCi/L		05/28/21 13:05	
EPA 904.0	Radium-228	0.906 ± 0.452 (0.781) C:75% T:84%	pCi/L		05/27/21 16:19	
Total Radium Calculation	Total Radium	0.906 ± 0.736 (1.40)	pCi/L		05/28/21 17:03	
50286416002	**PC-MW-114-050321**					
EPA 903.1	Radium-226	0.808 ± 0.632 (0.889) C:NA T:101%	pCi/L		05/28/21 13:05	
EPA 904.0	Radium-228	0.199 ± 0.312 (0.675) C:76% T:88%	pCi/L		05/27/21 16:19	
Total Radium Calculation	Total Radium	1.01 ± 0.944 (1.56)	pCi/L		05/28/21 17:03	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC April 2021
Pace Project No.: 50286291

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50286416003	**FD-01-050321**					
EPA 903.1	Radium-226	0.130 ± 0.497 (0.917) C:NA T:99%	pCi/L		05/28/21 13:35	
EPA 904.0	Radium-228	0.771 ± 0.415 (0.739) C:81% T:83%	pCi/L		05/27/21 16:20	
Total Radium Calculation	Total Radium	0.901 ± 0.912 (1.66)	pCi/L		05/28/21 17:03	
50286416004	**FB-01-050321**					
EPA 903.1	Radium-226	0.0868 ± 0.486 (0.933) C:NA T:92%	pCi/L		05/28/21 13:35	
EPA 904.0	Radium-228	0.532 ± 0.341 (0.625) C:76% T:86%	pCi/L		05/27/21 16:20	
Total Radium Calculation	Total Radium	0.619 ± 0.827 (1.56)	pCi/L		05/28/21 17:03	
50286416005	**PC-MW-113-050321 MS**					
EPA 903.1	Radium-226	80.86 %REC ± NA (NA) C:NA T:NA	pCi/L		05/28/21 13:05	
EPA 904.0	Radium-228	105.10 %REC ± NA (NA) C:NA T:NA	pCi/L		05/27/21 16:19	
50286416006	**PC-MW-113-050321 MSD**					
EPA 903.1	Radium-226	94.23 %REC 15.27 RPD ± NA (NA) C:NA T:NA	pCi/L		05/28/21 13:20	
EPA 904.0	Radium-228	93.68 %REC 11.49 RPD ± NA (NA) C:NA T:NA	pCi/L		05/27/21 16:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286291

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_Golder
Date: June 02, 2021

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286291

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_Golder
Date: June 02, 2021

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC April 2021
Pace Project No.: 50286291

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_Golder
Date: June 02, 2021

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-115-043021 **Lab ID: 50286291001** Collected: 04/30/21 16:05 Received: 05/01/21 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.189 ± 0.446 (0.827) C:NA T:92%**	pCi/L	05/26/21 13:16	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0836 ± 0.320 (0.726) C:69% T:83%**	pCi/L	05/25/21 12:15	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.273 ± 0.766 (1.55)**	pCi/L	05/26/21 15:28	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-110-043021 **Lab ID: 50286291002** Collected: 04/30/21 17:00 Received: 05/01/21 09:15 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.769 ± 0.530 (0.566) C:NA T:86%**	pCi/L	05/31/21 13:51	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.990 ± 0.487 (0.841) C:62% T:86%**	pCi/L	05/25/21 12:15	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.76 ± 1.02 (1.41)**	pCi/L	06/01/21 15:58	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-113-050321 **Lab ID: 50286416001** Collected: 05/03/21 09:45 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.0322 ± 0.284 (0.618) C:NA T:94%**	pCi/L	05/28/21 13:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.906 ± 0.452 (0.781) C:75% T:84%**	pCi/L	05/27/21 16:19	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.906 ± 0.736 (1.40)**	pCi/L	05/28/21 17:03	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-114-050321 **Lab ID: 50286416002** Collected: 05/03/21 11:30 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.808 ± 0.632 (0.889) C:NA T:101%**	pCi/L	05/28/21 13:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.199 ± 0.312 (0.675) C:76% T:88%**	pCi/L	05/27/21 16:19	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.01 ± 0.944 (1.56)**	pCi/L	05/28/21 17:03	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: FD-01-050321 **Lab ID: 50286416003** Collected: 05/03/21 12:00 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.130 ± 0.497 (0.917) C:NA T:99%**	pCi/L	05/28/21 13:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.771 ± 0.415 (0.739) C:81% T:83%**	pCi/L	05/27/21 16:20	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.901 ± 0.912 (1.66)**	pCi/L	05/28/21 17:03	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: FB-01-050321 **Lab ID: 50286416004** Collected: 05/03/21 12:45 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0868 ± 0.486 (0.933) C:NA T:92%**	pCi/L	05/28/21 13:35	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.532 ± 0.341 (0.625) C:76% T:86%**	pCi/L	05/27/21 16:20	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.619 ± 0.827 (1.56)**	pCi/L	05/28/21 17:03	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-113-050321 MS **Lab ID: 50286416005** Collected: 05/03/21 09:45 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**80.86 %REC ± NA (NA) C:NA T:NA**	pCi/L	05/28/21 13:05	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**105.10 %REC ± NA (NA) C:NA T:NA**	pCi/L	05/27/21 16:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

Sample: PC-MW-113-050321 MSD **Lab ID: 50286416006** Collected: 05/03/21 09:45 Received: 05/04/21 09:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**94.23 %REC 15.27 RPD ± NA (NA) C:NA T:NA**	pCi/L	05/28/21 13:20	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**93.68 %REC 11.49 RPD ± NA (NA) C:NA T:NA**	pCi/L	05/27/21 16:19	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

QC Batch: 447305
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50286416001, 50286416002, 50286416003, 50286416004, 50286416005, 50286416006

METHOD BLANK: 2158578 Matrix: Water
Associated Lab Samples: 50286416001, 50286416002, 50286416003, 50286416004, 50286416005, 50286416006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0765 ± 0.258 (0.589) C:79% T:83%	pCi/L	05/27/21 16:19	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

QC Batch: 447303
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50286291001, 50286291002

METHOD BLANK: 2158576 Matrix: Water
Associated Lab Samples: 50286291001, 50286291002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.902 ± 0.415 (0.690) C:72% T:84%	pCi/L	05/25/21 12:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

QC Batch: 447301
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50286291001, 50286291002

METHOD BLANK: 2158574 Matrix: Water
Associated Lab Samples: 50286291001, 50286291002

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.257 ± 0.392 (0.675) C:NA T:89%	pCi/L	05/26/21 13:03	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC April 2021
Pace Project No.: 50286291

QC Batch: 447304
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50286416001, 50286416002, 50286416003, 50286416004, 50286416005, 50286416006

METHOD BLANK: 2158577 Matrix: Water
Associated Lab Samples: 50286416001, 50286416002, 50286416003, 50286416004, 50286416005, 50286416006

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.160 ± 0.310 (0.541) C:NA T:98%	pCi/L	05/28/21 13:05	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC April 2021
Pace Project No.: 50286291

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC April 2021
Pace Project No.: 50286291

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50286291001	**PC-MW-115-043021**	EPA 903.1	447301		
50286291002	**PC-MW-110-043021**	EPA 903.1	447301		
50286416001	**PC-MW-113-050321**	EPA 903.1	447304		
50286416002	**PC-MW-114-050321**	EPA 903.1	447304		
50286416003	**FD-01-050321**	EPA 903.1	447304		
50286416004	**FB-01-050321**	EPA 903.1	447304		
50286416005	**PC-MW-113-050321 MS**	EPA 903.1	447304		
50286416006	**PC-MW-113-050321 MSD**	EPA 903.1	447304		
50286291001	**PC-MW-115-043021**	EPA 904.0	447303		
50286291002	**PC-MW-110-043021**	EPA 904.0	447303		
50286416001	**PC-MW-113-050321**	EPA 904.0	447305		
50286416002	**PC-MW-114-050321**	EPA 904.0	447305		
50286416003	**FD-01-050321**	EPA 904.0	447305		
50286416004	**FB-01-050321**	EPA 904.0	447305		
50286416005	**PC-MW-113-050321 MS**	EPA 904.0	447305		
50286416006	**PC-MW-113-050321 MSD**	EPA 904.0	447305		
50286291001	**PC-MW-115-043021**	Total Radium Calculation	449815		
50286291002	**PC-MW-110-043021**	Total Radium Calculation	450496		
50286416001	**PC-MW-113-050321**	Total Radium Calculation	450205		
50286416002	**PC-MW-114-050321**	Total Radium Calculation	450205		
50286416003	**FD-01-050321**	Total Radium Calculation	450205		
50286416004	**FB-01-050321**	Total Radium Calculation	450205		

WO#:50286291

50286291

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A Required Client Information:

Company:	NiSource_Golder
Address:	801 E 8th Ave
	Merrillville, IN 46410
Email:	jim_peace@golder.com
Phone:	Fax:
Requested Due Date:	Standard

Section B Required Project Information:

Report To:	Jim Peace
Copy To:	krysta_cione@golder.com, danielle_sylvia@golder.com
Purchase Order #:	~~PO12708~~ 12708
Project Name:	~~MCGS Assessment Monitoring~~
Project #:	MCGS PC April 2021

Section C Invoice Information:

Attention:	Jeff Loewe-U12677
Company Name:	NiSource
Address:	
Pace Quote:	
Pace Project Manager:	tina.sayer@pacelabs.com,
Pace Profile #:	9047

Regulatory Agency:

State / Location: IN

MATRIX / CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

SAMPLE ID — One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique

Requested Analysis Filtered (Y/N): Radium-226 N; Radium-228 N

ITEM #	SAMPLE ID	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	START TIME	END DATE	END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	~~Metals, Total by 6010~~	~~Metals, Total by 6020~~	~~Mercury by 7470~~	~~TDS by 2540C~~	~~IC (Cl, F, SO4) by~~ [illegible]	~~pH by 4500~~	Radium-226	Radium-228	Residual Chlorine (Y/N)	
1	PC-MW-115-043021 ~~GAMW-05~~					4/30/21	1605		2			2													X	X		001
2	PC-MW-110-043021 ~~GAMW-08~~					4/30/21	1700		2			2													X	X		002
3	~~GAMW-10~~																											
4	~~GAMW-11~~																											
5	~~GAMW-12~~																											
6	~~GAMW-13~~																											
7	~~GAMW-14~~																											
8	~~GAMW-15~~																											
9	~~GAMW-16~~																											
10	~~GAMW-18~~																											
11	~~GMMW-1~~																											
12	~~GMMW-2~~																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
~~*B, Ca, Li, Hardness by 6010~~	Katherine Bartels/Golder	4/30/21	1800	Fedex						
~~*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020~~	Fedex	5/1/21	0915	Daniel Pearson / Pace	5/1/21	0915	14.3	N	Y	Y
Radium sub to Pace PA										
~~LEVEL 4~~ 5/6/21tms										

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Katherine Bartels

SIGNATURE of SAMPLER: [signature] DATE Signed: 4/30/21

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DMP 5/1/21 12:09

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A (B) C D E F
4. **Cooler Temperature:** 14.3 / 14.3
   Temp should be above freezing to 6°C **(Initial/Corrected)**

5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☑ None ☐ Other _____
6. **Ice Type:** ☐ Wet ☐ Blue ☑ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☑ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		N/A	Trip Blank Custody Seals?:			✓

COMMENTS:

Level 4 not needed. 5/6/21tms

COC PAGE ___ of ___

Sample Container Count

Sample Line Item	WGFU	SBS DI BK Kit R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	DG9T	AG0U	AG1H	AG1U	AG3S	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H				Matrix	pH <2	pH >9	pH>10
1														2												WT	✓		
2														2												WT	✓		
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpres amber glass
DG9H	40mL HCl amber voa vial	AG1H	1L HCl amber glass
DG9M	40mL MeOH clear vial	AG1S	1L H2SO4 amber glass
DG9P	40mL TSP amber vial	AG1T	1L Na Thiosulfate amber glass
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpres amber glass
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass
VG9H	40mL HCl clear vial	AG2U	500mL unpres amber glass
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 amber glass
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpres amber glass
VGFX	40mL w/hexane wipe vial	AG3C	250mL NaOH amber glass
VSG	Headspace septa vial & HCl	BG1H	1L HCl clear glass
WGKU	8oz unpreserved clear jar	BG1S	1L H2SO4 clear glass
WGFU	4oz clear soil jar	BG1T	1L Na Thiosulfate clear glass
JGFU	4oz unpreserved amber wide	BG1U	1L unpreserved glass
CG3H	250mL clear glass HCl	BG3H	250mL HCl Clear Glass

Plastic / Misc.

BG3U	250mL Unpres Clear Glass
BP1A	1L NaOH, Asc Acid plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2A	500mL NaOH, Asc Acid plastic
BP2N	500mL HNO3 plastic
BP2O	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic (field filtered)

BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Ac plastic

AF	Air Filter
C	Air Cassettes
R	Terra core kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT	Water
SL	Solid
NAL	Non-aqueous liquid
WP	Wipe

WO# : 50286416

50286416

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A – Required Client Information:		Section B – Required Project Information:		Section C – Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	krysta_cione@golder.com, danielle_sylvia@golder.com	Company Name:	NiSource
	Merrillville, IN 46410			Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS PC April 2021	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	standard	Project #:		Pace Profile #:	9047

Regulatory Agency

State / Location: IN

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	TDS by 25406	IC/CL, F, SO4 by 9056	pH by 4500	Radium-226	Radium-228	Residual Chlorine (Y/N)	
	MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																		N	N	N	N	N	N				
1	~~PC-MW-110~~ (CH)	WT	G						4	3		1							X	X	X	X	X	X				
2	PC-MW-113 -050321	WT	G			5/3/21	9:45		#2	#		2							X	X	X	X	X	X	X	X		MS/MSD 001, 005, 006
3	PC-MW-114 -050321	WT	G			1	11:30		#2	#		2							X	X	X	X	X	X	X	X		002
4	~~PC-MW-115~~ (CH)	WT	G						#	#		X							X	X	X	X	X	X				
5	FD-01 -050321	WT	G			5/3/21	12:00		#2	#		2							X	X	X	X	X	X	X	X		003
6	FB-01 -050321	WT	G			1	12:45		#2	#		2							X	X	X	X	X	X	X	X		004
7																					(CH)							
8																												
9																												
10																												
11																												
12																												

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*B, Ca, Li, Hardness by 6010	Colby Howland Golder	5/3/21	17:15	Fedex			17.58	N	Y	Y
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020										
Radium Sub to Pace PA	Fedex	5/4/21	940	Marcia Bonnett	5/4/21	940				
							TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: Colby Howland

SIGNATURE of SAMPLER: Colby Howland DATE Signed: 5/3/21

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: MB 5/4/21 1259

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C (D) E F

4. **Cooler Temperature:** 17.5°C/17.5°C
Temp should be above freezing to 6°C **(Initial/Corrected)**

5. **Packing Material:** ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☐ Wet ☐ Blue ☑ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

Sample Line Item	WGFU	SBS DI BK Kit R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	DG9T	AG0U	AG1H	AG1U	AG3S	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H				Matrix	pH <2	pH >9	pH>10
1																													
2														26												WT	✓		
3														26												↓	↓		
4																													
5														22												WT	✓		
6														22												↓	↓		
7																													
8																													
9																													
10																													
11																													
12																													

Container Codes

Glass

DG9B	40mL Na Bisulfate amber vial	AG0U	100mL unpres amber glass	BG3U	250mL Unpres Clear Glass
DG9H	40mL HCl amber voa vial	AG1H	1L HCl amber glass	BP1A	1L NaOH, Asc Acid plastic
DG9M	40mL MeOH clear vial	AG1S	1L H2SO4 amber glass	BP1N	1L HNO3 plastic
DG9P	40mL TSP amber vial	AG1T	1L Na Thiosulfate amber glass	BP1S	1L H2SO4 plastic
DG9S	40mL H2SO4 amber vial	AG1U	1liter unpres amber glass	BP1U	1L unpreserved plastic
DG9T	40mL Na Thio amber vial	AG2N	500mL HNO3 amber glass	BP1Z	1L NaOH, Zn, Ac
DG9U	40mL unpreserved **amber** vial	AG2S	500mL H2SO4 amber glass	BP2A	500mL NaOH, Asc Acid plastic
VG9H	40mL HCl clear vial	AG2U	500mL unpres amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG3S	250mL H2SO4 amber glass	BP2O	500mL NaOH plastic
VG9U	40mL unpreserved **clear** vial	AG3U	250mL unpres amber glass	BP2S	500mL H2SO4 plastic
VGFX	40mL w/hexane wipe vial	AG3C	250mL NaOH amber glass	BP2U	500mL unpreserved plastic
VSG	Headspace septa vial & HCl	BG1H	1L HCl clear glass	BP2Z	500mL NaOH, Zn Ac
WGKU	8oz unpreserved clear jar	BG1S	1L H2SO4 clear glass	BP3B	250mL NaOH plastic
WGFU	4oz clear soil jar	BG1T	1L Na Thiosulfate clear glass	BP3N	250mL HNO3 plastic
JGFU	4oz unpreserved amber wide	BG1U	1L unpreserved glass	BP3F	250mL HNO3 plastic (field filtered)
CG3H	250mL clear glass HCl	BG3H	250mL HCl Clear Glass		

Plastic / Misc.

BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, Zn Ac plastic

AF	Air Filter
C	Air Cassettes
R	Terra core kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT	Water
SL	Solid
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

July 09, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50290903001	**PC-MW-110**	Water	06/23/21 13:41	06/24/21 08:40
50290903002	**PC-MW-113**	Water	06/23/21 15:27	06/24/21 08:40
50290903003	**PC-MW-114**	Water	06/23/21 10:37	06/24/21 08:40
50290903004	**PC-MW-115**	Water	06/23/21 12:03	06/24/21 08:40
50290903005	**FD-01**	Water	06/23/21 12:00	06/24/21 08:40
50290903006	**FB-01**	Water	06/23/21 15:30	06/24/21 08:40

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50290903001	**PC-MW-110**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50290903002	**PC-MW-113**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50290903003	**PC-MW-114**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50290903004	**PC-MW-115**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50290903005	**FD-01**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50290903006	**FB-01**	EPA 9056	HBS	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	RAM	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	SLB	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50290903001	**PC-MW-110**					
EPA 9056	Chloride	315	mg/L	25.0	07/09/21 11:05	
EPA 9056	Fluoride	0.56	mg/L	0.050	07/08/21 19:59	
EPA 9056	Sulfate	33.5	mg/L	2.5	07/08/21 20:15	
EPA 6010	Boron	0.21	mg/L	0.10	07/08/21 09:58	
EPA 6010	Calcium	97.3	mg/L	1.0	07/08/21 09:58	
EPA 6010	Lithium	0.012	mg/L	0.0080	07/08/21 10:44	
EPA 6010	Total Hardness by 2340B	362	mg/L	1.0	07/08/21 09:58	
EPA 6020	Arsenic	0.0071	mg/L	0.0010	07/02/21 18:08	
EPA 6020	Barium	0.28	mg/L	0.0020	07/02/21 17:33	
EPA 6020	Molybdenum	0.0043	mg/L	0.0010	07/02/21 18:08	
SM 2540C	Total Dissolved Solids	878	mg/L	20.0	06/28/21 08:29	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	06/28/21 14:23	H3
50290903002	**PC-MW-113**					
EPA 9056	Chloride	62.1	mg/L	2.5	07/08/21 20:48	
EPA 9056	Fluoride	1.1	mg/L	0.050	07/08/21 20:31	
EPA 9056	Sulfate	136	mg/L	2.5	07/08/21 20:48	
EPA 6010	Boron	0.27	mg/L	0.10	07/08/21 10:00	
EPA 6010	Calcium	88.3	mg/L	1.0	07/08/21 10:00	
EPA 6010	Lithium	0.026	mg/L	0.0080	07/08/21 10:46	
EPA 6010	Total Hardness by 2340B	318	mg/L	1.0	07/08/21 10:00	
EPA 6020	Arsenic	0.0041	mg/L	0.0010	07/02/21 18:12	
EPA 6020	Barium	0.036	mg/L	0.0010	07/02/21 18:12	
EPA 6020	Selenium	0.019	mg/L	0.0010	07/02/21 18:12	
SM 2540C	Total Dissolved Solids	558	mg/L	20.0	06/28/21 08:30	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	06/28/21 14:26	H3
50290903003	**PC-MW-114**					
EPA 9056	Chloride	226	mg/L	25.0	07/09/21 11:21	
EPA 9056	Fluoride	0.27	mg/L	0.050	07/08/21 21:04	
EPA 9056	Sulfate	56.6	mg/L	2.5	07/08/21 21:53	
EPA 6010	Boron	0.16	mg/L	0.10	07/08/21 10:02	
EPA 6010	Calcium	85.2	mg/L	1.0	07/08/21 10:02	
EPA 6010	Lithium	0.010	mg/L	0.0080	07/08/21 10:53	
EPA 6010	Total Hardness by 2340B	322	mg/L	1.0	07/08/21 10:02	
EPA 6020	Barium	0.064	mg/L	0.0010	07/02/21 17:38	
EPA 6020	Cobalt	0.0013	mg/L	0.0010	07/02/21 17:38	
EPA 6020	Molybdenum	0.0017	mg/L	0.0010	07/02/21 17:38	
EPA 6020	Selenium	0.0023	mg/L	0.0010	07/02/21 17:38	
SM 2540C	Total Dissolved Solids	700	mg/L	20.0	06/29/21 07:10	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	06/28/21 14:11	H3
50290903004	**PC-MW-115**					
EPA 9056	Chloride	125	mg/L	25.0	07/09/21 12:08	
EPA 9056	Fluoride	0.71	mg/L	0.050	07/08/21 23:15	
EPA 9056	Sulfate	107	mg/L	2.5	07/08/21 23:32	P8
EPA 6010	Boron	0.14	mg/L	0.10	07/08/21 10:13	
EPA 6010	Calcium	92.2	mg/L	1.0	07/08/21 10:13	
EPA 6010	Lithium	0.015	mg/L	0.0080	07/08/21 10:59	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50290903004	**PC-MW-115**					
EPA 6010	Total Hardness by 2340B	321	mg/L	1.0	07/08/21 10:13	
EPA 6020	Antimony	0.0034	mg/L	0.0010	07/02/21 18:17	
EPA 6020	Arsenic	0.0029	mg/L	0.0010	07/02/21 18:17	
EPA 6020	Barium	0.026	mg/L	0.0010	07/02/21 18:17	
EPA 6020	Molybdenum	0.0038	mg/L	0.0010	07/02/21 18:17	
EPA 6020	Selenium	0.0014	mg/L	0.0010	07/02/21 18:17	
SM 2540C	Total Dissolved Solids	581	mg/L	10.0	06/29/21 07:11	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	06/28/21 14:16	H3
50290903005	**FD-01**					
EPA 9056	Chloride	123	mg/L	25.0	07/09/21 12:24	
EPA 9056	Fluoride	0.71	mg/L	0.050	07/08/21 23:48	
EPA 9056	Sulfate	107	mg/L	2.5	07/09/21 00:04	P8
EPA 6010	Boron	0.14	mg/L	0.10	07/08/21 10:15	
EPA 6010	Calcium	93.2	mg/L	1.0	07/08/21 10:15	
EPA 6010	Lithium	0.011	mg/L	0.0080	07/08/21 11:01	
EPA 6010	Total Hardness by 2340B	325	mg/L	1.0	07/08/21 10:15	
EPA 6020	Antimony	0.0035	mg/L	0.0010	07/02/21 18:21	
EPA 6020	Arsenic	0.0031	mg/L	0.0010	07/02/21 18:21	
EPA 6020	Barium	0.027	mg/L	0.0010	07/02/21 18:21	
EPA 6020	Molybdenum	0.0039	mg/L	0.0010	07/02/21 18:21	
EPA 6020	Selenium	0.0016	mg/L	0.0010	07/02/21 18:21	
SM 2540C	Total Dissolved Solids	568	mg/L	10.0	06/29/21 07:11	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	06/28/21 14:13	H3
50290903006	**FB-01**					
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	06/28/21 14:30	H3

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 629946

P8: Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.

- FB-01 (Lab ID: 50290903006)
  - Sulfate
- FD-01 (Lab ID: 50290903005)
  - Sulfate
- PC-MW-115 (Lab ID: 50290903004)
  - Sulfate

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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 628540

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

- FB-01 (Lab ID: 50290903006)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_Golder
Date: July 09, 2021

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01 (Lab ID: 50290903006)
- FD-01 (Lab ID: 50290903005)
- PC-MW-110 (Lab ID: 50290903001)
- PC-MW-113 (Lab ID: 50290903002)
- PC-MW-114 (Lab ID: 50290903003)
- PC-MW-115 (Lab ID: 50290903004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: PC-MW-110 **Lab ID: 50290903001** Collected: 06/23/21 13:41 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**315**	mg/L	25.0	100		07/09/21 11:05	16887-00-6	
Fluoride	**0.56**	mg/L	0.050	1		07/08/21 19:59	16984-48-8	
Sulfate	**33.5**	mg/L	2.5	10		07/08/21 20:15	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.21**	mg/L	0.10	1	07/07/21 06:40	07/08/21 09:58	7440-42-8	
Calcium	**97.3**	mg/L	1.0	1	07/07/21 06:40	07/08/21 09:58	7440-70-2	
Lithium	**0.012**	mg/L	0.0080	1	07/07/21 06:40	07/08/21 10:44	7439-93-2	
Total Hardness by 2340B	**362**	mg/L	1.0	1	07/07/21 06:40	07/08/21 09:58		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7440-36-0	
Arsenic	**0.0071**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7440-38-2	
Barium	**0.28**	mg/L	0.0020	2	07/01/21 18:16	07/02/21 17:33	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:22	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 18:08	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 18:08	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7439-92-1	
Molybdenum	**0.0043**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7439-98-7	
Selenium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:08	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 09:51	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**878**	mg/L	20.0	1		06/28/21 08:29		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		06/28/21 14:23		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: PC-MW-113 **Lab ID: 50290903002** Collected: 06/23/21 15:27 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**62.1**	mg/L	2.5	10		07/08/21 20:48	16887-00-6	
Fluoride	**1.1**	mg/L	0.050	1		07/08/21 20:31	16984-48-8	
Sulfate	**136**	mg/L	2.5	10		07/08/21 20:48	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.27**	mg/L	0.10	1	07/07/21 06:40	07/08/21 10:00	7440-42-8	
Calcium	**88.3**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:00	7440-70-2	
Lithium	**0.026**	mg/L	0.0080	1	07/07/21 06:40	07/08/21 10:46	7439-93-2	
Total Hardness by 2340B	**318**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:00		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7440-36-0	
Arsenic	**0.0041**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7440-38-2	
Barium	**0.036**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:39	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 18:12	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 18:12	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7439-98-7	
Selenium	**0.019**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:12	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 09:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**558**	mg/L	20.0	1		06/28/21 08:30		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		06/28/21 14:26		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: PC-MW-114 **Lab ID: 50290903003** Collected: 06/23/21 10:37 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**226**	mg/L	25.0	100		07/09/21 11:21	16887-00-6	
Fluoride	**0.27**	mg/L	0.050	1		07/08/21 21:04	16984-48-8	
Sulfate	**56.6**	mg/L	2.5	10		07/08/21 21:53	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.16**	mg/L	0.10	1	07/07/21 06:40	07/08/21 10:02	7440-42-8	
Calcium	**85.2**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:02	7440-70-2	
Lithium	**0.010**	mg/L	0.0080	1	07/07/21 06:40	07/08/21 10:53	7439-93-2	
Total Hardness by 2340B	**322**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:02		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7440-38-2	
Barium	**0.064**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:00	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 17:38	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 17:38	7440-47-3	
Cobalt	**0.0013**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7439-92-1	
Molybdenum	**0.0017**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7439-98-7	
Selenium	**0.0023**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 17:38	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 10:01	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**700**	mg/L	20.0	1		06/29/21 07:10		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		06/28/21 14:11		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: PC-MW-115 **Lab ID: 50290903004** Collected: 06/23/21 12:03 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**125**	mg/L	25.0	100		07/09/21 12:08	16887-00-6	
Fluoride	**0.71**	mg/L	0.050	1		07/08/21 23:15	16984-48-8	
Sulfate	**107**	mg/L	2.5	10		07/08/21 23:32	14808-79-8	P8
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.14**	mg/L	0.10	1	07/07/21 06:40	07/08/21 10:13	7440-42-8	
Calcium	**92.2**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:13	7440-70-2	
Lithium	**0.015**	mg/L	0.0080	1	07/07/21 06:40	07/08/21 10:59	7439-93-2	
Total Hardness by 2340B	**321**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:13		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	**0.0034**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7440-36-0	
Arsenic	**0.0029**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7440-38-2	
Barium	**0.026**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:44	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 18:17	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 18:17	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7439-92-1	
Molybdenum	**0.0038**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7439-98-7	
Selenium	**0.0014**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:17	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 10:08	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**581**	mg/L	10.0	1		06/29/21 07:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		06/28/21 14:16		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: FD-01 **Lab ID: 50290903005** Collected: 06/23/21 12:00 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**123**	mg/L	25.0	100		07/09/21 12:24	16887-00-6	
Fluoride	**0.71**	mg/L	0.050	1		07/08/21 23:48	16984-48-8	
Sulfate	**107**	mg/L	2.5	10		07/09/21 00:04	14808-79-8	P8
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.14**	mg/L	0.10	1	07/07/21 06:40	07/08/21 10:15	7440-42-8	
Calcium	**93.2**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:15	7440-70-2	
Lithium	**0.011**	mg/L	0.0080	1	07/07/21 06:40	07/08/21 11:01	7439-93-2	
Total Hardness by 2340B	**325**	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:15		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	**0.0035**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7440-36-0	
Arsenic	**0.0031**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7440-38-2	
Barium	**0.027**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:48	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 18:21	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 18:21	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7439-92-1	
Molybdenum	**0.0039**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7439-98-7	
Selenium	**0.0016**	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 10:11	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**568**	mg/L	10.0	1		06/29/21 07:11		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		06/28/21 14:13		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Sample: FB-01 **Lab ID: 50290903006** Collected: 06/23/21 15:30 Received: 06/24/21 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	ND	mg/L	0.25	1		07/09/21 00:21	16887-00-6	
Fluoride	ND	mg/L	0.050	1		07/09/21 00:21	16984-48-8	
Sulfate	ND	mg/L	0.25	1		07/09/21 00:21	14808-79-8	P8
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	ND	mg/L	0.10	1	07/07/21 06:40	07/08/21 10:21	7440-42-8	
Calcium	ND	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:21	7440-70-2	
Lithium	ND	mg/L	0.0080	1	07/07/21 06:40	07/08/21 11:03	7439-93-2	
Total Hardness by 2340B	ND	mg/L	1.0	1	07/07/21 06:40	07/08/21 10:21		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7440-38-2	
Barium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	07/01/21 18:16	07/06/21 13:52	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	07/01/21 18:16	07/02/21 18:25	7440-43-9	
Chromium	ND	mg/L	0.0020	1	07/01/21 18:16	07/02/21 18:25	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7440-48-4	
Lead	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7439-98-7	
Selenium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7782-49-2	
Thallium	ND	mg/L	0.0010	1	07/01/21 18:16	07/02/21 18:25	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	07/07/21 00:03	07/07/21 10:13	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	ND	mg/L	10.0	1		06/29/21 07:12		PL
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		06/28/21 14:30		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 629946
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

METHOD BLANK: 2902163 Matrix: Water
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	07/08/21 13:42	
Fluoride	mg/L	ND	0.050	07/08/21 13:42	
Sulfate	mg/L	ND	0.25	07/08/21 13:42	

LABORATORY CONTROL SAMPLE: 2902164

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	92	80-120	
Fluoride	mg/L	0.5	0.47	94	80-120	
Sulfate	mg/L	2.5	2.3	94	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2902165 2902166

Parameter	Units	50290903003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	226	125	125	345	345	95	95	80-120	0	15	
Fluoride	mg/L	0.27	0.5	0.5	0.76	0.76	98	99	80-120	0	15	
Sulfate	mg/L	56.6	25	25	82.1	82.0	102	102	80-120	0	15	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 629236 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

METHOD BLANK: 2899591 Matrix: Water
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	07/07/21 09:29	

LABORATORY CONTROL SAMPLE: 2899592

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0051	103	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2899593 2899594

Parameter	Units	50290492002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0049	100	99	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2899595 2899596

Parameter	Units	50290903003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0050	101	100	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 628522 | Analysis Method: EPA 6010
QC Batch Method: EPA 3010 | Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

METHOD BLANK: 2896437 Matrix: Water
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	07/08/21 09:30	
Calcium	mg/L	ND	1.0	07/08/21 09:30	
Lithium	mg/L	ND	0.0080	07/08/21 09:30	
Total Hardness by 2340B	mg/L	ND	1.0	07/08/21 09:30	

LABORATORY CONTROL SAMPLE: 2896438

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.99	99	80-120	
Calcium	mg/L	10	10.0	100	80-120	
Lithium	mg/L	1	1.0	103	80-120	
Total Hardness by 2340B	mg/L	66.2	65.4	99	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2896439 2896440

Parameter	Units	50290903003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.16	1	1	1.2	1.2	104	102	75-125	1	20	
Calcium	mg/L	85.2	10	10	96.4	94.2	112	90	75-125	2	20	
Lithium	mg/L	0.010	1	1	1.1	1.1	110	108	75-125	2	20	
Total Hardness by 2340B	mg/L	322	66.2	66.2	392	383	105	92	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 629011
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

METHOD BLANK: 2898377 Matrix: Water
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	07/02/21 16:45	
Arsenic	mg/L	ND	0.0010	07/02/21 16:45	
Barium	mg/L	ND	0.0010	07/02/21 16:45	
Beryllium	mg/L	ND	0.00020	07/06/21 12:47	
Cadmium	mg/L	ND	0.00020	07/02/21 16:45	
Chromium	mg/L	ND	0.0020	07/02/21 16:45	
Cobalt	mg/L	ND	0.0010	07/02/21 16:45	
Lead	mg/L	ND	0.0010	07/02/21 16:45	
Molybdenum	mg/L	ND	0.0010	07/02/21 16:45	
Selenium	mg/L	ND	0.0010	07/02/21 16:45	
Thallium	mg/L	ND	0.0010	07/02/21 16:45	

LABORATORY CONTROL SAMPLE: 2898378

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.043	107	80-120	
Arsenic	mg/L	0.04	0.040	101	80-120	
Barium	mg/L	0.04	0.040	100	80-120	
Beryllium	mg/L	0.04	0.041	103	80-120	
Cadmium	mg/L	0.04	0.040	100	80-120	
Chromium	mg/L	0.04	0.044	110	80-120	
Cobalt	mg/L	0.04	0.041	102	80-120	
Lead	mg/L	0.04	0.041	104	80-120	
Molybdenum	mg/L	0.04	0.040	101	80-120	
Selenium	mg/L	0.04	0.038	95	80-120	
Thallium	mg/L	0.04	0.042	104	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2898379 2898380

Parameter	Units	50290903003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.044	0.044	109	110	75-125	1	20	
Arsenic	mg/L	ND	0.04	0.04	0.041	0.040	101	100	75-125	1	20	
Barium	mg/L	0.064	0.04	0.04	0.10	0.10	99	94	75-125	2	20	
Beryllium	mg/L	ND	0.04	0.04	0.042	0.042	104	104	75-125	0	20	
Cadmium	mg/L	ND	0.04	0.04	0.039	0.038	97	96	75-125	0	20	
Chromium	mg/L	ND	0.04	0.04	0.042	0.043	105	108	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2898379 2898380

Parameter	Units	50290903003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.0013	0.04	0.04	0.038	0.038	93	92	75-125	1	20	
Lead	mg/L	ND	0.04	0.04	0.041	0.041	102	102	75-125	0	20	
Molybdenum	mg/L	0.0017	0.04	0.04	0.042	0.043	102	102	75-125	0	20	
Selenium	mg/L	0.0023	0.04	0.04	0.038	0.040	90	94	75-125	3	20	
Thallium	mg/L	ND	0.04	0.04	0.042	0.042	104	104	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 628327
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002

METHOD BLANK: 2895897 Matrix: Water
Associated Lab Samples: 50290903001, 50290903002

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	06/28/21 08:22	

LABORATORY CONTROL SAMPLE: 2895898

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	299	100	80-120	

SAMPLE DUPLICATE: 2895899

Parameter	Units	50290856003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	603	608	1	10	

SAMPLE DUPLICATE: 2895900

Parameter	Units	50290893001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	427	425	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 628540 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903003, 50290903004, 50290903005, 50290903006

METHOD BLANK: 2896476 Matrix: Water
Associated Lab Samples: 50290903003, 50290903004, 50290903005, 50290903006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	06/29/21 07:10	

LABORATORY CONTROL SAMPLE: 2896477

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	280	93	80-120	

SAMPLE DUPLICATE: 2896478

Parameter	Units	50290903003 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	700	696	1	10	

SAMPLE DUPLICATE: 2896479

Parameter	Units	50290907006 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	322	325	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

QC Batch: 628433
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50290903001, 50290903002, 50290903003, 50290903004, 50290903005, 50290903006

SAMPLE DUPLICATE: 2896168

Parameter	Units	50290851007 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.8	0	2	H3

SAMPLE DUPLICATE: 2896169

Parameter	Units	50290903003 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.1	7.1	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
P8	Analyte was detected in the method blank. All associated samples had concentrations of at least ten times greater than the blank or were below the reporting limit.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd June 2021
Pace Project No.: 50290903

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50290903001	**PC-MW-110**	EPA 9056	629946		
50290903002	**PC-MW-113**	EPA 9056	629946		
50290903003	**PC-MW-114**	EPA 9056	629946		
50290903004	**PC-MW-115**	EPA 9056	629946		
50290903005	**FD-01**	EPA 9056	629946		
50290903006	**FB-01**	EPA 9056	629946		
50290903001	**PC-MW-110**	EPA 3010	628522	EPA 6010	629868
50290903002	**PC-MW-113**	EPA 3010	628522	EPA 6010	629868
50290903003	**PC-MW-114**	EPA 3010	628522	EPA 6010	629868
50290903004	**PC-MW-115**	EPA 3010	628522	EPA 6010	629868
50290903005	**FD-01**	EPA 3010	628522	EPA 6010	629868
50290903006	**FB-01**	EPA 3010	628522	EPA 6010	629868
50290903001	**PC-MW-110**	EPA 200.2	629011	EPA 6020	629206
50290903002	**PC-MW-113**	EPA 200.2	629011	EPA 6020	629206
50290903003	**PC-MW-114**	EPA 200.2	629011	EPA 6020	629206
50290903004	**PC-MW-115**	EPA 200.2	629011	EPA 6020	629206
50290903005	**FD-01**	EPA 200.2	629011	EPA 6020	629206
50290903006	**FB-01**	EPA 200.2	629011	EPA 6020	629206
50290903001	**PC-MW-110**	EPA 7470	629236	EPA 7470	629657
50290903002	**PC-MW-113**	EPA 7470	629236	EPA 7470	629657
50290903003	**PC-MW-114**	EPA 7470	629236	EPA 7470	629657
50290903004	**PC-MW-115**	EPA 7470	629236	EPA 7470	629657
50290903005	**FD-01**	EPA 7470	629236	EPA 7470	629657
50290903006	**FB-01**	EPA 7470	629236	EPA 7470	629657
50290903001	**PC-MW-110**	SM 2540C	628327		
50290903002	**PC-MW-113**	SM 2540C	628327		
50290903003	**PC-MW-114**	SM 2540C	628540		
50290903004	**PC-MW-115**	SM 2540C	628540		
50290903005	**FD-01**	SM 2540C	628540		
50290903006	**FB-01**	SM 2540C	628540		
50290903001	**PC-MW-110**	SM 4500-H+B	628433		
50290903002	**PC-MW-113**	SM 4500-H+B	628433		
50290903003	**PC-MW-114**	SM 4500-H+B	628433		
50290903004	**PC-MW-115**	SM 4500-H+B	628433		
50290903005	**FD-01**	SM 4500-H+B	628433		
50290903006	**FB-01**	SM 4500-H+B	628433		

WO# : 50290903

50290903

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : 1 Of 1

Section A	Section B	Section C
Required Client Information:	Required Project Information:	Invoice Information:
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U12677
Address: 801 E 8th Ave	Copy To: krysta_cione@golder.com, danielle_sylvia@golder.com	Company Name: NiSource
Merrillville, IN 46410	Purchase Order #: PO12708	Address:
Email: jim_peace@golder.com	Project Name: MCGS PC Bkgd June 2021	Pace Quote:
Phone: Fax:	Project #: 19121568-212-2	Pace Project Manager: tina.sayer@pacelabs.com,
Requested Due Date:		Pace Profile #: 9047-1

Regulatory Agency

State / Location: IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010*	Metals, Total by 6020*	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 905	pH by 4500	Residual Chlorine (Y/N)	
1	PC-MW-110	WT	G			6/22/21	1341		5	2		3							X	X	X	X	X	X		001
2	PC-MW-113	WT	G			6/23/21	1527		5	2		3							X	X	X	X	X	X		002
3	PC-MW-114	WT	G			6/23/21	1037		5	2		3							X	X	X	X	X	X		003
4	PC-MW-115	WT	G			6/23/21	1203		5	2		3							X	X	X	X	X	X		004
5	FD-01	WT	G			6/23/21	1200		5	2		3							X	X	X	X	X	X		005
6	FB-01	WT	G			6/23/21	1530		5	2		3							X	X	X	X	X	X		006
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
, Ca, Li, Hardness by 6010		6/23/21	1640	FedEx		
, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	6-24-21	8:40	R. Chambers	6-24-21	8:40

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER:

SIGNATURE of SAMPLER:

DATE Signed: 6/23/21

SAMPLE CONDITIONS				
TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)	
6.0	y	y	y	
6.4				

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: RC 6-24-21 14:17

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E F

4. **Cooler Temperature:** 6.6/6.0 7.0/6.4
Temp should be above freezing to 6°C (Initial/Corrected)

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	
Rush TAT Requested (4 days or less):		✓
Custody Signatures Present?	✓	
Containers Intact?:	✓	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓	
Extra labels on Terracore Vials? (soils only)		

	Yes	No	N/A
All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
	Present	Absent	N/A
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Headspace Wisconsin Sulfide?			✓
Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Trip Blank Present?		✓	
Trip Blank Custody Seals?:			✓

COMMENTS:

Out of temp cooler contained the ms and msd bottles for PC-MW-114.

OK to proceed per D. Sylvia email. 06/25/21tms

:OC PAGE 1 of 1

Sample Container Count

SBS
DI
MeOH (only)
BK Kit

:OC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit
1																2	1	1	1						
2																2	1	1	1						
3																6	3	3	3						
4																2	1	1	1						
5																2	1	1	1						
6																2	1	1	1						
7																									
8																									
9																									
10																									
11																									
12																									

** Place a RED dot on containers that are out of conformance **

Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
WT	✓		
	✓		
	✓		
	✓		
	✓		
	✓		

ntainer Codes

Glass

9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
9P	40mL TSP amber vial	BG1U	1L unpreserved glass
9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
1H	40mL HCl clear vial	AG1H	1L HCl amber glass
1T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
1U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
KU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
FU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
U	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
1	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
5	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
	General	AG3C	250mL NaOH amber glass

Plastic / Misc.

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic		
BP1Z	1L NaOH, Zn, Ac	Syringe Kit	LL Cr+6 sampling kit
BP2N	500mL HNO3 plastic		
BP2C	500mL NaOH plastic	AF	Air Filter
BP2S	500mL H2SO4 plastic	C	Air Cassettes
BP2U	500mL unpreserved plastic	R	Terracore kit
BP2Z	500mL NaOH, Zn Ac	SP5T	120mL Coliform Na Thiosulfate
BP3B	250mL NaOH plastic	U	Summa Can
BP3N	250mL HNO3 plastic	ZPLC	Ziploc Bag
BP3F	250mL HNO3 plastic-field filtered		
BP3U	250mL unpreserved plastic	WT	Water
BP3S	250mL H2SO4 plastic	SL	Solid
BP3Z	250mL NaOH, ZnAc plastic	NAL / OL	Non-aqueous liquid / Oil
		WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

July 16, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on June 24, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50290905001	**PC-MW-110**	Water	06/23/21 13:41	06/24/21 08:40
50290905002	**PC-MW-113**	Water	06/23/21 15:27	06/24/21 08:40
50290905003	**PC-MW-114**	Water	06/23/21 10:37	06/24/21 08:40
50290905004	**PC-MW-115**	Water	06/23/21 12:03	06/24/21 08:40
50290905005	**FD-01**	Water	06/23/21 12:00	06/24/21 08:40
50290905006	**FB-01**	Water	06/23/21 15:30	06/24/21 08:40
50290905007	**PC-MW-114 MS**	Water	06/23/21 10:37	06/24/21 08:40
50290905008	**PC-MW-114 MSD**	Water	06/23/21 10:37	06/24/21 08:40

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SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50290905001	**PC-MW-110**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905002	**PC-MW-113**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905003	**PC-MW-114**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905004	**PC-MW-115**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905005	**FD-01**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905006	**FB-01**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50290905007	**PC-MW-114 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
50290905008	**PC-MW-114 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50290905001	**PC-MW-110**					
EPA 903.1	Radium-226	0.899 ± 0.544 (0.596) C:NA T:96%	pCi/L		07/14/21 16:49	
EPA 904.0	Radium-228	1.64 ± 0.544 (0.746) C:69% T:88%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	2.54 ± 1.09 (1.34)	pCi/L		07/16/21 13:20	
50290905002	**PC-MW-113**					
EPA 903.1	Radium-226	0.0548 ± 0.250 (0.404) C:NA T:96%	pCi/L		07/14/21 16:56	
EPA 904.0	Radium-228	0.916 ± 0.467 (0.817) C:65% T:82%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	0.971 ± 0.717 (1.22)	pCi/L		07/16/21 13:20	
50290905003	**PC-MW-114**					
EPA 903.1	Radium-226	0.344 ± 0.242 (0.116) C:NA T:95%	pCi/L		07/14/21 16:49	
EPA 904.0	Radium-228	0.319 ± 0.424 (0.904) C:62% T:79%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	0.663 ± 0.666 (1.02)	pCi/L		07/16/21 13:20	
50290905004	**PC-MW-115**					
EPA 903.1	Radium-226	0.0601 ± 0.274 (0.558) C:NA T:91%	pCi/L		07/14/21 16:49	
EPA 904.0	Radium-228	0.622 ± 0.473 (0.939) C:64% T:82%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	0.682 ± 0.747 (1.50)	pCi/L		07/16/21 13:20	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50290905005	**FD-01**					
EPA 903.1	Radium-226	0.515 ± 0.403 (0.474) C:NA T:92%	pCi/L		07/14/21 16:49	
EPA 904.0	Radium-228	0.561 ± 0.438 (0.870) C:66% T:82%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	1.08 ± 0.841 (1.34)	pCi/L		07/16/21 13:20	
50290905006	**FB-01**					
EPA 903.1	Radium-226	0.112 ± 0.255 (0.410) C:NA T:94%	pCi/L		07/14/21 17:02	
EPA 904.0	Radium-228	0.0226 ± 0.302 (0.697) C:64% T:96%	pCi/L		07/13/21 11:25	
Total Radium Calculation	Total Radium	0.135 ± 0.557 (1.11)	pCi/L		07/16/21 13:20	
50290905007	**PC-MW-114 MS**					
EPA 903.1	Radium-226	106.56 %REC ± NA (NA) C:NA T:NA%	pCi/L		07/14/21 17:02	
EPA 904.0	Radium-228	123.89 %REC ± NA (NA) C:NA T:NA	pCi/L		07/13/21 11:25	
50290905008	**PC-MW-114 MSD**					
EPA 903.1	Radium-226	84.66 %REC 22.91 RPD ± NA (NA) C:NA T:NA%	pCi/L		07/14/21 17:02	
EPA 904.0	Radium-228	101.94 %REC 19.44 RPD ± NA (NA) C:NA T:NA	pCi/L		07/13/21 11:30	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_Golder
Date: July 16, 2021

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_Golder
Date: July 16, 2021

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_Golder
Date: July 16, 2021

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-110 **Lab ID: 50290905001** Collected: 06/23/21 13:41 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.899 ± 0.544 (0.596) C:NA T:96%**	pCi/L	07/14/21 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.64 ± 0.544 (0.746) C:69% T:88%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.54 ± 1.09 (1.34)**	pCi/L	07/16/21 13:20	7440-14-4	

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-113 **Lab ID: 50290905002** Collected: 06/23/21 15:27 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0548 ± 0.250 (0.404) C:NA T:96%**	pCi/L	07/14/21 16:56	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.916 ± 0.467 (0.817) C:65% T:82%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.971 ± 0.717 (1.22)**	pCi/L	07/16/21 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-114 **Lab ID: 50290905003** Collected: 06/23/21 10:37 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.344 ± 0.242 (0.116) C:NA T:95%**	pCi/L	07/14/21 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.319 ± 0.424 (0.904) C:62% T:79%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.663 ± 0.666 (1.02)**	pCi/L	07/16/21 13:20	7440-14-4	

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-115 **Lab ID: 50290905004** Collected: 06/23/21 12:03 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0601 ± 0.274 (0.558) C:NA T:91%**	pCi/L	07/14/21 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.622 ± 0.473 (0.939) C:64% T:82%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.682 ± 0.747 (1.50)**	pCi/L	07/16/21 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: FD-01 **Lab ID: 50290905005** Collected: 06/23/21 12:00 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.515 ± 0.403 (0.474) C:NA T:92%**	pCi/L	07/14/21 16:49	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.561 ± 0.438 (0.870) C:66% T:82%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.08 ± 0.841 (1.34)**	pCi/L	07/16/21 13:20	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: FB-01 **Lab ID: 50290905006** Collected: 06/23/21 15:30 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.112 ± 0.255 (0.410) C:NA T:94%**	pCi/L	07/14/21 17:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0226 ± 0.302 (0.697) C:64% T:96%**	pCi/L	07/13/21 11:25	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.135 ± 0.557 (1.11)**	pCi/L	07/16/21 13:20	7440-14-4	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-114 MS **Lab ID: 50290905007** Collected: 06/23/21 10:37 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**106.56 %REC ± NA (NA) C:NA T:NA%**	pCi/L	07/14/21 17:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**123.89 %REC ± NA (NA) C:NA T:NA**	pCi/L	07/13/21 11:25	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Sample: PC-MW-114 MSD **Lab ID: 50290905008** Collected: 06/23/21 10:37 Received: 06/24/21 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**84.66 %REC 22.91 RPD ± NA (NA) C:NA T:NA%**	pCi/L	07/14/21 17:02	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**101.94 %REC 19.44 RPD ± NA (NA) C:NA T:NA**	pCi/L	07/13/21 11:30	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

QC Batch: 454759 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50290905001, 50290905002, 50290905003, 50290905004, 50290905005, 50290905006, 50290905007, 50290905008

METHOD BLANK: 2196099 Matrix: Water
Associated Lab Samples: 50290905001, 50290905002, 50290905003, 50290905004, 50290905005, 50290905006, 50290905007, 50290905008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.0688 ± 0.263 (0.600) C:67% T:91%	pCi/L	07/13/21 11:26	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

QC Batch: 454758 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50290905001, 50290905002, 50290905003, 50290905004, 50290905005, 50290905006, 50290905007, 50290905008

METHOD BLANK: 2196098 Matrix: Water
Associated Lab Samples: 50290905001, 50290905002, 50290905003, 50290905004, 50290905005, 50290905006, 50290905007, 50290905008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0858 ± 0.196 (0.316) C:NA T:99%	pCi/L	07/14/21 16:34	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd June 2021 Rads
Pace Project No.: 50290905

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50290905001	**PC-MW-110**	EPA 903.1	454758		
50290905002	**PC-MW-113**	EPA 903.1	454758		
50290905003	**PC-MW-114**	EPA 903.1	454758		
50290905004	**PC-MW-115**	EPA 903.1	454758		
50290905005	**FD-01**	EPA 903.1	454758		
50290905006	**FB-01**	EPA 903.1	454758		
50290905007	**PC-MW-114 MS**	EPA 903.1	454758		
50290905008	**PC-MW-114 MSD**	EPA 903.1	454758		
50290905001	**PC-MW-110**	EPA 904.0	454759		
50290905002	**PC-MW-113**	EPA 904.0	454759		
50290905003	**PC-MW-114**	EPA 904.0	454759		
50290905004	**PC-MW-115**	EPA 904.0	454759		
50290905005	**FD-01**	EPA 904.0	454759		
50290905006	**FB-01**	EPA 904.0	454759		
50290905007	**PC-MW-114 MS**	EPA 904.0	454759		
50290905008	**PC-MW-114 MSD**	EPA 904.0	454759		
50290905001	**PC-MW-110**	Total Radium Calculation	456635		
50290905002	**PC-MW-113**	Total Radium Calculation	456635		
50290905003	**PC-MW-114**	Total Radium Calculation	456635		
50290905004	**PC-MW-115**	Total Radium Calculation	456635		
50290905005	**FD-01**	Total Radium Calculation	456635		
50290905006	**FB-01**	Total Radium Calculation	456635		

RADS

WO# : 50290905

50290905

Pace Analytical
WWW.PACELABS.COM

Analytical Request Document

DOCUMENT. All relevant fields must be completed accurately.

Page : 1 Of 1

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U12677
Address: 801 E 8th Ave	Copy To: krysta_cione@golder.com,	Company Name: NiSource
Merrillville, IN 46410	danielle_sylvia@golder.com	Address:
Email: jim_peace@golder.com	Purchase Order #: PO12708	Pace Quote:
Phone: Fax:	Project Name: MCGS PC Bkgd June 2021	Pace Project Manager: tina.sayer@pacelabs.com,
Requested Due Date:	Project #: 19121568-212-2	Pace Profile #: 9047-1

Regulatory Agency

State / Location: IN

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010*	Metals, Total by 6020*	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 905	pH by 4500	Residual Chlorine (Y/N)	
1	PC-MW-110	WT	G			6/23/21	1341		5	2		3							X	X	X	X	X	X		001
2	PC-MW-113	WT	G			6/23/21	1527		5	2		3							X	X	X	X	X	X		002
3	PC-MW-114	WT	G			6/23/21	1037		5	2		3							X	X	X	X	X	X		003, 007, 008
4	PC-MW-115	WT	G			6/23/21	1203		5	2		3							X	X	X	X	X	X		004
5	FD-01	WT	G			6/23/21	1200		5	2		3							X	X	X	X	X	X		005
6	FB-01	WT	G			6/23/21	1530		5	2		3							X	X	X	X	X	X		006
7																										
8																										
9																										
10																										
11																										
12																										

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010	[signature] / FedEx	6/23/21	1640	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	6-24-21	8:40	K. Simmons	6-24-21	8:40	6.0 6.4	y	y	y

SAMPLER NAME AND SIGNATURE					
PRINT Name of SAMPLER:	[signature]				
SIGNATURE of SAMPLER:	[signature]	DATE Signed:	6/23/21		

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

2021

SAMPLE CONDITION UPON RECEIPT FORM

al®

tials of person examining contents: BC 6-24-21 14:17

D EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER

on Cooler/Box Present: ☑ Yes ☐ No

☑ Yes ☐ No (leave blank if no seals were present)

1 2 3 4 5 6 A B C D E F

ature: 6.6/6.0 7.0/6.4

freezing to 6°C (Initial/Corrected)

5. Packing Material: ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other

6. Ice Type: ☑ Wet ☐ Blue ☐ None

7. If temp. is over 6°C or under 0°C, was the PM notified?: ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No
oils? (HI, ID, NY, WA, OR,CA, NM, TX, MS, NC, SC, GA, FL, or Puerto Rico)		✓
alysis (48 hours or less)?		✓
ced in Freezer or Short Holds To Lab	Time:	
d (4 days or less):		✓
Present?	✓	
	✓	
	✓	
Dates/Times) Match COC?: equire sample ID	✓	
acore Vials? (soils only)		

	Yes	No	N/A
All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2)** H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
	Present	Absent	N/A
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Headspace Wisconsin Sulfide?			✓
Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent
			✓
Trip Blank Present?		✓	
Trip Blank Custody Seals?:			✓

No thermal preservation requirement for RADs.

Analysis is Radium 226+228. 06/25/21tms

COC PAGE 1 **of** 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																2	1	1	1									WT	✓		
2																2	1	1	1										✓		
3																6	3	3	3										✓		
4																2	1	1	1										✓		
5																2	1	1	1										✓		
6																2	1	1	1										✓		
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
3G1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
3G1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic / Misc.

BP1B	1L NaOH plastic
BP1N	1L HNO3 plastic
BP1S	1L H2SO4 plastic
BP1U	1L unpreserved plastic
BP1Z	1L NaOH, Zn, Ac
BP2N	500mL HNO3 plastic
BP2C	500mL NaOH plastic
BP2S	500mL H2SO4 plastic
BP2U	500mL unpreserved plastic
BP2Z	500mL NaOH, Zn Ac
BP3B	250mL NaOH plastic
BP3N	250mL HNO3 plastic
BP3F	250mL HNO3 plastic-field filtered
BP3U	250mL unpreserved plastic
BP3S	250mL H2SO4 plastic
BP3Z	250mL NaOH, ZnAc plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

September 28, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on September 08, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Mr. Tom Haskins, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50296768001	**PC-MW-110-090721**	Water	09/07/21 10:36	09/08/21 09:35
50296768002	**PC-MW-113-090721**	Water	09/07/21 12:51	09/08/21 09:35
50296768003	**PC-MW-114-090721**	Water	09/07/21 13:46	09/08/21 09:35
50296768004	**PC-MW-115-090721**	Water	09/07/21 14:56	09/08/21 09:35
50296768005	**FD-01-090721**	Water	09/07/21 12:00	09/08/21 09:35
50296768006	**FB-01-090721**	Water	09/07/21 15:00	09/08/21 09:35

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50296768001	**PC-MW-110-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50296768002	**PC-MW-113-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50296768003	**PC-MW-114-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50296768004	**PC-MW-115-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50296768005	**FD-01-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50296768006	**FB-01-090721**	EPA 9056	RID	3	PASI-I
		EPA 6010	KJE	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50296768001	**PC-MW-110-090721**					
EPA 9056	Chloride	309	mg/L	25.0	09/17/21 11:16	
EPA 9056	Fluoride	0.55	mg/L	0.050	09/17/21 09:38	
EPA 9056	Sulfate	33.3	mg/L	2.5	09/16/21 16:11	
EPA 6010	Boron	0.20	mg/L	0.10	09/19/21 09:48	
EPA 6010	Calcium	97.9	mg/L	1.0	09/19/21 09:48	
EPA 6010	Lithium	0.0090	mg/L	0.0080	09/19/21 09:48	
EPA 6010	Total Hardness by 2340B	359	mg/L	1.0	09/19/21 09:48	
EPA 6020	Arsenic	0.0061	mg/L	0.0010	09/13/21 15:03	
EPA 6020	Barium	0.29	mg/L	0.0020	09/13/21 16:27	
EPA 6020	Molybdenum	0.0038	mg/L	0.0010	09/13/21 15:03	
SM 2540C	Total Dissolved Solids	878	mg/L	20.0	09/09/21 08:38	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	09/08/21 16:11	H3
50296768002	**PC-MW-113-090721**					
EPA 9056	Chloride	77.8	mg/L	2.5	09/17/21 10:34	
EPA 9056	Fluoride	1.1	mg/L	0.050	09/17/21 10:20	
EPA 9056	Sulfate	160	mg/L	2.5	09/17/21 10:34	
EPA 6010	Boron	0.26	mg/L	0.10	09/19/21 09:59	
EPA 6010	Calcium	100	mg/L	1.0	09/19/21 09:59	
EPA 6010	Lithium	0.025	mg/L	0.0080	09/19/21 09:59	
EPA 6010	Total Hardness by 2340B	352	mg/L	1.0	09/19/21 09:59	
EPA 6020	Arsenic	0.0017	mg/L	0.0010	09/13/21 15:35	
EPA 6020	Barium	0.036	mg/L	0.0010	09/13/21 15:35	
EPA 6020	Cobalt	0.0011	mg/L	0.0010	09/13/21 15:35	
EPA 6020	Selenium	0.017	mg/L	0.0010	09/13/21 15:35	
SM 2540C	Total Dissolved Solids	611	mg/L	10.0	09/09/21 08:38	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	09/08/21 16:18	H3
50296768003	**PC-MW-114-090721**					
EPA 9056	Chloride	196	mg/L	25.0	09/17/21 11:58	
EPA 9056	Fluoride	0.24	mg/L	0.050	09/16/21 17:49	
EPA 9056	Sulfate	204	mg/L	2.5	09/16/21 18:03	
EPA 6010	Boron	0.17	mg/L	0.10	09/19/21 10:01	
EPA 6010	Calcium	104	mg/L	1.0	09/19/21 10:01	
EPA 6010	Lithium	0.011	mg/L	0.0080	09/19/21 10:01	
EPA 6010	Total Hardness by 2340B	385	mg/L	1.0	09/19/21 10:01	
EPA 6020	Barium	0.063	mg/L	0.0010	09/13/21 15:40	
EPA 6020	Cobalt	0.0014	mg/L	0.0010	09/13/21 15:40	
EPA 6020	Molybdenum	0.0020	mg/L	0.0010	09/13/21 15:40	
EPA 6020	Selenium	0.0038	mg/L	0.0010	09/13/21 15:40	
SM 2540C	Total Dissolved Solids	784	mg/L	20.0	09/09/21 08:39	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	09/08/21 16:19	H3
50296768004	**PC-MW-115-090721**					
EPA 9056	Chloride	148	mg/L	25.0	09/17/21 12:11	
EPA 9056	Fluoride	0.76	mg/L	0.050	09/16/21 18:17	
EPA 9056	Sulfate	99.2	mg/L	2.5	09/16/21 18:31	
EPA 6010	Boron	0.18	mg/L	0.10	09/19/21 10:03	
EPA 6010	Calcium	82.5	mg/L	1.0	09/19/21 10:03	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50296768004	**PC-MW-115-090721**					
EPA 6010	Lithium	0.013	mg/L	0.0080	09/19/21 10:03	
EPA 6010	Total Hardness by 2340B	282	mg/L	1.0	09/19/21 10:03	
EPA 6020	Antimony	0.0042	mg/L	0.0010	09/13/21 15:44	
EPA 6020	Arsenic	0.0029	mg/L	0.0010	09/13/21 15:44	
EPA 6020	Barium	0.026	mg/L	0.0010	09/13/21 15:44	
EPA 6020	Chromium	0.0025	mg/L	0.0020	09/13/21 15:44	
EPA 6020	Molybdenum	0.0034	mg/L	0.0010	09/13/21 15:44	
EPA 6020	Selenium	0.0029	mg/L	0.0010	09/13/21 15:44	
SM 2540C	Total Dissolved Solids	588	mg/L	10.0	09/09/21 08:39	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	09/08/21 16:23	H3
50296768005	**FD-01-090721**					
EPA 9056	Chloride	194	mg/L	25.0	09/17/21 12:25	
EPA 9056	Fluoride	0.25	mg/L	0.050	09/16/21 18:45	
EPA 9056	Sulfate	204	mg/L	2.5	09/16/21 18:59	
EPA 6010	Boron	0.17	mg/L	0.10	09/19/21 10:10	
EPA 6010	Calcium	103	mg/L	1.0	09/19/21 10:10	
EPA 6010	Lithium	0.010	mg/L	0.0080	09/19/21 10:10	
EPA 6010	Total Hardness by 2340B	384	mg/L	1.0	09/19/21 10:10	
EPA 6020	Barium	0.064	mg/L	0.0010	09/13/21 15:49	
EPA 6020	Cobalt	0.0014	mg/L	0.0010	09/13/21 15:49	
EPA 6020	Molybdenum	0.0020	mg/L	0.0010	09/13/21 15:49	
EPA 6020	Selenium	0.0038	mg/L	0.0010	09/13/21 15:49	
SM 2540C	Total Dissolved Solids	808	mg/L	20.0	09/09/21 08:39	
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	09/08/21 16:17	H3
50296768006	**FB-01-090721**					
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	09/08/21 16:26	H3

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 639678

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50296768001,50297127001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MSD (Lab ID: 2945820)
  - Calcium

Additional Comments:

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 639238

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

- FB-01-090721 (Lab ID: 50296768006)
  - Total Dissolved Solids

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_Golder
Date: September 28, 2021

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-090721 (Lab ID: 50296768006)
- FD-01-090721 (Lab ID: 50296768005)
- PC-MW-110-090721 (Lab ID: 50296768001)
- PC-MW-113-090721 (Lab ID: 50296768002)
- PC-MW-114-090721 (Lab ID: 50296768003)
- PC-MW-115-090721 (Lab ID: 50296768004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: PC-MW-110-090721 **Lab ID: 50296768001** Collected: 09/07/21 10:36 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**309**	mg/L	25.0	100		09/17/21 11:16	16887-00-6	
Fluoride	**0.55**	mg/L	0.050	1		09/17/21 09:38	16984-48-8	
Sulfate	**33.3**	mg/L	2.5	10		09/16/21 16:11	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.20**	mg/L	0.10	1	09/16/21 14:06	09/19/21 09:48	7440-42-8	
Calcium	**97.9**	mg/L	1.0	1	09/16/21 14:06	09/19/21 09:48	7440-70-2	
Lithium	**0.0090**	mg/L	0.0080	1	09/16/21 14:06	09/19/21 09:48	7439-93-2	
Total Hardness by 2340B	**359**	mg/L	1.0	1	09/16/21 14:06	09/19/21 09:48		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7440-36-0	
Arsenic	**0.0061**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7440-38-2	
Barium	**0.29**	mg/L	0.0020	2	09/13/21 08:50	09/13/21 16:27	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:03	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:03	7440-43-9	
Chromium	ND	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:03	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7439-92-1	
Molybdenum	**0.0038**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7439-98-7	
Selenium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:03	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**878**	mg/L	20.0	1		09/09/21 08:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		09/08/21 16:11		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: PC-MW-113-090721 **Lab ID: 50296768002** Collected: 09/07/21 12:51 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**77.8**	mg/L	2.5	10		09/17/21 10:34	16887-00-6	
Fluoride	**1.1**	mg/L	0.050	1		09/17/21 10:20	16984-48-8	
Sulfate	**160**	mg/L	2.5	10		09/17/21 10:34	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.26**	mg/L	0.10	1	09/16/21 14:06	09/19/21 09:59	7440-42-8	
Calcium	**100**	mg/L	1.0	1	09/16/21 14:06	09/19/21 09:59	7440-70-2	
Lithium	**0.025**	mg/L	0.0080	1	09/16/21 14:06	09/19/21 09:59	7439-93-2	
Total Hardness by 2340B	**352**	mg/L	1.0	1	09/16/21 14:06	09/19/21 09:59		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7440-36-0	
Arsenic	**0.0017**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7440-38-2	
Barium	**0.036**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:35	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:35	7440-43-9	
Chromium	ND	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:35	7440-47-3	
Cobalt	**0.0011**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7439-98-7	
Selenium	**0.017**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**611**	mg/L	10.0	1		09/09/21 08:38		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		09/08/21 16:18		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: PC-MW-114-090721 **Lab ID: 50296768003** Collected: 09/07/21 13:46 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**196**	mg/L	25.0	100		09/17/21 11:58	16887-00-6	
Fluoride	**0.24**	mg/L	0.050	1		09/16/21 17:49	16984-48-8	
Sulfate	**204**	mg/L	2.5	10		09/16/21 18:03	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.17**	mg/L	0.10	1	09/16/21 14:06	09/19/21 10:01	7440-42-8	
Calcium	**104**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:01	7440-70-2	
Lithium	**0.011**	mg/L	0.0080	1	09/16/21 14:06	09/19/21 10:01	7439-93-2	
Total Hardness by 2340B	**385**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:01		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7440-38-2	
Barium	**0.063**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:40	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:40	7440-43-9	
Chromium	ND	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:40	7440-47-3	
Cobalt	**0.0014**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7439-92-1	
Molybdenum	**0.0020**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7439-98-7	
Selenium	**0.0038**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:40	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**784**	mg/L	20.0	1		09/09/21 08:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		09/08/21 16:19		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: PC-MW-115-090721 **Lab ID: 50296768004** Collected: 09/07/21 14:56 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**148**	mg/L	25.0	100		09/17/21 12:11	16887-00-6	
Fluoride	**0.76**	mg/L	0.050	1		09/16/21 18:17	16984-48-8	
Sulfate	**99.2**	mg/L	2.5	10		09/16/21 18:31	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.18**	mg/L	0.10	1	09/16/21 14:06	09/19/21 10:03	7440-42-8	
Calcium	**82.5**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:03	7440-70-2	
Lithium	**0.013**	mg/L	0.0080	1	09/16/21 14:06	09/19/21 10:03	7439-93-2	
Total Hardness by 2340B	**282**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:03		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	**0.0042**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7440-36-0	
Arsenic	**0.0029**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7440-38-2	
Barium	**0.026**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:44	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:44	7440-43-9	
Chromium	**0.0025**	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:44	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7439-92-1	
Molybdenum	**0.0034**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7439-98-7	
Selenium	**0.0029**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:44	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:20	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**588**	mg/L	10.0	1		09/09/21 08:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		09/08/21 16:23		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: FD-01-090721 **Lab ID: 50296768005** Collected: 09/07/21 12:00 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**194**	mg/L	25.0	100		09/17/21 12:25	16887-00-6	
Fluoride	**0.25**	mg/L	0.050	1		09/16/21 18:45	16984-48-8	
Sulfate	**204**	mg/L	2.5	10		09/16/21 18:59	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.17**	mg/L	0.10	1	09/16/21 14:06	09/19/21 10:10	7440-42-8	
Calcium	**103**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:10	7440-70-2	
Lithium	**0.010**	mg/L	0.0080	1	09/16/21 14:06	09/19/21 10:10	7439-93-2	
Total Hardness by 2340B	**384**	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:10		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7440-38-2	
Barium	**0.064**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:49	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:49	7440-43-9	
Chromium	ND	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:49	7440-47-3	
Cobalt	**0.0014**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7439-92-1	
Molybdenum	**0.0020**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7439-98-7	
Selenium	**0.0038**	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:49	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**808**	mg/L	20.0	1		09/09/21 08:39		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.0**	Std. Units	0.10	1		09/08/21 16:17		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Sample: FB-01-090721 **Lab ID: 50296768006** Collected: 09/07/21 15:00 Received: 09/08/21 09:35 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	ND	mg/L	0.25	1		09/16/21 19:13	16887-00-6	
Fluoride	ND	mg/L	0.050	1		09/16/21 19:13	16984-48-8	
Sulfate	ND	mg/L	0.25	1		09/16/21 19:13	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	ND	mg/L	0.10	1	09/16/21 14:06	09/19/21 10:13	7440-42-8	
Calcium	ND	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:13	7440-70-2	
Lithium	ND	mg/L	0.0080	1	09/16/21 14:06	09/19/21 10:13	7439-93-2	
Total Hardness by 2340B	ND	mg/L	1.0	1	09/16/21 14:06	09/19/21 10:13		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7440-38-2	
Barium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:54	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	09/13/21 08:50	09/13/21 15:54	7440-43-9	
Chromium	ND	mg/L	0.0020	1	09/13/21 08:50	09/13/21 15:54	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7440-48-4	
Lead	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7439-98-7	
Selenium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7782-49-2	
Thallium	ND	mg/L	0.0010	1	09/13/21 08:50	09/13/21 15:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	09/16/21 10:21	09/17/21 09:25	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	ND	mg/L	10.0	1		09/09/21 08:39		PL
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		09/08/21 16:26		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 640280
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

METHOD BLANK: 2948242 Matrix: Water
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	09/17/21 09:10	
Fluoride	mg/L	ND	0.050	09/17/21 09:10	
Sulfate	mg/L	ND	0.25	09/17/21 09:10	

LABORATORY CONTROL SAMPLE: 2948243

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	95	80-120	
Fluoride	mg/L	0.5	0.48	96	80-120	
Sulfate	mg/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2948244 2948245

Parameter	Units	50296768001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	309	125	125	453	453	115	115	80-120	0	15	
Fluoride	mg/L	0.55	0.5	0.5	1.0	1.0	99	98	80-120	0	15	
Sulfate	mg/L	33.3	25	25	57.7	57.8	97	98	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 640229
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

METHOD BLANK: 2948090 Matrix: Water
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	09/17/21 08:46	

LABORATORY CONTROL SAMPLE: 2948091

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0047	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2948092 2948093

Parameter	Units	50296768001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0047	0.0049	95	98	75-125	4	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2948094 2948095

Parameter	Units	50297057005 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0056	0.0055	88	88	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 639678
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

METHOD BLANK: 2945817 Matrix: Water
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	09/19/21 09:46	
Calcium	mg/L	ND	1.0	09/19/21 09:46	
Lithium	mg/L	ND	0.0080	09/19/21 09:46	
Total Hardness by 2340B	mg/L	ND	1.0	09/19/21 09:46	

LABORATORY CONTROL SAMPLE: 2945818

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.91	91	80-120	
Calcium	mg/L	10	9.9	99	80-120	
Lithium	mg/L	1	0.97	97	80-120	
Total Hardness by 2340B	mg/L	66.2	61.7	93	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945819 2945820

Parameter	Units	50296768001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.20	1	1	1.1	1.1	95	94	75-125	0	20	
Calcium	mg/L	97.9	10	10	106	105	84	72	75-125	1	20	P6
Lithium	mg/L	0.0090	1	1	1.0	1.0	100	99	75-125	1	20	
Total Hardness by 2340B	mg/L	359	66.2	66.2	414	410	83	77	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2945821 2945822

Parameter	Units	50297127001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.15	1	1	1.1	1.1	92	94	75-125	2	20	
Calcium	mg/L	72.5	10	10	81.5	84.7	90	122	75-125	4	20	
Lithium	mg/L	ND	1	1	0.99	1.0	99	100	75-125	1	20	
Total Hardness by 2340B	mg/L	249	66.2	66.2	307	319	88	106	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 639264
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

METHOD BLANK: 2943235 Matrix: Water
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	09/13/21 14:54	
Arsenic	mg/L	ND	0.0010	09/13/21 14:54	
Barium	mg/L	ND	0.0010	09/13/21 14:54	
Beryllium	mg/L	ND	0.00020	09/13/21 14:54	
Cadmium	mg/L	ND	0.00020	09/13/21 14:54	
Chromium	mg/L	ND	0.0020	09/13/21 14:54	
Cobalt	mg/L	ND	0.0010	09/13/21 14:54	
Lead	mg/L	ND	0.0010	09/13/21 14:54	
Molybdenum	mg/L	ND	0.0010	09/13/21 14:54	
Selenium	mg/L	ND	0.0010	09/13/21 14:54	
Thallium	mg/L	ND	0.0010	09/13/21 14:54	

LABORATORY CONTROL SAMPLE: 2943236

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.042	104	80-120	
Arsenic	mg/L	0.04	0.037	93	80-120	
Barium	mg/L	0.04	0.038	95	80-120	
Beryllium	mg/L	0.04	0.037	91	80-120	
Cadmium	mg/L	0.04	0.038	95	80-120	
Chromium	mg/L	0.04	0.040	100	80-120	
Cobalt	mg/L	0.04	0.040	99	80-120	
Lead	mg/L	0.04	0.040	101	80-120	
Molybdenum	mg/L	0.04	0.040	101	80-120	
Selenium	mg/L	0.04	0.040	99	80-120	
Thallium	mg/L	0.04	0.040	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2943237 2943238

Parameter	Units	50296768001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.041	0.042	102	106	75-125	3	20	
Arsenic	mg/L	0.0061	0.04	0.04	0.043	0.043	92	91	75-125	0	20	
Barium	mg/L	0.29	0.04	0.04	0.33	0.32	93	78	75-125	2	20	
Beryllium	mg/L	ND	0.04	0.04	0.035	0.036	89	89	75-125	1	20	
Cadmium	mg/L	ND	0.04	0.04	0.036	0.036	90	90	75-125	1	20	
Chromium	mg/L	ND	0.04	0.04	0.038	0.037	93	92	75-125	1	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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Indianapolis, IN 46268
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QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 2943237 2943238

Parameter	Units	50296768001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	ND	0.04	0.04	0.038	0.038	94	96	75-125	2	20	
Lead	mg/L	ND	0.04	0.04	0.039	0.039	97	99	75-125	1	20	
Molybdenum	mg/L	0.0038	0.04	0.04	0.044	0.044	99	101	75-125	1	20	
Selenium	mg/L	ND	0.04	0.04	0.038	0.037	94	93	75-125	1	20	
Thallium	mg/L	ND	0.04	0.04	0.040	0.040	99	101	75-125	2	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 639238 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

METHOD BLANK: 2943141 Matrix: Water
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	09/09/21 08:37	

LABORATORY CONTROL SAMPLE: 2943142

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	279	93	80-120	

SAMPLE DUPLICATE: 2943143

Parameter	Units	50296768001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	878	840	4	10	

SAMPLE DUPLICATE: 2943160

Parameter	Units	50296762001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	5280	5300	0	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

QC Batch: 639143
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50296768001, 50296768002, 50296768003, 50296768004, 50296768005, 50296768006

SAMPLE DUPLICATE: 2942764

Parameter	Units	50296295001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.9	7.9	0	2	H3

SAMPLE DUPLICATE: 2942765

Parameter	Units	50296768001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.2	1	2	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296768

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50296768001	**PC-MW-110-090721**	EPA 9056	640280		
50296768002	**PC-MW-113-090721**	EPA 9056	640280		
50296768003	**PC-MW-114-090721**	EPA 9056	640280		
50296768004	**PC-MW-115-090721**	EPA 9056	640280		
50296768005	**FD-01-090721**	EPA 9056	640280		
50296768006	**FB-01-090721**	EPA 9056	640280		
50296768001	**PC-MW-110-090721**	EPA 3010	639678	EPA 6010	640672
50296768002	**PC-MW-113-090721**	EPA 3010	639678	EPA 6010	640672
50296768003	**PC-MW-114-090721**	EPA 3010	639678	EPA 6010	640672
50296768004	**PC-MW-115-090721**	EPA 3010	639678	EPA 6010	640672
50296768005	**FD-01-090721**	EPA 3010	639678	EPA 6010	640672
50296768006	**FB-01-090721**	EPA 3010	639678	EPA 6010	640672
50296768001	**PC-MW-110-090721**	EPA 200.2	639264	EPA 6020	639788
50296768002	**PC-MW-113-090721**	EPA 200.2	639264	EPA 6020	639788
50296768003	**PC-MW-114-090721**	EPA 200.2	639264	EPA 6020	639788
50296768004	**PC-MW-115-090721**	EPA 200.2	639264	EPA 6020	639788
50296768005	**FD-01-090721**	EPA 200.2	639264	EPA 6020	639788
50296768006	**FB-01-090721**	EPA 200.2	639264	EPA 6020	639788
50296768001	**PC-MW-110-090721**	EPA 7470	640229	EPA 7470	640478
50296768002	**PC-MW-113-090721**	EPA 7470	640229	EPA 7470	640478
50296768003	**PC-MW-114-090721**	EPA 7470	640229	EPA 7470	640478
50296768004	**PC-MW-115-090721**	EPA 7470	640229	EPA 7470	640478
50296768005	**FD-01-090721**	EPA 7470	640229	EPA 7470	640478
50296768006	**FB-01-090721**	EPA 7470	640229	EPA 7470	640478
50296768001	**PC-MW-110-090721**	SM 2540C	639238		
50296768002	**PC-MW-113-090721**	SM 2540C	639238		
50296768003	**PC-MW-114-090721**	SM 2540C	639238		
50296768004	**PC-MW-115-090721**	SM 2540C	639238		
50296768005	**FD-01-090721**	SM 2540C	639238		
50296768006	**FB-01-090721**	SM 2540C	639238		
50296768001	**PC-MW-110-090721**	SM 4500-H+B	639143		
50296768002	**PC-MW-113-090721**	SM 4500-H+B	639143		
50296768003	**PC-MW-114-090721**	SM 4500-H+B	639143		
50296768004	**PC-MW-115-090721**	SM 4500-H+B	639143		
50296768005	**FD-01-090721**	SM 4500-H+B	639143		
50296768006	**FB-01-090721**	SM 4500-H+B	639143		

WO# : 50296768

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF- ıt
The Chain-of-Cus eted accurately.

50296768

Section A
Required Client Information:

Company:	NiSource_Golder
Address:	801 E 8th Ave
	Merrillville, IN 46410
Email:	jim_peace@golder.com
Phone:	Fax:
Requested Due Date:	NIPSCO standard

Section B
Required Project Information:

Report To:	Jim Peace
Copy To:	krysta_cione@golder.com, danielle_sylvia@golder.com
Purchase Order #	PO12708
Project Name:	MCGS PC Bkgd Sept 2021
Project #:	19121568-212-2

Attention:	Jeff Loewe-U12677
Company Name:	NiSource
Address:	
Pace Quote:	
Pace Project Manager:	tina.sayer@pacelabs.com,
Pace Profile #:	9047-1

Page : Of

Regulatory Agency

State / Location
IN

Requested Analysis Filtered (Y/N)

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010*	Metals, Total by 6020*	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 905	pH by 4500	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS																		N	N	N	N	N	N		
1	PC-MW-110- 090721					9/1/21	1036		5	2		3							X	X	X	X	X	X		MS/MSD
2	PC-MW-113- 090721					9/1/21	1251		5	2		3							X	X	X	X	X	X		
3	PC-MW-114- 090721					9/1/21	1346		5	2		3							X	X	X	X	X	X		
4	PC-MW-115- 090721					9/1/21	1456		5	2		3							X	X	X	X	X	X		
5	FD-01- 090721					9/1/21	1200		5	2		3							X	X	X	X	X	X		
6	FB-01- 090721					9/1/21	1300		5	2		3							X	X	X	X	X	X		
7	[redacted]																									
8	[redacted]																									
9	[redacted]																									
10	[redacted]																									
11	[redacted]																									
12	[redacted]																									

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
* B, Ca, Li, Hardness by 6010	[redacted] / GOLDER Fed Ex	9/1/21	1600	Fed Ex						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020				[redacted]	9/2/21	0935	0.7	Y	Y	Y
							0.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: [redacted]

SIGNATURE of SAMPLER: [redacted]

DATE Signed: 9/1/21

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DAP 9/8/21 1045

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E (F)
4. **Cooler Temperature:** 0.8/0.7 , 0.7/0.6
   Temp should be above freezing to 6°C (Initial/Corrected)

5. **Packing Material:** ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS. NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																6	3	3	3									WT	✓		
2																2	1	1	1												
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

October 01, 2021

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on September 08, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Olivia Deck for
Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Ms. Krysta Cione, Golder
Mr. Tom Haskins, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 9526
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50296861001	**PC-MW-110-090721**	Water	09/07/21 10:36	09/08/21 09:35
50296861002	**PC-MW-113-090721**	Water	09/07/21 12:51	09/08/21 09:35
50296861003	**PC-MW-114-090721**	Water	09/07/21 13:46	09/08/21 09:35
50296861004	**PC-MW-115-090721**	Water	09/07/21 14:56	09/08/21 09:35
50296861005	**FD-01-090721**	Water	09/07/21 12:00	09/08/21 09:35
50296861006	**FB-01-090721**	Water	09/07/21 15:00	09/08/21 09:35
50296861007	**PC-MW-110-090721 MS**	Water	09/07/21 10:36	09/08/21 09:35
50296861008	**PC-MW-110-090721 MSD**	Water	09/07/21 10:36	09/08/21 09:35

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50296861001	**PC-MW-110-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861002	**PC-MW-113-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861003	**PC-MW-114-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861004	**PC-MW-115-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861005	**FD-01-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861006	**FB-01-090721**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	RMK	1	PASI-PA
50296861007	**PC-MW-110-090721 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
50296861008	**PC-MW-110-090721 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50296861001	**PC-MW-110-090721**					
EPA 903.1	Radium-226	0.985 ± 0.559 (0.680) C:NA T:91%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	1.49 ± 0.525 (0.728) C:72% T:93%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	2.48 ± 1.08 (1.41)	pCi/L		10/01/21 14:19	
50296861002	**PC-MW-113-090721**					
EPA 903.1	Radium-226	0.265 ± 0.487 (0.869) C:NA T:95%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	0.750 ± 0.414 (0.736) C:73% T:94%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	1.02 ± 0.901 (1.61)	pCi/L		10/01/21 14:19	
50296861003	**PC-MW-114-090721**					
EPA 903.1	Radium-226	0.139 ± 0.472 (0.911) C:NA T:92%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	0.707 ± 0.463 (0.877) C:71% T:89%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	0.846 ± 0.935 (1.79)	pCi/L		10/01/21 14:19	
50296861004	**PC-MW-115-090721**					
EPA 903.1	Radium-226	-0.518 ± 0.485 (1.23) C:NA T:96%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	1.49 ± 0.578 (0.889) C:72% T:90%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	1.49 ± 1.06 (2.12)	pCi/L		10/01/21 14:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50296861005	**FD-01-090721**					
EPA 903.1	Radium-226	0.0707 ± 0.460 (0.926) C:NA T:93%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	0.750 ± 0.434 (0.784) C:72% T:90%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	0.821 ± 0.894 (1.71)	pCi/L		10/01/21 14:19	
50296861006	**FB-01-090721**					
EPA 903.1	Radium-226	-0.131 ± 0.444 (0.980) C:NA T:96%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	0.377 ± 0.372 (0.762) C:72% T:98%	pCi/L		09/28/21 15:38	
Total Radium Calculation	Total Radium	0.377 ± 0.816 (1.74)	pCi/L		10/01/21 14:19	
50296861007	**PC-MW-110-090721 MS**					
EPA 903.1	Radium-226	88.80 %REC ± NA (NA) C:NA T:NA%	pCi/L		09/29/21 16:58	
EPA 904.0	Radium-228	109.15 %REC ± NA (NA) C:NA T:NA	pCi/L		09/28/21 15:38	
50296861008	**PC-MW-110-090721 MSD**					
EPA 903.1	Radium-226	97.25 %REC 9.09 RPD ± NA (NA) C:NA T:NA%	pCi/L		09/29/21 17:21	
EPA 904.0	Radium-228	112.80 %REC 3.29 RPD ± NA (NA) C:NA T:NA	pCi/L		09/28/21 15:36	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_Golder
Date: October 01, 2021

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_Golder
Date: October 01, 2021

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_Golder
Date: October 01, 2021

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-110-090721 **Lab ID: 50296861001** Collected: 09/07/21 10:36 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.985 ± 0.559 (0.680) C:NA T:91%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.49 ± 0.525 (0.728) C:72% T:93%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.48 ± 1.08 (1.41)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-113-090721 **Lab ID: 50296861002** Collected: 09/07/21 12:51 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.265 ± 0.487 (0.869) C:NA T:95%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.750 ± 0.414 (0.736) C:73% T:94%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.02 ± 0.901 (1.61)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-114-090721 **Lab ID: 50296861003** Collected: 09/07/21 13:46 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.139 ± 0.472 (0.911) C:NA T:92%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.707 ± 0.463 (0.877) C:71% T:89%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.846 ± 0.935 (1.79)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-115-090721 **Lab ID: 50296861004** Collected: 09/07/21 14:56 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.518 ± 0.485 (1.23) C:NA T:96%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.49 ± 0.578 (0.889) C:72% T:90%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.49 ± 1.06 (2.12)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: FD-01-090721 **Lab ID: 50296861005** Collected: 09/07/21 12:00 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0707 ± 0.460 (0.926) C:NA T:93%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.750 ± 0.434 (0.784) C:72% T:90%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.821 ± 0.894 (1.71)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: FB-01-090721 **Lab ID: 50296861006** Collected: 09/07/21 15:00 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.131 ± 0.444 (0.980) C:NA T:96%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.377 ± 0.372 (0.762) C:72% T:98%**	pCi/L	09/28/21 15:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.377 ± 0.816 (1.74)**	pCi/L	10/01/21 14:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-110-090721 MS **Lab ID: 50296861007** Collected: 09/07/21 10:36 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**88.80 %REC ± NA (NA) C:NA T:NA%**	pCi/L	09/29/21 16:58	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**109.15 %REC ± NA (NA) C:NA T:NA**	pCi/L	09/28/21 15:38	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Sample: PC-MW-110-090721 MSD **Lab ID: 50296861008** Collected: 09/07/21 10:36 Received: 09/08/21 09:35 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**97.25 %REC 9.09 RPD ± NA (NA) C:NA T:NA%**	pCi/L	09/29/21 17:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**112.80 %REC 3.29 RPD ± NA (NA) C:NA T:NA**	pCi/L	09/28/21 15:36	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

QC Batch: 464882 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50296861001, 50296861002, 50296861003, 50296861004, 50296861005, 50296861006, 50296861007, 50296861008

METHOD BLANK: 2244733 Matrix: Water
Associated Lab Samples: 50296861001, 50296861002, 50296861003, 50296861004, 50296861005, 50296861006, 50296861007, 50296861008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0537 ± 0.316 (0.645) C:NA T:92%	pCi/L	09/29/21 16:58	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

QC Batch: 464883 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50296861001, 50296861002, 50296861003, 50296861004, 50296861005, 50296861006, 50296861007, 50296861008

METHOD BLANK: 2244734 Matrix: Water
Associated Lab Samples: 50296861001, 50296861002, 50296861003, 50296861004, 50296861005, 50296861006, 50296861007, 50296861008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.167 ± 0.274 (0.595) C:66% T:95%	pCi/L	09/28/21 11:03	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd Sept 2021
Pace Project No.: 50296861

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50296861001	**PC-MW-110-090721**	EPA 903.1	464882		
50296861002	**PC-MW-113-090721**	EPA 903.1	464882		
50296861003	**PC-MW-114-090721**	EPA 903.1	464882		
50296861004	**PC-MW-115-090721**	EPA 903.1	464882		
50296861005	**FD-01-090721**	EPA 903.1	464882		
50296861006	**FB-01-090721**	EPA 903.1	464882		
50296861007	**PC-MW-110-090721 MS**	EPA 903.1	464882		
50296861008	**PC-MW-110-090721 MSD**	EPA 903.1	464882		
50296861001	**PC-MW-110-090721**	EPA 904.0	464883		
50296861002	**PC-MW-113-090721**	EPA 904.0	464883		
50296861003	**PC-MW-114-090721**	EPA 904.0	464883		
50296861004	**PC-MW-115-090721**	EPA 904.0	464883		
50296861005	**FD-01-090721**	EPA 904.0	464883		
50296861006	**FB-01-090721**	EPA 904.0	464883		
50296861007	**PC-MW-110-090721 MS**	EPA 904.0	464883		
50296861008	**PC-MW-110-090721 MSD**	EPA 904.0	464883		
50296861001	**PC-MW-110-090721**	Total Radium Calculation	466464		
50296861002	**PC-MW-113-090721**	Total Radium Calculation	466464		
50296861003	**PC-MW-114-090721**	Total Radium Calculation	466464		
50296861004	**PC-MW-115-090721**	Total Radium Calculation	466464		
50296861005	**FD-01-090721**	Total Radium Calculation	466464		
50296861006	**FB-01-090721**	Total Radium Calculation	466464		

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : Of

Section A Required Client Information:	Section B Required Project Information:	Section C Invoice Information:
Company: NiSource_Golder	Report To: Jim Peace	Attention: Jeff Loewe-U126177
Address: 801 E 86th Ave	Copy To: krysta_cione@golder.com,	Company Name: NiSource
Merrillville, IN 46410	danielle_sylvia@golder.com	Address:
Email: jim_peace@golder.com	Purchase Order #: PO12708	Pace Quote:
Phone: Fax:	Project Name: MCGS PC Bkgd Sept 2021	Pace Project Manager: tina.sayer@pacelabs.com,
Requested Due Date:	Project #:	Pace Profile #: 9047-2

Regulatory Agency
State / Location
IN

ITEM #	SAMPLE ID One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N): Y/N	Analyses Test: Radium-226+228 (sum)*	Residual Chlorine (Y/N)	50296861
1	PC-MW-110-090721					9/7/2021	1036												X		
2	PC-MW-113-090721					9/7/2021	1251												X		
3	PC-MW-114-090721					9/7/2021	1346												X		
4	PC-MW-115-090721					9/7/2021	1456												X		
5	FD-01-090721					9/7/2021	1200												X		
6	FB-01-090721					9/7/2021	1500												X		
7																					
8																					
9																					
10																					
11																					
12																					

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Sub RadChem to Pace PA	Rguzman/Golder	9/7/2021	1600	Fed Ex						
	FedEx			D. Pendegrass/Pace	9/8/2021	935	0.7	Y	Y	Y
	See COC for 50296768 for signatures 9/9/21tms						0.6	Y	Y	Y

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	R Guzman		
SIGNATURE of SAMPLER:	On file in 50296768	DATE Signed:	9/7/2021

TEMP in C | Received on Ice (Y/N) | Custody Sealed Cooler (Y/N) | Samples Intact (Y/N)

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: DAP 9/8/21 1045

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____

2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No

(If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**

3. **Thermometer:** 1 2 3 4 5 6 A B C D E (F)

4. **Cooler Temperature:** 0.8/0.7 , 0.7/0.6
Temp should be above freezing to 6°C (Initial/Corrected)

5. **Packing Material:** ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____

6. **Ice Type:** ☑ Wet ☐ Blue ☐ None

7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS. NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																6	3	3	3									WT	✓		
2																2	1	1	1												
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

January 27, 2023

Mr. Tom Haskins
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Dear Mr. Haskins:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

(Greensburg, PA) - Revision 1 - This report replaces the January 20, 2023 report. This project was revised on January 27, 2023 to update results for the MS and MSD.

Revised report replace report dated 01/20/22. Rad QC data revised. 01/27/23tms

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Gabe Dixon, WSP
Ms. Sarah Gilles, WSP Golder
Ms. Danielle Sylvia, WSP Golder

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
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SAMPLE SUMMARY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50305664001	**PC-MW-110-121621**	Water	12/16/21 10:20	12/20/21 09:45
50305664002	**PC-MW-113-121621**	Water	12/16/21 12:35	12/20/21 09:45
50305664003	**PC-MW-114-121621**	Water	12/16/21 13:25	12/20/21 09:45
50305664004	**PC-MW-115-121621**	Water	12/16/21 14:35	12/20/21 09:45
50305664005	**FD-01-121621**	Water	12/16/21 12:00	12/20/21 09:45
50305664006	**FB-01-121621**	Water	12/16/21 14:45	12/20/21 09:45
50305664007	**PC-MW-110-121621 MS**	Water	12/16/21 10:20	12/20/21 09:45
50305664008	**PC-MW-110-121621 MSD**	Water	12/16/21 10:20	12/20/21 09:45

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SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50305664001	**PC-MW-110-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664002	**PC-MW-113-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664003	**PC-MW-114-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664004	**PC-MW-115-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664005	**FD-01-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664006	**FB-01-121621**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50305664007	**PC-MW-110-121621 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA
50305664008	**PC-MW-110-121621 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	JC2	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
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SUMMARY OF DETECTION

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50305664001	**PC-MW-110-121621**					
EPA 903.1	Radium-226	0.890 ± 0.422 (0.327) C:NA T:98%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	1.02 ± 0.545 (0.965) C:71% T:92%	pCi/L		01/14/22 17:26	
Total Radium Calculation	Total Radium	1.91 ± 0.967 (1.29)	pCi/L		01/19/22 16:19	
50305664002	**PC-MW-113-121621**					
EPA 903.1	Radium-226	0.323 ± 0.458 (0.775) C:NA T:95%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	0.400 ± 0.531 (1.13) C:64% T:86%	pCi/L		01/14/22 17:28	
Total Radium Calculation	Total Radium	0.723 ± 0.989 (1.91)	pCi/L		01/19/22 16:19	
50305664003	**PC-MW-114-121621**					
EPA 903.1	Radium-226	0.558 ± 0.586 (0.931) C:NA T:89%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	-0.167 ± 0.402 (0.992) C:73% T:83%	pCi/L		01/14/22 17:28	
Total Radium Calculation	Total Radium	0.558 ± 0.988 (1.92)	pCi/L		01/19/22 16:19	
50305664004	**PC-MW-115-121621**					
EPA 903.1	Radium-226	0.000 ± 0.413 (0.894) C:NA T:88%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	-0.128 ± 0.529 (1.26) C:66% T:84%	pCi/L		01/14/22 17:28	
Total Radium Calculation	Total Radium	0.000 ± 0.942 (2.15)	pCi/L		01/19/22 16:19	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50305664005	**FD-01-121621**					
EPA 903.1	Radium-226	0.481 ± 0.377 (0.442) C:NA T:98%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	0.521 ± 0.594 (1.25) C:61% T:86%	pCi/L		01/14/22 17:38	
Total Radium Calculation	Total Radium	1.00 ± 0.971 (1.69)	pCi/L		01/19/22 16:19	
50305664006	**FB-01-121621**					
EPA 903.1	Radium-226	0.128 ± 0.563 (1.07) C:NA T:96%	pCi/L		01/18/22 14:32	
EPA 904.0	Radium-228	0.749 ± 0.532 (1.02) C:65% T:91%	pCi/L		01/14/22 17:38	
Total Radium Calculation	Total Radium	0.877 ± 1.10 (2.09)	pCi/L		01/19/22 16:19	
50305664007	**PC-MW-110-121621 MS**					
EPA 903.1	Radium-226	76.88 %REC ± NA (NA) C:NA T:NA	pCi/L		01/18/22 14:46	
EPA 904.0	Radium-228	123.53 %REC ± NA (NA) C:NA T:NA	pCi/L		01/14/22 17:38	
50305664008	**PC-MW-110-121621 MSD**					
EPA 903.1	Radium-226	104.25 %REC 30.22RPD ± NA (NA) C:NA T:NA	pCi/L		01/18/22 14:46	
EPA 904.0	Radium-228	109.24 %REC 12.27 RPD ± NA (NA) C:NA T:NA	pCi/L		01/14/22 17:39	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_WSP
Date: January 27, 2023

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_WSP
Date: January 27, 2023

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_WSP
Date: January 27, 2023

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-110-121621 **Lab ID: 50305664001** Collected: 12/16/21 10:20 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.890 ± 0.422 (0.327) C:NA T:98%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.02 ± 0.545 (0.965) C:71% T:92%**	pCi/L	01/14/22 17:26	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.91 ± 0.967 (1.29)**	pCi/L	01/19/22 16:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-113-121621 **Lab ID: 50305664002** Collected: 12/16/21 12:35 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.323 ± 0.458 (0.775) C:NA T:95%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.400 ± 0.531 (1.13) C:64% T:86%**	pCi/L	01/14/22 17:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.723 ± 0.989 (1.91)**	pCi/L	01/19/22 16:19	7440-14-4	

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-114-121621 **Lab ID: 50305664003** Collected: 12/16/21 13:25 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.558 ± 0.586 (0.931) C:NA T:89%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.167 ± 0.402 (0.992) C:73% T:83%**	pCi/L	01/14/22 17:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.558 ± 0.988 (1.92)**	pCi/L	01/19/22 16:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-115-121621 **Lab ID: 50305664004** Collected: 12/16/21 14:35 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.413 (0.894) C:NA T:88%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**-0.128 ± 0.529 (1.26) C:66% T:84%**	pCi/L	01/14/22 17:28	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.000 ± 0.942 (2.15)**	pCi/L	01/19/22 16:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: FD-01-121621 **Lab ID: 50305664005** Collected: 12/16/21 12:00 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.481 ± 0.377 (0.442) C:NA T:98%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.521 ± 0.594 (1.25) C:61% T:86%**	pCi/L	01/14/22 17:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**1.00 ± 0.971 (1.69)**	pCi/L	01/19/22 16:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: FB-01-121621 **Lab ID: 50305664006** Collected: 12/16/21 14:45 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.128 ± 0.563 (1.07) C:NA T:96%**	pCi/L	01/18/22 14:32	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.749 ± 0.532 (1.02) C:65% T:91%**	pCi/L	01/14/22 17:38	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.877 ± 1.10 (2.09)**	pCi/L	01/19/22 16:19	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-110-121621 MS **Lab ID: 50305664007** Collected: 12/16/21 10:20 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**76.88 %REC ± NA (NA) C:NA T:NA**	pCi/L	01/18/22 14:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**123.53 %REC ± NA (NA) C:NA T:NA**	pCi/L	01/14/22 17:38	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Sample: PC-MW-110-121621 MSD **Lab ID: 50305664008** Collected: 12/16/21 10:20 Received: 12/20/21 09:45 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**104.25 %REC 30.22RPD ± NA (NA) C:NA T:NA**	pCi/L	01/18/22 14:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**109.24 %REC 12.27 RPD ± NA (NA) C:NA T:NA**	pCi/L	01/14/22 17:39	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

QC Batch: 478388 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50305664001, 50305664002, 50305664003, 50305664004, 50305664005, 50305664006, 50305664007, 50305664008

METHOD BLANK: 2312056 Matrix: Water
Associated Lab Samples: 50305664001, 50305664002, 50305664003, 50305664004, 50305664005, 50305664006, 50305664007, 50305664008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.186 ± 0.263 (0.564) C:79% T:86%	pCi/L	01/14/22 14:24	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

QC Batch: 478387 Analysis Method: EPA 903.1
QC Batch Method: EPA 903.1 Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50305664001, 50305664002, 50305664003, 50305664004, 50305664005, 50305664006, 50305664007, 50305664008

METHOD BLANK: 2312055 Matrix: Water
Associated Lab Samples: 50305664001, 50305664002, 50305664003, 50305664004, 50305664005, 50305664006, 50305664007, 50305664008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.289 ± 0.380 (0.632) C:NA T:98%	pCi/L	01/18/22 14:17	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305664

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50305664001	**PC-MW-110-121621**	EPA 903.1	478387		
50305664002	**PC-MW-113-121621**	EPA 903.1	478387		
50305664003	**PC-MW-114-121621**	EPA 903.1	478387		
50305664004	**PC-MW-115-121621**	EPA 903.1	478387		
50305664005	**FD-01-121621**	EPA 903.1	478387		
50305664006	**FB-01-121621**	EPA 903.1	478387		
50305664007	**PC-MW-110-121621 MS**	EPA 903.1	478387		
50305664008	**PC-MW-110-121621 MSD**	EPA 903.1	478387		
50305664001	**PC-MW-110-121621**	EPA 904.0	478388		
50305664002	**PC-MW-113-121621**	EPA 904.0	478388		
50305664003	**PC-MW-114-121621**	EPA 904.0	478388		
50305664004	**PC-MW-115-121621**	EPA 904.0	478388		
50305664005	**FD-01-121621**	EPA 904.0	478388		
50305664006	**FB-01-121621**	EPA 904.0	478388		
50305664007	**PC-MW-110-121621 MS**	EPA 904.0	478388		
50305664008	**PC-MW-110-121621 MSD**	EPA 904.0	478388		
50305664001	**PC-MW-110-121621**	Total Radium Calculation	480054		
50305664002	**PC-MW-113-121621**	Total Radium Calculation	480054		
50305664003	**PC-MW-114-121621**	Total Radium Calculation	480054		
50305664004	**PC-MW-115-121621**	Total Radium Calculation	480054		
50305664005	**FD-01-121621**	Total Radium Calculation	480054		
50305664006	**FB-01-121621**	Total Radium Calculation	480054		

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTOD

The Chain-of-Custody is a LEG ly.

WO# : 50305664

50305664

Page : Of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	krysta_cione@golder.com, danielle_sylvia@golder.com	Company Name:	NiSource
Merrillville, IN 46410				Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO12708	Pace Quote	
Phone:	Fax:	Project Name:	MCGS PC Bkgd Dec 2021	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	NIPSCO standard	Project #:	19121568-212-2	Pace Profile #:	9047-1

Regulatory Agency
State / Location
IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium 226+228 (sum)	Residual Chlorine (Y/N)	
1	PC-MW-110- 12/6/21	WT	G			12/14/21	1020		2			2						N	X		MS/MSD 001
2	PC-MW-113- 12/6/21	WT	G			12/14/21	1235		2			2						N	X		002
3	PC-MW-114- 12/6/21	WT	G			12/14/21	1325		2			2						N	X		003
4	PC-MW-115- 12/6/21	WT	G			12/14/21	1435		2			2						N	X		004
5	FD-01- 12/6/21	WT	G			12/14/21	1200		2			2						N	X		005
6	FB-01- 12/6/21	WT	G			12/14/21	1445		2			2						N	X		006
7																					007
8																					008
9																					
10																					
11																					
12																					

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Sub RadChem to PA	[signature] / FedEx	12/14/21	1600	FedEx						
	FedEx	12-20-21	9:45	[signature]	12-20-21	9:45	0.3	y	y	y
							0.4			
							0.7			

SAMPLER NAME AND SIGNATURE			TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
PRINT Name of SAMPLER:	[signature]					
SIGNATURE of SAMPLER:	[signature]	DATE Signed: 12/14/21				

F-IN-Q-290-rev.21, 02Feb2021

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

RCVD C1, C2 on 12/17/21 1040

Date/Time and Initials of person examining contents: DMP 12/17/21 16:11 BC 12-20-21 11:42

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals ~~were present~~)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature:** C1 (0.1/0.4°C); C2 (0.3/0.7°C) 0.5/0.5
   Temp should be above freezing to 6°C **(Initial/Corrected)**
5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other Ziploc Bags
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle:** **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	✓		Present	Absent	N/A ✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Custody Signatures Present?	✓		Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
			Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			✓

COMMENTS: Cooler 3 not received on 12/17/21.

Cooler 3 arrived on 12/20/21 @ 0.5 degrees C. 12/20/21tms

COC PAGE 1 **of** 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																26												WT	✓		
2																															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

January 05, 2022

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on December 20, 2021. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Mr. Tom Haskins, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50305666001	**PC-MW-110-121621**	Water	12/16/21 10:20	12/20/21 09:45
50305666002	**PC-MW-113-121621**	Water	12/16/21 12:35	12/20/21 09:45
50305666003	**PC-MW-114-121621**	Water	12/16/21 13:25	12/20/21 09:45
50305666004	**PC-MW-115-121621**	Water	12/16/21 14:35	12/20/21 09:45
50305666005	**FD-01-121621**	Water	12/16/21 12:00	12/20/21 09:45
50305666006	**FB-01-121621**	Water	12/16/21 14:45	12/20/21 09:45

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50305666001	**PC-MW-110-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50305666002	**PC-MW-113-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50305666003	**PC-MW-114-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50305666004	**PC-MW-115-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50305666005	**FD-01-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I
50305666006	**FB-01-121621**	EPA 9056	BK1	3	PASI-I
		EPA 6010	JPK, RAM	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	BSW	1	PASI-I
		SM 4500-H+B	ZM	1	PASI-I

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50305666001	**PC-MW-110-121621**					
EPA 9056	Chloride	298	mg/L	25.0	01/03/22 19:06	
EPA 9056	Fluoride	0.51	mg/L	0.050	01/03/22 18:29	
EPA 9056	Sulfate	37.0	mg/L	2.5	01/03/22 18:47	
EPA 6010	Boron	0.23	mg/L	0.10	12/23/21 21:24	
EPA 6010	Calcium	95.4	mg/L	1.0	12/23/21 21:24	
EPA 6010	Lithium	0.015	mg/L	0.0080	12/28/21 14:19	
EPA 6010	Total Hardness by 2340B	358	mg/L	1.0	12/23/21 21:24	
EPA 6020	Arsenic	0.0060	mg/L	0.0010	12/22/21 15:11	
EPA 6020	Barium	0.33	mg/L	0.0050	12/22/21 14:32	
EPA 6020	Molybdenum	0.0037	mg/L	0.0010	12/22/21 15:11	
SM 2540C	Total Dissolved Solids	818	mg/L	20.0	12/21/21 08:14	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	12/22/21 12:44	H3
50305666002	**PC-MW-113-121621**					
EPA 9056	Chloride	55.4	mg/L	2.5	12/30/21 15:23	
EPA 9056	Fluoride	0.83	mg/L	0.050	01/04/22 15:24	
EPA 9056	Sulfate	143	mg/L	2.5	12/30/21 15:23	
EPA 6010	Boron	0.33	mg/L	0.10	12/23/21 21:34	
EPA 6010	Calcium	96.2	mg/L	1.0	12/23/21 21:34	
EPA 6010	Lithium	0.019	mg/L	0.0080	12/28/21 12:00	
EPA 6010	Total Hardness by 2340B	340	mg/L	1.0	12/23/21 21:34	
EPA 6020	Arsenic	0.0020	mg/L	0.0010	12/22/21 13:52	
EPA 6020	Barium	0.036	mg/L	0.0010	12/22/21 13:52	
EPA 6020	Cadmium	0.00033	mg/L	0.00020	12/22/21 13:52	
EPA 6020	Cobalt	0.0026	mg/L	0.0010	12/22/21 13:52	
EPA 6020	Selenium	0.034	mg/L	0.0010	12/22/21 13:52	
SM 2540C	Total Dissolved Solids	556	mg/L	10.0	12/21/21 08:14	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	12/22/21 12:48	H3
50305666003	**PC-MW-114-121621**					
EPA 9056	Chloride	297	mg/L	25.0	12/30/21 19:04	
EPA 9056	Fluoride	0.26	mg/L	0.050	01/04/22 16:20	
EPA 9056	Sulfate	221	mg/L	2.5	12/30/21 18:46	
EPA 6010	Boron	0.24	mg/L	0.10	12/23/21 21:36	
EPA 6010	Calcium	117	mg/L	1.0	12/23/21 21:36	
EPA 6010	Lithium	0.013	mg/L	0.0080	12/28/21 12:02	
EPA 6010	Total Hardness by 2340B	425	mg/L	1.0	12/23/21 21:36	
EPA 6020	Barium	0.069	mg/L	0.0010	12/22/21 13:56	
EPA 6020	Cobalt	0.0013	mg/L	0.0010	12/22/21 13:56	
EPA 6020	Molybdenum	0.0019	mg/L	0.0010	12/22/21 13:56	
EPA 6020	Selenium	0.0045	mg/L	0.0010	12/22/21 13:56	
SM 2540C	Total Dissolved Solids	1000	mg/L	20.0	12/21/21 08:15	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	12/22/21 12:49	H3
50305666004	**PC-MW-115-121621**					
EPA 9056	Chloride	191	mg/L	25.0	12/30/21 19:59	
EPA 9056	Fluoride	0.80	mg/L	0.050	01/04/22 16:38	
EPA 9056	Sulfate	118	mg/L	2.5	12/30/21 19:41	
EPA 6010	Boron	0.37	mg/L	0.10	12/23/21 21:38	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50305666004	**PC-MW-115-121621**					
EPA 6010	Calcium	90.1	mg/L	1.0	12/23/21 21:38	
EPA 6010	Lithium	0.015	mg/L	0.0080	12/28/21 12:05	
EPA 6010	Total Hardness by 2340B	319	mg/L	1.0	12/23/21 21:38	
EPA 6020	Antimony	0.0045	mg/L	0.0010	12/22/21 14:11	
EPA 6020	Arsenic	0.0039	mg/L	0.0010	12/22/21 14:11	
EPA 6020	Barium	0.032	mg/L	0.0010	12/22/21 14:11	
EPA 6020	Chromium	0.0027	mg/L	0.0020	12/22/21 14:11	
EPA 6020	Molybdenum	0.0043	mg/L	0.0010	12/22/21 14:11	
EPA 6020	Selenium	0.0036	mg/L	0.0010	12/22/21 14:11	
SM 2540C	Total Dissolved Solids	696	mg/L	20.0	12/21/21 08:15	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	12/22/21 12:50	H3
50305666005	**FD-01-121621**					
EPA 9056	Chloride	294	mg/L	25.0	12/30/21 21:31	
EPA 9056	Fluoride	0.27	mg/L	0.050	01/04/22 16:57	
EPA 9056	Sulfate	201	mg/L	2.5	12/30/21 20:36	
EPA 6010	Boron	0.25	mg/L	0.10	12/23/21 21:41	
EPA 6010	Calcium	115	mg/L	1.0	12/23/21 21:41	
EPA 6010	Lithium	0.012	mg/L	0.0080	12/28/21 12:07	
EPA 6010	Total Hardness by 2340B	419	mg/L	1.0	12/23/21 21:41	
EPA 6020	Barium	0.068	mg/L	0.0010	12/22/21 14:16	
EPA 6020	Cobalt	0.0012	mg/L	0.0010	12/22/21 14:16	
EPA 6020	Molybdenum	0.0018	mg/L	0.0010	12/22/21 14:16	
EPA 6020	Selenium	0.0041	mg/L	0.0010	12/22/21 14:16	
SM 2540C	Total Dissolved Solids	1030	mg/L	20.0	12/21/21 08:15	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	12/22/21 12:46	H3
50305666006	**FB-01-121621**					
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	12/22/21 12:55	H3

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 656127

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50305666001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3024798)
  - Calcium
  - Total Hardness by 2340B
- MSD (Lab ID: 3024799)
  - Calcium
  - Total Hardness by 2340B

Additional Comments:

Pace Analytical Services, LLC
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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 656021

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50305666001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3024102)
  - Barium
- MSD (Lab ID: 3024103)
  - Barium

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 655913

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.
- FB-01-121621 (Lab ID: 50305666006)
  - Total Dissolved Solids

PP: The mass of dried residue obtained did not meet the test method requirements based on volume used.
- FB-01-121621 (Lab ID: 50305666006)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_Golder
Date: January 05, 2022

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-121621 (Lab ID: 50305666006)
- FD-01-121621 (Lab ID: 50305666005)
- PC-MW-110-121621 (Lab ID: 50305666001)
- PC-MW-113-121621 (Lab ID: 50305666002)
- PC-MW-114-121621 (Lab ID: 50305666003)
- PC-MW-115-121621 (Lab ID: 50305666004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: PC-MW-110-121621 **Lab ID: 50305666001** Collected: 12/16/21 10:20 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**298**	mg/L	25.0	100		01/03/22 19:06	16887-00-6	
Fluoride	**0.51**	mg/L	0.050	1		01/03/22 18:29	16984-48-8	
Sulfate	**37.0**	mg/L	2.5	10		01/03/22 18:47	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.23**	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:24	7440-42-8	
Calcium	**95.4**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:24	7440-70-2	
Lithium	**0.015**	mg/L	0.0080	1	12/23/21 00:47	12/28/21 14:19	7439-93-2	
Total Hardness by 2340B	**358**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:24		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7440-36-0	
Arsenic	**0.0060**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7440-38-2	
Barium	**0.33**	mg/L	0.0050	5	12/21/21 17:40	12/22/21 14:32	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 15:11	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 15:11	7440-43-9	
Chromium	ND	mg/L	0.0020	1	12/21/21 17:40	12/22/21 15:11	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7439-92-1	
Molybdenum	**0.0037**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7439-98-7	
Selenium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 15:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 10:52	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**818**	mg/L	20.0	1		12/21/21 08:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		12/22/21 12:44		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: PC-MW-113-121621 **Lab ID: 50305666002** Collected: 12/16/21 12:35 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**55.4**	mg/L	2.5	10		12/30/21 15:23	16887-00-6	
Fluoride	**0.83**	mg/L	0.050	1		01/04/22 15:24	16984-48-8	
Sulfate	**143**	mg/L	2.5	10		12/30/21 15:23	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.33**	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:34	7440-42-8	
Calcium	**96.2**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:34	7440-70-2	
Lithium	**0.019**	mg/L	0.0080	1	12/23/21 00:47	12/28/21 12:00	7439-93-2	
Total Hardness by 2340B	**340**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:34		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7440-36-0	
Arsenic	**0.0020**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7440-38-2	
Barium	**0.036**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 13:52	7440-41-7	
Cadmium	**0.00033**	mg/L	0.00020	1	12/21/21 17:40	12/22/21 13:52	7440-43-9	
Chromium	ND	mg/L	0.0020	1	12/21/21 17:40	12/22/21 13:52	7440-47-3	
Cobalt	**0.0026**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7439-98-7	
Selenium	**0.034**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:52	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 11:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**556**	mg/L	10.0	1		12/21/21 08:14		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		12/22/21 12:48		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: PC-MW-114-121621 **Lab ID: 50305666003** Collected: 12/16/21 13:25 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**297**	mg/L	25.0	100		12/30/21 19:04	16887-00-6	
Fluoride	**0.26**	mg/L	0.050	1		01/04/22 16:20	16984-48-8	
Sulfate	**221**	mg/L	2.5	10		12/30/21 18:46	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.24**	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:36	7440-42-8	
Calcium	**117**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:36	7440-70-2	
Lithium	**0.013**	mg/L	0.0080	1	12/23/21 00:47	12/28/21 12:02	7439-93-2	
Total Hardness by 2340B	**425**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:36		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7440-38-2	
Barium	**0.069**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 13:56	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 13:56	7440-43-9	
Chromium	ND	mg/L	0.0020	1	12/21/21 17:40	12/22/21 13:56	7440-47-3	
Cobalt	**0.0013**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7439-92-1	
Molybdenum	**0.0019**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7439-98-7	
Selenium	**0.0045**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 13:56	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 11:02	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**1000**	mg/L	20.0	1		12/21/21 08:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.1**	Std. Units	0.10	1		12/22/21 12:49		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: PC-MW-115-121621 **Lab ID: 50305666004** Collected: 12/16/21 14:35 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**191**	mg/L	25.0	100		12/30/21 19:59	16887-00-6	
Fluoride	**0.80**	mg/L	0.050	1		01/04/22 16:38	16984-48-8	
Sulfate	**118**	mg/L	2.5	10		12/30/21 19:41	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.37**	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:38	7440-42-8	
Calcium	**90.1**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:38	7440-70-2	
Lithium	**0.015**	mg/L	0.0080	1	12/23/21 00:47	12/28/21 12:05	7439-93-2	
Total Hardness by 2340B	**319**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:38		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	**0.0045**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7440-36-0	
Arsenic	**0.0039**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7440-38-2	
Barium	**0.032**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:11	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:11	7440-43-9	
Chromium	**0.0027**	mg/L	0.0020	1	12/21/21 17:40	12/22/21 14:11	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7439-92-1	
Molybdenum	**0.0043**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7439-98-7	
Selenium	**0.0036**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:11	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 11:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**696**	mg/L	20.0	1		12/21/21 08:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.3**	Std. Units	0.10	1		12/22/21 12:50		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: FD-01-121621 **Lab ID: 50305666005** Collected: 12/16/21 12:00 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	**294**	mg/L	25.0	100		12/30/21 21:31	16887-00-6	
Fluoride	**0.27**	mg/L	0.050	1		01/04/22 16:57	16984-48-8	
Sulfate	**201**	mg/L	2.5	10		12/30/21 20:36	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	**0.25**	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:41	7440-42-8	
Calcium	**115**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:41	7440-70-2	
Lithium	**0.012**	mg/L	0.0080	1	12/23/21 00:47	12/28/21 12:07	7439-93-2	
Total Hardness by 2340B	**419**	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:41		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7440-38-2	
Barium	**0.068**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:16	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:16	7440-43-9	
Chromium	ND	mg/L	0.0020	1	12/21/21 17:40	12/22/21 14:16	7440-47-3	
Cobalt	**0.0012**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7439-92-1	
Molybdenum	**0.0018**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7439-98-7	
Selenium	**0.0041**	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:16	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 11:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	**1030**	mg/L	20.0	1		12/21/21 08:15		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.2**	Std. Units	0.10	1		12/22/21 12:46		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Sample: FB-01-121621 **Lab ID: 50305666006** Collected: 12/16/21 14:45 Received: 12/20/21 09:45 Matrix: Water

Parameters	Results	Units	Report Limit	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis							
Chloride	ND	mg/L	0.25	1		01/04/22 17:15	16887-00-6	
Fluoride	ND	mg/L	0.050	1		01/04/22 17:15	16984-48-8	
Sulfate	ND	mg/L	0.25	1		01/04/22 17:15	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Boron	ND	mg/L	0.10	1	12/23/21 00:47	12/23/21 21:49	7440-42-8	
Calcium	ND	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:49	7440-70-2	
Lithium	ND	mg/L	0.0080	1	12/23/21 00:47	12/28/21 12:09	7439-93-2	
Total Hardness by 2340B	ND	mg/L	1.0	1	12/23/21 00:47	12/23/21 21:49		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis							
Antimony	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7440-36-0	
Arsenic	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7440-38-2	
Barium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7440-39-3	
Beryllium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:20	7440-41-7	
Cadmium	ND	mg/L	0.00020	1	12/21/21 17:40	12/22/21 14:20	7440-43-9	
Chromium	ND	mg/L	0.0020	1	12/21/21 17:40	12/22/21 14:20	7440-47-3	
Cobalt	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7440-48-4	
Lead	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7439-92-1	
Molybdenum	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7439-98-7	
Selenium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7782-49-2	
Thallium	ND	mg/L	0.0010	1	12/21/21 17:40	12/22/21 14:20	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis							
Mercury	ND	mg/L	0.00020	1	12/29/21 13:49	12/30/21 11:17	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis							
Total Dissolved Solids	ND	mg/L	10.0	1		12/21/21 08:15		PL,PP
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis							
pH at 25 Degrees C	**7.4**	Std. Units	0.10	1		12/22/21 12:55		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656199
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001

METHOD BLANK: 3024995 Matrix: Water
Associated Lab Samples: 50305666001

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	12/29/21 16:16	
Fluoride	mg/L	ND	0.050	12/29/21 16:16	
Sulfate	mg/L	ND	0.25	12/29/21 16:16	

LABORATORY CONTROL SAMPLE: 3024996

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.3	104	80-120	
Fluoride	mg/L	0.5	0.57	113	80-120	
Sulfate	mg/L	2.5	2.8	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024997 3024998

Parameter	Units	50305587003 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	4.6	1.2	1.2	5.9	5.9	102	102	80-120	0	15	
Fluoride	mg/L	ND	0.5	0.5	0.54	0.54	97	97	80-120	0	15	
Sulfate	mg/L	67.0	25	25	91.9	92.5	100	102	80-120	1	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024999 3025000

Parameter	Units	50305666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	298	125	125	433	433	108	108	80-120	0	15	
Fluoride	mg/L	0.51	0.5	0.5	0.98	0.99	93	96	80-120	1	15	
Sulfate	mg/L	37.0	25	25	63.7	63.5	106	106	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656720
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

METHOD BLANK: 3027181 Matrix: Water
Associated Lab Samples: 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	12/30/21 10:19	
Fluoride	mg/L	ND	0.050	12/30/21 10:19	
Sulfate	mg/L	ND	0.25	12/30/21 10:19	

LABORATORY CONTROL SAMPLE: 3027182

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.1	90	80-120	
Fluoride	mg/L	0.5	0.42	84	80-120	
Sulfate	mg/L	2.5	2.4	97	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3027344 3027345

Parameter	Units	50305666002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	55.4	12.5	12.5	68.0	68.0	101	101	80-120	0	15	
Fluoride	mg/L	0.83	0.5	0.5	1.3	1.3	96	99	80-120	1	15	
Sulfate	mg/L	143	25	25	170	163	107	81	80-120	4	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656953 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

METHOD BLANK: 3027904 Matrix: Water
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	12/30/21 10:16	

LABORATORY CONTROL SAMPLE: 3027905

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0050	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3027906 3027907

Parameter	Units	50305666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0051	0.0051	102	102	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656127
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

METHOD BLANK: 3024796 Matrix: Water
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	12/23/21 21:05	
Calcium	mg/L	ND	1.0	12/23/21 21:05	
Lithium	mg/L	ND	0.0080	12/28/21 14:17	
Total Hardness by 2340B	mg/L	ND	1.0	12/23/21 21:05	

LABORATORY CONTROL SAMPLE: 3024797

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	101	80-120	
Calcium	mg/L	10	10	100	80-120	
Lithium	mg/L	1	0.97	97	80-120	
Total Hardness by 2340B	mg/L	66.2	64.8	98	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024798 3024799

Parameter	Units	50305666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.23	1	1	1.2	1.2	101	101	75-125	0	20	
Calcium	mg/L	95.4	10	10	111	112	157	165	75-125	1	20	P6
Lithium	mg/L	0.015	1	1	1.0	0.98	100	97	75-125	4	20	
Total Hardness by 2340B	mg/L	358	66.2	66.2	443	447	128	133	75-125	1	20	P6

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656021
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

METHOD BLANK: 3024100 Matrix: Water
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	12/22/21 12:23	
Arsenic	mg/L	ND	0.0010	12/22/21 12:23	
Barium	mg/L	ND	0.0010	12/22/21 12:23	
Beryllium	mg/L	ND	0.00020	12/22/21 12:23	
Cadmium	mg/L	ND	0.00020	12/22/21 12:23	
Chromium	mg/L	ND	0.0020	12/22/21 12:23	
Cobalt	mg/L	ND	0.0010	12/22/21 12:23	
Lead	mg/L	ND	0.0010	12/22/21 12:23	
Molybdenum	mg/L	ND	0.0010	12/22/21 12:23	
Selenium	mg/L	ND	0.0010	12/22/21 12:23	
Thallium	mg/L	ND	0.0010	12/22/21 12:23	

LABORATORY CONTROL SAMPLE: 3024101

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.043	108	80-120	
Arsenic	mg/L	0.04	0.039	97	80-120	
Barium	mg/L	0.04	0.039	98	80-120	
Beryllium	mg/L	0.04	0.041	103	80-120	
Cadmium	mg/L	0.04	0.042	105	80-120	
Chromium	mg/L	0.04	0.044	109	80-120	
Cobalt	mg/L	0.04	0.041	104	80-120	
Lead	mg/L	0.04	0.041	103	80-120	
Molybdenum	mg/L	0.04	0.040	101	80-120	
Selenium	mg/L	0.04	0.040	101	80-120	
Thallium	mg/L	0.04	0.041	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024102 3024103

Parameter	Units	50305666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.044	0.045	111	112	75-125	1	20	
Arsenic	mg/L	0.0060	0.04	0.04	0.045	0.044	98	96	75-125	2	20	
Barium	mg/L	0.33	0.04	0.04	0.38	0.38	132	133	75-125	0	20	P6
Beryllium	mg/L	ND	0.04	0.04	0.040	0.041	100	102	75-125	2	20	
Cadmium	mg/L	ND	0.04	0.04	0.041	0.041	102	103	75-125	1	20	
Chromium	mg/L	ND	0.04	0.04	0.042	0.042	104	102	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3024102 3024103

Parameter	Units	50305666001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	ND	0.04	0.04	0.039	0.038	96	95	75-125	1	20	
Lead	mg/L	ND	0.04	0.04	0.043	0.043	108	108	75-125	0	20	
Molybdenum	mg/L	0.0037	0.04	0.04	0.045	0.045	103	102	75-125	1	20	
Selenium	mg/L	ND	0.04	0.04	0.041	0.041	101	101	75-125	1	20	
Thallium	mg/L	ND	0.04	0.04	0.043	0.043	107	107	75-125	0	20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 655913 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

METHOD BLANK: 3023756 Matrix: Water
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

Parameter	Units	Blank Result	Reporting Limit	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	12/21/21 08:13	

LABORATORY CONTROL SAMPLE: 3023757

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	300	100	80-120	

SAMPLE DUPLICATE: 3023758

Parameter	Units	50305666001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	818	840	3	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

QC Batch: 656216
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50305666001, 50305666002, 50305666003, 50305666004, 50305666005, 50305666006

SAMPLE DUPLICATE: 3025104

Parameter	Units	50305666001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.2	7.2	1	2	H3

SAMPLE DUPLICATE: 3025105

Parameter	Units	50305827001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.8	7.7	1	2	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd Dec 2021
Pace Project No.: 50305666

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50305666001	**PC-MW-110-121621**	EPA 9056	656199		
50305666002	**PC-MW-113-121621**	EPA 9056	656720		
50305666003	**PC-MW-114-121621**	EPA 9056	656720		
50305666004	**PC-MW-115-121621**	EPA 9056	656720		
50305666005	**FD-01-121621**	EPA 9056	656720		
50305666006	**FB-01-121621**	EPA 9056	656720		
50305666001	**PC-MW-110-121621**	EPA 3010	656127	EPA 6010	656461
50305666002	**PC-MW-113-121621**	EPA 3010	656127	EPA 6010	656461
50305666003	**PC-MW-114-121621**	EPA 3010	656127	EPA 6010	656461
50305666004	**PC-MW-115-121621**	EPA 3010	656127	EPA 6010	656461
50305666005	**FD-01-121621**	EPA 3010	656127	EPA 6010	656461
50305666006	**FB-01-121621**	EPA 3010	656127	EPA 6010	656461
50305666001	**PC-MW-110-121621**	EPA 200.2	656021	EPA 6020	656111
50305666002	**PC-MW-113-121621**	EPA 200.2	656021	EPA 6020	656111
50305666003	**PC-MW-114-121621**	EPA 200.2	656021	EPA 6020	656111
50305666004	**PC-MW-115-121621**	EPA 200.2	656021	EPA 6020	656111
50305666005	**FD-01-121621**	EPA 200.2	656021	EPA 6020	656111
50305666006	**FB-01-121621**	EPA 200.2	656021	EPA 6020	656111
50305666001	**PC-MW-110-121621**	EPA 7470	656953	EPA 7470	657046
50305666002	**PC-MW-113-121621**	EPA 7470	656953	EPA 7470	657046
50305666003	**PC-MW-114-121621**	EPA 7470	656953	EPA 7470	657046
50305666004	**PC-MW-115-121621**	EPA 7470	656953	EPA 7470	657046
50305666005	**FD-01-121621**	EPA 7470	656953	EPA 7470	657046
50305666006	**FB-01-121621**	EPA 7470	656953	EPA 7470	657046
50305666001	**PC-MW-110-121621**	SM 2540C	655913		
50305666002	**PC-MW-113-121621**	SM 2540C	655913		
50305666003	**PC-MW-114-121621**	SM 2540C	655913		
50305666004	**PC-MW-115-121621**	SM 2540C	655913		
50305666005	**FD-01-121621**	SM 2540C	655913		
50305666006	**FB-01-121621**	SM 2540C	655913		
50305666001	**PC-MW-110-121621**	SM 4500-H+B	656216		
50305666002	**PC-MW-113-121621**	SM 4500-H+B	656216		
50305666003	**PC-MW-114-121621**	SM 4500-H+B	656216		
50305666004	**PC-MW-115-121621**	SM 4500-H+B	656216		
50305666005	**FD-01-121621**	SM 4500-H+B	656216		
50305666006	**FB-01-121621**	SM 4500-H+B	656216		

Pace Analytical
WWW.PACELABS.COM

CHAIN-OF-CUSTODY / Ana

The Chain-of-Custody is a LEGAL DOCUM

WO# : 50305666

50305666

Of

Section A Required Client Information:		Section B Required Project Information:		Section C Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U12677
Address:	801 E 8th Ave	Copy To:	krysta_cione@golder.com,	Company Name:	NiSource
	Merrillville, IN 46410		danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO12708	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS PC Bkgd Dec 2021	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	NIPSCO standard	Project #:	19121568-212-2	Pace Profile #:	9047-1

Regulatory Agency	
State / Location	IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Metals, Total by 6010*	Metals, Total by 6020*	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 905	pH by 4500	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																									
1	PC-MW-110-12/16/21	WT	G			12/16/21	1020		3	2		1						N	X	X	X	X	X			MS/MSD 001
2	PC-MW-113-12/16/21	WT	G			12/16/21	1235		3	2		1						N	X	X	X	X	X			002
3	PC-MW-114-12/16/21	WT	G			12/16/21	1325		3	2		1						N	X	X	X	X	X			003
4	PC-MW-115-12/16/21	WT	G			12/16/21	1435		3	2		1						N	X	X	X	X	X			004
5	FD-01-12/16/21	WT	G			12/16/21	1200		3	2		1						N	X	X	X	X	X			005
6	FB-01-12/16/21	WT	G			12/16/21	1445		3	2		1						N	X	X	X	X	X			006
7																		N								
8																		N								
9																		N								
10																		N								
11																		N								
12																		N								

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
* B, Ca, Li, Hardness by 6010	FedEx	12/16/21	1600	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	12-20-21	9:45		12-20-21	9:45	0.5	y	y	y
							0.4			
							0.7			

SAMPLER NAME AND SIGNATURE	
PRINT Name of SAMPLER:	
SIGNATURE of SAMPLER:	DATE Signed: 12/16/21

F-IN-Q-290-rev.21, 02Feb2021

Pace Analytical

SAMPLE CONDITION UPON RECEIPT FORM

RCVD C1, C2 on 12/17/21 1040

Date/Time and Initials of person examining contents: DMP 12/17/21 16:11 BC 12-20-21 11:42

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals ~~were present~~)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature:** C1 (0.1/0.4°C); C2 (0.3/0.7°C) 0.5/0.5
   Temp should be above freezing to 6°C **(Initial/Corrected)**
5. **Packing Material:** ☐ Bubble Wrap ☐ Bubble Bags ☐ None ☑ Other Ziploc Bags
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No
USDA Regulated Soils? (HI, ID, NY, WA, OR, CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	
Rush TAT Requested (4 days or less):		✓
Custody Signatures Present?	✓	
Containers Intact?:	✓	
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓	
Extra labels on Terracore Vials? (soils only)		

	Yes	No	N/A
All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** Circle: **HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
	Present	Absent	N/A
Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Headspace Wisconsin Sulfide?			✓
Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Trip Blank Present?		✓	
Trip Blank Custody Seals?:			✓

COMMENTS: Cooler 3 not received on 12/17/21.
Cooler 3 received on 12/20/21 @ 0.5 degrees C. 12/20/21tms

COC PAGE 1 of 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																	3	3	3									WT	✓		
2																	1	1	1												
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

April 09, 2022

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Mr. Victor Garcia, WSP Golder
Mr. Tom Haskins, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50310826001	**PC-MW-110-030822**	Water	03/08/22 11:20	03/09/22 08:40
50310826002	**PC-MW-110-030822 MS**	Water	03/08/22 11:20	03/09/22 08:40
50310826003	**PC-MW-110-030822 MSD**	Water	03/08/22 11:20	03/09/22 08:40
50310826004	**PC-MW-113-030822**	Water	03/08/22 13:30	03/09/22 08:40
50310826005	**PC-MW-114-030822**	Water	03/08/22 14:40	03/09/22 08:40
50310826006	**PC-MW-115-030822**	Water	03/08/22 15:50	03/09/22 08:40
50310826007	**FD-01-030822**	Water	03/08/22 12:00	03/09/22 08:40
50310826008	**FB-01-030822**	Water	03/08/22 14:50	03/09/22 08:40

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50310826001	**PC-MW-110-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50310826002	**PC-MW-110-030822 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50310826003	**PC-MW-110-030822 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50310826004	**PC-MW-113-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50310826005	**PC-MW-114-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50310826006	**PC-MW-115-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50310826007	**FD-01-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA
50310826008	**FB-01-030822**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	JAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50310826001	**PC-MW-110-030822**					
EPA 903.1	Radium-226	0.523 ± 0.414 (0.563) C:NA T:96%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	1.55 ± 0.464 (0.524) C:79% T:93%	pCi/L		04/05/22 11:20	
Total Radium Calculation	Total Radium	2.07 ± 0.878 (1.09)	pCi/L		04/09/22 15:49	
50310826002	**PC-MW-110-030822 MS**					
EPA 903.1	Radium-226	83.71 %REC ± NA (NA) C:NA T:NA%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	89.56 %REC ± NA (NA) C:NA T:NA	pCi/L		04/05/22 11:20	
50310826003	**PC-MW-110-030822 MSD**					
EPA 903.1	Radium-226	77.70 %REC 7.45 RPD ± NA (NA) C:NA T:NA%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	98.85 %REC 9.86 RPD ± NA (NA) C:NA T:NA	pCi/L		04/05/22 11:20	
50310826004	**PC-MW-113-030822**					
EPA 903.1	Radium-226	0.137 ± 0.465 (0.897) C:NA T:100%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	0.727 ± 0.353 (0.585) C:75% T:87%	pCi/L		04/05/22 11:20	
Total Radium Calculation	Total Radium	0.864 ± 0.818 (1.48)	pCi/L		04/09/22 15:49	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50310826005	**PC-MW-114-030822**					
EPA 903.1	Radium-226	0.0792 ± 0.601 (1.19) C:NA T:95%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	0.548 ± 0.336 (0.618) C:73% T:91%	pCi/L		04/05/22 11:21	
Total Radium Calculation	Total Radium	0.627 ± 0.937 (1.81)	pCi/L		04/09/22 15:49	
50310826006	**PC-MW-115-030822**					
EPA 903.1	Radium-226	0.405 ± 0.479 (0.753) C:NA T:94%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	0.146 ± 0.314 (0.696) C:77% T:86%	pCi/L		04/05/22 11:21	
Total Radium Calculation	Total Radium	0.551 ± 0.793 (1.45)	pCi/L		04/09/22 15:49	
50310826007	**FD-01-030822**					
EPA 903.1	Radium-226	0.000 ± 0.457 (0.949) C:NA T:96%	pCi/L		04/06/22 13:38	
EPA 904.0	Radium-228	0.771 ± 0.386 (0.657) C:71% T:87%	pCi/L		04/05/22 11:21	
Total Radium Calculation	Total Radium	0.771 ± 0.843 (1.61)	pCi/L		04/09/22 15:49	
50310826008	**FB-01-030822**					
EPA 903.1	Radium-226	0.268 ± 0.307 (0.181) C:NA T:98%	pCi/L		04/06/22 13:59	
EPA 904.0	Radium-228	0.0150 ± 0.238 (0.559) C:75% T:93%	pCi/L		04/05/22 11:21	
Total Radium Calculation	Total Radium	0.283 ± 0.545 (0.740)	pCi/L		04/09/22 15:49	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_WSP
Date: April 09, 2022

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_WSP
Date: April 09, 2022

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_WSP
Date: April 09, 2022

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-110-030822 **Lab ID: 50310826001** Collected: 03/08/22 11:20 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.523 ± 0.414 (0.563) C:NA T:96%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.55 ± 0.464 (0.524) C:79% T:93%**	pCi/L	04/05/22 11:20	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.07 ± 0.878 (1.09)**	pCi/L	04/09/22 15:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-110-030822 MS **Lab ID: 50310826002** Collected: 03/08/22 11:20 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**83.71 %REC ± NA (NA) C:NA T:NA%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**89.56 %REC ± NA (NA) C:NA T:NA**	pCi/L	04/05/22 11:20	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-110-030822 MSD **Lab ID: 50310826003** Collected: 03/08/22 11:20 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**77.70 %REC 7.45 RPD ± NA (NA) C:NA T:NA%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**98.85 %REC 9.86 RPD ± NA (NA) C:NA T:NA**	pCi/L	04/05/22 11:20	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-113-030822 **Lab ID: 50310826004** Collected: 03/08/22 13:30 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.137 ± 0.465 (0.897) C:NA T:100%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.727 ± 0.353 (0.585) C:75% T:87%**	pCi/L	04/05/22 11:20	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.864 ± 0.818 (1.48)**	pCi/L	04/09/22 15:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-114-030822 **Lab ID: 50310826005** Collected: 03/08/22 14:40 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.0792 ± 0.601 (1.19) C:NA T:95%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.548 ± 0.336 (0.618) C:73% T:91%**	pCi/L	04/05/22 11:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.627 ± 0.937 (1.81)**	pCi/L	04/09/22 15:49	7440-14-4	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: PC-MW-115-030822 **Lab ID: 50310826006** Collected: 03/08/22 15:50 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.405 ± 0.479 (0.753) C:NA T:94%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.146 ± 0.314 (0.696) C:77% T:86%**	pCi/L	04/05/22 11:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.551 ± 0.793 (1.45)**	pCi/L	04/09/22 15:49	7440-14-4	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: FD-01-030822 **Lab ID: 50310826007** Collected: 03/08/22 12:00 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.000 ± 0.457 (0.949) C:NA T:96%**	pCi/L	04/06/22 13:38	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.771 ± 0.386 (0.657) C:71% T:87%**	pCi/L	04/05/22 11:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.771 ± 0.843 (1.61)**	pCi/L	04/09/22 15:49	7440-14-4	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Sample: FB-01-030822 **Lab ID: 50310826008** Collected: 03/08/22 14:50 Received: 03/09/22 08:40 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.268 ± 0.307 (0.181) C:NA T:98%**	pCi/L	04/06/22 13:59	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.0150 ± 0.238 (0.559) C:75% T:93%**	pCi/L	04/05/22 11:21	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.283 ± 0.545 (0.740)**	pCi/L	04/09/22 15:49	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

QC Batch: 493029
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50310826001, 50310826002, 50310826003, 50310826004, 50310826005, 50310826006, 50310826007, 50310826008

METHOD BLANK: 2385853 Matrix: Water
Associated Lab Samples: 50310826001, 50310826002, 50310826003, 50310826004, 50310826005, 50310826006, 50310826007, 50310826008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.0524 ± 0.239 (0.487) C:NA T:99%	pCi/L	04/06/22 13:38	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

QC Batch: 493030 Analysis Method: EPA 904.0
QC Batch Method: EPA 904.0 Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50310826001, 50310826002, 50310826003, 50310826004, 50310826005, 50310826006, 50310826007, 50310826008

METHOD BLANK: 2385854 Matrix: Water
Associated Lab Samples: 50310826001, 50310826002, 50310826003, 50310826004, 50310826005, 50310826006, 50310826007, 50310826008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.404 ± 0.262 (0.478) C:75% T:98%	pCi/L	04/05/22 11:20	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd Rads
Pace Project No.: 50310826

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50310826001	**PC-MW-110-030822**	EPA 903.1	493029		
50310826002	**PC-MW-110-030822 MS**	EPA 903.1	493029		
50310826003	**PC-MW-110-030822 MSD**	EPA 903.1	493029		
50310826004	**PC-MW-113-030822**	EPA 903.1	493029		
50310826005	**PC-MW-114-030822**	EPA 903.1	493029		
50310826006	**PC-MW-115-030822**	EPA 903.1	493029		
50310826007	**FD-01-030822**	EPA 903.1	493029		
50310826008	**FB-01-030822**	EPA 903.1	493029		
50310826001	**PC-MW-110-030822**	EPA 904.0	493030		
50310826002	**PC-MW-110-030822 MS**	EPA 904.0	493030		
50310826003	**PC-MW-110-030822 MSD**	EPA 904.0	493030		
50310826004	**PC-MW-113-030822**	EPA 904.0	493030		
50310826005	**PC-MW-114-030822**	EPA 904.0	493030		
50310826006	**PC-MW-115-030822**	EPA 904.0	493030		
50310826007	**FD-01-030822**	EPA 904.0	493030		
50310826008	**FB-01-030822**	EPA 904.0	493030		
50310826001	**PC-MW-110-030822**	Total Radium Calculation	496364		
50310826004	**PC-MW-113-030822**	Total Radium Calculation	496364		
50310826005	**PC-MW-114-030822**	Total Radium Calculation	496364		
50310826006	**PC-MW-115-030822**	Total Radium Calculation	496364		
50310826007	**FD-01-030822**	Total Radium Calculation	496364		
50310826008	**FB-01-030822**	Total Radium Calculation	496364		

WO#: 50310826

50310826

CHAIN-OF-CUSTODY / Analytical Request Document

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

Page : Of

Section A Required Client	Section B Report To: Jim Peace	Section C Invoice Information: Attention: Jeff Loewe-U12677
Company: NiSource_Golder	Copy To: krysta_cione@golder.com,	Company Name: NiSource
Address: 801 E 8th Ave	danielle_sylvia@golder.com	Address:
Merrillville, IN 46410	Purchase Order #: PO12708	Pace Quote:
Email: jim_peace@golder.com	Project Name: MCGS PC Bkgd Dec 2021	Pace Project Manager: tina.sayer@pacelabs.com,
Phone: Fax:	Project #: ~~19121568 212 2~~ RS 19121568 22 2204	Pace Profile #: 9047-1
Requested Due Date: NIPSCO standard		

Regulatory Agency

State / Location: IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Analyses Test: Radium 226+228 (sum)	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Requested Analysis Filtered (Y/N)			
1	PC-MW-110- 030822	WT	G			3/8/22	1120		2			2						N	X		MS/MSD 001, 002, 003
2	PC-MW-113- 030822	WT	G			3/8/22	1330		2			2						N	X		004
3	PC-MW-114- 030822	WT	G			3/8/22	1440		2			2						N	X		005
4	PC-MW-115- 030822	WT	G			3/8/22	1550		2			2						N	X		006
5	FD-01- 030822	WT	G			3/8/22	1200		2			2						N	X		007
6	FB-01- 030822	WT	G			3/8/22	1450		2			2						N	X		008
7																		N			
8																		N			
9																		N			
10																		N			
11																		N			
12																		N			

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
*Sub RadChem to PA	[signature] FedEx	3/8/22	1700	FedEx						
	FedEx	3-9-22	8:40	N. Clemmons	3-9-22	8:40	0.3	y	y	y
							0.3			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R. GUZMAN

SIGNATURE of SAMPLER: [signature]

DATE Signed: 3/8/22

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: RC 3-9-22 12:17

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature:** 0.5/0.3 0.5/0.3
   Temp should be above freezing to 6°C **(Initial/Corrected)**
5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle:** **(HNO3 (<2))** **H2SO4 (<2)** **NaOH (>10)** **NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	✓		Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 of 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																6												WT	✓		
2																2															
3																															
4																															
5																															
6																															
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

March 23, 2022

Mr. Jim Peace
Golder
670 North Commercial Street
Suite 103
Manchester, NH 03101

RE: Project: MCGS PC Bkgd
Pace Project No.: 50310827

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on March 09, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Mr. Victor Garcia, WSP Golder
Mr. Tom Haskins, Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, Golder

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50310827001	**PC-MW-110-030822**	Water	03/08/22 11:20	03/09/22 08:40
50310827002	**PC-MW-113-030822**	Water	03/08/22 13:30	03/09/22 08:40
50310827003	**PC-MW-114-030822**	Water	03/08/22 14:40	03/09/22 08:40
50310827004	**PC-MW-115-030822**	Water	03/08/22 15:50	03/09/22 08:40
50310827005	**FD-01-030822**	Water	03/08/22 12:00	03/09/22 08:40
50310827006	**FB-01-030822**	Water	03/08/22 14:50	03/09/22 08:40

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50310827001	**PC-MW-110-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I
50310827002	**PC-MW-113-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I
50310827003	**PC-MW-114-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I
50310827004	**PC-MW-115-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I
50310827005	**FD-01-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I
50310827006	**FB-01-030822**	EPA 9056	BK1	3	PASI-I
		EPA 6010	MTM	4	PASI-I
		EPA 6020	DMT	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	WZE	1	PASI-I
		SM 4500-H+B	SWJ	1	PASI-I

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50310827001	**PC-MW-110-030822**					
EPA 9056	Chloride	300	mg/L	25.0	03/11/22 19:21	
EPA 9056	Fluoride	0.60	mg/L	0.050	03/11/22 18:50	
EPA 9056	Sulfate	35.9	mg/L	2.5	03/11/22 19:06	
EPA 6010	Boron	0.26	mg/L	0.10	03/22/22 17:00	
EPA 6010	Calcium	98.3	mg/L	1.0	03/22/22 17:00	
EPA 6010	Lithium	0.016J	mg/L	0.0080	03/22/22 17:00	
EPA 6010	Total Hardness by 2340B	373	mg/L	1.0	03/22/22 17:00	
EPA 6020	Arsenic	0.0060	mg/L	0.0010	03/18/22 03:18	
EPA 6020	Barium	0.32	mg/L	0.0050	03/18/22 02:51	
EPA 6020	Chromium	0.00054J	mg/L	0.0020	03/18/22 03:18	
EPA 6020	Cobalt	0.00017J	mg/L	0.0010	03/18/22 03:18	
EPA 6020	Molybdenum	0.0039	mg/L	0.0010	03/18/22 03:18	
SM 2540C	Total Dissolved Solids	852	mg/L	20.0	03/15/22 13:21	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	03/15/22 14:28	H3
50310827002	**PC-MW-113-030822**					
EPA 9056	Chloride	267	mg/L	25.0	03/11/22 22:11	
EPA 9056	Fluoride	0.89	mg/L	0.050	03/11/22 21:40	
EPA 9056	Sulfate	185	mg/L	2.5	03/11/22 21:56	
EPA 6010	Boron	0.28	mg/L	0.10	03/22/22 17:10	
EPA 6010	Calcium	125	mg/L	1.0	03/22/22 17:10	
EPA 6010	Lithium	0.024	mg/L	0.0080	03/22/22 17:10	
EPA 6010	Total Hardness by 2340B	467	mg/L	1.0	03/22/22 17:10	
EPA 6020	Antimony	0.00033J	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Arsenic	0.0013	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Barium	0.045	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Cadmium	0.00078	mg/L	0.00020	03/18/22 03:50	
EPA 6020	Chromium	0.00048J	mg/L	0.0020	03/18/22 03:50	
EPA 6020	Cobalt	0.0033	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Lead	0.00011J	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Molybdenum	0.00039J	mg/L	0.0010	03/18/22 03:50	
EPA 6020	Selenium	0.019	mg/L	0.0010	03/18/22 03:50	
SM 2540C	Total Dissolved Solids	982	mg/L	10.0	03/15/22 13:23	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	03/15/22 14:30	H3
50310827003	**PC-MW-114-030822**					
EPA 9056	Chloride	366	mg/L	25.0	03/11/22 22:58	
EPA 9056	Fluoride	0.23	mg/L	0.050	03/11/22 22:27	
EPA 9056	Sulfate	196	mg/L	2.5	03/11/22 22:42	
EPA 6010	Boron	0.22	mg/L	0.10	03/22/22 17:12	
EPA 6010	Calcium	120	mg/L	1.0	03/22/22 17:12	
EPA 6010	Lithium	0.011J	mg/L	0.0080	03/22/22 17:12	
EPA 6010	Total Hardness by 2340B	440	mg/L	1.0	03/22/22 17:12	
EPA 6020	Antimony	0.00037J	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Arsenic	0.00021J	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Barium	0.058	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Cadmium	0.000059J	mg/L	0.00020	03/18/22 03:54	
EPA 6020	Chromium	0.00031J	mg/L	0.0020	03/18/22 03:54	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50310827003	**PC-MW-114-030822**					
EPA 6020	Cobalt	0.0014	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Lead	0.00016J	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Molybdenum	0.0019	mg/L	0.0010	03/18/22 03:54	
EPA 6020	Selenium	0.0036	mg/L	0.0010	03/18/22 03:54	
SM 2540C	Total Dissolved Solids	1160	mg/L	20.0	03/15/22 13:23	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	03/15/22 14:32	H3
50310827004	**PC-MW-115-030822**					
EPA 9056	Chloride	124	mg/L	2.5	03/11/22 23:29	
EPA 9056	Fluoride	0.83	mg/L	0.050	03/11/22 23:13	
EPA 9056	Sulfate	127	mg/L	2.5	03/11/22 23:29	
EPA 6010	Boron	0.33	mg/L	0.10	03/22/22 17:14	
EPA 6010	Calcium	93.9	mg/L	1.0	03/22/22 17:14	
EPA 6010	Lithium	0.012J	mg/L	0.0080	03/22/22 17:14	
EPA 6010	Total Hardness by 2340B	338	mg/L	1.0	03/22/22 17:14	
EPA 6020	Antimony	0.0037	mg/L	0.0010	03/18/22 03:57	
EPA 6020	Arsenic	0.0029	mg/L	0.0010	03/18/22 03:57	
EPA 6020	Barium	0.027	mg/L	0.0010	03/18/22 03:57	
EPA 6020	Cadmium	0.000039J	mg/L	0.00020	03/18/22 03:57	
EPA 6020	Chromium	0.0015J	mg/L	0.0020	03/18/22 03:57	
EPA 6020	Cobalt	0.00068J	mg/L	0.0010	03/18/22 03:57	
EPA 6020	Molybdenum	0.0042	mg/L	0.0010	03/18/22 03:57	
EPA 6020	Selenium	0.0029	mg/L	0.0010	03/18/22 03:57	
SM 2540C	Total Dissolved Solids	615	mg/L	10.0	03/15/22 13:24	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	03/15/22 14:33	H3
50310827005	**FD-01-030822**					
EPA 9056	Chloride	253	mg/L	25.0	03/12/22 01:02	
EPA 9056	Fluoride	0.89	mg/L	0.050	03/12/22 00:31	
EPA 9056	Sulfate	183	mg/L	2.5	03/12/22 00:46	
EPA 6010	Boron	0.28	mg/L	0.10	03/22/22 17:20	
EPA 6010	Calcium	127	mg/L	1.0	03/22/22 17:20	
EPA 6010	Lithium	0.025	mg/L	0.0080	03/22/22 17:20	
EPA 6010	Total Hardness by 2340B	475	mg/L	1.0	03/22/22 17:20	
EPA 6020	Antimony	0.00032J	mg/L	0.0010	03/18/22 04:01	
EPA 6020	Arsenic	0.00092J	mg/L	0.0010	03/18/22 04:01	
EPA 6020	Barium	0.044	mg/L	0.0010	03/18/22 04:01	
EPA 6020	Cadmium	0.00075	mg/L	0.00020	03/18/22 04:01	
EPA 6020	Chromium	0.00029J	mg/L	0.0020	03/18/22 04:01	
EPA 6020	Cobalt	0.0030	mg/L	0.0010	03/18/22 04:01	
EPA 6020	Molybdenum	0.00038J	mg/L	0.0010	03/18/22 04:01	
EPA 6020	Selenium	0.019	mg/L	0.0010	03/18/22 04:01	
SM 2540C	Total Dissolved Solids	956	mg/L	20.0	03/15/22 13:24	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	03/15/22 14:34	H3
50310827006	**FB-01-030822**					
EPA 9056	Chloride	0.074J	mg/L	0.25	03/12/22 01:17	
EPA 9056	Sulfate	0.067J	mg/L	0.25	03/12/22 01:17	
EPA 6010	Boron	0.0071J	mg/L	0.10	03/22/22 17:22	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50310827006	**FB-01-030822**					
EPA 6010	Calcium	3.3	mg/L	1.0	03/22/22 17:22	C0
EPA 6010	Total Hardness by 2340B	12.3	mg/L	1.0	03/22/22 17:22	
EPA 6020	Barium	0.0016	mg/L	0.0010	03/18/22 04:05	C0
SM 4500-H+B	pH at 25 Degrees C	7.0	Std. Units	0.10	03/15/22 14:36	H3

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 667361

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50310827001,50310828026

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3073278)
  - Calcium
- MS (Lab ID: 3073280)
  - Calcium
- MSD (Lab ID: 3073279)
  - Calcium
- MSD (Lab ID: 3073281)
  - Calcium

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_WSP
Date: March 23, 2022

Analyte Comments:

QC Batch: 667361

C0: Result confirmed by second analysis.

- FB-01-030822 (Lab ID: 50310827006)
  - Calcium

E: Analyte concentration exceeded the calibration range. The reported result is estimated.

- MS (Lab ID: 3073280)
  - Calcium
- MSD (Lab ID: 3073281)
  - Calcium

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 666313

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50310827001,50311058001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MSD (Lab ID: 3068265)
  - Barium

Additional Comments:

Analyte Comments:

QC Batch: 666313

C0: Result confirmed by second analysis.

- FB-01-030822 (Lab ID: 50310827006)
  - Barium

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
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PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 666323

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.
- FB-01-030822 (Lab ID: 50310827006)
  - Total Dissolved Solids

PP: The mass of dried residue obtained did not meet the test method requirements based on volume used.
- FB-01-030822 (Lab ID: 50310827006)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_WSP
Date: March 23, 2022

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-030822 (Lab ID: 50310827006)
- FD-01-030822 (Lab ID: 50310827005)
- PC-MW-110-030822 (Lab ID: 50310827001)
- PC-MW-113-030822 (Lab ID: 50310827002)
- PC-MW-114-030822 (Lab ID: 50310827003)
- PC-MW-115-030822 (Lab ID: 50310827004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: PC-MW-110-030822 **Lab ID: 50310827001** Collected: 03/08/22 11:20 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**300**	mg/L	25.0	2.9	100		03/11/22 19:21	16887-00-6	
Fluoride	**0.60**	mg/L	0.050	0.0050	1		03/11/22 18:50	16984-48-8	
Sulfate	**35.9**	mg/L	2.5	0.53	10		03/11/22 19:06	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.26**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:00	7440-42-8	
Calcium	**98.3**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:00	7440-70-2	
Lithium	**0.016J**	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:00	7439-93-2	
Total Hardness by 2340B	**373**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:00		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 03:18	7440-36-0	
Arsenic	**0.0060**	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 03:18	7440-38-2	
Barium	**0.32**	mg/L	0.0050	0.0010	5	03/15/22 16:35	03/18/22 02:51	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 03:18	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 03:18	7440-43-9	
Chromium	**0.00054J**	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 03:18	7440-47-3	
Cobalt	**0.00017J**	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 03:18	7440-48-4	
Lead	ND	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 03:18	7439-92-1	
Molybdenum	**0.0039**	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 03:18	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 03:18	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 03:18	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**852**	mg/L	20.0	20.0	1		03/15/22 13:21		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		03/15/22 14:28		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: PC-MW-113-030822 **Lab ID: 50310827002** Collected: 03/08/22 13:30 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**267**	mg/L	25.0	2.9	100		03/11/22 22:11	16887-00-6	
Fluoride	**0.89**	mg/L	0.050	0.0050	1		03/11/22 21:40	16984-48-8	
Sulfate	**185**	mg/L	2.5	0.53	10		03/11/22 21:56	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.28**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:10	7440-42-8	
Calcium	**125**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:10	7440-70-2	
Lithium	**0.024**	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:10	7439-93-2	
Total Hardness by 2340B	**467**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:10		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00033J**	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 03:50	7440-36-0	
Arsenic	**0.0013**	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 03:50	7440-38-2	
Barium	**0.045**	mg/L	0.0010	0.00020	1	03/15/22 16:35	03/18/22 03:50	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 03:50	7440-41-7	
Cadmium	**0.00078**	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 03:50	7440-43-9	
Chromium	**0.00048J**	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 03:50	7440-47-3	
Cobalt	**0.0033**	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 03:50	7440-48-4	
Lead	**0.00011J**	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 03:50	7439-92-1	
Molybdenum	**0.00039J**	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 03:50	7439-98-7	
Selenium	**0.019**	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 03:50	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 03:50	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:07	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**982**	mg/L	10.0	10.0	1		03/15/22 13:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		03/15/22 14:30		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: PC-MW-114-030822 **Lab ID: 50310827003** Collected: 03/08/22 14:40 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**366**	mg/L	25.0	2.9	100		03/11/22 22:58	16887-00-6	
Fluoride	**0.23**	mg/L	0.050	0.0050	1		03/11/22 22:27	16984-48-8	
Sulfate	**196**	mg/L	2.5	0.53	10		03/11/22 22:42	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.22**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:12	7440-42-8	
Calcium	**120**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:12	7440-70-2	
Lithium	**0.011J**	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:12	7439-93-2	
Total Hardness by 2340B	**440**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:12		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00037J**	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 03:54	7440-36-0	
Arsenic	**0.00021J**	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 03:54	7440-38-2	
Barium	**0.058**	mg/L	0.0010	0.00020	1	03/15/22 16:35	03/18/22 03:54	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 03:54	7440-41-7	
Cadmium	**0.000059J**	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 03:54	7440-43-9	
Chromium	**0.00031J**	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 03:54	7440-47-3	
Cobalt	**0.0014**	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 03:54	7440-48-4	
Lead	**0.00016J**	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 03:54	7439-92-1	
Molybdenum	**0.0019**	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 03:54	7439-98-7	
Selenium	**0.0036**	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 03:54	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 03:54	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:10	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**1160**	mg/L	20.0	20.0	1		03/15/22 13:23		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/15/22 14:32		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: PC-MW-115-030822 **Lab ID: 50310827004** Collected: 03/08/22 15:50 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**124**	mg/L	2.5	0.29	10		03/11/22 23:29	16887-00-6	
Fluoride	**0.83**	mg/L	0.050	0.0050	1		03/11/22 23:13	16984-48-8	
Sulfate	**127**	mg/L	2.5	0.53	10		03/11/22 23:29	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.33**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:14	7440-42-8	
Calcium	**93.9**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:14	7440-70-2	
Lithium	**0.012J**	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:14	7439-93-2	
Total Hardness by 2340B	**338**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:14		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0037**	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 03:57	7440-36-0	
Arsenic	**0.0029**	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 03:57	7440-38-2	
Barium	**0.027**	mg/L	0.0010	0.00020	1	03/15/22 16:35	03/18/22 03:57	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 03:57	7440-41-7	
Cadmium	**0.000039J**	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 03:57	7440-43-9	
Chromium	**0.0015J**	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 03:57	7440-47-3	
Cobalt	**0.00068J**	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 03:57	7440-48-4	
Lead	ND	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 03:57	7439-92-1	
Molybdenum	**0.0042**	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 03:57	7439-98-7	
Selenium	**0.0029**	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 03:57	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 03:57	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:12	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**615**	mg/L	10.0	10.0	1		03/15/22 13:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/15/22 14:33		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: FD-01-030822 **Lab ID: 50310827005** Collected: 03/08/22 12:00 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**253**	mg/L	25.0	2.9	100		03/12/22 01:02	16887-00-6	
Fluoride	**0.89**	mg/L	0.050	0.0050	1		03/12/22 00:31	16984-48-8	
Sulfate	**183**	mg/L	2.5	0.53	10		03/12/22 00:46	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.28**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:20	7440-42-8	
Calcium	**127**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:20	7440-70-2	
Lithium	**0.025**	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:20	7439-93-2	
Total Hardness by 2340B	**475**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:20		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00032J**	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 04:01	7440-36-0	
Arsenic	**0.00092J**	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 04:01	7440-38-2	
Barium	**0.044**	mg/L	0.0010	0.00020	1	03/15/22 16:35	03/18/22 04:01	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 04:01	7440-41-7	
Cadmium	**0.00075**	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 04:01	7440-43-9	
Chromium	**0.00029J**	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 04:01	7440-47-3	
Cobalt	**0.0030**	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 04:01	7440-48-4	
Lead	ND	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 04:01	7439-92-1	
Molybdenum	**0.00038J**	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 04:01	7439-98-7	
Selenium	**0.019**	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 04:01	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 04:01	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:15	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**956**	mg/L	20.0	20.0	1		03/15/22 13:24		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		03/15/22 14:34		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Sample: FB-01-030822 **Lab ID: 50310827006** Collected: 03/08/22 14:50 Received: 03/09/22 08:40 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**0.074J**	mg/L	0.25	0.029	1		03/12/22 01:17	16887-00-6	
Fluoride	ND	mg/L	0.050	0.0050	1		03/12/22 01:17	16984-48-8	
Sulfate	**0.067J**	mg/L	0.25	0.053	1		03/12/22 01:17	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.0071J**	mg/L	0.10	0.0067	1	03/22/22 08:08	03/22/22 17:22	7440-42-8	
Calcium	**3.3**	mg/L	1.0	0.13	1	03/22/22 08:08	03/22/22 17:22	7440-70-2	C0
Lithium	ND	mg/L	0.0080	0.0041	1	03/22/22 08:08	03/22/22 17:22	7439-93-2	
Total Hardness by 2340B	**12.3**	mg/L	1.0	0.50	1	03/22/22 08:08	03/22/22 17:22		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.00028	1	03/15/22 16:35	03/18/22 04:05	7440-36-0	
Arsenic	ND	mg/L	0.0010	0.000094	1	03/15/22 16:35	03/18/22 04:05	7440-38-2	
Barium	**0.0016**	mg/L	0.0010	0.00020	1	03/15/22 16:35	03/18/22 04:05	7440-39-3	C0
Beryllium	ND	mg/L	0.00020	0.000032	1	03/15/22 16:35	03/18/22 04:05	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000026	1	03/15/22 16:35	03/18/22 04:05	7440-43-9	
Chromium	ND	mg/L	0.0020	0.00020	1	03/15/22 16:35	03/18/22 04:05	7440-47-3	
Cobalt	ND	mg/L	0.0010	0.000072	1	03/15/22 16:35	03/18/22 04:05	7440-48-4	
Lead	ND	mg/L	0.0010	0.000095	1	03/15/22 16:35	03/18/22 04:05	7439-92-1	
Molybdenum	ND	mg/L	0.0010	0.000074	1	03/15/22 16:35	03/18/22 04:05	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00057	1	03/15/22 16:35	03/18/22 04:05	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000061	1	03/15/22 16:35	03/18/22 04:05	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000085	1	03/21/22 18:18	03/22/22 08:22	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		03/15/22 13:25		PL, PP
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.0**	Std. Units	0.10	0.10	1		03/15/22 14:36		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 665793
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

METHOD BLANK: 3065681 Matrix: Water
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.029	03/11/22 15:14	
Fluoride	mg/L	ND	0.050	0.0050	03/11/22 15:14	
Sulfate	mg/L	ND	0.25	0.053	03/11/22 15:14	

LABORATORY CONTROL SAMPLE: 3065682

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.3	107	80-120	
Fluoride	mg/L	0.5	0.49	97	80-120	
Sulfate	mg/L	2.5	2.8	110	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3065683 3065684

Parameter	Units	50310827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	300	125	125	411	410	89	88	80-120	0	15	
Fluoride	mg/L	0.60	0.5	0.5	1.1	1.1	98	97	80-120	0	15	
Sulfate	mg/L	35.9	25	25	59.2	59.2	93	93	80-120	0	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 666848
QC Batch Method: EPA 7470
Analysis Method: EPA 7470
Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

METHOD BLANK: 3070431 Matrix: Water
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000085	03/22/22 07:53	

LABORATORY CONTROL SAMPLE: 3070432

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0050	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3070433 3070434

Parameter	Units	50310827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0049	0.0050	99	100	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 667361
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

METHOD BLANK: 3073276 Matrix: Water
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	0.0079J	0.10	0.0067	03/22/22 15:11	
Calcium	mg/L	ND	1.0	0.13	03/22/22 15:11	
Lithium	mg/L	ND	0.0080	0.0041	03/22/22 15:11	
Total Hardness by 2340B	mg/L	ND	1.0	0.50	03/22/22 15:11	

LABORATORY CONTROL SAMPLE: 3073277

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	1.0	102	80-120	
Calcium	mg/L	10	10.3	103	80-120	
Lithium	mg/L	1	1.0	104	80-120	
Total Hardness by 2340B	mg/L	66.2	66.2	100	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3073278 3073279

Parameter	Units	50310827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.26	1	1	1.3	1.2	101	99	75-125	2	20	
Calcium	mg/L	98.3	10	10	104	103	58	44	75-125	1	20	P6
Lithium	mg/L	0.016J	1	1	1.0	1.0	102	101	75-125	1	20	
Total Hardness by 2340B	mg/L	373	66.2	66.2	421	416	73	65	75-125	1	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3073280 3073281

Parameter	Units	50310828026 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	ND	1	1	1.1	1.1	105	106	75-125	1	20	
Calcium	mg/L	411000 ug/L	10	10	412	426	10	156	75-125	3	20	E,P6
Lithium	mg/L	31.8 ug/L	1	1	1.1	1.1	103	103	75-125	0	20	
Total Hardness by 2340B	mg/L	1430000 ug/L	66.2	66.2	1470	1520	52	131	75-125	3	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 666313
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

METHOD BLANK: 3068262 Matrix: Water
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.00028	03/18/22 02:43	
Arsenic	mg/L	ND	0.0010	0.000094	03/18/22 02:43	
Barium	mg/L	ND	0.0010	0.00020	03/18/22 02:43	
Beryllium	mg/L	ND	0.00020	0.000032	03/18/22 02:43	
Cadmium	mg/L	ND	0.00020	0.000026	03/18/22 02:43	
Chromium	mg/L	ND	0.0020	0.00020	03/18/22 02:43	
Cobalt	mg/L	ND	0.0010	0.000072	03/18/22 02:43	
Lead	mg/L	ND	0.0010	0.000095	03/18/22 02:43	
Molybdenum	mg/L	ND	0.0010	0.000074	03/18/22 02:43	
Selenium	mg/L	ND	0.0010	0.00057	03/18/22 02:43	
Thallium	mg/L	ND	0.0010	0.000061	03/18/22 02:43	

LABORATORY CONTROL SAMPLE: 3068263

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.041	103	80-120	
Arsenic	mg/L	0.04	0.038	96	80-120	
Barium	mg/L	0.04	0.039	98	80-120	
Beryllium	mg/L	0.04	0.040	100	80-120	
Cadmium	mg/L	0.04	0.040	101	80-120	
Chromium	mg/L	0.04	0.041	103	80-120	
Cobalt	mg/L	0.04	0.041	103	80-120	
Lead	mg/L	0.04	0.041	102	80-120	
Molybdenum	mg/L	0.04	0.041	101	80-120	
Selenium	mg/L	0.04	0.041	102	80-120	
Thallium	mg/L	0.04	0.041	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068264 3068265

Parameter	Units	50310827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.042	0.042	104	104	75-125	1	20	
Arsenic	mg/L	0.0060	0.04	0.04	0.043	0.042	92	91	75-125	1	20	
Barium	mg/L	0.32	0.04	0.04	0.37	0.38	110	151	75-125	4	20	P6
Beryllium	mg/L	ND	0.04	0.04	0.045	0.046	113	114	75-125	1	20	
Cadmium	mg/L	ND	0.04	0.04	0.038	0.038	95	95	75-125	0	20	
Chromium	mg/L	0.00054J	0.04	0.04	0.039	0.039	96	96	75-125	1	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068264 3068265

Parameter	Units	50310827001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.00017J	0.04	0.04	0.038	0.038	95	95	75-125	0	20	
Lead	mg/L	ND	0.04	0.04	0.040	0.041	101	102	75-125	1	20	
Molybdenum	mg/L	0.0039	0.04	0.04	0.045	0.045	102	103	75-125	1	20	
Selenium	mg/L	ND	0.04	0.04	0.040	0.040	100	100	75-125	1	20	
Thallium	mg/L	ND	0.04	0.04	0.041	0.041	103	103	75-125	0	20	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3068266 3068267

Parameter	Units	50311058001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	ND	0.04	0.04	0.042	0.042	104	104	75-125	1	20	
Arsenic	mg/L	0.0025	0.04	0.04	0.043	0.043	100	101	75-125	1	20	
Barium	mg/L	0.036	0.04	0.04	0.077	0.077	103	104	75-125	0	20	
Beryllium	mg/L	ND	0.04	0.04	0.042	0.043	105	107	75-125	2	20	
Cadmium	mg/L	ND	0.04	0.04	0.038	0.038	95	95	75-125	0	20	
Chromium	mg/L	0.00040J	0.04	0.04	0.040	0.040	99	99	75-125	0	20	
Cobalt	mg/L	0.00016J	0.04	0.04	0.038	0.038	94	94	75-125	0	20	
Lead	mg/L	ND	0.04	0.04	0.040	0.041	101	101	75-125	0	20	
Molybdenum	mg/L	0.00058J	0.04	0.04	0.040	0.041	100	100	75-125	1	20	
Selenium	mg/L	ND	0.04	0.04	0.041	0.040	101	101	75-125	0	20	
Thallium	mg/L	ND	0.04	0.04	0.041	0.041	102	103	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 666323 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

METHOD BLANK: 3068277 Matrix: Water
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	03/15/22 13:15	

LABORATORY CONTROL SAMPLE: 3068278

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	274	91	80-120	

SAMPLE DUPLICATE: 3068279

Parameter	Units	50310813001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1780	1780	0	10	

SAMPLE DUPLICATE: 3068280

Parameter	Units	50310827001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	852	862	1	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC Bkgd
Pace Project No.: 50310827

QC Batch: 666372
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50310827001, 50310827002, 50310827003, 50310827004, 50310827005, 50310827006

SAMPLE DUPLICATE: 3068436

Parameter	Units	50310980001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	8.1	8.1	0	2	H3

SAMPLE DUPLICATE: 3068437

Parameter	Units	50310827001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	0	2	H3

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC Bkgd
Pace Project No.: 50310827

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

C0	Result confirmed by second analysis.
E	Analyte concentration exceeded the calibration range. The reported result is estimated.
H3	Sample was received or analysis requested beyond the recognized method holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.
PP	The mass of dried residue obtained did not meet the test method requirements based on volume used.

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC Bkgd
Pace Project No.: 50310827

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50310827001	**PC-MW-110-030822**	EPA 9056	665793		
50310827002	**PC-MW-113-030822**	EPA 9056	665793		
50310827003	**PC-MW-114-030822**	EPA 9056	665793		
50310827004	**PC-MW-115-030822**	EPA 9056	665793		
50310827005	**FD-01-030822**	EPA 9056	665793		
50310827006	**FB-01-030822**	EPA 9056	665793		
50310827001	**PC-MW-110-030822**	EPA 3010	667361	EPA 6010	667587
50310827002	**PC-MW-113-030822**	EPA 3010	667361	EPA 6010	667587
50310827003	**PC-MW-114-030822**	EPA 3010	667361	EPA 6010	667587
50310827004	**PC-MW-115-030822**	EPA 3010	667361	EPA 6010	667587
50310827005	**FD-01-030822**	EPA 3010	667361	EPA 6010	667587
50310827006	**FB-01-030822**	EPA 3010	667361	EPA 6010	667587
50310827001	**PC-MW-110-030822**	EPA 200.2	666313	EPA 6020	666492
50310827002	**PC-MW-113-030822**	EPA 200.2	666313	EPA 6020	666492
50310827003	**PC-MW-114-030822**	EPA 200.2	666313	EPA 6020	666492
50310827004	**PC-MW-115-030822**	EPA 200.2	666313	EPA 6020	666492
50310827005	**FD-01-030822**	EPA 200.2	666313	EPA 6020	666492
50310827006	**FB-01-030822**	EPA 200.2	666313	EPA 6020	666492
50310827001	**PC-MW-110-030822**	EPA 7470	666848	EPA 7470	667440
50310827002	**PC-MW-113-030822**	EPA 7470	666848	EPA 7470	667440
50310827003	**PC-MW-114-030822**	EPA 7470	666848	EPA 7470	667440
50310827004	**PC-MW-115-030822**	EPA 7470	666848	EPA 7470	667440
50310827005	**FD-01-030822**	EPA 7470	666848	EPA 7470	667440
50310827006	**FB-01-030822**	EPA 7470	666848	EPA 7470	667440
50310827001	**PC-MW-110-030822**	SM 2540C	666323		
50310827002	**PC-MW-113-030822**	SM 2540C	666323		
50310827003	**PC-MW-114-030822**	SM 2540C	666323		
50310827004	**PC-MW-115-030822**	SM 2540C	666323		
50310827005	**FD-01-030822**	SM 2540C	666323		
50310827006	**FB-01-030822**	SM 2540C	666323		
50310827001	**PC-MW-110-030822**	SM 4500-H+B	666372		
50310827002	**PC-MW-113-030822**	SM 4500-H+B	666372		
50310827003	**PC-MW-114-030822**	SM 4500-H+B	666372		
50310827004	**PC-MW-115-030822**	SM 4500-H+B	666372		
50310827005	**FD-01-030822**	SM 4500-H+B	666372		
50310827006	**FB-01-030822**	SM 4500-H+B	666372		

WO# : 50310827

50310827

Pace Analytical
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AIN-OF-CUSTODY / Analytical Request Document

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

Page : Of

Section A
Required Client Information:

Company:	NiSource_Golder
Address:	801 E 8th Ave
	Merrillville, IN 46410
Email:	jim_peace@golder.com
Phone:	Fax:
Requested Due Date:	NIPSCO standard

Report To:	Jim Peace
Copy To:	krysta_cione@golder.com,
	danielle_sylvia@golder.com
Purchase Order #:	PO12708
Project Name:	MCGS PC Bkgd Dec 2021
Project #:	~~19121568.212.2~~ 19121568.22.2

Section C
Invoice Information:

Attention:	Jeff Loewe-U12677
Company Name:	NiSource
Address:	
Pace Quote:	
Pace Project Manager:	tina.sayer@pacelabs.com,
Pace Profile #:	9047-1

Regulatory Agency
State / Location
IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010*	Metals, Total by 6020*	Mercury by 7470	TDS by 2540C	IC (Cl, F, SO4) by 905	pH by 4500	Residual Chlorine (Y/N)	
	MATRIX: Drinking Water DW, Water WT, Waste Water WW, Product P, Soil/Solid SL, Oil OL, Wipe WP, Air AR, Other OT, Tissue TS																	Y/N	N	N	N	N	N	N		
1	PC-MW-110- 030822	WT	G			3/8/22	1120		3	2		1							X	X	X	X	X	X		MS/MSD 001
2	PC-MW-113- 030822	WT	G			3/8/22	1330		3	2		1							X	X	X	X	X	X		002
3	PC-MW-114- 030822	WT	G			3/8/22	1440		3	2		1							X	X	X	X	X	X		003
4	PC-MW-115- 030822	WT	G			3/8/22	1550		3	2		1							X	X	X	X	X	X		004
5	FD-01- 030822	WT	G			3/8/22	1200		3	2		1							X	X	X	X	X	X		005
6	FB-01- 030822	WT	G			3/8/22	1150		3	2		1							X	X	X	X	X	X		006
7																										
8																										
9																										
10																										
11																										
12																										

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS: TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)
* B, Ca, Li, Hardness by 6010	Golder / FedEx	3/8/22	1700	FedEx						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	FedEx	3-9-22	8:40	B. Clemmons	3-9-22	8:40	0.3	y	y	y
							0.3			

SAMPLER NAME AND SIGNATURE

PRINT Name of SAMPLER: R GUZMAN

SIGNATURE of SAMPLER: R Guzman

DATE Signed: 3/8/22

Pace Analytical®

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: RC 3-9-22 12:17

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature:** 0.5/0.3 0.5/0.3
   Temp should be above freezing to 6°C **(Initial/Corrected)**

5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base pres. Have been CHECKED?: **exceptions: VOA, coliform, LLHg, O&G, and any container with a septum cap or preserved with HCl.** **Circle:** (HNO3 (<2)) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9) Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:	✓		Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):	✓		Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)			Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE 1 **of** 1

Sample Container Count

SBS
DI
MeOH (only)
BK
Kit

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	R	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit			Matrix	HNO3/ H2SO4 pH <2	NaOH/ ZNAc pH >9	NaOH pH>10
1																	3	3	3									WT	✓		
2																	1	1	1												
3																															
4																															
5																															
6																													ph3		
7																															
8																															
9																															
10																															
11																															
12																															

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic / Misc.

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Syringe Kit	LL Cr+6 sampling kit

AF	Air Filter
C	Air Cassettes
R	Terracore kit
SP5T	120mL Coliform Na Thiosulfate
U	Summa Can
ZPLC	Ziploc Bag

WT		Water	
SL		Solid	
NAL	OL	Non-aqueous liquid	Oil
WP		Wipe	

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

July 05, 2022

Mr. Jim Peace
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS PC 2022
Pace Project No.: 50319339

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Indianapolis

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Mr. Victor Garcia, WSP Golder
Mr. Tom Haskins, WSP Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, WSP Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC 2022
Pace Project No.: 50319339

Pace Analytical Services Indianapolis

7726 Moller Road, Indianapolis, IN 46268
Illinois Accreditation #: 200074
Indiana Drinking Water Laboratory #: C-49-06
Kansas/TNI Certification #: E-10177
Kentucky UST Agency Interest #: 80226
Kentucky WW Laboratory ID #: 98019
Michigan Drinking Water Laboratory #9050
Ohio VAP Certified Laboratory #: CL0065
Oklahoma Laboratory #: 9204
Texas Certification #: T104704355
Wisconsin Laboratory #: 999788130
USDA Soil Permit #: P330-19-00257

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE SUMMARY

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50319339001	**PC-MW-110-062022**	Water	06/20/22 11:15	06/21/22 09:00
50319339002	**PC-MW-113-062022**	Water	06/20/22 13:40	06/21/22 09:00
50319339003	**PC-MW-114-062022**	Water	06/20/22 14:55	06/21/22 09:00
50319339004	**PC-MW-115-062022**	Water	06/20/22 15:55	06/21/22 09:00
50319339005	**FB-01-062022**	Water	06/20/22 16:00	06/21/22 09:00
50319339006	**FD-01-062022**	Water	06/20/22 12:00	06/21/22 09:00

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50319339001	**PC-MW-110-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I
50319339002	**PC-MW-113-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I
50319339003	**PC-MW-114-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I
50319339004	**PC-MW-115-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I
50319339005	**FB-01-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I
50319339006	**FD-01-062022**	EPA 9056	RMR	3	PASI-I
		EPA 6010	DJS	4	PASI-I
		EPA 6020	CAW	11	PASI-I
		EPA 7470	ILP	1	PASI-I
		SM 2540C	AEL	1	PASI-I
		SM 4500-H+B	TAY	1	PASI-I

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory

PASI-I = Pace Analytical Services - Indianapolis

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50319339001	**PC-MW-110-062022**					
EPA 9056	Chloride	333	mg/L	25.0	06/23/22 11:32	
EPA 9056	Fluoride	0.58	mg/L	0.050	06/23/22 09:12	
EPA 9056	Sulfate	43.4	mg/L	2.5	06/23/22 10:05	
EPA 6010	Boron	0.23	mg/L	0.10	06/30/22 11:09	
EPA 6010	Calcium	107	mg/L	1.0	06/30/22 11:09	
EPA 6010	Lithium	0.017J	mg/L	0.0080	06/30/22 11:09	
EPA 6010	Total Hardness by 2340B	404	mg/L	10.0	06/30/22 11:09	
EPA 6020	Antimony	0.000081J	mg/L	0.0010	06/23/22 13:42	
EPA 6020	Arsenic	0.0071	mg/L	0.0010	06/23/22 13:42	
EPA 6020	Barium	0.38	mg/L	0.0050	06/23/22 14:53	
EPA 6020	Beryllium	0.000030J	mg/L	0.00020	06/23/22 13:42	
EPA 6020	Chromium	0.00067J	mg/L	0.0020	06/23/22 13:42	
EPA 6020	Cobalt	0.00022J	mg/L	0.0010	06/23/22 13:42	
EPA 6020	Molybdenum	0.0041	mg/L	0.0010	06/23/22 13:42	
EPA 6020	Selenium	0.00037J	mg/L	0.0010	06/23/22 13:42	
SM 2540C	Total Dissolved Solids	964	mg/L	20.0	06/23/22 09:40	
SM 4500-H+B	pH at 25 Degrees C	7.3	Std. Units	0.10	06/21/22 14:37	H3
50319339002	**PC-MW-113-062022**					
EPA 9056	Chloride	127	mg/L	25.0	06/23/22 13:00	
EPA 9056	Fluoride	1.0	mg/L	0.050	06/23/22 12:25	
EPA 9056	Sulfate	187	mg/L	2.5	06/23/22 12:42	
EPA 6010	Boron	0.30	mg/L	0.10	06/30/22 11:25	
EPA 6010	Calcium	109	mg/L	1.0	06/30/22 11:25	
EPA 6010	Lithium	0.016J	mg/L	0.0080	06/30/22 11:25	
EPA 6010	Total Hardness by 2340B	395	mg/L	10.0	06/30/22 11:25	
EPA 6020	Antimony	0.00047J	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Arsenic	0.0017	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Barium	0.041	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Cadmium	0.0011	mg/L	0.00020	06/23/22 14:16	
EPA 6020	Chromium	0.00050J	mg/L	0.0020	06/23/22 14:16	
EPA 6020	Cobalt	0.0059	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Lead	0.00016J	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Molybdenum	0.00059J	mg/L	0.0010	06/23/22 14:16	
EPA 6020	Selenium	0.021	mg/L	0.0010	06/23/22 14:16	
SM 2540C	Total Dissolved Solids	767	mg/L	10.0	06/23/22 09:41	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	06/21/22 14:39	H3
50319339003	**PC-MW-114-062022**					
EPA 9056	Chloride	314	mg/L	25.0	06/23/22 14:27	
EPA 9056	Fluoride	0.25	mg/L	0.050	06/23/22 13:17	
EPA 9056	Sulfate	140	mg/L	2.5	06/23/22 13:35	
EPA 6010	Boron	0.25	mg/L	0.10	06/30/22 11:27	
EPA 6010	Calcium	88.2	mg/L	1.0	06/30/22 11:27	
EPA 6010	Total Hardness by 2340B	326	mg/L	10.0	06/30/22 11:27	
EPA 6020	Antimony	0.00037J	mg/L	0.0010	06/23/22 14:21	
EPA 6020	Arsenic	0.00023J	mg/L	0.0010	06/23/22 14:21	
EPA 6020	Barium	0.047	mg/L	0.0010	06/23/22 14:21	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50319339003	**PC-MW-114-062022**					
EPA 6020	Cadmium	0.000029J	mg/L	0.00020	06/23/22 14:21	
EPA 6020	Chromium	0.00035J	mg/L	0.0020	06/23/22 14:21	
EPA 6020	Cobalt	0.0011	mg/L	0.0010	06/23/22 14:21	
EPA 6020	Molybdenum	0.0019	mg/L	0.0010	06/23/22 14:21	
EPA 6020	Selenium	0.0033	mg/L	0.0010	06/23/22 14:21	
SM 2540C	Total Dissolved Solids	964	mg/L	20.0	06/23/22 09:42	
SM 4500-H+B	pH at 25 Degrees C	7.2	Std. Units	0.10	06/21/22 14:41	H3
50319339004	**PC-MW-115-062022**					
EPA 9056	Chloride	341	mg/L	25.0	06/23/22 15:20	
EPA 9056	Fluoride	0.67	mg/L	0.050	06/23/22 14:45	
EPA 9056	Sulfate	91.4	mg/L	2.5	06/23/22 15:02	
EPA 6010	Boron	0.18	mg/L	0.10	06/30/22 11:29	
EPA 6010	Calcium	92.1	mg/L	1.0	06/30/22 11:29	
EPA 6010	Lithium	0.013J	mg/L	0.0080	06/30/22 11:29	
EPA 6010	Total Hardness by 2340B	312	mg/L	10.0	06/30/22 11:29	
EPA 6020	Antimony	0.0042	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Arsenic	0.0055	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Barium	0.040	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Cadmium	0.000030J	mg/L	0.00020	06/23/22 14:26	
EPA 6020	Chromium	0.0028	mg/L	0.0020	06/23/22 14:26	
EPA 6020	Cobalt	0.00025J	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Molybdenum	0.0033	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Selenium	0.0030	mg/L	0.0010	06/23/22 14:26	
EPA 6020	Thallium	0.000057J	mg/L	0.0010	06/23/22 14:26	
SM 2540C	Total Dissolved Solids	924	mg/L	20.0	06/23/22 14:16	
SM 4500-H+B	pH at 25 Degrees C	7.4	Std. Units	0.10	06/21/22 14:41	H3
50319339005	**FB-01-062022**					
EPA 6020	Barium	0.00011J	mg/L	0.0010	06/23/22 14:30	
EPA 6020	Chromium	0.00024J	mg/L	0.0020	06/23/22 14:30	
SM 4500-H+B	pH at 25 Degrees C	6.1	Std. Units	0.10	06/21/22 14:43	H3
50319339006	**FD-01-062022**					
EPA 9056	Chloride	128	mg/L	25.0	06/28/22 20:30	
EPA 9056	Fluoride	1.0	mg/L	0.050	06/23/22 15:55	
EPA 9056	Sulfate	187	mg/L	2.5	06/28/22 20:14	
EPA 6010	Boron	0.32	mg/L	0.10	06/30/22 11:34	
EPA 6010	Calcium	118	mg/L	1.0	06/30/22 11:34	
EPA 6010	Lithium	0.016J	mg/L	0.0080	06/30/22 11:34	
EPA 6010	Total Hardness by 2340B	426	mg/L	10.0	06/30/22 11:34	
EPA 6020	Antimony	0.00044J	mg/L	0.0010	06/23/22 14:35	
EPA 6020	Arsenic	0.0017	mg/L	0.0010	06/23/22 14:35	
EPA 6020	Barium	0.041	mg/L	0.0010	06/23/22 14:35	
EPA 6020	Cadmium	0.0011	mg/L	0.00020	06/23/22 14:35	
EPA 6020	Chromium	0.00048J	mg/L	0.0020	06/23/22 14:35	
EPA 6020	Cobalt	0.0062	mg/L	0.0010	06/23/22 14:35	
EPA 6020	Lead	0.00019J	mg/L	0.0010	06/23/22 14:35	
EPA 6020	Molybdenum	0.00060J	mg/L	0.0010	06/23/22 14:35	

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SUMMARY OF DETECTION

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50319339006	**FD-01-062022**					
EPA 6020	Selenium	0.022	mg/L	0.0010	06/23/22 14:35	
SM 2540C	Total Dissolved Solids	737	mg/L	10.0	06/23/22 14:18	
SM 4500-H+B	pH at 25 Degrees C	7.1	Std. Units	0.10	06/21/22 14:38	H3

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **EPA 9056**
Description: 9056 IC Anions
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for EPA 9056 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Surrogates:
All surrogates were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **EPA 6010**
Description: 6010 MET ICP
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for EPA 6010 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 3010 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 682831

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50319339001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3142550)
  - Calcium
- MSD (Lab ID: 3142551)
  - Calcium
  - Total Hardness by 2340B

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **EPA 6020**
Description: 6020 MET ICPMS
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for EPA 6020 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 200.2 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Internal Standards:
All internal standards were within QC limits with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 682864

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 50319339001

P6: Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.

- MS (Lab ID: 3142624)
  - Barium

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **EPA 7470**
Description: 7470 Mercury
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for EPA 7470 by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:
The samples were prepared in accordance with EPA 7470 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):
All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:
All criteria were within method requirements with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **SM 2540C**
Description: 2540C Total Dissolved Solids
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for SM 2540C by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

Analyte Comments:

QC Batch: 683143

PL: The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

- FB-01-062022 (Lab ID: 50319339005)
  - Total Dissolved Solids

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PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319339

Method: **SM 4500-H+B**
Description: 4500H+ pH, Electrometric
Client: NiSource_WSP
Date: July 05, 2022

General Information:
6 samples were analyzed for SM 4500-H+B by Pace Analytical Services Indianapolis. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

H3: Sample was received or analysis requested beyond the recognized method holding time.
- FB-01-062022 (Lab ID: 50319339005)
- FD-01-062022 (Lab ID: 50319339006)
- PC-MW-110-062022 (Lab ID: 50319339001)
- PC-MW-113-062022 (Lab ID: 50319339002)
- PC-MW-114-062022 (Lab ID: 50319339003)
- PC-MW-115-062022 (Lab ID: 50319339004)

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Duplicate Sample:
All duplicate sample results were within method acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

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ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: PC-MW-110-062022 **Lab ID: 50319339001** Collected: 06/20/22 11:15 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**333**	mg/L	25.0	6.7	100		06/23/22 11:32	16887-00-6	
Fluoride	**0.58**	mg/L	0.050	0.017	1		06/23/22 09:12	16984-48-8	
Sulfate	**43.4**	mg/L	2.5	0.85	10		06/23/22 10:05	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.23**	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:09	7440-42-8	
Calcium	**107**	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:09	7440-70-2	
Lithium	**0.017J**	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:09	7439-93-2	
Total Hardness by 2340B	**404**	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:09		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.000081J**	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 13:42	7440-36-0	
Arsenic	**0.0071**	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 13:42	7440-38-2	
Barium	**0.38**	mg/L	0.0050	0.00046	5	06/22/22 15:15	06/23/22 14:53	7440-39-3	
Beryllium	**0.000030J**	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 13:42	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 13:42	7440-43-9	
Chromium	**0.00067J**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 13:42	7440-47-3	
Cobalt	**0.00022J**	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 13:42	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 13:42	7439-92-1	
Molybdenum	**0.0041**	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 13:42	7439-98-7	
Selenium	**0.00037J**	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 13:42	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 13:42	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 10:43	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**964**	mg/L	20.0	20.0	1		06/23/22 09:40		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.3**	Std. Units	0.10	0.10	1		06/21/22 14:37		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: PC-MW-113-062022 **Lab ID: 50319339002** Collected: 06/20/22 13:40 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**127**	mg/L	25.0	6.7	100		06/23/22 13:00	16887-00-6	
Fluoride	**1.0**	mg/L	0.050	0.017	1		06/23/22 12:25	16984-48-8	
Sulfate	**187**	mg/L	2.5	0.85	10		06/23/22 12:42	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.30**	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:25	7440-42-8	
Calcium	**109**	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:25	7440-70-2	
Lithium	**0.016J**	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:25	7439-93-2	
Total Hardness by 2340B	**395**	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:25		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00047J**	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 14:16	7440-36-0	
Arsenic	**0.0017**	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 14:16	7440-38-2	
Barium	**0.041**	mg/L	0.0010	0.000093	1	06/22/22 15:15	06/23/22 14:16	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 14:16	7440-41-7	
Cadmium	**0.0011**	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 14:16	7440-43-9	
Chromium	**0.00050J**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 14:16	7440-47-3	
Cobalt	**0.0059**	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 14:16	7440-48-4	
Lead	**0.00016J**	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 14:16	7439-92-1	
Molybdenum	**0.00059J**	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 14:16	7439-98-7	
Selenium	**0.021**	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 14:16	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 14:16	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 10:55	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**767**	mg/L	10.0	10.0	1		06/23/22 09:41		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		06/21/22 14:39		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: PC-MW-114-062022 **Lab ID: 50319339003** Collected: 06/20/22 14:55 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**314**	mg/L	25.0	6.7	100		06/23/22 14:27	16887-00-6	
Fluoride	**0.25**	mg/L	0.050	0.017	1		06/23/22 13:17	16984-48-8	
Sulfate	**140**	mg/L	2.5	0.85	10		06/23/22 13:35	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.25**	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:27	7440-42-8	
Calcium	**88.2**	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:27	7440-70-2	
Lithium	ND	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:27	7439-93-2	
Total Hardness by 2340B	**326**	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:27		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00037J**	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 14:21	7440-36-0	
Arsenic	**0.00023J**	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 14:21	7440-38-2	
Barium	**0.047**	mg/L	0.0010	0.000093	1	06/22/22 15:15	06/23/22 14:21	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 14:21	7440-41-7	
Cadmium	**0.000029J**	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 14:21	7440-43-9	
Chromium	**0.00035J**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 14:21	7440-47-3	
Cobalt	**0.0011**	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 14:21	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 14:21	7439-92-1	
Molybdenum	**0.0019**	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 14:21	7439-98-7	
Selenium	**0.0033**	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 14:21	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 14:21	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 10:58	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**964**	mg/L	20.0	20.0	1		06/23/22 09:42		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.2**	Std. Units	0.10	0.10	1		06/21/22 14:41		H3

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: PC-MW-115-062022 **Lab ID: 50319339004** Collected: 06/20/22 15:55 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**341**	mg/L	25.0	6.7	100		06/23/22 15:20	16887-00-6	
Fluoride	**0.67**	mg/L	0.050	0.017	1		06/23/22 14:45	16984-48-8	
Sulfate	**91.4**	mg/L	2.5	0.85	10		06/23/22 15:02	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.18**	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:29	7440-42-8	
Calcium	**92.1**	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:29	7440-70-2	
Lithium	**0.013J**	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:29	7439-93-2	
Total Hardness by 2340B	**312**	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:29		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.0042**	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 14:26	7440-36-0	
Arsenic	**0.0055**	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 14:26	7440-38-2	
Barium	**0.040**	mg/L	0.0010	0.000093	1	06/22/22 15:15	06/23/22 14:26	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 14:26	7440-41-7	
Cadmium	**0.000030J**	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 14:26	7440-43-9	
Chromium	**0.0028**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 14:26	7440-47-3	
Cobalt	**0.00025J**	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 14:26	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 14:26	7439-92-1	
Molybdenum	**0.0033**	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 14:26	7439-98-7	
Selenium	**0.0030**	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 14:26	7782-49-2	
Thallium	**0.000057J**	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 14:26	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 11:00	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 50 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**924**	mg/L	20.0	20.0	1		06/23/22 14:16		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.4**	Std. Units	0.10	0.10	1		06/21/22 14:41		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: FB-01-062022 **Lab ID: 50319339005** Collected: 06/20/22 16:00 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	ND	mg/L	0.25	0.067	1		06/23/22 15:37	16887-00-6	
Fluoride	ND	mg/L	0.050	0.017	1		06/23/22 15:37	16984-48-8	
Sulfate	ND	mg/L	0.25	0.085	1		06/23/22 15:37	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	ND	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:31	7440-42-8	
Calcium	ND	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:31	7440-70-2	
Lithium	ND	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:31	7439-93-2	
Total Hardness by 2340B	ND	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:31		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	ND	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 14:30	7440-36-0	
Arsenic	ND	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 14:30	7440-38-2	
Barium	**0.00011J**	mg/L	0.0010	0.000093	1	06/22/22 15:15	06/23/22 14:30	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 14:30	7440-41-7	
Cadmium	ND	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 14:30	7440-43-9	
Chromium	**0.00024J**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 14:30	7440-47-3	
Cobalt	ND	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 14:30	7440-48-4	
Lead	ND	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 14:30	7439-92-1	
Molybdenum	ND	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 14:30	7439-98-7	
Selenium	ND	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 14:30	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 14:30	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 11:03	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	ND	mg/L	10.0	10.0	1		06/23/22 14:17		PL
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**6.1**	Std. Units	0.10	0.10	1		06/21/22 14:43		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS

Project: MCGS PC 2022
Pace Project No.: 50319339

Sample: FD-01-062022 **Lab ID: 50319339006** Collected: 06/20/22 12:00 Received: 06/21/22 09:00 Matrix: Water

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
9056 IC Anions	Analytical Method: EPA 9056 Initial Volume/Weight: 10 mL Final Volume/Weight: 10 mL Pace Analytical Services - Indianapolis								
Chloride	**128**	mg/L	25.0	6.7	100		06/28/22 20:30	16887-00-6	
Fluoride	**1.0**	mg/L	0.050	0.017	1		06/23/22 15:55	16984-48-8	
Sulfate	**187**	mg/L	2.5	0.85	10		06/28/22 20:14	14808-79-8	
6010 MET ICP	Analytical Method: EPA 6010 Preparation Method: EPA 3010 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Boron	**0.32**	mg/L	0.10	0.011	1	06/28/22 08:38	06/30/22 11:34	7440-42-8	
Calcium	**118**	mg/L	1.0	0.13	1	06/28/22 08:38	06/30/22 11:34	7440-70-2	
Lithium	**0.016J**	mg/L	0.0080	0.0030	1	06/28/22 08:38	06/30/22 11:34	7439-93-2	
Total Hardness by 2340B	**426**	mg/L	10.0	10.0	1	06/28/22 08:38	06/30/22 11:34		
6020 MET ICPMS	Analytical Method: EPA 6020 Preparation Method: EPA 200.2 Initial Volume/Weight: 50 mL Final Volume/Weight: 50 mL Pace Analytical Services - Indianapolis								
Antimony	**0.00044J**	mg/L	0.0010	0.000075	1	06/22/22 15:15	06/23/22 14:35	7440-36-0	
Arsenic	**0.0017**	mg/L	0.0010	0.00017	1	06/22/22 15:15	06/23/22 14:35	7440-38-2	
Barium	**0.041**	mg/L	0.0010	0.000093	1	06/22/22 15:15	06/23/22 14:35	7440-39-3	
Beryllium	ND	mg/L	0.00020	0.000021	1	06/22/22 15:15	06/23/22 14:35	7440-41-7	
Cadmium	**0.0011**	mg/L	0.00020	0.000022	1	06/22/22 15:15	06/23/22 14:35	7440-43-9	
Chromium	**0.00048J**	mg/L	0.0020	0.00010	1	06/22/22 15:15	06/23/22 14:35	7440-47-3	
Cobalt	**0.0062**	mg/L	0.0010	0.000041	1	06/22/22 15:15	06/23/22 14:35	7440-48-4	
Lead	**0.00019J**	mg/L	0.0010	0.00014	1	06/22/22 15:15	06/23/22 14:35	7439-92-1	
Molybdenum	**0.00060J**	mg/L	0.0010	0.00026	1	06/22/22 15:15	06/23/22 14:35	7439-98-7	
Selenium	**0.022**	mg/L	0.0010	0.00033	1	06/22/22 15:15	06/23/22 14:35	7782-49-2	
Thallium	ND	mg/L	0.0010	0.000038	1	06/22/22 15:15	06/23/22 14:35	7440-28-0	
7470 Mercury	Analytical Method: EPA 7470 Preparation Method: EPA 7470 Initial Volume/Weight: 30 mL Final Volume/Weight: 30 mL Pace Analytical Services - Indianapolis								
Mercury	ND	mg/L	0.00020	0.000091	1	06/23/22 17:35	06/24/22 11:05	7439-97-6	
2540C Total Dissolved Solids	Analytical Method: SM 2540C Initial Volume/Weight: 100 mL Final Volume/Weight: 100 mL Pace Analytical Services - Indianapolis								
Total Dissolved Solids	**737**	mg/L	10.0	10.0	1		06/23/22 14:18		
4500H+ pH, Electrometric	Analytical Method: SM 4500-H+B Pace Analytical Services - Indianapolis								
pH at 25 Degrees C	**7.1**	Std. Units	0.10	0.10	1		06/21/22 14:38		H3

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 682900
QC Batch Method: EPA 9056
Analysis Method: EPA 9056
Analysis Description: 9056 IC Anions
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

METHOD BLANK: 3142719 Matrix: Water
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Chloride	mg/L	ND	0.25	0.067	06/23/22 06:55	
Fluoride	mg/L	ND	0.050	0.017	06/23/22 06:55	
Sulfate	mg/L	ND	0.25	0.085	06/23/22 06:55	

LABORATORY CONTROL SAMPLE: 3142720

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Chloride	mg/L	1.2	1.2	95	80-120	
Fluoride	mg/L	0.5	0.48	95	80-120	
Sulfate	mg/L	2.5	2.4	96	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142721 3142722

Parameter	Units	50319339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	333	125	125	458	461	101	103	80-120	1	15	
Fluoride	mg/L	0.58	0.5	0.5	1.1	1.1	100	100	80-120	0	15	
Sulfate	mg/L	43.4	25	25	67.2	66.9	95	94	80-120	0	15	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142723 3142724

Parameter	Units	50319381002 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Chloride	mg/L	1.4	1.2	1.2	2.6	2.6	94	94	80-120	0	15	
Fluoride	mg/L	0.20	0.5	0.5	0.70	0.70	99	99	80-120	0	15	
Sulfate	mg/L	16.2	2.5	2.5	18.8	18.9	105	110	80-120	1	15	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 683216 | Analysis Method: EPA 7470
QC Batch Method: EPA 7470 | Analysis Description: 7470 Mercury
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

METHOD BLANK: 3144270 Matrix: Water
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Mercury	mg/L	ND	0.00020	0.000091	06/24/22 10:21	

LABORATORY CONTROL SAMPLE: 3144271

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Mercury	mg/L	0.005	0.0051	102	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3144272 3144273

Parameter	Units	50319339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Mercury	mg/L	ND	0.005	0.005	0.0050	0.0050	101	99	75-125	2	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 682831
QC Batch Method: EPA 3010
Analysis Method: EPA 6010
Analysis Description: 6010 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

METHOD BLANK: 3142548 Matrix: Water
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Boron	mg/L	ND	0.10	0.011	06/30/22 10:40	
Calcium	mg/L	ND	1.0	0.13	06/30/22 10:40	
Lithium	mg/L	ND	0.0080	0.0030	06/30/22 10:40	
Total Hardness by 2340B	mg/L	ND	10.0	10.0	06/30/22 10:40	

LABORATORY CONTROL SAMPLE: 3142549

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Boron	mg/L	1	0.97	97	80-120	
Calcium	mg/L	10	9.8	98	80-120	
Lithium	mg/L	1	0.96	96	80-120	
Total Hardness by 2340B	mg/L	66.2	63.0	95	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142550 3142551

Parameter	Units	50319339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Boron	mg/L	0.23	1	1	1.2	1.1	100	89	75-125	10	20	
Calcium	mg/L	107	10	10	122	105	142	-26	75-125	15	20	P6
Lithium	mg/L	0.017J	1	1	1.1	0.93	104	92	75-125	13	20	
Total Hardness by 2340B	mg/L	404	66.2	66.2	484	417	120	19	75-125	15	20	P6

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 682864
QC Batch Method: EPA 200.2
Analysis Method: EPA 6020
Analysis Description: 6020 MET
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

METHOD BLANK: 3142622 Matrix: Water
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Antimony	mg/L	ND	0.0010	0.000075	06/23/22 13:33	
Arsenic	mg/L	ND	0.0010	0.00017	06/23/22 13:33	
Barium	mg/L	ND	0.0010	0.000093	06/23/22 13:33	
Beryllium	mg/L	ND	0.00020	0.000021	06/23/22 13:33	
Cadmium	mg/L	ND	0.00020	0.000022	06/23/22 13:33	
Chromium	mg/L	ND	0.0020	0.00010	06/23/22 13:33	
Cobalt	mg/L	ND	0.0010	0.000041	06/23/22 13:33	
Lead	mg/L	ND	0.0010	0.00014	06/23/22 13:33	
Molybdenum	mg/L	ND	0.0010	0.00026	06/23/22 13:33	
Selenium	mg/L	ND	0.0010	0.00033	06/23/22 13:33	
Thallium	mg/L	0.000055J	0.0010	0.000038	06/23/22 13:33	

LABORATORY CONTROL SAMPLE: 3142623

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Antimony	mg/L	0.04	0.043	108	80-120	
Arsenic	mg/L	0.04	0.040	99	80-120	
Barium	mg/L	0.04	0.044	109	80-120	
Beryllium	mg/L	0.04	0.037	94	80-120	
Cadmium	mg/L	0.04	0.042	105	80-120	
Chromium	mg/L	0.04	0.041	103	80-120	
Cobalt	mg/L	0.04	0.042	104	80-120	
Lead	mg/L	0.04	0.044	109	80-120	
Molybdenum	mg/L	0.04	0.041	103	80-120	
Selenium	mg/L	0.04	0.040	100	80-120	
Thallium	mg/L	0.04	0.045	112	80-120	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142624 3142625

Parameter	Units	50319339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Antimony	mg/L	0.000081J	0.04	0.04	0.044	0.042	111	105	75-125	6	20	
Arsenic	mg/L	0.0071	0.04	0.04	0.048	0.047	102	100	75-125	1	20	
Barium	mg/L	0.38	0.04	0.04	0.40	0.42	74	111	75-125	4	20	P6
Beryllium	mg/L	0.000030J	0.04	0.04	0.040	0.039	101	97	75-125	4	20	
Cadmium	mg/L	ND	0.04	0.04	0.041	0.039	102	98	75-125	4	20	
Chromium	mg/L	0.00067J	0.04	0.04	0.039	0.039	97	96	75-125	0	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 3142624 3142625

Parameter	Units	50319339001 Result	MS Spike Conc.	MSD Spike Conc.	MS Result	MSD Result	MS % Rec	MSD % Rec	% Rec Limits	RPD	Max RPD	Qual
Cobalt	mg/L	0.00022J	0.04	0.04	0.039	0.037	97	92	75-125	6	20	
Lead	mg/L	ND	0.04	0.04	0.043	0.042	109	105	75-125	4	20	
Molybdenum	mg/L	0.0041	0.04	0.04	0.046	0.044	104	99	75-125	4	20	
Selenium	mg/L	0.00037J	0.04	0.04	0.040	0.040	100	98	75-125	2	20	
Thallium	mg/L	ND	0.04	0.04	0.045	0.043	111	107	75-125	4	20	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 683134 | Analysis Method: SM 2540C
QC Batch Method: SM 2540C | Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003

METHOD BLANK: 3143785 Matrix: Water
Associated Lab Samples: 50319339001, 50319339002, 50319339003

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/23/22 09:31	

LABORATORY CONTROL SAMPLE: 3143786

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	288	96	80-120	

SAMPLE DUPLICATE: 3143787

Parameter	Units	50319335001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	1190	1170	1	10	

SAMPLE DUPLICATE: 3143788

Parameter	Units	50319339001 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	964	960	0	10	

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REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 683143
QC Batch Method: SM 2540C
Analysis Method: SM 2540C
Analysis Description: 2540C Total Dissolved Solids
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339004, 50319339005, 50319339006

METHOD BLANK: 3143807 Matrix: Water
Associated Lab Samples: 50319339004, 50319339005, 50319339006

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
Total Dissolved Solids	mg/L	ND	10.0	10.0	06/23/22 14:15	

LABORATORY CONTROL SAMPLE: 3143808

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Total Dissolved Solids	mg/L	300	288	96	80-120	

SAMPLE DUPLICATE: 3143809

Parameter	Units	50319381002 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	326	323	1	10	

SAMPLE DUPLICATE: 3143810

Parameter	Units	50319394005 Result	Dup Result	RPD	Max RPD	Qualifiers
Total Dissolved Solids	mg/L	327	319	2	10	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA

Project: MCGS PC 2022
Pace Project No.: 50319339

QC Batch: 682696
QC Batch Method: SM 4500-H+B
Analysis Method: SM 4500-H+B
Analysis Description: 4500H+B pH
Laboratory: Pace Analytical Services - Indianapolis
Associated Lab Samples: 50319339001, 50319339002, 50319339003, 50319339004, 50319339005, 50319339006

SAMPLE DUPLICATE: 3141930

Parameter	Units	50319339001 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	7.3	7.3	1	2	H3

SAMPLE DUPLICATE: 3142128

Parameter	Units	50319339005 Result	Dup Result	RPD	Max RPD	Qualifiers
pH at 25 Degrees C	Std. Units	6.1	6.1	1	2	H3

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC 2022
Pace Project No.: 50319339

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

H3	Sample was received or analysis requested beyond the recognized method holding time.
P6	Matrix spike recovery was outside laboratory control limits due to a parent sample concentration notably higher than the spike level.
PL	The minimum mass of dried residue of 2.5 mg could not be obtained using the routine sample volume of 100 mL.

Pace Analytical Services, LLC
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(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC 2022
Pace Project No.: 50319339

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50319339001	**PC-MW-110-062022**	EPA 9056	682900		
50319339002	**PC-MW-113-062022**	EPA 9056	682900		
50319339003	**PC-MW-114-062022**	EPA 9056	682900		
50319339004	**PC-MW-115-062022**	EPA 9056	682900		
50319339005	**FB-01-062022**	EPA 9056	682900		
50319339006	**FD-01-062022**	EPA 9056	682900		
50319339001	**PC-MW-110-062022**	EPA 3010	682831	EPA 6010	684205
50319339002	**PC-MW-113-062022**	EPA 3010	682831	EPA 6010	684205
50319339003	**PC-MW-114-062022**	EPA 3010	682831	EPA 6010	684205
50319339004	**PC-MW-115-062022**	EPA 3010	682831	EPA 6010	684205
50319339005	**FB-01-062022**	EPA 3010	682831	EPA 6010	684205
50319339006	**FD-01-062022**	EPA 3010	682831	EPA 6010	684205
50319339001	**PC-MW-110-062022**	EPA 200.2	682864	EPA 6020	683070
50319339002	**PC-MW-113-062022**	EPA 200.2	682864	EPA 6020	683070
50319339003	**PC-MW-114-062022**	EPA 200.2	682864	EPA 6020	683070
50319339004	**PC-MW-115-062022**	EPA 200.2	682864	EPA 6020	683070
50319339005	**FB-01-062022**	EPA 200.2	682864	EPA 6020	683070
50319339006	**FD-01-062022**	EPA 200.2	682864	EPA 6020	683070
50319339001	**PC-MW-110-062022**	EPA 7470	683216	EPA 7470	683302
50319339002	**PC-MW-113-062022**	EPA 7470	683216	EPA 7470	683302
50319339003	**PC-MW-114-062022**	EPA 7470	683216	EPA 7470	683302
50319339004	**PC-MW-115-062022**	EPA 7470	683216	EPA 7470	683302
50319339005	**FB-01-062022**	EPA 7470	683216	EPA 7470	683302
50319339006	**FD-01-062022**	EPA 7470	683216	EPA 7470	683302
50319339001	**PC-MW-110-062022**	SM 2540C	683134		
50319339002	**PC-MW-113-062022**	SM 2540C	683134		
50319339003	**PC-MW-114-062022**	SM 2540C	683134		
50319339004	**PC-MW-115-062022**	SM 2540C	683143		
50319339005	**FB-01-062022**	SM 2540C	683143		
50319339006	**FD-01-062022**	SM 2540C	683143		
50319339001	**PC-MW-110-062022**	SM 4500-H+B	682696		
50319339002	**PC-MW-113-062022**	SM 4500-H+B	682696		
50319339003	**PC-MW-114-062022**	SM 4500-H+B	682696		
50319339004	**PC-MW-115-062022**	SM 4500-H+B	682696		
50319339005	**FB-01-062022**	SM 4500-H+B	682696		
50319339006	**FD-01-062022**	SM 4500-H+B	682696		

WO# : 50319339

50319339

Pace Analytical
WWW.PACELABS.COM

Request Document

elevant fields must be completed accurately.

Page : Of

Section A
Required Client Information:

Company:	NiSource_Golder
Address:	801 E 86th Ave
	Merrillville, IN 46410
Email:	jim_peace@golder.com
Phone:	Fax:
Requested Due Date:	10 day TAT

Section B
Required Project Information:

Report To:	Jim Peace
Copy To:	thomas_haskins@golder.com,
	danielle_sylvia@golder.com
Purchase Order #:	PO21343
Project Name:	MCGS PC 2022
Project #:	6219215GB

Attention:	Jeff Loewe-U12677
Company Name:	NiSource
Address:	
Pace Quote:	
Pace Project Manager:	tina.sayer@pacelabs.com,
Pace Profile #:	9047-1

Regulatory Agency
State / Location
IN

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Analyses Test Y/N	Metals, Total by 6010	Metals, Total by 6020	Mercury by 7470	IC (Cl, F, SO4) by 9056	TDS by 2540C	pH by 4500	Residual Chlorine (Y/N)	
1	PC-MW-110-062022					6/20/22	1115		3	2		1							X	X	X	X	X	X		MS/MSD
2	PC-MW-113-062022					6/20/22	1340		3	2		1							X	X	X	X	X	X		
3	PC-MW-114-062022					6/20/22	1455		3	2		1							X	X	X	X	X	X		
4	PC-MW-115-062022					6/20/22	1555		3	2		1							X	X	X	X	X	X		
5	FB-01-062022					6/20/22	1600		3	2		1							X	X	X	X	X	X		
6	FD-01-062022					6/20/22	1200		3	2		1							X	X	X	X	X	X		
7																											
8																											
9																											
10																											
11																											
12																											

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
* B, Ca, Li, Hardness by 6010		6/20/22	1800	Feaux						
*Sb, As, Ba, Be, Cd, Cr, Co, Pb, Mo, Se, Tl by 6020	Feaux	6/21/22	0900		6/21/22	0900	See Sam	VI	4	4
LEVEL 2										

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:	R. GUZMAN		
SIGNATURE of SAMPLER:		DATE Signed:	6/20/22

TEMP in C	Received on Ice (Y/N)	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: MCS 6/21/22 0920

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 (A) B C D E F
4. **Cooler Temperature(s):** 1.1 / 1.1 | 3.7 / 3.7 | | | **(Initial/Corrected)** RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)
5. **Packing Material:** ☑ Bubble Wrap ☐ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
   Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	✓		
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
Containers Intact?:	✓		Headspace in VOA Vials (>6mm): See Containter Count form for details	Present	Absent	No VOA Vials Sent ✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE ____ of ____

Sample Container Count

** Place a RED dot on containers that are out of conformance **

		MeOH (only)	VIALS					AMBER GLASS							PLASTIC									OTHER				Matrix	Nitric	Sulfuric	Sodium Hydroxide	Sodium Hydroxide/ ZnAc
		SBS																											Red	Yellow	Green	Black
COC Line Item	WGFU	DI	DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	CG3H	Syringe Kit				HNO3 <2	H2SO4 <2	NaOH >10	NaOH/Zn Ac >9
		R																													
1																	3	3	3									✓	✓			
2																	1	1	1													
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass	BP1B	1L NaOH plastic
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass	BP1N	1L HNO3 plastic
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass	BP1S	1L H2SO4 plastic
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass	BP1U	1L unpreserved plastic
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass	BP1Z	1L NaOH, Zn, Ac
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass	BP2N	500mL HNO3 plastic
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass	BP2C	500mL NaOH plastic
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass	BP2S	500mL H2SO4 plastic
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass	BP2U	500mL unpreserved plastic
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass	BP2Z	500mL NaOH, Zn Ac
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass	BP3B	250mL NaOH plastic
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass	BP3N	250mL HNO3 plastic
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass	BP3F	250mL HNO3 plastic-field filtered
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered	BP3U	250mL unpreserved plastic
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass	BP3S	250mL H2SO4 plastic
GN	General	AG3C	250mL NaOH amber glass	BP3Z	250mL NaOH, ZnAc plastic

Plastic

BP4U	125mL unpreserved plastic
BP4N	125mL HNO3 plastic
BP4S	125mL H2SO4 plastic

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

July 22, 2022

Mr. Jim Peace
WSP Golder
10 Al Paul Lane
Suite 103
Merrimack, NH 03054

RE: Project: MCGS PC 2022
Pace Project No.: 50319340

Dear Mr. Peace:

Enclosed are the analytical results for sample(s) received by the laboratory on June 21, 2022. The results relate only to the samples included in this report. Results reported herein conform to the applicable TNI/NELAC Standards and the laboratory's Quality Manual, where applicable, unless otherwise noted in the body of the report.

The test results provided in this final report were generated by each of the following laboratories within the Pace Network:

- Pace Analytical Services - Greensburg

If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Tina Sayer

Tina Sayer
tina.sayer@pacelabs.com
(317)228-3100
Project Manager

Enclosures

cc: Mr. Victor Garcia, WSP Golder
Mr. Tom Haskins, WSP Golder
Accounts Payable., NiSource
Ms. Danielle Sylvia, WSP Golder

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

CERTIFICATIONS

Project: MCGS PC 2022
Pace Project No.: 50319340

Pace Analytical Services Pennsylvania
1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601
ANAB DOD-ELAP Rad Accreditation #: L2417
Alabama Certification #: 41590
Arizona Certification #: AZ0734
Arkansas Certification
California Certification #: 04222CA
Colorado Certification #: PA01547
Connecticut Certification #: PH-0694
Delaware Certification
EPA Region 4 DW Rad
Florida/TNI Certification #: E87683
Georgia Certification #: C040
Florida: Cert E871149 SEKS WET
Guam Certification
Hawaii Certification
Idaho Certification
Illinois Certification
Indiana Certification
Iowa Certification #: 391
Kansas/TNI Certification #: E-10358
Kentucky Certification #: KY90133
KY WW Permit #: KY0098221
KY WW Permit #: KY0000221
Louisiana DHH/TNI Certification #: LA180012
Louisiana DEQ/TNI Certification #: 4086
Maine Certification #: 2017020
Maryland Certification #: 308
Massachusetts Certification #: M-PA1457
Michigan/PADEP Certification #: 9991
Missouri Certification #: 235
Montana Certification #: Cert0082
Nebraska Certification #: NE-OS-29-14
Nevada Certification #: PA014572018-1
New Hampshire/TNI Certification #: 297617
New Jersey/TNI Certification #: PA051
New Mexico Certification #: PA01457
New York/TNI Certification #: 10888
North Carolina Certification #: 42706
North Dakota Certification #: R-190
Ohio EPA Rad Approval: #41249
Oregon/TNI Certification #: PA200002-010
Pennsylvania/TNI Certification #: 65-00282
Puerto Rico Certification #: PA01457
Rhode Island Certification #: 65-00282
South Dakota Certification
Tennessee Certification #: 02867
Texas/TNI Certification #: T104704188-17-3
Utah/TNI Certification #: PA014572017-9
USDA Soil Permit #: P330-17-00091
Vermont Dept. of Health: ID# VT-0282
Virgin Island/PADEP Certification
Virginia/VELAP Certification #: 460198
Washington Certification #: C868
West Virginia DEP Certification #: 143
West Virginia DHHR Certification #: 9964C
Wisconsin Approve List for Rad
Wyoming Certification #: 8TMS-L

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
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SAMPLE SUMMARY

Project: MCGS PC 2022
Pace Project No.: 50319340

Lab ID	Sample ID	Matrix	Date Collected	Date Received
50319340001	**PC-MW-110-062022**	Water	06/20/22 11:15	06/21/22 09:00
50319340002	**PC-MW-110-062022 MS**	Water	06/20/22 11:15	06/21/22 09:00
50319340003	**PC-MW-110-062022 MSD**	Water	06/20/22 11:15	06/21/22 09:00
50319340004	**PC-MW-113-062022**	Water	06/20/22 13:40	06/21/22 09:00
50319340005	**PC-MW-114-062022**	Water	06/20/22 14:55	06/21/22 09:00
50319340006	**PC-MW-115-062022**	Water	06/20/22 15:55	06/21/22 09:00
50319340007	**FB-01-062022**	Water	06/20/22 16:00	06/21/22 09:00
50319340008	**FD-01-062022**	Water	06/20/22 12:00	06/21/22 09:00

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

SAMPLE ANALYTE COUNT

Project: MCGS PC 2022
Pace Project No.: 50319340

Lab ID	Sample ID	Method	Analysts	Analytes Reported	Laboratory
50319340001	**PC-MW-110-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
50319340002	**PC-MW-110-062022 MS**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50319340003	**PC-MW-110-062022 MSD**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
50319340004	**PC-MW-113-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
50319340005	**PC-MW-114-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
50319340006	**PC-MW-115-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
50319340007	**FB-01-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA
50319340008	**FD-01-062022**	EPA 903.1	SLC	1	PASI-PA
		EPA 904.0	VAL	1	PASI-PA
		Total Radium Calculation	LAL	1	PASI-PA

PASI-PA = Pace Analytical Services - Greensburg

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC 2022
Pace Project No.: 50319340

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50319340001	**PC-MW-110-062022**					
EPA 903.1	Radium-226	0.480 ± 0.372 (0.525) C:NA T:84%	pCi/L		07/21/22 11:46	
EPA 904.0	Radium-228	1.57 ± 0.607 (0.941) C:79% T:84%	pCi/L		07/11/22 16:53	
Total Radium Calculation	Total Radium	2.05 ± 0.979 (1.47)	pCi/L		07/22/22 14:45	
50319340002	**PC-MW-110-062022 MS**					
EPA 903.1	Radium-226	89.43 %REC ± NA (NA) C:NA T:NA%	pCi/L		07/21/22 11:46	
EPA 904.0	Radium-228	89.96 %REC ± NA (NA) C:NA T:NA	pCi/L		07/11/22 16:53	
50319340003	**PC-MW-110-062022 MSD**					
EPA 903.1	Radium-226	96.72 %REC 7.83 RPD ± NA (NA) C:NA T:NA%	pCi/L		07/21/22 11:46	
EPA 904.0	Radium-228	75.47 %REC 17.52 RPD ± NA (NA) C:NA T:NA	pCi/L		07/11/22 16:53	
50319340004	**PC-MW-113-062022**					
EPA 903.1	Radium-226	0.164 ± 0.233 (0.394) C:NA T:95%	pCi/L		07/21/22 11:46	
EPA 904.0	Radium-228	0.322 ± 0.388 (0.819) C:71% T:95%	pCi/L		07/11/22 16:54	
Total Radium Calculation	Total Radium	0.486 ± 0.621 (1.21)	pCi/L		07/22/22 14:45	
50319340005	**PC-MW-114-062022**					
EPA 903.1	Radium-226	-0.178 ± 0.186 (0.503) C:NA T:90%	pCi/L		07/21/22 12:21	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

SUMMARY OF DETECTION

Project: MCGS PC 2022
Pace Project No.: 50319340

Lab Sample ID / Method	Client Sample ID / Parameters	Result	Units	Report Limit	Analyzed	Qualifiers
50319340005	**PC-MW-114-062022**					
EPA 904.0	Radium-228	0.787 ± 0.447 (0.801) C:72% T:90%	pCi/L		07/11/22 16:54	
Total Radium Calculation	Total Radium	0.787 ± 0.633 (1.30)	pCi/L		07/22/22 14:45	
50319340006	**PC-MW-115-062022**					
EPA 903.1	Radium-226	0.507 ± 0.290 (0.267) C:NA T:86%	pCi/L		07/21/22 12:21	
EPA 904.0	Radium-228	0.156 ± 0.353 (0.786) C:75% T:86%	pCi/L		07/11/22 16:54	
Total Radium Calculation	Total Radium	0.663 ± 0.643 (1.05)	pCi/L		07/22/22 14:45	
50319340007	**FB-01-062022**					
EPA 903.1	Radium-226	0.116 ± 0.177 (0.284) C:NA T:90%	pCi/L		07/21/22 12:21	
EPA 904.0	Radium-228	0.249 ± 0.359 (0.770) C:79% T:90%	pCi/L		07/11/22 16:54	
Total Radium Calculation	Total Radium	0.365 ± 0.536 (1.05)	pCi/L		07/22/22 14:45	
50319340008	**FD-01-062022**					
EPA 903.1	Radium-226	0.295 ± 0.235 (0.305) C:NA T:94%	pCi/L		07/21/22 12:21	
EPA 904.0	Radium-228	0.555 ± 0.409 (0.797) C:74% T:94%	pCi/L		07/11/22 16:54	
Total Radium Calculation	Total Radium	0.850 ± 0.644 (1.10)	pCi/L		07/22/22 14:45	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319340

Method: **EPA 903.1**
Description: 903.1 Radium 226
Client: NiSource_WSP
Date: July 22, 2022

General Information:
8 samples were analyzed for EPA 903.1 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319340

Method: **EPA 904.0**
Description: 904.0 Radium 228
Client: NiSource_WSP
Date: July 22, 2022

General Information:
8 samples were analyzed for EPA 904.0 by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

PROJECT NARRATIVE

Project: MCGS PC 2022
Pace Project No.: 50319340

Method: **Total Radium Calculation**
Description: Total Radium 228+226
Client: NiSource_WSP
Date: July 22, 2022

General Information:
6 samples were analyzed for Total Radium Calculation by Pace Analytical Services Greensburg. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:
The samples were analyzed within the method required hold times with any exceptions noted below.

Method Blank:
All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:
All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:
All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-110-062022 **Lab ID: 50319340001** Collected: 06/20/22 11:15 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.480 ± 0.372 (0.525) C:NA T:84%**	pCi/L	07/21/22 11:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**1.57 ± 0.607 (0.941) C:79% T:84%**	pCi/L	07/11/22 16:53	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**2.05 ± 0.979 (1.47)**	pCi/L	07/22/22 14:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
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(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-110-062022 MS **Lab ID: 50319340002** Collected: 06/20/22 11:15 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**89.43 %REC ± NA (NA) C:NA T:NA%**	pCi/L	07/21/22 11:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**89.96 %REC ± NA (NA) C:NA T:NA**	pCi/L	07/11/22 16:53	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-110-062022 MSD **Lab ID: 50319340003** Collected: 06/20/22 11:15 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**96.72 %REC 7.83 RPD ± NA (NA) C:NA T:NA%**	pCi/L	07/21/22 11:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**75.47 %REC 17.52 RPD ± NA (NA) C:NA T:NA**	pCi/L	07/11/22 16:53	15262-20-1	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-113-062022 **Lab ID: 50319340004** Collected: 06/20/22 13:40 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.164 ± 0.233 (0.394) C:NA T:95%**	pCi/L	07/21/22 11:46	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.322 ± 0.388 (0.819) C:71% T:95%**	pCi/L	07/11/22 16:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.486 ± 0.621 (1.21)**	pCi/L	07/22/22 14:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-114-062022 **Lab ID: 50319340005** Collected: 06/20/22 14:55 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**-0.178 ± 0.186 (0.503) C:NA T:90%**	pCi/L	07/21/22 12:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.787 ± 0.447 (0.801) C:72% T:90%**	pCi/L	07/11/22 16:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.787 ± 0.633 (1.30)**	pCi/L	07/22/22 14:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: PC-MW-115-062022 **Lab ID: 50319340006** Collected: 06/20/22 15:55 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.507 ± 0.290 (0.267) C:NA T:86%**	pCi/L	07/21/22 12:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.156 ± 0.353 (0.786) C:75% T:86%**	pCi/L	07/11/22 16:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.663 ± 0.643 (1.05)**	pCi/L	07/22/22 14:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: FB-01-062022 **Lab ID: 50319340007** Collected: 06/20/22 16:00 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.116 ± 0.177 (0.284) C:NA T:90%**	pCi/L	07/21/22 12:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.249 ± 0.359 (0.770) C:79% T:90%**	pCi/L	07/11/22 16:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.365 ± 0.536 (1.05)**	pCi/L	07/22/22 14:45	7440-14-4	

Pace Analytical Services, LLC
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Indianapolis, IN 46268
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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

Sample: FD-01-062022 **Lab ID: 50319340008** Collected: 06/20/22 12:00 Received: 06/21/22 09:00 Matrix: Water
PWS: Site ID: Sample Type:

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
	Pace Analytical Services - Greensburg					
Radium-226	EPA 903.1	**0.295 ± 0.235 (0.305) C:NA T:94%**	pCi/L	07/21/22 12:21	13982-63-3	
	Pace Analytical Services - Greensburg					
Radium-228	EPA 904.0	**0.555 ± 0.409 (0.797) C:74% T:94%**	pCi/L	07/11/22 16:54	15262-20-1	
	Pace Analytical Services - Greensburg					
Total Radium	Total Radium Calculation	**0.850 ± 0.644 (1.10)**	pCi/L	07/22/22 14:45	7440-14-4	

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

QC Batch: 514046
QC Batch Method: EPA 904.0
Analysis Method: EPA 904.0
Analysis Description: 904.0 Radium 228
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50319340001, 50319340002, 50319340003, 50319340004, 50319340005, 50319340006, 50319340007, 50319340008

METHOD BLANK: 2491330 Matrix: Water
Associated Lab Samples: 50319340001, 50319340002, 50319340003, 50319340004, 50319340005, 50319340006, 50319340007, 50319340008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-228	0.344 ± 0.333 (0.675) C:81% T:93%	pCi/L	07/11/22 16:52	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
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Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL - RADIOCHEMISTRY

Project: MCGS PC 2022
Pace Project No.: 50319340

QC Batch: 514044
QC Batch Method: EPA 903.1
Analysis Method: EPA 903.1
Analysis Description: 903.1 Radium-226
Laboratory: Pace Analytical Services - Greensburg
Associated Lab Samples: 50319340001, 50319340002, 50319340003, 50319340004, 50319340005, 50319340006, 50319340007, 50319340008

METHOD BLANK: 2491326 Matrix: Water
Associated Lab Samples: 50319340001, 50319340002, 50319340003, 50319340004, 50319340005, 50319340006, 50319340007, 50319340008

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	-0.115 ± 0.250 (0.576) C:NA T:93%	pCi/L	07/21/22 11:46	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALIFIERS

Project: MCGS PC 2022
Pace Project No.: 50319340

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Reported results are not rounded until the final step prior to reporting. Therefore, calculated parameters that are typically reported as "Total" may vary slightly from the sum of the reported component parameters.

Act - Activity

Unc - Uncertainty: SDWA = 1.96 sigma count uncertainty, all other matrices = Expanded Uncertainty (95% confidence interval). Gamma Spec = Expanded Uncertainty (95.4% Confidence Interval)

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

Pace Analytical Services, LLC
7726 Moller Road
Indianapolis, IN 46268
(317)228-3100

QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: MCGS PC 2022
Pace Project No.: 50319340

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
50319340001	**PC-MW-110-062022**	EPA 903.1	514044		
50319340002	**PC-MW-110-062022 MS**	EPA 903.1	514044		
50319340003	**PC-MW-110-062022 MSD**	EPA 903.1	514044		
50319340004	**PC-MW-113-062022**	EPA 903.1	514044		
50319340005	**PC-MW-114-062022**	EPA 903.1	514044		
50319340006	**PC-MW-115-062022**	EPA 903.1	514044		
50319340007	**FB-01-062022**	EPA 903.1	514044		
50319340008	**FD-01-062022**	EPA 903.1	514044		
50319340001	**PC-MW-110-062022**	EPA 904.0	514046		
50319340002	**PC-MW-110-062022 MS**	EPA 904.0	514046		
50319340003	**PC-MW-110-062022 MSD**	EPA 904.0	514046		
50319340004	**PC-MW-113-062022**	EPA 904.0	514046		
50319340005	**PC-MW-114-062022**	EPA 904.0	514046		
50319340006	**PC-MW-115-062022**	EPA 904.0	514046		
50319340007	**FB-01-062022**	EPA 904.0	514046		
50319340008	**FD-01-062022**	EPA 904.0	514046		
50319340001	**PC-MW-110-062022**	Total Radium Calculation	520751		
50319340004	**PC-MW-113-062022**	Total Radium Calculation	520751		
50319340005	**PC-MW-114-062022**	Total Radium Calculation	520751		
50319340006	**PC-MW-115-062022**	Total Radium Calculation	520751		
50319340007	**FB-01-062022**	Total Radium Calculation	520751		
50319340008	**FD-01-062022**	Total Radium Calculation	520751		

WO# : 50319340

50319340

st Document

ls must be completed accurately.

Page : Of

Section A Required Client Information:		Section B Required Project Information:		Invoice Information:	
Company:	NiSource_Golder	Report To:	Jim Peace	Attention:	Jeff Loewe-U126177
Address:	801 E 86th Ave	Copy To:	Thomas_Haskins@golder.com,	Company Name:	NiSource
Merrillville, IN 46410			danielle_sylvia@golder.com	Address:	
Email:	jim_peace@golder.com	Purchase Order #:	PO21343	Pace Quote:	
Phone:	Fax:	Project Name:	MCGS PC 2022	Pace Project Manager:	tina.sayer@pacelabs.com,
Requested Due Date:	16 day TAT	Project #:	GL19245GB	Pace Profile #:	9047-2

Regulatory Agency
State / Location
IN

ITEM #	SAMPLE ID (One Character per box. (A-Z, 0-9 / , -) Sample Ids must be unique)	MATRIX CODE (see valid codes to left)	SAMPLE TYPE (G=GRAB C=COMP)	COLLECTED START DATE	COLLECTED START TIME	COLLECTED END DATE	COLLECTED END TIME	SAMPLE TEMP AT COLLECTION	# OF CONTAINERS	Preservatives: Unpreserved	H2SO4	HNO3	HCl	NaOH	Na2S2O3	Methanol	Other	Requested Analysis Filtered (Y/N) Y/N	Analyses Test: Radium-226+228 (sum)*	Residual Chlorine (Y/N)	
1	PC-MW-110-062022					6/20/22	1115		2			2							X		MS/MSD
2	PC-MW-113-062022					6/20/22	1340		2			2							X		
3	PC-MW-114-062022					6/20/22	1455		2			2							X		
4	PC-MW-115-062022					6/20/22	1555		2			2							X		
5	FB-01-062022					6/20/22	1600		2			2							X		
6	FD-01-062022					6/20/22	1200		2			2							X		
7																					
8																					
9																					
10																					
11																					
12																					

MATRIX CODE: Drinking Water DW; Water WT; Waste Water WW; Product P; Soil/Solid SL; Oil OL; Wipe WP; Air AR; Other OT; Tissue TS

ADDITIONAL COMMENTS	RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	SAMPLE CONDITIONS			
*Sub RadChem to Pace PA	Fedex	6/20/22	1600	Fedex						
	Fedex	6/21/22	0900		6/21/22	0900	see SCR	Y	Y	Y
LEVEL 2										

SAMPLER NAME AND SIGNATURE			
PRINT Name of SAMPLER:		TEMP in C	Received on Ice (Y/N)
SIGNATURE of SAMPLER:	DATE Signed: 6/20/22	Custody Sealed Cooler (Y/N)	Samples Intact (Y/N)

Pace

SAMPLE CONDITION UPON RECEIPT FORM

Date/Time and Initials of person examining contents: MCS 6/21/22 0920

1. **Courier:** ☑ FED EX ☐ UPS ☐ CLIENT ☐ PACE ☐ USPS ☐ OTHER _____
2. **Custody Seal on Cooler/Box Present:** ☑ Yes ☐ No
   (If yes)Seals Intact: ☑ Yes ☐ No **(leave blank if no seals were present)**
3. **Thermometer:** 1 2 3 4 5 6 A B C D E F
4. **Cooler Temperature(s):** 1.1 / 1.1 | 3.7 | 3.7 | | | | |
   (Initial/Corrected) **RECORD TEMPS OF ALL COOLERS RECEIVED (use Comments below to add more)**
5. **Packing Material:** ☑ Bubble Wrap ☑ Bubble Bags ☐ None ☐ Other _____
6. **Ice Type:** ☑ Wet ☐ Blue ☐ None
7. **If temp. is over 6°C or under 0°C, was the PM notified?:** ☐ Yes ☐ No
   Cooler temp should be above freezing to 6°C

All discrepancies will be written out in the comments section below.

	Yes	No		Yes	No	N/A
USDA Regulated Soils? (HI, ID, NY, WA, OR,CA, NM, TX, OK, AR, LA, TN, AL, MS, NC, SC, GA, FL, or Puerto Rico)		✓	All containers needing acid/base preservation have been pH CHECKED?: **Exceptions: VOA, coliform, LLHg, O&G, RAD CHEM, and any container with a septum cap or preserved with HCl.** **Circle: HNO3 (<2) H2SO4 (<2) NaOH (>10) NaOH/ZnAc (>9)** Any non-conformance to pH recommendations will be noted on the container count form	MCS 4		✓
Short Hold Time Analysis (48 hours or less)? Analysis:		✓				
Time 5035A TC placed in Freezer or Short Holds To Lab	Time:			Present	Absent	N/A
			Residual Chlorine Check (SVOC 625 Pest/PCB 608)			✓
Rush TAT Requested (4 days or less):		✓	Residual Chlorine Check (Total/Amenable/Free Cyanide)			✓
Custody Signatures Present?	✓		Headspace Wisconsin Sulfide?			✓
			Headspace in VOA Vials (>6mm):	Present	Absent	No VOA Vials Sent
Containers Intact?:	✓		See Containter Count form for details			✓
Sample Label (IDs/Dates/Times) Match COC?: Except TCs, which only require sample ID	✓		Trip Blank Present?		✓	
Extra labels on Terracore Vials? (soils only)		✓	Trip Blank Custody Seals?:			✓

COMMENTS:

COC PAGE ____ of ____

Sample Container Count

** Place a RED dot on containers that are out of conformance **

COC Line Item	WGFU	MeOH (only) / SBS / DI / R	VIALS: DG9H VG9H	VOA VIAL HS (>6mm)	VG9U	DG9U	VG9T	AMBER GLASS: AG0U	AG1H	AG1U	AG2U	AG3S	AG3SF	AG3C	PLASTIC: BP1U	BP1N	BP2U	BP3U	BP3N	BP3F	BP3S	BP3B	BP3Z	OTHER: CG3H	Syringe Kit			Matrix	Nitric Red HNO3 <2	Sulfuric Yellow H2SO4 <2	Sodium Hydroxide Green NaOH >10	Sodium Hydroxide/ ZnAc Black NaOH/Zn Ac >9
1																6												SA				
2																2																
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																
11																																
12																																

Container Codes

Glass

DG9H	40mL HCl amber voa vial	BG1T	1L Na Thiosulfate clear glass
DG9P	40mL TSP amber vial	BG1U	1L unpreserved glass
DG9S	40mL H2SO4 amber vial	BG3H	250mL HCl Clear Glass
DG9T	40mL Na Thio amber vial	BG3U	250mL Unpres Clear Glass
DG9U	40mL unpreserved amber vial	AG0U	100mL unpres amber glass
VG9H	40mL HCl clear vial	AG1H	1L HCl amber glass
VG9T	40mL Na Thio. clear vial	AG1S	1L H2SO4 amber glass
VG9U	40mL unpreserved clear vial	AG1T	1L Na Thiosulfate amber glass
I	40mL w/hexane wipe vial	AG1U	1liter unpres amber glass
WGKU	8oz unpreserved clear jar	AG2N	500mL HNO3 amber glass
WGFU	4oz clear soil jar	AG2S	500mL H2SO4 amber glass
JGFU	4oz unpreserved amber wide	AG2U	500mL unpres amber glass
CG3H	250mL clear glass HCl	AG3S	250mL H2SO4 amber glass
BG1H	1L HCl clear glass	AG3SF	250mL H2SO4 amb glass -field filtered
BG1S	1L H2SO4 clear glass	AG3U	250mL unpres amber glass
GN	General	AG3C	250mL NaOH amber glass

Plastic

BP1B	1L NaOH plastic	BP4U	125mL unpreserved plastic
BP1N	1L HNO3 plastic	BP4N	125mL HNO3 plastic
BP1S	1L H2SO4 plastic	BP4S	125mL H2SO4 plastic
BP1U	1L unpreserved plastic		
BP1Z	1L NaOH, Zn, Ac		
BP2N	500mL HNO3 plastic		
BP2C	500mL NaOH plastic		
BP2S	500mL H2SO4 plastic		
BP2U	500mL unpreserved plastic		
BP2Z	500mL NaOH, Zn Ac		
BP3B	250mL NaOH plastic		
BP3N	250mL HNO3 plastic		
BP3F	250mL HNO3 plastic-field filtered		
BP3U	250mL unpreserved plastic		
BP3S	250mL H2SO4 plastic		
BP3Z	250mL NaOH, ZnAc plastic		

Miscellaneous

Syringe Kit	LL Cr+6 sampling kit
ZPLC	Ziploc Bag
R	Terracore Kit
SP5T	120mL Coliform Sodium Thiosulfate
T	Tedlar Bag (air sample)
U	Summa Can (air sample)
WT	Water
SL	Solid Solid
OL	Oil
NAL	Non-aqueous liquid
WP	Wipe

APPENDIX D

2022-2023 Data Usability Summary Report

Data Usability Summary Report
2022-2023 Groundwater Samples

This Data Usability Summary Report (DUSR) presents the findings of the data quality assessment performed on the analyses of groundwater samples collected for two (2) semi-annual sampling events, conducted September 9-15, 2022 and March 30 – April 10, 2023 at the Michigan City Generating Station. Samples reported in laboratory sample delivery groups (SDGs) listed in Table 1 were reviewed as part of this DUSR.

The samples were submitted Pace Analytical Laboratories located in Indianapolis, IN and Greensburg, PA to perform requested analyses. Information regarding the sample point identifications, analytical parameters, quality control (QC) samples, sampling dates, and laboratory SDG designations are summarized in Table 1.
Groundwater samples were analyzed following methods:

- Target Compound List (TCL) Total Metals following USEPA SW-846 Method 6020A, Inductively Coupled Plasma-Mass Spectrometry, February 2007 and USEPA SW-846 Method 6010C Inductively Coupled Plasma- Atomic Emission Spectrometry Revision 3 (November 2000);
- Total Hardness following Standard Methods Method 2340B;
- Mercury following USEPA SW846 7470A Mercury in Liquid Wastes (Manual Cold- Vapor Technique) Revision 1 (September 1994);
- Anions (chloride, fluoride, and sulfate) following USEPA SW846 9056A Determination of Inorganic Anions by Ion Chromatography Revision 1 (February 2007);
- Total Dissolved Solids (TDS) following SM 2540C Total Dissolved Solids Dried at 180 °C, Standard Methods 20th Edition (1998);
- pH by SM 4500-H+B pH in Water by Potentiometry; and,
- Radium-226 and Radium-228 following USEPA SW846 Method 903.1 Radium-226 in Drinking Water Radon Emanation Technique (January 1980) and USEPA SW846 Method 904.0 Radium-228 in Drinking Water (January 1980), respectively.

A total of 16 groundwater samples, as well as 2 field blanks, 2 field duplicates, and 2 matrix spikes/matrix spike duplicates (MS/MSDs) were collected and analyzed during the two semi-annual events.

The data quality assessment of inorganic results was performed in accordance with the Quality Assurance Project Plan (QAPP) and EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017) (Inorganic Guidelines), the Evaluation of Radiochemistry Data Usability- Department of Energy (DOE, 1997) (Guidelines, used for the evaluation of fall 2022 radiological data), and the Verification and Validation of Radiological Data for Use in Waste Management and Environmental Remediation- American Nuclear Society (ANSI/ANS, 2012) (Guidelines, used for the evaluation of spring 2023 radiological data), where applicable to the methods listed above. If there was a conflict between the Guidelines and the analytical methodology, method specific criteria and professional judgment were used.

In general, chemical results for the samples collected at the Site were qualified based on outlying accuracy, precision, and analytical holding time exceedances. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample and may be considered biased high.

J-	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample and may be considered biased low.
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

In general, the data generated as part of the groundwater sampling event met the QC criteria established in the respective methods and the Inorganic Guidelines. Table 2 summarizes all qualifications applied to the data, with applicable qualifier codes. Certain samples may have been qualified for multiple data quality assessment (DQA) findings, as shown in Table 2. The following bulleted items highlight qualifications to specific parameters and/or samples:

- Antimony results detected below the reporting limit for samples GAMW-10-091322, GAMW-12-091322, and GMMW-2-091322 were qualified as non-detect (U) at the reporting limit due to the presence method blank contamination.
- Barium results detected above the reporting limit for samples GAMW-16-041023 and FD-01-041023 were qualified as estimated and potentially biased high (J+) due to presence of field blank contamination.
- Chromium results detected below the reporting limit for samples GAMW-16-041023, GMMW-1-041023, and FD-041023 were qualified as non-detect (U) at the reporting limit due to the presence of field blank contamination.
- Lead results detected below the reporting limit for samples GAMW-16-041023, GMMW-1-041023, and FD-041023 were qualified as non-detect (U) due to the presence of field blank contamination.
- Laboratory analyzed pH samples were analyzed outside of method holding time. All laboratory measured pH values were qualified as estimated (J). Field measured pH values were used in all data evaluations.
- The radium-226 and associated total radium results for sample GAMW-16-090922 were qualified as non-detect and estimated (UJ) due to associated matrix spike duplicate recoveries under quality control limits and matrix spike/matrix spike duplicate relative percent differences above quality control limits.
- The radium-226 results for sample GMMW-1-090922 were qualified as non-detect estimated (UJ) due to associated matrix spike duplicate recoveries under quality control limits and matrix spike/matrix spike duplicate relative percent differences above quality control limits.
- The radium-228 and associated total radium results for sample GMMW-1-090922 were rejected (R) due to method blank contamination.
- The radium-228 and associated total radium results for sample GAMW-10-040723 and GMMW-2-040723 were qualified as non-detect and estimated (UJ) due to associated matrix spike recoveries below quality control limits.
- Sulfate results detected above the reporting limit for sample GAMW-10-040723, GMMW-2-040723, GAMW-16-041023, GMMW-1-041023, and FD-01-041023 were qualified as estimated and potentially biased low (J-) due to associated matrix spike and matrix spike duplicate percent recoveries below quality control limits.

Well GAMW-18 was not sampled during the Fall 2022 event, and wells GAMW-14 and GAMW-15 were not sampled during the spring 2023 sampling event due to the wells being dry.

Dilutions do not require qualifications based on the Guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of statewide characterization.

Based on the data validations and data quality assessment, 99.5% of the analytical data for samples collected at the Site were determined to be acceptable (including estimated data) for their intended use.

TABLE 1

Sample Collection and Analysis Summary
NIPSCO LLC CCR Groundwater Monitoring - Michigan City

						Analyses							
SDG	Field Identification	Collection Date	Location	Matrix	QC Samples	Metals by EPA 6010	Metals by EPA 6020	Mercury by EPA 7470	Anions by EPA 9056	Total Hardness by EPA 2340B	TDS by SM 2540C	pH by SM 4500-H+B	Radium 226/228 by EPA 903.1/904.0
50325558	GAMW-16-090922	9/9/2022	GAMW-16	GW	MS/MSD	X	X	X	X	X	X	X	
50325558	GMMW-1-090922	9/9/2022	GMMW-1	GW	-	X	X	X	X	X	X	X	
50325558	GAMW-14-091222	9/12/2022	GAMW-14	GW	-	X	X	X	X	X	X	X	
50325558	GAMW-10-091322	9/13/2022	GAMW-10	GW	-	X	X	X	X	X	X	X	
50325558	GAMW-12-091322	9/13/2022	GAMW-12	GW	-	X	X	X	X	X	X	X	
50325558	GAMW-15-091322	9/13/2022	GAMW-15	GW	-	X	X	X	X	X	X	X	
50325558	GMMW-2-091322	9/13/2022	GMMW-2	GW	-	X	X	X	X	X	X	X	
50325558	FD-01-091322	9/13/2022	GAMW-12	GW	FD	X	X	X	X	X	X	X	
50325558	GAMW-05-091522	9/15/2022	GAMW-05	GW	-	X	X	X	X	X	X	X	
50325558	FB-01-091522	9/15/2022	GAMW-05	WQ	FB	X	X	X	X	X	X	X	
50325559	GAMW-16-090922	9/9/2022	GAMW-16	GW	-								X
50325559	GAMW-16-090922 MS	9/9/2022	GAMW-16	GW	MS								X
50325559	GAMW-16-090922 MSD	9/9/2022	GAMW-16	GW	MSD								X
50325559	GMMW-1-090922	9/9/2022	GMMW-1	GW	-								X
50325559	GAMW-14-091222	9/12/2022	GAMW-14	GW	-								X
50325559	GAMW-10-091322	9/13/2022	GAMW-10	GW	-								X
50325559	GAMW-12-091322	9/13/2022	GAMW-12	GW	-								X
50325559	GAMW-15-091322	9/13/2022	GAMW-15	GW	-								X
50325559	GMMW-2-091322	9/13/2022	GMMW-2	GW	-								X
50325559	FD-01-091322	9/13/2022	GAMW-12	GW	FD								X
50325559	GAMW-05-091522	9/15/2022	GAMW-05	GW	-								X
50325559	FB-01-091522	9/15/2022	GAMW-05	WQ	FB								X
50340934	PC-MW-110-033023	3/30/2023	PC-M1-110	GW	-	X	X	X	X	X	X	X	
50340934	PC-MW-113-033023	3/30/2023	PC-MW-113	GW	-	X	X	X	X	X	X	X	
50340934	PC-MW-114-033023	3/30/2023	PC-MW-114	GW	-	X	X	X	X	X	X	X	
50340934	PC-MW-115-033023	3/30/2023	PC-MW-115	GW	-	X	X	X	X	X	X	X	
50340934	GAMW-10-040723	4/7/2023	GAMW-10	GW	-	X	X	X	X	X	X	X	
50340934	GMMW-2-040723	4/7/2023	GMMW-2	GW	MS/MSD	X	X	X	X	X	X	X	
50340934	GAMW-16-041023	4/10/2023	GAMW-16	GW	-	X	X	X	X	X	X	X	
50340934	GMMW-1-041023	4/10/2023	GMMW-1	GW	-	X	X	X	X	X	X	X	
50340934	FD-01-041023	4/10/2023	GAMW-16	GW	FD	X	X	X	X	X	X	X	
50340934	FB-01-041023	4/10/2023	-	WQ	FB	X	X	X	X	X	X	X	
50340934	PC-MW-110-033023	3/30/2023	PC-M1-110	GW	-								X

TABLE 1

Sample Collection and Analysis Summary
NIPSCO LLC CCR Groundwater Monitoring - Michigan City

						Analyses							
SDG	*Field Identification*	*Collection Date*	*Location*	*Matrix*	*QC Samples*	Metals by EPA 6010	Metals by EPA 6020	Mercury by EPA 7470	Anions by EPA 9056	Total Hardness by EPA 2340B	TDS by SM 2540C	pH by SM 4500-H+B	Radium 226/228 by EPA 903.1/904.0
50340934	PC-MW-113-033023	3/30/2023	PC-MW-113	GW	-								X
50340934	PC-MW-114-033023	3/30/2023	PC-MW-114	GW	-								X
50340934	PC-MW-115-033023	3/30/2023	PC-MW-115	GW	-								X
50340934	GAMW-10-040723	4/7/2023	GAMW-10	GW	-								X
50340934	GMMW-2-040723	4/7/2023	GMMW-2	GW	-								X
50340935	GMMW-2-040723 MS	4/7/2023	GMMW-2	WQ	MS								X
50340936	GMMW-2-040723 MSD	4/7/2023	GMMW-2	WQ	MSD								X
50340934	GAMW-16-041023	4/10/2023	GAMW-16	GW	-								X
50340934	GMMW-1-041023	4/10/2023	GMMW-1	GW	-								X
50340934	FD-01-041023	4/10/2023	GAMW-16	GW	FD								X
50340934	FB-01-041023	4/10/2023	-	WQ	FB								X

Notes:
All non-radiological analyses performed by PACE at the Indianapolis, IN laboratory.
All radiological analyses performed by PACE at the Greensburg, PA laboratory.

Prepared by: GRD
Checked by: DFSC

Abbreviations:
FB: Field Blank
FD: Field Duplicate
GW: Ground Wate
WQ: Water Quality
QC: Quality Control
SDG: Sample Delivery Group
MS/MSD: Matrix Spike/Matrix Spike Duplicate

TABLE 2

Qualifier Summary Table
NIPSCO LLC CCR Groundwater Monitoring - Michigan City

Sample Name	*Constituent*	*New Result*	*New RL*	*Qualifier*	*Reason*
GAMW-16-090922	pH	-	-	J	Method holding time exceedance
GMMW-1-090922	pH	-	-	J	Method holding time exceedance
GAMW-14-091222	pH	-	-	J	Method holding time exceedance
GAMW-10-091322	pH	-	-	J	Method holding time exceedance
GAMW-12-091322	pH	-	-	J	Method holding time exceedance
GAMW-15-091322	pH	-	-	J	Method holding time exceedance
GMMW-2-091322	pH	-	-	J	Method holding time exceedance
FD-01-091322	pH	-	-	J	Method holding time exceedance
GAMW-05-091522	pH	-	-	J	Method holding time exceedance
GAMW-10-091322	Antimony	0.001	-	U	Method blank contamination
GAMW-12-091322	Antimony	0.001	-	U	Method blank contamination
GMMW-2-091322	Antimony	0.001	-	U	Method blank contamination
GAMW-16-090922	Radium 226	-	-	UJ	MSD %R below QC limits, MS/MSD RPD above QC criteria
GAMW-16-090922	Total Radium	-	-	UJ	MSD %R below QC limits, MS/MSD RPD above QC criteria
GMMW-1-090922	Radium-226	-	-	UJ	MSD %R below QC limits, MS/MSD RPD above QC criteria
GMMW-1-090922	Radium 228	-	-	R	Method Blank Contamination
GMMW-1-090922	Total Radium	-	-	R	Method Blank Contamination
PC-MW-110-033023	pH	-	-	J	Method holding time exceedance
PC-MW-113-033023	pH	-	-	J	Method holding time exceedance
PC-MW-114-033023	pH	-	-	J	Method holding time exceedance
PC-MW-115-033023	pH	-	-	J	Method holding time exceedance
GAMW-10-040723	pH	-	-	J	Method holding time exceedance
GMMW-2-040723	pH	-	-	J	Method holding time exceedance
GAMW-16-041023	pH	-	-	J	Method holding time exceedance
GMMW-1-041023	pH	-	-	J	Method holding time exceedance
FD-01-041023	pH	-	-	J	Method holding time exceedance
GAMW-16-041023	Barium	-	-	J+	Field blank contamination
FD-01-041023	Barium	-	-	J+	Field blank contamination
GAMW-16-041023	Chromium	0.002	-	U	Field blank contamination
GAMW-16-041023	Lead	0.001	-	U	Field blank contamination
GMMW-1-041023	Chromium	0.002	-	U	Field blank contamination
GMMW-1-041023	Lead	0.001	-	U	Field blank contamination
FD-01-041023	Chromium	0.002	-	U	Field blank contamination
FD-01-041023	Lead	0.001	-	U	Field blank contamination
GAMW-10-040723	Sulfate	-	-	J-	MS and MSD %R below QC limits
GMMW-2-040723	Sulfate	-	-	J-	MS and MSD %R below QC limits
GAMW-16-041023	Sulfate	-	-	J-	MS and MSD %R below QC limits
GMMW-1-041023	Sulfate	-	-	J-	MS and MSD %R below QC limits

TABLE 2

Qualifier Summary Table
NIPSCO LLC CCR Groundwater Monitoring - Michigan City

Sample Name	*Constituent*	*New Result*	*New RL*	*Qualifier*	*Reason*
FD-01-041023	Sulfate	-	-	J-	MS and MSD %R below QC limits
GAMW-10-040723	Radium-228	-	-	UJ	MS %R below QC limits
GAMW-10-040723	Total Radium	-	-	UJ	MS %R below QC limits
GMMW-2-040723	Radium-228	-	-	UJ	MS %R below QC limits
GMMW-2-040723	Total Radium	-	-	UJ	MS %R below QC limits
All Samples	-	-	-	-	Laboratory applied U-qualifiers indicating non-detect results and J-qualifiers indicating estimated results below the reporting limit are retained unless other qualification is indicated in this table. All other qualifiers are removed.

Abbreviations:

RL: Reporting Limit
MS/MSD: Matrix spike/matrix spike duplicate
QC: Quality control
RPD: Relative percent difference
%R: Percent recovery

Qualifier Definitions:

J: Estimated Result
U: Non-detect result
UJ: Estimated non-detect result
R: Rejected Result
J+: Estimated and potentially biased high result
J-: Estimated and potentially biased low result

Created by: GRD 6/27/23

APPENDIX E

2021-2022 Post-Closure Background Monitoring Well Data Usability Summary Report

Data Usability Summary Report
2021-2022 Groundwater Samples

This Data Usability Summary Report (DUSR) presents the findings of the data quality assessment performed on the analyses of groundwater samples collected for eight (8) sampling events, conducted April 30th through May 3rd, 2021; June 23rd, 2021; September 7th, 2021; December 16th, 2021; March 8th, 2022; June 20th, 2022; September 14th, 2022; and December 5th, 2022 at the Michigan City Generating Station. Samples reported in laboratory sample delivery groups (SDGs) listed in Table 1 were reviewed as part of this DUSR.

The samples were submitted Pace Analytical Laboratories located in Indianapolis, IN and Greensburg, PA to perform requested analyses. Information regarding the sample point identifications, analytical parameters, quality control (QC) samples, sampling dates, and laboratory SDG designations are summarized in Table 1. Groundwater samples were analyzed following methods:

- Target Compound List (TCL) Total Metals following USEPA SW-846 Method 6020A, Inductively Coupled Plasma-Mass Spectrometry, February 2007 and USEPA SW-846 Method 6010C Inductively Coupled Plasma- Atomic Emission Spectrometry Revision 3 (November 2000);
- Total Hardness following SM 2340B, Hardness in Water by Calculation, Standard Methods 20th Edition (1998);
- Mercury following USEPA SW846 7470A Mercury in Liquid Wastes (Manual Cold- Vapor Technique) Revision 1 (September 1994);
- Anions (chloride, fluoride, and sulfate) following USEPA SW846 9056A Determination of Inorganic Anions by Ion Chromatography Revision 1 (February 2007);
- Total Dissolved Solids (TDS) following SM 2540C Total Dissolved Solids Dried at 180 °C, Standard Methods 20th Edition (1998);
- pH by SM 4500-H+B pH in Water by Potentiometry; and,
- Radium-226 and Radium-228 following USEPA SW846 Method 903.1 Radium-226 in Drinking Water Radon Emanation Technique (January 1980) and USEPA SW846 Method 904.0 Radium-228 in Drinking Water (January 1980), respectively.

A total of 32 groundwater samples, as well as 8 field blanks, 8 field duplicates, and 16 matrix spikes/matrix spike duplicates (MS/MSDs) were collected and analyzed during the eight sampling events.

The data quality assessment of inorganic results was performed in accordance with the Quality Assurance Project Plan (QAPP) and EPA Contract Laboratory Program (CLP) National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017) (Inorganic Guidelines) and the Evaluation of Radiochemistry Data Usability- Department of Energy (DOE, 1997) (Guidelines), where applicable to the methods listed above. If there was a conflict between the Guidelines and the analytical methodology, method specific criteria and professional judgment were used.

In general, chemical results for the samples collected at the Site were qualified based on outlying accuracy, precision, and analytical holding time exceedances. The following definitions provide brief explanations of the qualifiers which may have been assigned to data during the data validation process.

J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample and may be considered biased high.

J-	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample and may be considered biased low.
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.

In general, the data generated as part of the groundwater sampling event met the QC criteria established in the respective methods and the Inorganic Guidelines. Table 2 summarizes all qualifications applied to the data, with applicable qualifier codes. Certain samples may have been qualified for multiple data quality assessment (DQA) findings, as shown in Table 2. The following bulleted items highlight qualifications to specific parameters and/or samples:

- Laboratory analyzed pH samples were analyzed outside of method holding time. All laboratory measured pH values were qualified as estimated (J). Field measured pH values were used in all data evaluations.
- The chromium results for PC-MW-110-062022, PC-MW-113-06022, and PC-MW-114-062022 were qualified as non-detect (U) at the reporting limit due to field blank contamination.
- The thallium result for PC-MW-115-062022 was qualified as non-detect (U) at the reporting limit due to method blank contamination.
- The lead results for PC-MW-113-120522 and FD-01-120522 were qualified as non-detect (U) at the reporting limit due to field blank contamination.
- The lead results for PC-MW-113-120522 and FD-01-120522 were qualified as non-detect (U) at the reporting limit due to method blank contamination.
- The radium-228 and associated combined radium result for PC-MW-110-043021 were rejected (R) due to method blank contamination.
- The radium-226 and associated combined radium results for PC-MW-110-091422, PC-MW-113-091422, PC-MW-114-091422, PC-MW-115-091422, and FD-091422 were qualified as estimated (J/UJ) due to the matrix spike duplicate percent recovery below quality control criteria and the matrix spike/matrix spike duplicate relative percent difference above quality control criteria.
- The radium-228 and associated combined radium results for PC-MW-110-120522 and the radium-228 result for FD-01-120522 were qualified as estimated biased low (J-) and the radium-228 and associated combined radium results for PC-MW-113-120522, PC-MW-114-120522 and PC-115-120522 and the combined radium result for FD-01-120522 were qualified as estimated (UJ) due to the matrix spike duplicate percent recovery below quality control criteria.

Dilutions do not require qualifications based on the Guidelines. Detection and reporting limits of non-detect compounds are elevated proportional to the dilution when undiluted sample results are not provided by the laboratory. The data usability of diluted results was evaluated by the data user in the context of statewide characterization.

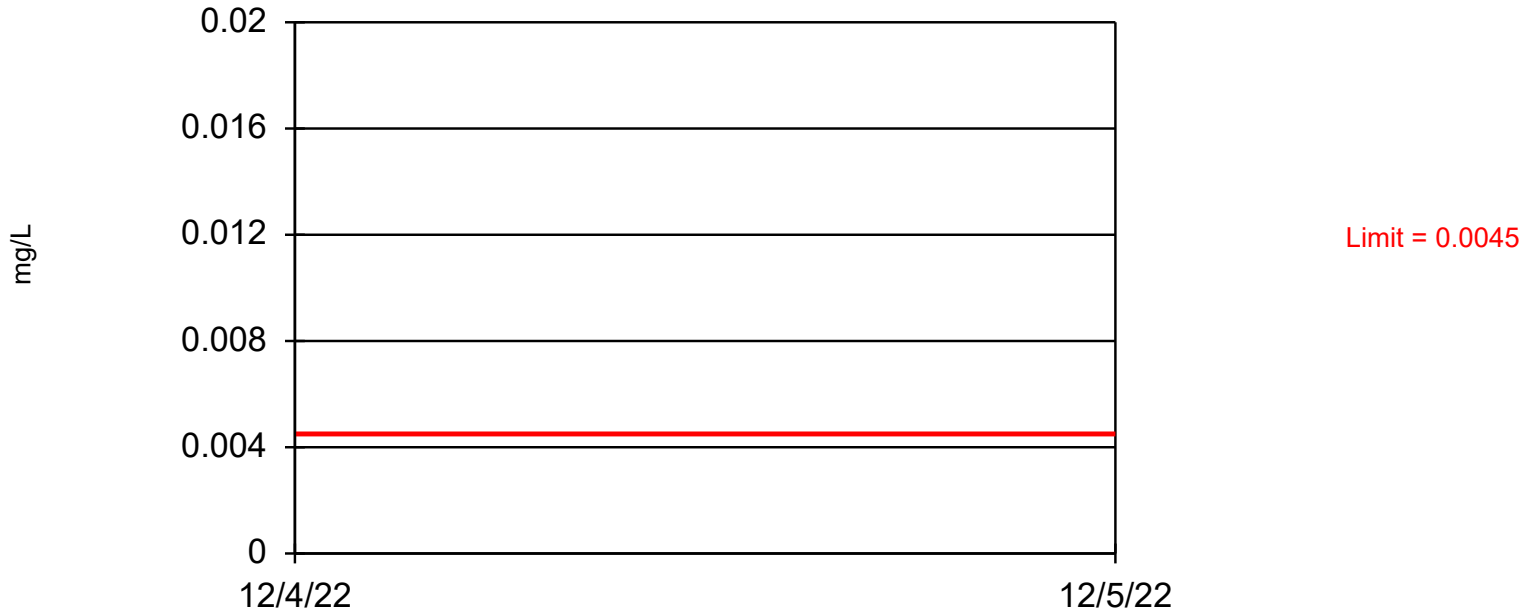
Based on the data validations and data quality assessment 99.8% of the analytical data for samples collected at the site were determined to be acceptable (including estimated data) for their intended use.

APPENDIX F

2022-2023 Statistics

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 46.88% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Antimony Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric

Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 12.5% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Arsenic Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric

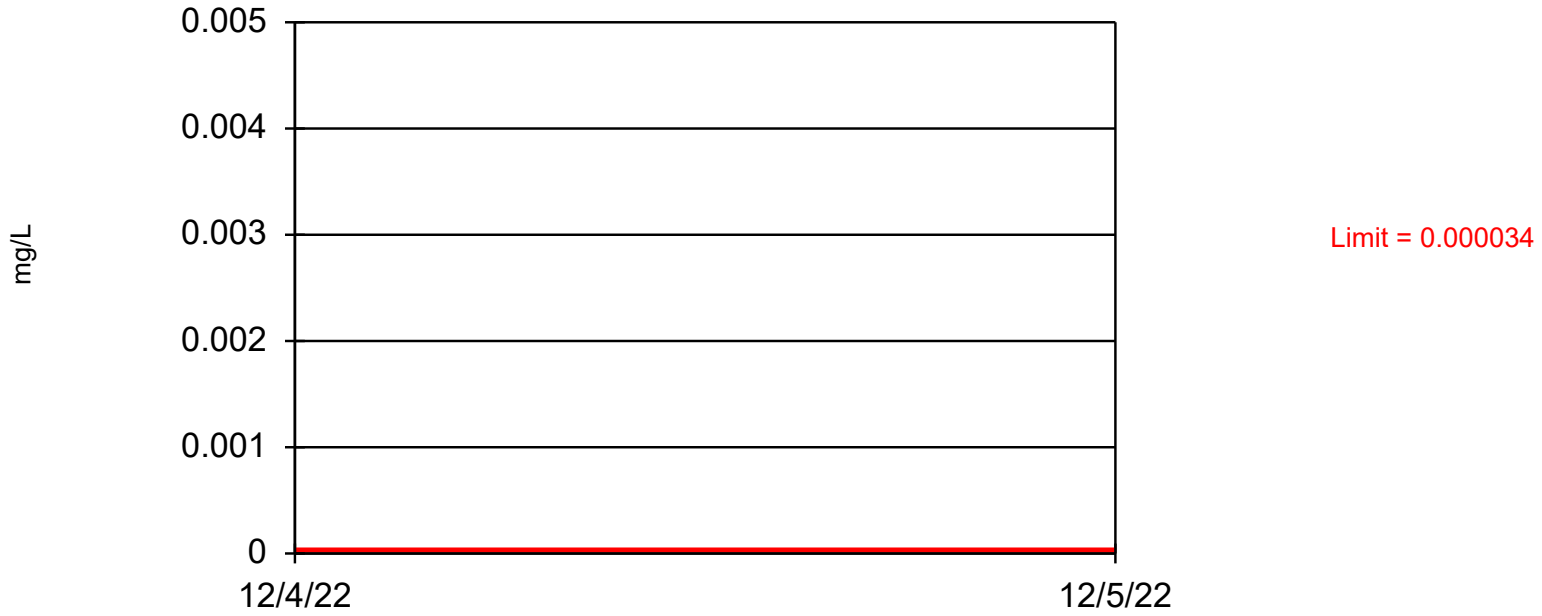
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Barium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



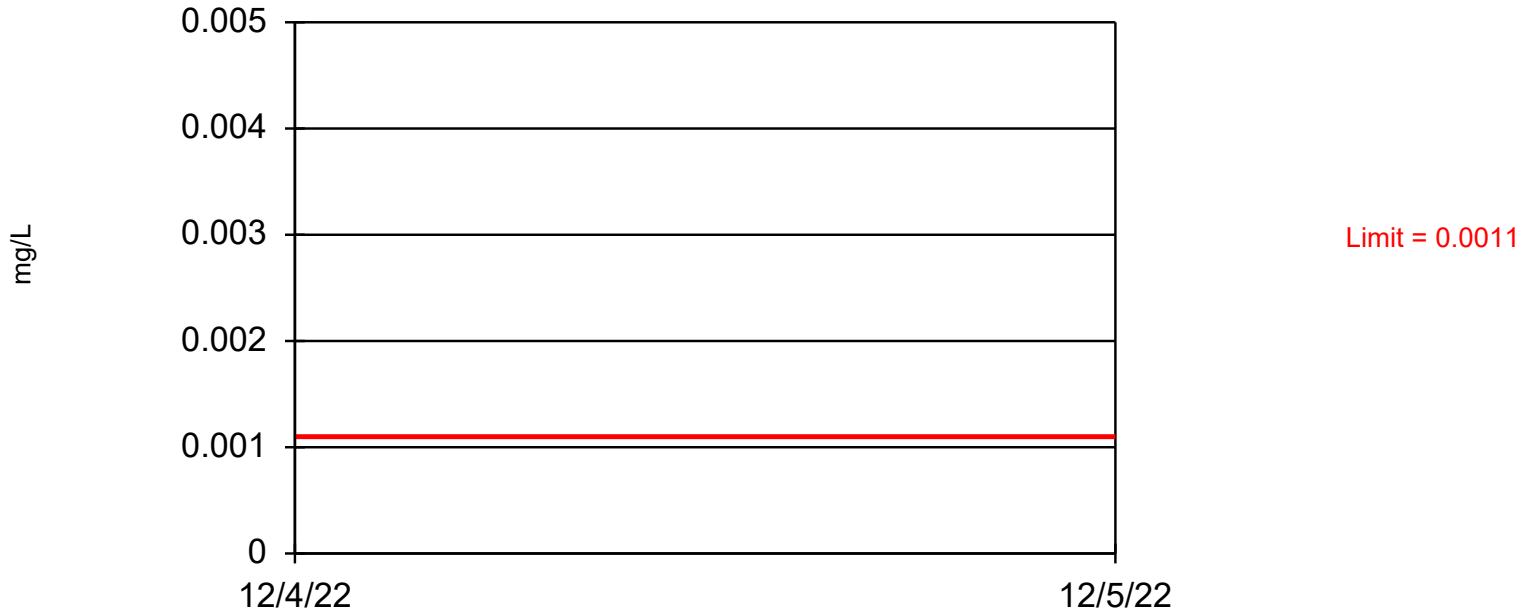
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 32 background values. 93.75% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Beryllium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



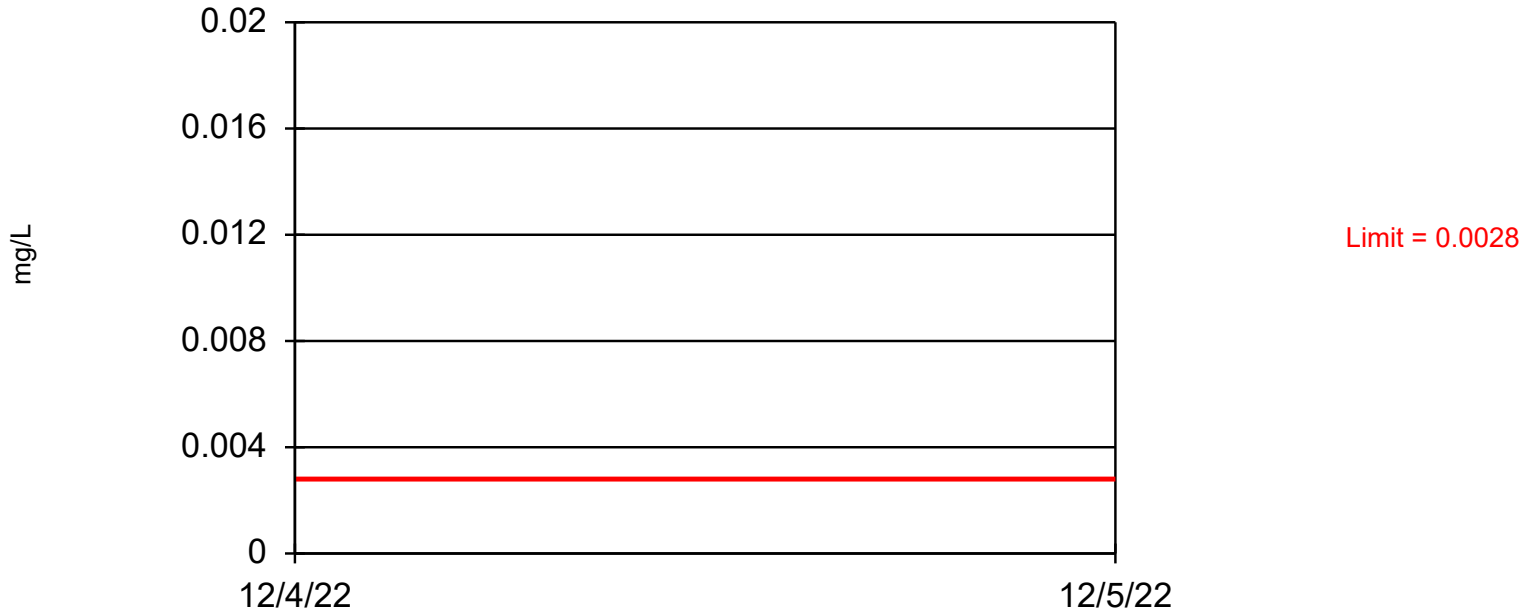
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 65.63% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Cadmium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 56.25% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Chromium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric

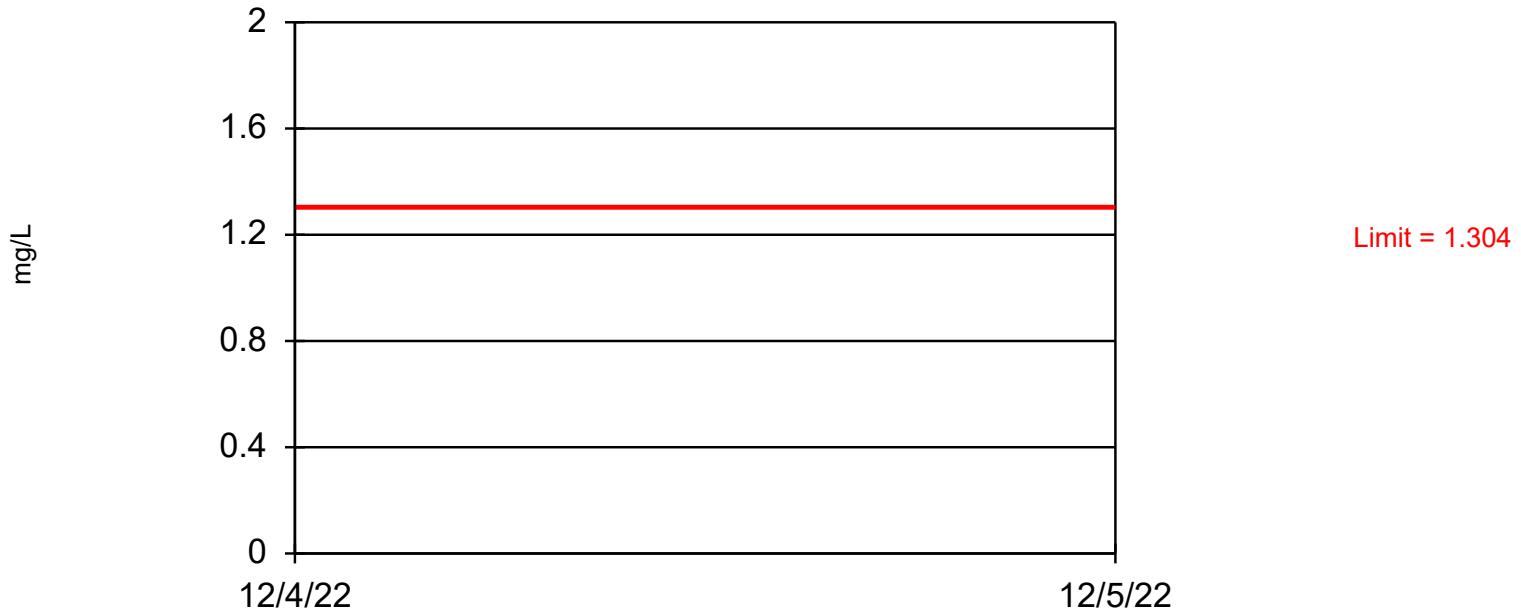
Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 31.25% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Cobalt Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Parametric



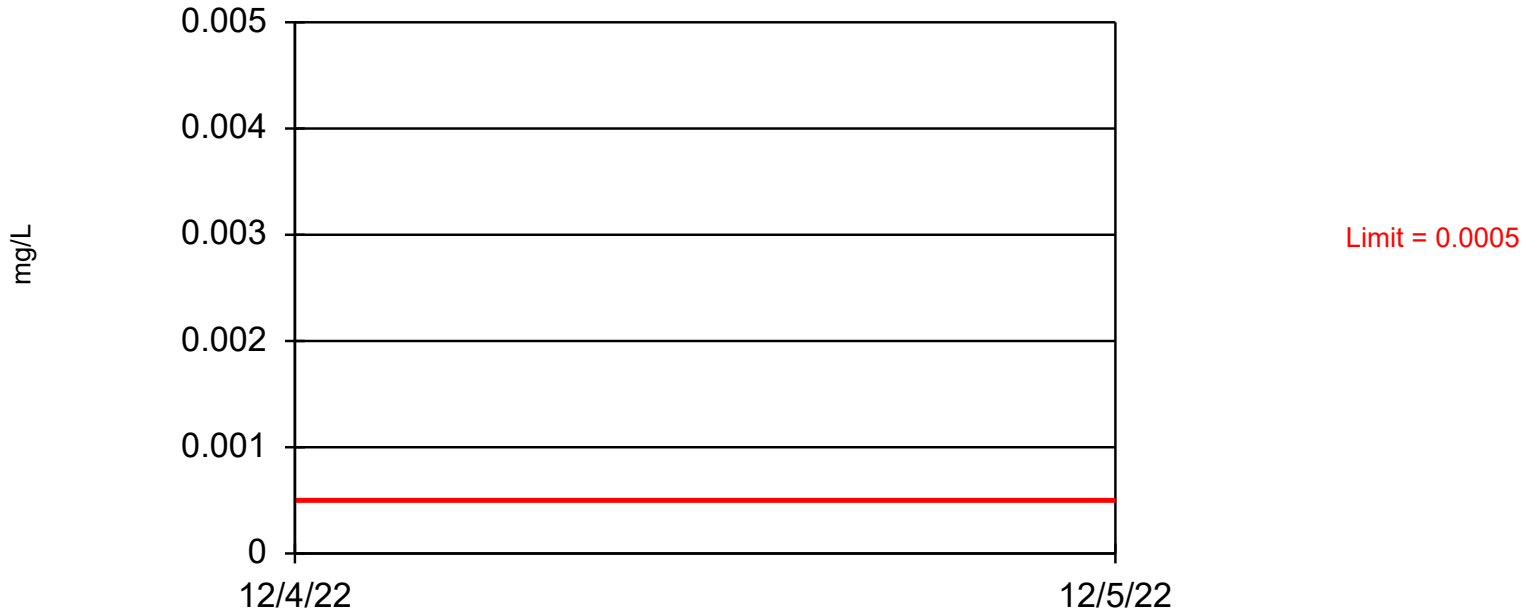
95% coverage. Background Data Summary: Mean=0.6588, Std. Dev.=0.2934, n=32. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9388, critical = 0.904. Report alpha = 0.05.

Constituent: Fluoride Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



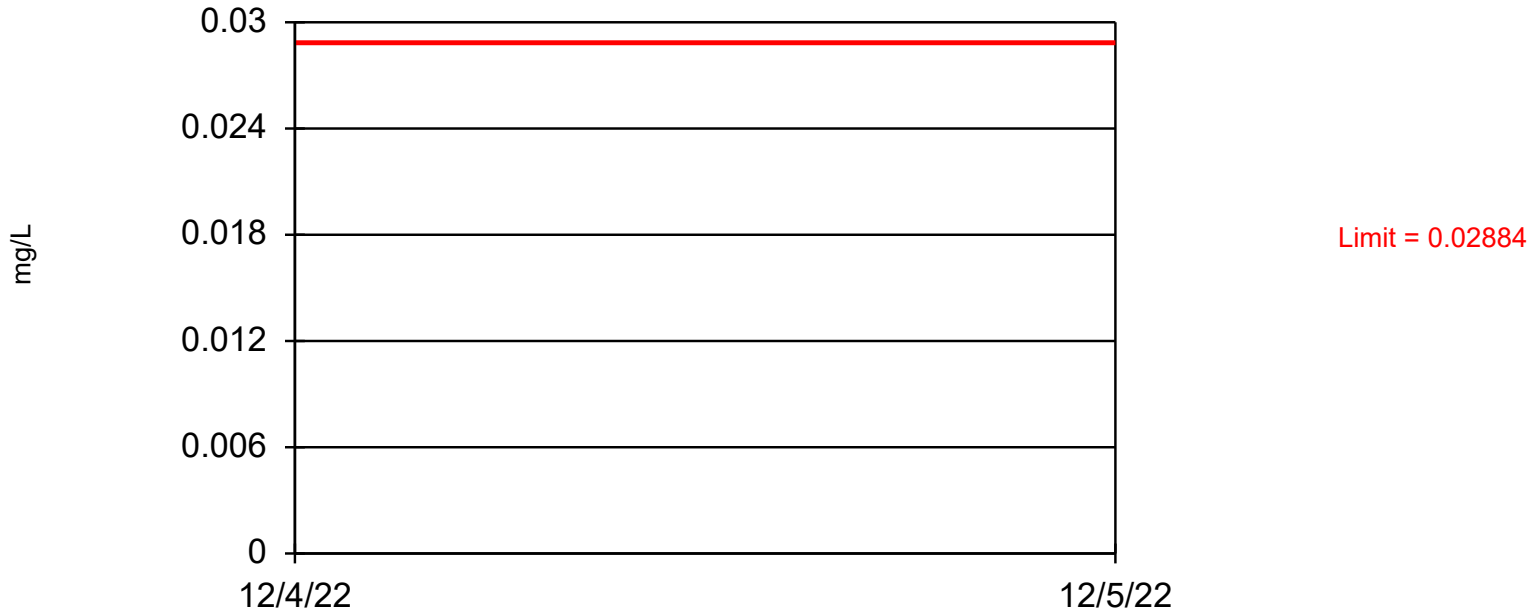
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 32 background values. 87.5% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Lead Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Parametric



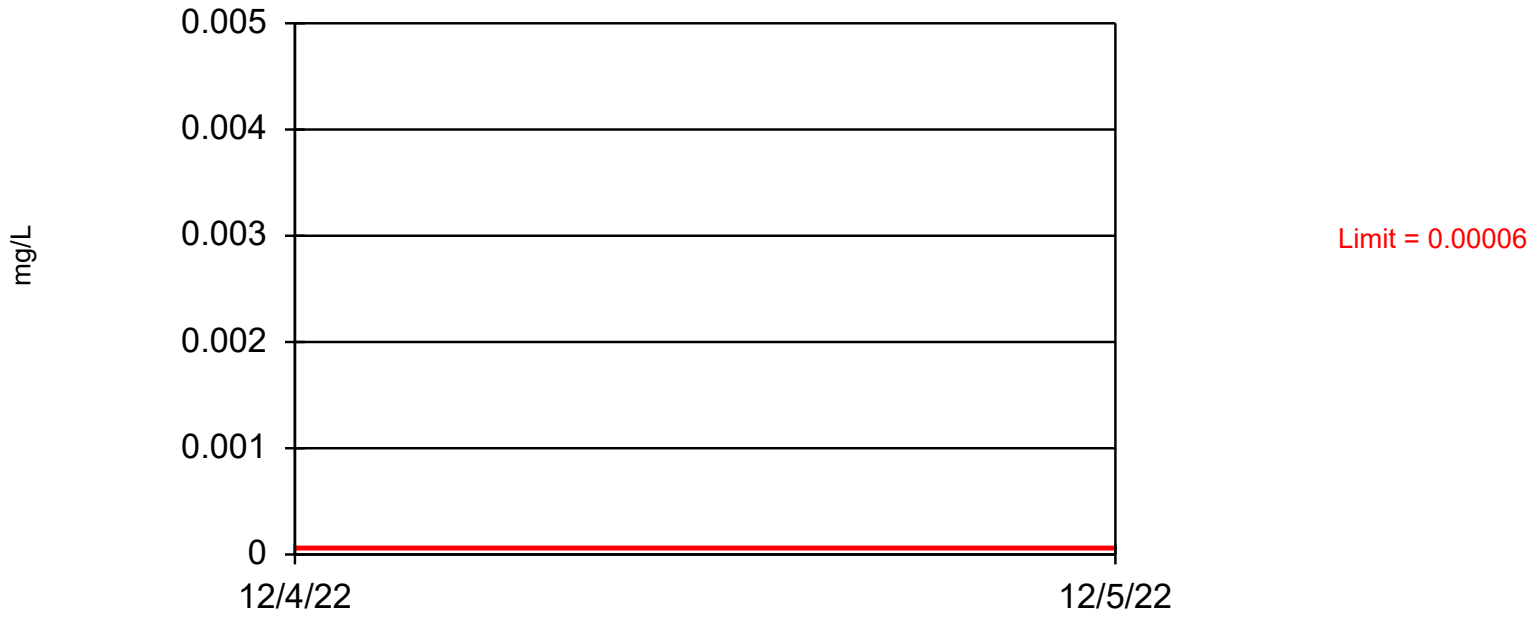
95% coverage. Background Data Summary: Mean=0.01432, Std. Dev.=0.006576, n=31, 9.677% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9593, critical = 0.902. Report alpha = 0.05.

Constituent: Lithium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



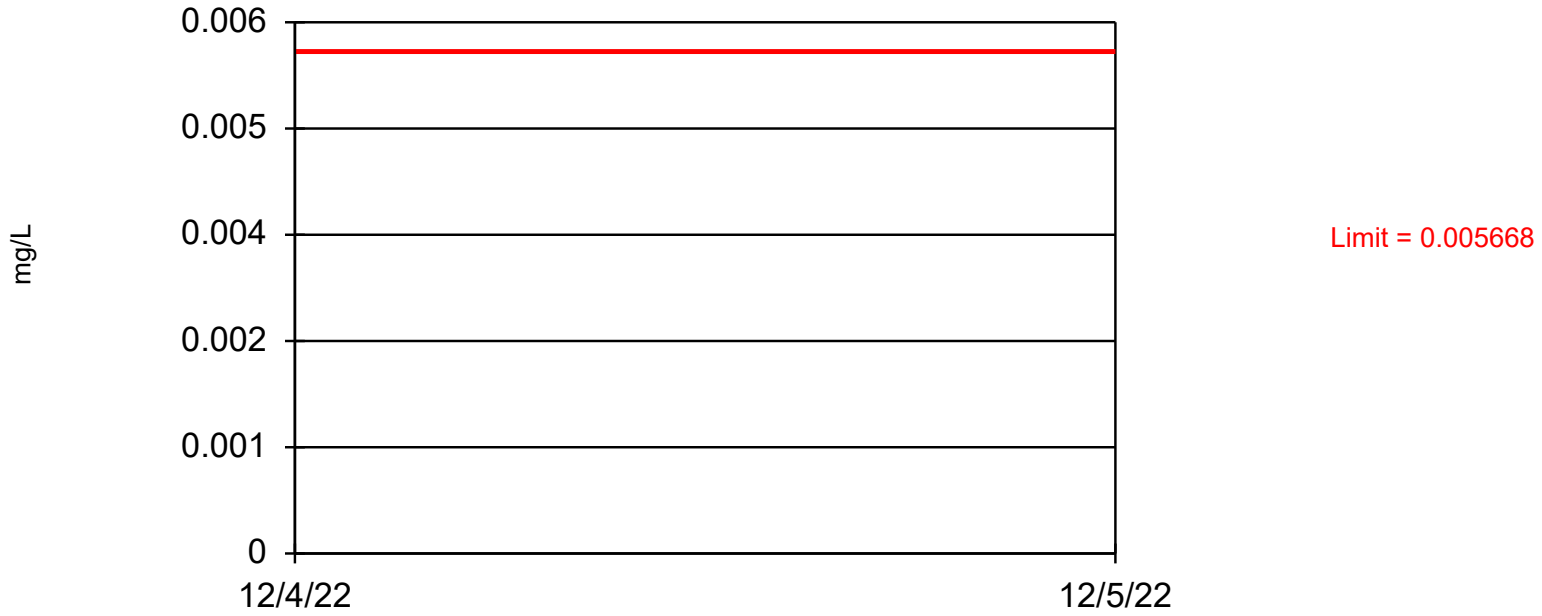
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. All background values were censored; limit is most recent reporting limit. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Mercury Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Parametric



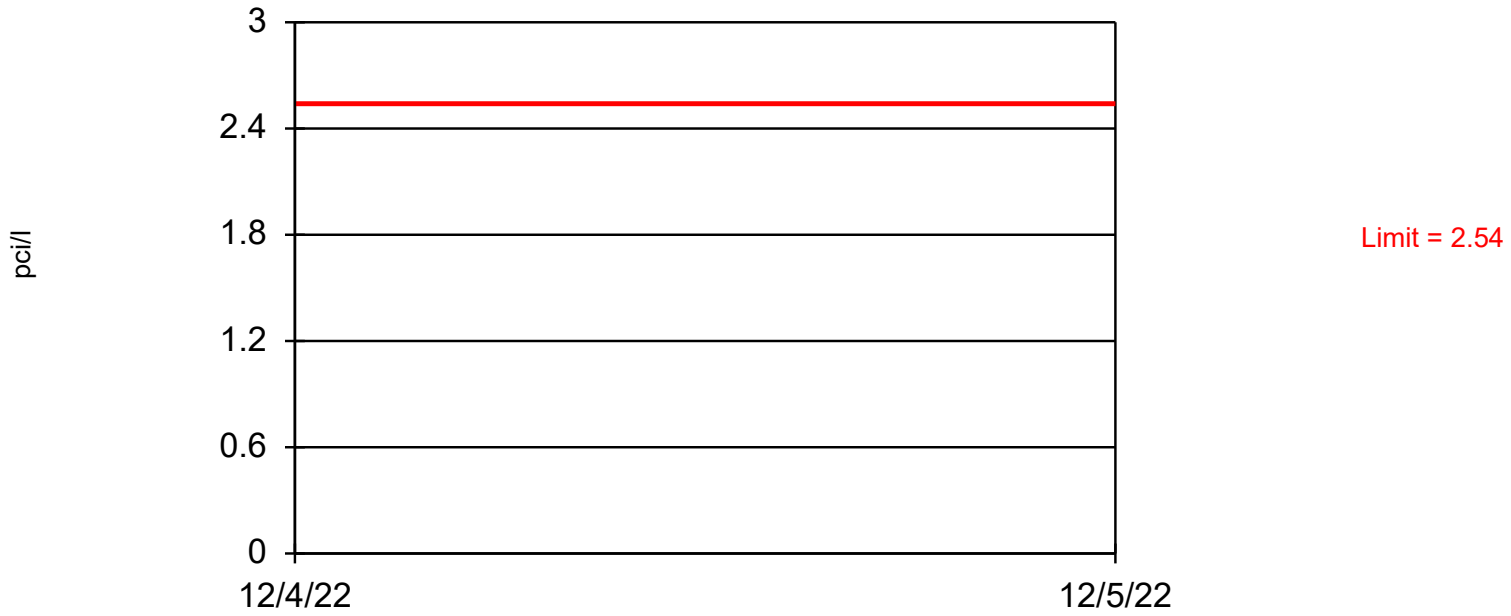
95% coverage. Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.002111, Std. Dev.=0.001618, n=32, 15.63% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9193, critical = 0.904. Report alpha = 0.05.

Constituent: Molybdenum Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



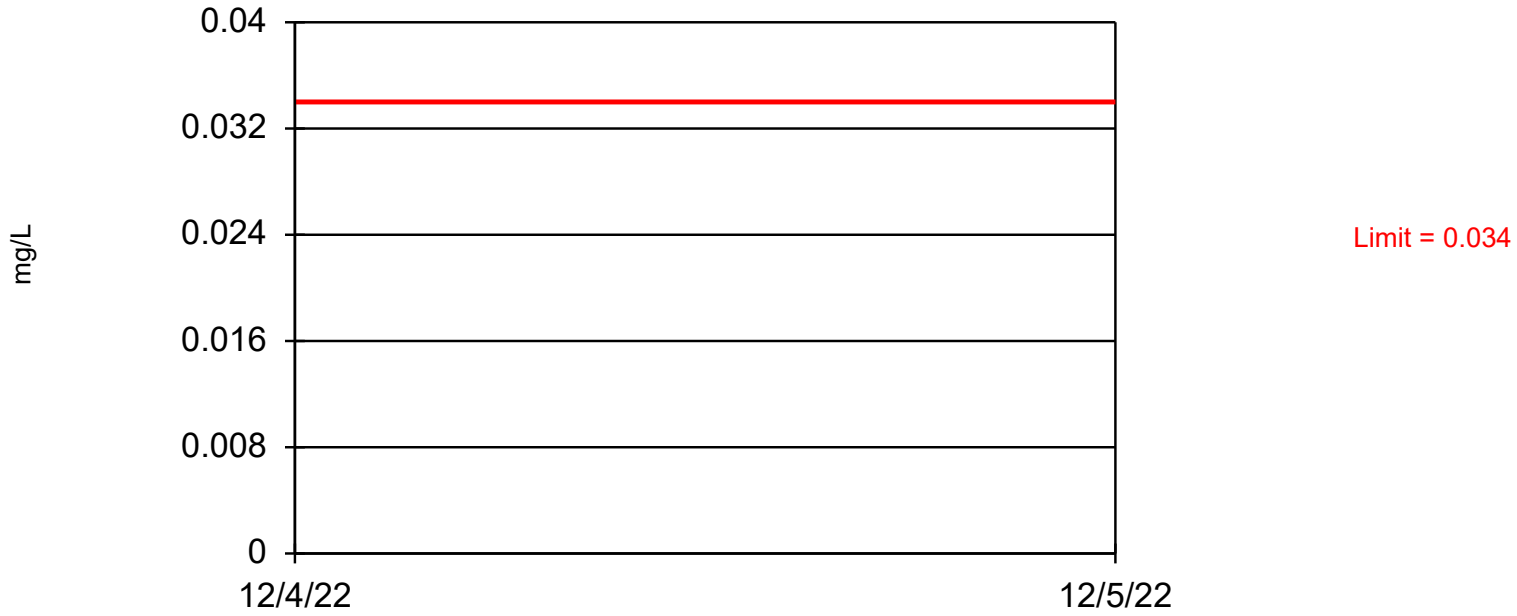
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 31 background values. 77.42% NDs. 86.13% coverage at alpha=0.01; 90.82% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.2039.

Constituent: Radium 226 + 228 Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric tolerance limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 32 background values. 21.88% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Selenium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Tolerance Limit

Interwell Non-parametric

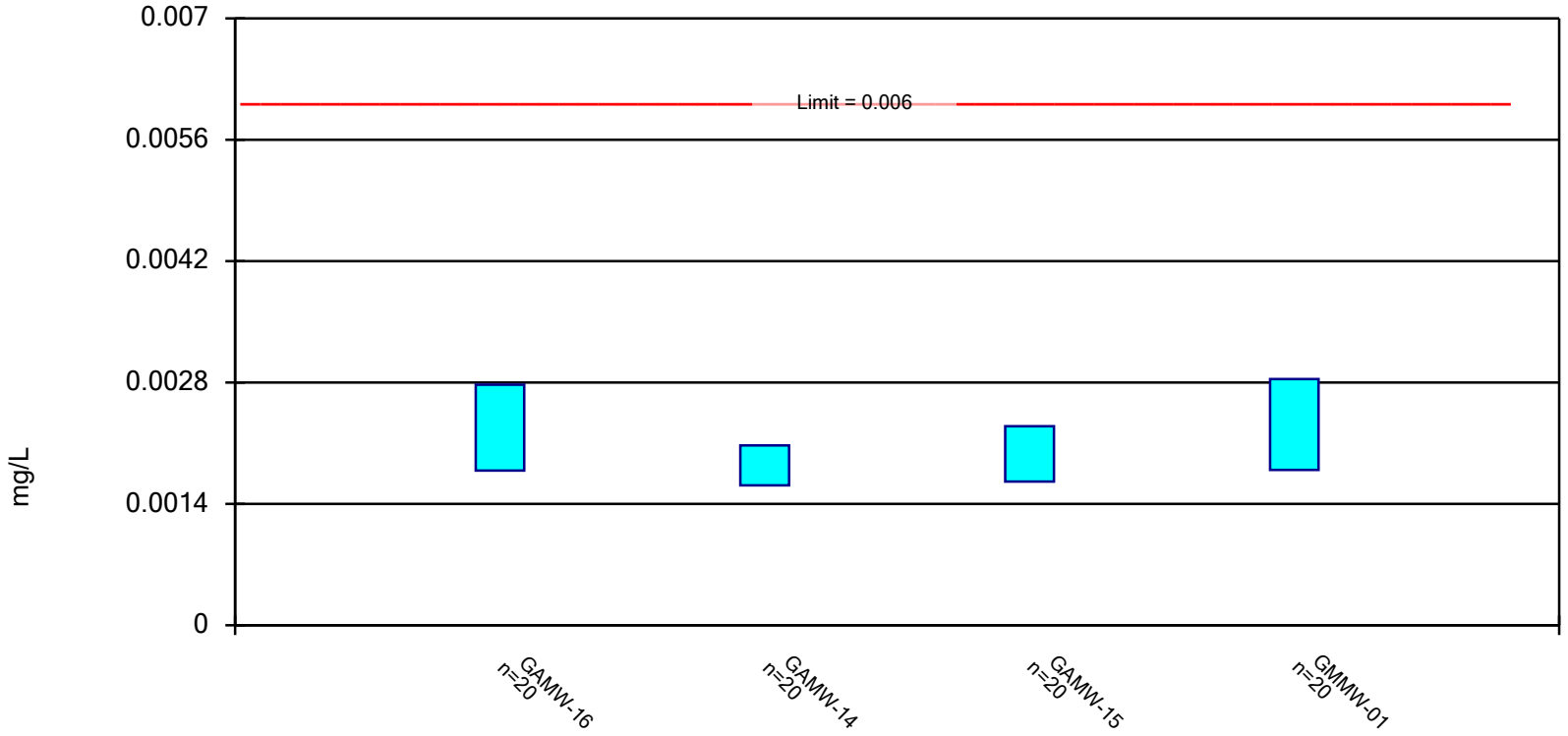
Non-parametric test used in lieu of parametric tolerance limit because censored data exceeded 75%. Limit is highest of 32 background values. 96.88% NDs. 86.52% coverage at alpha=0.01; 91.21% coverage at alpha=0.05; 97.85% coverage at alpha=0.5. Report alpha = 0.1937.

Constituent: Thallium Analysis Run 1/25/2023 1:50 PM View: Background- Post Closure

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

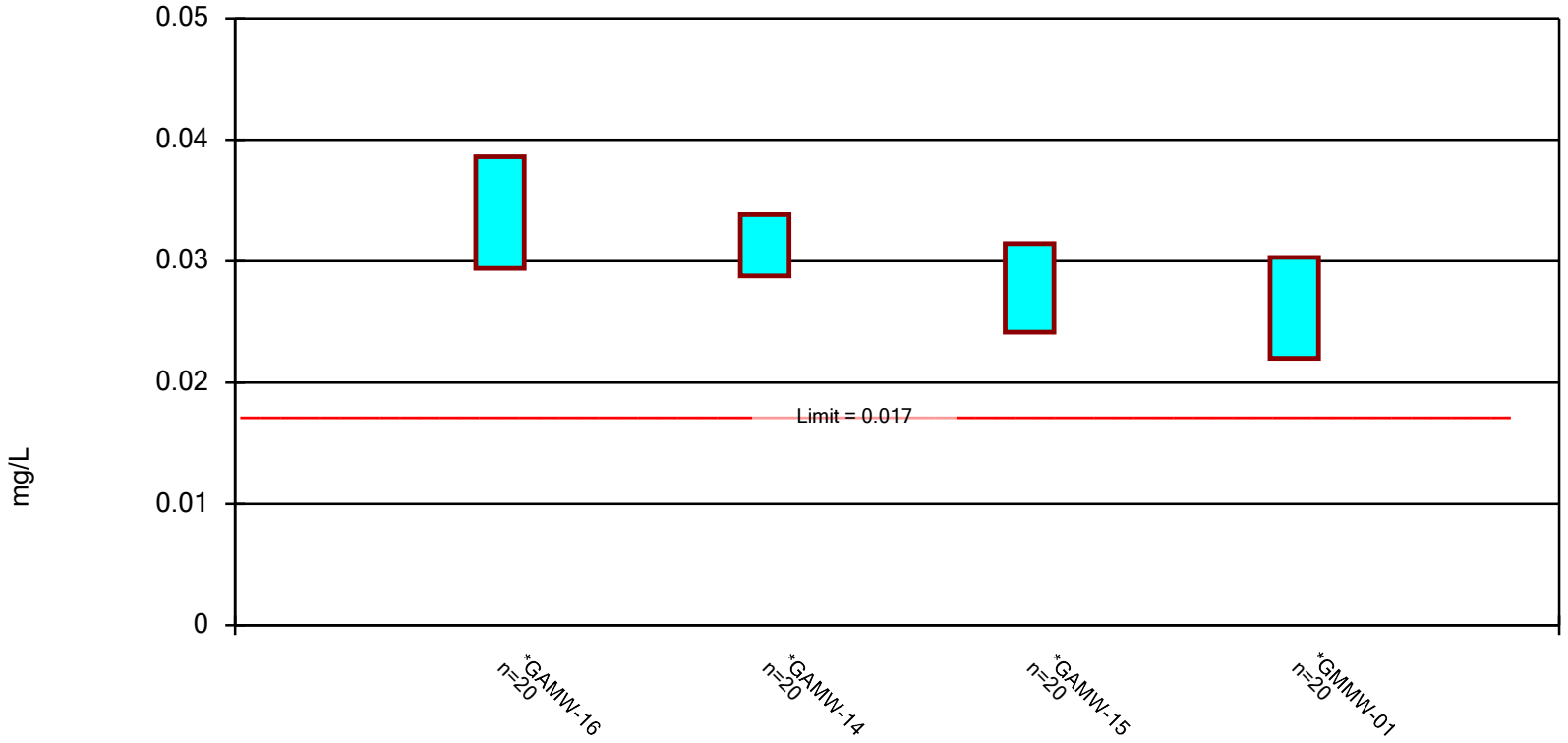


Constituent: Antimony Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

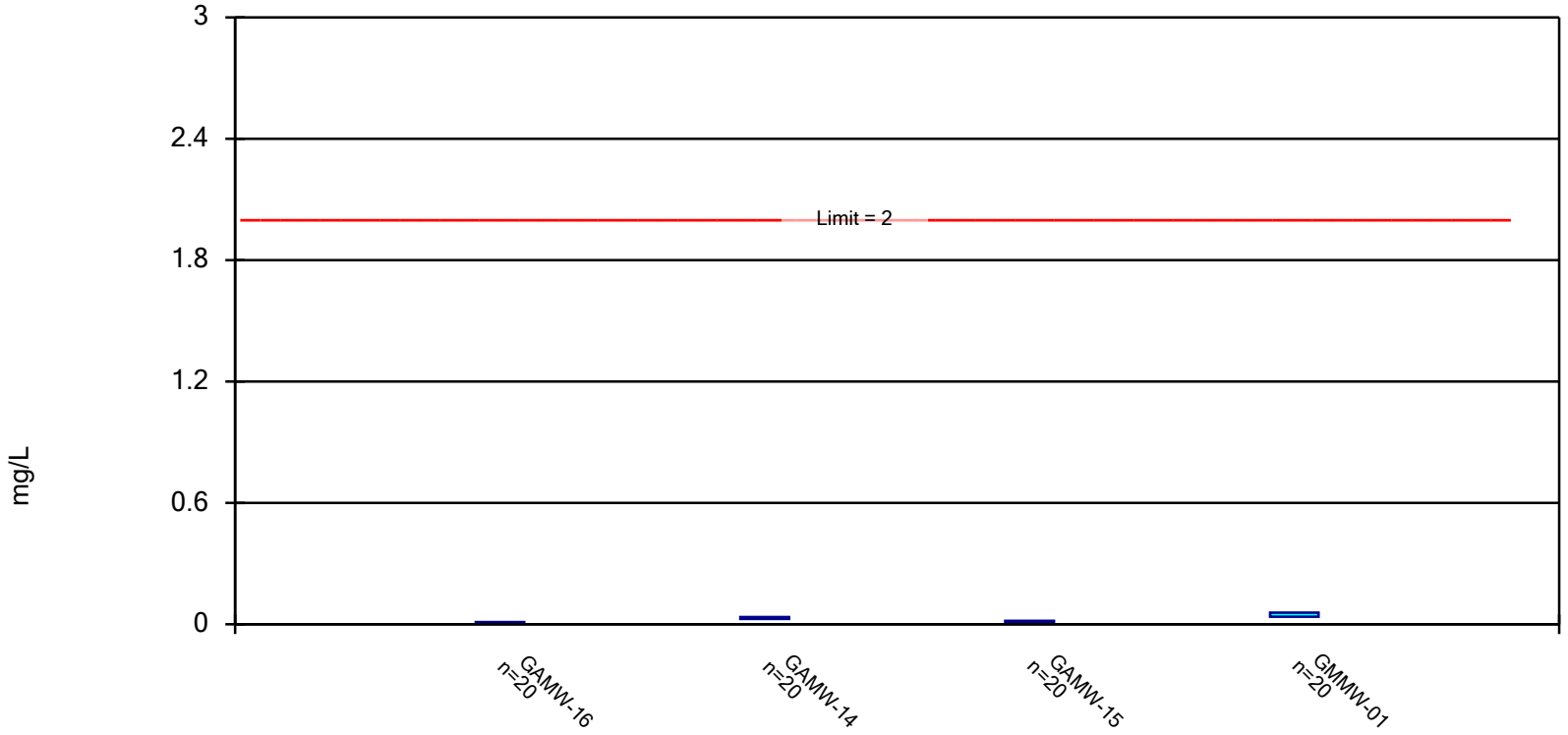


Constituent: Arsenic Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

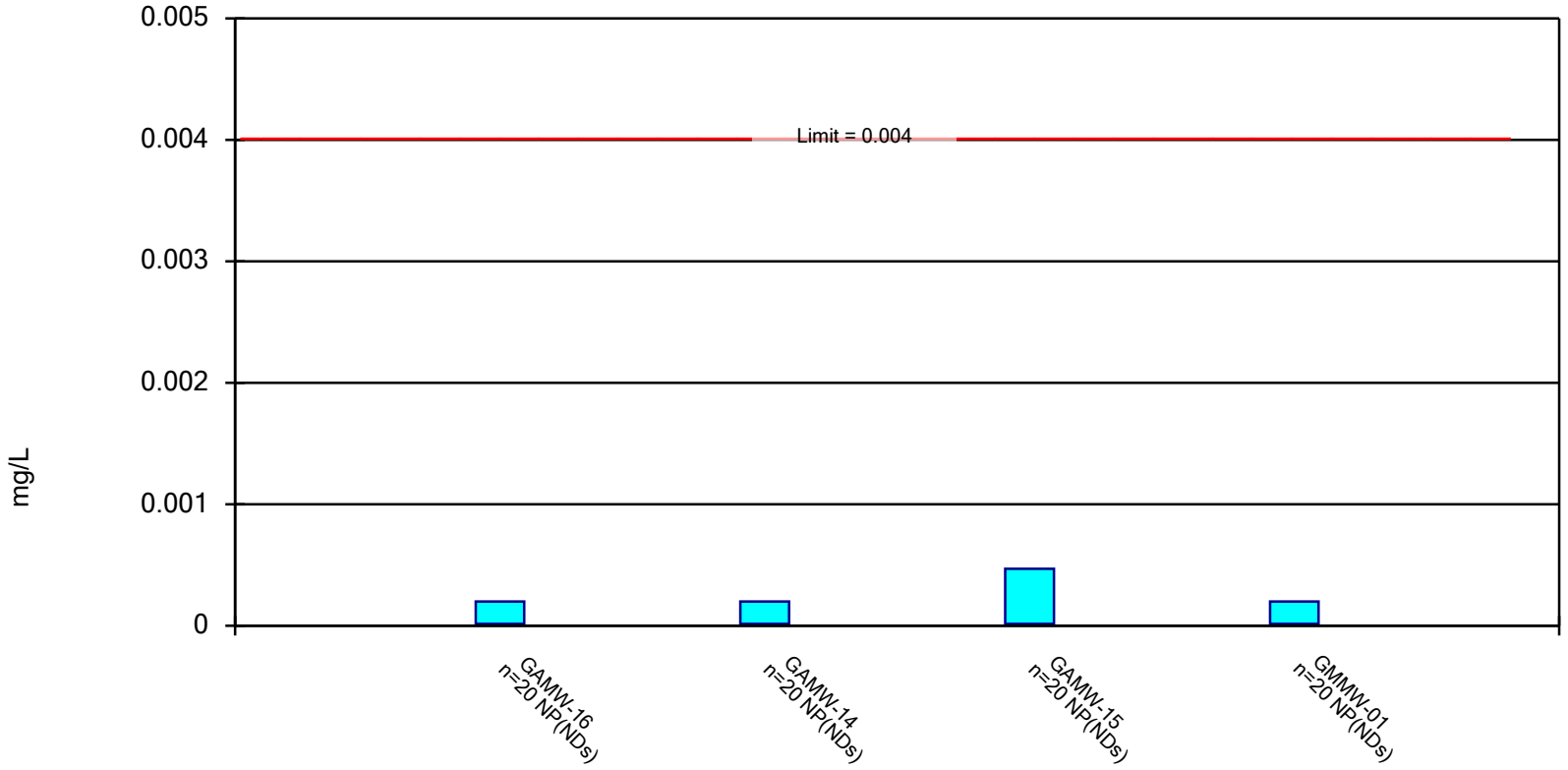


Constituent: Barium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

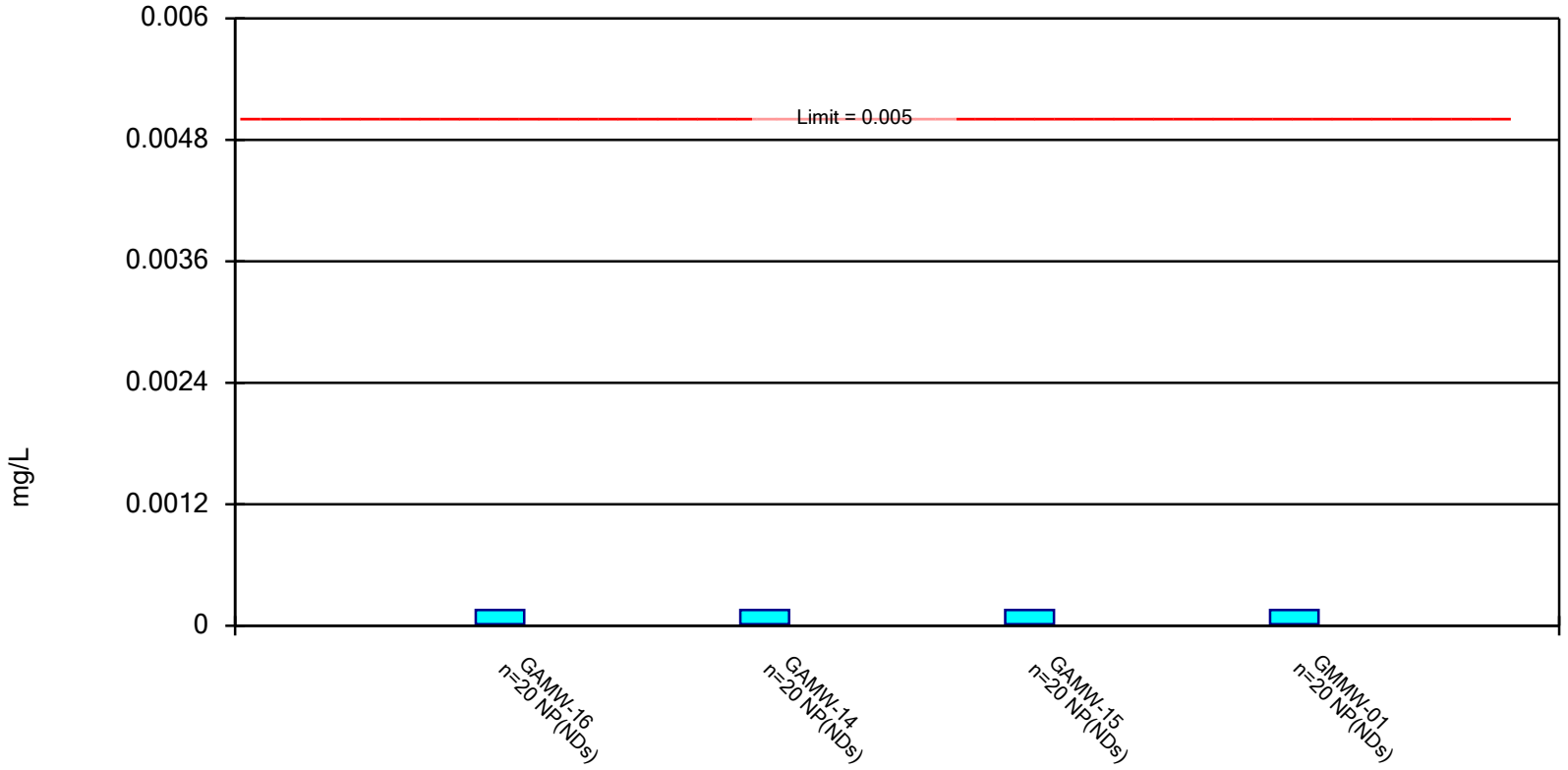


Constituent: Beryllium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

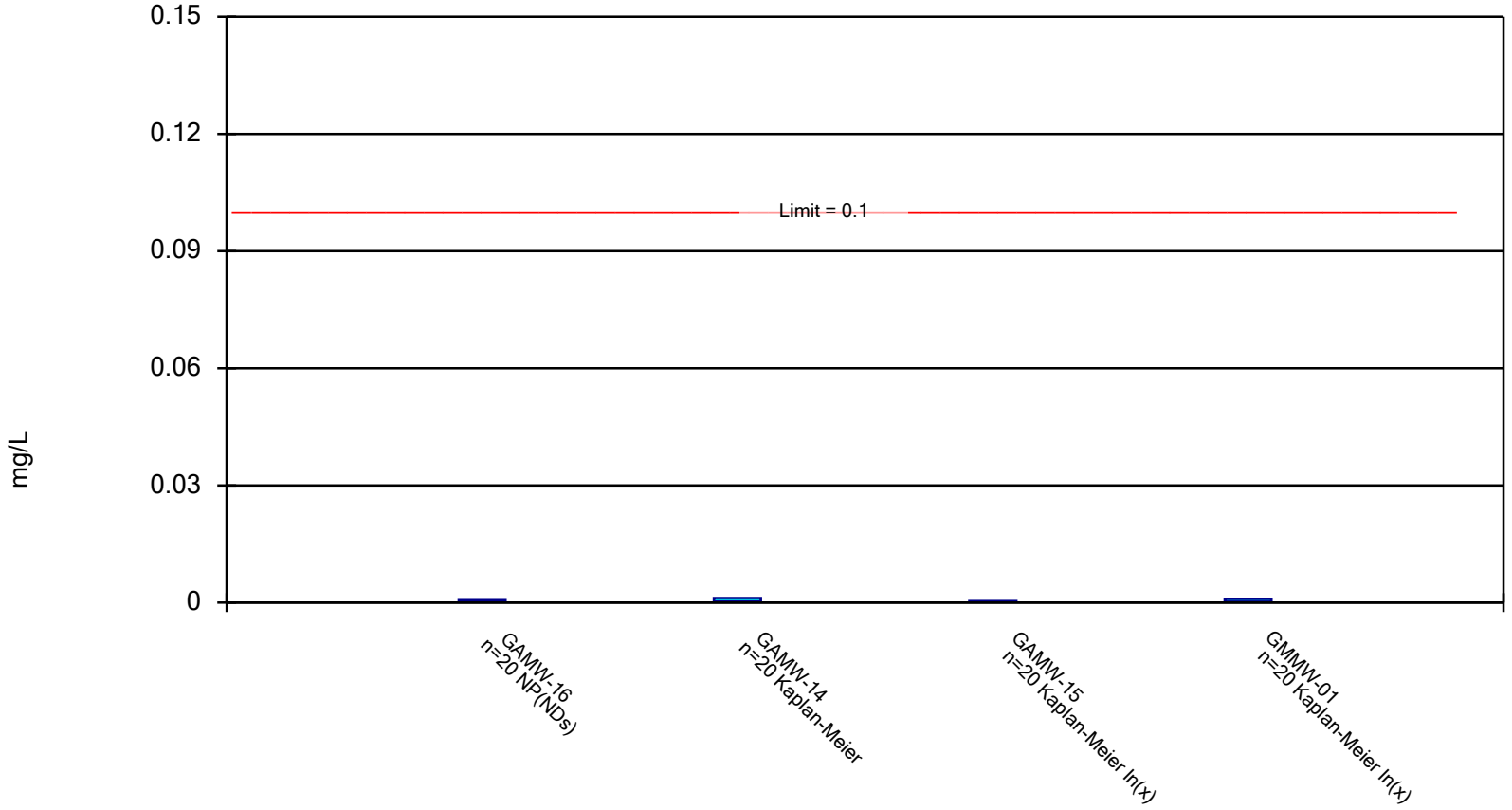


Constituent: Cadmium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

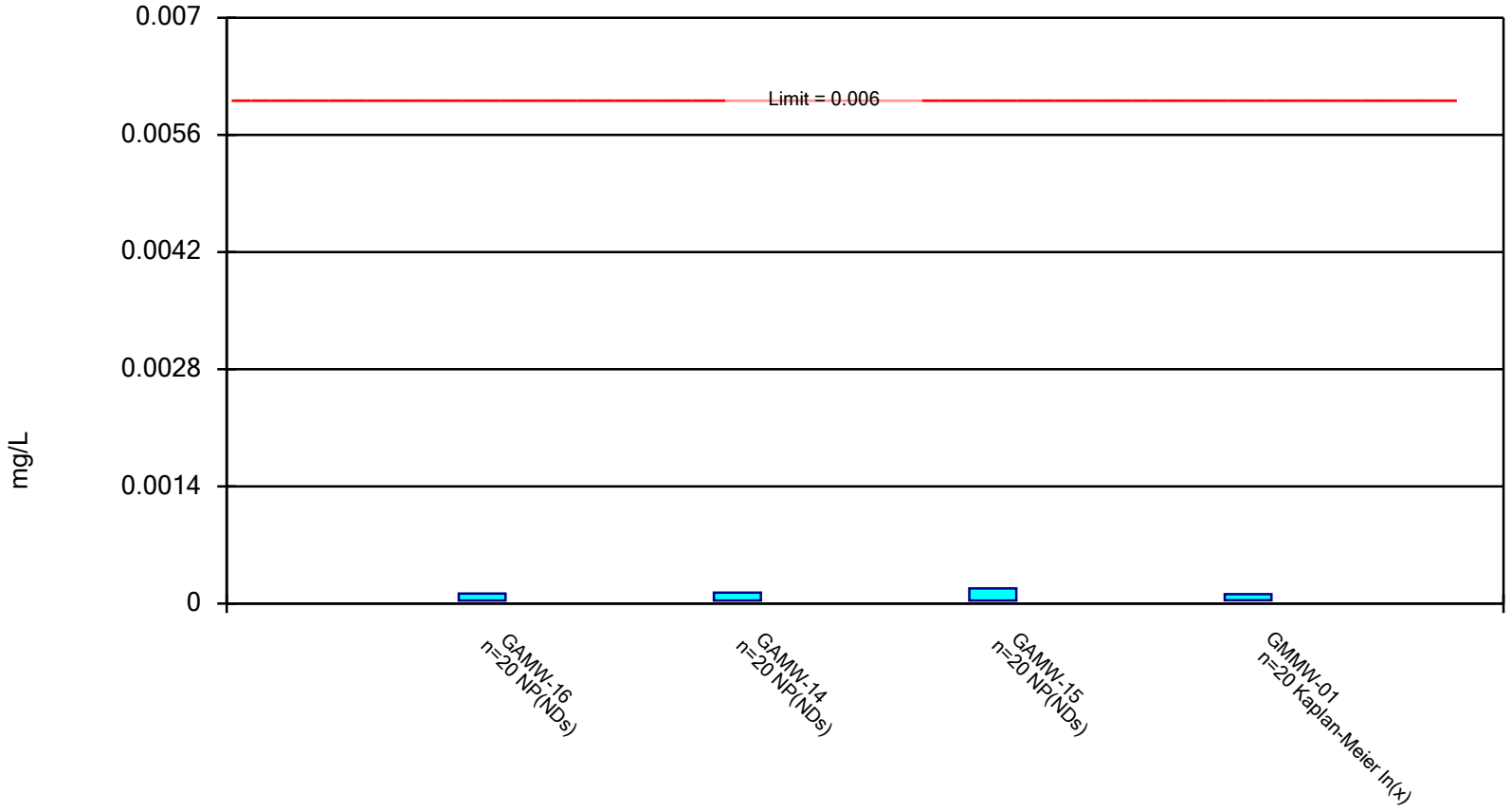


Constituent: Chromium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

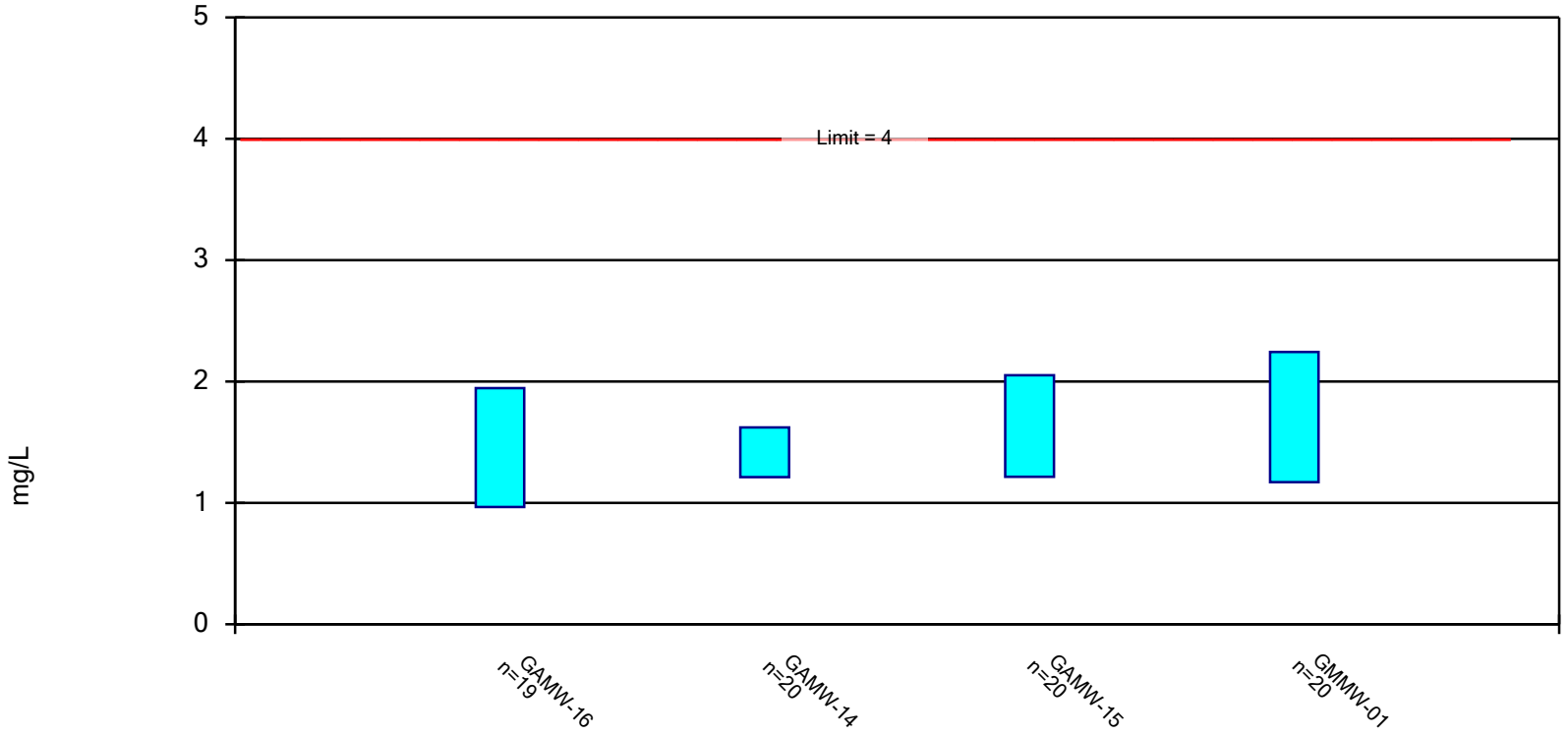


Constituent: Cobalt Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

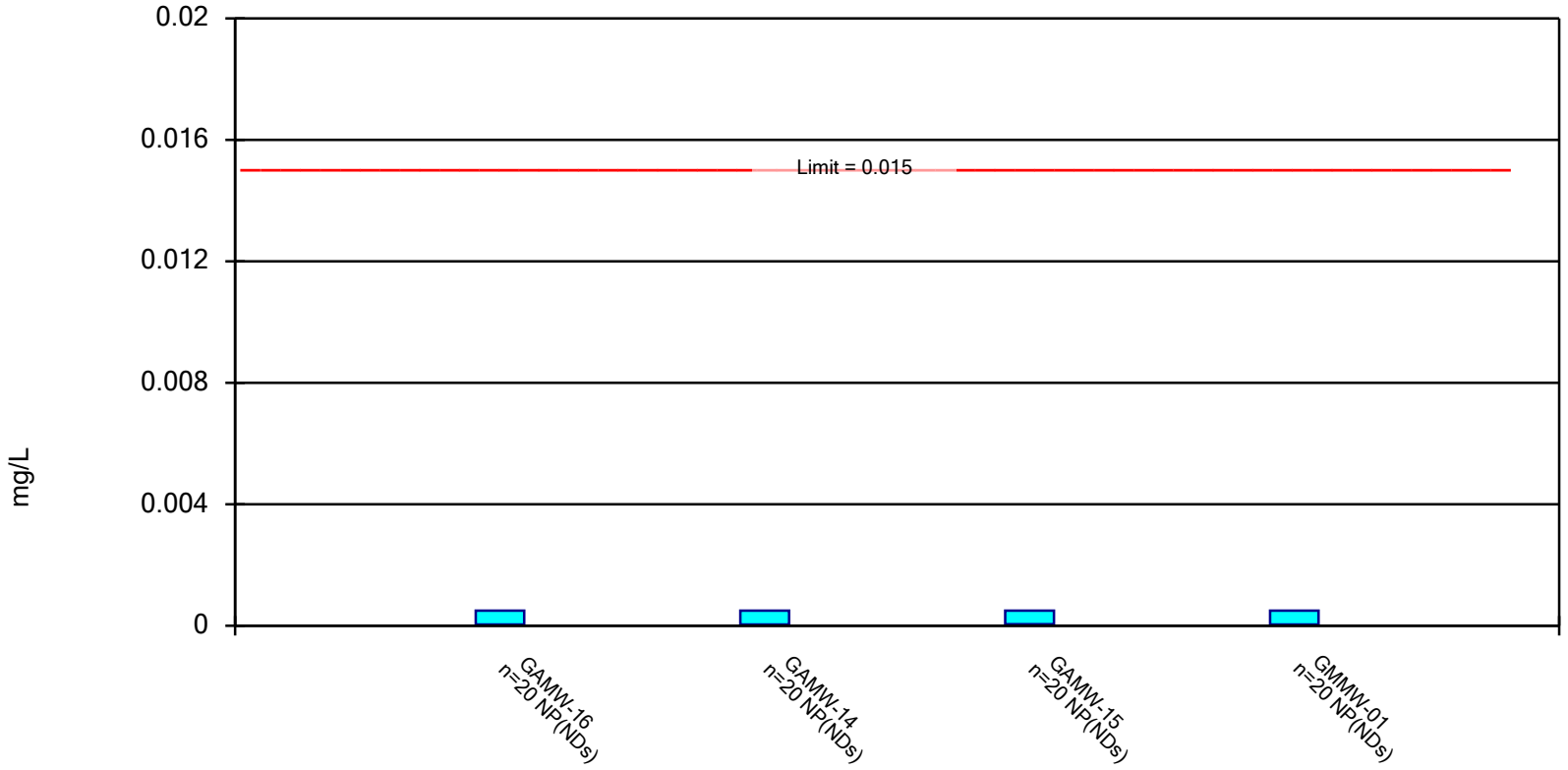


Constituent: Fluoride Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

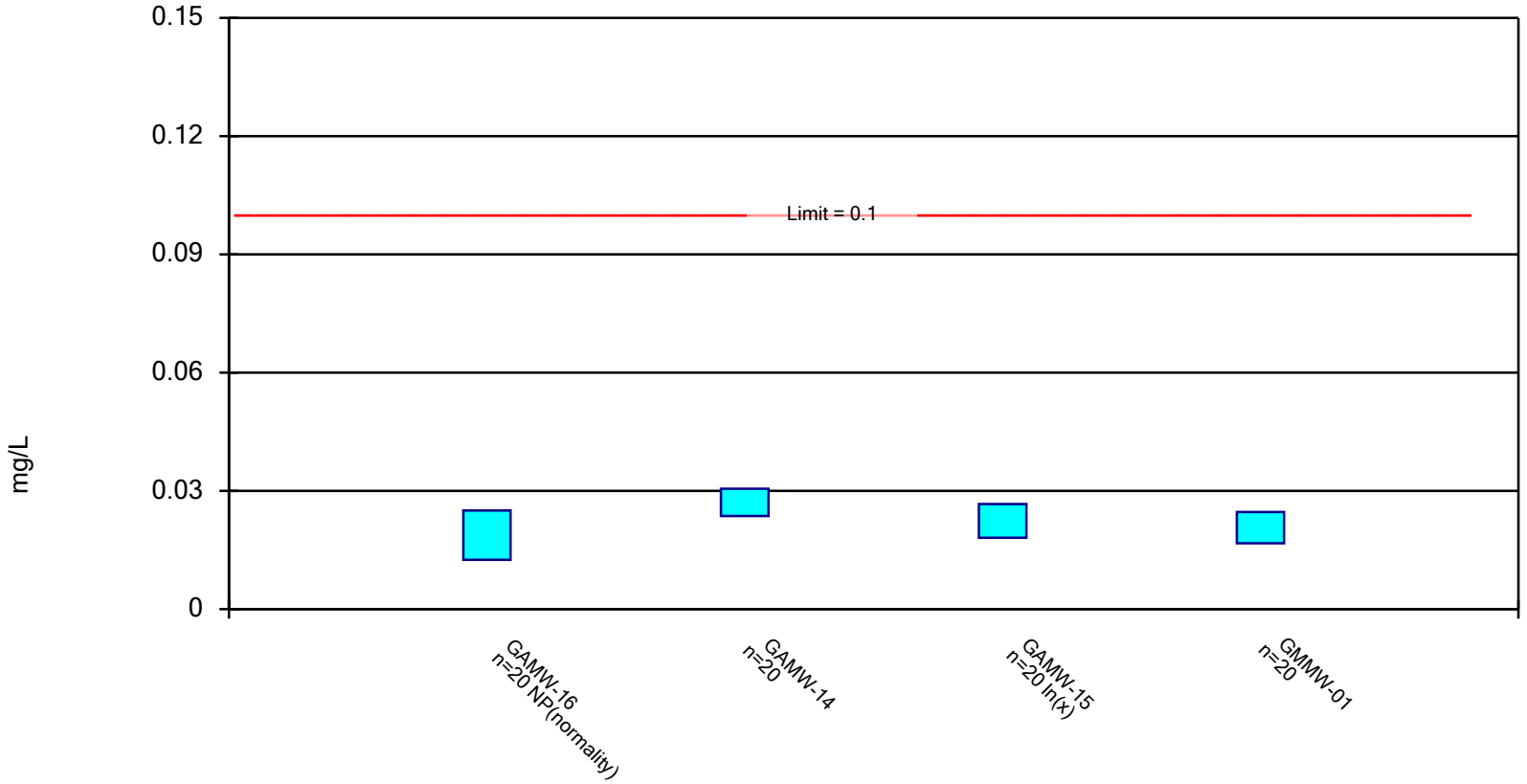


Constituent: Lead Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

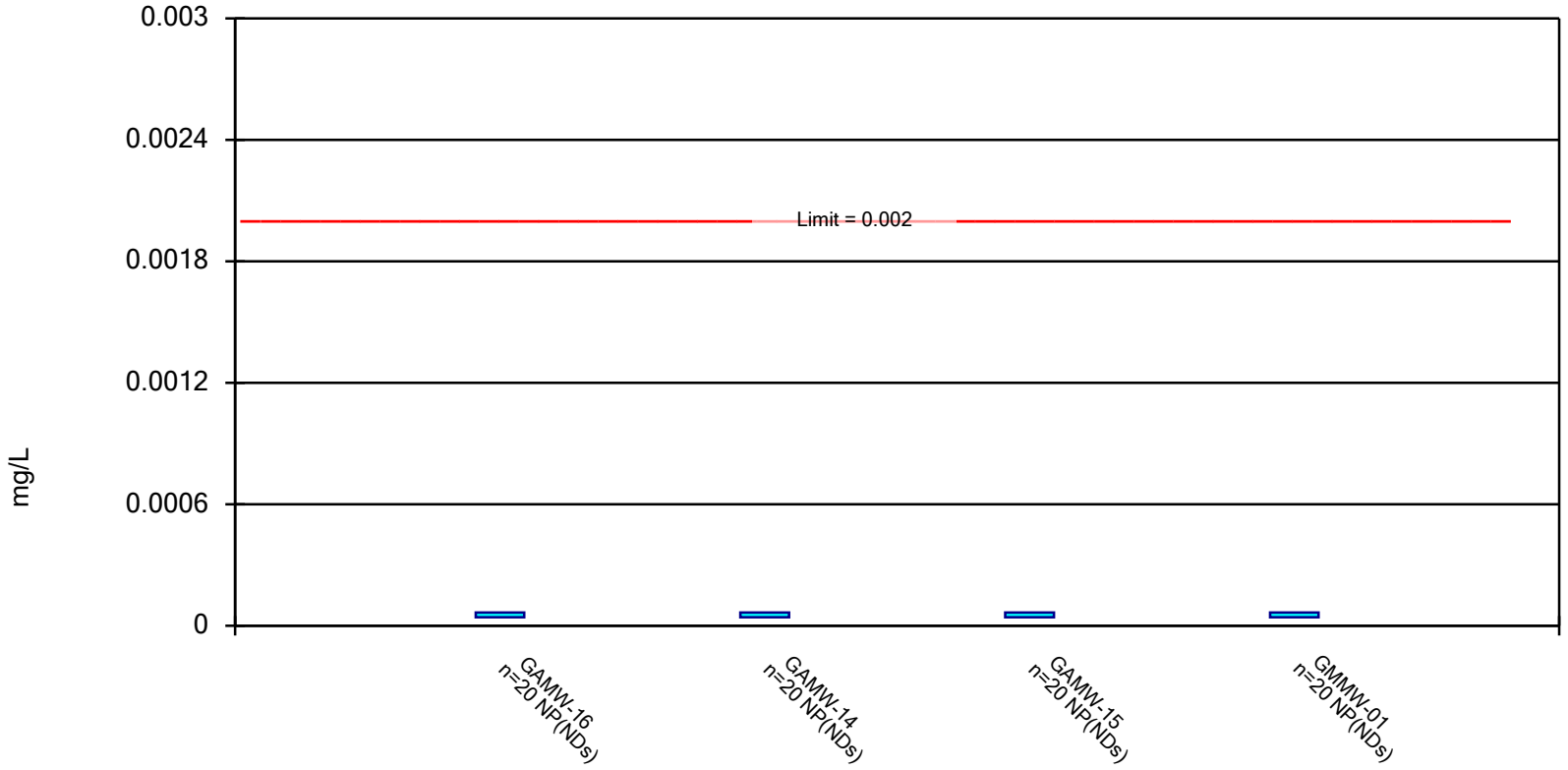


Constituent: Lithium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

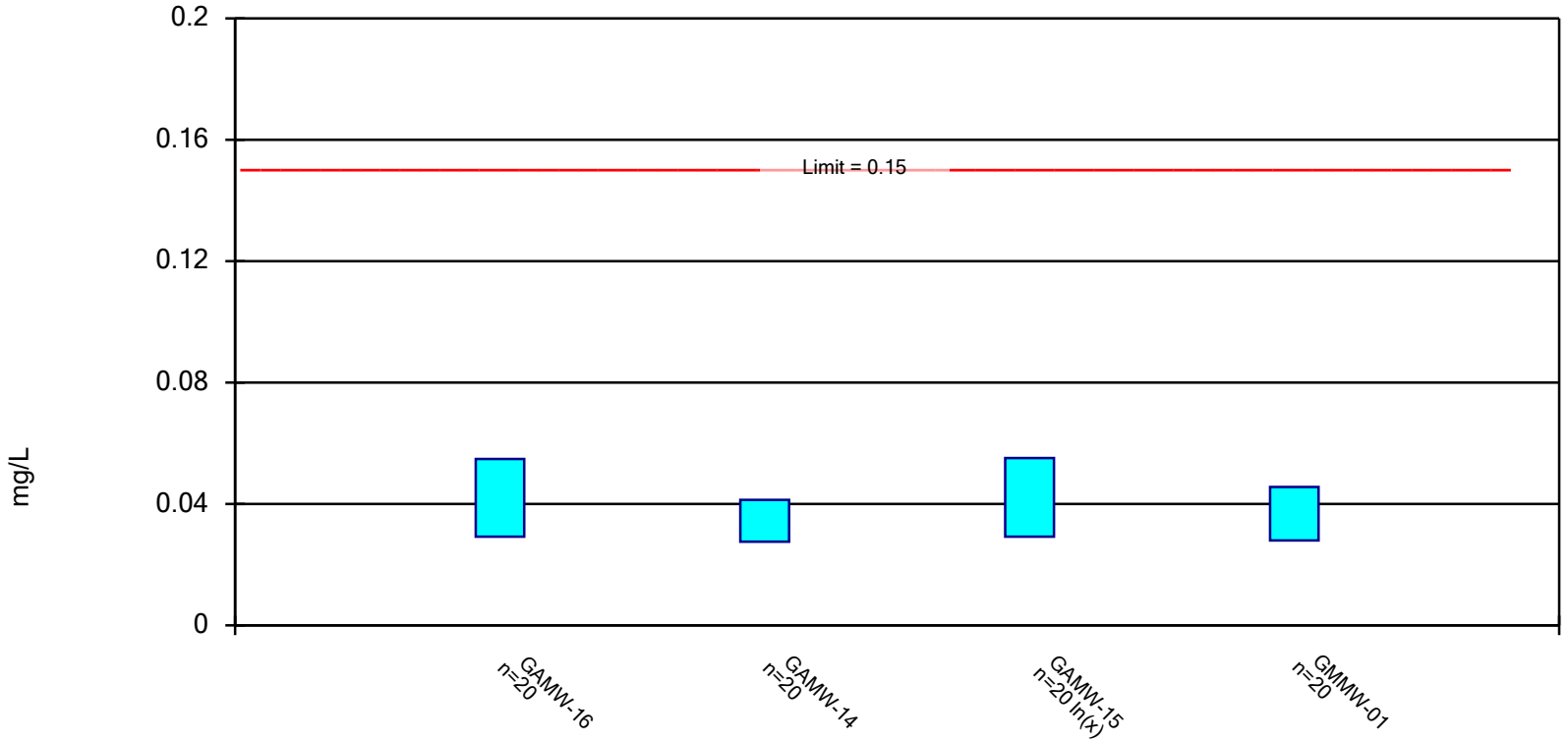


Constituent: Mercury Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

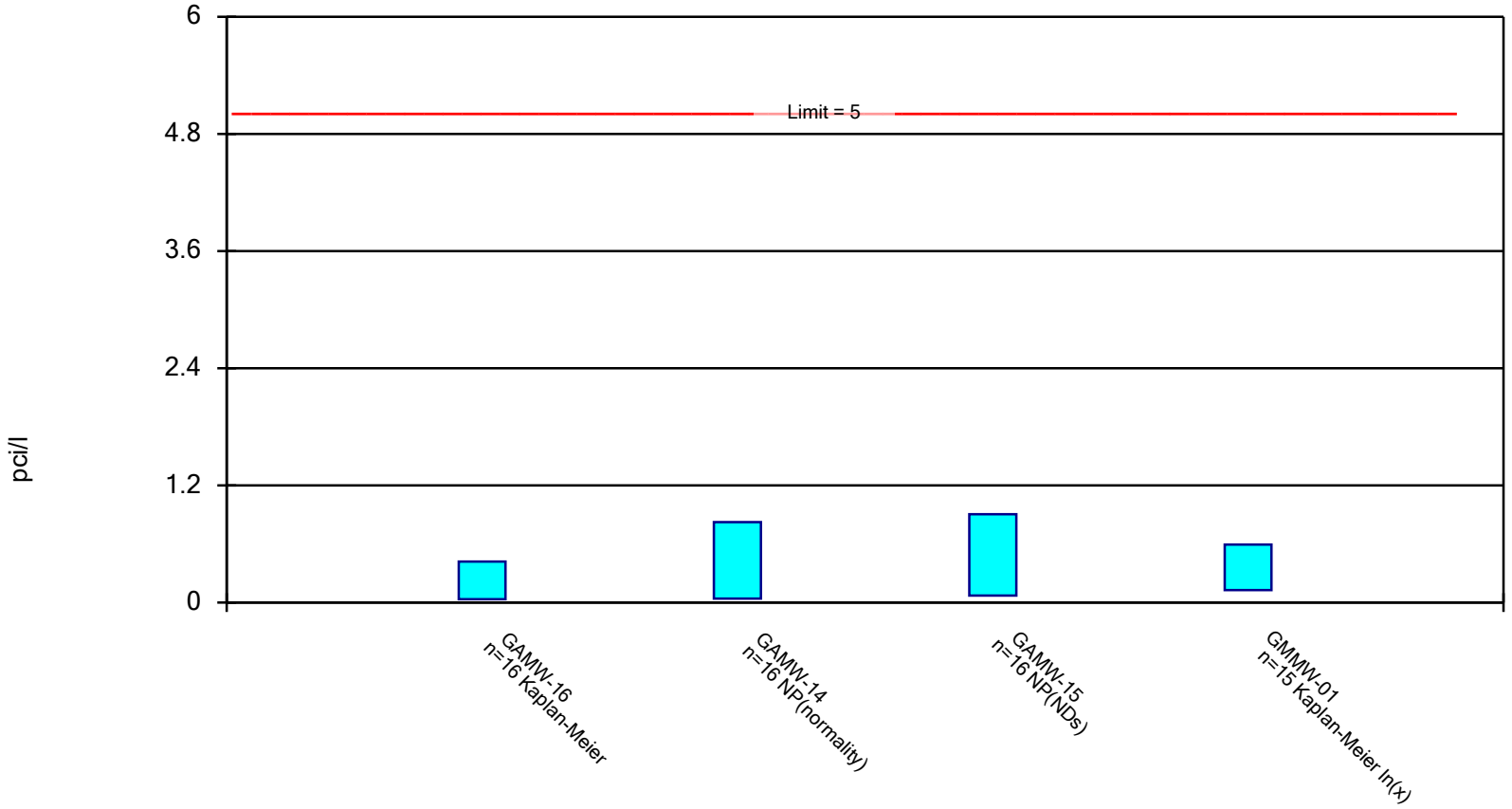


Constituent: Molybdenum Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

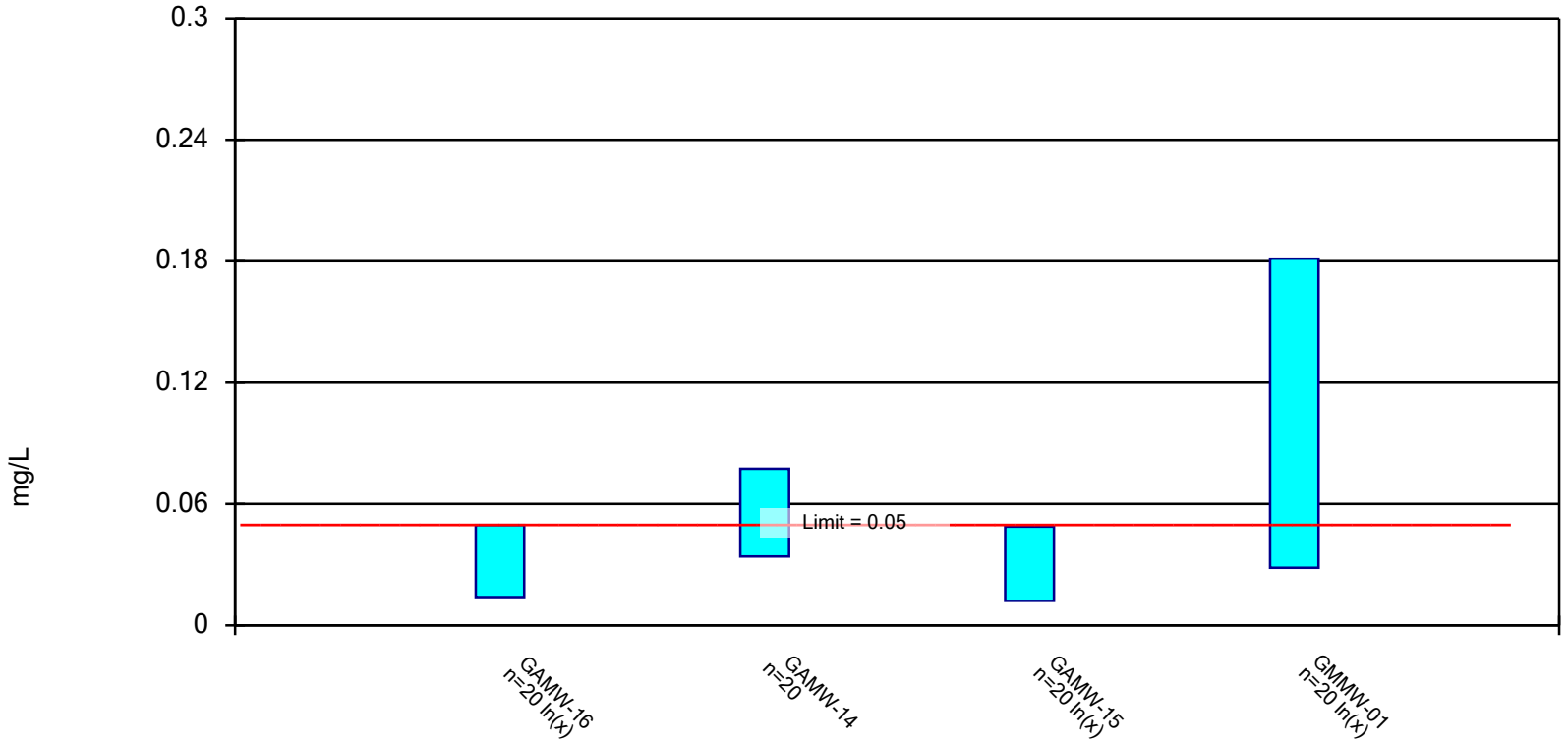


Constituent: Radium 226 + 228 Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

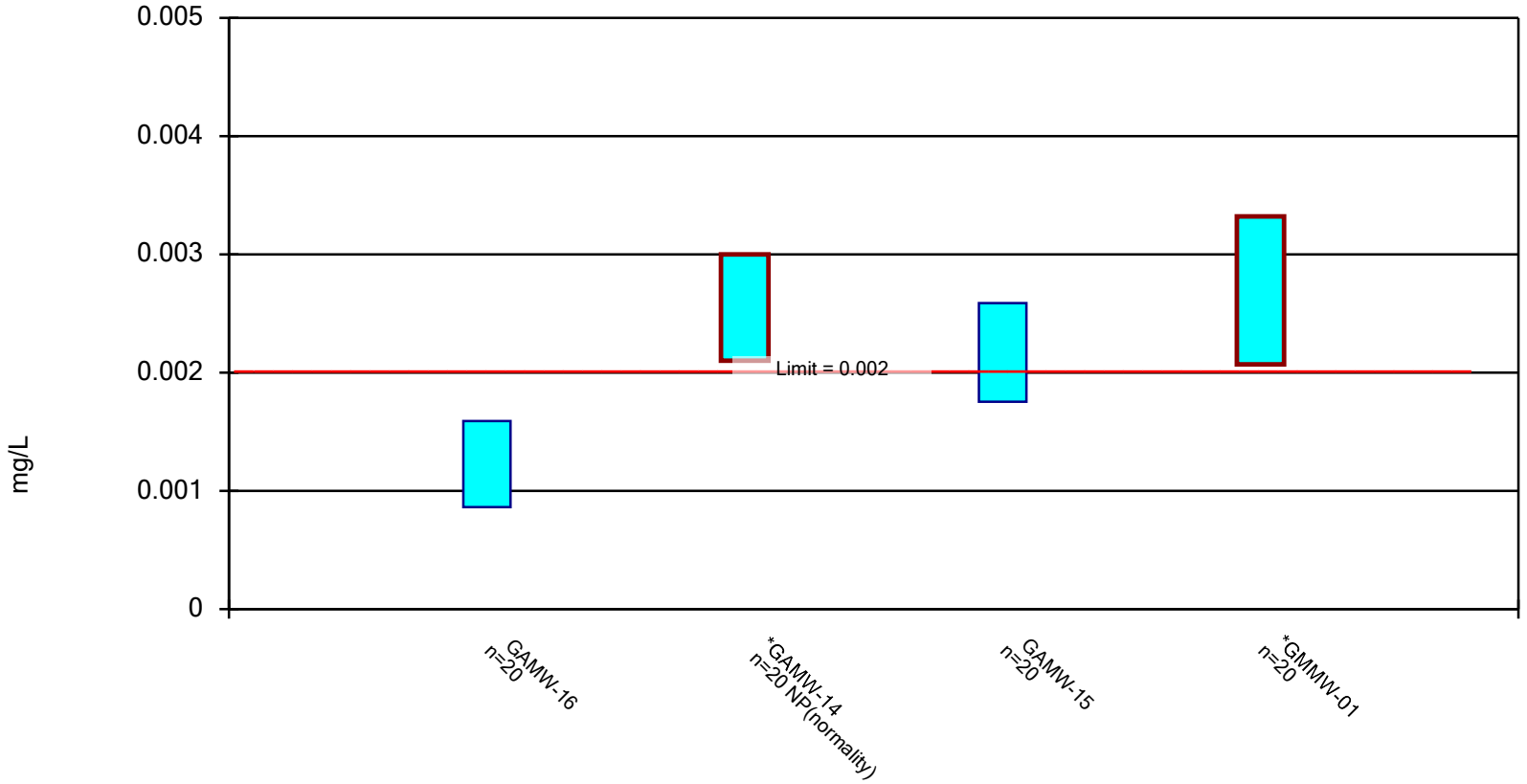


Constituent: Selenium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

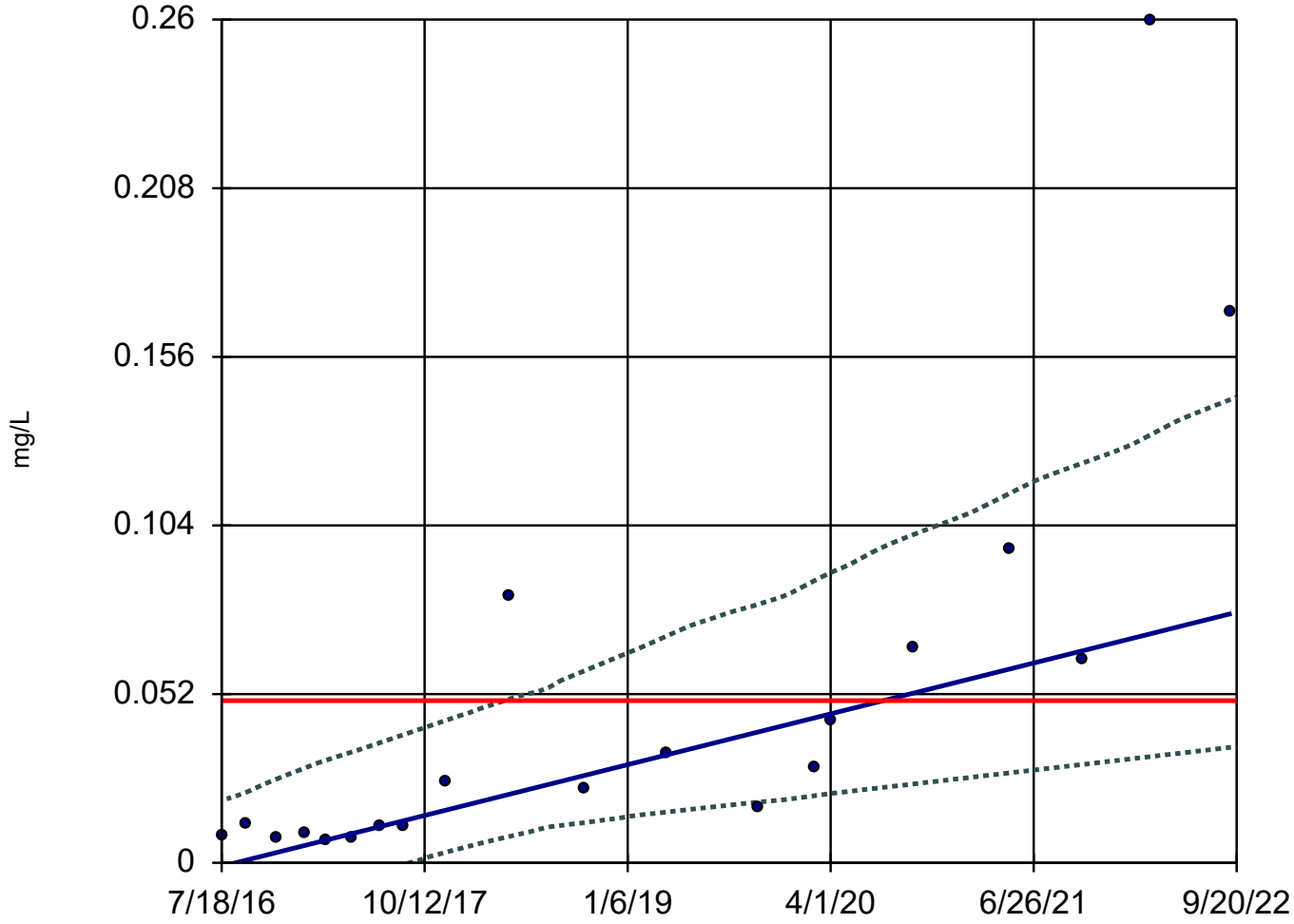


Constituent: Thallium Analysis Run 12/27/2022 12:06 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-16



n = 20

Slope = 0.01268 units per year.

Mann-Kendall statistic = 135
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

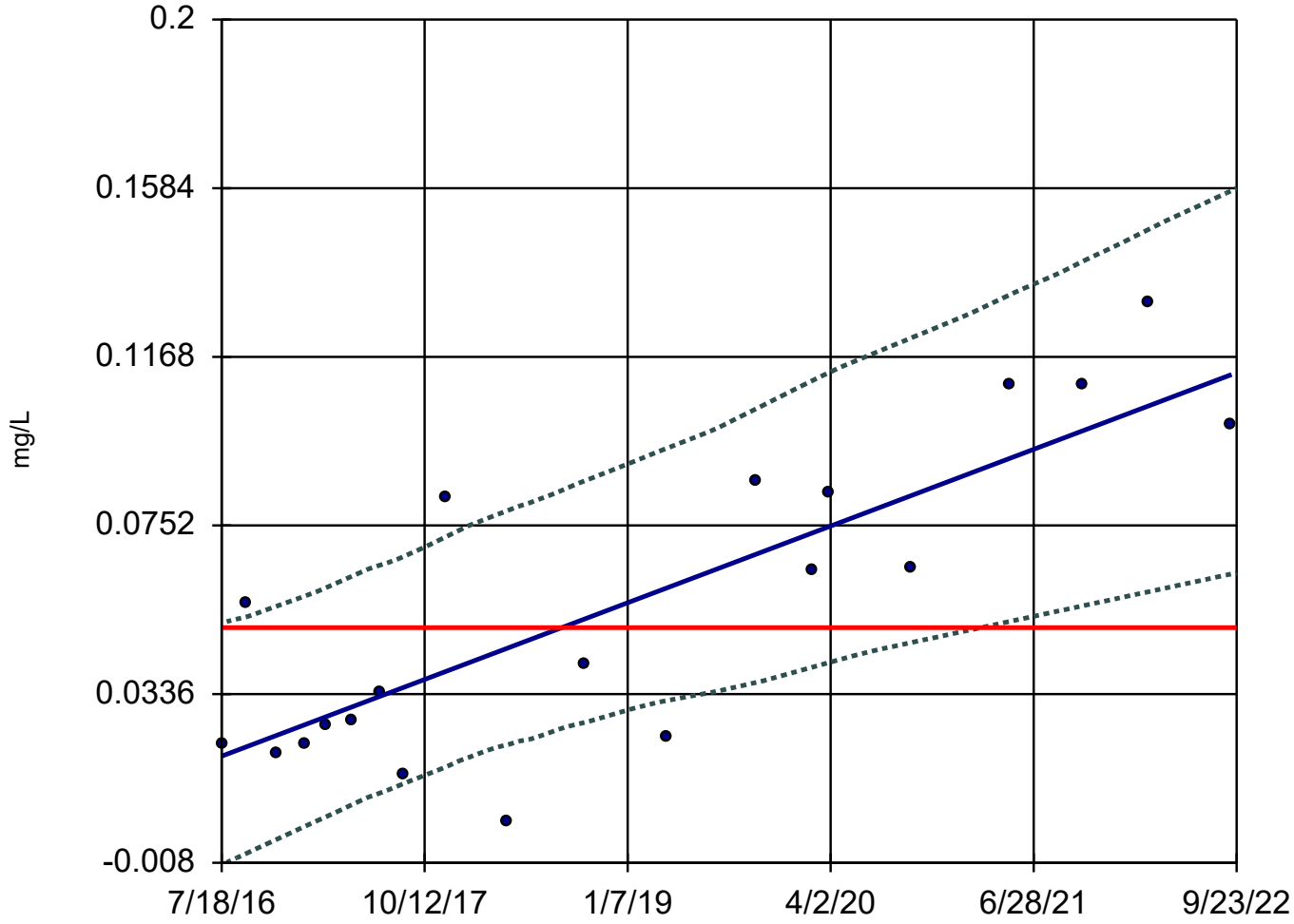
Confidence band intersects MCL (0.05) on 04/18/18.

Constituent: Selenium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-14



n = 20

Slope = 0.01529 units per year.

Mann-Kendall statistic = 110
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

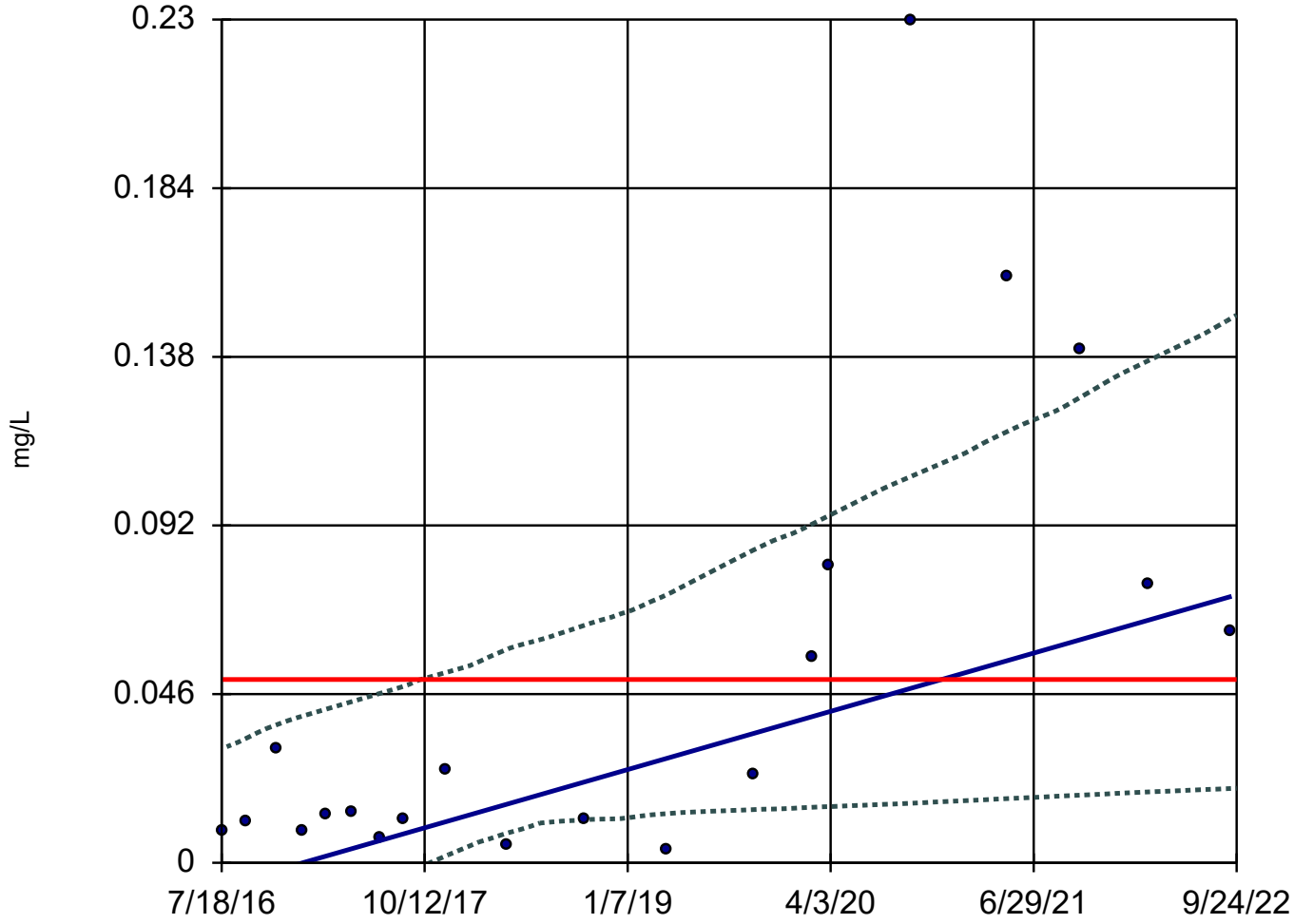
Confidence band intersects MCL (0.05) on 03/10/21.

Constituent: Selenium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-15



n = 20

Slope = 0.01283 units per year.

Mann-Kendall statistic = 85
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

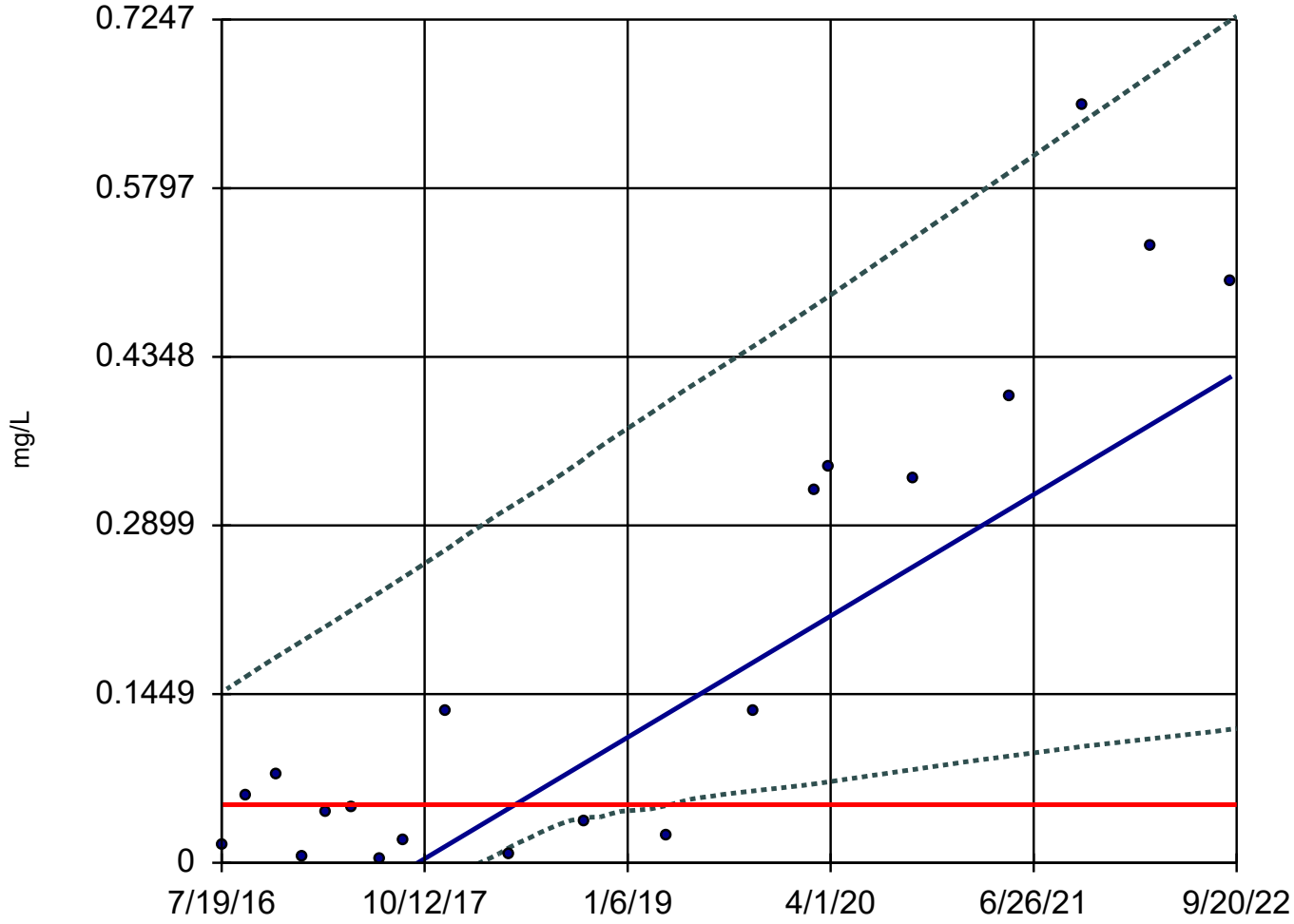
Confidence band intersects MCL (0.05) on 10/21/17.

Constituent: Selenium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GMMW-01



n = 20

Slope = 0.08441 units per year.

Mann-Kendall statistic = 111
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects MCL (0.05) on 04/13/19.

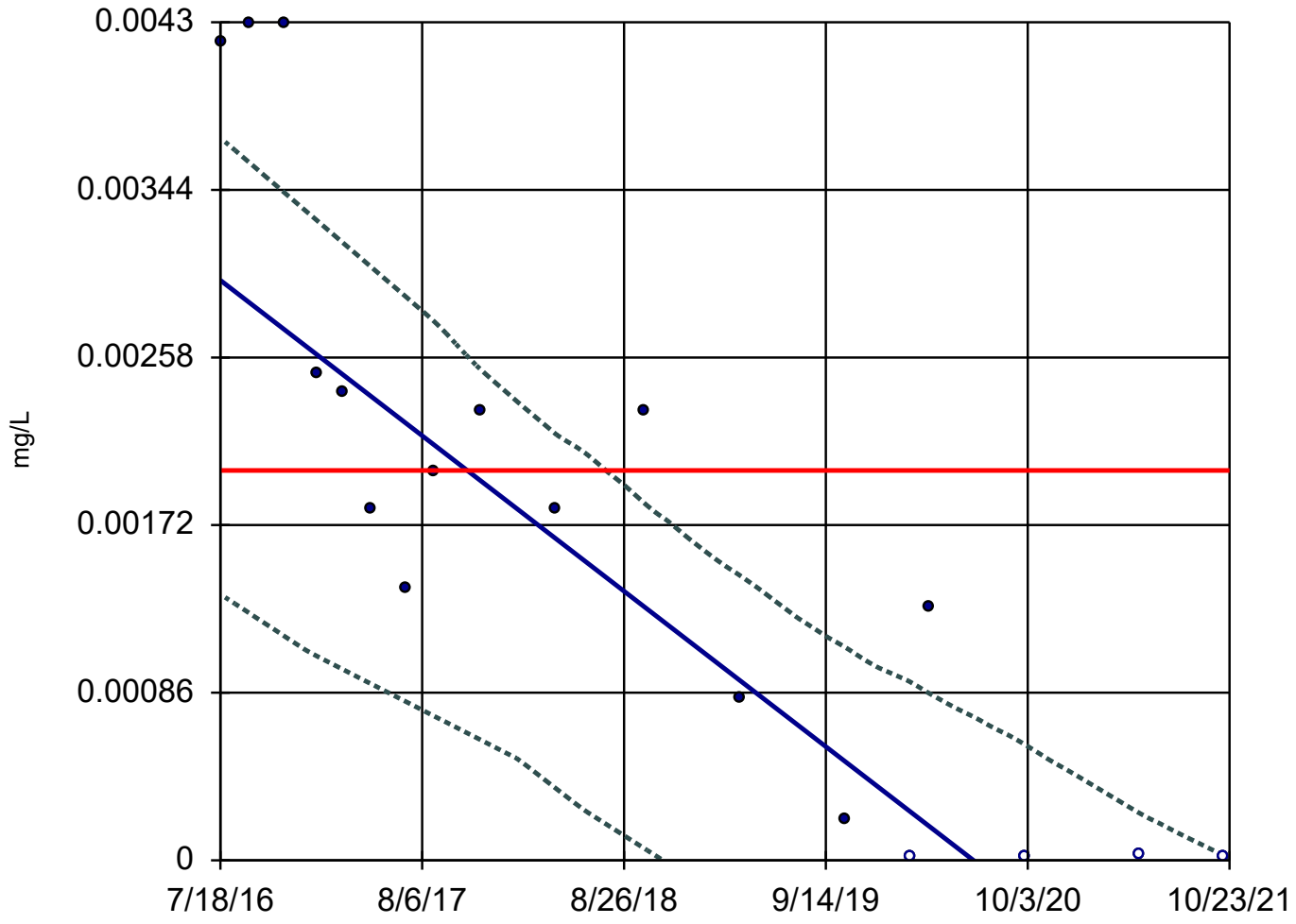
Constituent: Selenium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Hollow symbols indicate censored values.

Sen's Slope and 95% Confidence Band

GAMW-13



n = 18

Slope = -0.000757 units per year.

Mann-Kendall statistic = -114
critical = -63

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

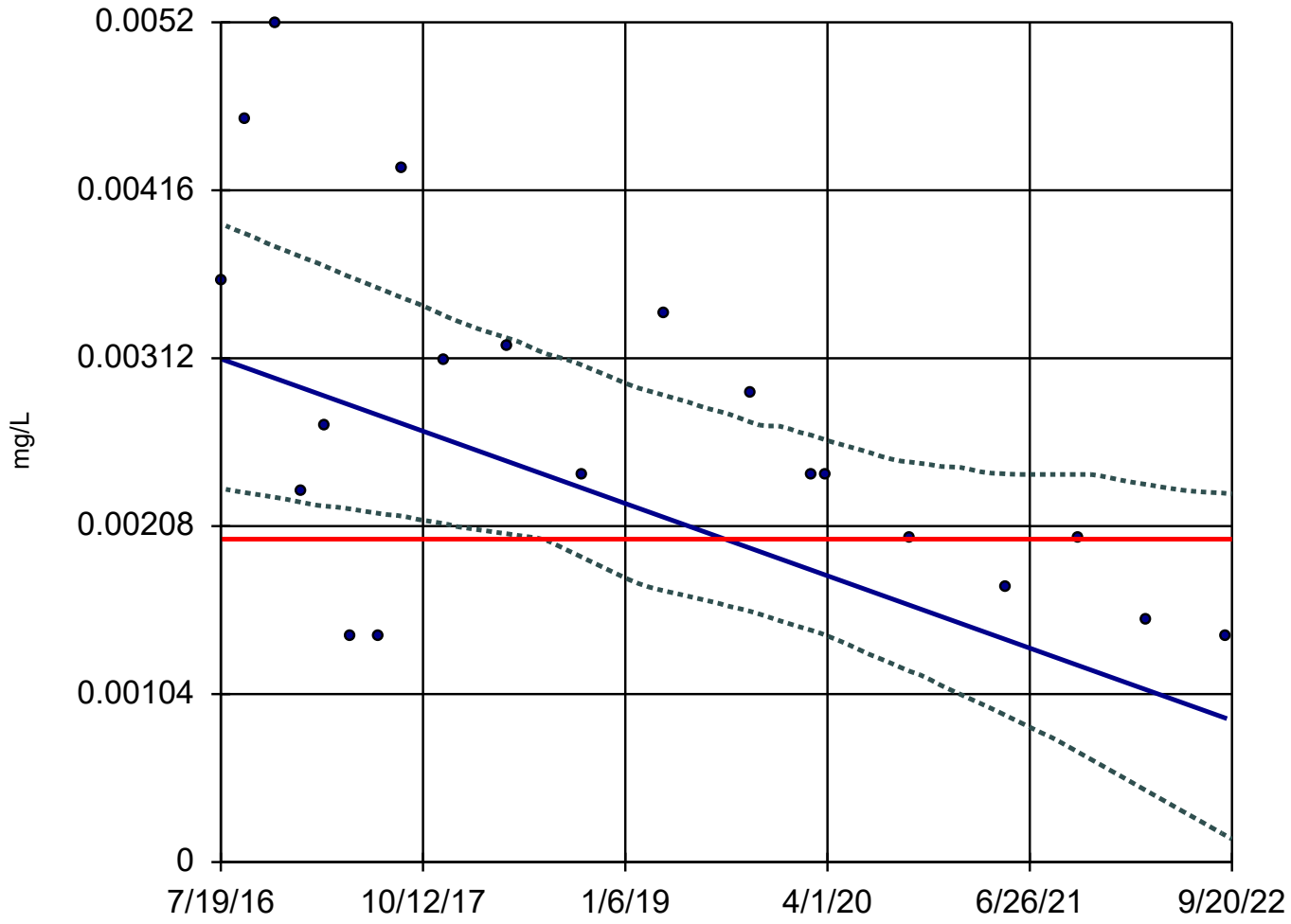
Confidence band is below MCL (0.002).

Constituent: Thallium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GMMW-01



n = 20

Slope = -0.0003626 units per year.

Mann-Kendall statistic = -87
critical = -73

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

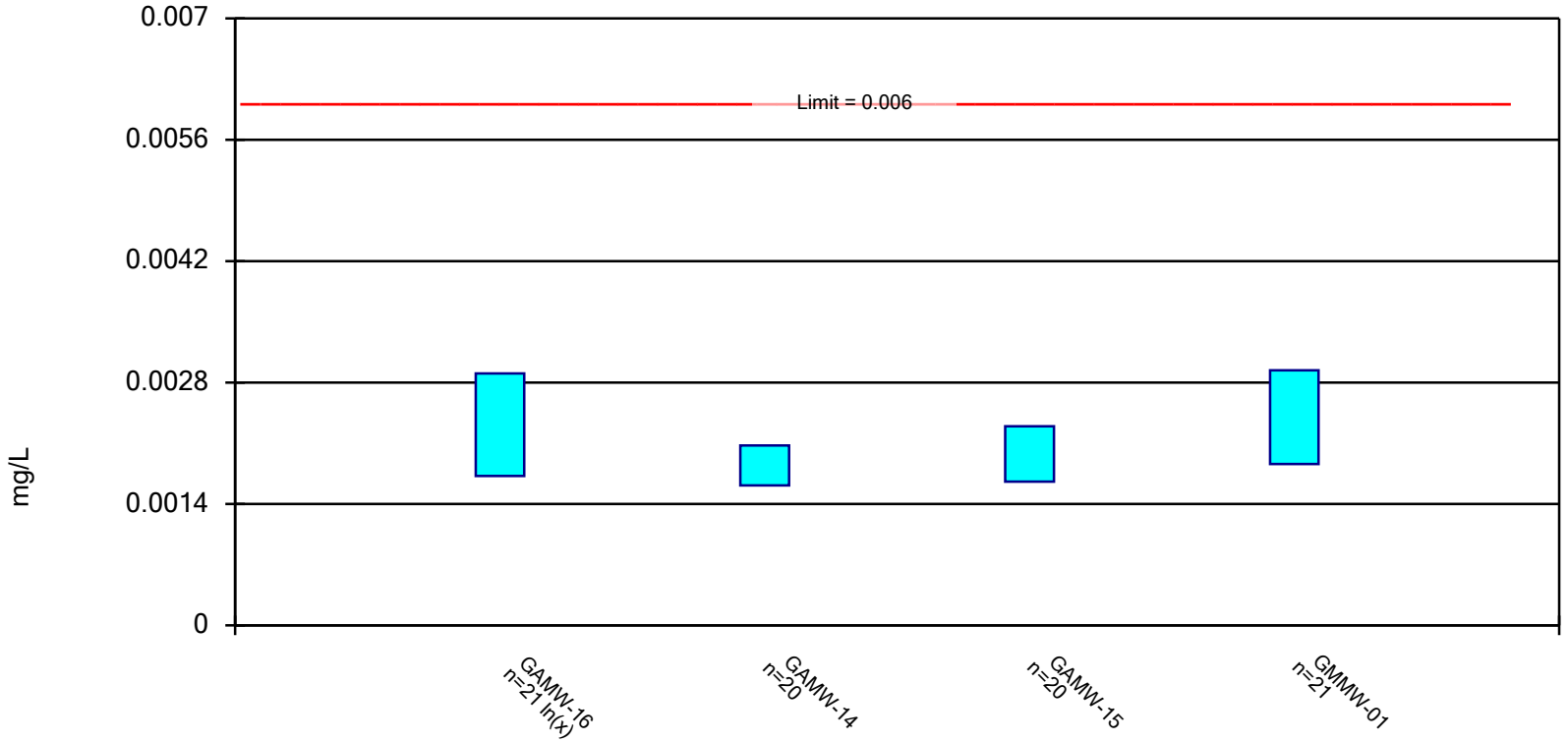
Confidence band is below MCL (0.002).

Constituent: Thallium Analysis Run 12/29/2022 9:26 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

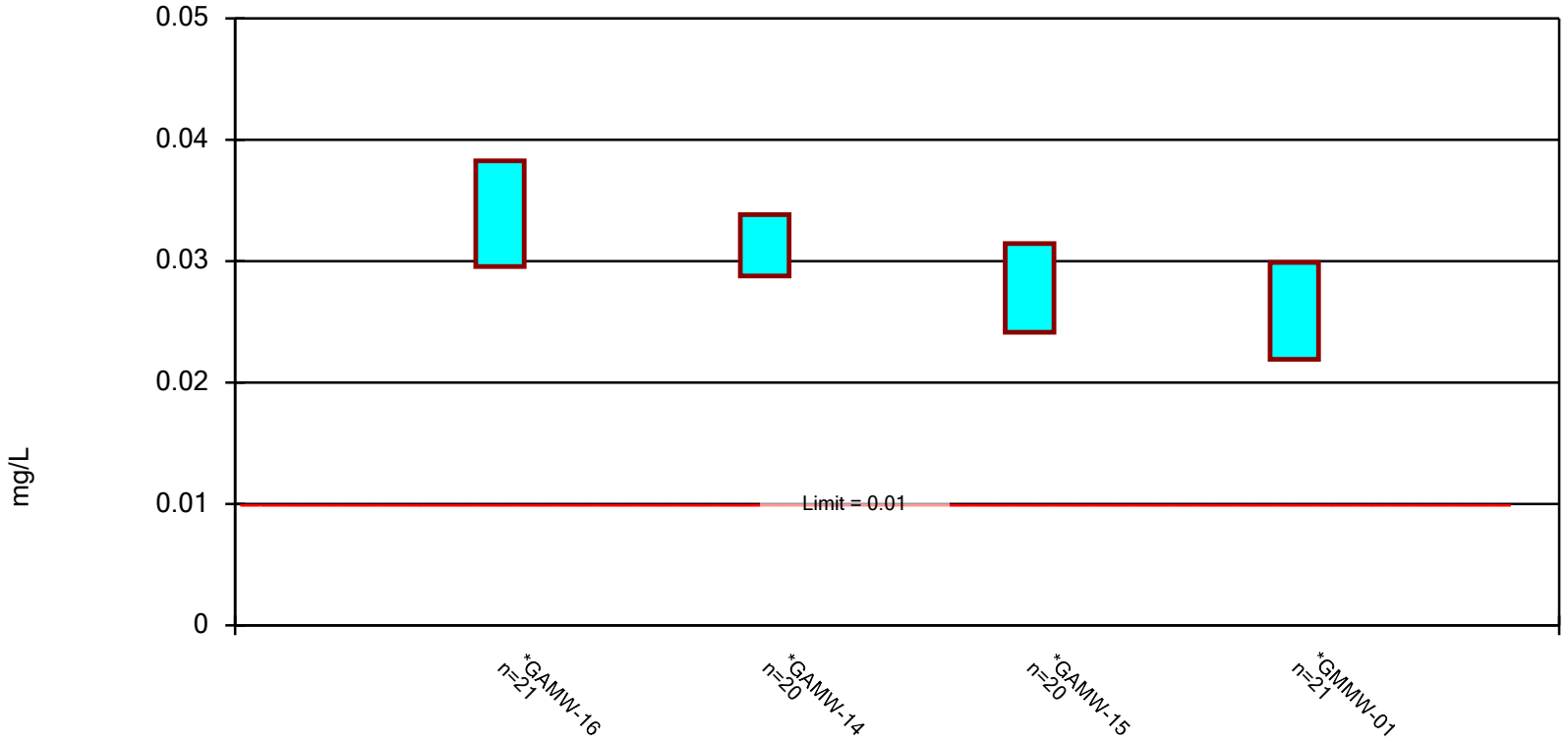


Constituent: Antimony Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

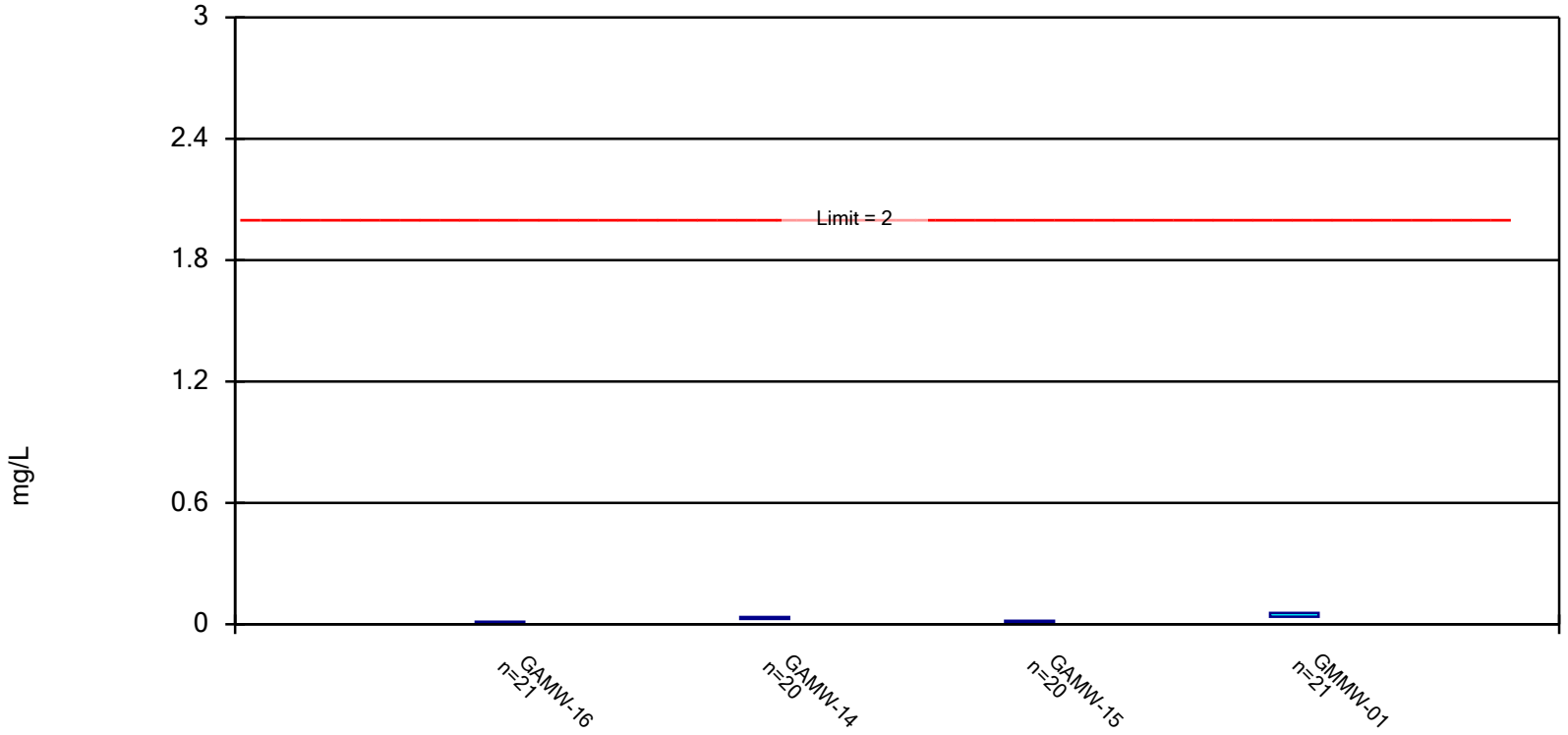


Constituent: Arsenic Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

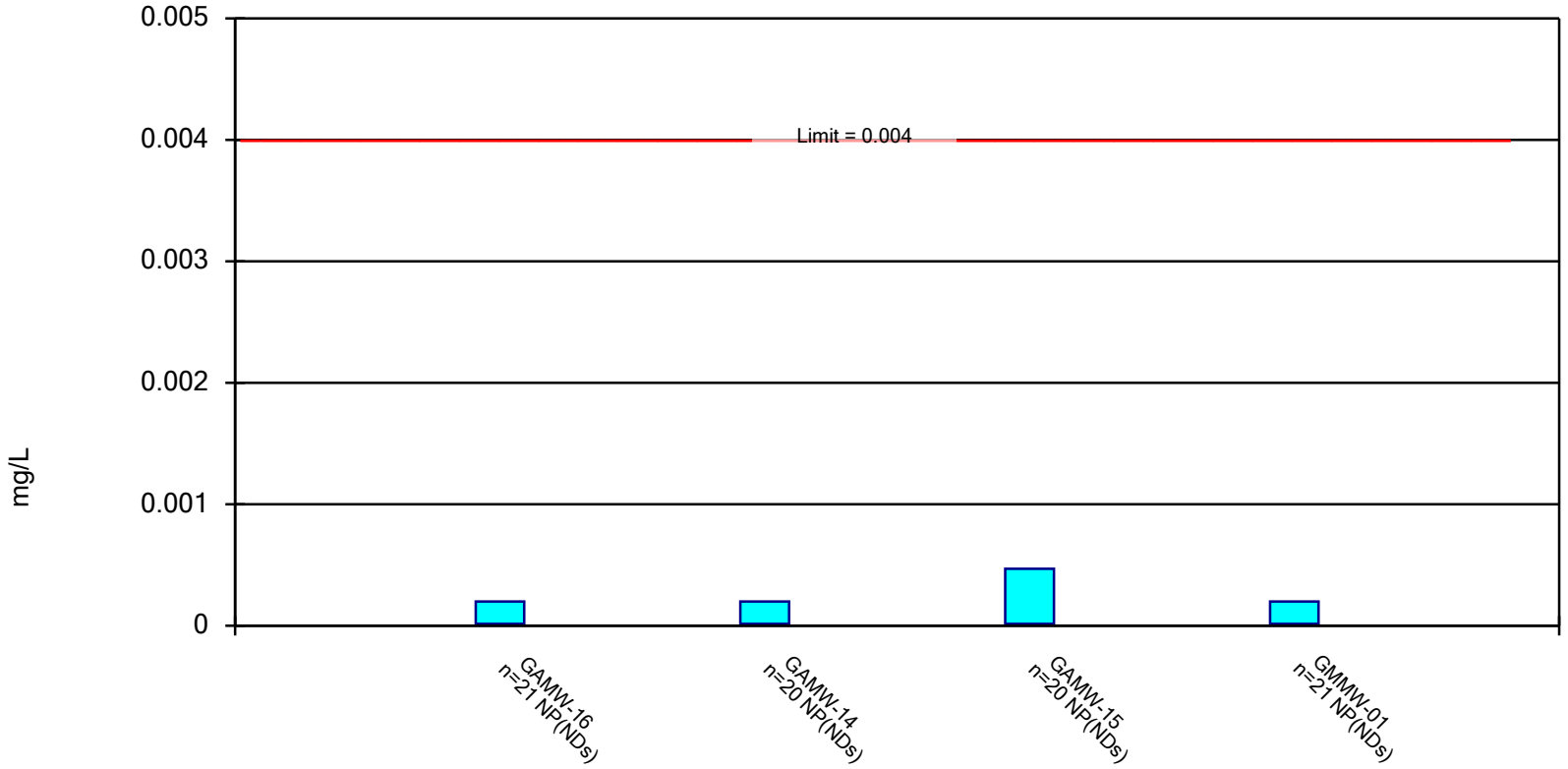


Constituent: Barium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

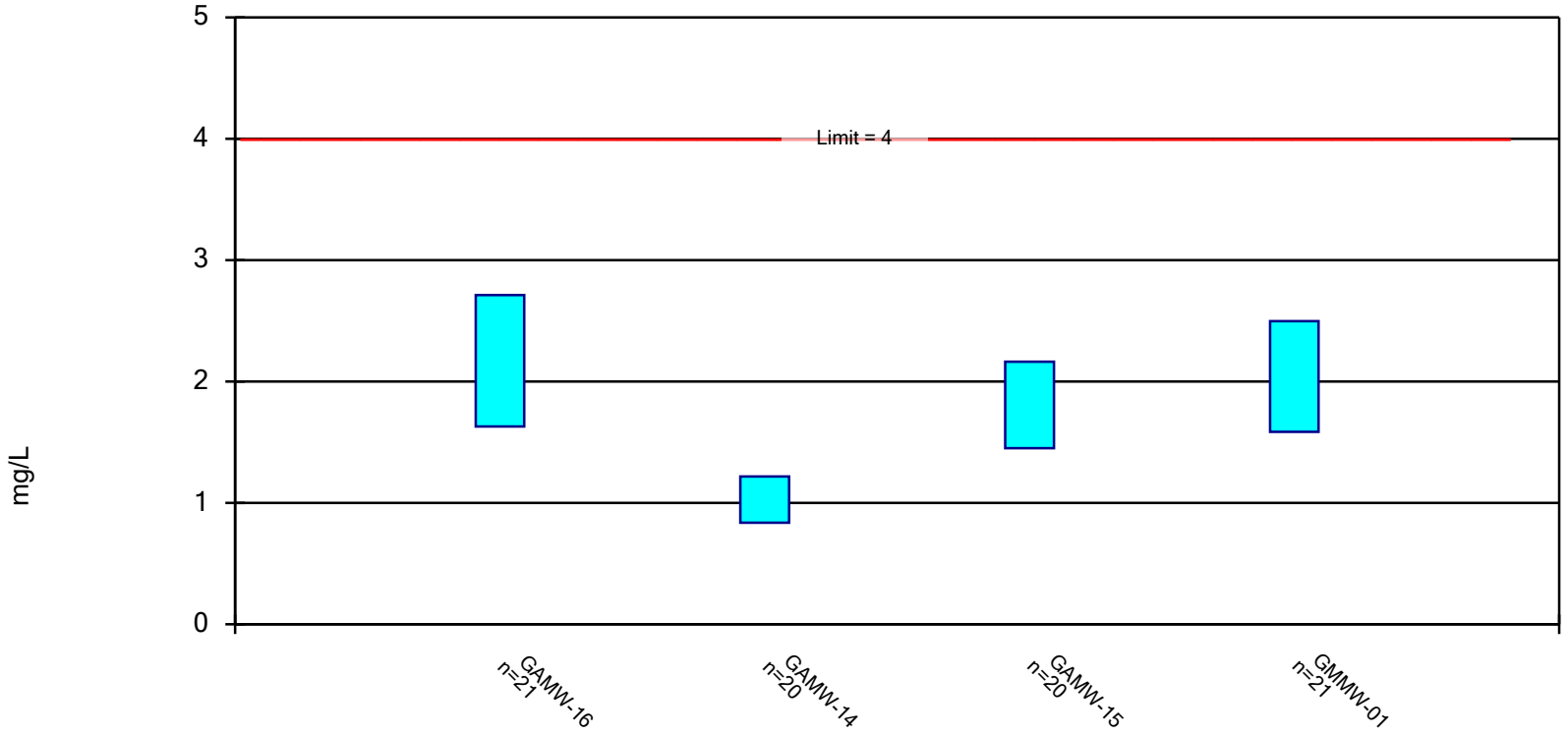


Constituent: Beryllium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

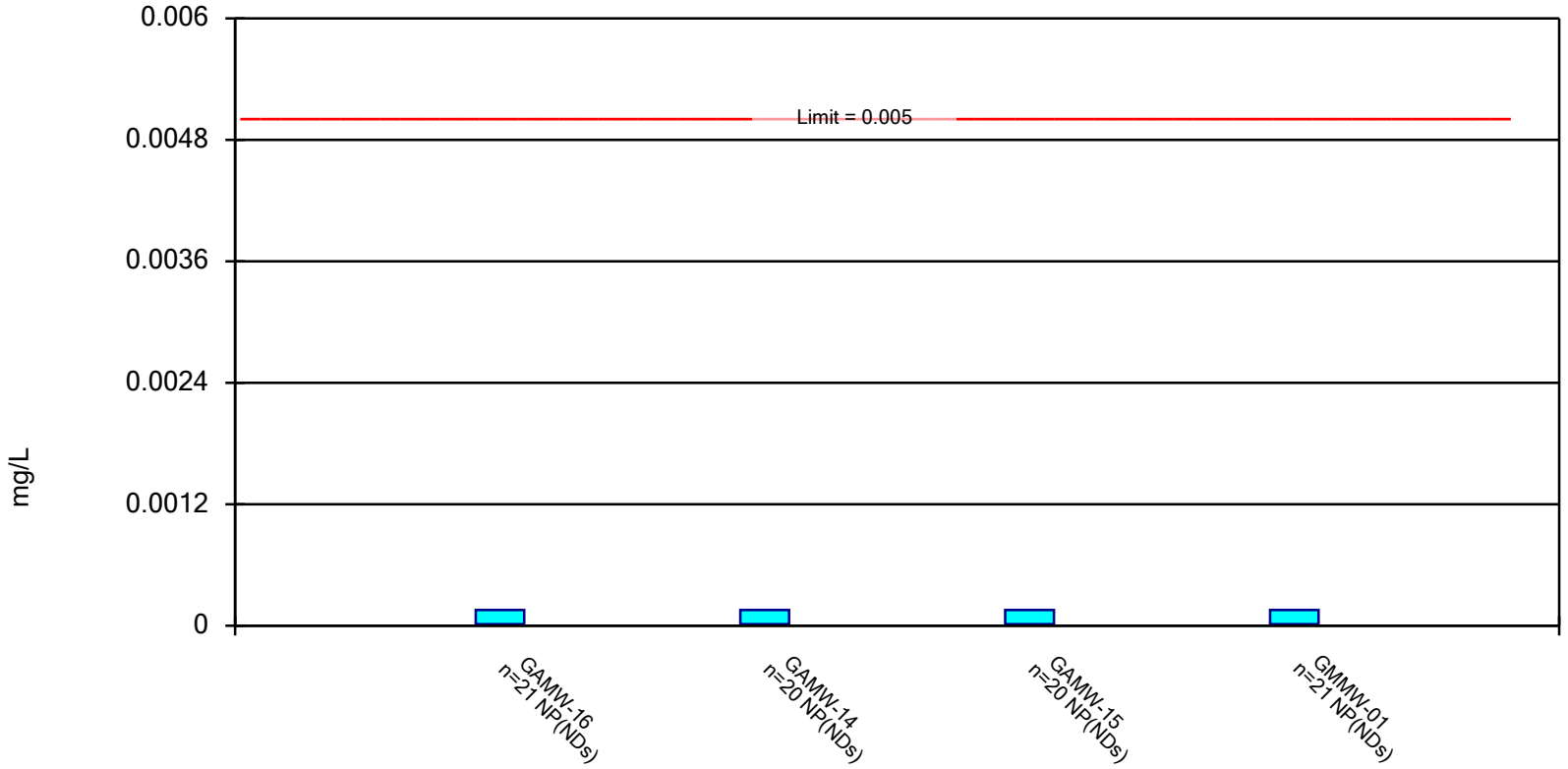


Constituent: Boron Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

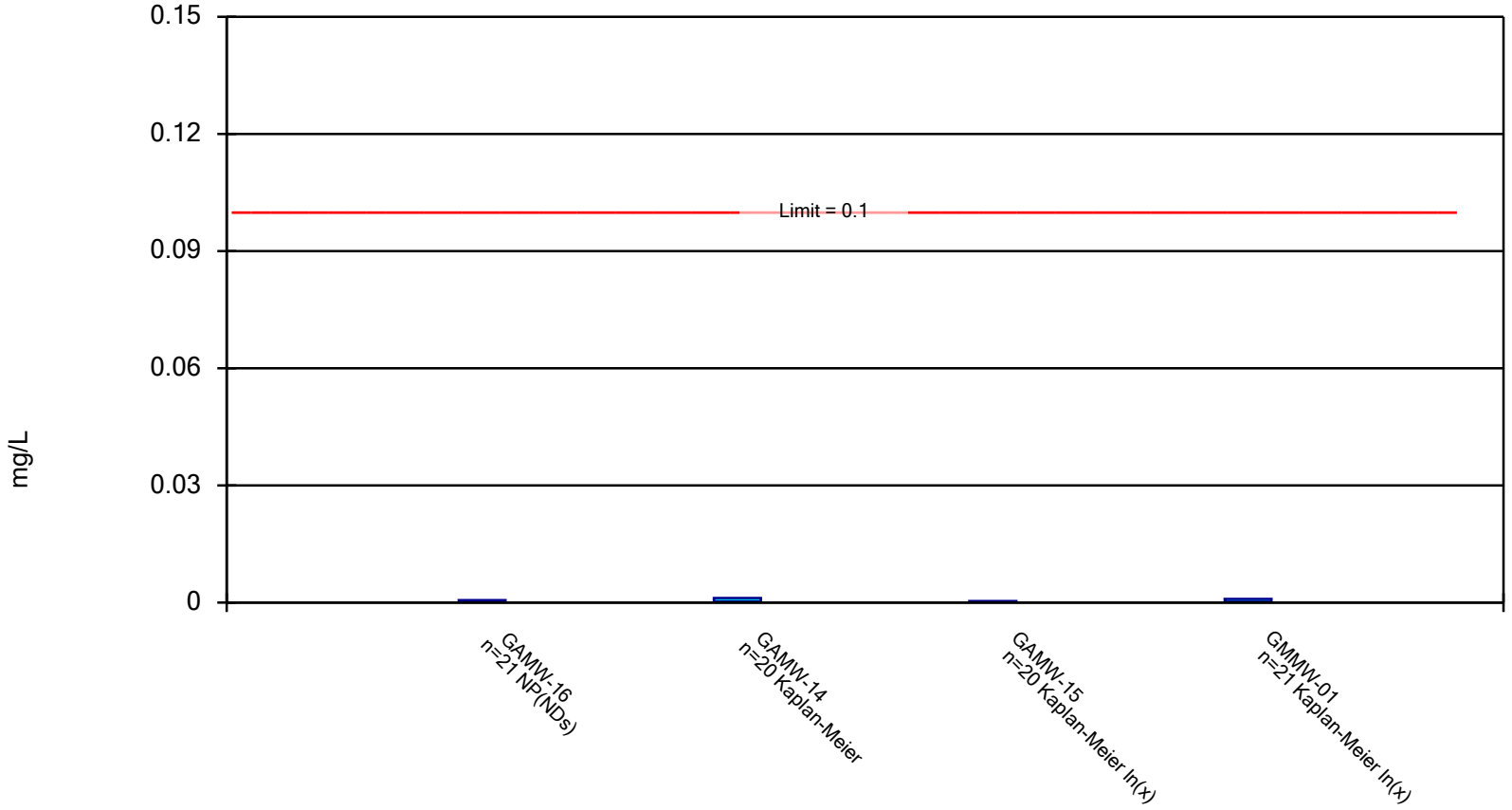


Constituent: Cadmium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

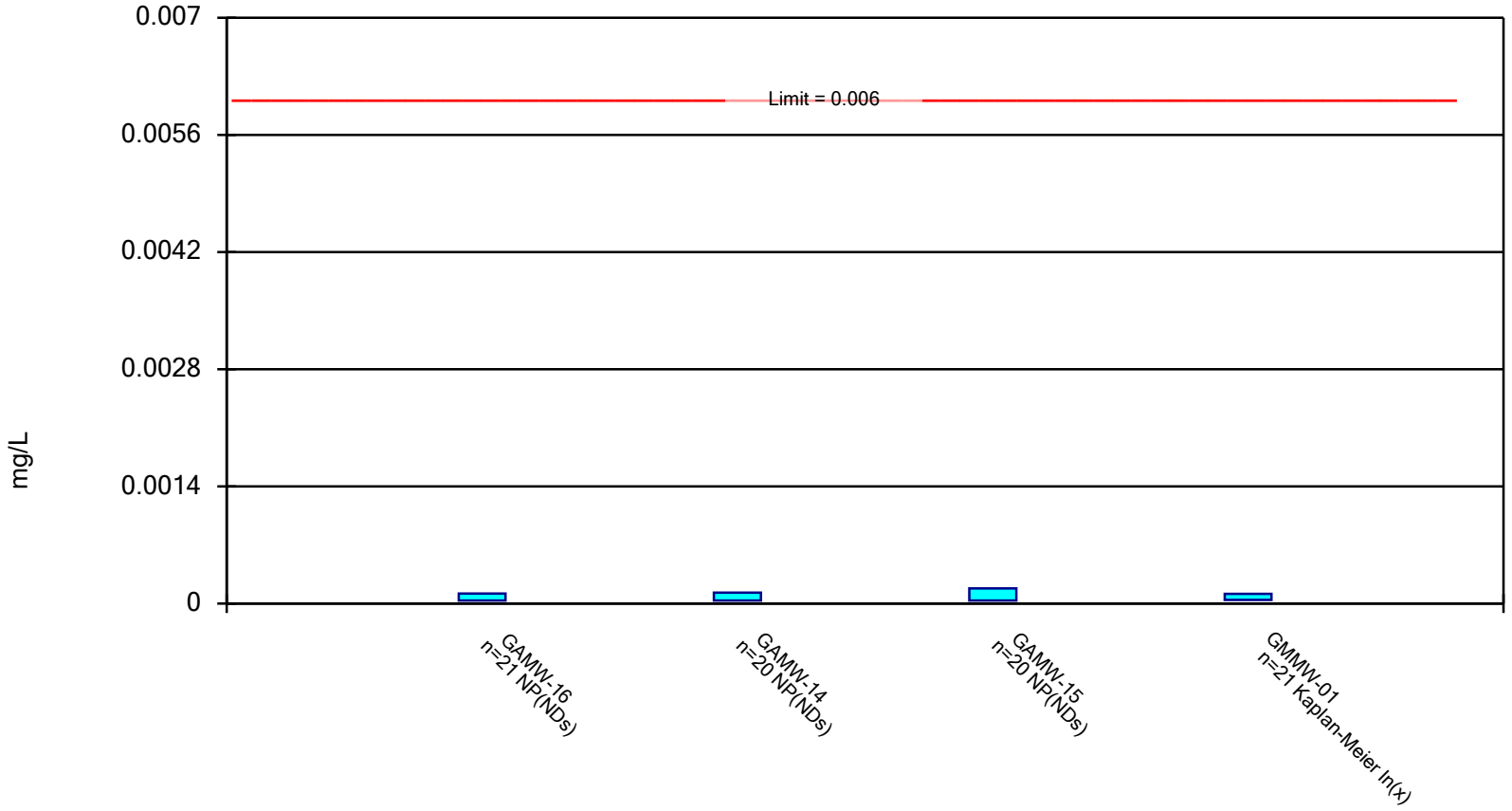


Constituent: Chromium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

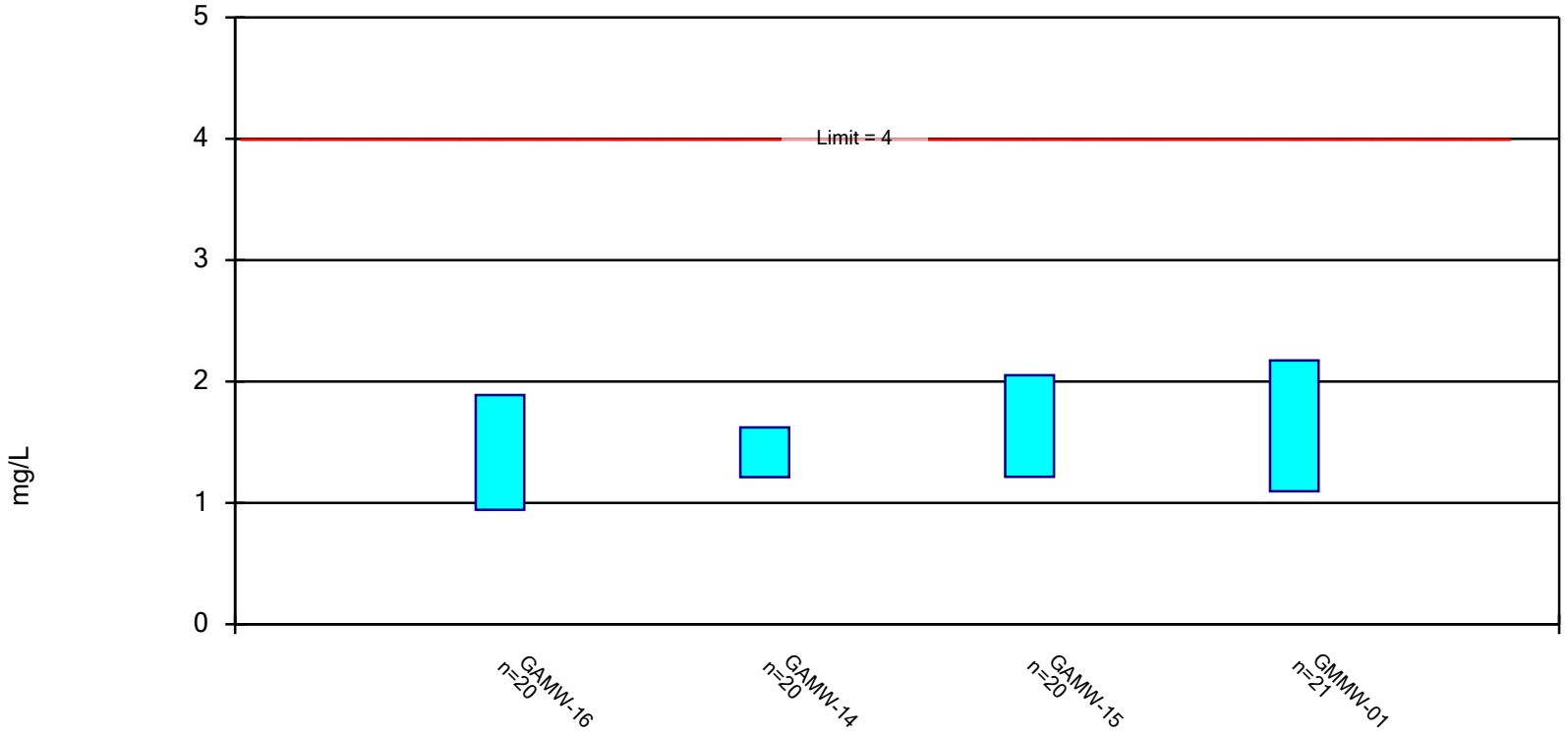


Constituent: Cobalt Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

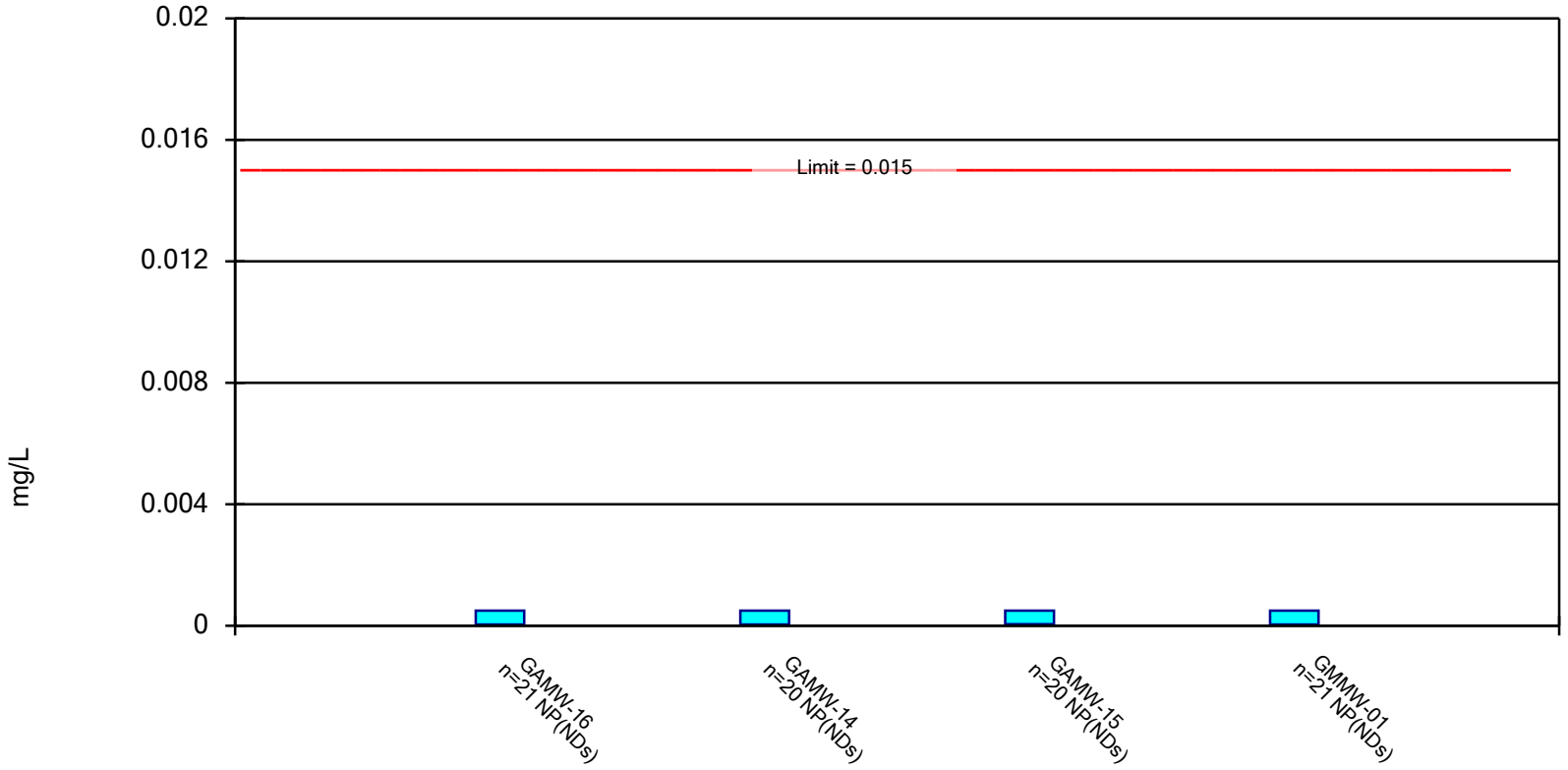


Constituent: Fluoride Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

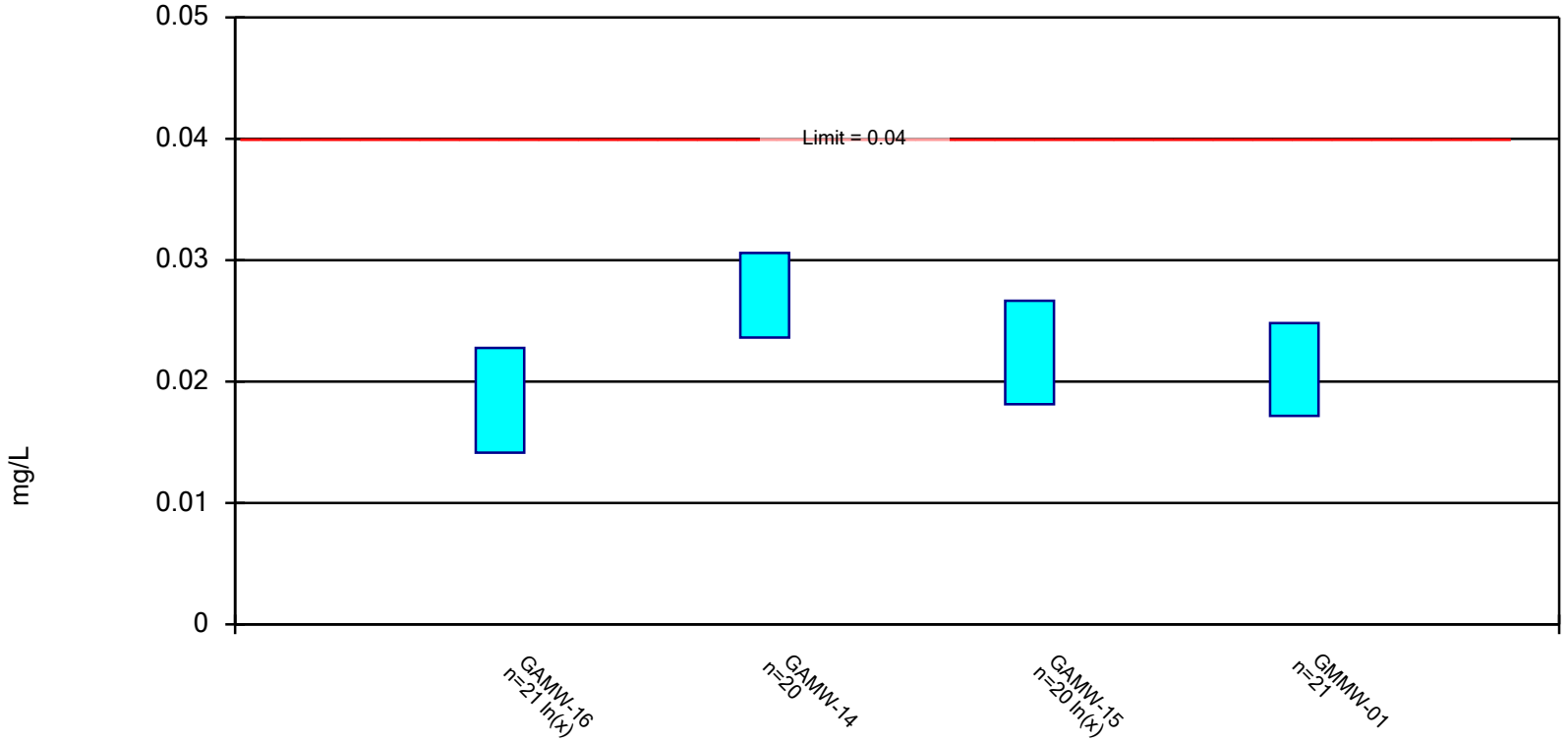


Constituent: Lead Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

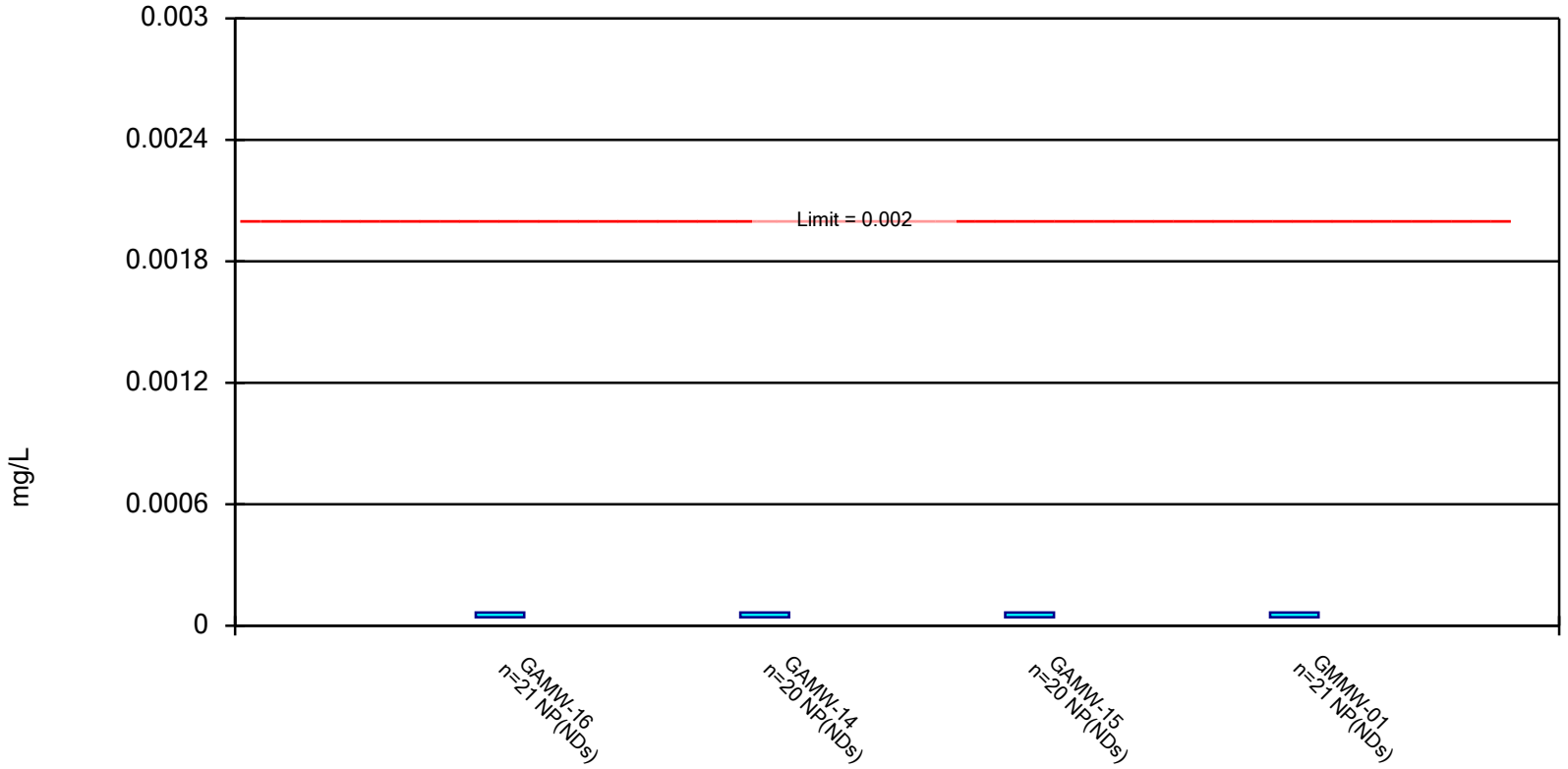


Constituent: Lithium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Non-Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01.

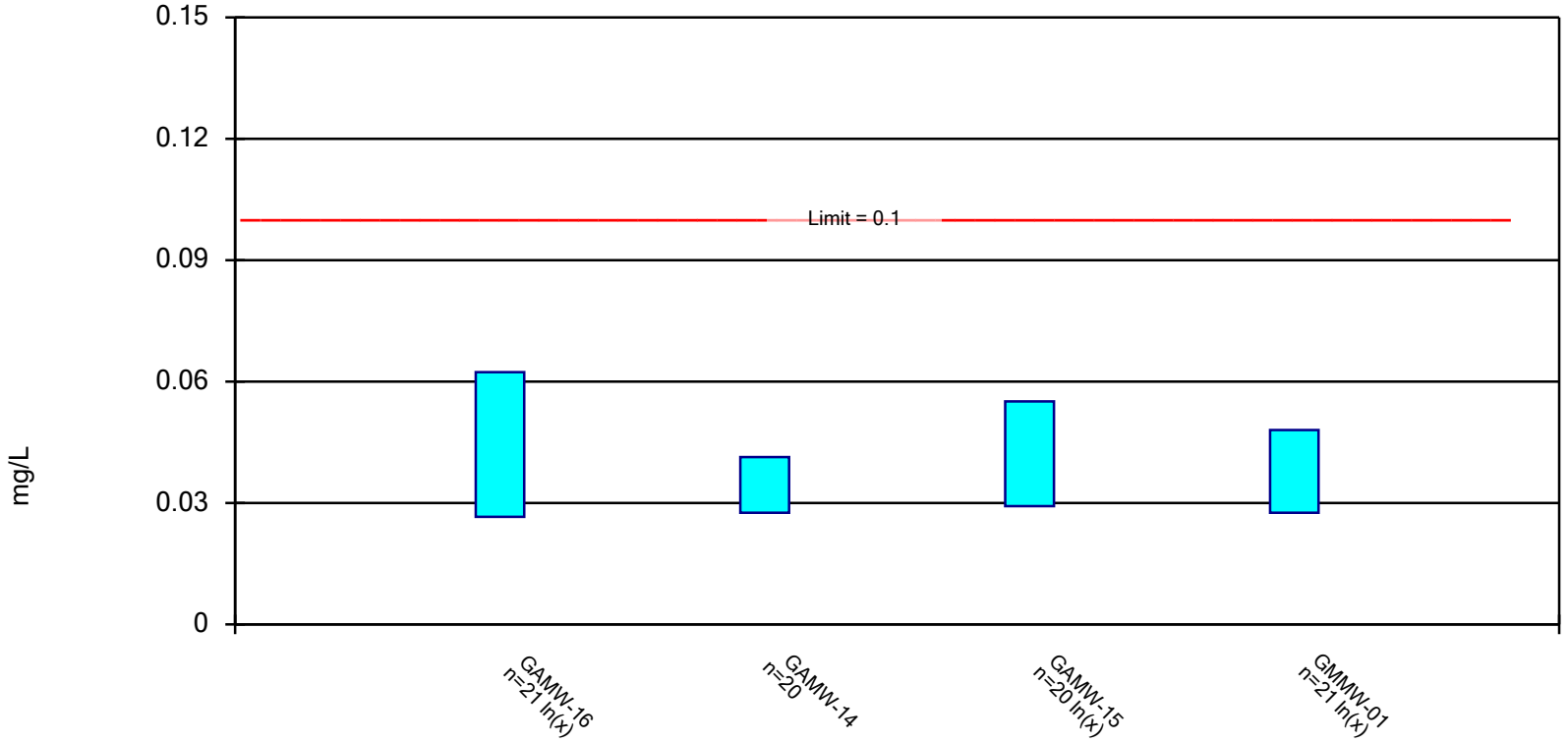


Constituent: Mercury Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

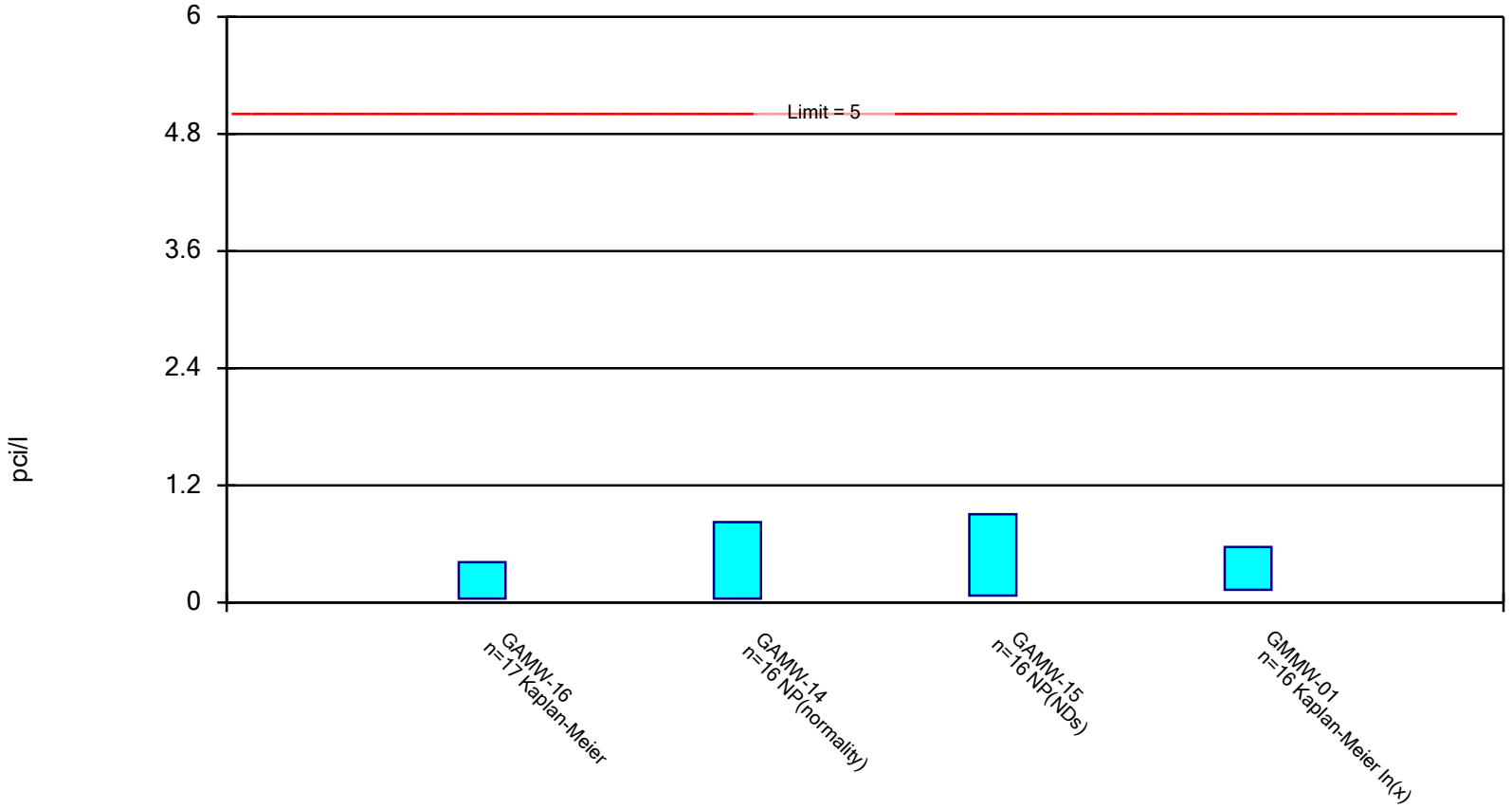


Constituent: Molybdenum Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

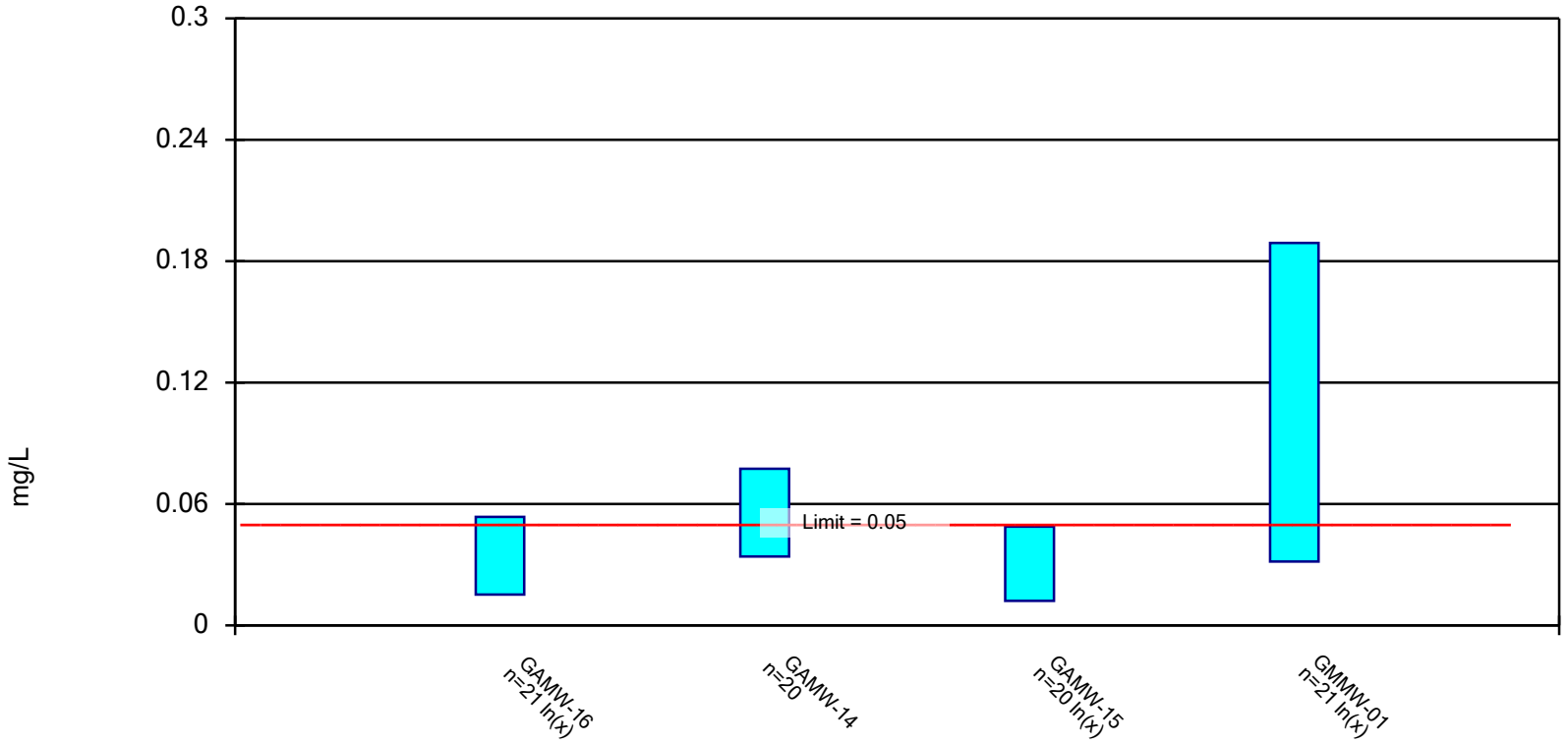


Constituent: Radium 226 + 228 Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

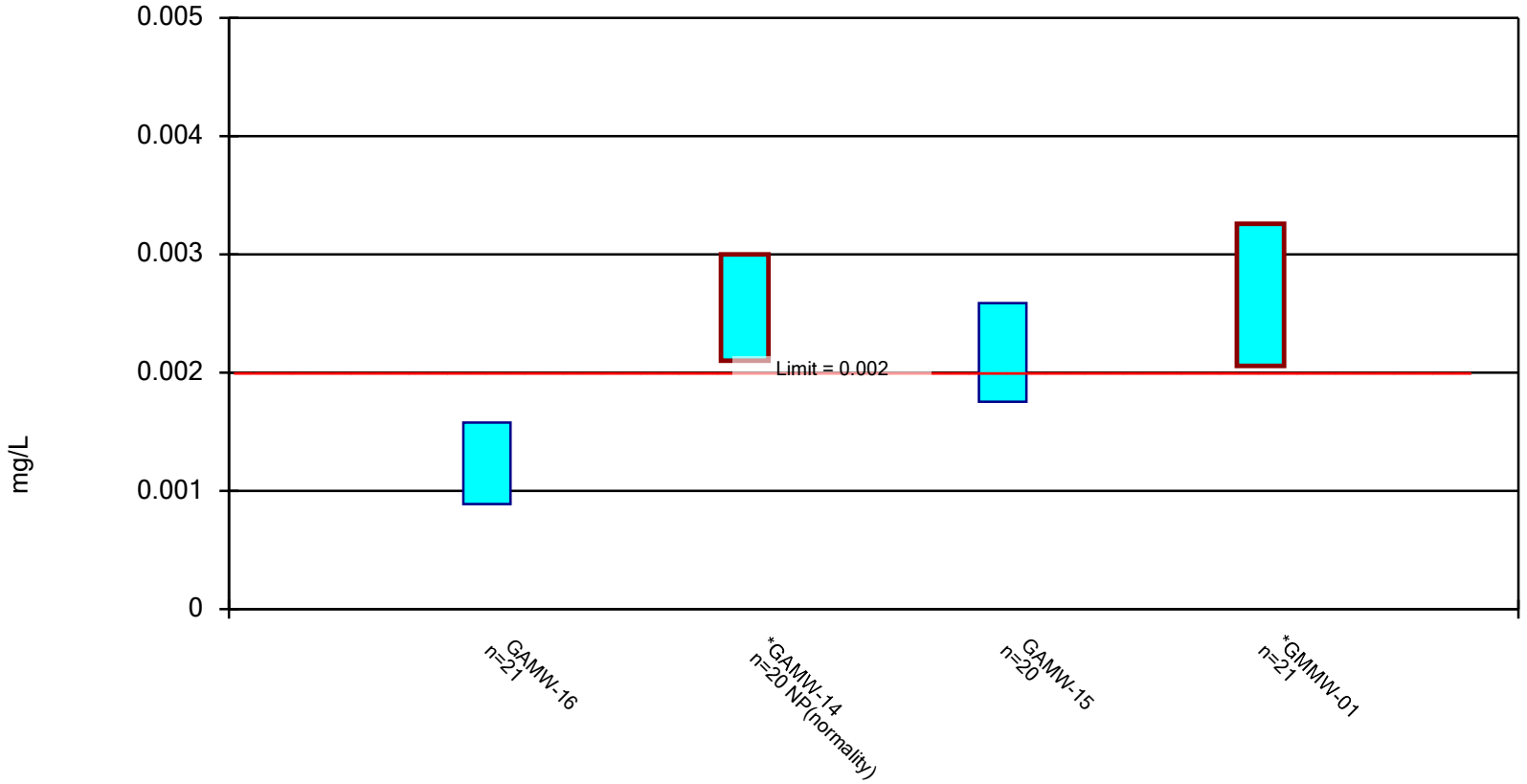


Constituent: Selenium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Parametric and Non-Parametric (NP) Confidence Interval

Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.

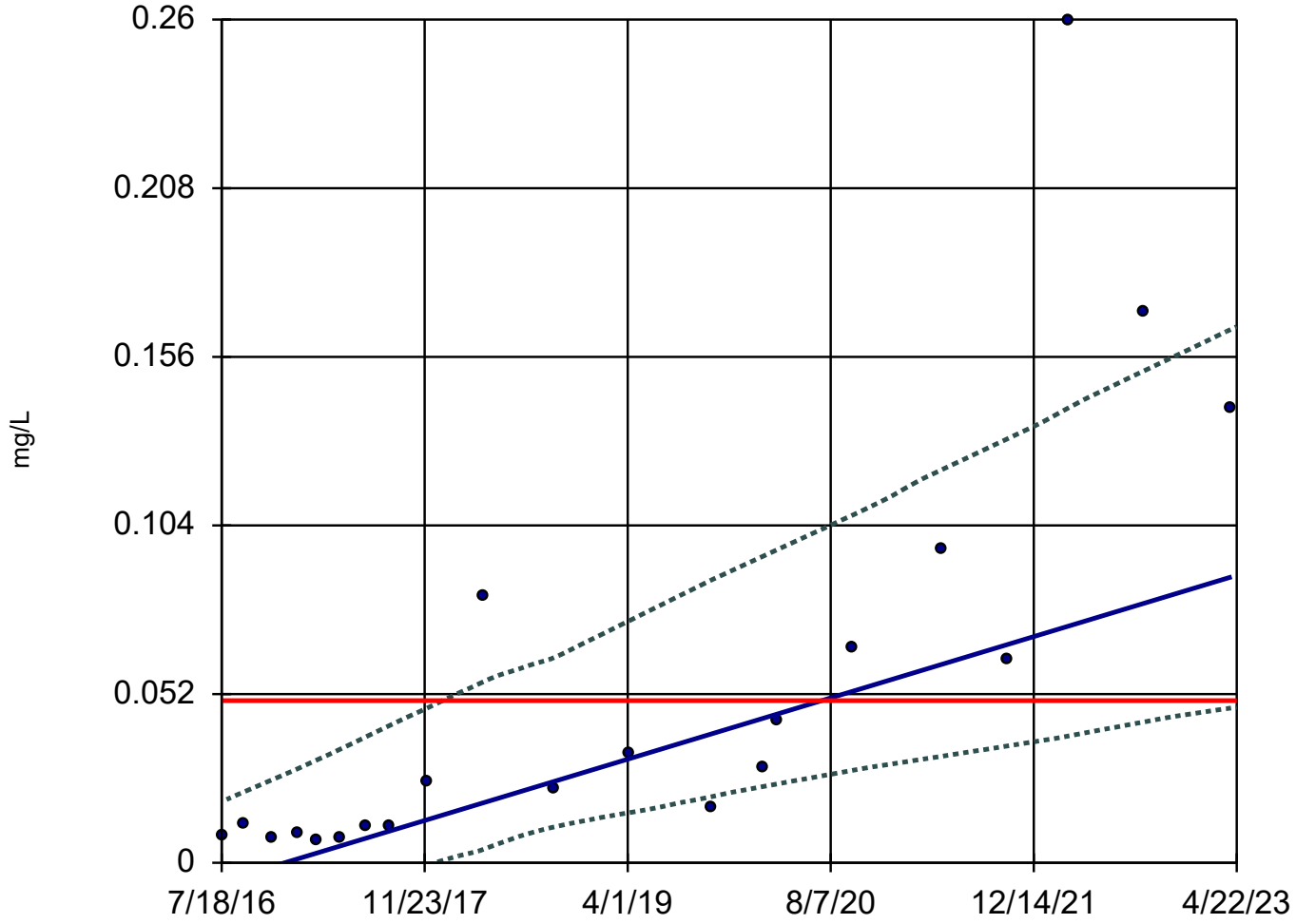


Constituent: Thallium Analysis Run 6/27/2023 8:25 AM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-16



n = 21

Slope = 0.01397 units per year.

Mann-Kendall statistic = 151
critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

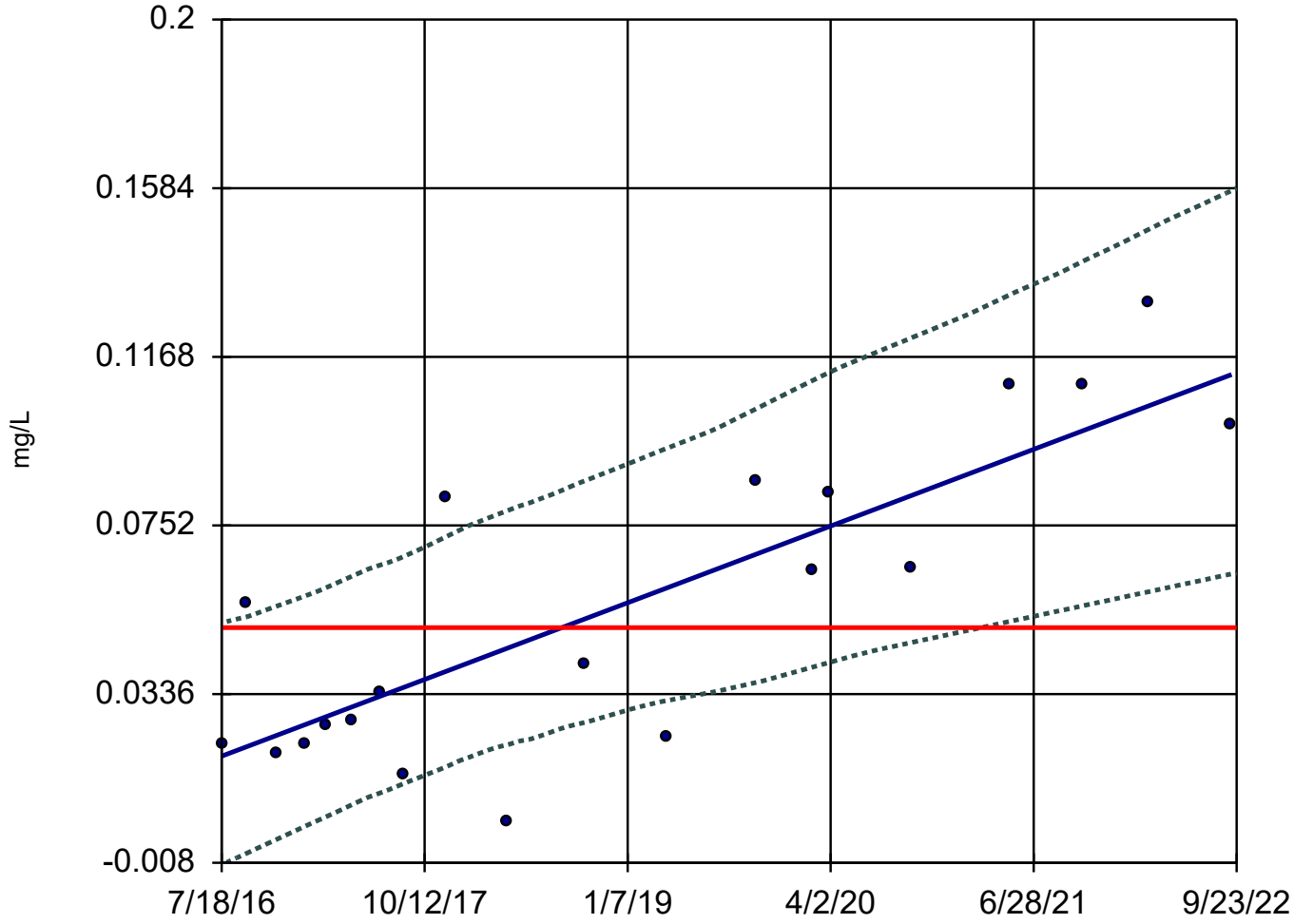
Confidence band intersects GWPS (0.05) on 01/21/18.

Constituent: Selenium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-14



n = 20

Slope = 0.01529 units per year.

Mann-Kendall statistic = 110
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

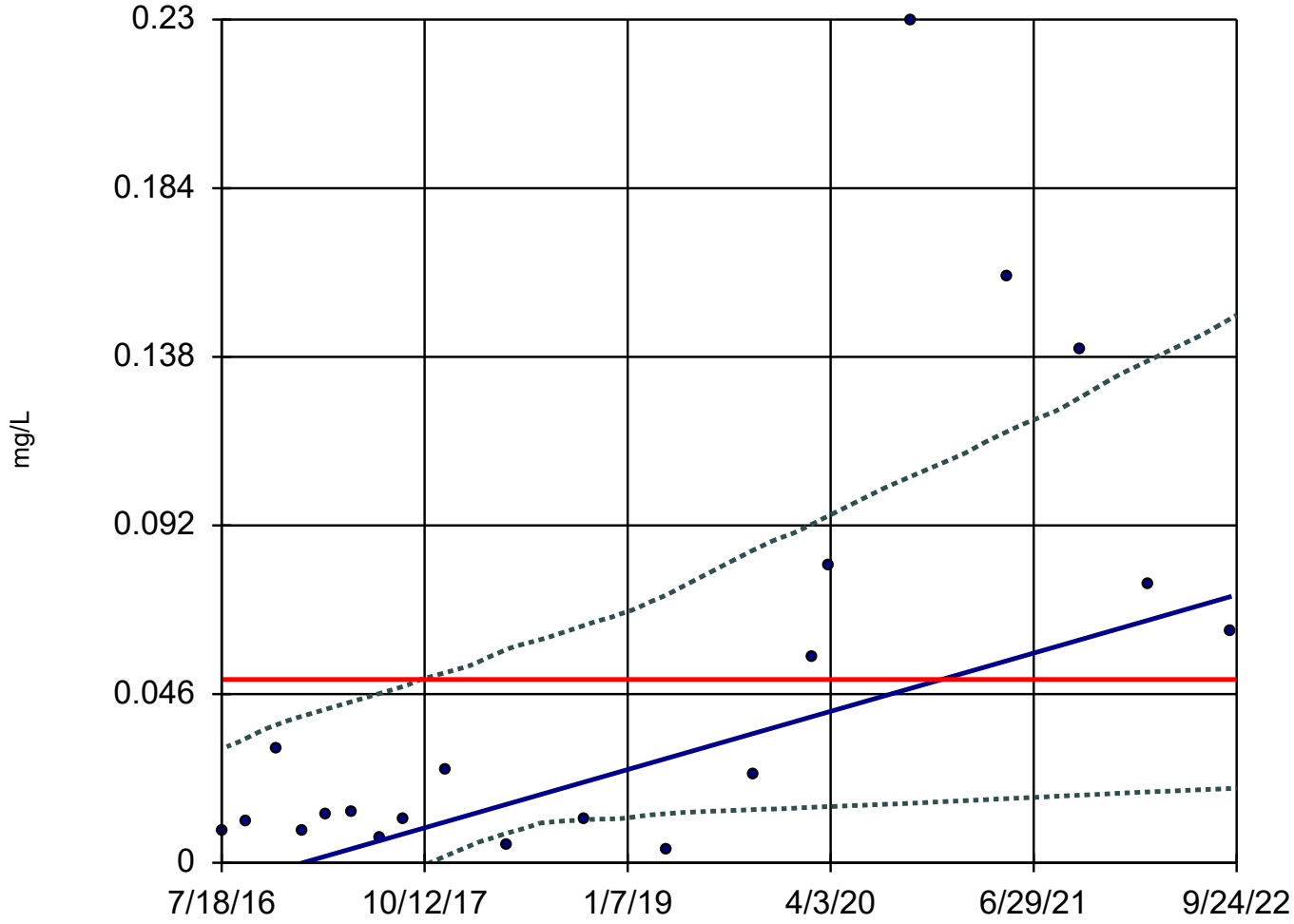
Confidence band intersects GWPS (0.05) on 03/10/21.

Constituent: Selenium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GAMW-15



n = 20

Slope = 0.01283 units per year.

Mann-Kendall statistic = 85
critical = 73

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

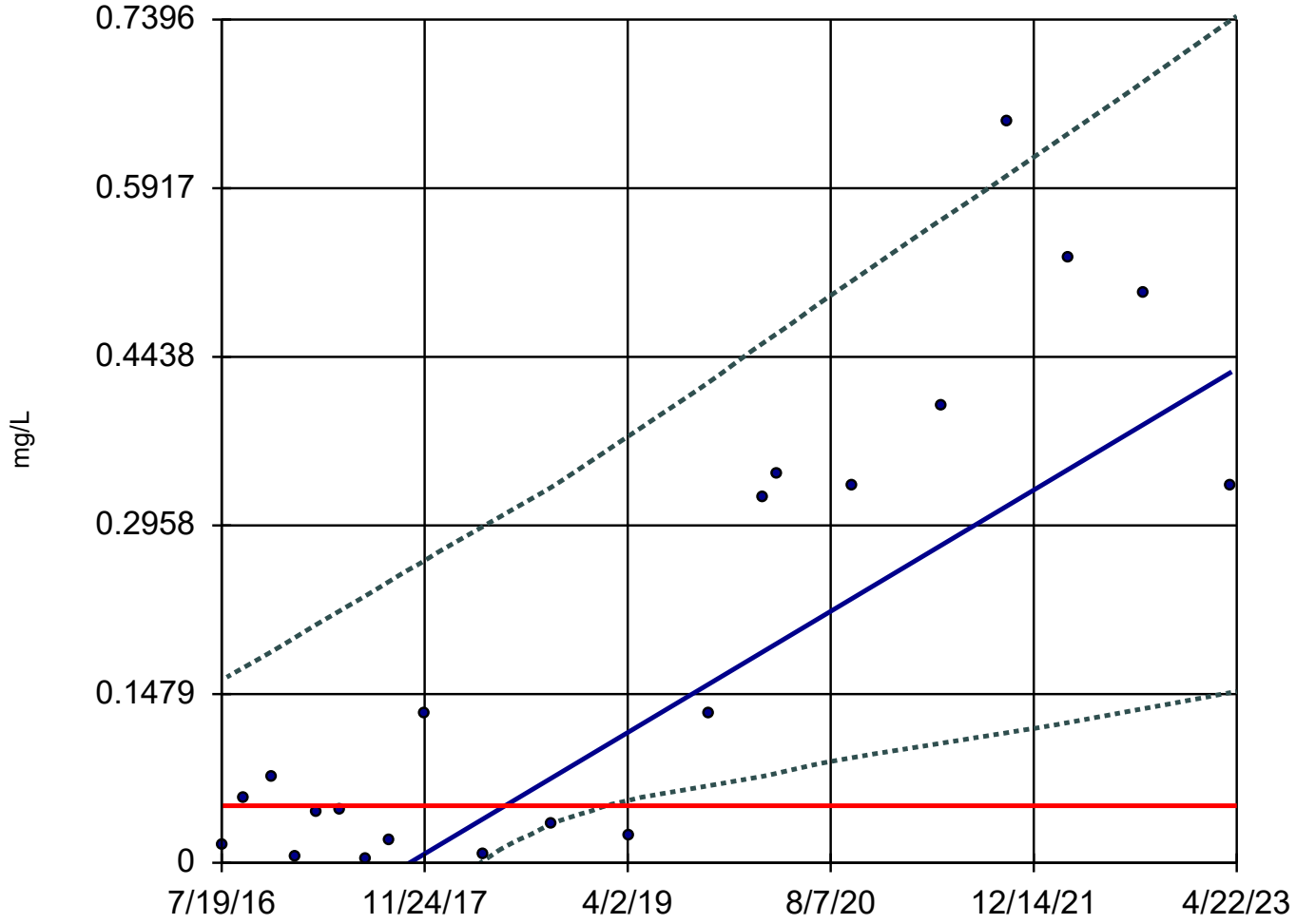
Confidence band intersects GWPS (0.05) on 10/21/17.

Constituent: Selenium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GMMW-01



n = 21

Slope = 0.07861 units per year.

Mann-Kendall statistic = 120 critical = 78

Increasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band intersects GWPS (0.05) on 02/19/19.

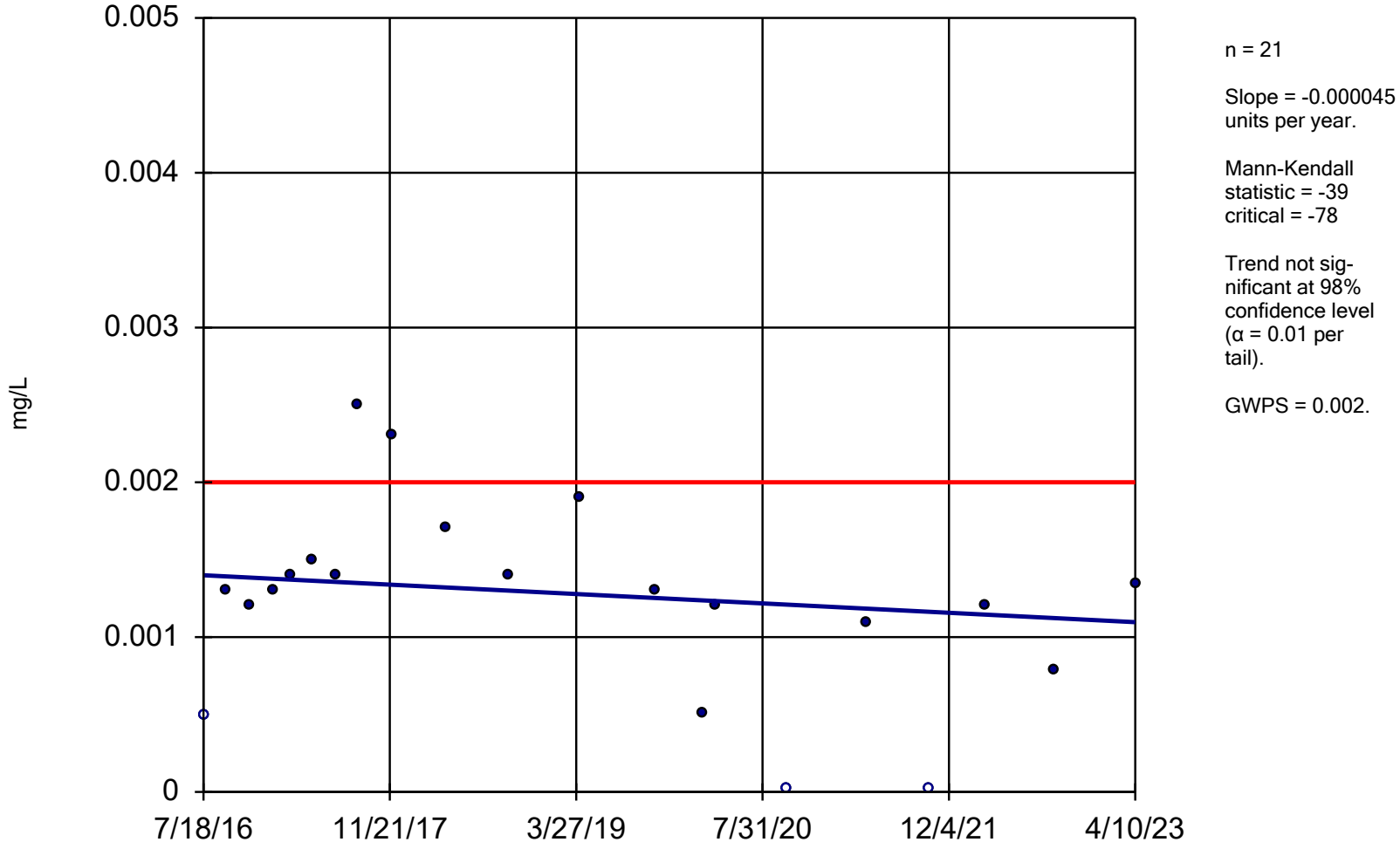
Constituent: Selenium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Hollow symbols indicate censored values.

Sen's Slope Estimator

GAMW-16



n = 21

Slope = -0.000045 units per year.

Mann-Kendall statistic = -39
critical = -78

Trend not significant at 98% confidence level (α = 0.01 per tail).

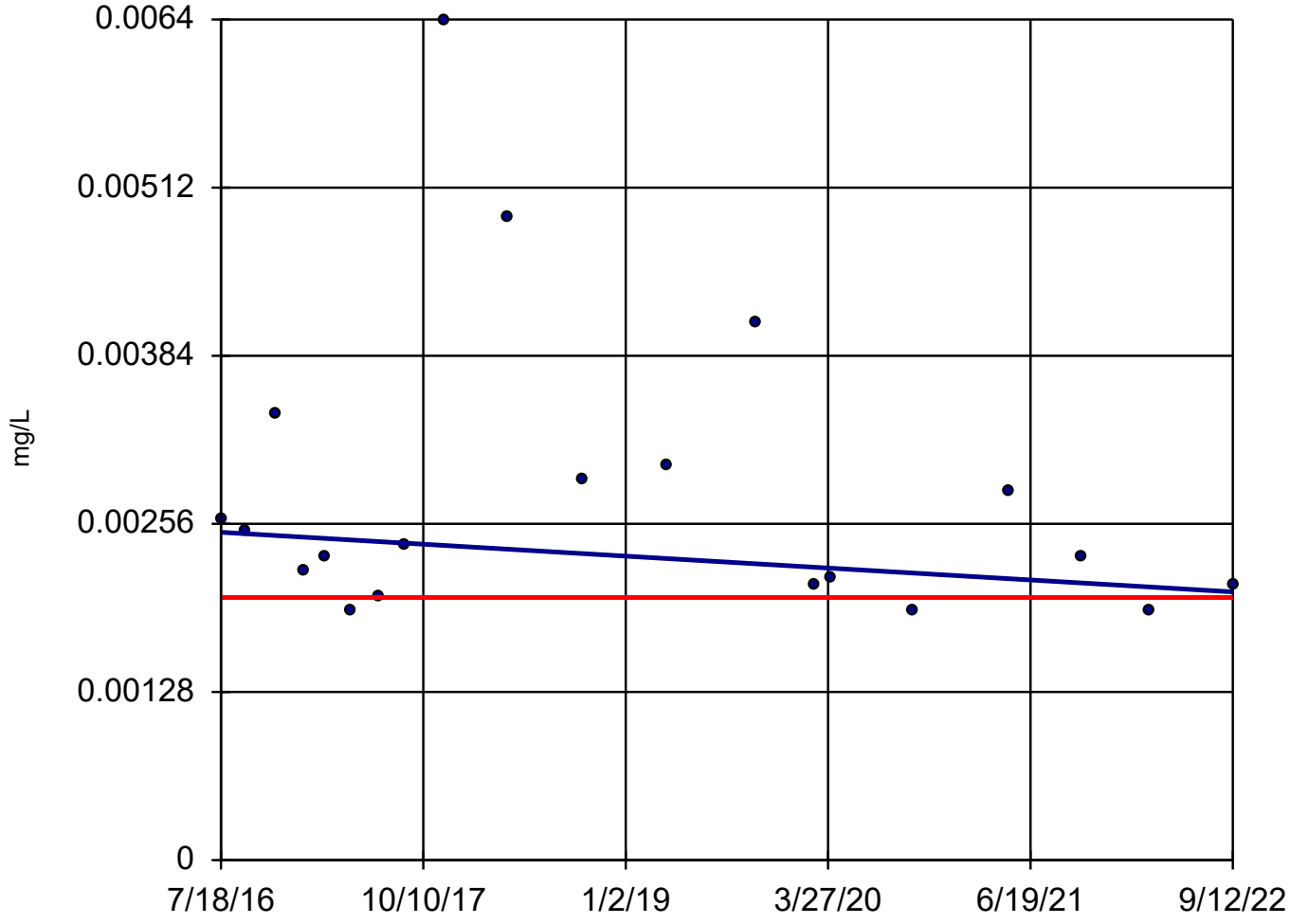
GWPS = 0.002.

Constituent: Thallium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope Estimator

GAMW-14



n = 20

Slope = -0.00007358 units per year.

Mann-Kendall statistic = -37
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

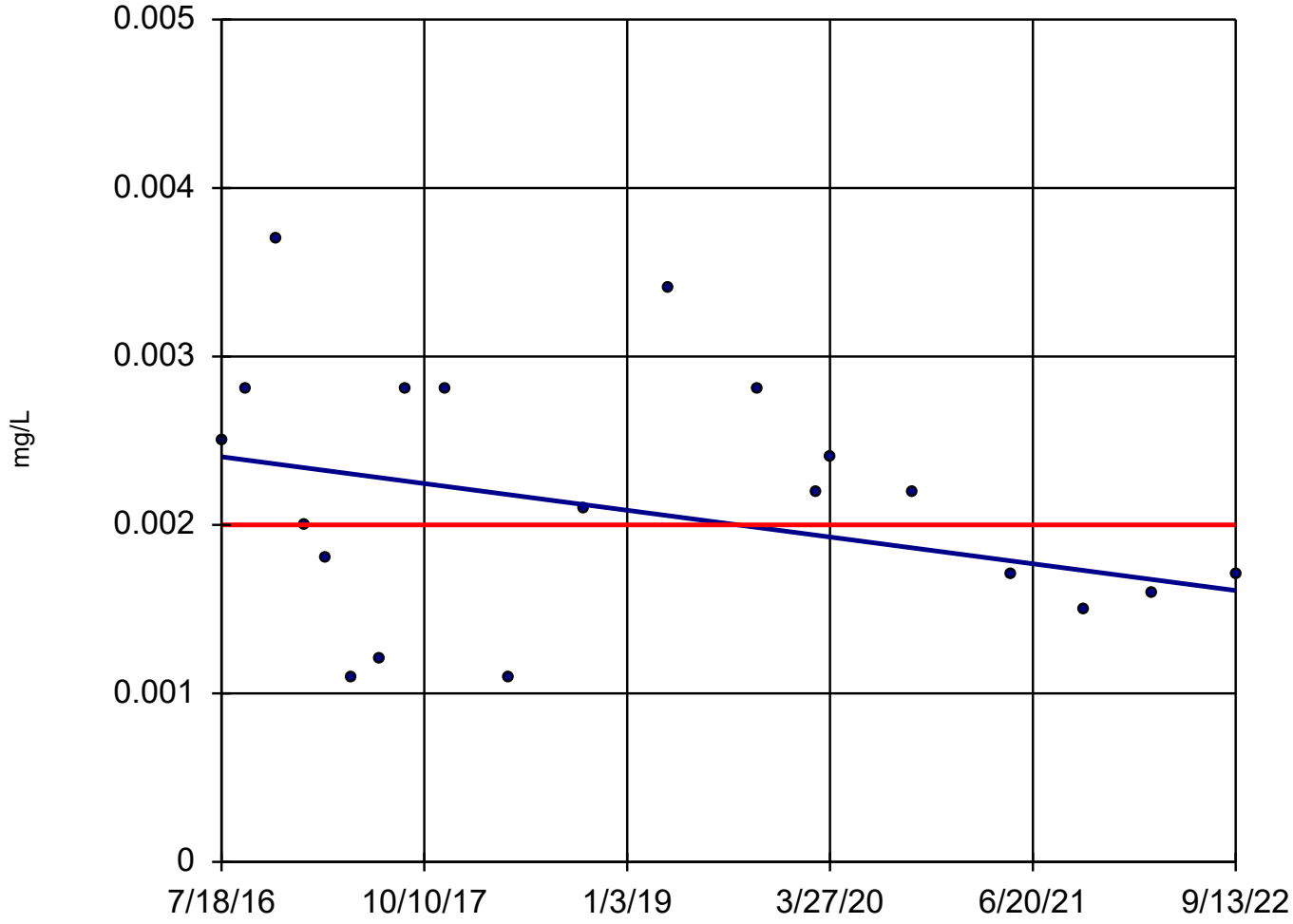
GWPS = 0.002.

Constituent: Thallium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope Estimator

GAMW-15



n = 20

Slope = -0.000129 units per year.

Mann-Kendall statistic = -41
critical = -73

Trend not significant at 98% confidence level (α = 0.01 per tail).

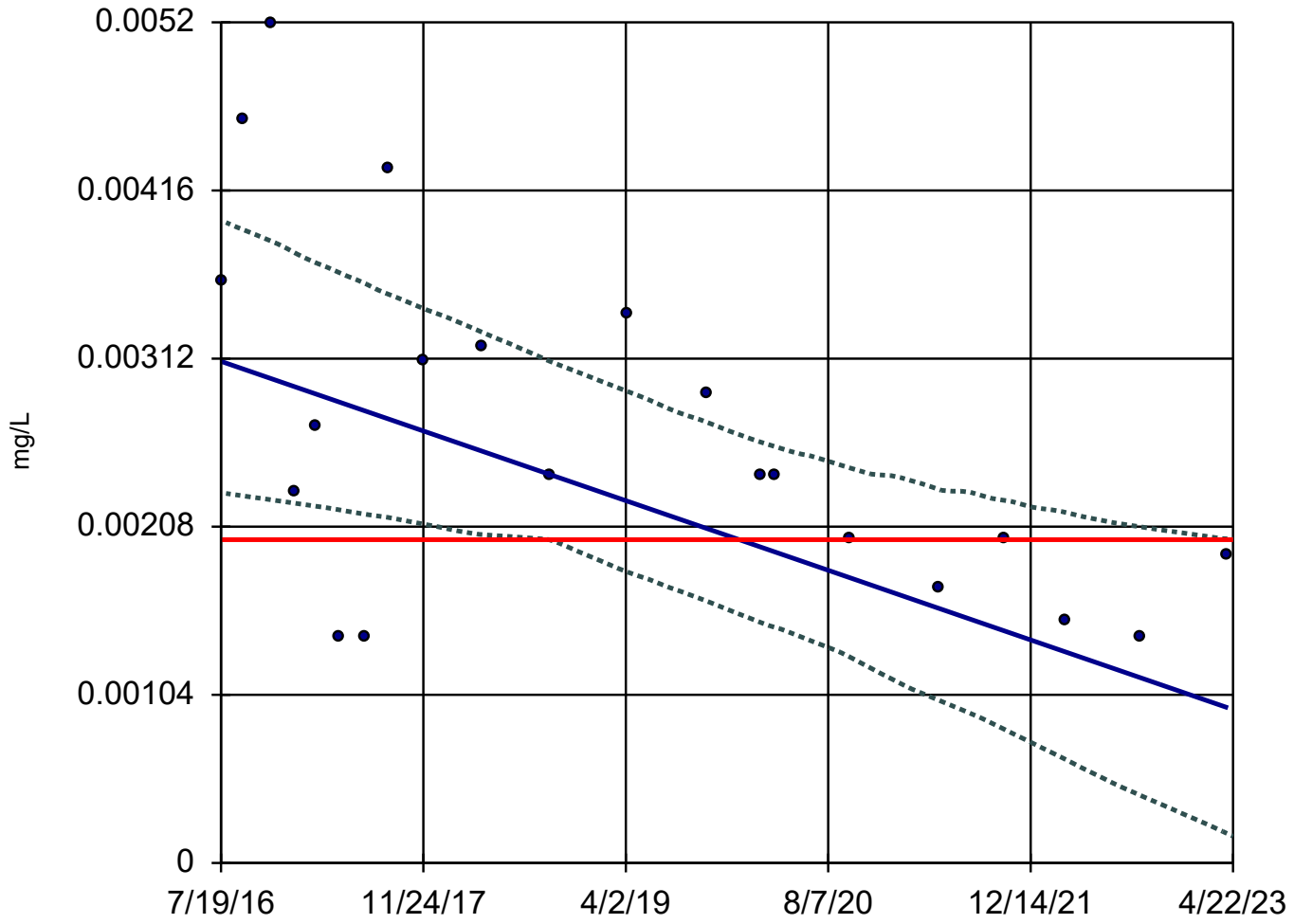
GWPS = 0.002.

Constituent: Thallium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

Sen's Slope and 95% Confidence Band

GMMW-01



n = 21

Slope = -0.0003185 units per year.

Mann-Kendall statistic = -97
critical = -78

Decreasing trend significant at 98% confidence level (α = 0.01 per tail).

Confidence band is below GWPS (0.002).

Constituent: Thallium Analysis Run 6/27/2023 2:17 PM View: Primary 2

Michigan City GS Client: NIPSCO Data: MCGS_CCR_GW

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