Arch Chemicals, Inc.

Rochester, New York (Site #828018a)

Groundwater Monitoring Report 63
Fall 2019

May 2020

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
FALL 2019 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

ARCH CHEMICALS, INC.
(A WHOLLY-OWNED SUBSIDIARY OF LONZA)

MAY 2020

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
FALL 2019 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

Prepared by

MACTEC Engineering & Geology, Inc.
Portland, Maine

for

ARCH CHEMICALS, INC.
(A Wholly-Owned Subsidiary of Lonza)

MAY 2020

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EXECUTIVE SUMMARY

This monitoring report presents the results of an on-going groundwater and surface water monitoring program being conducted by Arch Chemicals at its Rochester, New York, manufacturing facility. Arch Chemicals is a wholly-owned subsidiary of Lonza, a leading supplier to the global life sciences, healthcare and pharmaceutical industries headquartered in Basel, Switzerland.

During this monitoring event conducted in November 2019, samples from a total of 28 groundwater monitoring or pumping wells and four locations associated with the Dolomite Products Quarry seep and outfall were collected by Matrix Environmental Technologies Inc., of Orchard Park, New York, and analyzed by Paradigm Environmental Services, Inc., of Rochester, New York.

As in prior reports, monitoring results were compared with previous average concentrations at each sampling location. Nineteen of the 28 wells sampled for chloropyridines, as well as the main quarry seep location QS-4, had contaminant concentrations that were above their respective 5-year prior averages. Nine of the 24 wells sampled for volatile organic compounds had concentrations above their 5-year prior averages.

Sampling locations associated with the quarry included the main quarry seep (QS-4), the quarry ditch where the quarry dewatering discharge enters the ditch (QD-1), the quarry ditch as it enters the Erie Barge Canal (QO-2), and the surface water in the canal approximately 100-feet downstream of the quarry ditch (QO-2S1). The total concentration of chloropyridines in quarry seep QS-4 was 88 micrograms per liter (µg/L), which is greater than its prior 5-year average of 78 µg/L. Chloropyridines were not detected in the ditch sample from location QD-1, the ditch outfall sample at location QO-2, or the canal water at sample location QO-2S1.

On-site monitoring wells were checked for the presence of floating (or light) non-aqueous phase liquids (LNAPL) using an interface probe. LNAPL was not observed in any of these wells.

During the period June 2019 through November 2019, the on-site groundwater extraction system pumped approximately 7.9 million gallons of groundwater to the on-site treatment system, containing an estimated 3,700 pounds of chloropyridines and 47 pounds of target volatile organic compounds.

The next regular monitoring event will occur in May 2020 and will include groundwater, surface water, and seep sampling.

1.0 INTRODUCTION

In accordance with the Order on Consent executed between Arch Chemicals, Inc., and the New York State Department of Environmental Conservation (NYSDEC), effective August 21, 2003, Arch is conducting a Remedial Action program at its facility on McKee Road in Rochester, New York. As part of this program, Arch conducts twice-yearly monitoring events consisting of sampling and chemical analysis of groundwater and surface water in the vicinity of the Rochester facility.

The Fall 2019 sampling event included the collection and analysis of groundwater, surface water, and seep samples from a total of 32 off-site and on-site locations. Samples were collected from November 12 through November 19, 2019, for analysis of selected chloropyridines and volatile organic compounds (VOCs).

This report presents the results of the Fall 2019 monitoring event.

2.0 SAMPLE COLLECTION AND ANALYSIS

2.1 GROUNDWATER

Groundwater samples were collected from off-site wells, on-site wells and piezometers for analysis of selected chloropyridines (2-chloropyridine, 2,6-dichloropyridine, 3-chloropyridine, 4-chloropyridine, pyridine, and p-fluoroaniline) and target compound list (TCL) VOCs. Samples were collected by personnel from Matrix Environmental Technologies Inc., (Matrix) and transported to the analytical laboratories of Paradigm Environmental Services, Inc. (Paradigm) in Rochester, New York for analysis. Table 1 lists the wells that were sampled and the requested analyses and the sampling locations are shown on Figures 1 and 2. Well B-11 was noted as damaged in a prior field sampling event and recommended for abandonment. The well was removed from the sampling program.

The Matrix Field Report, which includes groundwater sampling data sheets, is provided in Appendix A.

Groundwater was collected from most of the wells following the low flow/low stress purging technique using bladder or peristaltic pumps. Samples from active pumping wells were collected from the discharge lines.

Groundwater piezometric elevations were measured on November 11, 2019. Piezometric contours were constructed for each water-bearing zone (overburden, bedrock, and deep bedrock) and are presented on Figures 3, 4, and 5, respectively.

On-site monitoring wells were checked for the presence of LNAPL using an interface probe. LNAPL was not observed in any of these wells.

2.2 SURFACE WATER

Surface water and quarry seep samples were collected as part of the on-going monitoring program for the Arch Rochester site. The location of the quarry and its outfall in relation to

the site is shown on Figure 6. Samples of the main quarry seep (QS-4), the quarry ditch where the quarry dewatering discharge enters the ditch (QD-1), the quarry ditch as it enters the Erie Barge Canal (QO-2), and the surface water in the canal approximately 100-feet downstream of the quarry ditch (QO-2S1) were collected by Matrix on November 18, 2019. All quarry-related samples were analyzed for the Arch suite of selected chloropyridines. The quarry locations sampled during the Fall 2019 event are shown on Figure 7.

2.3 ANALYTICAL PROCEDURES

Samples were analyzed for the Arch suite of selected chloropyridines and TCL volatile organic compounds (VOCs) by USEPA SW-846 Methods 8270D and 8260C, respectively. The reporting limits for the chloropyridines and VOCs are approximately 10 micrograms per liter (µg/L) and 2 to 20 µg/L, respectively, for undiluted samples.

2.4 QUALITY CONTROL

Laboratory analytical results were reviewed and qualified following USEPA "National Functional Guidelines for Organic Superfund Methods Data Review", January 2017, using professional judgment and guidance from USEPA Region II SOPs No. HW-24 Revision 4, October 2014, and No. HW-22 Revision 5, December 2010. Analytical results were evaluated for the following parameters:

* Collection and Preservation
* Holding Times
Surrogate Recoveries
* Blank Contamination
* Duplicates
Laboratory Control Samples
Matrix Spike/Matrix Spike Duplicates
Miscellaneous

* - *all criteria were met for this parameter*

With the qualifications discussed below, results are determined to be usable as reported by the laboratory.

Surrogate Recoveries. Percent recoveries of one or more VOC surrogates in a subset of samples were less than the laboratory control limits, indicating potential low biases relative to the laboratory's statistically derived control limits. The majority of surrogate results that were less than the laboratory's statistically derived limits were greater than 80 percent, indicating generally acceptable recoveries. Based on USEPA data validation guidelines, positive and non-detected results in affected samples were qualified estimated with potential low bias (J-/UJ): BR-106, BR-127, BR-6A, BR-7A, BR-8, MW-106, PW13, PW15, PW16, PW17, PZ-102, PZ-103, PZ-104, PZ-105, and PZ-106.

Duplicates. Field duplicates for chloropyridines and VOCs were collected at locations BR-127 and PW15. Relative percent differences (RPDs) between sample and field duplicate results for all target analytes in all field duplicate pairs were within the control limit.

Laboratory Control Samples (LCS). Percent recoveries of 4-chloropyridine (46 to 49) and p-fluoroaniline (36 to 40) in all LCS associated with the sampling event were below nominal control limits of 50-140, indicating potential low biases for 4-chloropyridine and p-fluoroaniline in all samples. Nominal control limits were used in the absence of statistically derived laboratory control limits. 4-Chloropyridine and p-fluoroaniline were not detected in any samples and reporting limits in all samples were qualified estimated (UJ).

Matrix Spike/Matrix Spike Duplicates (MS/MSD). MS/MSD analyses were specified on the chain of custody forms for samples BR-127 and BR-9 for chloropyridines and VOCs. In the MS/MSD associated with SVOC sample BR-127, percent recoveries of p-fluoroaniline (34, 36) were less than the 50-140 nominal control limits, indicating potential low bias. p-Fluoroaniline was not detected in sample BR-127 and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with SVOC sample BR-9, percent recoveries of p-fluoroaniline (35, 33) were less than the 50-140 nominal control limits, indicating potential low bias. p-Fluoroaniline was not detected in sample BR-9 and the reporting limit was qualified estimated (UJ).

In the MSD associated with VOC sample BR-127, percent recovery for chloroform (60) was less than the laboratory control limits, indicating potential low bias. The result for chloroform in BR-127 was qualified estimated with potential low bias (J-).

In the MS/MSD associated with VOC sample BR-9, percent recoveries for all VOCs were generally low with several recoveries less than the laboratory control limits. Based on the consistency of the low recoveries, and that all MSD recoveries were within laboratory limits, the MS recoveries were attributed to a potential spiking error rather than matrix interference. The MSD for VOC sample BR-9 was used for evaluation and sample results were reported without qualification for the MS/MSD.

Miscellaneous. Samples from a subset of wells were analyzed at dilutions due to high concentrations of volatile organic and/or semi-volatile organic target analytes. As a result, non-detections are reported at elevated reporting limits.

3.0 ANALYTICAL RESULTS

3.1 GROUNDWATER

The validated results from the Fall 2019 groundwater monitoring event are provided in Tables 2 and 3. Table 4 provides a comparison of the Fall 2019 analytical results for selected chloropyridines and VOCs in representative wells to mean concentrations of the prior five years (Fall 2014 through Spring 2019). Concentration trends for both selected chloropyridines and VOCs are also presented as time-series plots for representative wells in Appendix B. A summary of the analytical findings is presented below by parameter class.

3.1.1 CHLOROPYRIDINES

On-Site. Chloropyridines were detected above sample quantitation limits in all 21 of the on-site wells sampled in the Fall 2019 event. Concentrations of chloropyridines (sum of all chloropyridine and pyridine isomer concentrations) ranged from 39 µg/L (in well B-15) to

730,000 µg/L in well BR-8. Sixteen of the on-site wells exhibited total chloropyridine concentrations that were above their respective means from monitoring events over the previous five years (see Table 4).

Off-Site. Chloropyridines were detected above sample quantitation limits in all seven of the off-site wells that were sampled. Concentrations of total chloropyridines ranged from 32 µg/L (in PZ-101) to 58,000 µg/L in well MW-106. Three of the off-site wells contained total chloropyridine concentrations above their respective five-year prior means (see Table 4).

Concentration Contours. Chloropyridine distribution in groundwater is shown as a set of concentration contours on Figure 8. The contours were developed using data from both overburden and bedrock monitoring wells. The chloropyridine plume distribution is generally similar to the prior monitoring event in May 2019 with increases in most wells, notably in wells to the west at BR-106 and MW-106 and in each extraction well. Lower concentrations were measured MW-127, an overburden well along the east perimeter of the plume near extraction well BR-127. Chloropyridine levels were highest in on-site well BR-8 (730,000 µg/L) and extraction wells PW15 and PW16 as compared to historic levels in these wells and other on-site wells.

3.1.2 SELECTED VOCS

On-Site. Selected VOCs were detected in 17 of the 21 on-site wells sampled for VOCs in the Fall 2019 event. Total concentrations of selected VOCs (sum of carbon tetrachloride, chlorobenzene, chloroform, methylene chloride, tetrachloroethene, and trichloroethene) ranged from not detected (in wells B-15, BR-126, BR-5A, and MW-127) to 74,000 µg/L in PZ-106. Seven of the on-site wells contained total concentrations of selected VOCs above their respective five-year prior means (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple on-site wells include:

- toluene (in 11 out of 21)
- 1,2-dichlorobenzene (12 of 21)
- carbon disulfide (11 of 21)
- vinyl chloride (4 of 21)
- 1,2,3-trichlorobenzene (3 of 21)
- bromoform (2 of 21)
- 1,1-dichloroethane (2 of 21)
- benzene (14 of 21)
- 1,4-dichlorobenzene (9 of 21)
- 1,3-dichlorobenzene (9 of 21)
- cis-1,2-dichloroethene (5 of 21)
- 1,2,4-trichlorobenzene (4 of 21)
- m,p-xylenes (2 of 21)

Off-Site. Selected VOCs were detected in six of the seven off-site wells sampled for VOCs during the Fall 2019 event. Total concentrations of selected VOCs ranged from not detected (in well BR-105D) to 630 µg/L (in well MW-106). Two wells (BR-106 and MW-106) contained total concentrations of selected VOCs above their 5-year prior means for VOCs (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple off-site wells include benzene (in 6 out of 7 wells), 1,2-dichlorobenzene (5 of 7), 1,3-dichlorobenzene (4 of 7), 1,4-dichlorobenzene (4 of 7), carbon disulfide (4 of 7), and cis-1,2-dichloroethene (2 of 7).

Concentration Contours. The distribution of selected VOCs in groundwater is shown as a set of concentration contours on Figure 9. These contours were developed using both overburden and bedrock groundwater data and are dashed where approximated using historical data. The VOC plume extent is generally consistent with previous monitoring events, with higher VOC concentrations shifting slightly south and east within the plume. Increases were observed in on-site wells PZ-106 and PZ-107, although the November 2019 concentration of target VOCs in PZ-107 is only slightly greater than the previous five year mean. The target VOCs concentration for PZ-106 increased from 10,000 µg/L in Spring 2019 to 74,000 µg/L in the fall, and is above the previous five year mean of 7,200 µg/L. VOCs observed in off-site wells primarily consist of chlorobenzenes.

3.2 SURFACE WATER AND QUARRY SEEP

Results from the Fall 2019 canal and quarry monitoring event are presented in Table 5 and are discussed below.

3.2.1 QUARRY

One quarry seep sample (QS-4) was collected in the Fall 2019 monitoring event. The sample contained 88 µg/L total chloropyridines, which is above its prior five-year mean of 78 µg/L.

3.2.2 QUARRY DISCHARGE DITCH

Two locations within the quarry discharge ditch were sampled and analyzed for chloropyridines: QD-1, at the point where the quarry's dewatering discharge enters the ditch; and QO-2, at the location where the ditch discharges to the canal. Chloropyridine compounds were not detected in either sample.

3.2.3 BARGE CANAL

One sample was collected from the Erie Barge Canal location (QO-2S1, approximately 100 feet downstream of QO-2). Chloropyridines were not detected in this sample.

4.0 EXTRACTION SYSTEM PERFORMANCE

Table 6 presents a summary of the system flow measurements for the on-site extraction wells from June 2019 through November 2019. The total volume pumped during the six-month period was approximately 7.9 million gallons. Overall, the system pumped reliably throughout the period with system flow rates averaging between 22 and 37 gpm on a monthly basis. PW-17 continues to be a poorly performing well due to very low yield. Flow for well PW-13 dropped significantly at the end of November 2019, which is consistent with its usual pattern of low flow during the late fall and winter months (when the nearby canal is drawn down). A continued drop in average flow from BR-7A was measured (~ 5.9 gpm vs average of 8.8 gpm in spring 2019 and 11.3 gpm in 2018). This lower flow may have resulted in plume redistribution and higher concentrations in other extraction wells over the period. . Well BR-9 was off-line for maintenance in mid-October and well BR-127 was off-line for maintenance in mid-September. The remaining wells (PW-15 andPW-16) pumped at relatively consistent rates through the six-month period.

Table 7 provides a calculation of mass removal rates since the previous groundwater monitoring event (i.e., from May 2019 through November 2019). Arch estimates that approximately 47 pounds of target VOCs and 3,700 pounds of chloropyridine compounds were removed by the groundwater extraction system and treated by the plant's activated carbon adsorption units over that time period.

5.0 OPTIMIZATION OF MONITORING NETWORK

Overburden monitoring well B-11 is reportedly damaged and is scheduled to be abandoned in 2020. MW-127, another overburden monitoring well located nearby tracks closely with B-11 and can be used monitor the plume perimeter along the southeast area of the facility. Debris was noted in well BR-3 that prevented sample collection in Spring 2019. This well may have been covered over inadvertently as a result of work activity in the area. Arch will make attempts to locate it. Arch is planning to remove sediment build up from wells BR-9, PW-16, and BR-127 and assess the condition of well BR-7A before the next sampling event in May 2020.

6.0 NEXT MONITORING EVENT

The next regular monitoring event will occur in May 2020 and will include groundwater, surface water, and seep sampling.

Table 8 shows the 2020 monitoring program for the Arch Rochester site.

Figures

Legend

Property Owned by Lonza

Monitoring Well

NOTES

1. Source - Topographic Quadrangle 7.5-Minute Series

N

0 250 500 Feet

MACTEC

Prepared/Date: ICD 03/23/20	Checked/Date: NMB 03/23/20

I-390

ERIE BARGE CANAL

FIRTH RIXSON

ARCH

BUFFALO RD. BUSINESS CENTER

MW-103/BR-103

MW-108/BR-108

PZ-102

BR-111/BR-111D

BR-106/MW-106

PZ-103

MW-16

AID TO HOSPITALS

BR-126

BR-112A/BR-112D

MW-105/BR-105

MW-104/BR-104

BUFFALO ROAD

MW-114/BR-114

12-6

CUMBERLAND FARMS PETROLEUM TERMINAL

OW-105

NESS-W

NESS-E

8-8

7-6

BR-113/BR-113D

LEXINGTON

11-8

GENERAL RAIL SIGNAL CO.

9-6

RW-1

10-6

HOWARD ROAD

DOLOMITE PRODUCTS QUARRY

13-4

Morey

OW-102A

OW-103

PFAUDLER

BR-122D

BR-117/BR-117D

BR-121D (Abandoned)

BR-118/BR-118D

BR-123D

BR-116/BR-116D

I-390

ERIE BARGE CANAL

BR-120D (Abandoned)

BR-119D (Abandoned)

LETTINGTON DRIVE

BR-124D

Figure 1
Fall 2019
Off-Site Groundwater
Monitoring Well Locations

Arch Chemicals
Rochester, NY

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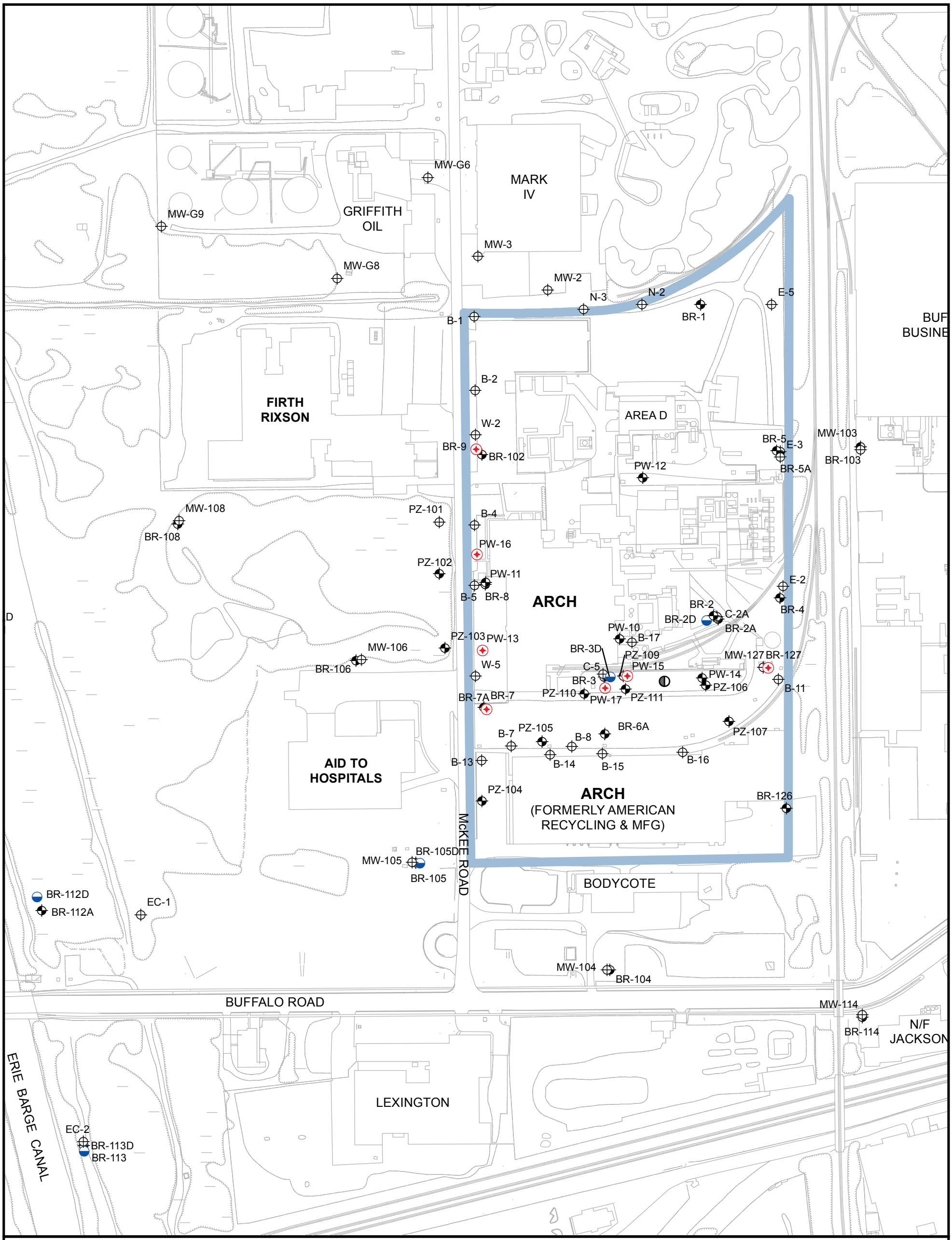

Legend

- Active Pumping Well
- Overburden Monitoring Well
- Bedrock Monitoring Well
- Deep Bedrock Monitoring Well
- Carbon Treatment Sample Location
- Property Owned by Lonza

0 100 200 Feet

N

Figure 2
Fall 2019
Onsite Monitoring Well Locations

Arch Chemicals
Rochester, NY

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Prepared/Date: ICD 03/23/2020	Checked/Date: NB 03/23/2020

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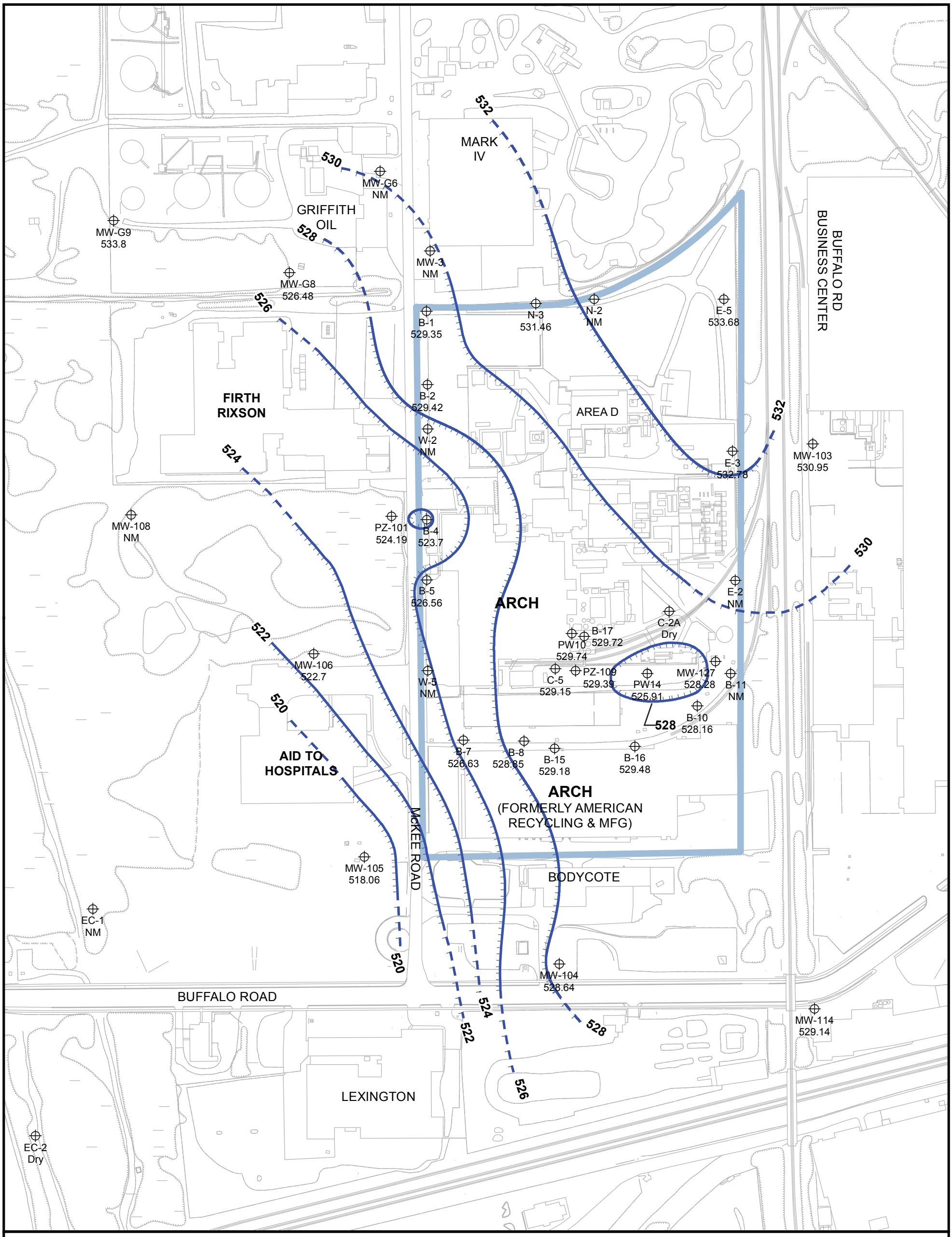

NOTES:
1. Water Levels Measured on November 11, 2019
2. Dashed Contours Reflect Uncertainty
3. NM = Not Measured

0 100 200 Feet

N

Legend

PZ-101 (526.61) — Piezometric Elevation (Feet MSL) at Well or Piezometer

Property Owned by Lonza

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Figure 3
Fall 2019
Overburden Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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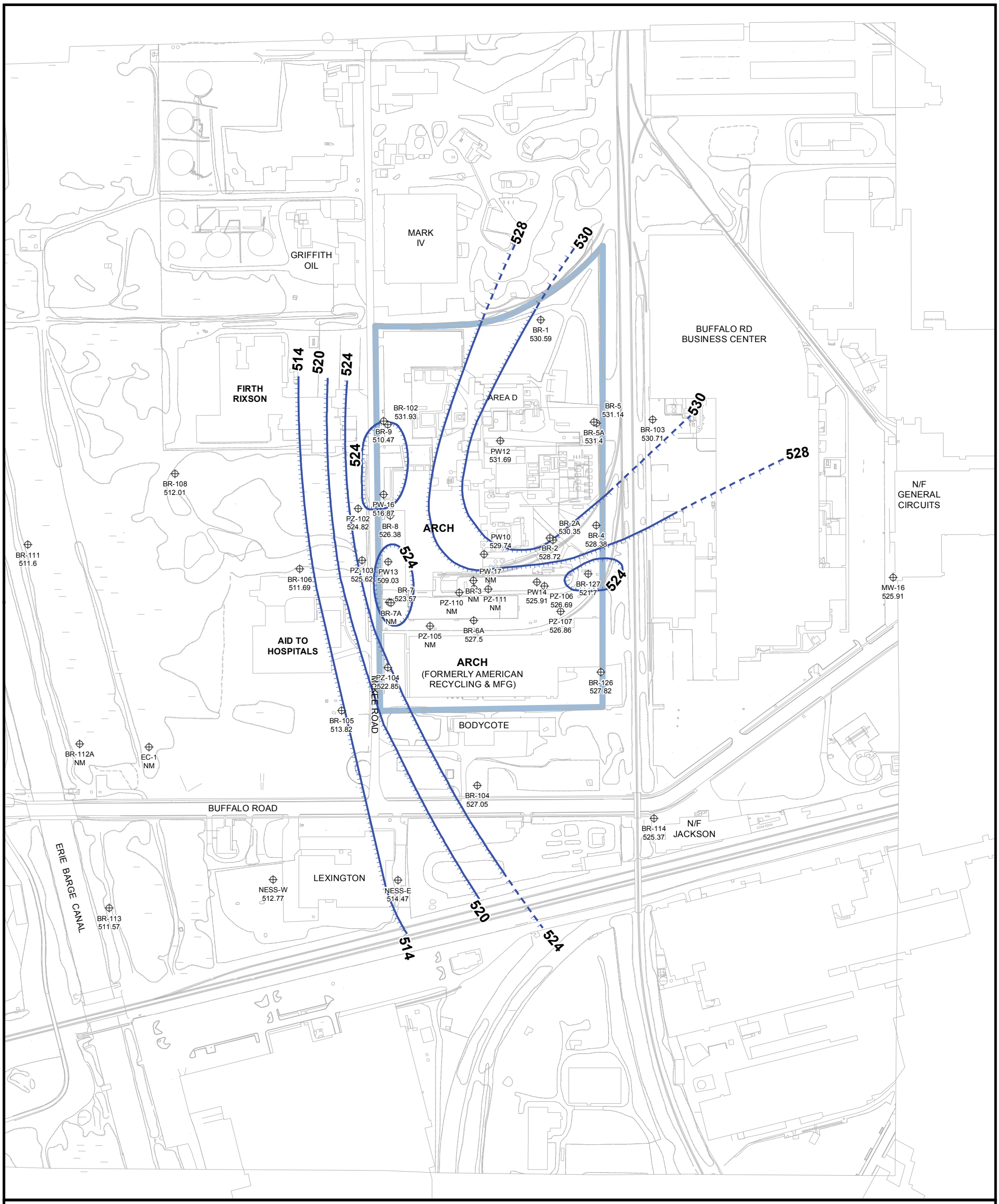

Legend

- BR-114 (526.88) — Piezometric Elevation (Feet MSL) at Well or Piezometer
- Interpreted Groundwater Flow Direction
- **516** — Bedrock Piezometric Elevation Contour (Feet MSL)
- Property Owned by Lonza

0 150 300 Feet

N

NOTES:

1. Water Levels Measured on Nov 11, 2019
2. Dashed Contours Reflect Uncertainty

Figure 4
Fall 2019
Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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Legend

- Bedrock Well ('D' Designates Deep Well)
- 500 — Deep Bedrock Elevation Contour (MSL)
- Interpreted Groundwater Flow Direction
- Property Owned by Lonza
- BR-116D (510.30) Piezometric Elevation (Feet MSL) at Deep Bedrock Well

NOTES:

1. Water Levels Measured on Nov 11, 2019
2. Dashed Contours Reflect Uncertainty
3. Wells BR-105D and BR-3D not used in contouring

0 250 500 Feet

N

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Checked/Date: NB 04/01/20

ERIE BARGE CANAL

I-390

FIRTH RIXSON

ARCH

BUFFALO RD. BUSINESS CENTER

BR-111D 511.23

BR-3D 488.35

AID TO HOSPITALS

BR-105D 510.07

BR-112D 511.43

BUFFALO ROAD

CUMBERLAND FARMS PETROLEUM TERMINAL

BR-113D 511.44

LEXINGTON

GENERAL RAIL SIGNAL CO.

DOLOMITE PRODUCTS QUARRY

BR-122D 507.24

PFAUDLER

BR-117D 499.02

BR-118D 500.43

BR-123D 508.71

BR-124D 505.18

LETTINGTON DRIVE

500

502

504

506

508

510

Figure 5
Fall 2019
Deep Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

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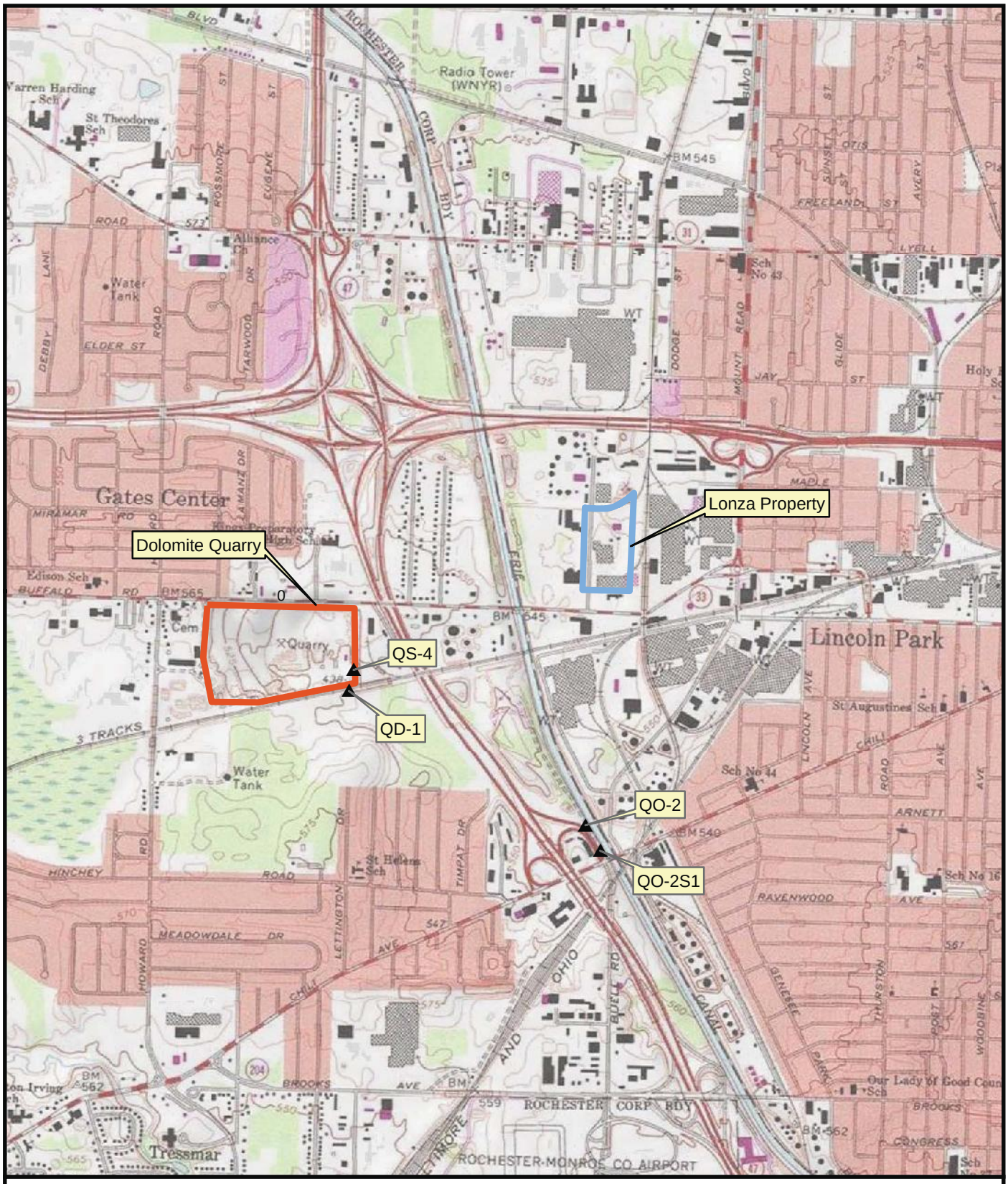

Topographi map: Copyright:© 2013 National Geographic Society, i-cubed

Legend

- Lonza Property
- Dolomite Quarry Boundary
- ▲ Surface Water Sample Location

Figure 6
Fall 2019
Sample Locations
Erie Barge Canal

Arch Chemicals
Rochester, NY

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Prepared/Date: ICD 04/08/20	Checked/Date: NB 04/08/2020

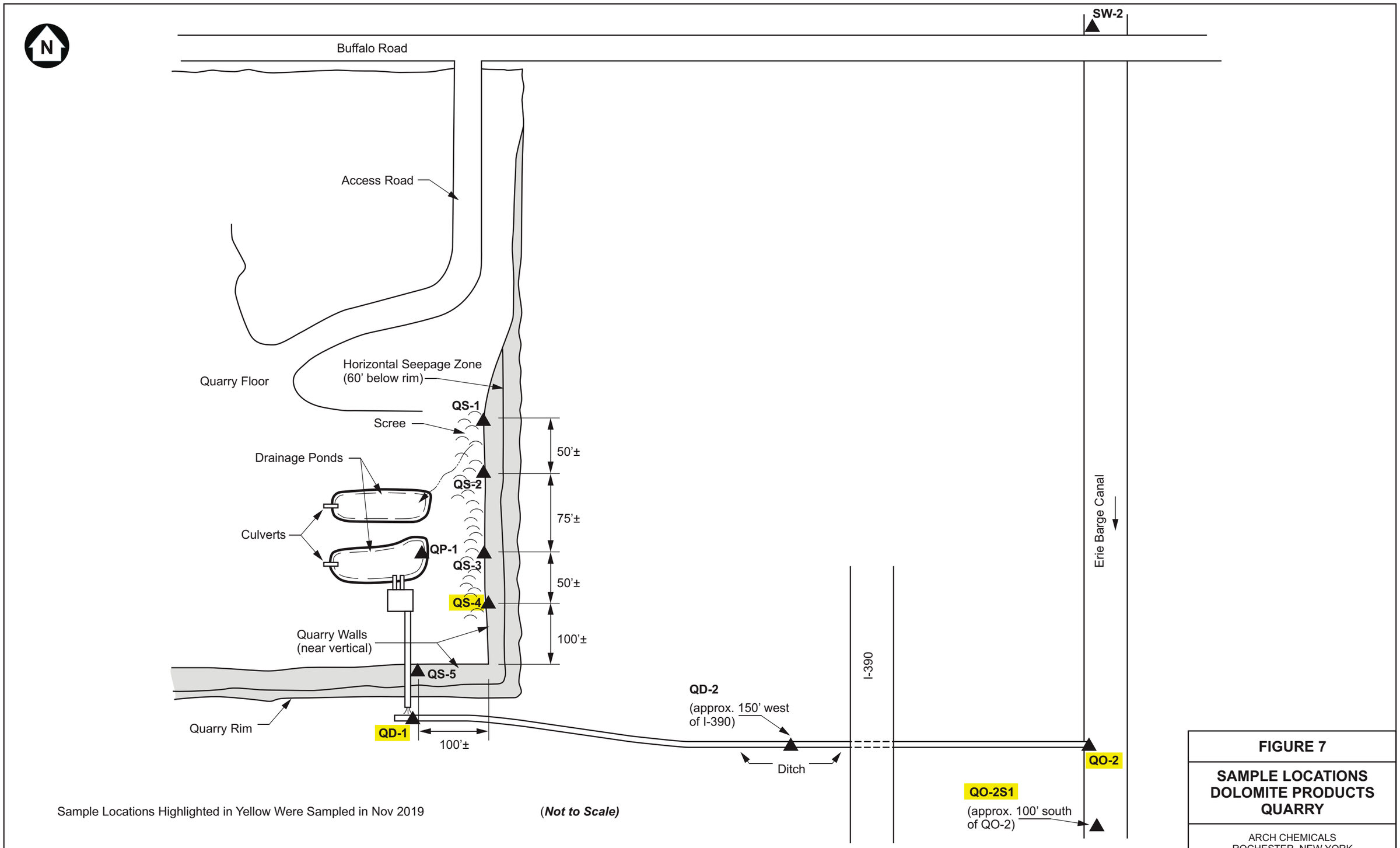
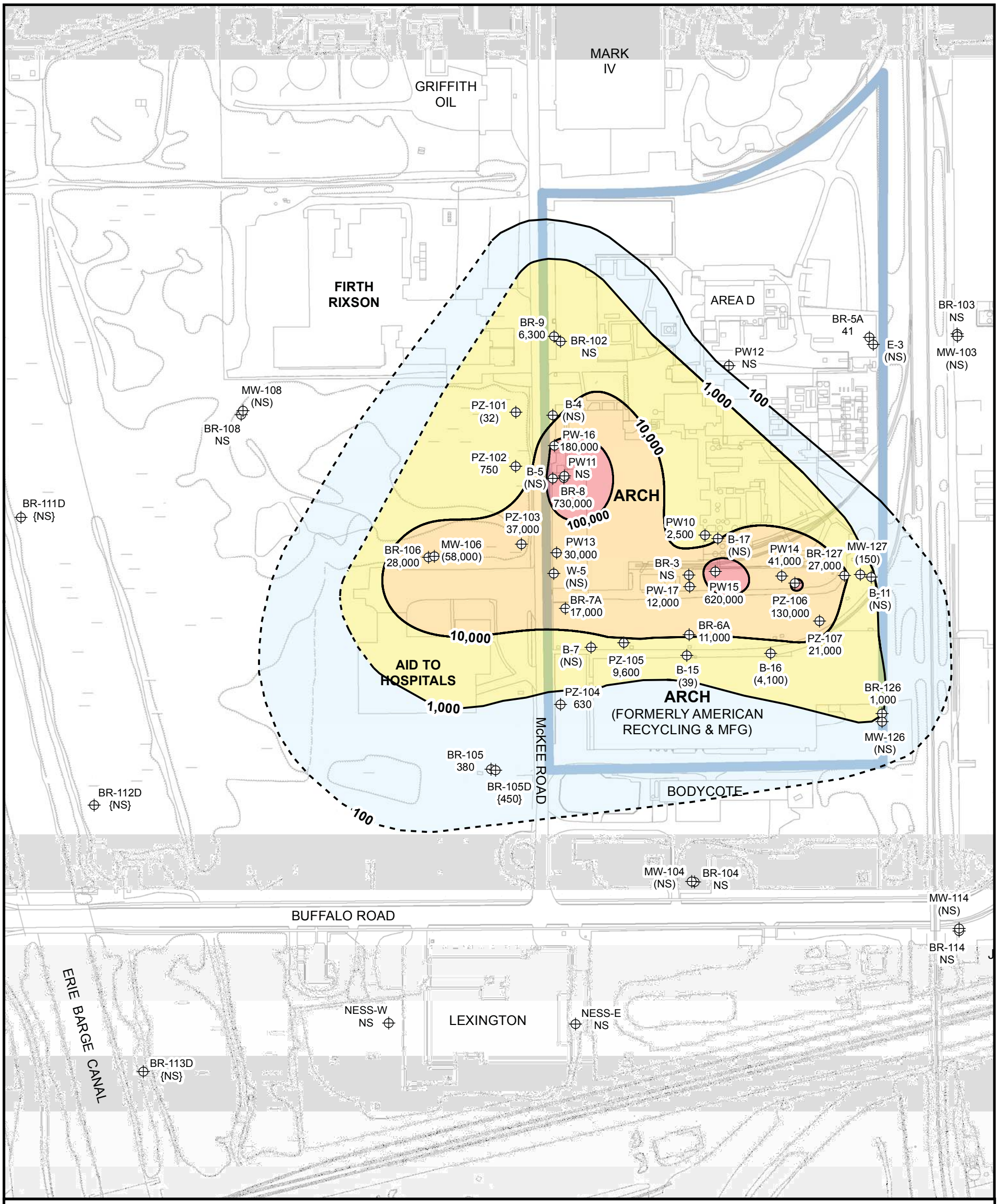


FIGURE 7

SAMPLE LOCATIONS
DOLOMITE PRODUCTS QUARRY

ARCH CHEMICALS
ROCHESTER, NEW YORK

W2004030a.cdr



Legend

MW-106 (28000) — Monitoring Location with Concentration

Property Owned by Lonza

100 — Chloropyridine Concentration Contour

{1000} Deep Bedrock Well
(1000) Overburden Well
1000 Bedrock Well
NS Not Sampled
ND Not Detected

0 100 200 Feet

N

NOTES:

1. Samples Collected Nov 12-19, 2019
2. Selected chloropyridines consist of 2,6-dichloropyridine, 2-chloropyridine, 3-chloropyridine, 4-chloropyridine, and P-fluoroaniline.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells.
4. Dashed concentration contours represent inferences from historical analytical results.
5. Concentrations are in µg/L.

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Prepared/Date: ICD 04/08/20	Checked/Date: NB 04/08/20

Figure 8
Fall 2019
Selected Chloropyridine Concentration Contours

Arch Chemicals
Rochester, NY

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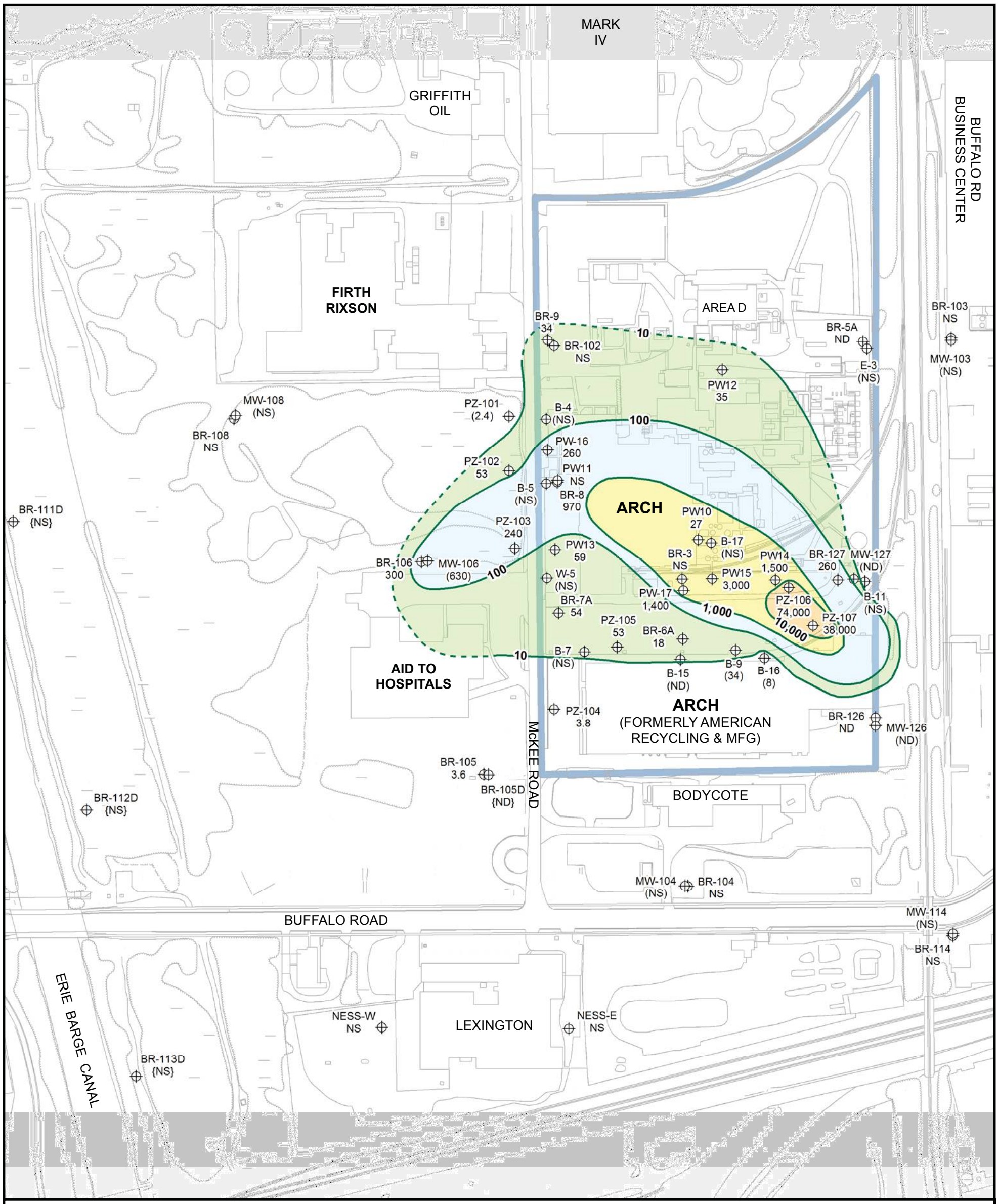


Legend

BR-127 550 — Monitoring Location with Concentration

100 — VOC Concentration Contour

Property Owned by Lonza

{1000} Deep Bedrock Well
(1000) Overburden Well
1000 Bedrock Well
NS Not Sampled
ND Not Detected

0 100 200 Feet

N

MACTEC

NOTES:

1. Samples Collected Nov 12-19, 2019
2. Original Select VOCs consist of Carbon tetrachloride, Methylene chloride Chloroform, TCE, PCE, and Chlorobenzene.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells.
4. Dashed concentration contours represent inferences from historical analytical results.
5. Concentrations are in µg/L

Prepared/Date: ICD 04/08/20	Checked/Date: NB 04/08/20

Figure 9
Fall 2019
Selected Volatile Organic Compound Concentration Contours

Arch Chemicals
Rochester, NY

Document: P:\Projects\Arch\Rochester\GIS\MapDocuments\Fall 2019\VOC_Contours_Fig9_Fall2019.mxd PDF: P:\Projects\Arch\Arch-Lonza-2019 GW Monitoring-3616196076\4.0_Deliverables\4.1_Reports\Fall_2019\Figures\Figure_9_VOCs.pdf 04/08/2020 17:35 PM ian.desjarlais

Tables

TABLE 1
FALL 2019 GROUNDWATER SAMPLING AND ANALYTICAL PROGRAM

ARCH CHEMICALS, INC
ROCHESTER, NEW YORK

			ANALYSIS	PYRIDINES	VOCs
SITE / AREA	**WELL / POINT**	**DATE**	**QC TYPE**		
AID TO HOSPITALS	BR-106	11/15/2019	Sample	X	X
	MW-106	11/15/2019	Sample	X	X
	PZ-101	11/15/2019	Sample	X	X
	PZ-102	11/15/2019	Sample	X	X
	PZ-103	11/15/2019	Sample	X	X
ARCH ROCHESTER	B-15	11/12/2019	Sample	X	X
	B-16	11/12/2019	Sample	X	X
	BR-126	11/12/2019	Sample	X	X
	BR-127	11/14/2019	Duplicate	X	X
	BR-127	11/14/2019	Sample	X	X
	BR-5A	11/12/2019	Sample	X	X
	BR-6A	11/14/2019	Sample	X	X
	BR-7A	11/19/2019	Sample	X	X
	BR-8	11/18/2019	Sample	X	X
	BR-9	11/19/2019	Sample	X	X
	MW-127	11/14/2019	Sample	X	X
	PW10	11/14/2019	Sample	X	X
	PW12	11/12/2019	Sample	X	X
	PW13	11/19/2019	Sample	X	X
	PW14	11/14/2019	Sample	X	X
	PW15	11/18/2019	Duplicate	X	X
	PW15	11/18/2019	Sample	X	X
	PW16	11/18/2019	Sample	X	X
	PW17	11/18/2019	Sample	X	X
	PZ-104	11/12/2019	Sample	X	X
	PZ-105	11/14/2019	Sample	X	X
	PZ-106	11/14/2019	Sample	X	X
	PZ-107	11/14/2019	Sample	X	X
ERIE BARGE CANAL	QD-1	11/18/2019	Sample	X	
(Samples in canal or property along canal)	QO-2	11/18/2019	Sample	X	
	QO-2S1	11/18/2019	Sample	X	
DOLOMITE PRODUCTS, INC.	QS-4	11/18/2019	Sample	X	
(Samples at or near Dolomite Quarry)					
RG & E RIGHT OF WAY	BR-105	11/15/2019	Sample	X	X
	BR-105D	11/15/2019	Sample	X	X

N/F = now or formerly

TABLE 2
FALL 2019 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15	B-16	BR-105	BR-105D	BR-106	BR-126	BR-127	BR-127	BR-5A	BR-6A
SAMPLE DATE:	11/12/2019	11/12/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019	11/14/2019	11/14/2019	11/12/2019	11/14/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	25.6	365 J	83.4	53.5	2,500	193	2,000 U	2,000 U	22.6	2,030
2-Chloropyridine	13	3,780	300	369	25,100	831	24,100	26,600	18.3	8,900
3-Chloropyridine	9.64 U	482 U	19.2 U	24.5 J	2,000 U	80 U	2,000 U	2,000 U	9.52 U	1,000 U
4-Chloropyridine	9.64 UJ	482 UJ	19.2 UJ	46.8 UJ	2,000 UJ	80 UJ	2,000 UJ	2,000 UJ	9.52 UJ	1,000 UJ
p-Fluoroaniline	9.64 UJ	482 UJ	19.2 UJ	46.8 UJ	2,000 UJ	80 UJ	2,000 UJ	2,000 UJ	9.52 UJ	1,000 UJ
Pyridine	9.64 U	482 U	19.2 U	46.8 U	2,000 U	80 U	2,000 U	2,000 U	9.52 U	1,000 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 2
FALL 2019 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-7A	BR-8	BR-9	MW-106	MW-127	PW10	PW12	PW13	PW14	PW15
SAMPLE DATE:	11/19/2019	11/18/2019	11/19/2019	11/15/2019	11/14/2019	11/14/2019	11/12/2019	11/19/2019	11/14/2019	11/18/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS	FD
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	2,000 U	100,000 U	500 U	10,000 U	74.5	1,930	9.58 U	2,000 U	4,000 U	40,000 U
2-Chloropyridine	16,800	629,000	6,310	57,800	75.9	616	66.2	30,000	40,600	559,000
3-Chloropyridine	2,000 U	100,000 U	500 U	10,000 U	40 U	200 U	9.58 U	2,000 U	4,000 U	40,000 U
4-Chloropyridine	2,000 UJ	100,000 UJ	500 UJ	10,000 UJ	40 UJ	200 UJ	9.58 UJ	2,000 UJ	4,000 UJ	40,000 UJ
p-Fluoroaniline	2,000 UJ	100,000 UJ	500 UJ	10,000 UJ	40 UJ	200 UJ	9.58 UJ	2,000 UJ	4,000 UJ	40,000 UJ
Pyridine	2,000 U	98,100 J	500 U	10,000 U	40 U	200 U	9.12 J	2,000 U	4,000 U	41,300

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 2
FALL 2019 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW15	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	11/18/2019	11/18/2019	11/18/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019	11/14/2019	11/14/2019	11/14/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)										
2,6-Dichloropyridine	40,000 U	7,460 J	1,100	20	400 U	2,840	112	1,460	10,000 U	1,150
2-Chloropyridine	581,000	170,000	10,700	12.4	754	32,400	519	8,110	129,000	18,800
3-Chloropyridine	40,000 U	10,000 U	1,000 U	9.65 U	400 U	1,660 J	100 U	1,000 U	10,000 U	1,000 U
4-Chloropyridine	40,000 UJ	10,000 UJ	1,000 UJ	9.65 UJ	400 UJ	2,000 UJ	100 UJ	1,000 UJ	10,000 UJ	1,000 UJ
p-Fluoroaniline	40,000 UJ	10,000 UJ	1,000 UJ	9.65 UJ	400 UJ	2,000 UJ	100 UJ	1,000 UJ	10,000 UJ	1,000 UJ
Pyridine	43,700	10,000 U	1,000 U	9.65 U	400 U	2,000 U	100 U	1,000 U	10,000 U	638 J

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = micrograms per Liter
FS = Field sample
FD = Field duplicate

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15	B-16	BR-105	BR-105D	BR-106	BR-126	BR-127	BR-127	BR-5A
SAMPLE DATE:	11/12/2019	11/12/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019	11/14/2019	11/14/2019	11/12/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FD	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,1,2,2-Tetrachloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,1,2-Trichloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,1-Dichloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,1-Dichloroethene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,2,3-Trichlorobenzene	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
1,2,4-Trichlorobenzene	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	2.73 J
1,2-Dibromo-3-chloropropane	10 U	10 U	10 U	10 U	25 UJ	10 U	50 UJ	25 U	10 U
1,2-Dibromoethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,2-Dichlorobenzene	2 U	1.51 J	2.01	2 U	113 J-	2 U	6.34 J-	6.23	2 U
1,2-Dichloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,2-Dichloropropane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
1,3-Dichlorobenzene	2 U	1.06 J	2 U	2 U	8.44 J-	2 U	10 UJ	5.01	2 U
1,4-Dichlorobenzene	2 U	1.96 J	2 U	2 U	11.1 J-	2 U	13.3 J-	11.1	2 U
1,4-Dioxane	20 U	20 U	20 U	20 U	50 UJ	20 U	100 UJ	50 U	20 U
2-Butanone	10 U	10 U	10 U	10 U	25 UJ	10 U	50 UJ	25 U	10 U
2-Hexanone	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
4-Methyl-2-pentanone	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
Acetic acid, methyl ester	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Acetone	10 U	10 U	10 U	10 U	25 J-	10 U	50 UJ	25 U	10 U
Benzene	1 U	1.05	0.538 J	4.99	14.2 J-	1.91	5.17 J-	4.5	1 U
Bromochloromethane	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
Bromodichloromethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Bromoform	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
Bromomethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Carbon disulfide	2 U	2 U	2 U	1.36 J	3.94 J-	2 U	21 J-	19.4	2 U
Carbon tetrachloride	2 U	2 U	2 U	2 U	5 UJ	2 U	8.85 J-	7.31	2 U

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-15	B-16	BR-105	BR-105D	BR-106	BR-126	BR-127	BR-127	BR-5A
SAMPLE DATE:	11/12/2019	11/12/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019	11/14/2019	11/14/2019	11/12/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FD	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chlorobenzene	2 U	3.78	3.62	2 U	296 J-	2 U	9.67 J-	7.96	2 U
Chloroethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Chloroform	2 U	4.35	2 U	2 U	5 UJ	2 U	266 J-	217 J-	2 U
Chloromethane	2 U	2 U	2 U	13.8	5 UJ	2 U	10 UJ	5 U	2 U
Cis-1,2-Dichloroethene	2 U	2.83	2.49	4.52	5 UJ	2 U	10 UJ	3.67 J	2 U
Cis-1,3-Dichloropropene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Cyclohexane	10 U	10 U	10 U	8.47 J	25 UJ	10 U	50 UJ	25 U	10 U
Dibromochloromethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Dichlorodifluoromethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Ethylbenzene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Isopropylbenzene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Methyl cyclohexane	2 U	2 U	2 U	4.84	5 UJ	2 U	10 UJ	5 U	2 U
Methyl Tertbutyl Ether	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Methylene chloride	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	9.81 J	5 U
Styrene	5 U	5 U	5 U	5 U	12.5 UJ	5 U	25 UJ	12.5 U	5 U
Tetrachloroethene	2 U	2 U	2 U	2 U	5 UJ	2 U	12.2 J-	10.8	2 U
Toluene	2 U	2 U	2 U	2 U	5 UJ	2 U	5.19 J-	3.88 J	2 U
trans-1,2-Dichloroethene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
trans-1,3-Dichloropropene	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Trichloroethene	2 U	2 U	2 U	2 U	5 UJ	2 U	9.75 J-	7.2	2 U
Trichlorofluoromethane	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Vinyl chloride	2 U	2.11	4.17	2 U	5 UJ	2 U	10 UJ	5.25	2 U
Xylene, o	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U
Xylenes (m&p)	2 U	2 U	2 U	2 U	5 UJ	2 U	10 UJ	5 U	2 U

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

µg/L = micrograms per Liter

FS = Field sample

FD = Field duplicate

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-6A	BR-7A	BR-8	BR-9	MW-106	MW-127	PW10	PW12	PW13
SAMPLE DATE:	11/14/2019	11/19/2019	11/18/2019	11/19/2019	11/15/2019	11/14/2019	11/14/2019	11/12/2019	11/19/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,1,2,2-Tetrachloroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,1,2-Trichloroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,1-Dichloroethane	2 UJ	4.97 J-	20 UJ	2 U	10 UJ	2 U	2 U	4 U	3.12 J-
1,1-Dichloroethene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,2,3-Trichlorobenzene	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	11	21.1	5 UJ
1,2,4-Trichlorobenzene	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	16.5	190	5 UJ
1,2-Dibromo-3-chloropropane	10 UJ	10 UJ	100 UJ	10 U	50 UJ	10 U	10 U	20 U	10 UJ
1,2-Dibromoethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,2-Dichlorobenzene	1.6 J-	25.9 J-	217 J-	25	220 J-	2 U	1.18 J	7.91	38.3 J-
1,2-Dichloroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,2-Dichloropropane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
1,3-Dichlorobenzene	2 UJ	8.63 J-	92.4 J-	4.08	8.07 J-	2 U	2 U	25.7	7.56 J-
1,4-Dichlorobenzene	2 UJ	5.73 J-	40.7 J-	3.51	13.5 J-	2 U	2 U	16.6	6.67 J-
1,4-Dioxane	20 UJ	20 UJ	200 UJ	20 U	100 UJ	20 U	20 U	40 U	20 UJ
2-Butanone	10 UJ	10 UJ	100 UJ	10 U	50 UJ	10 U	10 U	20 U	10 UJ
2-Hexanone	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
4-Methyl-2-pentanone	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
Acetic acid, methyl ester	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Acetone	10 UJ	10 UJ	100 UJ	10 U	50 UJ	10 U	10 U	11.5 J	10 UJ
Benzene	2.16 J-	8.7 J-	24.7 J-	1.6	23.6 J-	1 U	1 U	2 U	6.44 J-
Bromochloromethane	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
Bromodichloromethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Bromoform	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
Bromomethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Carbon disulfide	1.12 J-	2.11 J-	70.2 J-	2 U	5.72 J-	2 U	2 U	4 U	1.99 J-
Carbon tetrachloride	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	7.59	4 U	2 UJ

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-6A	BR-7A	BR-8	BR-9	MW-106	MW-127	PW10	PW12	PW13
SAMPLE DATE:	11/14/2019	11/19/2019	11/18/2019	11/19/2019	11/15/2019	11/14/2019	11/14/2019	11/12/2019	11/19/2019
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chlorobenzene	13.5 J-	50.4 J-	965 J-	33.7	632 J-	2 U	2 U	19.2	58.2 J-
Chloroethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Chloroform	2.9 J-	3.74 J-	20 UJ	2 U	10 UJ	2 U	5.79	10.7	1.21 J-
Chloromethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Cis-1,2-Dichloroethene	29.3 J-	1 J-	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Cis-1,3-Dichloropropene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Cyclohexane	10 UJ	10 UJ	100 UJ	10 U	50 UJ	10 U	10 U	20 U	10 UJ
Dibromochloromethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Dichlorodifluoromethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Ethylbenzene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	3.14 J	2 UJ
Isopropylbenzene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Methyl cyclohexane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Methyl Tertbutyl Ether	2 UJ	1.73 J-	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Methylene chloride	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
Styrene	5 UJ	5 UJ	50 UJ	5 U	25 UJ	5 U	5 U	10 U	5 UJ
Tetrachloroethene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	12.5	5.21	2 UJ
Toluene	46.5 J-	1.73 J-	83.5 J-	2.46	10 UJ	2 U	2 U	11.3	1.99 J-
trans-1,2-Dichloroethene	1.8 J-	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
trans-1,3-Dichloropropene	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Trichloroethene	1.54 J-	2 UJ	20 UJ	2 U	10 UJ	2 U	1.09 J	4 U	2 UJ
Trichlorofluoromethane	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Vinyl chloride	50.7 J-	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	4 U	2 UJ
Xylene, o	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	8.09	2 UJ
Xylenes (m&p)	2 UJ	2 UJ	20 UJ	2 U	10 UJ	2 U	2 U	14.4	2 UJ

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW14	PW15	PW15	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104
SAMPLE DATE:	11/14/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019
QC TYPE:	FS	FD	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
1,1,1-Trichloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,1,2,2-Tetrachloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,1,2-Trichloro-1,2,2-Trifluoroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,1,2-Trichloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,1-Dichloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,1-Dichloroethene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,2,3-Trichlorobenzene	50 U	56.1 J-	67.1 J-	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
1,2,4-Trichlorobenzene	50 U	257 J-	273 J-	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
1,2-Dibromo-3-chloropropane	100 U	100 UJ	100 UJ	50 UJ	100 UJ	10 U	10 UJ	25 UJ	10 UJ
1,2-Dibromoethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,2-Dichlorobenzene	20 U	16.1 J-	18.9 J-	362 J-	20 UJ	2 U	18 J-	172 J-	2 UJ
1,2-Dichloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,2-Dichloropropane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
1,3-Dichlorobenzene	20 U	53.8 J-	52.6 J-	59.6 J-	20 UJ	2 U	1.93 J-	54.5 J-	2 UJ
1,4-Dichlorobenzene	20 U	102 J-	97.5 J-	49.7 J-	20 UJ	2 U	3.2 J-	38.9 J-	2 UJ
1,4-Dioxane	200 U	200 UJ	200 UJ	100 UJ	200 UJ	20 U	20 UJ	50 UJ	20 UJ
2-Butanone	100 U	100 UJ	100 UJ	50 UJ	100 UJ	10 U	10 UJ	25 UJ	10 UJ
2-Hexanone	50 U	50 UJ	50 UJ	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
4-Methyl-2-pentanone	50 U	50 UJ	50 UJ	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
Acetic acid, methyl ester	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Acetone	100 U	100 UJ	100 UJ	50 UJ	100 UJ	10 U	10 UJ	25 UJ	10 UJ
Benzene	6.93 J	20.3 J-	21.4 J-	6.59 J-	8.81 J-	1 U	3.45 J-	4.86 J-	0.711 J-
Bromochloromethane	50 U	50 UJ	50 UJ	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
Bromodichloromethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Bromoform	50 U	77.7 J-	73.6 J-	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
Bromomethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Carbon disulfide	32.5	161 J-	155 J-	6.38 J-	170 J-	2 U	2 UJ	7.15 J-	2 UJ
Carbon tetrachloride	20 U	211 J-	259 J-	10 UJ	84.3 J-	2 U	2 UJ	5 UJ	2 UJ

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW14	PW15	PW15	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104
SAMPLE DATE:	11/14/2019	11/18/2019	11/18/2019	11/18/2019	11/18/2019	11/15/2019	11/15/2019	11/15/2019	11/12/2019
QC TYPE:	FS	FD	FS	FS	FS	FS	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)									
Chlorobenzene	20 U	150 J-	149 J-	264 J-	20 UJ	2.44	52.7 J-	242 J-	3.76 J-
Chloroethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Chloroform	1370	1540 J-	1490 J-	10 UJ	904 J-	2 U	2 UJ	5 UJ	2 UJ
Chloromethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Cis-1,2-Dichloroethene	20 U	20 UJ	20 UJ	10 UJ	71.9 J-	2 U	2 UJ	5 UJ	2 UJ
Cis-1,3-Dichloropropene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Cyclohexane	100 U	100 UJ	100 UJ	50 UJ	100 UJ	10 U	10 UJ	25 UJ	10 UJ
Dibromochloromethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Dichlorodifluoromethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Ethylbenzene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Isopropylbenzene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Methyl cyclohexane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Methyl Tertbutyl Ether	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Methylene chloride	50 U	76.3 J-	68.5 J-	25 UJ	208 J-	5 U	5 UJ	12.5 UJ	5 UJ
Styrene	50 U	50 UJ	50 UJ	25 UJ	50 UJ	5 U	5 UJ	12.5 UJ	5 UJ
Tetrachloroethene	24.9	987 J-	978 J-	10 UJ	152 J-	2 U	2 UJ	5 UJ	2 UJ
Toluene	19.7 J	116 J-	114 J-	41.5 J-	11.2 J-	2 U	2 UJ	3.08 J-	2 UJ
trans-1,2-Dichloroethene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
trans-1,3-Dichloropropene	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Trichloroethene	65.2	80.4 J-	75.4 J-	10 UJ	17 J-	2 U	2 UJ	5 UJ	2 UJ
Trichlorofluoromethane	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Vinyl chloride	20 U	20 UJ	20 UJ	10 UJ	133 J-	2 U	2 UJ	5 UJ	2 UJ
Xylene, o	20 U	20 UJ	20 UJ	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ
Xylenes (m&p)	20 U	11.8 J-	10.5 J-	10 UJ	20 UJ	2 U	2 UJ	5 UJ	2 UJ

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	11/14/2019	11/14/2019	11/14/2019
QC TYPE:	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)			
1,1,1-Trichloroethane	2 UJ	1,000 UJ	400 U
1,1,2,2-Tetrachloroethane	2 UJ	1,000 UJ	400 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 UJ	1,000 UJ	400 U
1,1,2-Trichloroethane	2 UJ	1,000 UJ	400 U
1,1-Dichloroethane	2 UJ	1,000 UJ	400 U
1,1-Dichloroethene	2 UJ	1,000 UJ	400 U
1,2,3-Trichlorobenzene	5 UJ	2,500 UJ	1,000 U
1,2,4-Trichlorobenzene	5 UJ	2,500 UJ	1,000 U
1,2-Dibromo-3-chloropropane	10 UJ	5,000 UJ	2,000 U
1,2-Dibromoethane	2 UJ	1,000 UJ	400 U
1,2-Dichlorobenzene	2.6 J-	1,000 UJ	400 U
1,2-Dichloroethane	2 UJ	1,000 UJ	400 U
1,2-Dichloropropane	2 UJ	1,000 UJ	400 U
1,3-Dichlorobenzene	2 UJ	1,000 UJ	400 U
1,4-Dichlorobenzene	2 UJ	1,000 UJ	400 U
1,4-Dioxane	20 UJ	10,000 UJ	4,000 U
2-Butanone	10 UJ	5,000 UJ	2,000 U
2-Hexanone	5 UJ	2,500 UJ	1,000 U
4-Methyl-2-pentanone	5 UJ	2,500 UJ	1,000 U
Acetic acid, methyl ester	2 UJ	1,000 UJ	400 U
Acetone	10 UJ	5,000 UJ	2,000 U
Benzene	5.34 J-	500 UJ	200 U
Bromochloromethane	5 UJ	2,500 UJ	1,000 U
Bromodichloromethane	2 UJ	1,000 UJ	400 U
Bromoform	5 UJ	2,750 J-	1,000 U
Bromomethane	2 UJ	1,000 UJ	400 U
Carbon disulfide	2 UJ	2,810 J-	622
Carbon tetrachloride	2 UJ	26,400 J-	8,000

TABLE 3
FALL 2019 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	11/14/2019	11/14/2019	11/14/2019
QC TYPE:	FS	FS	FS
VOCs By SW-846 Method 8260C (µg/L)			
Chlorobenzene	52.7 J-	1,000 UJ	400 U
Chloroethane	2 UJ	1,000 UJ	400 U
Chloroform	2 UJ	43,900 J-	21,600
Chloromethane	2 UJ	1,000 UJ	400 U
Cis-1,2-Dichloroethene	2 UJ	1,000 UJ	400 U
Cis-1,3-Dichloropropene	2 UJ	1,000 UJ	400 U
Cyclohexane	10 UJ	5,000 UJ	2,000 U
Dibromochloromethane	2 UJ	1,000 UJ	400 U
Dichlorodifluoromethane	2 UJ	1,000 UJ	400 U
Ethylbenzene	2 UJ	1,000 UJ	400 U
Isopropylbenzene	2 UJ	1,000 UJ	400 U
Methyl cyclohexane	2 UJ	1,000 UJ	400 U
Methyl Tertbutyl Ether	2 UJ	1,000 UJ	400 U
Methylene chloride	5 UJ	2,050 J-	6,700
Styrene	5 UJ	2,500 UJ	1,000 U
Tetrachloroethene	2 UJ	1,300 J-	1,220
Toluene	2 UJ	1,000 UJ	400 U
trans-1,2-Dichloroethene	2 UJ	1,000 UJ	400 U
trans-1,3-Dichloropropene	2 UJ	1,000 UJ	400 U
Trichloroethene	2 UJ	1,000 UJ	400 U
Trichlorofluoromethane	2 UJ	1,000 UJ	400 U
Vinyl chloride	2 UJ	1,000 UJ	400 U
Xylene, o	2 UJ	1,000 UJ	400 U
Xylenes (m&p)	2 UJ	1,000 UJ	400 U

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

TABLE 4
COMPARISON OF FALL 2019
CHLOROPYRIDINES AND VOLATILE ORGANICS CONCENTRATIONS
IN GROUNDWATER TO PREVIOUS RESULTS (ug/L)

ARCH ROCHESTER
SEMI-ANNUAL GROUNDWATER MONITORING REPORT

WELL	SELECTED CHLOROPYRIDINES				SELECTED VOCs			
	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2019 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2019 RESULT
ON-SITE WELLS/LOCATIONS								
B-11	8	4,800	1900		8	570	25	
B-15	10	13,000	61	39	10	1,600	ND	ND
B-16	10	33,000	810	**4,100**	10	4,500	5.6	**8**
B-17	6	28,000,000	640,000		6	350,000	6,900	
B-7	5	9,100	120		5	270	4.1	
BR-126	10	12,000	930	**1,000**	10	240	ND	ND
BR-127	10	44,000	16,000	**27,000**	10	1,300	290	260
BR-3	4	6,500,000	960		4	930,000	350	
BR-5A	10	1,700	33	**41**	10	9,400	ND	ND
BR-6A	10	140,000	15,000	11,000	10	69,000	2,900	18
BR-7A	10	510,000	7,300	**17,000**	10	5,600	77	54
BR-8	10	550,000	330,000	**730,000**	10	7,800	650	**970**
BR-9	10	2,400	470	**6,300**	10	210	11	**34**
E-3	5	600	12		5	15,000	ND	
MW-127	10	15,000	1,400	150	10	7,500	0	ND
PW10	11	500,000	150,000	2,500	11	120,000	810	27
PW12	10	15,000	61	**75**	10	120,000	170	35
PW13	10	94,000	24,000	**30,000**	10	1,800	150	59
PW14	10	99,000	25,000	**41,000**	10	160,000	1,600	1,500
PW15	10	440,000	280,000	**620,000**	10	57,000	23,000	3,000
PW16	10	130,000	84,000	**180,000**	10	1,200	430	260
PW17	10	75,000	26,000	12,000	10	66,000	23,000	1,400
PZ-104	10	9,100	540	**630**	10	52	2.4	**3.8**
PZ-105	10	190,000	5,600	**9,600**	10	9,900	32	**53**
PZ-106	10	290,000	13,000	**130,000**	10	1,400,000	7,200	**74,000**
PZ-107	10	31,000	8,300	**21,000**	10	160,000	37,000	**38,000**
OFF-SITE WELLS/LOCATIONS								
BR-105	10	24,000	890	380	10	350	8.5	3.6
BR-105D	10	17,000	130	**450**	10	230	0.19	ND
BR-106	11	46,000	19,000	**28,000**	11	12,000	200	**300**
BR-112D	5	310	14			4.3		
BR-113D	5	490	1.3			2.8		
BR-114	5	520	1.1		5	12	ND	
BR-117D	5	80	1.1			1.9		
BR-118D	5	330	11			6.6		
BR-122D	5	650	1.2			ND		

TABLE 4
COMPARISON OF FALL 2019
CHLOROPYRIDINES AND VOLATILE ORGANICS CONCENTRATIONS
IN GROUNDWATER TO PREVIOUS RESULTS (ug/L)

ARCH ROCHESTER
SEMI-ANNUAL GROUNDWATER MONITORING REPORT

WELL	SELECTED CHLOROPYRIDINES				SELECTED VOCs			
	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2019 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2019 RESULT
BR-123D	5	860	47			7		
MW-106	11	130,000	33,000	**58,000**	11	4,000	360	**630**
MW-114	5	18	ND		5	27	18	
PZ-101	10	27,000	130	32	10	620	1.3	2.4
PZ-102	11	210,000	58,000	750	11	11,000	440	53
PZ-103	10	230,000	64,000	37,000	10	46,000	560	240
QD-1	10	11	1	ND		ND		
QO-2	9	380	ND	ND		ND		
QO-2S1	10	27	ND	ND		ND		
QS-4	10	13,000	78	**88**		ND		

Note:
1) Number of samples and mean reflect 5-year sampling period from November 2014 through May 2019. Historic maximum based on all available results from March 1990 through November 2018.
2) Chloropyridines represented by: 2-Chloropyridine, 2,6-Dichloropyridine, 3-Chloropyridine, 4-Chloropyridine, p-Fluoroaniline, and Pyridine.
3) Selected VOCs represented by Carbon Tetrachloride, Chlorobenzene, Chloroform, Methylene Chloride, Tetrachloroethene, and Trichloroethene.
4) **Bold and shade** - November 2019 exceeds 5-year mean.
5) ND = Not detected
BLANK = Not sampled

TABLE 5
FALL 2019 QUARRY SEEP AND OUTFALL WATER SAMPLE RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	QD-1	QO-2	QO-2S1	QS-4
SAMPLE DATE:	11/18/2019	11/18/2019	11/18/2019	11/18/2019
QC TYPE:	FS	FS	FS	FS
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270D (µg/L)				
2,6-Dichloropyridine	9.64 U	9.61 U	9.57 U	27.9
2-Chloropyridine	9.64 U	9.61 U	9.57 U	59.9
3-Chloropyridine	9.64 U	9.61 U	9.57 U	9.63 U
4-Chloropyridine	9.64 UJ	9.61 UJ	9.57 UJ	9.63 UJ
p-Fluoroaniline	9.64 UJ	9.61 UJ	9.57 UJ	9.63 UJ
Pyridine	9.64 U	9.61 U	9.57 U	9.63 U

Notes:

U = Compound not detected; value represents sample quantitation limit.

J = Estimated value

µg/L = micrograms per Liter

TABLE 6
EXTRACTION WELL WEEKLY FLOW MEASUREMENTS - JUNE 2019 THROUGH NOVEMBER 2019

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

Week Ending	BR-7A [Gal./Wk.]	BR-9 [Gal./Wk.]	PW-13 [Gal./Wk.]	PW-15 [Gal./Wk.]	PW-16 [Gal./Wk.]	PW-17 [Gal./Wk.]	BR-127 [Gal./Wk.]	Total [Gal.]
Jun '19								
06/02/19	66,466	73,159	56,996	24,592	62,805	1,130	66,895	352,043
06/09/19	56,835	61,387	54,287	18,147	58,131	988	66,685	316,460
06/16/19	54,931	64,561	58,784	13,173	54,921	1,082	69,737	317,189
06/23/19	56,726	68,611	63,536	12,135	56,024	953	66,767	324,752
06/30/19	58,761	72,489	66,302	12,539	55,303	1,115	69,963	336,472
							Total [Gal.]	1,646,916
Jul '19								
07/07/19	57,174	67,858	64,123	10,479	48,478	1,119	74,325	323,556
07/14/19	56,673	66,004	66,040	13,271	53,759	1,158	71,912	328,817
07/21/19	57,029	63,046	66,796	12,468	47,987	1,215	73,652	322,193
07/28/19	51,738	59,373	56,712	11,401	50,522	959	56,505	287,210
							Total [Gal.]	1,261,776
Aug '19								
08/04/19	113,988	113,375	145,400	24,221	96,303	1,991	112,362	607,640
08/11/19	53,838	62,753	70,523	11,765	45,741	1,170	67,770	313,560
08/18/19	54,423	64,008	73,223	11,915	48,668	1,125	58,773	312,135
08/25/19	55,130	53,042	72,744	11,764	44,632	1,020	16,212	254,544
							Total [Gal.]	1,487,879
Sep '19								
09/01/19	54,629	48,712	70,173	11,516	41,776	1,157	29,642	257,605
09/08/19	57,171	47,557	74,221	11,963	43,445	958	43,876	279,191
09/15/19	68,998	45,487	79,104	12,061	20,412	1,049	22,741	249,852
09/22/19	14,930	17,581	24,651	4,156	8,408	388	1	70,115
09/29/19	74,520	13,742	88,748	12,377	47,469	1,199	15,927	253,982
							Total [Gal.]	1,110,745
Oct '19								
10/06/19	78,654	34	98,452	5,533	47,120	1,203	58,721	289,717
10/13/19	69,489	27	93,005	11,863	47,658	1,189	50,019	273,250
10/20/19	57,342	30,904	90,120	11,951	41,396	1,204	49,514	282,431
10/27/19	42,128	13,007	88,895	11,238	37,026	1,257	43,021	236,572
							Total [Gal.]	1,081,970
Nov '19								
11/03/19	55,998	30,036	88,516	12,312	40,785	1,202	37,495	266,344
11/10/19	65,262	41,664	91,342	12,206	36,960	1,331	52,738	301,503
11/17/19	58,422	75,436	80,342	8,118	30,728	1,306	49,915	304,267
11/24/19	61,516	18,825	45,284	443	38,381	1,037	48,206	213,692
12/01/19	60,551	49,432	9,283	8,705	36,224	884	20,181	185,260
							Total [Gal.]	1,271,066
6 Mo. (27 weeks) Removal (Gal.)	1,613,322	1,322,110	1,937,602	322,312	1,241,062	30,389	1,393,555	7,860,352

TABLE 7

MASS REMOVAL SUMMARY
PERIOD: JUNE 2019 THROUGH NOVEMBER 2019

ARCH ROCHESTER
FALL 2019 GROUNDWATER MONITORING REPORT

Well	Total Vol. Pumped (gallons)[2]	Avg[1.] VOC Conc. (ppm)	Avg[1.] PYR Conc. (ppm)	VOCs Removed (pounds)	PYR. Removed (pounds)
BR-7A	1,613,000	0.038	10.4	0.51	140
BR-9	1,322,000	0.025	4.4	0.27	48
PW-13	1,938,000	0.069	22	1.1	360
PW-15	322,300	14	440	38	1200
PW-16	1,241,000	0.32	160	3.3	1700
PW-17	30,390	3.4	12	0.86	3.0
BR-127	1,394,000	0.26	20	3.0	230
Totals:	7,860,000			47	3700

Notes: 1) VOC and pyridine concentrations used in this table are an average of the analytical results from the Spring 2019 and Fall 2019 sampling events for each well;
Total select VOCs include chlorobenzene, PCE, TCE, methylene chloride, carbon tetrachloride, and chloroform
2) Flows measured for period of 27 weeks (189 days).

Prepared/Date: JAR 04/06/20
Checked/Date:NMB 04/07/20

TABLE 8
2020 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

ARCH ROCHESTER						2020					
MONITORING PROGRAM						SPRING		FALL		TOTAL	
	Well	*zone*	*area*	*Frequency/Parameters*	*Purpose*	*Pyridines*	*VOCs*	*Pyridines*	*VOCs*	*Pyridines*	*VOCs*
OFF-SITE	BR-105	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
MONITORING	BR-105D	BR deep	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	MW-106	OB	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-106	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-112D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	BR-113D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	MW-114	OB	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-114	BR	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-117D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-118D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-122D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-123D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	PZ-101	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-102	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-103	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
ON-SITE	PZ-104	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
MONITORING	PZ-105	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-106	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-107	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-126	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-127	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-3	BR	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-8	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-9	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-5A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-6A	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-7A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	B-16	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-17	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	B-7	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	B-11	OB	ON-SITE	Well B-11 damaged beyond repair and scheduled for abandonment in 2020						0	0
	B-15	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	E-3	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	MW-127	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PW10	OB/BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW12	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW13	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW14	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW15	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW16	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW17	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
QUARRY/CANAL	QS-4	quarry seep	QUARRY	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
MONITORING	QD-1	quarry ditch	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2	quarry outfall	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2S1	canal at outfall	CANAL	semi-annual monitoring, PYR	surface water monitoring	1		1		2	0
TOTAL SAMPLES						44	34	32	28	76	62

Appendix A

Groundwater Field Sampling Data Sheets

FIELD REPORT

REMEDIAL INVESTIGATION SAMPLING
LONZA CHEMICAL
ROCHESTER, NEW YORK

Fall 2019 Event

Matrix Environmental Project #04-029

PREPARED FOR:

Lonza
100 McKee Road
Rochester, NY 14611

PREPARED BY:

MATRIX
ENVIRONMENTAL TECHNOLOGIES INC.
3730 California Road
Orchard Park, New York 14127

Written by: Steven L. Marchetti

Reviewed by: Nicholas S. Minute

Date: December 23, 2019

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the sampling of the following points:

- 41 groundwater samples
- Two quarry outfall samples
- One quarry seep sample
- One canal at outfall sample

These activities were in support of the Phase II Remediation Investigation being conducted at the Lonza Chemical facility in Rochester, New York. Static water levels in the groundwater wells were recorded on November 11, 2019 7, 2019 by Matrix Environmental Technologies Inc. (METI) field personnel. The samples were collected from November 12 through November 19, 2019.

2.0 METHODOLOGIES

2.1 Water Level Measurements

Static water levels in all groundwater wells were measured from the top of the well casing/riser with an electronic water level indicator. Well bottoms were sounded with the weighted steel measuring tape. Measurements were recorded to the nearest hundredth of a foot (0.01 feet). The length of the measuring device which contacted the water was cleaned between the wells with a deionized water rinse and paper towel wipe. These data are presented on Sampling Summary Table and Field Observation forms attached.

2.2 Well Purging

Monitoring wells were evacuated prior to sampling employing one of the following methods:

1. Purging three times the standing water volume using precleaned or dedicated 1.25" x 5' stainless steel bailers, 2" x 5' polyvinyl chloride bailers, peristaltic pump or QED low-flow bladder pumps.

2. Evacuated with the low flow/low stress purging technique using either QED low-flow bladder pumps or a variable rate peristaltic pump.

Wells that were purged of three standing volumes were mainly wells located on or very near the Erie Canal and historically purged with this method prior to sampling. The remaining wells were evacuated with a low flow/low stress purging technique. This technique involves the use of a variable flow rate bladder or peristaltic pump. The pumps were employed to purge the monitoring wells at a flow rate such that drawdown of the water column from static conditions is minimal. Field measurements of pH, specific conductance, temperature, ORP, dissolved oxygen and turbidity are monitored every 3-5

minutes until stabilization of parameters is realized. Once stabilized has occurred, sampling can be conducted. All purge water was collected into 55-gallon drums for disposal at the on-site wastewater treatment facility. Data pertaining to each evacuation are presented on the Sampling Summary Table and Field Observations forms attached.

2.3 Property Utilities

Surface water samples were collected from one location on the Erie Barge Canal, two outfall samples and one seep location. Sample locations were noted on the Field Forms.

3.0 SAMPLING

3.1 Monitoring Wells

All groundwater wells were sampled using precleaned or dedicated 1.25" x 1.25" x 5' stainless steel bailers, peristaltic pumps or bladder (Sample Pro) pumps when low flow purging techniques were used. Each bailer was constructed with Teflon, bottom-filling check valve and was assembled without glues or welds. New ¼" poly rope was attached to each bailer. The bailer was slowly lowered into the water column, minimizing agitation and devolatilization. Low density polyethylene (LDPE) tubing was used with both the bladder (QED) and the peristaltic pumps. The bladder pumps were decontaminated between sample locations in accordance with the work plan. Personnel exercised care in all aspects of the sampling to ensure the collection of a representative sample. An additional sample container was collected from each well in order to facilitate the measurement of field analytical parameters. Data pertaining to sampling are presented in the Sampling Summary Table and the Field Observations Forms (Appendix A).

3.2 Canal Sampling

When possible, samples were collected directly from the canal into appropriate sample containers. Otherwise, samples were collected with the use of a unique, laboratory cleaned stainless steel bailer. The bailers were immersed just below the surface and removed. Sample was poured directly into the appropriate container. An additional container was collected to facilitate the measurement of field parameters. Additional data pertaining to these samples is presented in the Sampling Summary Table and Field Observation Forms (Appendix A).

3.3 Seep Sampling

Groundwater samples were collected from seeps at the quarry (QS4) located on Buffalo Road. The samples were collected with the use of a laboratory cleaned stainless steel bucket and was then poured directly into the appropriate containers. An additional container was collected to facilitate the measurement of field parameters. Data pertaining to this sampling is presented in the Sampling Summary Table and Field Observation Forms (Appendix A).

4.0 SAMPLE CONTAINERS

Monitoring wells and surface water samples requiring analysis for volatile organic compounds were collected into 40 ml glass vials with Teflon septa. Samples for semi-volatile and pyridine analysis were collected into one liter amber glass bottles with teflo-lined caps. All bottles were purchased new and cleaned (Protocol A, 300 series) from Paradigm Environmental Services. Each container was labeled with the following information:

- Sample Identification (Well/Point I.D.)
- Date
- Project Number
- Sampler's Initials

5.0 FIELD MEASUREMENTS

On-site field measurements were made of each sample's pH, specific conductance and temperature. Measurements were made in accordance with protocols outlined in Methods for Chemical Analysis of Water and Wastes (EPA – 600/4-79-9020). These data were presented on the Sampling Summary Table and Field Observation Forms.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC

6.1 Trip Blanks

Trip blanks were collected with each sample shipment requiring volatile organic compound analysis. Each trip blank consisted of two 40 ml glass vials with Teflon septa which were filled with deionized water provided by Paradigm Environmental Services. These blanks were transported to the site, stored with field collected samples and submitted to the Paradigm Environmental Services for analysis.

6.2 Equipment Rinse Blank

Equipment rinse blanks were collected.

7.0 CHAIN OF CUSTODY

Chain of custody was initiated at the time of sample collection and maintained through delivery to Paradigm Environmental Services in Rochester, New York. Copies of these documents are included in the analytical report package.

TABLES

Table 1
Sampling Summary Table
Lonza, Rochester, NY

Sample Location		Zone	Sample Date	Sample Time	Water Level (ft) **	Bottom of Well (ft)	pH (STD Units)	Spec. Cond. (mS/cm)	Temp ©	Turb (NTU)	ORP (mv)	DO (ppm)
B-11	On-Site	OB	Not sampled due to obstruction in well at 4.20'.									
B-15	On-Site	OB	11/12/2019	11:30	6.75	NM	6.85	0.71	9.37	4.3	60	2.19
B-16	Off-Site	OB	11/12/2019	12:21	8.18	NM	7.05	2.45	8.52	6.2	26	12.35
BR-105	Off-Site	BR	11/15/2019	10:10	24.01	NM	7.25	3.08	10.14	36.0	-202	6.61
BR-105D	Off-Site	BR deep	11/15/2019	9:35	28.31	NM	6.75	62.00	10.78	3.1	-355	11.45
BR-106	Off-Site	BR	11/15/2019	7:55	25.12	NM	6.91	6.92	9.18	61.0	-328	17.02
BR-126	Off-Site	BR	11/12/2019	2:45	10.09	NM	7.19	0.90	8.78	6.5	-91	3.85
BR-127	On-Site	BR	11/14/2019	1:40	21.80	NM	9.17	4.94	12.03	28.2	-123	8.39
BR-5A	On-Site	pumping well	11/12/2019	11:40	4.86	NM	7.21	3.93	6.05	9.0	72	1.33
BR-6A	On-Site	BR	11/14/2019	10:25	14.72	NM	9.01	5.52	7.70	33.7	-411	2.83
BR-7A	On-Site	pumping well	11/19/2019	8:40	14.19	NM	7.52	3.87	14.19	33.5	-200	8.20
BR-8	On-Site	BR	11/18/2019	12:20	13.13	NM	8.16	11.60	10.34	7.7	-271	1.28
BR-9	On-Site	pumping well	11/19/2019	7:45	Lost field sheet							
MW-106	Off-Site	OB	11/15/2019	8:35	13.56	NM	6.92	4.75	9.51	0.0	-310	8.15
MW-127	On-Site	OB	11/14/2019	2:35	8.63	NM	7.85	2.22	10.80	16.3	30	6.41
PW-10	On-Site	pumping well	11/14/2019	8:15	8.86	NM	8.61	20.1	9.55	30.6	-82	1.73
PW-12	On-Site	BR	11/12/2019	9:56	6.83	NM	7.24	0.31	10.00	21.6	-170	5.21
PW-13	On-Site	pumping well	11/19/2019	8:20	26.95	NM	7.22	4.32	12.31	48.7	-205	7.63
PW-14	On-Site	pumping well	11/14/2019	1:15	11.46	NM	9.93	6.83	9.33	5.0	-160	0.98
PW-15	On-Site	pumping well	11/18/2019	4:48	8.86	NM	10.14	16.50	10.05	155.0	-193	10.16
PW-16	On-Site	pumping well	11/18/2019	11:20	NM	NM	7.79	8.60	13.54	458.0	-211	3.15
PW-17	On-Site	pumping well	11/18/2019	8:00	29.35	NM	7.25	4.90	6.59	38.8	-62	11.02
PZ-101	Off-Site	BR	11/15/2019	12:50	19.56	NM	6.82	6.19	9.83	5.3	-120	3.34
PZ-102	Off-Site	BR	11/15/2019	12:10	16.21	NM	7.34	11.00	7.35	4.4	-205	1.71
PZ-103	Off-Site	BR	11/15/2019	11:12	15.65	NM	8.05	3.06	7.62	38.4	-297	4.62
PZ-104	Off-Site	BR	11/12/2019	2:33	14.22	NM	6.94	2.86	7.40	9.1	-72	1.23
PZ-105	On-Site	BR	11/14/2019	9:15	11.80	NM	7.41	4.25	7.30	231.0	-95	1.51
PZ-106	On-Site	BR	11/14/2019	12:40	12.23	NM	8.49	14.50	11.63	122.0	-156	1.15
PZ-107	On-Site	BR	11/14/2019	11:20	12.91	NM	6.58	6.98	10.99	30.9	-210	2.78
QD-1	Quarry/Canal	quarry ditch	11/18/2019	9:20	NM	NA	8.05	1.75	7.09	5.6	75	21.73
QO-2	Quarry/Canal	quarry outfall	11/18/2019	10:03	NM	NA	8.05	1.49	6.51	33.0	72	14.78
QO-2S1	Quarry/Canal	canal at outfall	11/18/2019	10:05	NM	NA	8.09	0.74	5.43	26.8	71	12.75
QS-4	Quarry/Canal	quarry seep	11/18/2019	9:00	NM	NA	8.02	2.42	7.83	11.1	-13	16.13

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
B-1	On-Site	OB	11/11/2019	8.40	537.75	529.35	8:30	
B-10	On-Site	OB	11/11/2019	10.64	538.80	528.16	9:31	
B-11	On-Site	OB	11/11/2019	NM	536.00	NM	9:33	obstruction at 4.20' bgs
B-15	On-Site	OB	11/11/2019	6.11	535.29	529.18	10:21	
B-16	Off-Site	OB	11/11/2019	6.73	536.21	529.48	10:23	
B-17	On-Site	OB	11/11/2019	9.02	538.74	529.72	9:04	
B-2	On-Site	OB	11/11/2019	9.6	539.02	529.42	1:10	
B-4	On-Site	OB	11/11/2019	19.17	542.87	523.70	9:49	
B-5	On-Site	OB	11/11/2019	13.65	540.21	526.56	9:48	
B-7	On-Site	OB	11/11/2019	14.48	541.11	526.63	10:15	
B-8	On-Site	OB	11/11/2019	10.03	538.88	528.85	9:23	
BR-1	On-Site	BR	11/11/2019	6.69	537.28	530.59	8:54	
BR-102	On-Site	BR	11/11/2019	7.50	539.43	531.93	8:25	
BR-103	Off-Site	BR	11/11/2019	2.48	533.19	530.71	11:10	
BR-104	Off-Site	BR	11/11/2019	10.51	537.56	527.05	10:54	
BR-105	Off-Site	BR	11/11/2019	23.08	536.90	513.82	10:40	
BR-105D	Off-Site	BR deep	11/11/2019	26.42	536.49	510.07	10:41	
BR-106	Off-Site	BR	11/11/2019	24.05	535.74	511.69	1:28	
BR-108	Off-Site	BR	11/11/2019	28.57	540.58	512.01	10:34	
BR-111	Off-Site	BR	11/11/2019	28.82	540.42	511.60	11:37	
BR-111D	Off-Site	BR	11/11/2019	29.11	540.34	511.23	11:39	
BR-112D	Off-Site	BR deep	11/11/2019	36.48	547.91	511.43	11:33	
BR-113	Off-Site	BR	11/11/2019	31.45	543.02	511.57	12:20	
BR-113D	Off-Site	BR deep	11/11/2019	31.49	542.93	511.44	12:21	
BR-114	Off-Site	BR	11/11/2019	14.40	539.77	525.37	11:26	
BR-116	Off-Site	BR	11/11/2019	29.25	545.38	516.13	1:52	
BR-116D	Off-Site	BR deep	11/11/2019	35.68	545.22	509.54	1:48	
BR-117	Off-Site	BR	11/11/2019	36.40	547.61	511.21	11:53	
BR-117D	Off-Site	BR deep	11/11/2019	48.14	547.16	499.02	11:51	
BR-118	Off-Site	BR	11/11/2019	23.84	547.79	523.95	11:58	
BR-118D	Off-Site	BR deep	11/11/2019	47.50	547.93	500.43	11:56	
BR-122D	Off-Site	BR deep	11/11/2019	45.10	552.34	507.24	12:10	
BR-123D	Off-Site	BR deep	11/11/2019	44.91	553.62	508.71	12:14	
BR-124D	Off-Site	BR deep	11/11/2019	32.27	537.45	505.18	12:15	
BR-126	Off-Site	BR	11/11/2019	10.08	537.90	527.82	10:30	
BR-127	On-Site	BR	11/11/2019	14.35	536.05	521.70	9:34	
BR-2	On-Site	BR	11/11/2019	10.25	538.97	528.72	9:00	
BR-2A	On-Site	BR	11/11/2019	10.01	540.36	530.35	9:01	
BR-2D	On-Site	BR deep	11/11/2019	9.85	537.26	527.41	8:59	
BR-3	On-Site	BR	11/11/2019	NM	538.20	NM	NM	Buried
BR-3D	On-Site	BR deep	11/11/2019	49.32	537.67	488.35	9:12	
BR-4	On-Site	BR	11/11/2019	10.65	539.03	528.38	9:37	
BR-5	On-Site	BR	11/11/2019	5.16	536.30	531.14	8:48	
BR-5A	On-Site	pumping well	11/11/2019	4.95	536.35	531.40	8:50	
BR-6A	On-Site	BR	11/11/2019	13.40	540.90	527.50	9:21	
BR-7	On-Site	BR	11/11/2019	15.53	539.10	523.57	10:14	
BR-7A	On-Site	pumping well	11/11/2019	NM	539.12	NM	10:12	Could not gauge, hoses in way
BR-8	On-Site	BR	11/11/2019	13.34	539.72	526.38	9:47	
BR-9	On-Site	pumping well	11/11/2019	31.70	542.17	510.47	8:27	
C-2A	On-Site	OB	11/11/2019	Dry	539.66	Dry	Dry	
C-5	On-Site	OB	11/11/2019	10.48	539.63	529.15	9:11	
CANAL	Off-Site	SW	11/11/2019	37.00	544.79	507.79	12:42	
E-2	On-Site	OB	11/11/2019	NM	538.32	NM	NM	Missing
E-3	On-Site	OB	11/11/2019	3.81	536.59	532.78	8:47	
E-5	On-Site	OB	11/11/2019	5.63	539.31	533.68	8:52	
EC-2	Off-Site	BR	11/11/2019	Dry	542.00	Dry	Dry	
MW-103	Off-Site	OB	11/11/2019	2.30	533.25	530.95	11:20	
MW-104	Off-Site	OB	11/11/2019	8.90	537.54	528.64	10:54	
MW-105	Off-Site	OB	11/11/2019	18.85	536.91	518.06	10:42	
MW-106	Off-Site	OB	11/11/2019	12.74	535.44	522.70	1:30	
MW-114	Off-Site	OB	11/11/2019	10.55	539.69	529.14	11:25	
MW-127	On-Site	OB	11/11/2019	8.59	536.87	528.28	9:36	
MW-16	Off-Site	BR	11/11/2019	10.88	536.79	525.91	11:22	
MW-3	Off-Site	OB	11/11/2019	NM	535.89	NM	NM	Inaccessible
MW-G6	Off-Site	OB	11/11/2019	NM	534.65	NM	NM	Destroyed
MW-G8	Off-Site	OB	11/11/2019	7.77	534.25	526.48	1:17	

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G9	Off-Site	OB	11/11/2019	2.80	536.60	533.80	1:20	
N-2	On-Site	OB	11/11/2019	NM	537.33	NM	NM	Damaged
N-3	On-Site	OB	11/11/2019	5.92	537.38	531.46	8:32	
NESS-E	Off-Site	BR deep	11/11/2019	25.84	540.31	514.47	10:47	
NESS-W	Off-Site	BR deep	11/11/2019	30.27	543.04	512.77	10:45	
PW-10	On-Site	pumping well	11/11/2019	9.02	538.76	529.74	9:06	
PW-12	On-Site	BR	11/11/2019	5.80	537.49	531.69	8:45	
PW-13	On-Site	pumping well	11/11/2019	27.10	536.13	509.03	10:10	
PW-14	On-Site	pumping well	11/11/2019	11.12	537.03	525.91	9:18	
PW-15	On-Site	pumping well	11/11/2019	30.45	538.32	507.87	9:09	
PW-16	On-Site	pumping well	11/11/2019	22.45	539.32	516.87	9:40	
PW-17	On-Site	pumping well	11/11/2019	29.46	NA	NA	9:10	
PZ-101	Off-Site	BR	11/11/2019	18.76	542.95	524.19	10:01	
PZ-102	Off-Site	BR	11/11/2019	16.07	540.89	524.82	10:03	
PZ-103	Off-Site	BR	11/11/2019	14.58	540.20	525.62	10:05	
PZ-104	Off-Site	BR	11/11/2019	14.00	536.85	522.85	10:18	
PZ-105	On-Site	BR	11/11/2019	9.56	536.93	NM	9:27	Well underwater.
PZ-106	On-Site	BR	11/11/2019	10.55	537.24	526.69	9:17	
PZ-107	On-Site	BR	11/11/2019	11.53	538.39	526.86	9:30	
PZ-109	On-Site	BR	11/11/2019	9.20	538.59	529.39	9:13	
PZ-110	On-Site	BR	11/11/2019	10.74	NA	NA	9:15	
PZ-111	On-Site	BR	11/11/2019	NM	NA	NM	NM	Could Not Locate Well
W-5	On-Site	OB	11/11/2019	NM	538.53	NM	NM	Inaccessible

APPENDIX A

FIELD OBSERVATION FORMS

TABLE 9
2019 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

AMBER
1 NOAE

ARCH ROCHESTER						2019					
MONITORING PROGRAM						SPRING		FALL		TOTAL	
	Well	zone	area	Frequency/Parameters	Purpose	Pyridines	VOCs	Pyridines	VOCs	Pyridines	VOCs
OFF-SITE MONITORING	BR-105	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-105D	BR deep	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	MW-106	OB	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-106	BR	AID-HOSP	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-112D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	BR-113D	BR deep	NYSDOT	annual monitoring, PYR	trend monitoring	1				1	0
	MW-114	OB	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-114	BR	JACKSON	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-117D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-118D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-122D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	BR-123D	BR deep	QUARRY	annual monitoring, PYR	trend monitoring	1				1	0
	PZ-101	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-102	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-103	BR	McKee Rd	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
ON-SITE MONITORING	PZ-104	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PZ-105	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-106	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PZ-107	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	BR-126	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-127	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-3	BR	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	BR-8	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-9	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-5A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	BR-6A	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	BR-7A	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	B-16	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-17	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	B-7	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
Dry Broken	B-11	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-15	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	E-3	OB	ON-SITE	annual monitoring, VOCs & PYR	trend monitoring	1	1			1	1
	MW-127	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	1	1	1	1	2	2
	PW10	OB/BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW12	BR	ON-SITE	semi-annual monitoring, VOCs & PYR	trend monitoring	1	1	1	1	2	2
	PW13	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW14	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW15	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW16	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
	PW17	pumping well	ON-SITE	semi-annual monitoring, VOCs & PYR	mass removal/trend monitoring	1	1	1	1	2	2
QUARRY/CANAL MONITORING	QS-4	quarry seep	QUARRY	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QD-1	quarry ditch	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2	quarry outfall	DITCH	semi-annual monitoring, PYR	trend monitoring	1		1		2	0
	QO-2S1	canal at outfall	CANAL	semi-annual monitoring, PYR	surface water monitoring	1		1		2	0
TOTAL SAMPLES						45	35	33	29	78	64

Ex: BR9 Dupe
BR127MS
PW18 MSD

~~2~~ - Dupe
~~2~~ - MS
~~2~~ ~~MSD~~
~~2~~ - MSD

Prepared/Date: JAR 03/11/19
Checked/Date: NMB 03/12/19

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR-8

Field Personnel: PB + SUM

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 11-18-19

Condition of seal: (X) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height:

Condition of Prot. Casing/Riser: (X) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged

if prot casing; depth to riser below:

Gas Meter Calibration/Reading: % Gas % LEL:

Vol. Organic Matter (Calibration/Reading): Volatiles (ppm):

PURGE INFORMATION

Date/Time Initiated: 11-18-19 11:25

Date/Time Completed: 11-18-19 11:54

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) ~~2~~ 6"

Initial Water Level (ft): 12.98

Elevation G/W MSL:

Well Total Depth (ft):

Method of Well Purge Peristaltic Pump

One (1) Riser Vol (gal):

Dedicated: Y / N

Total Volume Purged (gal): 70 oz

Purged to Dryness: Y / (N)

Purge Observations: Tea Colored water

Start ~~11:25~~

Finish ~~11:54~~

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:29	12.99			9.10	8.47	11.4	10.9	-195	4.53	
11:34	13.01			9.27	8.32	11.6	9.5	-244	1.64	
11:39	13.03			9.83	8.26	11.6	9.8	-237	1.31	
11:44	13.07			10.09	8.22	11.6	7.8	-241	1.27	
11:49	13.11			10.24	8.18	11.6	8.1	-267	1.30	
11:54	13.13		70 oz	10.34	8.16	11.6	7.7	-271	1.28	
Sample at = 12:20										

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW-16

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft) Could Not Gauge. Gets sediment above probe.

Method of Sampling Pumping well - Bailer Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:08	13.54	7.79	8.60	458	-211	3.15	
11:20 - Sample							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy 32°F

Sample characteristics: Black water with Lots of floaty Sediment.

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Conza Sample Point ID: QO2S1

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft)

Method of Sampling Grab Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:01	5.43	8.09	0.737	26.8	71	12.75	
10:05 - Sample							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Same

Sample characteristics: Clear

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: Q02

SAMPLING INFORMATION

Date/Time 11-19-19 Water Level at Sampling (ft)

Method of Sampling Grab Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:00	6.51	8.05	1.49	33.0	72	14.78	
10:03 - Sample							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Sun

Sample characteristics: Clear

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: Qd1

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft) /

Method of Sampling Grab Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:10	7.09	8.05	1.75	5.6	75	21.73	
9:20 - Sample							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Sunny

Sample characteristics: Clear water

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QS4

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft) ✓

Method of Sampling Grab Dedicated: Y / N

Multi-phased/layered: Y / (N) if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:00	7.83	8.02	2.42	11.1	-13	16.13	
9:00 - Sample							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: SAme

Sample characteristics: Clear

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW-15

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft) 8.86

Method of Sampling Pumping well Dedicated: Y / N

Multi-phased/layered: Y / (N) if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:15	10.05	10.14	16.5	155	-193	10.16	
8:20 - Sample + Dupe							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Cold 25°F

Sample characteristics: Brown Clear Water

Comments and Observations: Pump Not Functioning at time of arrival

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW-17

SAMPLING INFORMATION

Date/Time 11-18-19 Water Level at Sampling (ft) 29.35

Method of Sampling Pumping well Dedicated: Y / N

Multi-phased/layered: Y / (N) if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
7:55	6.59	7.25	4.90	38.8	-62	1102	
8:00 - Sampled							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Cold 25°F

Sample characteristics: Clear water

Comments and Observations:

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ101

Field Personnel: PoeT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11-15-19 12:17

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 12:17

Date/Time Completed: 12:50

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 19.03

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge gw pump

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): 90 oz

Purged to Dryness: Y / (N)

Purge Observations: clear

Start 12:17 Finish 12:50

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
12:20	19.30			8.51	6.51	6.50	6.8	-125	5.41	
12:25	19.31			9.25	6.89	6.32	6.3	-129	3.59	
12:30	19.42			9.25	6.84	6.25	6.1	-127	3.38	
12:35	19.51			9.84	6.81	6.19	5.9	-124	3.32	
12.40	19.56		90oz	9.83	6.82	6.19	5.3	-120	3.34	Sampled

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ102

Field Personnel: PDT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11-15-19

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged ____

Prot. Casing/Riser Height: ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11:32

Date/Time Completed: 12:10

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) ____

Initial Water Level (ft): 16.20

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge GRO Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): 6.5 oz

Purged to Dryness: Y (N)

Purge Observations: clear

Start 11:32 Finish 12:10

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:35	16.20			6.79	7.58	10.7	13.5	-176	10.98	
11:40	16.20			7.18	7.40	10.9	6.5	-195	2.41	
11:45	16.21			7.37	7.34	10.9	5.1	-201	1.93	
11:50	16.21		6.5 oz	7.35	7.34	11.0	4.4	-205	1.71	

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ103

Field Personnel: PaT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 10:40 11-15-19

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 10:40

Date/Time Completed: 11:12

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 15.40

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge geo pump

One (1) Riser Vol (gal): ____

Dedicated: Y (N)

Total Volume Purged (gal): 7.0 oz

Purged to Dryness: Y (N)

Purge Observations: overcast Light Black

Start 10:40 Finish 11:12

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:45	15.43			19.24	7.95	2.97	167	-250	14.05	
10:50	15.60			8.31	7.93	2.96	124	-266	4.62	
10:55	15.62			7.82	7.99	2.98	63.7	-286	4.38	
11:00	15.64			7.61	8.02	3.06	430	-295	4.62	
11:05	15.65		7.0 oz	7.62	8.05	3.06	38.4	-297	4.69	Sampled

New Line old frozen

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR 105

Field Personnel: PaT

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-15-19 9:35

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11-15-19 9:35

Date/Time Completed: 10:10 AM

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 8"

Initial Water Level (ft): 24.00

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge GeoPump

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): ____

Purged to Dryness: Y / (N)

Purge Observations: our cost

Start 935 Finish 10:10AM

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:35	2400			9.70	7.19	5.09	47.3	-261	10.75	
9:40	24.01			10.03	7.21	3.49	34.9	-219	7.90	
9:45	24.01			10.13	7.24	3.20	29.0	-207	7.10	
9:50	24.01		7502	10.14	7.25	3.08	360	-202	6.61	Sample

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR 105D

Field Personnel: PdT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11-15-14 8:50

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose (✓) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 8:50

Date/Time Completed: ~~9:15~~ 9:35

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 27.52

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge GRO Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): 70 oz

Purged to Dryness: Y / (N)

Purge Observations: over cast

Start 8:50 Finish 9:35

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:55	27.92			7.92	6.62	83.9	9.4	-328	11.70	
9:03	28.05			10.20	6.68	61.9	7.2	-344	12.30	
9:10	28.25			10.68	6.74	62.0	2.9	-353	11.69	
9:15	28.31		70 oz	10.78	6.75	62.0	3.1	-355	11.45	~~Sample~~

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW106

Field Personnel: RCF

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-15-2019

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged ____

Prot. Casing/Riser Height: ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 8:00

Date/Time Completed: 8:35 AM

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 12.60

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge geo pump

One (1) Riser Vol (gal): ____

Dedicated: Y (N)

Total Volume Purged (gal): ____

Purged to Dryness: Y (N)

Purge Observations: Light Brown

Start 8:00 Finish 8:35 AM

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:00	13.48			9.37	7.61	4.93	215	-259	12.44	
8:06	13.55			9.92	7.10	4.82	0.0	-283	7.14	
8:12	13.56			9.44	6.93	4.80	0.0	-302	7.03	
8:19	13.55			9.64	6.93	4.77	00	-319	8.34	
8:25	13.56			9.51	6.92	4.75	00	-310	8.15	Sample

64

FIELD OBSERVATIONS

Facility: Lonza

Field Personnel: PCF

Sample Point ID: BR106

Sample Matrix: _____

MONITORING WELL INSPECTION

Date/Time: 11-15-2019

Condition of seal: (✓) Good ( ) Cracked _____ %

( ) None ( ) Buried No seal

Prot. Casing/Riser Height: _____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged _____

if prot casing; depth to riser below: _____

Gas Meter Calibration/Reading: % Gas _____ % LEL: _____

Vol. Organic Matter (Calibration/Reading): _____ Volatiles (ppm): _____

PURGE INFORMATION

Date/Time Initiated: 7:15

Date/Time Completed: 7:55

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 6"

Initial Water Level (ft): 25.03

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge geo pump

One (1) Riser Vol (gal): _____

Dedicated: Y / (N)

Total Volume Purged (gal): 64 oz

Purged to Dryness: Y / (N)

Purge Observations: over cast 34°

Start 7:15 Finish _____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
7:15	25.10			7.45	6.55	6.71	510	-269	17.80	
7:20	25.13			8.69	6.87	6.85	177	-313	17.01	
7:30	25.18			9.12	6.92	6.91	66	-320	17.05	
7:36	25.15			9.15	6.98	6.95	60	-325	17.08	
7:45	25.12		64oz	9.18	6.91	6.92	61	-328	17.02	

FIELD OBSERVATIONS

Facility: Conza

Sample Point ID: MW127

Field Personnel: SM + PB

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11-14-19

Condition of seal: (✓) Good ( ) Cracked ____ %
( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good
( ) loose ( ) flush mount
( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 1:54 11-14-19

Date/Time Completed: 2:20

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 8.03

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge peristaltic

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 64 oz

Purged to Dryness: Y / N

Purge Observations: Clear water

Start ____ Finish 2:20

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
1:59	8.35			9.43	8.72	2.24	32.5	-33	9.81	
2:05	8.48			10.46	8.14	2.18	22.2	+10	6.86	
2:10	8.50			10.89	7.94	2.19	17.5	+24	6.50	
2:15	8.60			10.72	7.87	2.22	16.8	+28	6.46	
2:20	[illegible]		64 oz	10.80	7.85	2.22	16.3	+30	6.41	- Sample
	8.63									

Sample At 2:35

Cold - Cloudy 33°

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR-127

SAMPLING INFORMATION

Date/Time 11-14-19 Water Level at Sampling (ft) 21.80

Method of Sampling Pumping Well Dedicated: Y / N

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
1:37	12.03	9.17	4.94	28.2	-123	8.39	
1:40 - Sample Time							

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: Cloudy 33° F

Sample characteristics: Light Brown water

Comments and Observations: Dupe, MS + MSD Also Collected

Dup = 1:43 Sample

MS = 1:47 Sample

MSD = 1:52 Sample

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: _____ Company: _____

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW14

Field Personnel: Pat + Steve

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11/14/19

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good – No Top or Plug - well Tated.

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11-14-19 - 12:43 Date/Time Completed: - 1:15

Surf. Meas. Point: (X) Pro Casing ( ) Riser Riser Diameter (inches) 6"

Initial Water Level (ft): 11.15 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic Pump

One (1) Riser Vol (gal): ____ Dedicated: Y / N

Total Volume Purged (gal): 67 oz Purged to Dryness: Y / N

Purge Observations: Light Brown Start ____ Finish 1:15

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
12:49	11.25			8.35	9.89	6.88	120	-194	2.88	
12:55	11.33			9.30	9.92	6.78	24.5	-160	1.20	
1:00	11.45			9.49	9.93	6.83	5.4	-160	1.00	
1:05	11.46		67 oz	9.33	9.93	6.83	5.0	-160	0.98	– Sample
1:15 - Sample										

Cold = Cloudy 33°

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PZ 106

Field Personnel: Pat Stone Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11/14/2019 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 12:17 Date/Time Completed: 12:40 - Sampled

Surf. Meas. Point: ( ) Pro Casing (X) Riser Riser Diameter (inches) 2"

Initial Water Level (ft): 10.06 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ Dedicated: Y / N

Total Volume Purged (gal): 48 oz Purged to Dryness: Y / (N)

Purge Observations: Black water Start ____ Finish 12:40

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP -176	DO	Other
12:17	11.03			11.53	8.49	13.6	172	[illegible]	3.32	
12:22	11.63			11.68	8.47	14.6	140	-158	1.55	
12:27	12.21			11.30	8.57	14.5	125	-157	1.18	
11:32	12.23		48oz	11.63	8.49	14.5	122	-156	1.15	
12:40	Sampled									

- Stagnant

Cloudy - 33°F

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ 107

Field Personnel: Pat, Steve

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11-14-2019

Condition of seal: (/) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (X) unlocked ( ) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 10:45am

Date/Time Completed: 11:20

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 11.15

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 104 oz.

Purged to Dryness: Y / (N)

Purge Observations: Clear with Black Sediment

Start 10:45 Finish 11:20

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:48	12.32			9.26	6.88	6.82	85.7	-142	8.04	
10:57	12.80		56	10.57	6.59	7.29	40.6	-174	3.12	
11:00	12.87			10.79	6.53	6.53	37.4	-190	2.91	
11:05	12.88			11.07	6.53	7.00	31.5	-205	2.74	
11:10	12.91		104oz	10.99	6.58	6.98	30.9	-210	2.78	Sample

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR 6R

Field Personnel: RaT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11/14/2019

Condition of seal: ( ) Good ( ) Cracked ____ %

(✓) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 9:30

Date/Time Completed: 10:25 am

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 4"

Initial Water Level (ft): 13.62

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge geo Pump

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 70 oz

Purged to Dryness: Y / N

Purge Observations: Clear slight wight

Start ____ Finish 10:25 Am

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:37	13.62			8.26	8.72	5.33	90.7	-321	3.59	
9:45	13.94			8.51	8.76	5.40	66.2	-359	1.78	
9:52	14.30			8.29	8.87	5.43	51.8	-392	2.40	
9:57	14.60			8.03	8.97	5.48	35.5	-407	2.82	
10:08	14.72		70oz	7.70	9.01	5.52	33.7	-411	2.83	Sample

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PZ 105

Field Personnel: RH Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-14-2019 Condition of seal: ( ) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 8:30 AM Date/Time Completed: 9:15 AM

Surf. Meas. Point: ( ) Pro Casing ( ) Riser Riser Diameter (inches) 2"

Initial Water Level (ft): 9.55 Elevation G/W MSL: ____

Well Total Depth (ft): ____ Method of Well Purge geo Pump

One (1) Riser Vol (gal): ____ Dedicated: Y / N

Total Volume Purged (gal): 56 Purged to Dryness: Y / N

Purge Observations: grey cloudy Start 8:35 Finish 9:15 AM

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:35	9.55			8.33	7.77	3.99	00	-94	3.92	
8:42	10.80			7.42	7.46	4.32	177	-95	2.08	
8:47	11.31			7.40	7.42	4.25	227	-96	1.59	
8:55	11.75			7.27	7.41	4.25	220	-95	1.43	
9:00	11.80		56	7.30	7.41	4.25	231	-95	1.51	Sample

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW10

Field Personnel: PCT

Sample Matrix: gw

MONITORING WELL INSPECTION

Date/Time: 11/14/2019 7:40 AM

Condition of seal: (✓) Good ( ) Cracked ____ %

(✓) None ( ) Buried NO J

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: (✓) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged One Bolt missing Tab Broken

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 7:40 Am

Date/Time Completed: 8:15 Am

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches) 8" Steel

Initial Water Level (ft): ____

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge geo pump

One (1) Riser Vol (gal): ____

Dedicated: Y / (N)

Total Volume Purged (gal): 58 oz

Purged to Dryness: Y / (N)

Purge Observations: clear

Start 7:41 Am Finish 8:15 Am

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
7:42	8.84 8.48			7.67	8.37	19.9	35.2	-69	3.49	
7:48	8.85			9.00	8.55	19.7	35.7	-78	2.15	
7:53	8.86			9.65	8.58	19.9	32	-81	1.88	
7:58	8.86			9.27	8.60	20.2	30.9	-82	1.69	
8:03	8.86		58 oz	9.55	8.61	20.1	30.6	-82	1.73	Sample

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR126

Field Personnel: DK + PB

Sample Matrix:

MONITORING WELL INSPECTION

Date/Time: 11-12-19 13:15

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height:

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged

if prot casing; depth to riser below:

Gas Meter Calibration/Reading: % Gas % LEL:

Vol. Organic Matter (Calibration/Reading): Volatiles (ppm):

PURGE INFORMATION

Date/Time Initiated: 11-12 13:27

Date/Time Completed: 13:54

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 4" steel

Initial Water Level (ft): 10.05

Elevation G/W MSL:

Well Total Depth (ft):

Method of Well Purge Peristaltic

One (1) Riser Vol (gal):

Dedicated: (Y) / N

Total Volume Purged (gal): 1.5 L

Purged to Dryness: Y / (N)

Purge Observations: Clear, black tiny particles

Start Finish

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
13:30	10.09	250 ml/min		8.85	7.13	0.87	8.6	103	5.88	
13:35	10.09	125		8.27	7.26	0.872	6.3	103	4.17	
14:40	10.09			8.56	7.27	0.882	7.2	-93	4.06	
14:45	10.09			8.78	7.19	0.899	6.5	-91	3.85	
→ SAMPLE										

25°, wind, sun

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ104

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-12-19 14:00

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good

( ) loose ( ) flush mount

( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11-12 14:02

Date/Time Completed: 14:33

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 14.23

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.3 L

Purged to Dryness: Y (N)

Purge Observations: clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
14:07	14.23	125 mL/min		7.61	~~6.89~~ 7.02	2.84	9.2	-62	1.85	
14:12	14.23			7.46	6.89	2.85	9.2	-65	1.49	
14:17	14.23			7.21	6.91	2.84	9.2	-69	1.37	
14:22	14.23			7.40	6.94	2.86	9.1	-72	1.23	
	→ SAMPLE									

25°F, Windy, Sun

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B16

Field Personnel: 11-12-19

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-12-19 11:45

Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11-12-19 11:51

Date/Time Completed: 12:21

Surf. Meas. Point: ( ) Pro Casing (✓) Riser

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 7.25

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N

Total Volume Purged (gal): 1.75L

Purged to Dryness: Y (N)

Purge Observations: Clear

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:55	7.62	250mL/min		8.57	7.17	2.30	6.1	105	13.35	
12:00	7.80	67.5		8.52	7.08	2.38	11.3	100	13.4	
12:05	7.84			8.16	7.06	2.40	5.6	74	12.98	
12:10	7.88			7.96	7.06	2.42	6.0	39	12.83	
12:15	8.18			8.52	7.05	2.45	6.2	26	12.35	
	↳ SAMPLE									

25°F, Wind, sun, snow

FIELD OBSERVATIONS

Facility: Lot 29 | Sample Point ID: B15

Field Personnel: DKHPB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 1/24/19 10:52 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 1/-/2 10:57 | Date/Time Completed: 11:30

Surf. Meas. Point: ( ) Pro Casing (✓) Riser | Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 6.08 | Elevation G/W MSL: ____

Well Total Depth (ft): ____ | Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ | Dedicated: Y / N

Total Volume Purged (gal): 2L | Purged to Dryness: Y / N

Purge Observations: clear | Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/~~htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
11:02	6.35	250 mL/min		8.59	7.19	0.729	9.8	118	4.94	
11:07	6.49	125		10.17	6.91	0.701	14.5	82	2.90	
11:12	6.68	67.5		9.75	6.86	0.705	12.5	59	2.42	
11:17	6.72			9.50	6.85	0.709	8.1	57	2.27	
11:22	6.75			9.37	6.85	0.709	4.3	60	2.19	
→ SAMPLE										

25° F, Winter

FIELD OBSERVATIONS

Facility: Conoco — Sample Point ID: BR5A

Field Personnel: DKPP — Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 1-12-19 10:01 — Condition of seal: ( ) Good ( ) Cracked ____ %
( ) None ( ) Buried

Prot. Casing/Riser Height: ____ — Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good
( ) loose ( ) flush mount
( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 10-12 10:03 — Date/Time Completed: 10:40

Surf. Meas. Point: ( ) Pro Casing (X) Riser — Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 4.82 — Elevation G/W MSL: ____

Well Total Depth (ft): ____ — Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____ — Dedicated: (Y) / N

Total Volume Purged (gal): 1.5 2.0 L — Purged to Dryness: Y / (N)

Purge Observations: clear — Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
10:07	4.86	225 mL/min		7.24	6.98	3.83	12	22	2.30	
10:12	4.86	ADJ 675		5.82	7.15	3.90	8.2	46	1.62	
10:17	4.86			5.87	7.18	3.90	7.5	60	1.43	
10:22	4.86			6.00	7.20	3.92	8.2	66	1.39	
10:27				6.05	7.21	3.93	9	72	1.33	
↳ SAMPLE										

25°F, Snow

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW-13

SAMPLING INFORMATION

Date/Time 11-19-19 Water Level at Sampling (ft) 26.95

Method of Sampling grab Bailed Dedicated: Y (N)

Multi-phased/layered: Y (N) if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:15	12.31	7.22	4.32	48.7	-205	763	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: overcast 38° Sam 7:20

Sample characteristics:

Comments and Observations:

Perm Well Running Bailer sampled

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: _____ by: BT B Company: Matrix

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	LAB PROJECT ID
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 111918T
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email:
ATTN:	Francien Trubia	ATTN:		francien.trubia@lonza.com

PROJECT REFERENCE

Semiannual GW Sample Event

Fall 2019

Matrix Codes:

AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Py - Site specific SVOA	TCL Volatiles	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
11/15/2019	7:55 AM		X	BR106	WG	3	X	X										
11/15/2019	8:35AM		X	MW106	WG	3	X	X									PO Number 4502114313	
11/15/2019	9:35 AM		X	BR105D	WG	3	X	X										
11/15/2019	10:10 AM		X	BR105	WG	3	X	X										
11/15/2019	11:12 AM		X	PZ103	WG	3	X	X										
11/15/2019	12:10PM		X	PZ102	WG	3	X	X										
11/15/2019	12:50PM		X	PZ101	WG	3	X	X										
11/15/2019				TRIP BLANK														

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other	☐	Other	☐	Other EDD	☒
please indicate date needed:		please indicate package needed:		please indicate EDD needed:	
				DEC/WOOD EDD	

Sampled By — Date/Time: 11/15/2019 14:15

Relinquished By — Date/Time: 11/15/2019 1503

Received By — Date/Time: 11/15/19 1503

Received @ Lab By — Date/Time:

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

FIELD OBSERVATIONS

Facility: Conoco Sample Point ID: BR 7A

SAMPLING INFORMATION

Date/Time 11-19-14 Water Level at Sampling (ft) Blockage from Pump inlet

Method of Sampling Grab from Discharge Dedicated: Y (N)

Multi-phased/layered: Y / N if yes: ( ) Light ( ) Heavy

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
8:35	14.19	7.52	3.87	33.5	-200	8.20	

INSTRUMENT CALIFBRATION/CHECK DATA

Meter ID#	Cal Std 7.0 SU	Cal Std 4.0 SU	Cal Std. 10.0 SU	Check Std 7.0 SU (+/- 10%)	Cal.Std. 1413 umhos/cm	Check Std 1413 umhos/cm (+/- 10%)	Cal Std. 10 NTU	Check Std 10 NTU (+/- 10%)
Solution ID#								

GENERAL INFORMATION

Weather conditions at time of sampling: overcast 32°F 8:40

Sample characteristics:

Comments and Observations:

Pump Turned on 10 min Before Sample

I certify that sampling procedures were in accordance with all applicable EPA, State and Site-Specific protocols:

Date: 11-19-14 by: JT B Company: MACTEC

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW12

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-12-19 9:00

Condition of seal: ( ) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good ( ) loose ( ) flush mount ( ) Damaged ____

if prot casing; depth to riser below: ____

Gas Meter Calibration/Reading: % Gas ____ % LEL: ____

Vol. Organic Matter (Calibration/Reading): ____ Volatiles (ppm): ____

PURGE INFORMATION

Date/Time Initiated: 11-12-19 9:25 (~~9:00~~)

Date/Time Completed: 9:56

Surf. Meas. Point: ( ) Pro Casing ( ) Riser

Riser Diameter (inches): 6" steel

Initial Water Level (ft): 5.68

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge: Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: Y / N

Total Volume Purged (gal): 2L

Purged to Dryness: Y / N

Purge Observations: Cloudy

Start ____ Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (mS/cm)	Turb. (NTU)	ORP	DO	Other
9:27	6.70	250		10.28	6.14	0.328	27.9	-155	5.50	
9:32	6.74	125		9.21	6.99	0.316	30.5	-169	3.80	
9:37	6.80	67.5		9.55	7.12	0.314	29	-168	4.14	
9:42	6.82			9.79	7.18	0.313	25.7	-168	4.52	
9:47	6.83			10.00	7.24	0.313	21.6	-170	5.21	
↳	SAMPLE									

23°F, Light snow

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT ID
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 111918T
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email:
ATTN:	Francion Trubia	ATTN:		francien.trubia@lonza.com

PROJECT REFERENCE
Semiannual GW Sample Event
Fall 2019

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Py - Site specific SVOA	TCL Volatics	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
11/12/2019	9:56 AM		X	PW12	WG	3	X	X										
11/12/2019	10:40 AM		X	BR5A	WG	3	X	X									PO Number 4502114313	
11/12/2019	11:30AM		X	B15	WG	3	X	X										
11/12/2019	12:21 PM		X	B16	WG	3	X	X										
11/12/2019	1:54 PM		X	BR126	WG	3	X	X										
11/12/2019	2:33PM		X	PZ104	WG	3	X	X										
				TRIP BLANK														

(1) nelson.breton@woodplc.com and julio.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other (please indicate date needed: ____)	☐	Other (please indicate package needed: ____)	☐	Other EDD (please indicate EDD needed: DECWOOD EDD)	☒

David Greinheder 11-12-19 15:00
Sampled By — Date/Time — Total Cost:

Relinquished By — Date/Time

Received By 11/12/19 1555 — Date/Time — P.I.F.

Received @ Lab By — Date/Time

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM ENVIRONMENTAL SERVICES, INC.

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	LAB PROJECT ID
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 111918T
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email: francien.trubia@lonza.com
ATTN:	Francien Trubia	ATTN:		

PROJECT REFERENCE
Semiannual GW Sample Event
Fall 2019

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Py - Site specific SVOA	TCL Volatiles	MS -	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
11/14/2019	8:15AM		X	PW10	WG	3	X	X										
11/14/2019	9:15AM		X	PZ105	WG	3	X	X									PO Number 4502114313	
11/14/2019	10:25 AM		X	BR6A	WG	3	X	X										
11/14/2019	11:20 AM		X	PZ107	WG	3	X	X										
11/14/2019	12:40PM		X	PZ106	WG	3	X	X										
11/14/2019	1:15PM		X	PW14	WG	3	X	X										
11/14/2019	1:43PM		X	BR127 Field Duplicate	WG	3	X	X										
11/14/2019	1:40PM		X	BR127	WG	9	X	X	X	X							MS (1:47PM)/MSD (1:52PM)	
11/14/2019	2:20PM		X	MW127	WG	3	X	X										
11/14/2019				TRIP BLANK														

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed:	☐	Other please indicate package needed:	☐	Other EDD please indicate EDD needed: DECWOOD EDD	☒

Sampled By — Date/Time: 11/14/2019 1500

Relinquished By — Date/Time: 11/14/2019 1532

Received By — Date/Time: 11/14/19 1537

Received @ Lab By — Date/Time:

Total Cost:

P.I.F. ☐

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM ENVIRONMENTAL SERVICES, INC.

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		LAB PROJECT ID
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 111918T
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email:
ATTN:	Francien Trubia	ATTN:		francien.trubia@lonza.com

PROJECT REFERENCE

Semiannual GW Sample Event

Fall 2019

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Py - Site specific SVOA	TCL Volatiles	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
11/18/2019	8:00AM		X	PW17	WG	3	X	X										
11/18/2019	8:20AM		X	PW15	WG	3	X	X									PO Number 4502114313	
11/18/2019	8:20AM		X	PW15 Field Duplicate	WG	3	X	X										
11/18/2019	9:00AM		X	QS4	WG	1	X											
11/18/2019	9:20AM		X	QD1	WG	1	X											
11/18/2019	10:03AM		X	QO2	WG	1	X											
11/18/2019	10:05AM		X	QOS1	WG	1	X											
11/18/2019	11:20AM		X	PW16	WG	3	X	X										
11/18/2019	12:20PM		X	BR8	WG	3	X	X										
11/18/2019				TRIP BLANK														

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements		
Availability contingent upon lab approval; additional fees may apply.				
Standard 5 day	☐	None Required	☐	None Required ☐
10 day	☒	Batch QC	☐	Basic EDD ☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD ☒
Rush 2 day	☐	Category B	☐	
Rush 1 day	☐			
Other	☐	Other	☐	Other EDD ☒
please indicate date needed:		please indicate package needed:		please indicate EDD needed: DEC/WOOD EDD

Sampled By — Date/Time: 11/18/2019 13:35

Relinquished By — Date/Time: 11/18/2019 14:15

Received By — Date/Time: 11/18/19 1415

Received @ Lab By — Date/Time:

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

179 Lake Avenue, Rochester, NY 14608 Office (585) 647-2530 Fax (585) 647-3311

PARADIGM

CHAIN OF CUSTODY

REPORT TO:		INVOICE TO:		
COMPANY:	Arch Chemicals, Inc.	COMPANY:	SAME	LAB PROJECT ID
ADDRESS:	100 McKee Road, P.O. Box 30205	ADDRESS:		
CITY:	Rochester STATE: NY ZIP: 14603	CITY:	STATE: ZIP:	Quotation #: MS 111918T
PHONE:	585-613-3752 FAX:	PHONE:	FAX:	Email:
ATTN:	Francien Trubia	ATTN:		francien.trubia@lonza.com

PROJECT REFERENCE
Semiannual GW Sample Event
Fall 2019

Matrix Codes:
AQ - Aqueous Liquid; NQ - Non-Aqueous Liquid; WA - Water; WG - Groundwater; DW - Drinking Water; WW - Wastewater; SO - Soil; SL - Sludge; SD - Solid; PT - Paint; WP - Wipe; CK - Caulk; OL - Oil; AR - Air

REQUESTED ANALYSIS

DATE COLLECTED	TIME COLLECTED	COMPOSITE	GRAB	SAMPLE IDENTIFIER	MATRIX CODES	NUMBER OF CONTAINERS	Py - Site specific SVOA	TCL Volatiles	MS	MSD							REMARKS	PARADIGM LAB SAMPLE NUMBER
11/19/2019	7:45AM		X	BR9	WG	9	X	X	X	X							MS (7:45AM)/MSD (7:45AM)	
11/19/2019	8:20AM		X	PW13	WG	3	X	X										
11/19/2019	8:40AM		X	BR7A	WG	3	X	X									*PO Number 4502114313*	
11/19/2019				TRIP BLANK														

(1) nelson.breton@woodplc.com and julie.ricardi@woodplc.com

Turnaround Time		Report Supplements			
Availability contingent upon lab approval; additional fees may apply.					
Standard 5 day	☐	None Required	☐	None Required	☐
10 day	☒	Batch QC	☐	Basic EDD	☐
Rush 3 day	☐	Category A	☐	NYSDEC EDD	☒
Rush 2 day	☐	Category B	☐		
Rush 1 day	☐				
Other please indicate date needed.	☐	Other please indicate package needed.	☐	Other EDD please indicate EDD needed:	☒
				DEC/WOOD EDD	

Sampled By	11/19/19	900 am
Relinquished By	11/20/19	9:10
Received By	11/19/19	910
Received @ Lab By		

Total Cost:

P.I.F.

By signing this form, client agrees to Paradigm Terms and Conditions (reverse).

See additional page for sample conditions.

11-1-19

Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
MW-G6	Off-Site	OB				—	—	Destroyed 11/15/17
MW-G8	Off-Site	OB				7.77	1:17	
MW-G9	Off-Site	OB				2.80	1:30	
N-2	On-Site	OB				—	8:55	DAMAGED
N-3	On-Site	OB				5.92	8:32	
NESS-E	Off-Site	BR deep				25.84	10:47	
NESS-W	Off-Site	BR deep				30.27	10:45	
PW-10	On-Site	pumping well				9.02	9:06	
PW-12	On-Site	BR				5.80	8:45	
PW-13	On-Site	pumping well				3.84	10:10	NO SCHUCK absorption
PW-14	On-Site	pumping well				11.52	9:18	
PW-15	On-Site	pumping well				30.45	9:09	
PW-16	On-Site	pumping well				22.45	9:40	
PW-17	On Site	pumping well				29.46	9:10	
PZ-101	Off-Site	BR				18.76	10:01	
PZ-102	Off-Site	BR				16.07	10:03	
PZ-103	Off-Site	BR				14.58	10:05	
PZ-104	Off-Site	BR				14.00	10:10	
PZ-105	On-Site	BR				9.56	9:37	BOX bw, in puddle
PZ-106	On-Site	BR				10.55	9:17	
PZ-107	On-Site	BR				11.53	9:30	
PZ-109	On-Site	BR				9.20	9:12	
PZ-110	On-Site	BR				10.74	9:15	
PZ-111	On-Site	BR				—		can't find
W-5	On-Site	OB				NS-1		

11-11-19

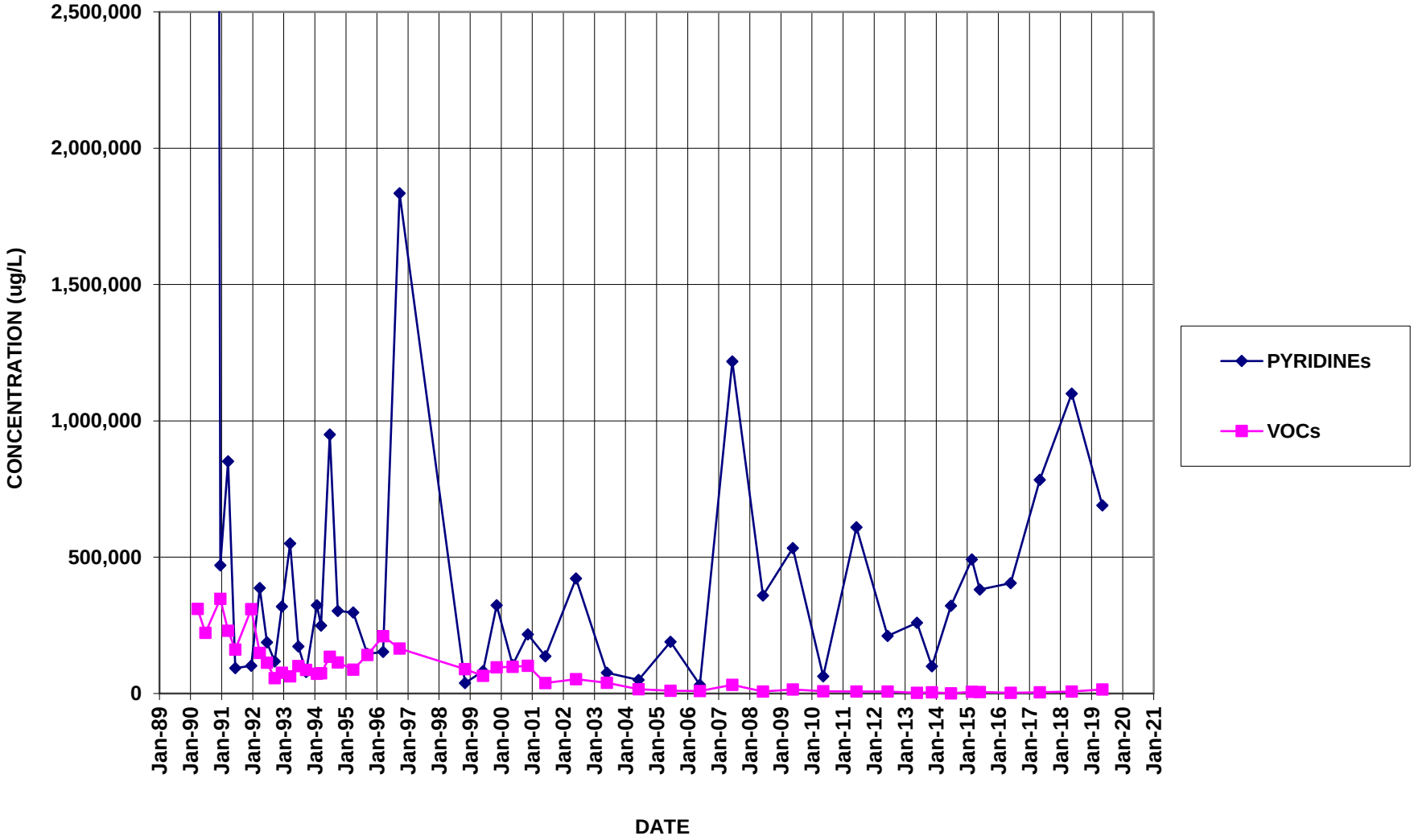
Table 2
Groundwater Elevation Report
Lonza, Rochester, NY

Sample Location		Zone	Date	Depth to water	Casing Elevation	GW Elevation	Time	Comments
B-1	On-Site	OB				8.40	8:30	
B-10	On-Site	OB				10.64	9:31	
B-11	On-Site	OB					9:37	Dry (10/14/19) obstructed @ 4.20
B-15	On-Site	OB				6.11	10:21	
B-16	Off-Site	OB				6.73	10:23	
B-17	On-Site	OB				9.02	9:04	
B-2	On-Site	OB				9.60	1:10	
B-4	On-Site	OB				19.17	9:49	
B-5	On-Site	OB				13.65	9:48	
B-7	On-Site	OB				14.48	10:15	
B-8	On-Site	OB				10.03	9:33	
BR-1	On-Site	BR				6.69	8:54	
BR-102	On-Site	BR				7.50	8:35	
BR-103	Off-Site	BR				2.48	11.10	
BR-104	Off-Site	BR				10.5	10:54	
BR-105	Off-Site	BR			23.09	~~10.95~~	10:47	
BR-105D	Off-Site	BR deep				36.42	10:41	
BR-106	Off-Site	BR				24.05	1:28	
BR-108	Off-Site	BR				28.57	10:34	
BR-111	Off-Site	BR				28.82	11:37	
BR-111D	Off-Site	BR				29.11	11:39	
BR-112D	Off-Site	BR deep				36.48	11:33	
BR-113	Off-Site	BR				31.45	12:20	
BR-113D	Off-Site	BR deep				31.49	12:21	
BR-114	Off-Site	BR				14.40	11:36	
BR-116	Off-Site	BR				29.35	1:53	
BR-116D	Off-Site	BR deep				35.68	1:48	Need ACW Box
BR-117	Off-Site	BR				36.40	11:53	
BR-117D	Off-Site	BR deep				48.14	11:51	
BR-118	Off-Site	BR				23.84	11:58	
BR-118D	Off-Site	BR deep				47.50	11:56	
BR-122D	Off-Site	BR deep				45.17	12:10	
BR-123D	Off-Site	BR deep				44.91	12:14	
BR-124D	Off-Site	BR deep				32.27		
BR-126	Off-Site	BR				10.08	10:30	~~well under debris~~
BR-127	On-Site	BR				14.35	9:34	
BR-2	On-Site	BR				10.25	9:01	
BR-2A	On-Site	BR				10.01	9:01	
BR-2D	On-Site	BR deep				9.85	8:59	
BR-3	On-Site	BR				Buried		debris in well
BR-3D	On-Site	BR deep				49.32	9:12	
BR-4	On-Site	BR				10.65	9:37	
BR-5	On-Site	BR				5.16	8:48	
BR-5A	On-Site	pumping well				4.95	8:29	
BR-6A	On-Site	BR				13.40	9:29	
BR-7	On-Site	BR				15.53	10:14	
BR-7A	On-Site	pumping well			OBstruction	5	10:12	can't get + past here
BR-8	On-Site	BR				13.34	9:47	
BR-9	On-Site	pumping well				31.70	8:27	Heat on
C-2A	On-Site	OB			DRY	10.25	9:00	
C-5	On-Site	OB				10.48	9:11	
CANAL	Off-Site	SW				37.00		~~GONE~~ 12:42 GONE
E-2	On-Site	OB						
E-3	On-Site	OB				3.81	8:47	
E-5	On-Site	OB				5.63	9:52	
EC-2	Off-Site	BR				DRY		12:23
MW-103	Off-Site	OB				2.30	11:12	
MW-104	Off-Site	OB				8.90	10:54	
MW-105	Off-Site	OB				18.85	10:43	
MW-106	Off-Site	OB				12.74	1:32	
MW-114	Off-Site	OB				10.55	11:25	
MW-127	On-Site	OB				8.54	9:36	
MW-16	Off-Site	BR				10.80	11:22	Road Box destroyed
MW-3	Off-Site	OB				NS-1		

Appendix B

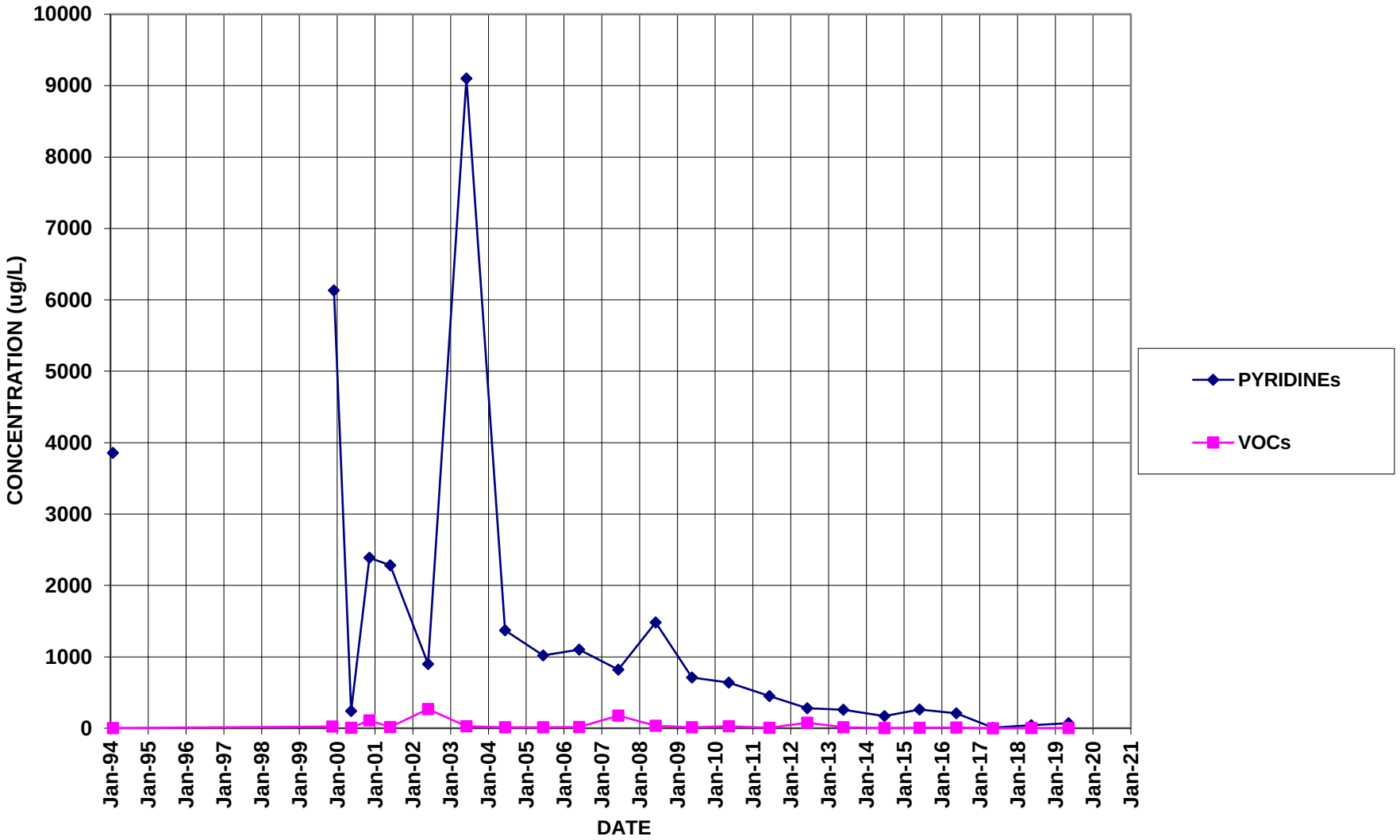
Well Trend Data

B-17

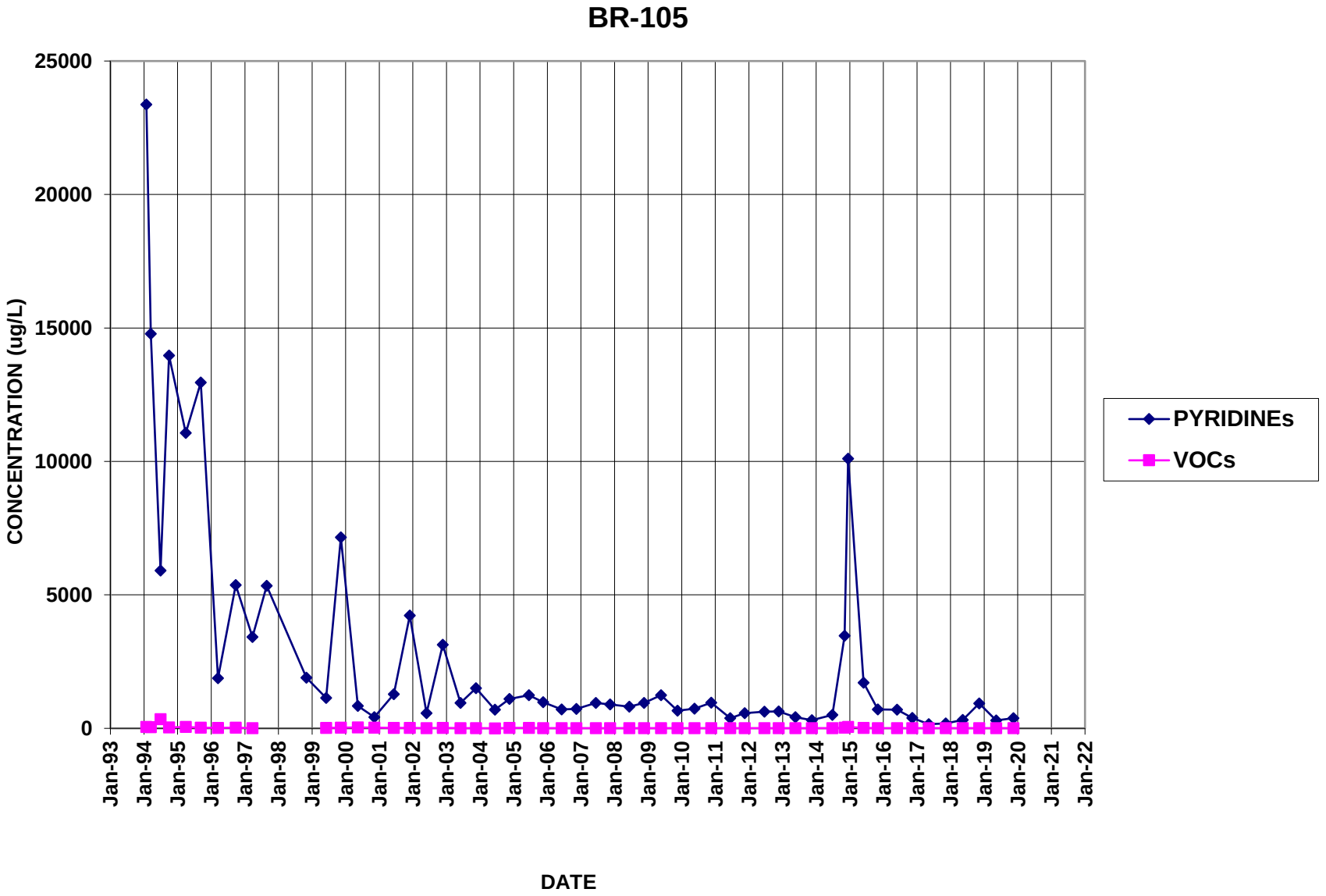


Prepared by: JAR 7/31/19
Reviewed by: nmb

B-7

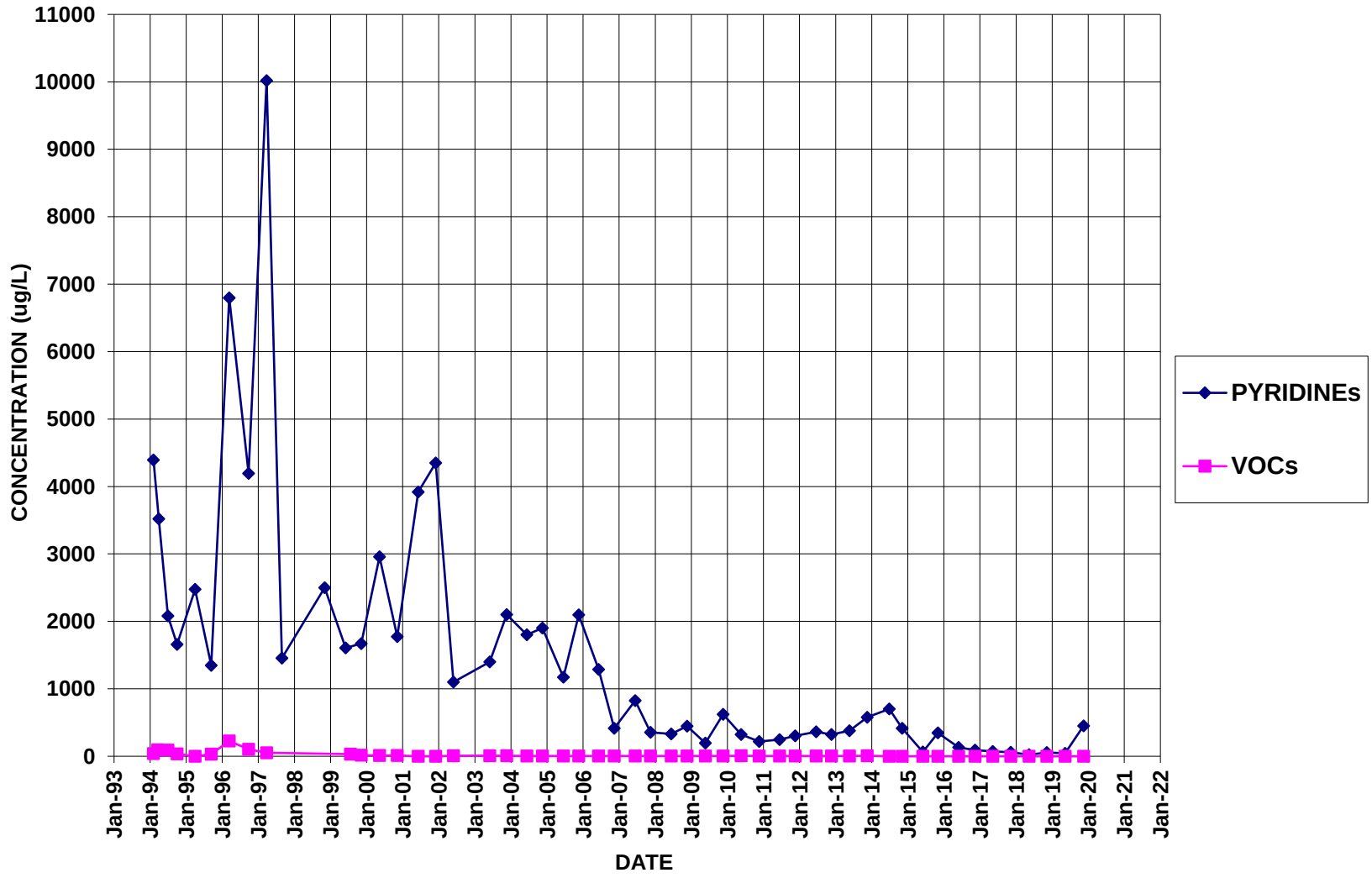


Prepared by: JAR 7/31/19
Reviewed by: nmb



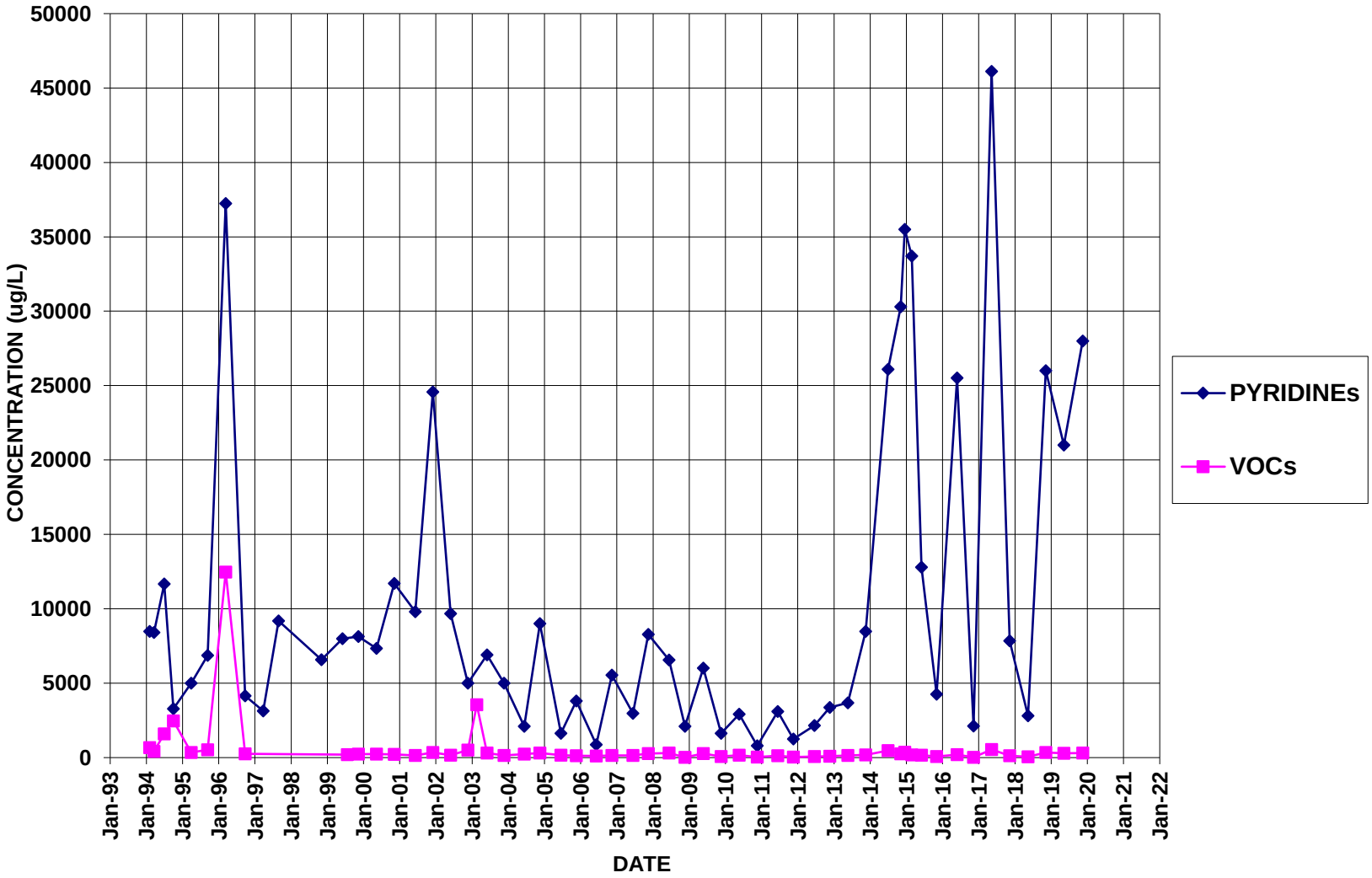
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-105D



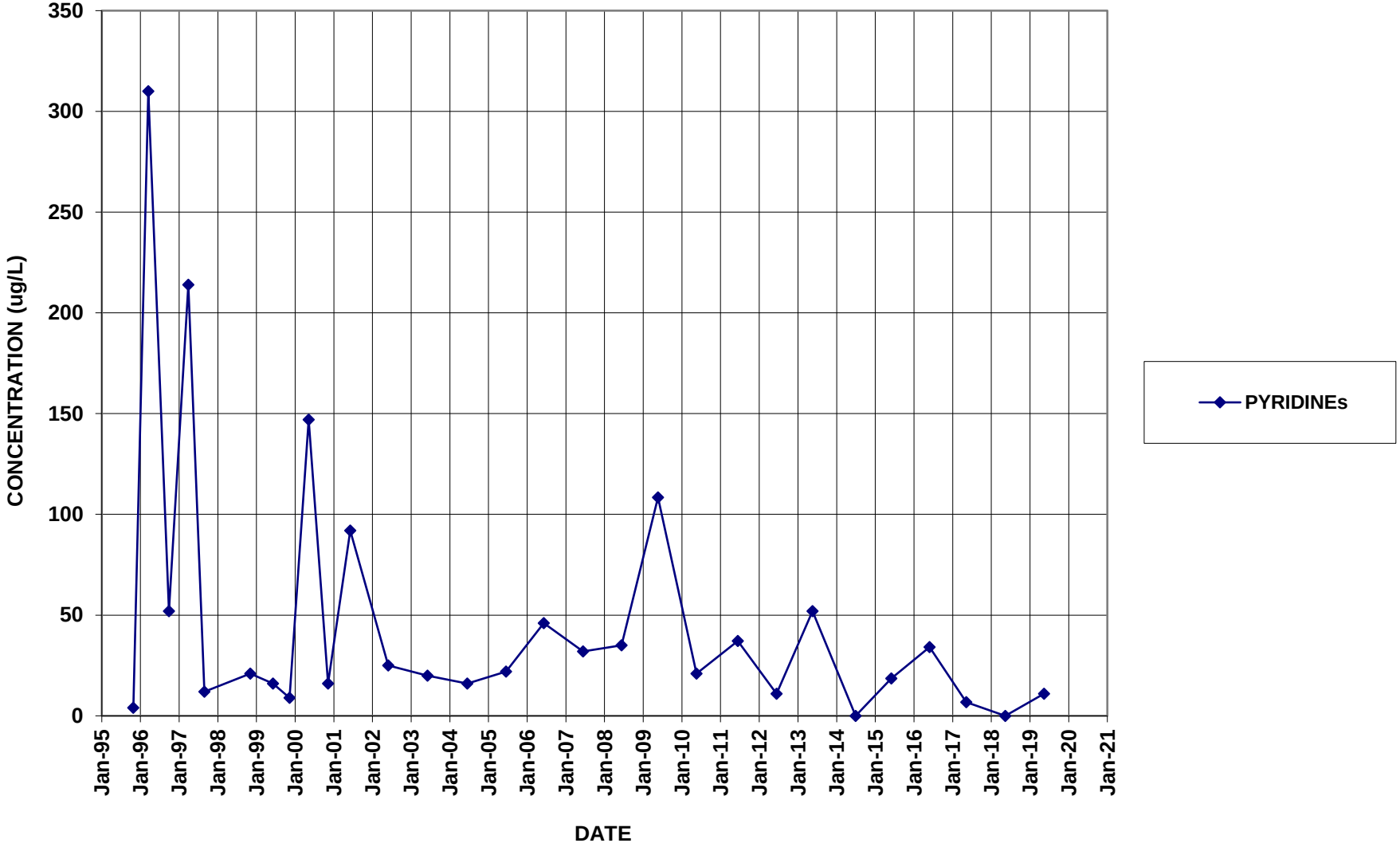
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-106



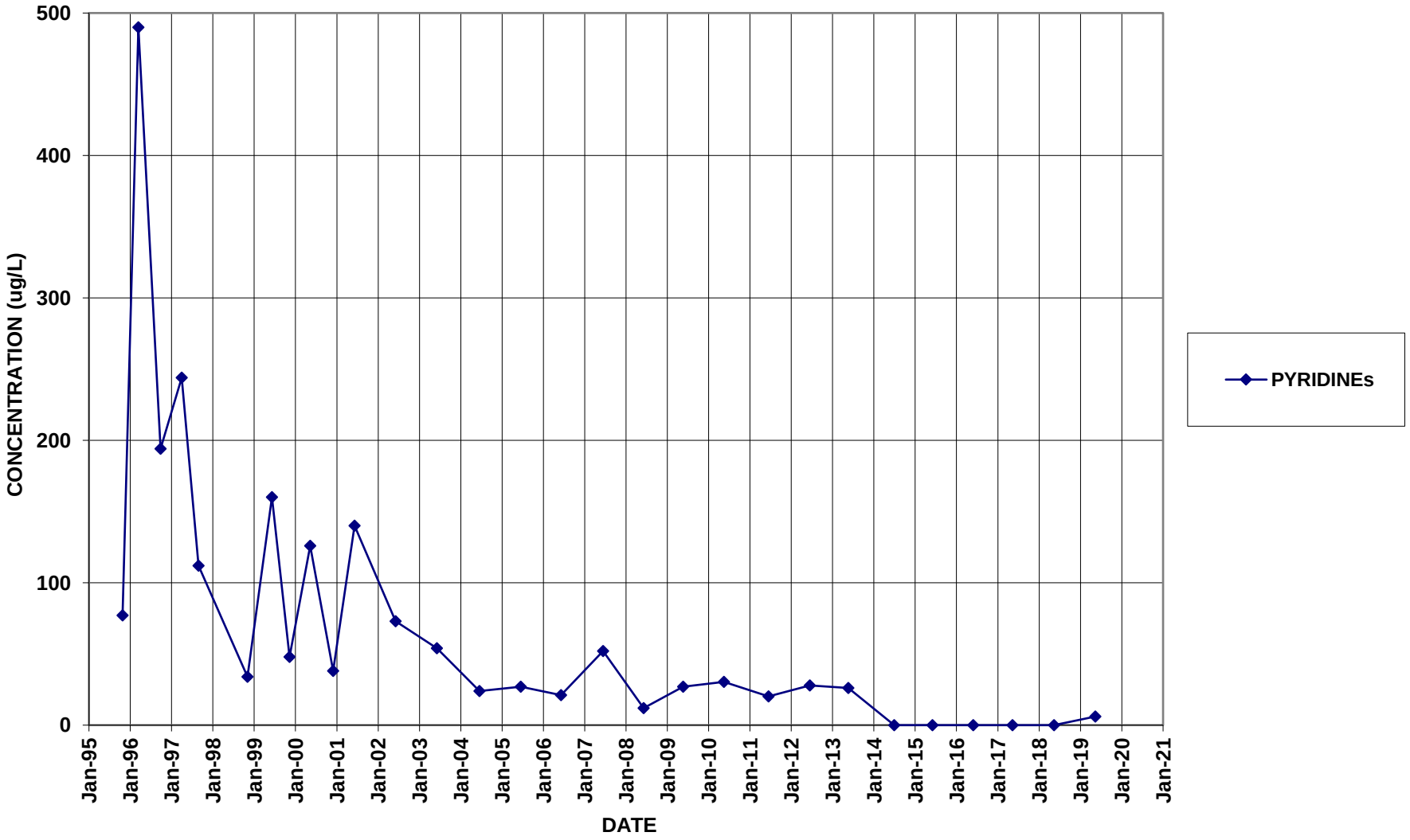
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-112D



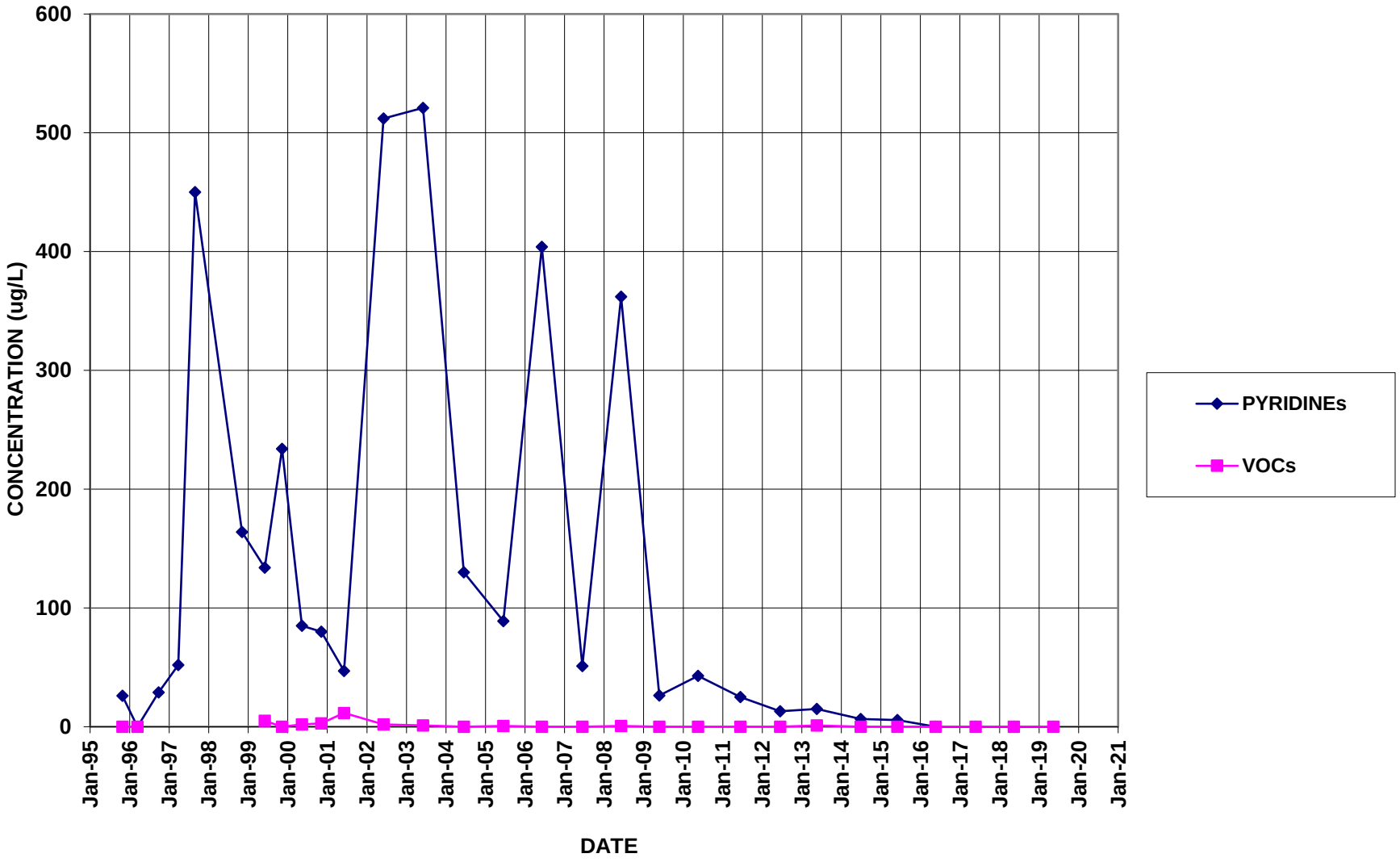
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-113D



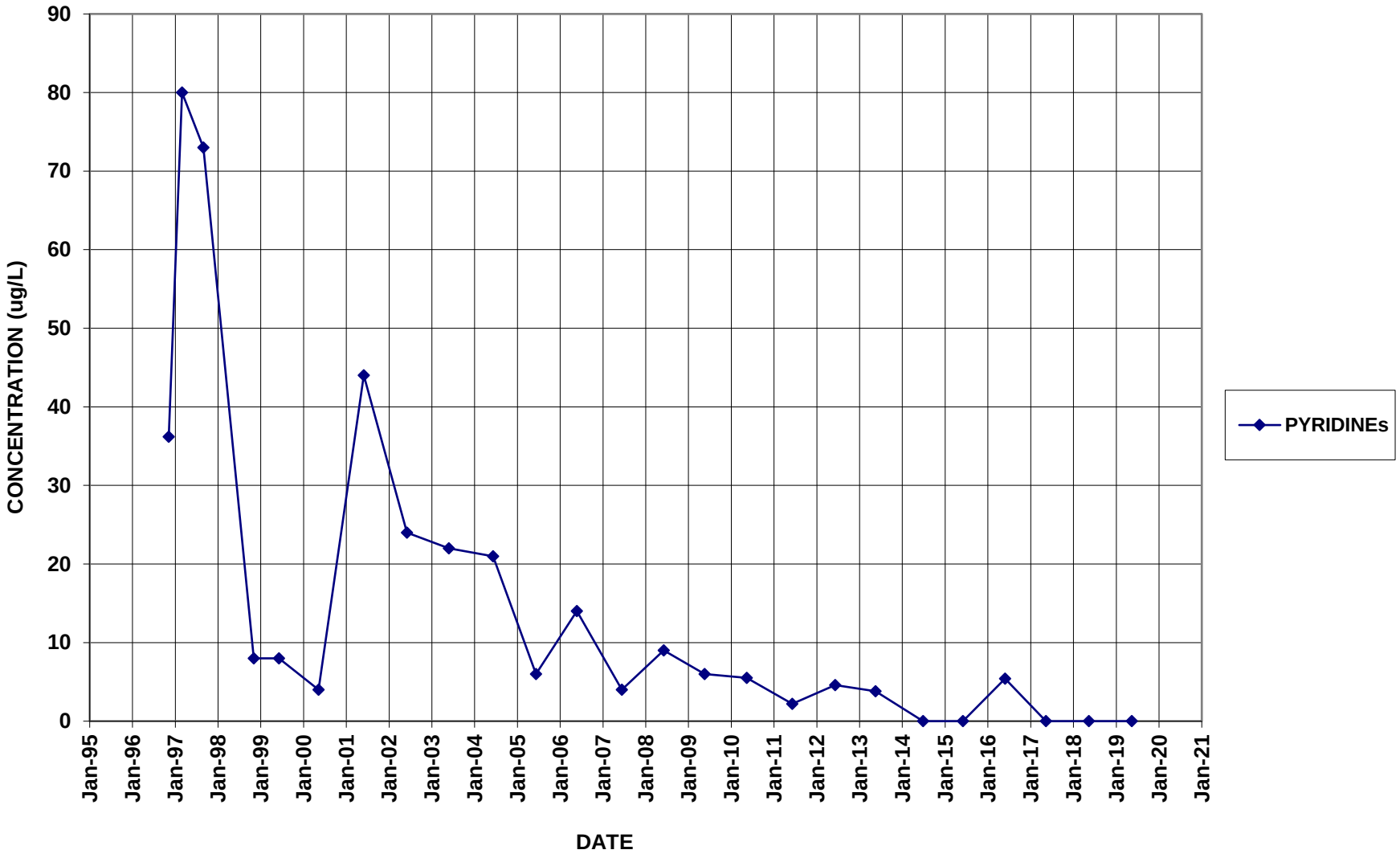
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-114



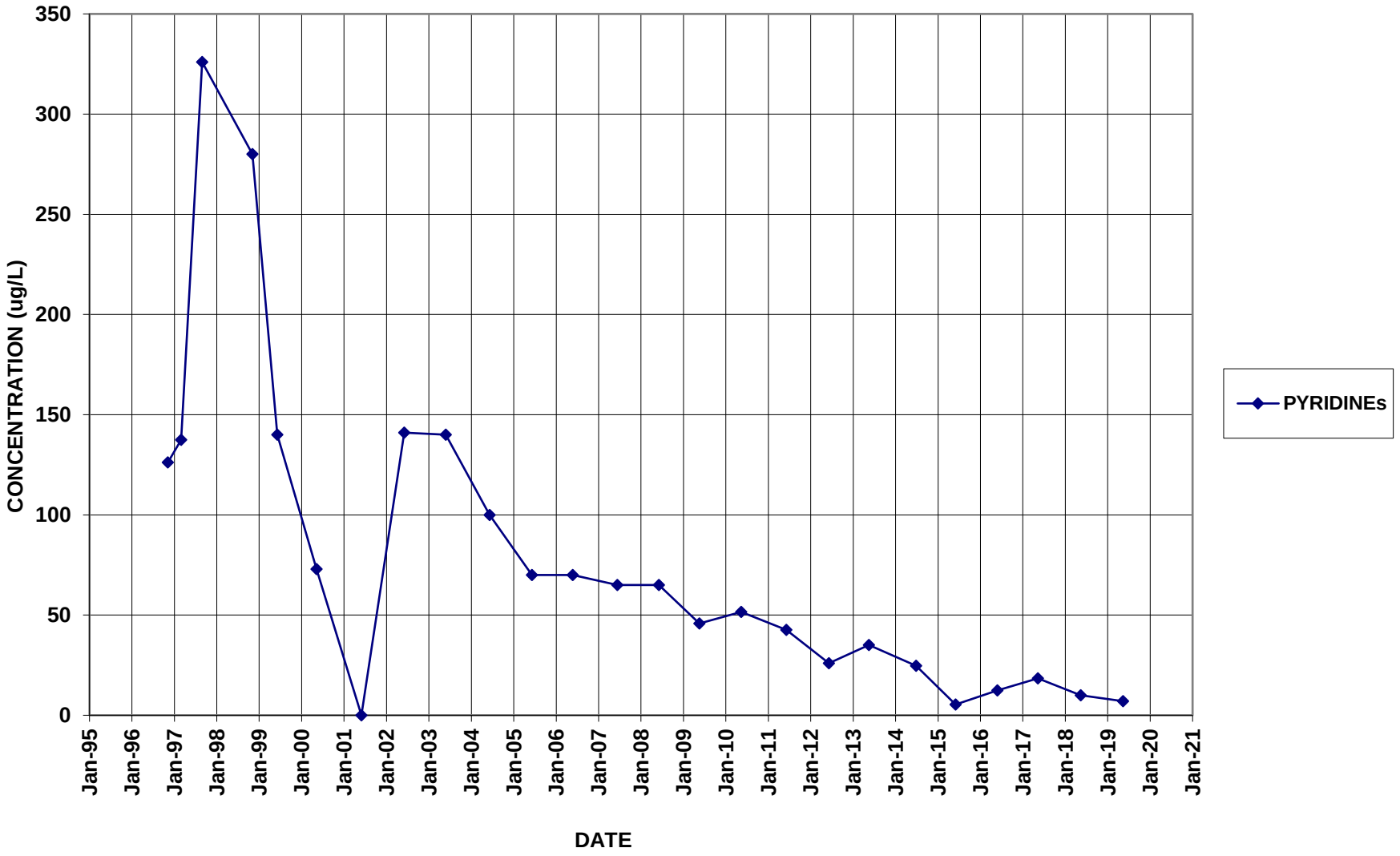
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-117D



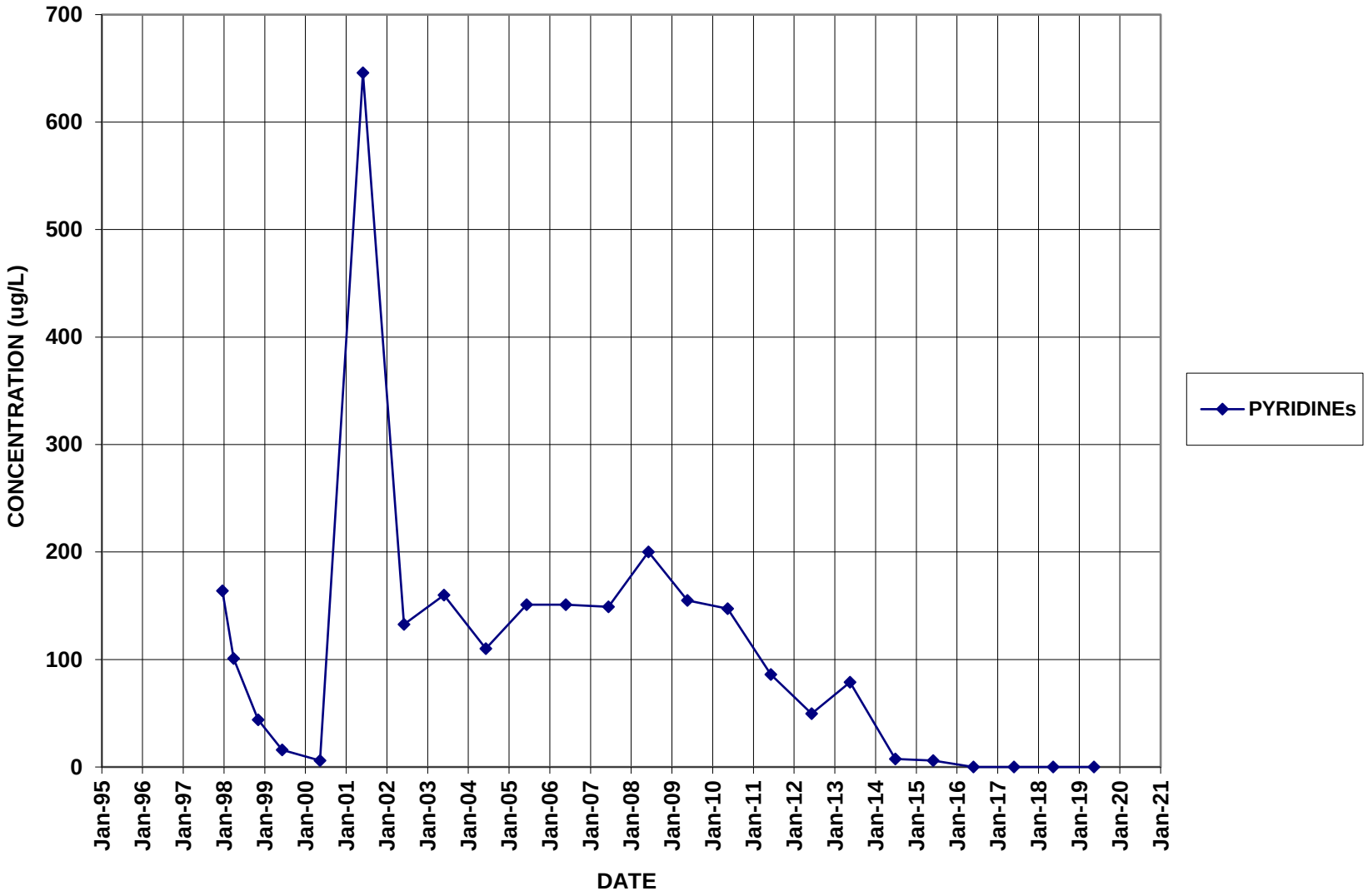
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-118D



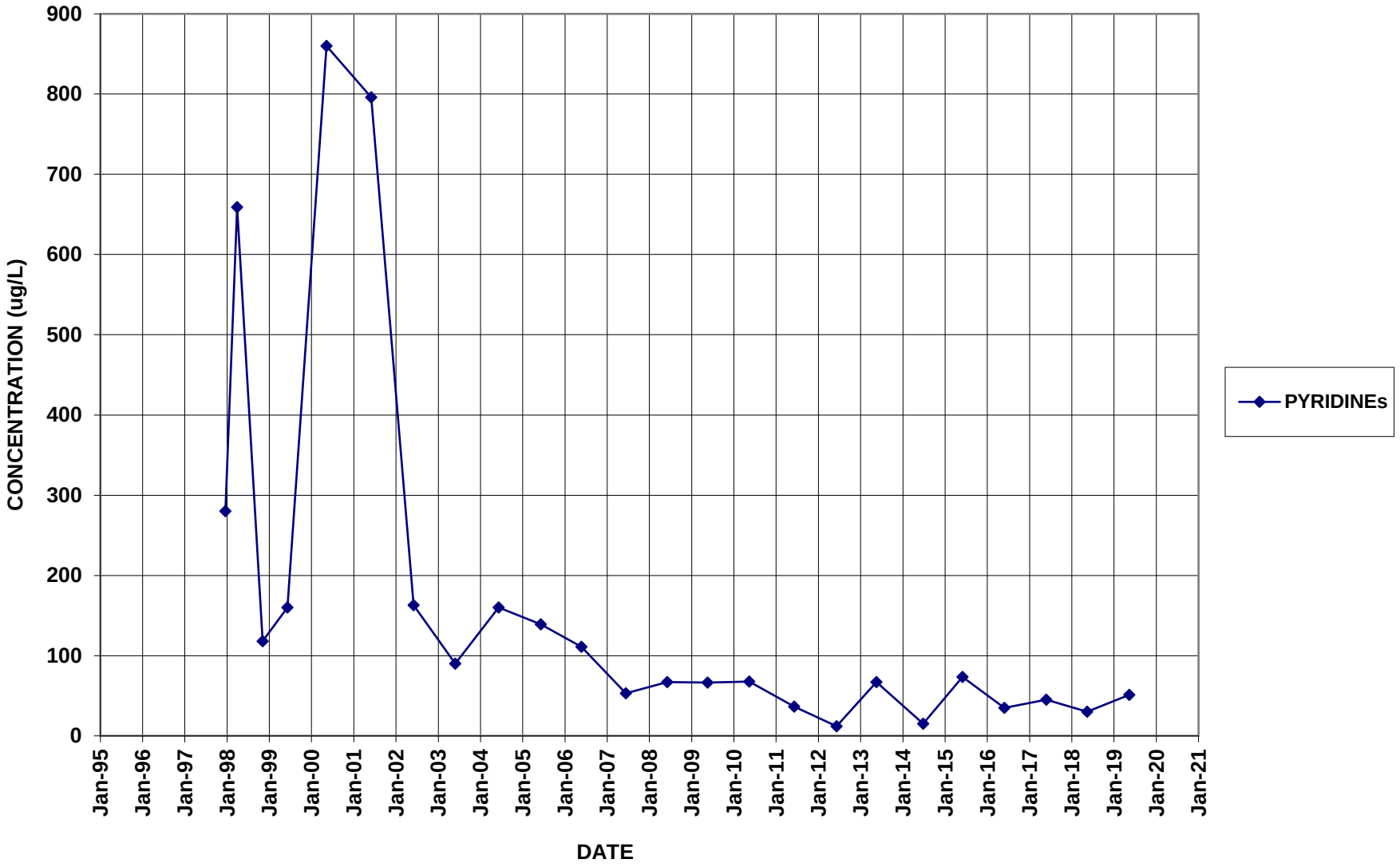
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-122D



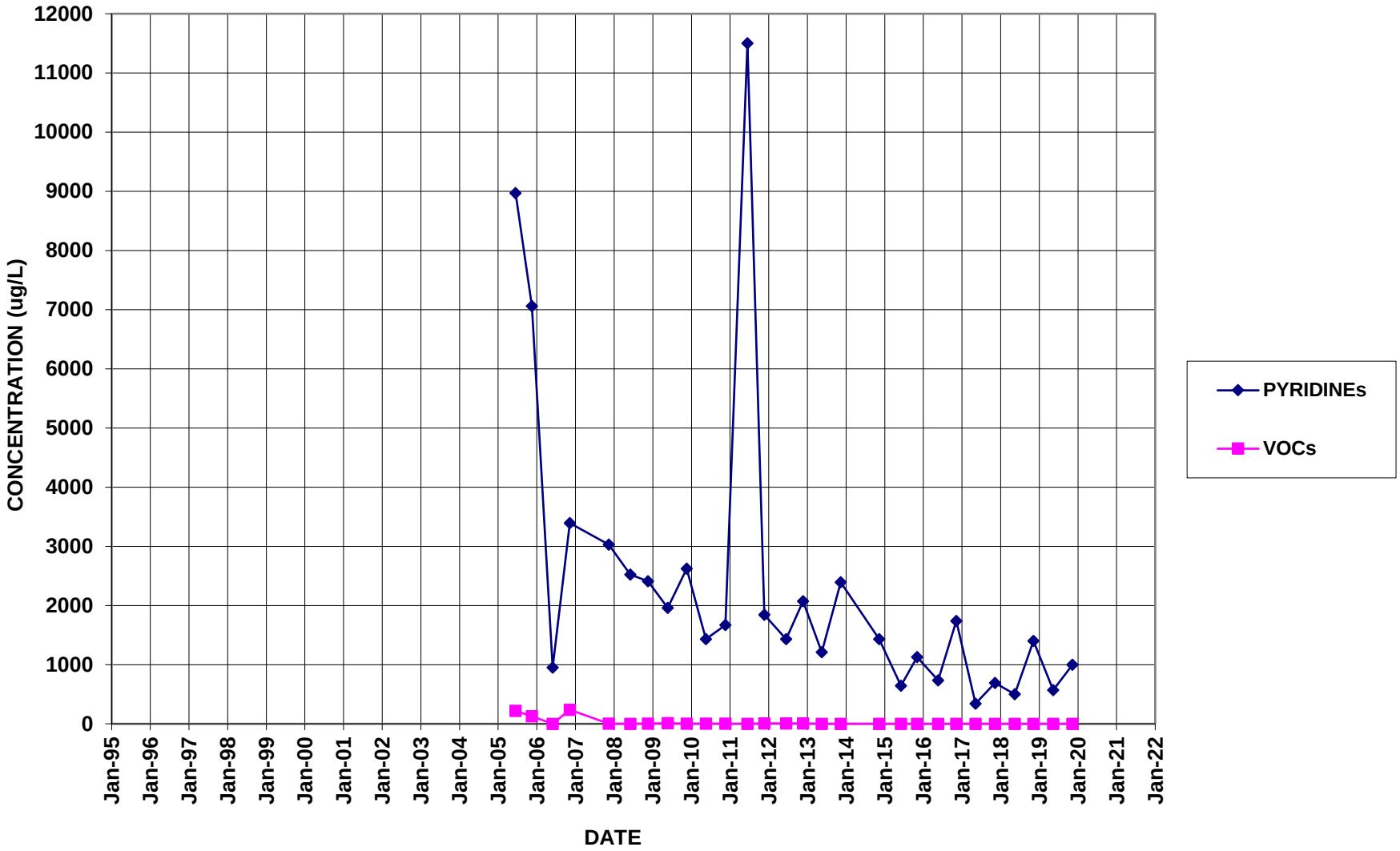
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-123D



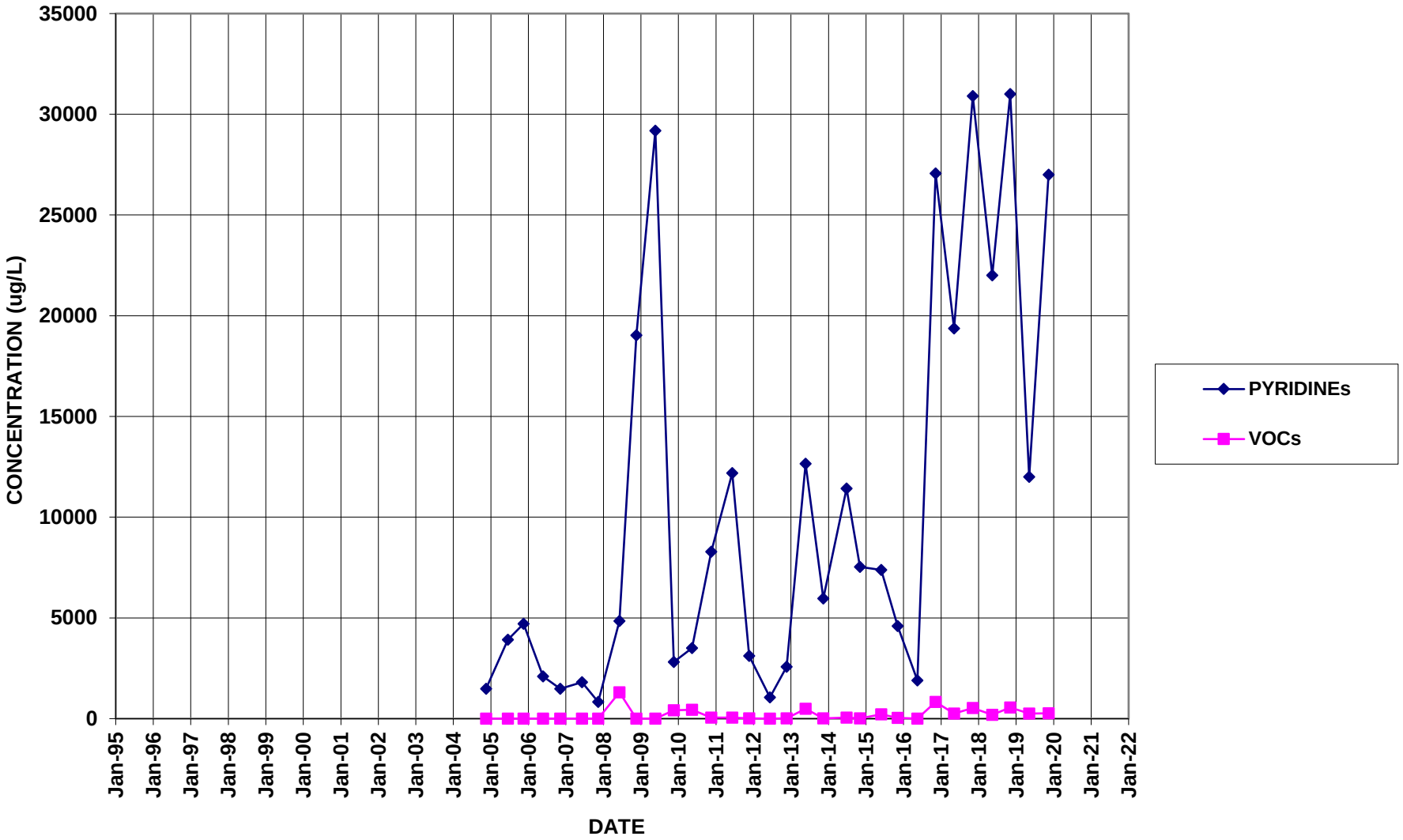
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-126

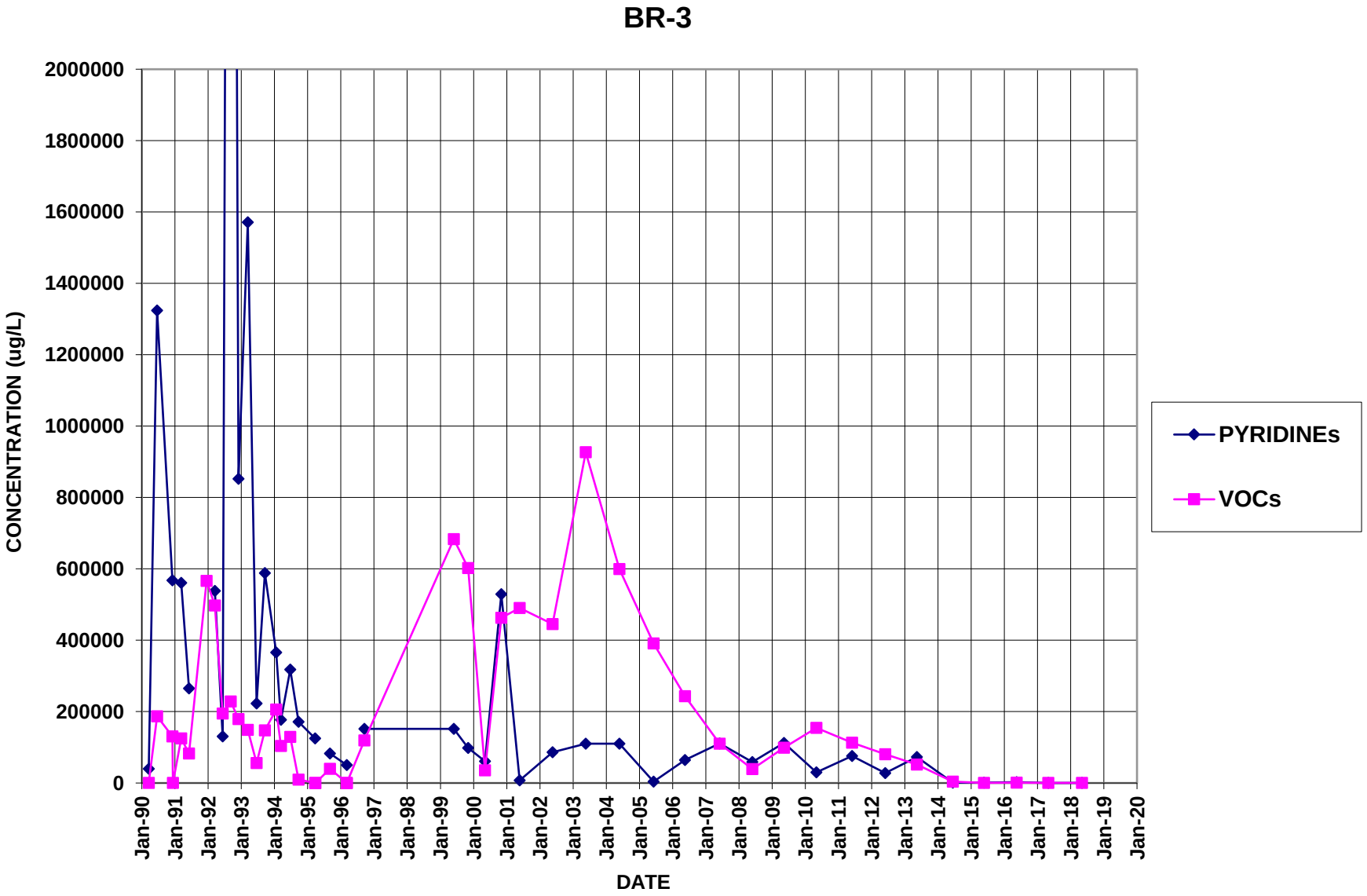


Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-127

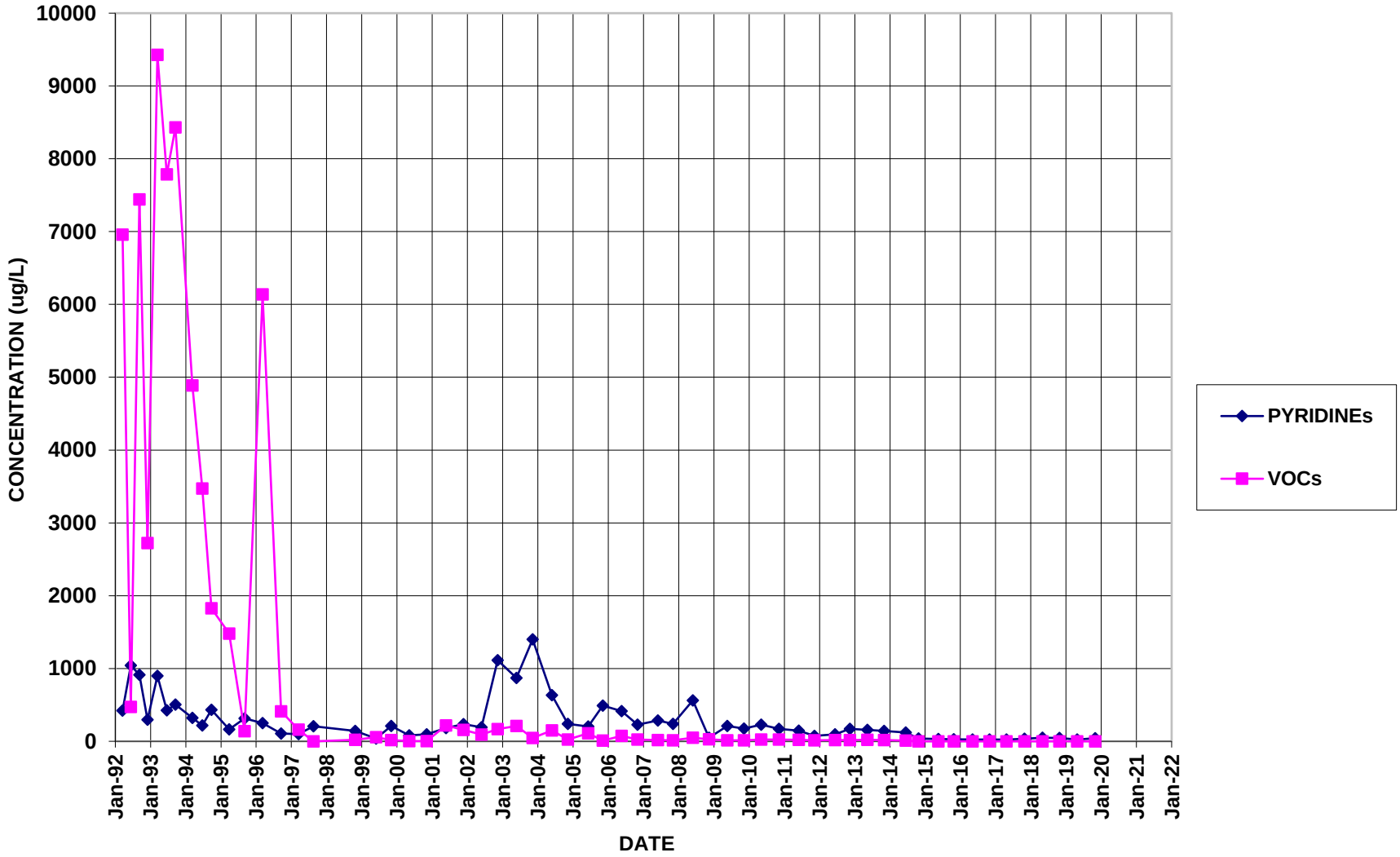


Prepared by: JAR 4/7/2020
Reviewed by: nmb



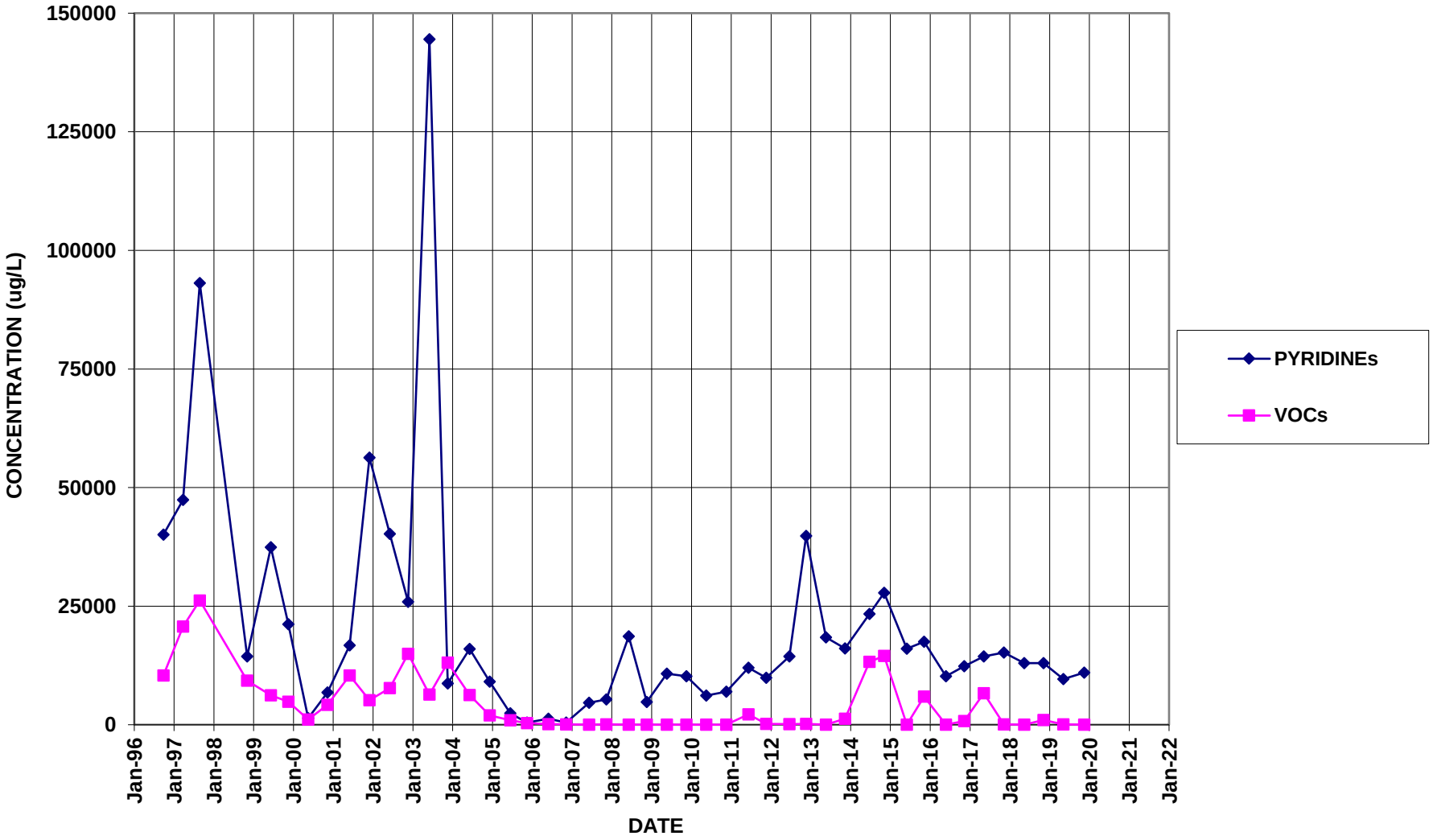
Prepared by: JAR 7/31/19
Reviewed by: nmb

BR-5A



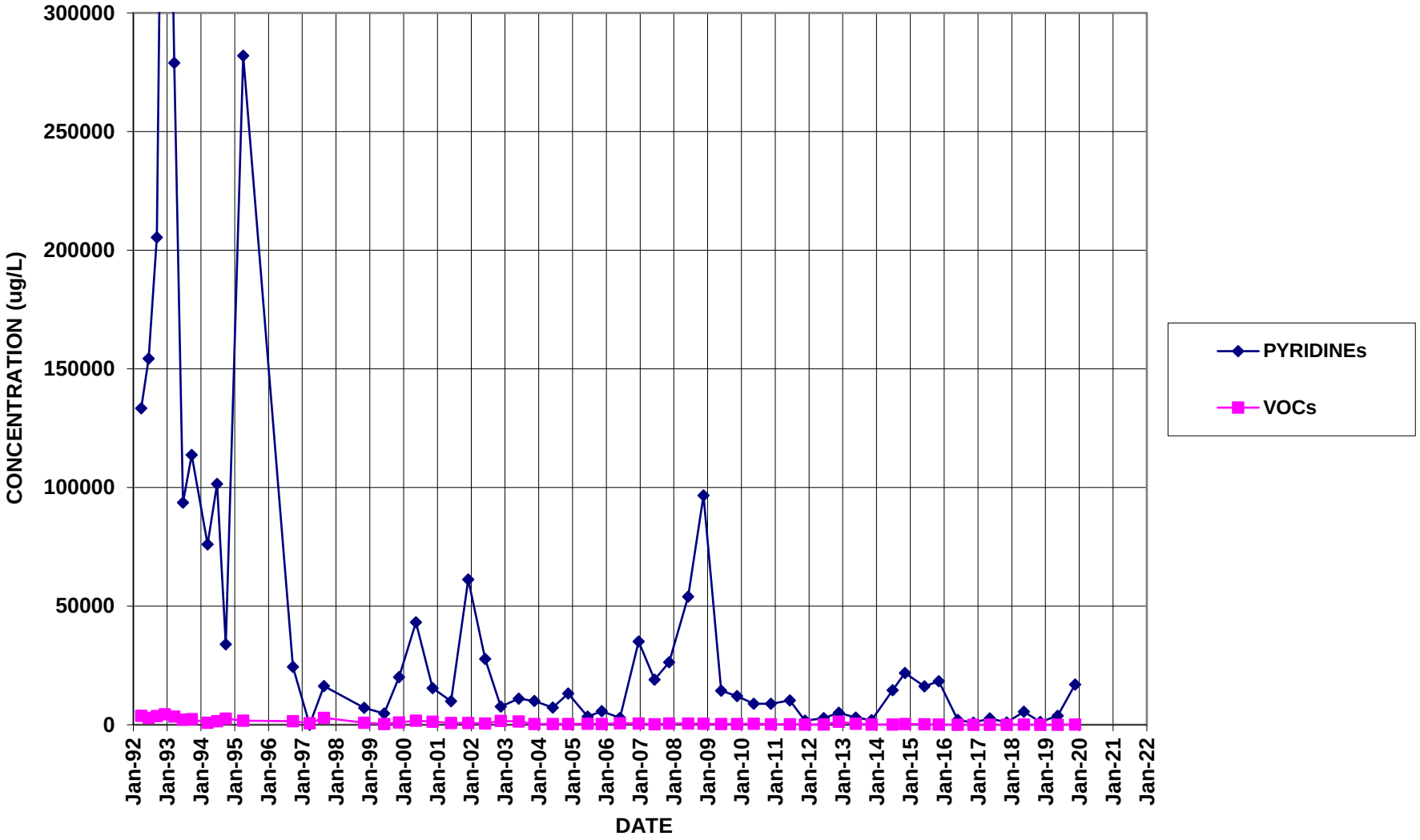
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-6A



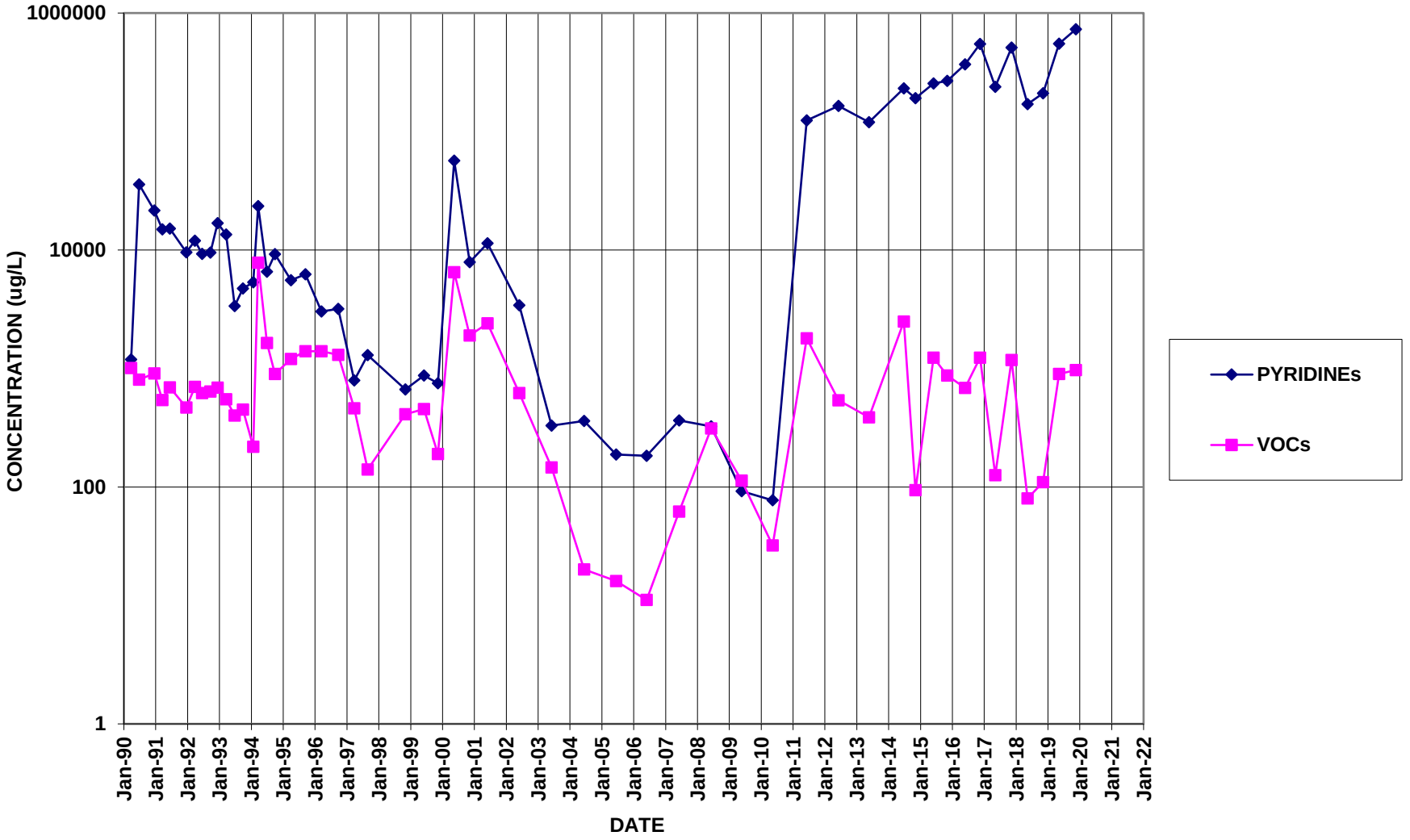
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-7A



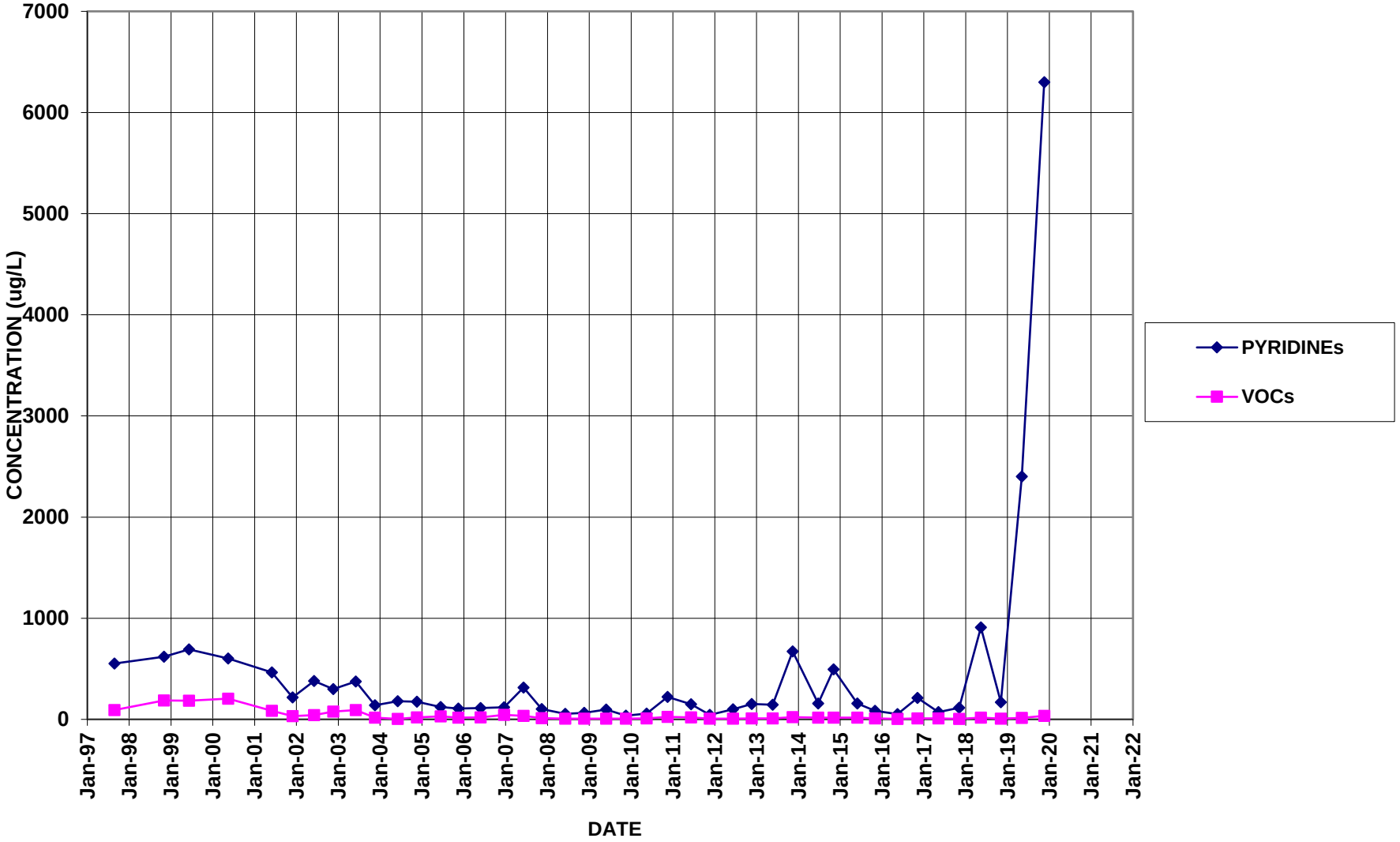
Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-8

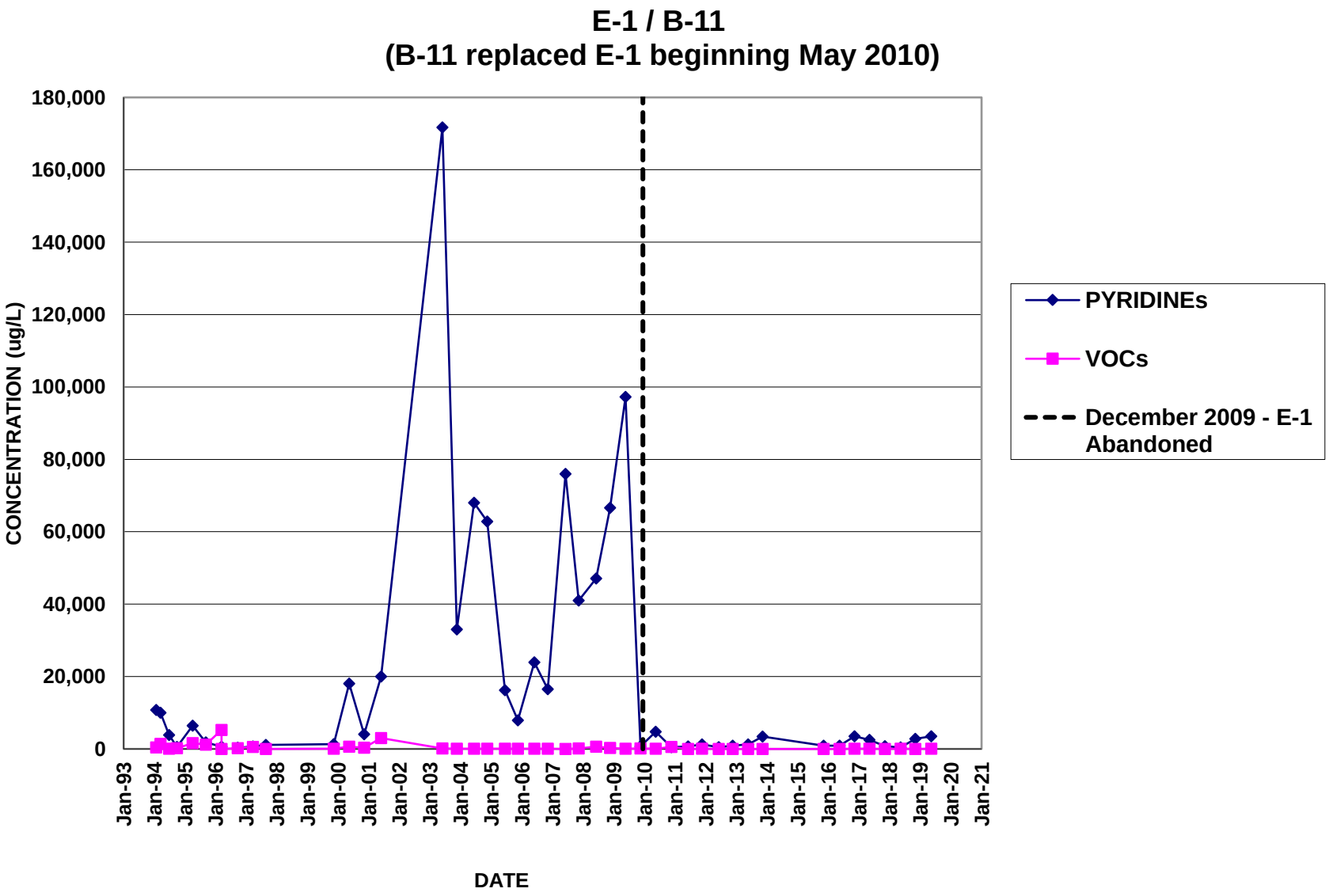


Prepared by: JAR 4/7/2020
Reviewed by: nmb

BR-9

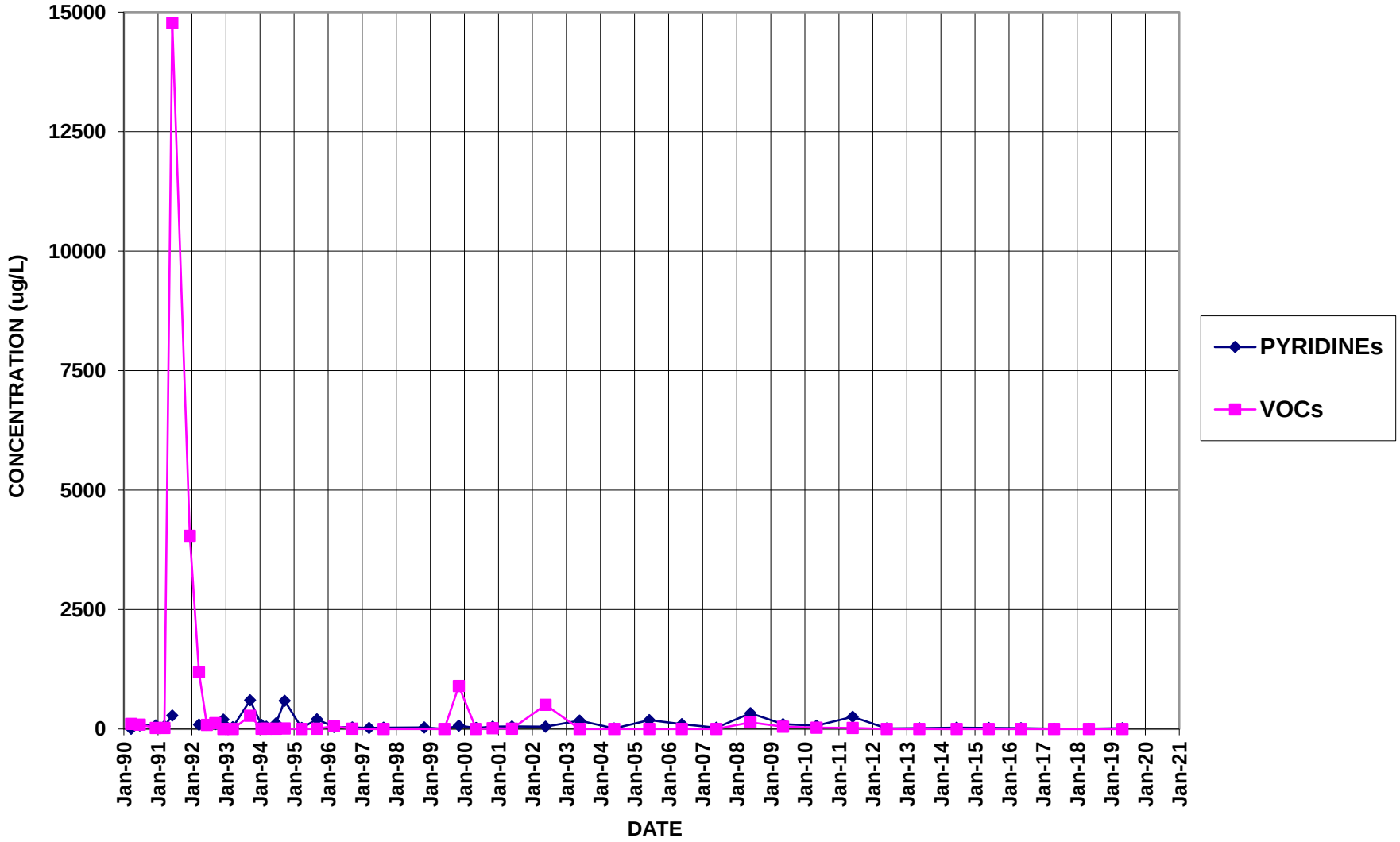


Prepared by: JAR 4/7/2020
Reviewed by: nmb



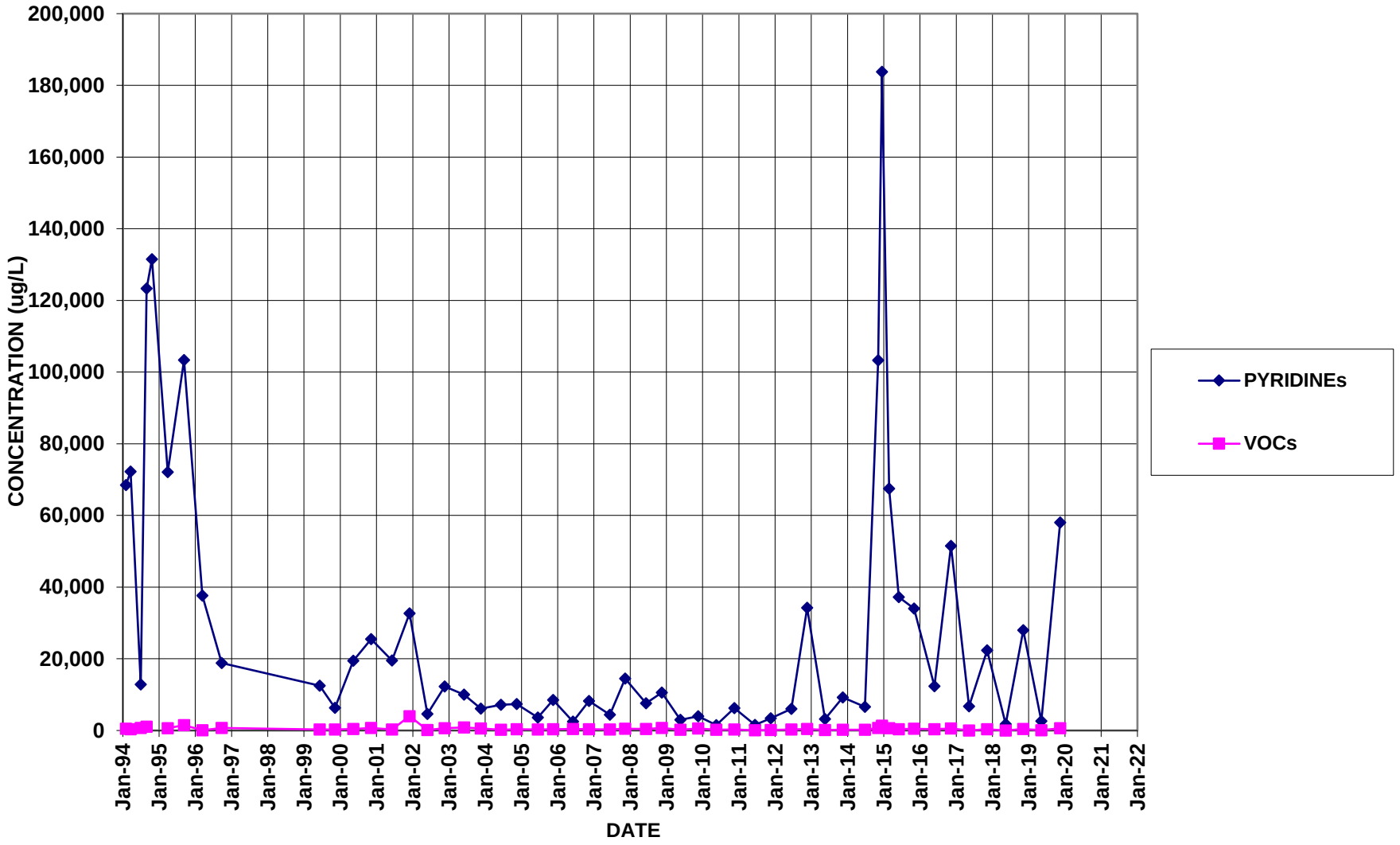
Prepared by: JAR 7/31/19
Reviewed by: nmb

E-3



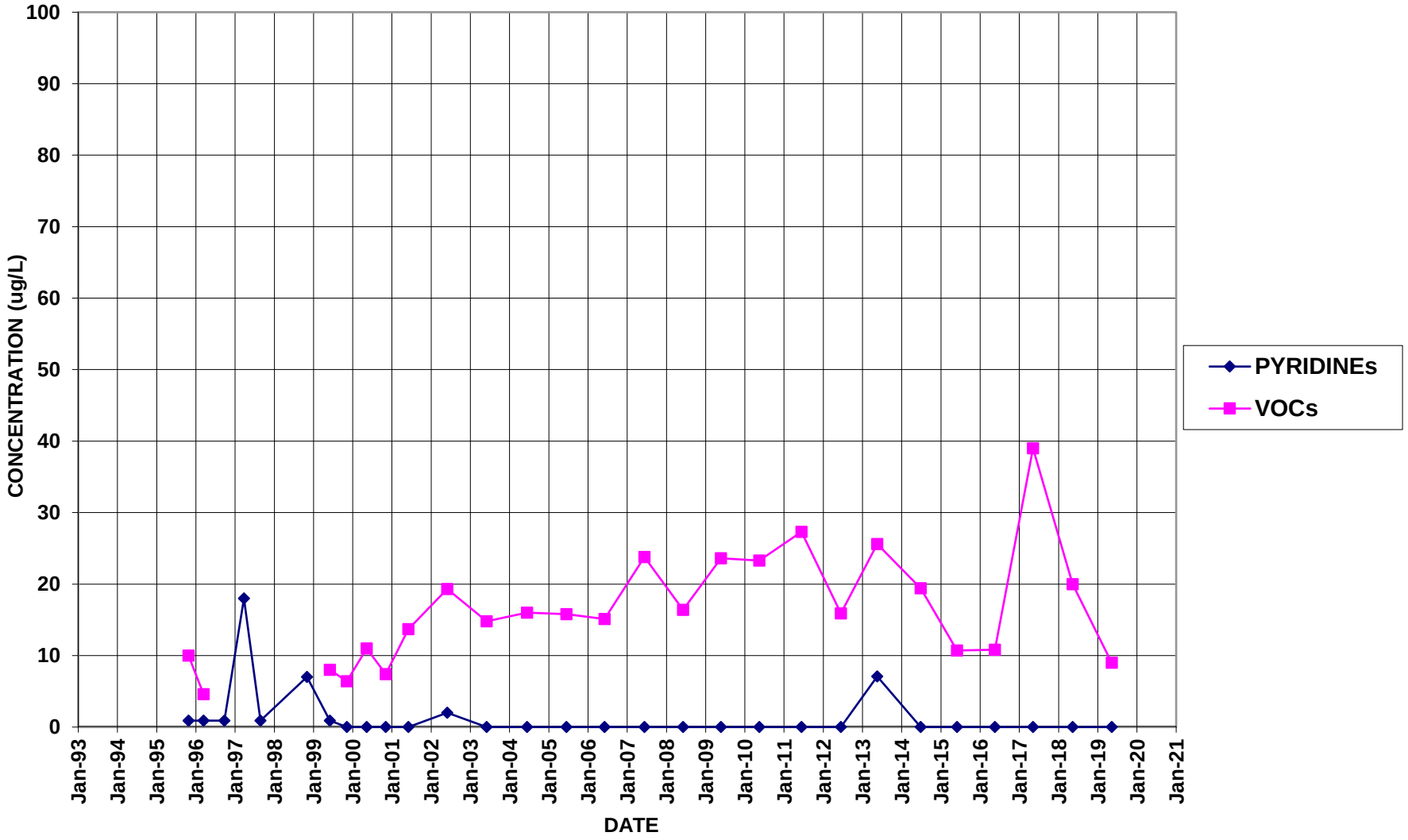
Prepared by: JAR 7/31/19
Reviewed by: nmb

MW-106



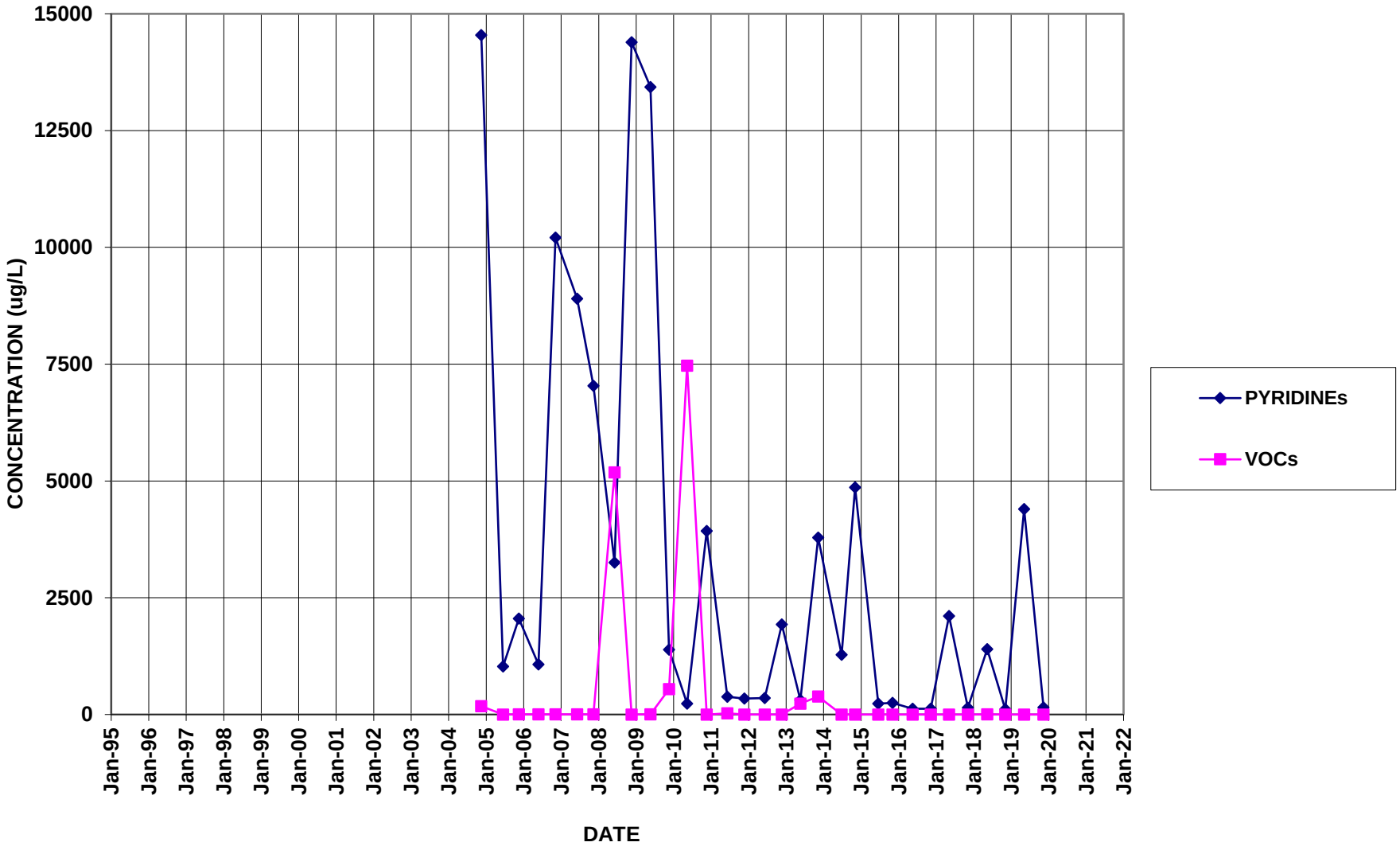
Prepared by: JAR 4/7/2020
Reviewed by: nmb

MW-114



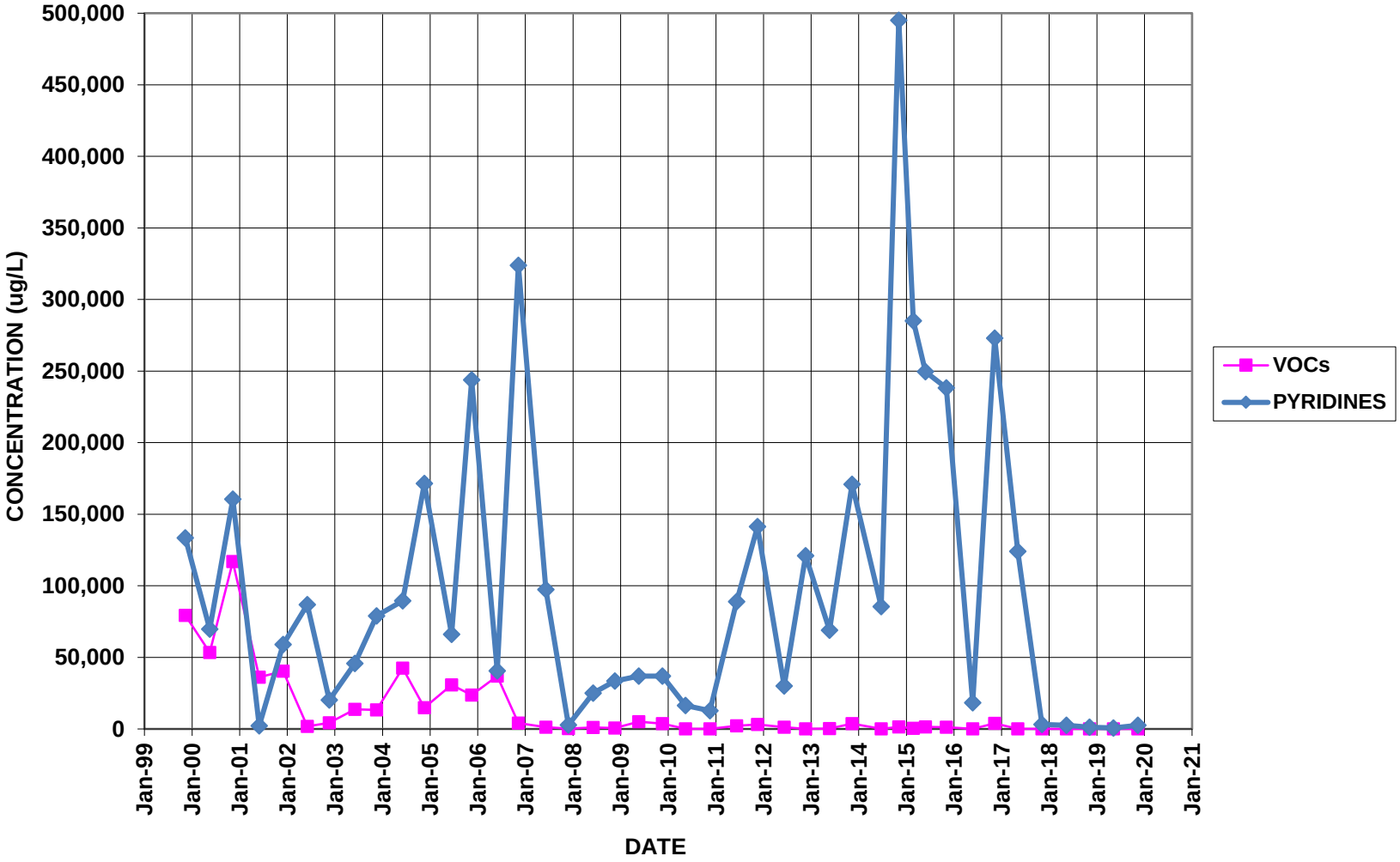
Prepared by: JAR 7/31/19
Reviewed by: nmb

MW-127



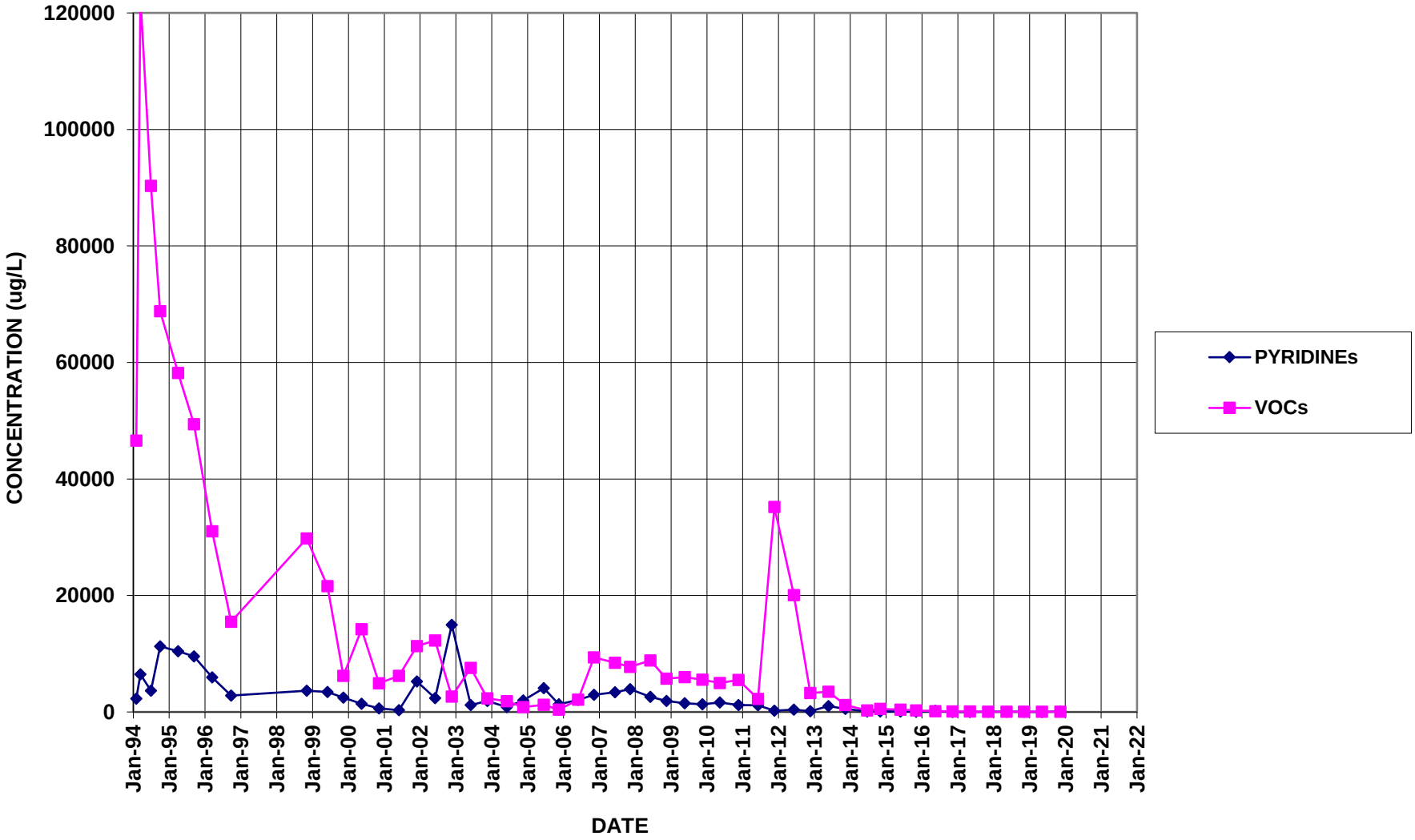
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW10



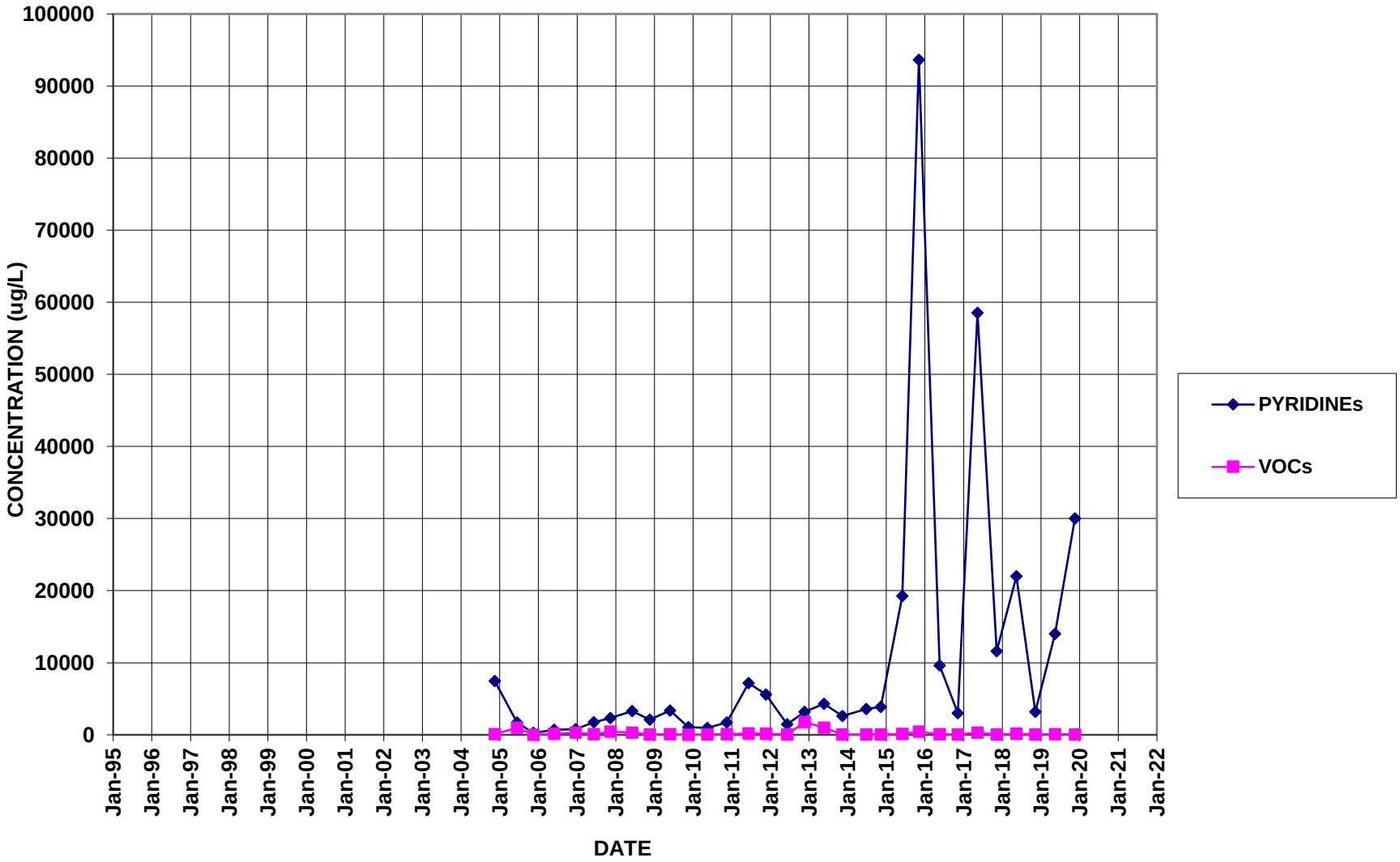
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW12 (Formerly BR-101)



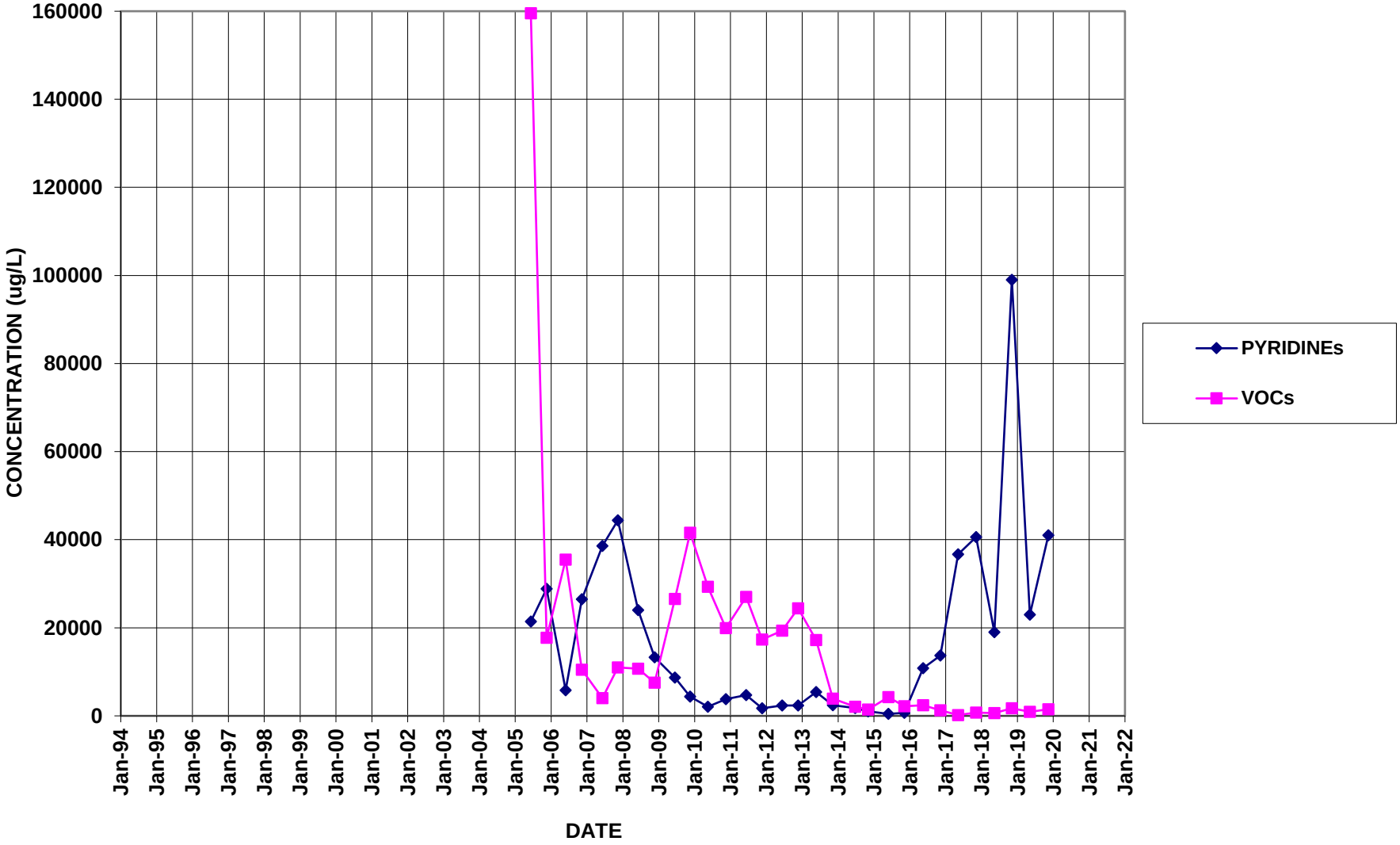
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW13



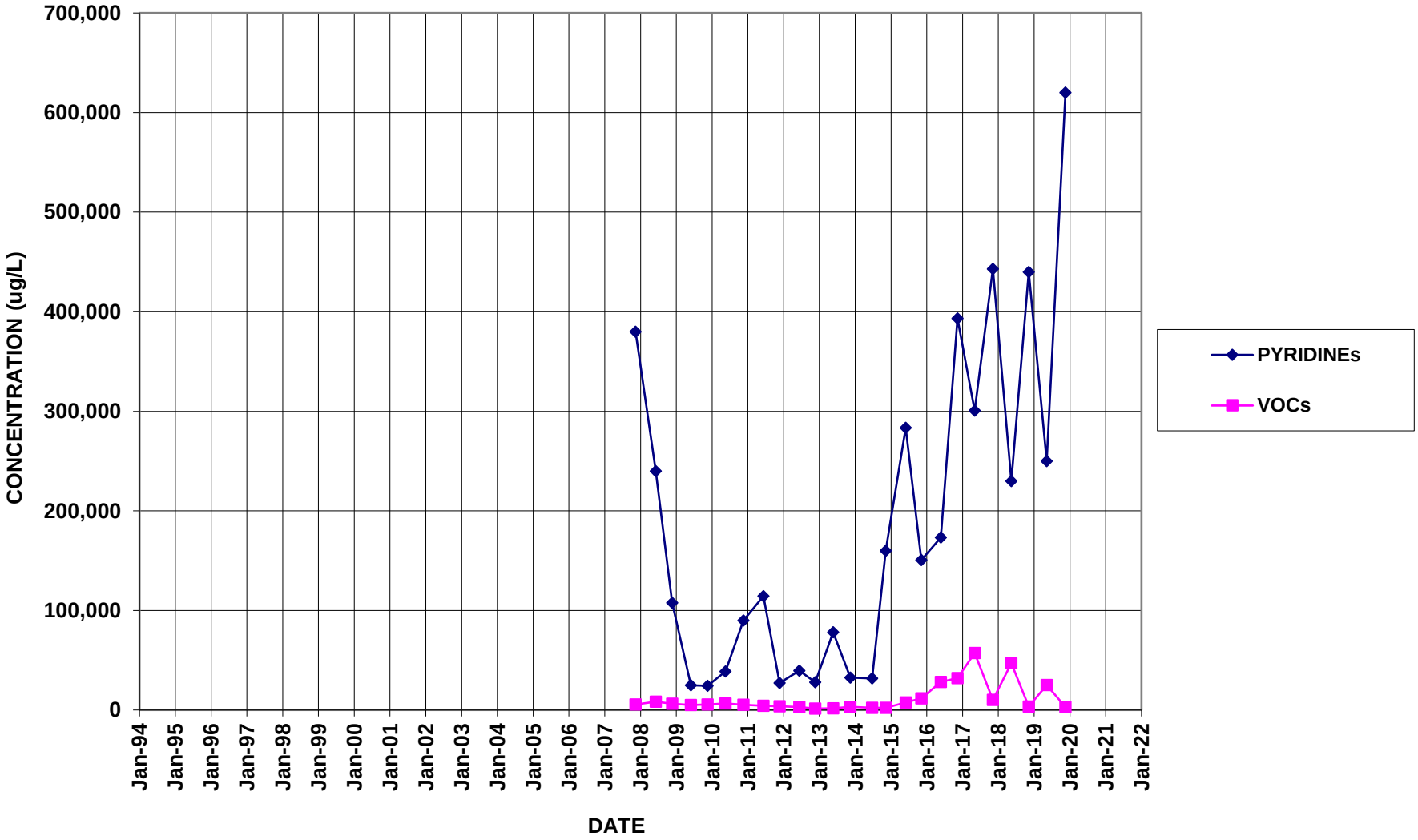
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW14



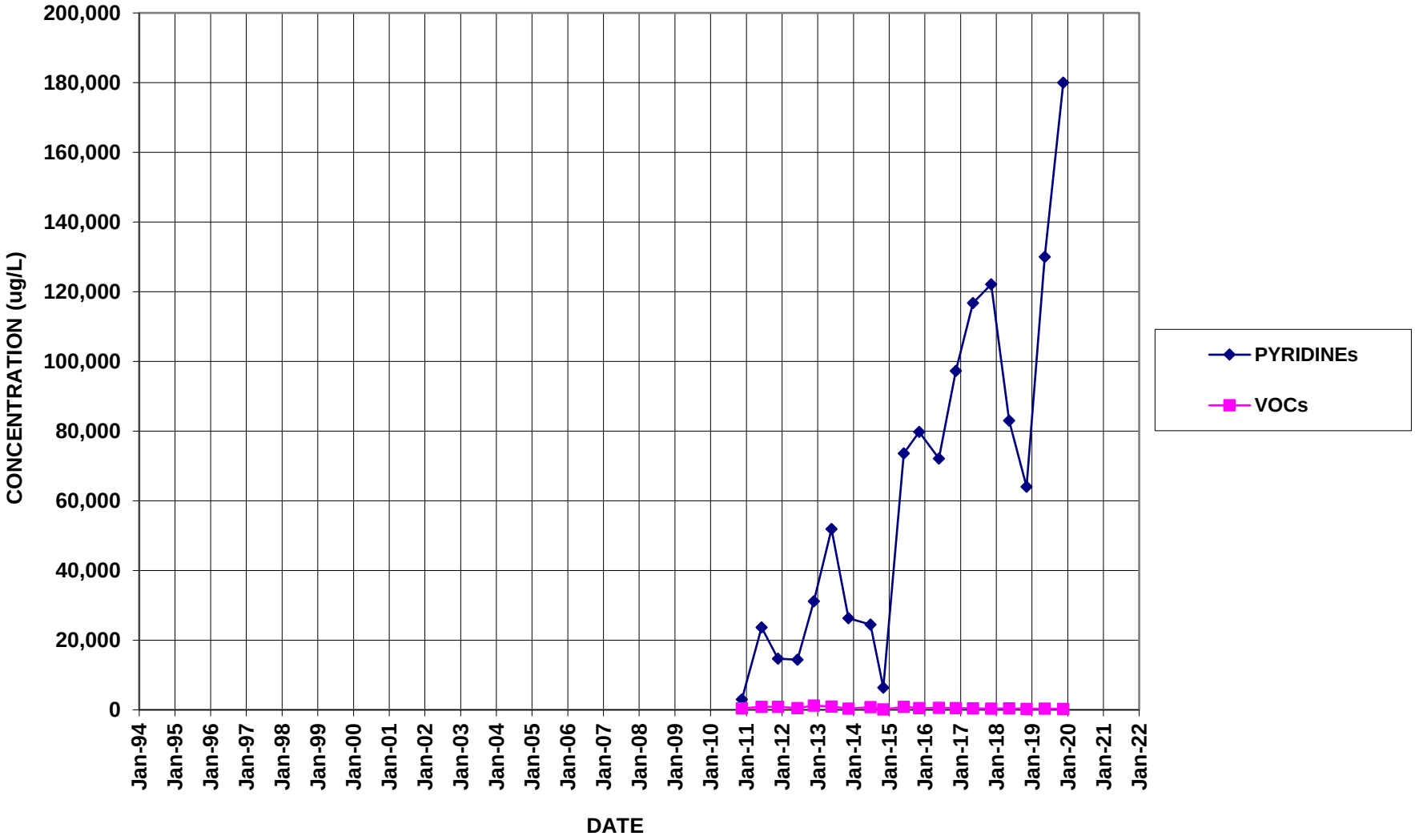
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW15



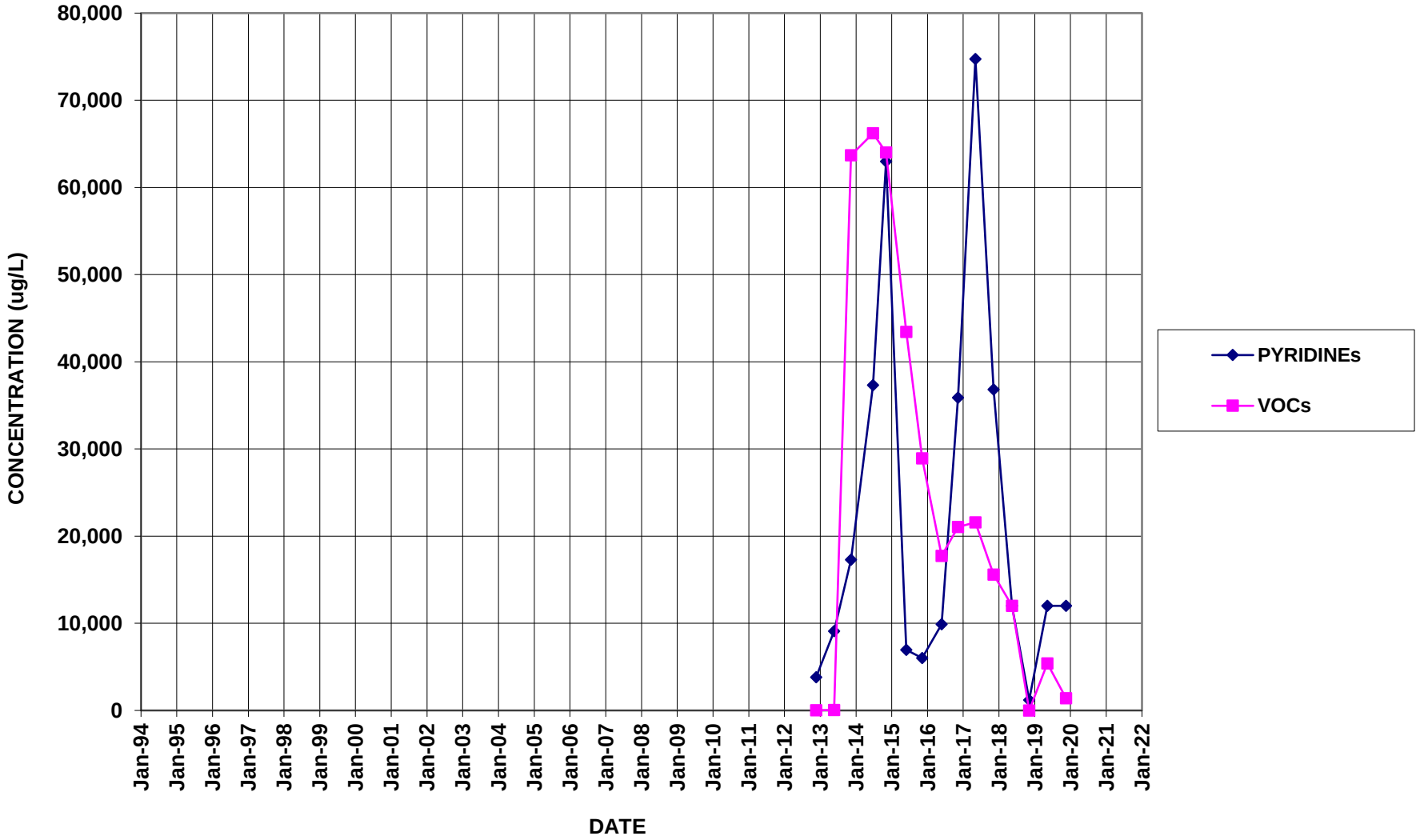
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW16



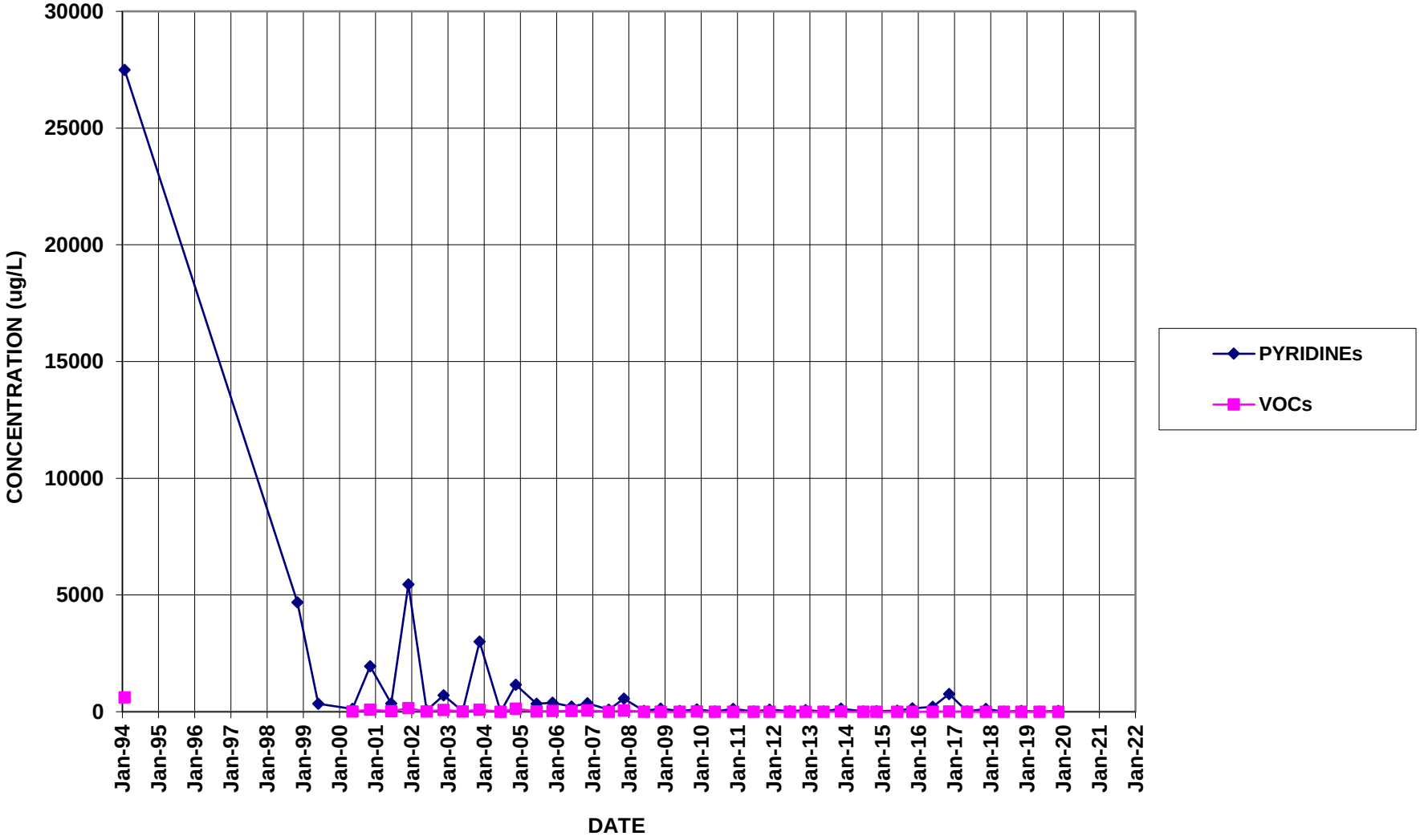
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PW17



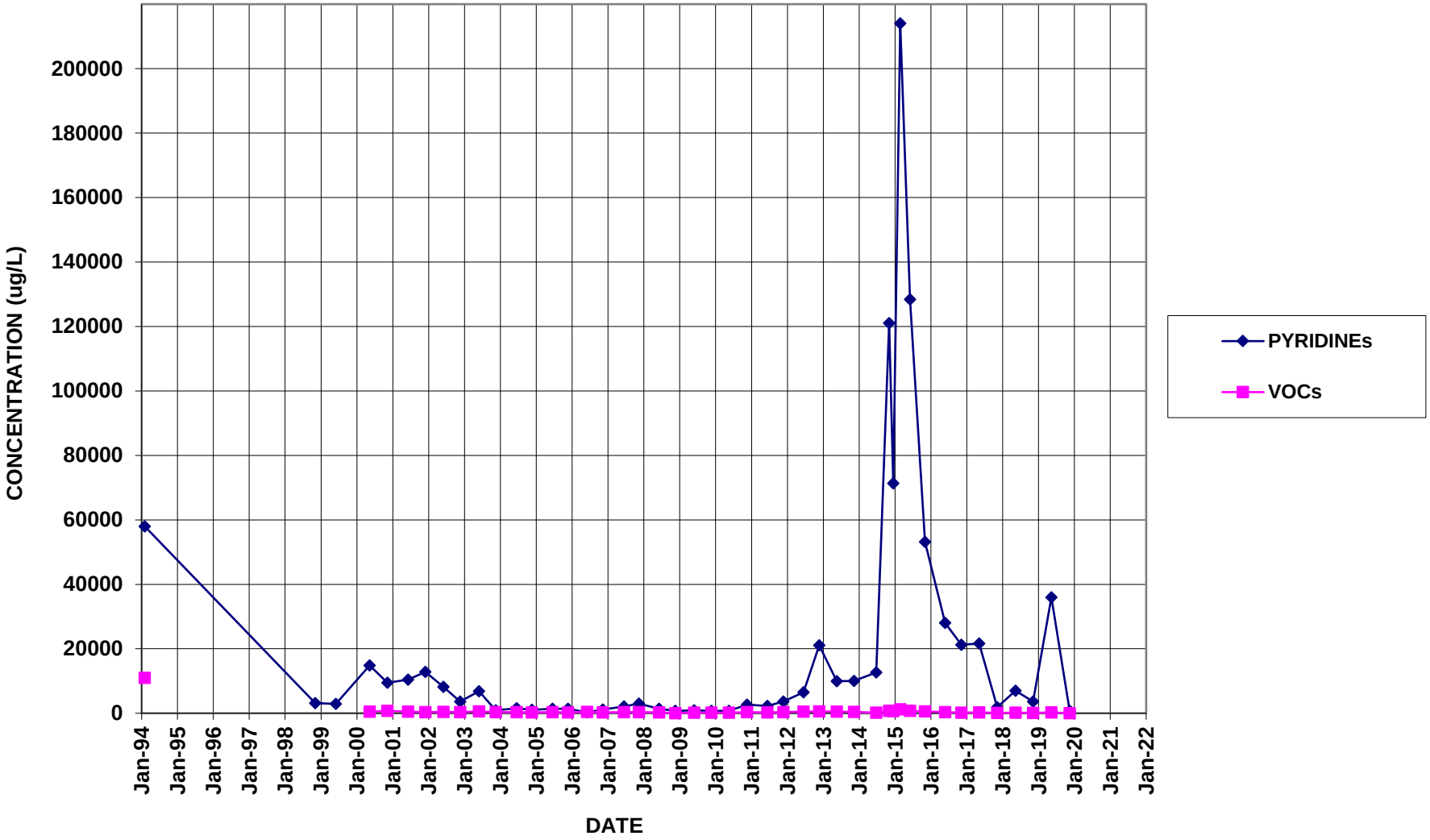
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-101



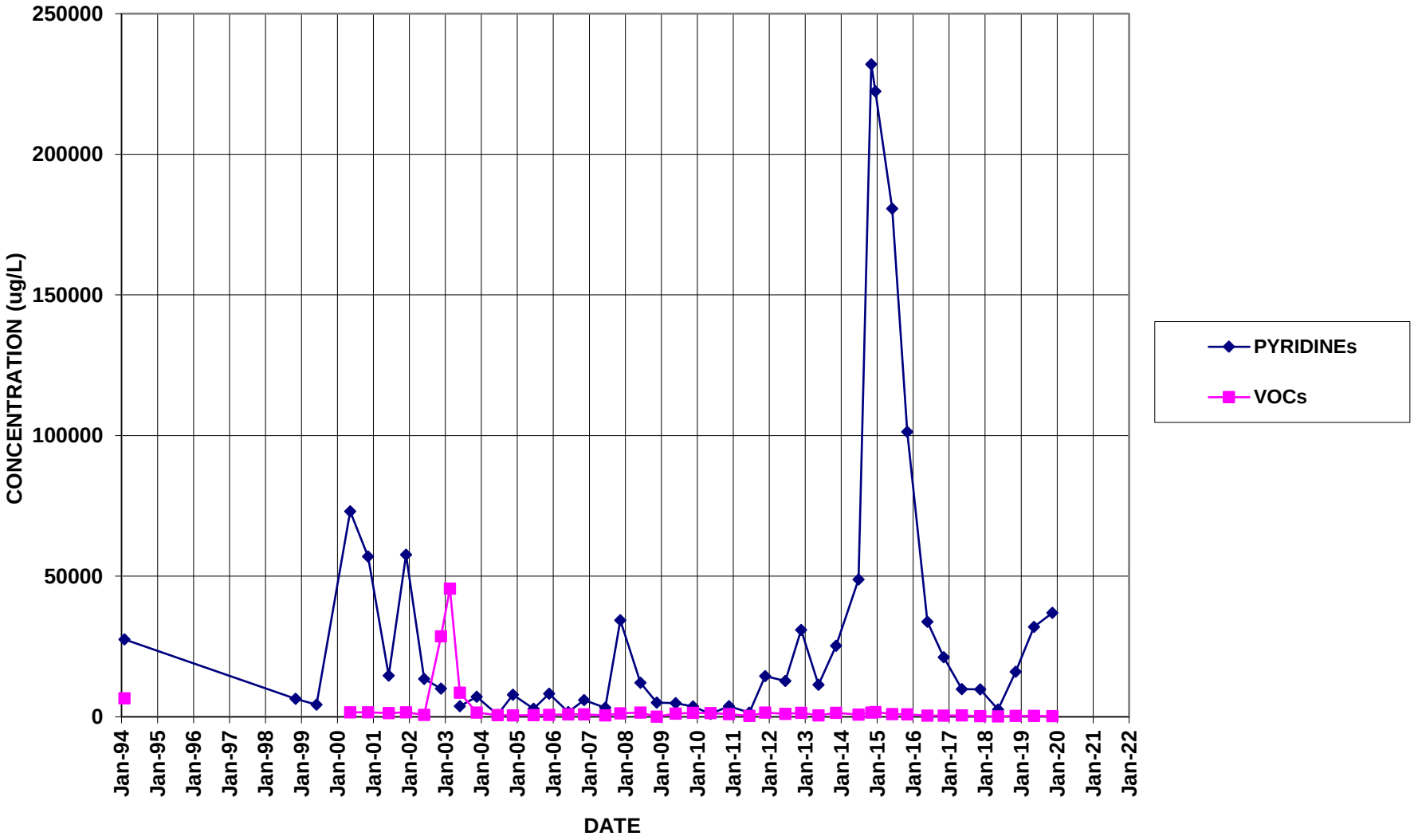
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-102



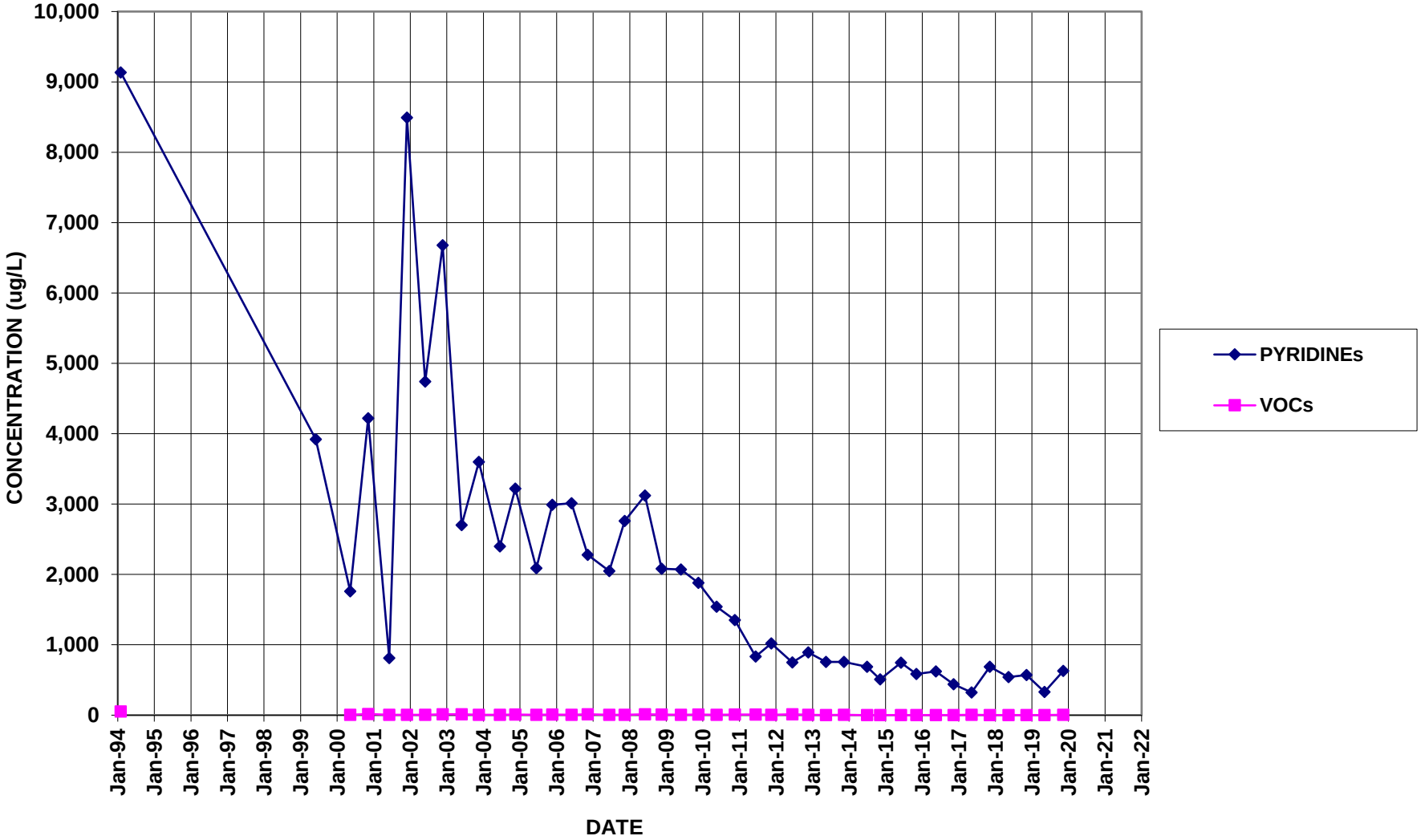
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-103



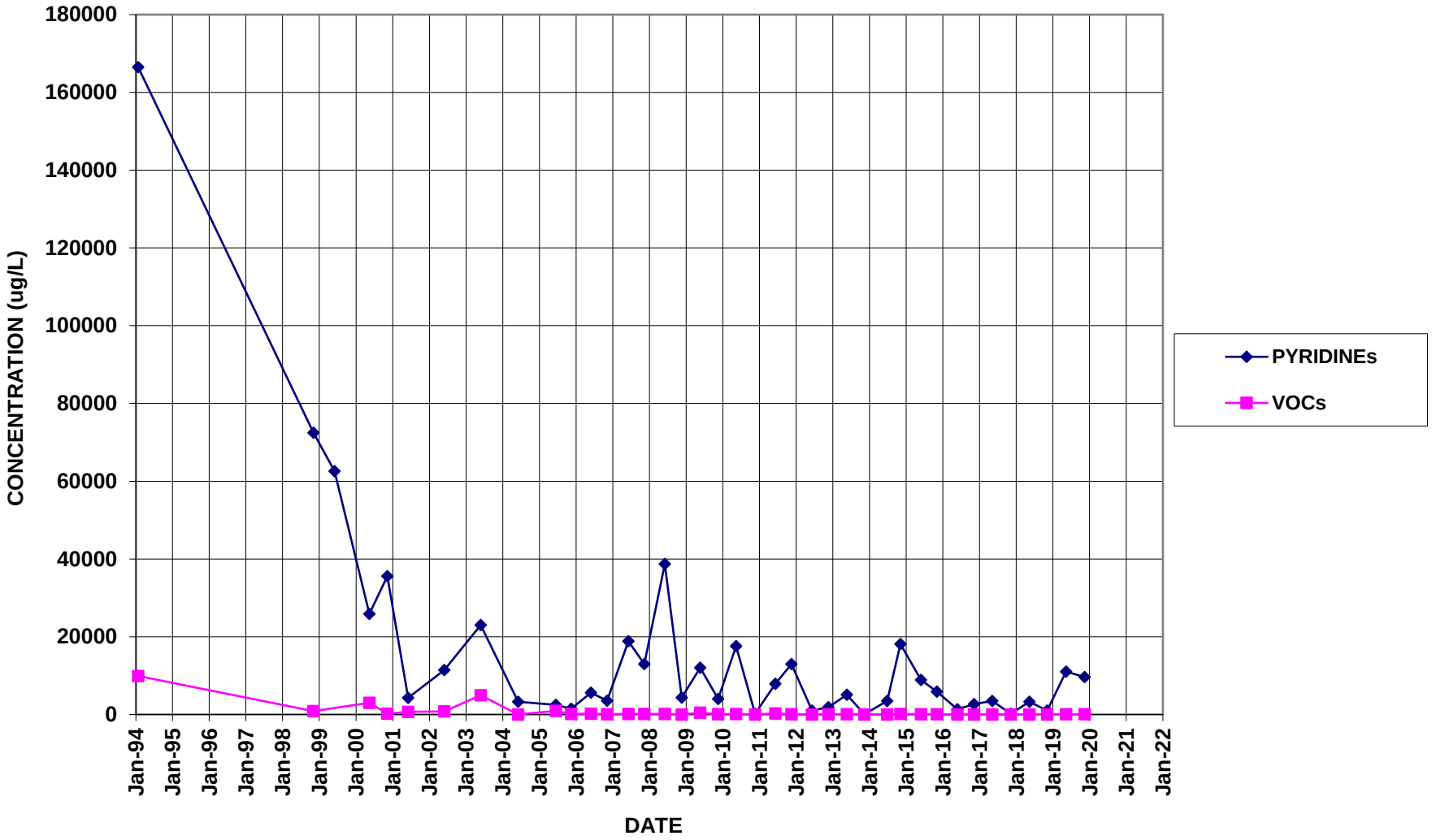
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-104



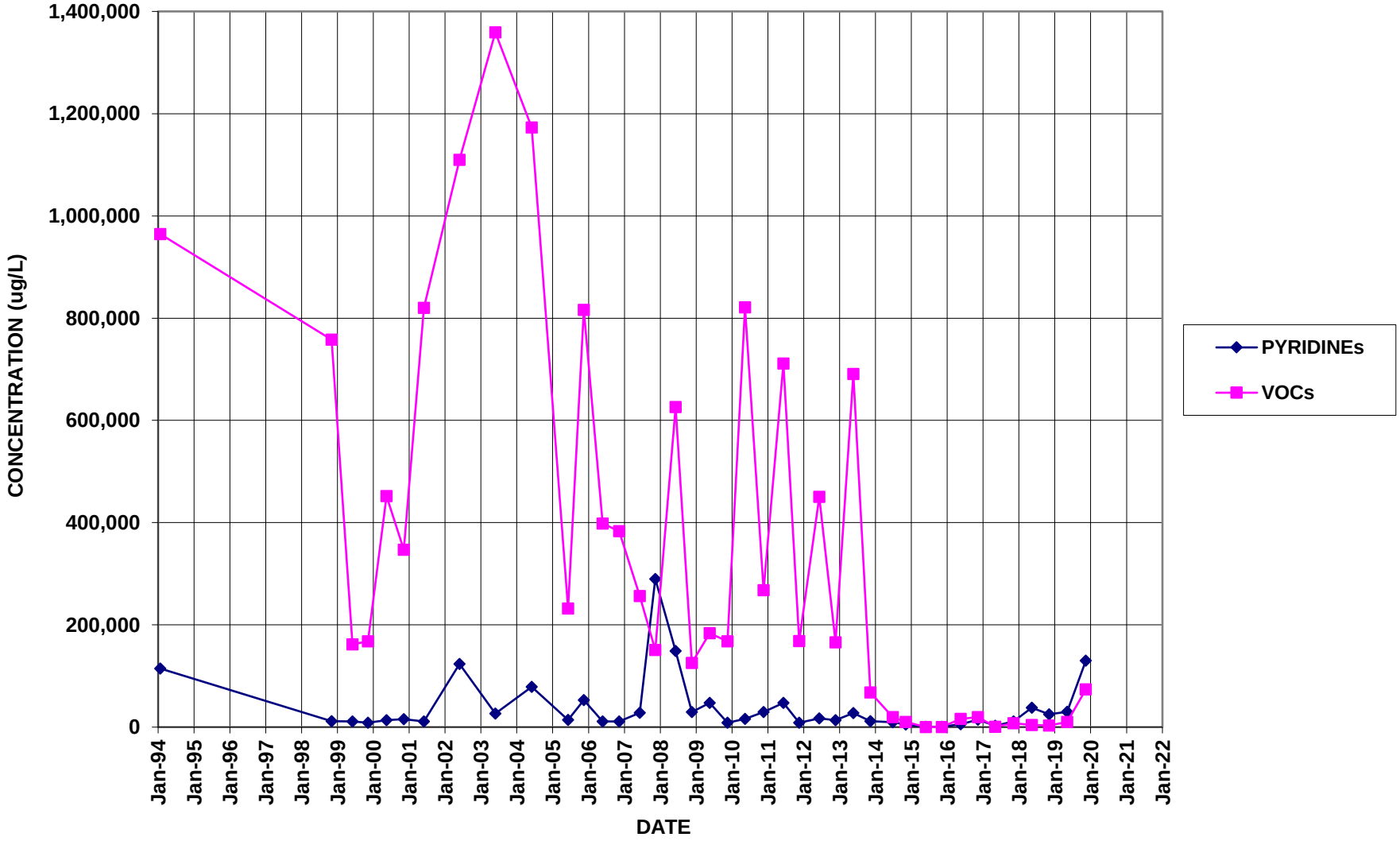
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-105



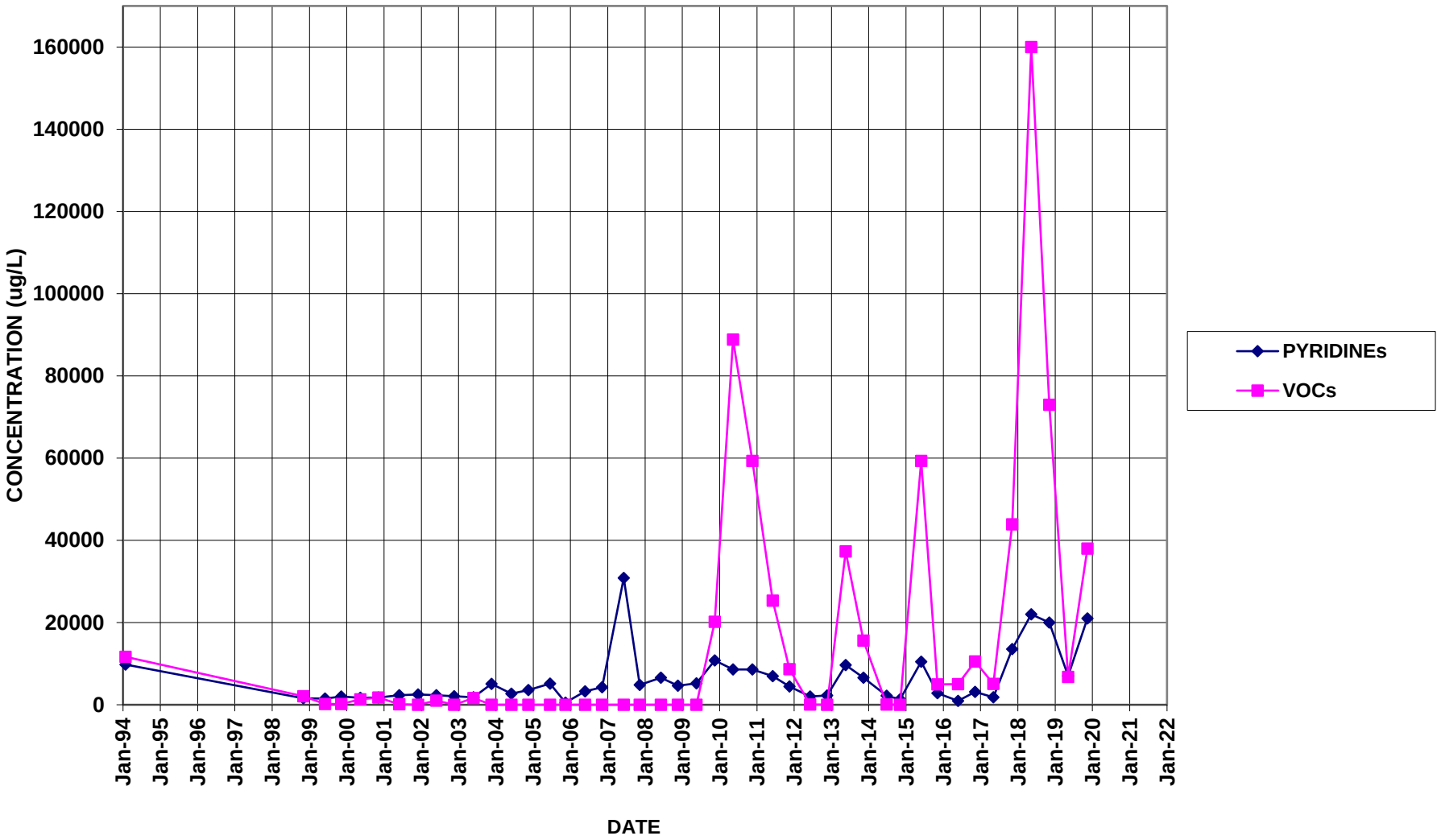
Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-106

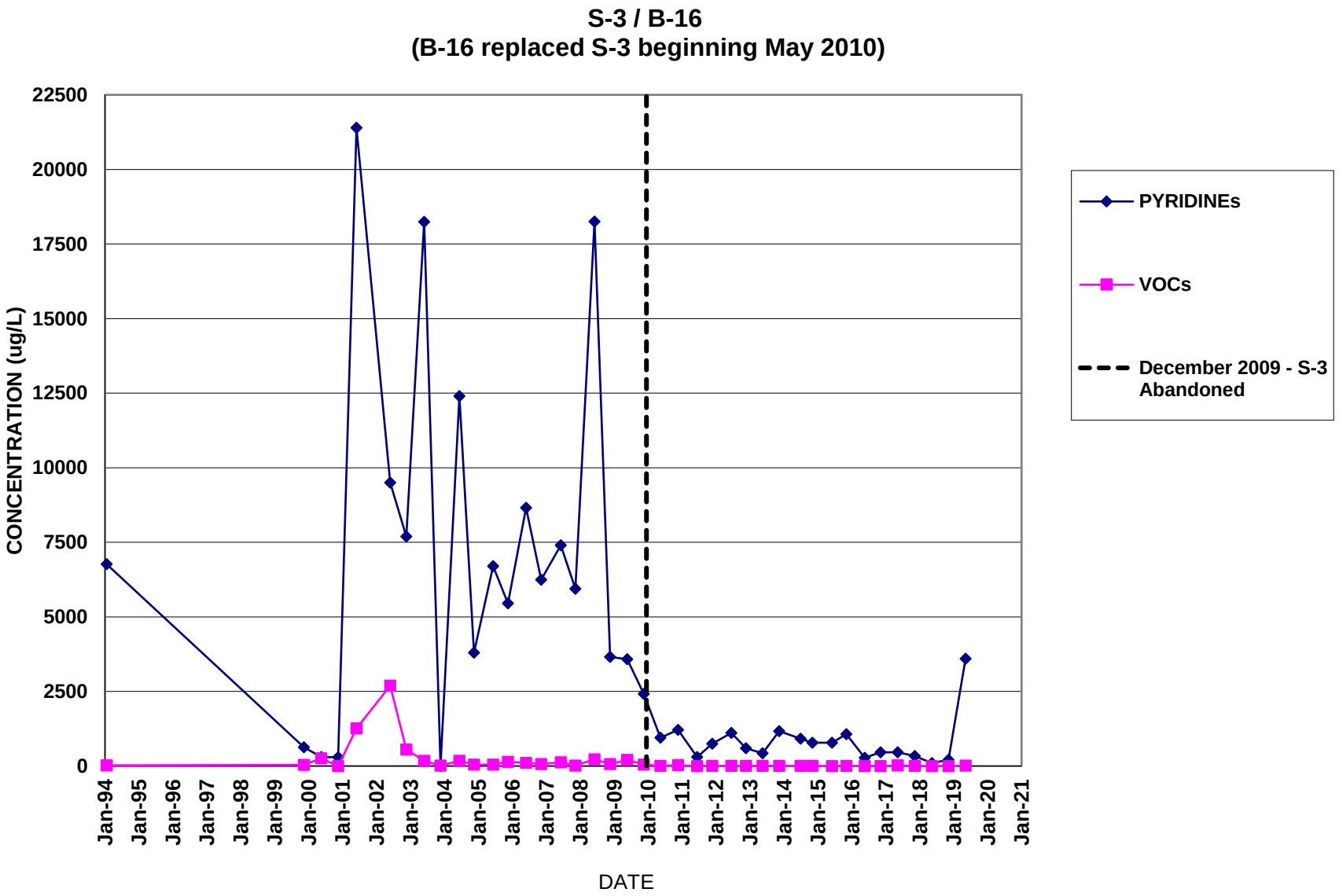


Prepared by: JAR 4/7/2020
Reviewed by: nmb

PZ-107

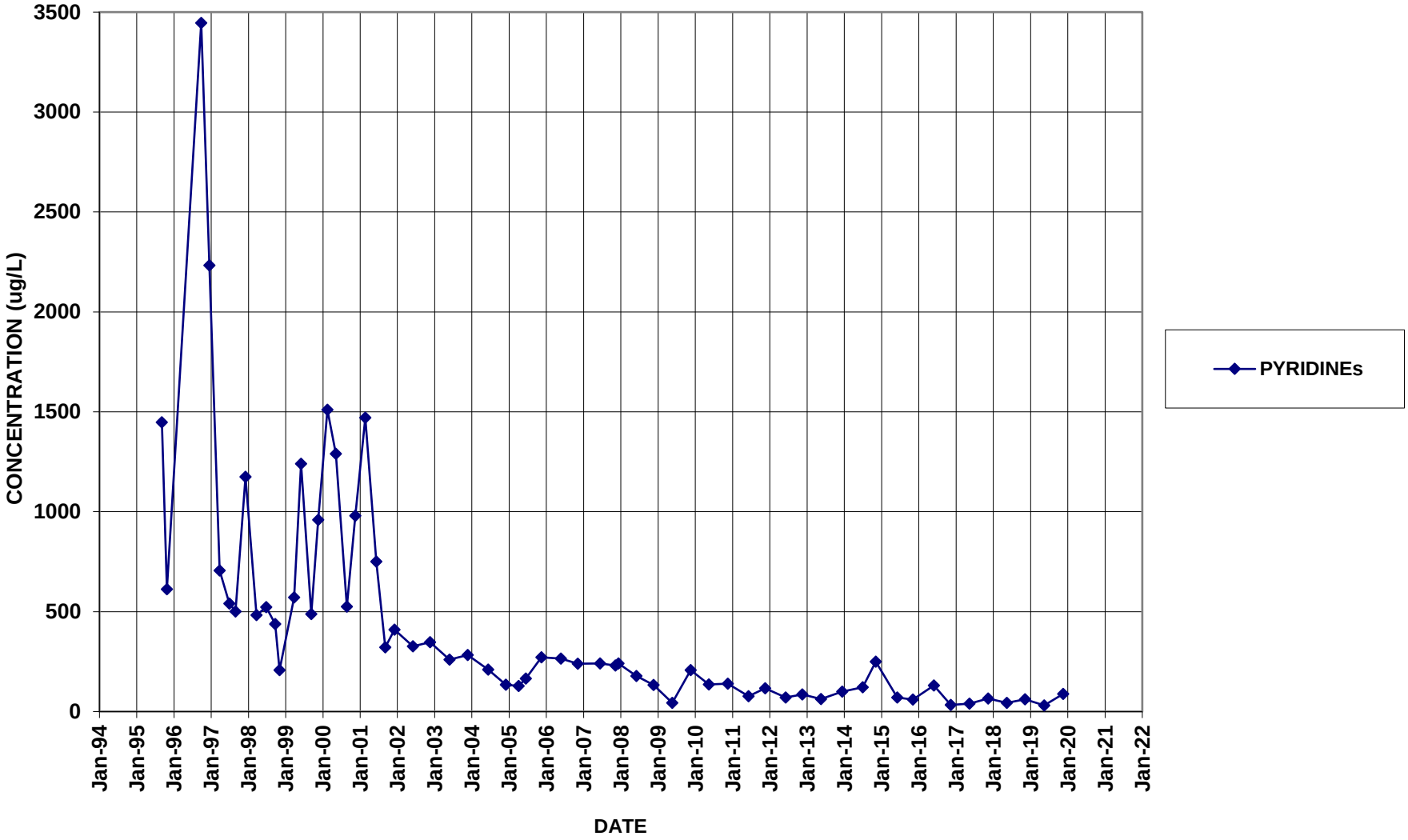


Prepared by: JAR 4/7/2020
Reviewed by: nmb



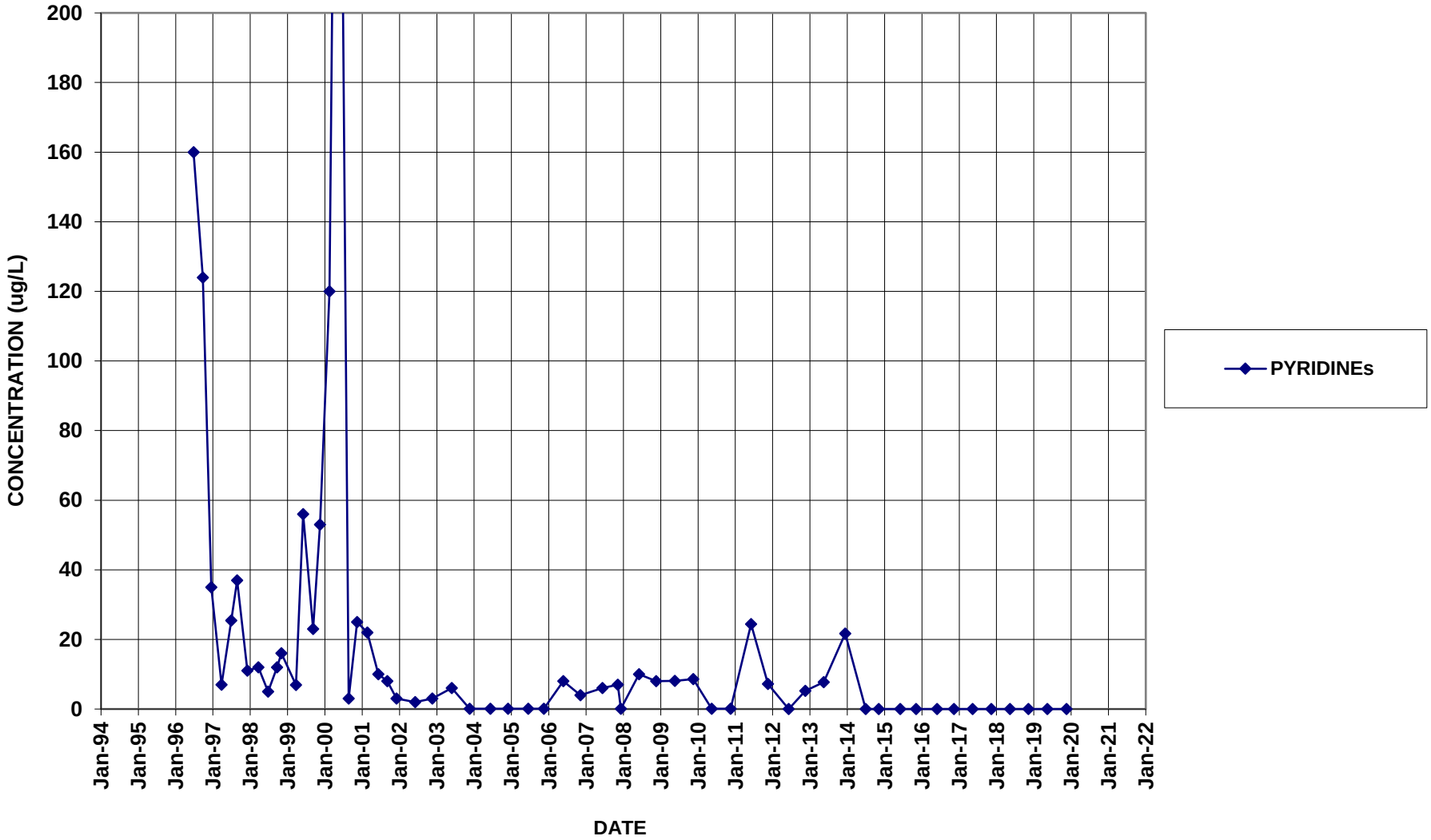
Prepared by: JAR 7/31/19
Reviewed by: nmb

QS-4 (QUARRY SEEP)



Prepared by: JAR 4/7/2020
Reviewed by: nmb

QO-2 (QUARRY OUTFALL)



Prepared by: JAR 4/7/2020
Reviewed by: nmb