SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
FALL 2014 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

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

MARCH 2015

SURFACE WATER AND GROUNDWATER MONITORING PROGRAM
FALL 2014 MONITORING REPORT

ARCH CHEMICALS
ROCHESTER PLANT SITE
ROCHESTER, NEW YORK

Prepared by

AMEC Environment & Infrastructure, Inc.
Portland, Maine

for

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

March 2015

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Nelson M. Breton
Associate Hydrogeologist

Jeffrey E. Brandow, P.E.
Associate Engineer

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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 2014, samples from a total of 30 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. Seventeen of the 30 wells sampled for chloropyridines had contaminant concentrations that were above their respective 5-year prior averages. Eight of the 29 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 250 micrograms per liter (µg/L), which was above its prior 5-year average of 110 µg/L, but well below historical levels. Chloropyridines were not detected in the ditch sample from location QD-1, the ditch outfall sample at location QO-2, or in the canal water at sample location QO2-S1.

On-site monitoring wells were checked for the presence of dense non-aqueous phase liquids (DNAPL) and floating (or light) NAPL (LNAPL), using an interface probe. No DNAPL or LNAPL was observed in any of these wells.

During the period June 2014 through November 2014, the on-site groundwater extraction system pumped approximately 5.8 million gallons of groundwater to the on-site treatment system, containing an estimated 815 pounds of chloropyridines and 27 pounds of target volatile organic compounds. Pumping well BR-5A was shut down in August 2014 as a result of low contaminant levels. Concentrations of site-related contaminants in that well continued to decline in the November 2014 sampling results.

In response to observed increases in chloropyridine concentrations in well PW-10 and nearby pumping wells PW-15 and PW-17, Arch has undertaken several proactive steps to reduce off-site migration and identify or rule out potential on-going leaks to the subsurface. In December 2014, pumps and discharge lines at wells PW-15, PW-16, and BR-7A, were inspected and cleaned or replaced as necessary, and flow rates were maximized to improve capture and containment along the western property boundary. In addition, Arch is inspecting its remaining in-ground process lines and wastewater conveyance lines to look for potential leaks. In December 2014, a deteriorated trench drain was discovered in the area near well PW-10. This line was immediately shut down and the flow was re-routed through a temporary line while further assessment and required repairs are made.

The next regular monitoring event will occur in May 2015 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 2014 sampling event included the collection and analysis of a total of 34 groundwater, surface water, and seep samples from off-site and on-site locations. Samples were collected November 4 through November 10, 2014, for analysis of selected chloropyridines and volatile organic compounds (VOCs).

This report presents the results of the Fall 2014 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. The off-site and on-site locations of these sampling points are shown in Figures 1 and 2, respectively. Groundwater sampling data sheets are provided in Appendix A.

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

Groundwater piezometric elevations were measured on December 5, 2014. Piezometric contour maps were constructed for each water-bearing zone (overburden, bedrock, and deep bedrock) and are presented in Figures 3, 4, and 5.

On-site monitoring wells were checked for the presence of non-aqueous phase liquid (NAPL), using an interface probe. No dense NAPL (DNAPL) or floating (light) NAPL (LNAPL) was 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 7, 2014. All quarry-related samples were analyzed for the Arch suite of selected chloropyridines. The quarry locations sampled during the Fall 2014 event are shown on Figure 7.

2.3 ANALYTICAL PROCEDURES

The analytical procedures, data review findings, and validated data for this groundwater monitoring event are discussed in the following paragraphs.

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

All laboratory analytical results were reviewed and qualified following U.S. Environmental Protection Agency Contract Laboratory Program (USEPA CLP), "National Functional Guidelines for Superfund Organic Methods Data Review", June, 2008, as modified by USEPA Region II, "SOP No. HW-6 Revision 14", September 2006. 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 the VOC surrogates 2-pentafluorobenzene, 1,2-dichloroethane-d4, and/or toluene-d8 in a subset of samples were below the laboratory statistically derived control limits, indicating potential low biases. Positive and non-detected results in affected samples were qualified estimated (J/UJ): PZ105, BR127, PW13, BR7A, PZ102, PZ103, MW106, and BR106.

Percent recovery of VOC surrogate 4-bromofluorobenzene in sample PW12 was above the laboratory statistically derived control limits, indicating a potential high bias. Positive detections of VOCs in sample PW12 were qualified estimated (J) and may represent potential high biases.

Laboratory Control Samples (LCS). Percent recovery of the VOC 1,2-dichloropropane was below the laboratory statistically derived control limits in the laboratory control sample associated with a subset of samples. 1,2-Dichloropropane was not detected in the samples

and reporting limits were qualified estimated (UJ) in samples MW106, BR106, BR105D, BR105, and BR9.

Percent recoveries of 4-chloropyridine (33 to 41) in all laboratory control samples associated with the sampling event were below nominal control limits of 50-140, indicating potential low biases for 4-chloropyridine in all samples. In addition, percent recoveries of p-fluoroaniline (48) and pyridine (40 to 44) in a subset of laboratory control samples were below nominal control limits of 50-140. Nominal control limits were used in the absence of statistically derived laboratory control limits. Positive and non-detected results for 4-chloropyridine in all samples, and for p-fluoroaniline and pyridine in a subset of samples, were qualified estimated (J/UJ).

Matrix Spike/Matrix Spike Duplicates (MS/MSD). Percent recoveries for a subset of VOC target analytes were below the laboratory control limits in the MS/MSD associated with sample BR127. Results for all affected analytes except benzene, chloroform, toluene, and trichloroethene were non-detect in sample BR127, and reporting limits were qualified estimated (UJ). The positive detections of benzene, chloroform, toluene, and trichloroethene in sample BR127 were qualified estimated (J) and may represent potential low biases.

Percent recoveries for a subset of VOC target analytes were below the laboratory control limits in the MS/MSD associated with sample BR9. In addition, relative percent differences (RPDs) between recoveries for benzene (12) and vinyl chloride (34) were above the laboratory control limits. Results for all affected analytes except benzene, chlorobenzene, toluene, and vinyl chloride were non-detect in sample BR9, and reporting limits were qualified estimated (UJ). The positive detections of benzene, chlorobenzene, toluene, and vinyl chloride in sample BR9 were qualified estimated (J) and may represent potential low biases.

In the MS/MSD associated with chloropyridines sample PW14, percent recoveries were below nominal control limits of 50-140 for 4-chloropyridine (36, 34), indicating potential low biases. 4-Chloropyridine was not detected in sample PW14, and the reporting limit was qualified estimated (UJ).

In the MS/MSD associated with chloropyridines sample BR127, percent recoveries were below nominal control limits of 50-140 for 2-chloropyridine (44), 4-chloropyridine (31, 35), and p-fluoroaniline (47), indicating potential low biases. The RPD between recoveries for 2-chloropyridine (56) was above the nominal control limit of 20. Positive and non-detected results for 2-chloropyridine, 4-chloropyridine, and p-fluoroaniline in sample BR127 were qualified estimated (J/UJ).

In the MS/MSD associated with chloropyridines sample BR9, percent recoveries were below nominal control limits of 50-140 for 4-chloropyridine (34, 35), indicating potential low biases. 4-Chloropyridine was not detected in sample BR9, and the reporting limit was qualified estimated (UJ).

Miscellaneous. Samples from a subset of wells were analyzed at dilutions due to high concentrations of volatile organic and/or semivolatile organic target analytes. Non-detects are reported at elevated reporting limits.

3.0 ANALYTICAL RESULTS

3.1 GROUNDWATER

The validated results from the Fall 2014 groundwater monitoring event are provided in Tables 2 and 3. Table 4 provides a comparison of the Fall 2014 analytical results for selected chloropyridines and VOCs in representative wells to mean concentrations of the prior five years (Fall 2009 through Spring 2014). Long term 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 22 on-site wells sampled in the Fall 2014 event. Concentrations of chloropyridines (sum of all chloropyridine and pyridine isomer concentrations) ranged from 40 micrograms per liter (µg/L) in well BR-5A to 495,000 µg/L in monitoring well PW-10. Ten 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 8 off-site wells that were sampled. Concentrations of total selected chloropyridines ranged from 22 µg/L (in well MW-16 at the former General Circuits property) to 230,000 µg/L in well PZ-103 on the west side of McKee Road. Seven of the off-site wells contained total chloropyridine concentrations above their respective 5-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. Substantial increases were noted in wells PZ-102, PZ-103, and well pair MW-106/BR-106. These appear related to earlier observed increases in BR-8 and pumping well PW-16, which are now showing reduced concentrations in the Fall 2014 sampling results. Arch anticipates that concentrations in PZ-102, PZ-103, and the 106 well pair will also peak and begin to decline in the 2015 sampling events. In addition, increased concentrations of chloropyridines were observed in monitoring well PW-10 and nearby pumping wells PW-15 and PW-17. Based on these observations, Arch has initiated an assessment of in-ground process and wastewater lines to check for potential on-going leaks to the subsurface. More discussion on these efforts is provided in Section 4 of this report.

3.1.2 Selected VOCs.

On-Site. Selected VOCs were detected in 17 of the 22 on-site wells sampled in the Fall 2014 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-5A, BR-126, MW-127, and PZ-107) to 63,000 µg/L (in pumping well PW-17). Three of the on-site wells contained concentrations of total VOCs above their 5-year prior means (see Table 4).

In addition to the selected VOCs, other notable constituents detected in multiple on-site wells include benzene (in 15 out of 22 wells), 1,4-dichlorobenzene (11 of 22), 1,3-dichlorobenzene (9 of 22), 1,2-dichlorobenzene (10 of 22), carbon disulfide (6 of 22), cis-1,2-dichloroethene (5 of 22), toluene (4 of 22), 1,2,4-trichlorobenzene (4 of 22), vinyl chloride (3 of 22), 1,1-dichloroethane (3 of 24), 1,1,2-trichloro-1,2,2-trifluoroethane (3 of 22), 1,2,3-trichlorobenzene (2 of 22), acetone (2 of 22), ethyl benzene (2 of 22), and xylenes (2 of 22).

Off-Site. Of the selected VOCs, only chlorobenzene was detected in the off-site wells during the Fall 2014 event. Chlorobenzene concentrations ranged from not detected (in well BR-105D) to 1,500 µg/L (in well PZ-103). Five of these wells were above their 5-year prior means for VOCs (see Table 4).

In addition to the chlorobenzene, other notable constituents detected in multiple off-site wells include benzene (in 6 out of 7 wells), 1,2-dichlorobenzene (6 of 7), 1,4-dichlorobenzene (4 of 7), 1,3-dichlorobenzene (3 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 noticeable decreases in the southeastern portion of the plant property as a result of the continued decline in VOCs in wells PZ-106 and PZ-107.

3.2 SURFACE WATER

Results from the Fall 2014 canal and quarry monitoring event are presented in Table 5. The results are included in Table 5 and are discussed below.

3.2.1 Quarry

One quarry seep sample (QS-4) was collected in the Fall 2014 monitoring event. The sample contained 250 µg/L total chloropyridines, which is above its prior 5-year mean but still well below historical levels.

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 ditch 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 AND MAINTENANCE

Table 6 is a summary of the system flow measurements for the on-site extraction wells from June 2014 through November 2014. The total volume pumped during the six-month period was approximately 5.8 million gallons.

During the reporting period, pumping well PW-17 was off-line for an extended period due to a broken discharge line. The line was repaired in December 2014. Equipment (pump) problems in well PW-15 also adversely affected flow rates in July, September, and November 2014.

Table 7 provides a calculation of mass removal rates since the previous groundwater monitoring event (i.e., from June 2014 through November 2014). Arch estimates that approximately 27 pounds of target VOCs and 815 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.

In response to the unexpected increase in chloropyridine concentrations in well PW-10 and nearby pumping wells PW-15 and PW-17, Arch has undertaken several proactive steps to reduce off-site migration and identify or rule out potential on-going leaks to the subsurface. In December 2014, pumps and discharge lines at wells PW-15, PW-16, and BR-7A, were inspected and cleaned or replaced as necessary, and flow rates were maximized to improve capture and containment along the western property boundary. BR-127 in the southeast corner of the plant property was also addressed. Substantial increases in flows were achieved in these wells, and the system will be closely monitored through 2015 to try to maintain the increased pumping rates to the extent feasible. In addition, Arch is in the process of inspecting its remaining in-ground process lines and wastewater conveyance lines to look for potential leaks. In December 2014, a deteriorated trench drain was discovered in the area near well PW-10. This line was immediately shut down and the flow was re-routed through a temporary line while further assessment and required repairs are made. This effort is currently on-going, and progress will be reported to the NYSDEC in our quarterly site progress reports.

Extraction well BR-5A was shut down in August 2014, due to low observed contaminant levels in this well. Sampling results from BR-5A in the Fall 2014 event showed that contaminant levels declined further after shutting down the well, which is consistent with our interpretation that the operation of this pumping well was drawing impacted water toward the eastern property boundary.

Extraction well PW-14 continues to provide minimal contaminant mass removal due to extremely low flow rates, and does not contribute to groundwater containment in any significant way. Capture of groundwater in the vicinity of PW-14 is provided by pumping wells BR-127, PW-15, and PW-17. Arch intends to shut down PW-14 in the near future.

5.0 OPTIMIZATION OF MONITORING NETWORK

Several of the off-site monitoring wells are now exhibiting little or no indication of site-related contamination. This can be best seen in the time-series plots included in Appendix B. Arch requests that the following wells be dropped from the groundwater quality monitoring program: BR-103, MW-103, BR-104, MW-104, BR-108, BR-116, BR-116D, MW-16, NESS-E, NESS-W, and PZ-101. Arch does not propose abandoning any of these wells at this time, as they will continue to be used for water level measurements.

6.0 NEXT MONITORING EVENT

The next regular monitoring event will occur in May 2015 and will include groundwater, surface water, and seep sampling.

Table 8 shows the current monitoring program for the Arch Rochester site, along with the changes proposed in Section 5.

Figures

Legend

Property Owned by Lonza

Monitoring Well

NOTES

1. Source - Topographic Quadrangle 7.5-Minute Series

N

0 250 500 1,000 Feet

Prepared by JEB | Checked by NMB

BARGE CANAL

I-390

FIRTH RIXSON

ARCH

BUFFALO RD. BUSINESS CENTER

MW-103/BR-103

MW-108/BR-108

PZ-102

BR-106/MW-106

PZ-103

MW-16

AID TO HOSPITALS

BR-126

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

LEXINGTON

GENERAL RAIL SIGNAL CO.

11-8

9-6

RW-1

10-6

13-4

DOLOMITE PRODUCTS QUARRY

Morey

OW-102A

OW-103

BR-122D

PFAUDLER

ERIE BARGE CANAL

BR-121D (Abandoned)

BR-118/BR-118D

BR-123D

BR-116/BR-116D

I-390

BR-120D (Abandoned)

BR-119D (Abandoned)

LETTINGTON DRIVE

BR-124D

Figure 1
Off-Site Groundwater Monitoring Well Locations

Arch Chemicals
Rochester, NY

amec

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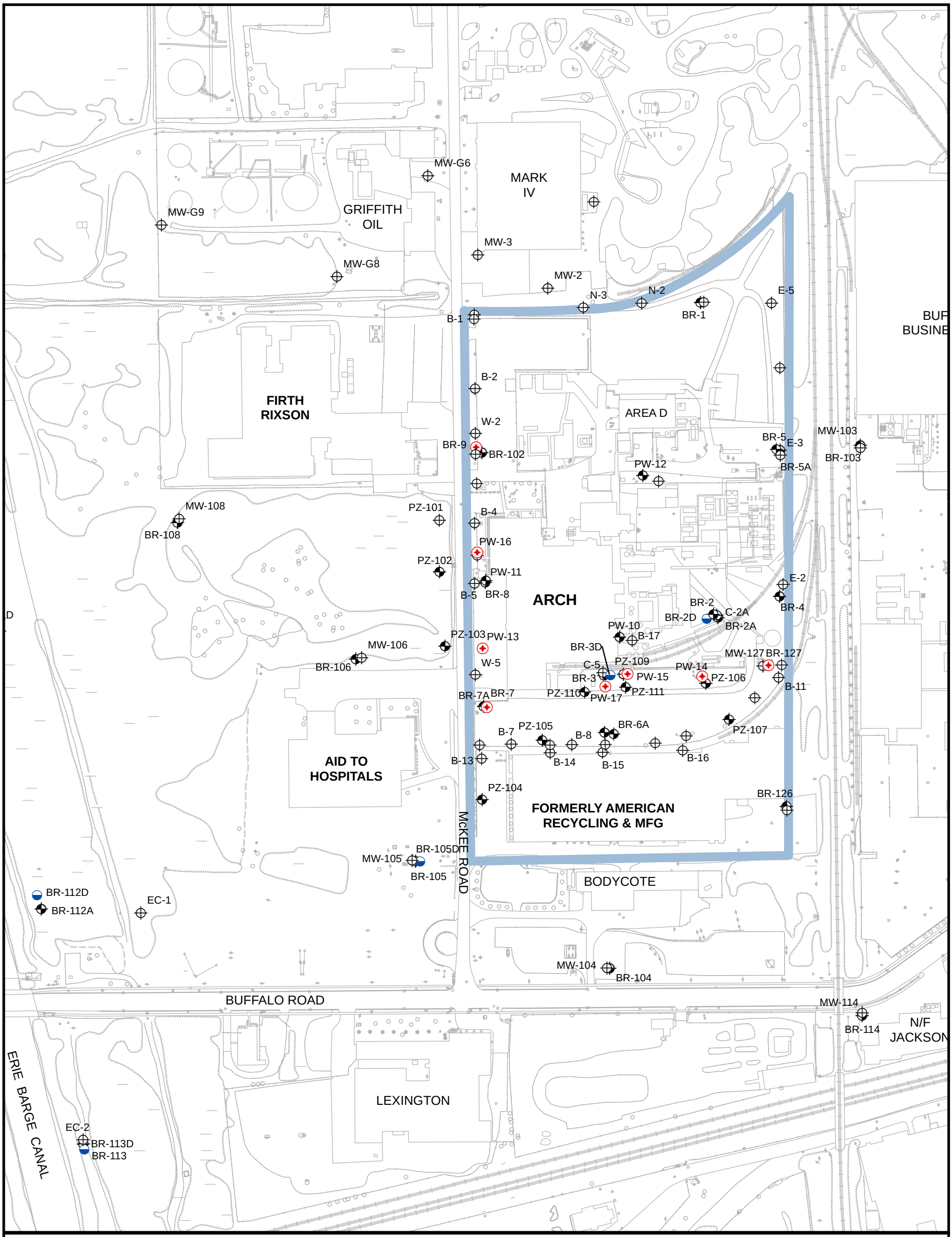

NOTES:

1. Off-Site Well Locations also Included on Figure 1

N

0 100 200 400 Feet

Legend

- Active Pumping Well
- Overburden Monitoring Well
- Bedrock Monitoring Well
- Deep Bedrock Monitoring Well
- Property Owned by Lonza

Figure 2
Onsite Monitoring Well Locations

Arch Chemicals Rochester, NY

Prepared/Date: JEB 01/16/15	Checked/Date: NMB 01/16/15

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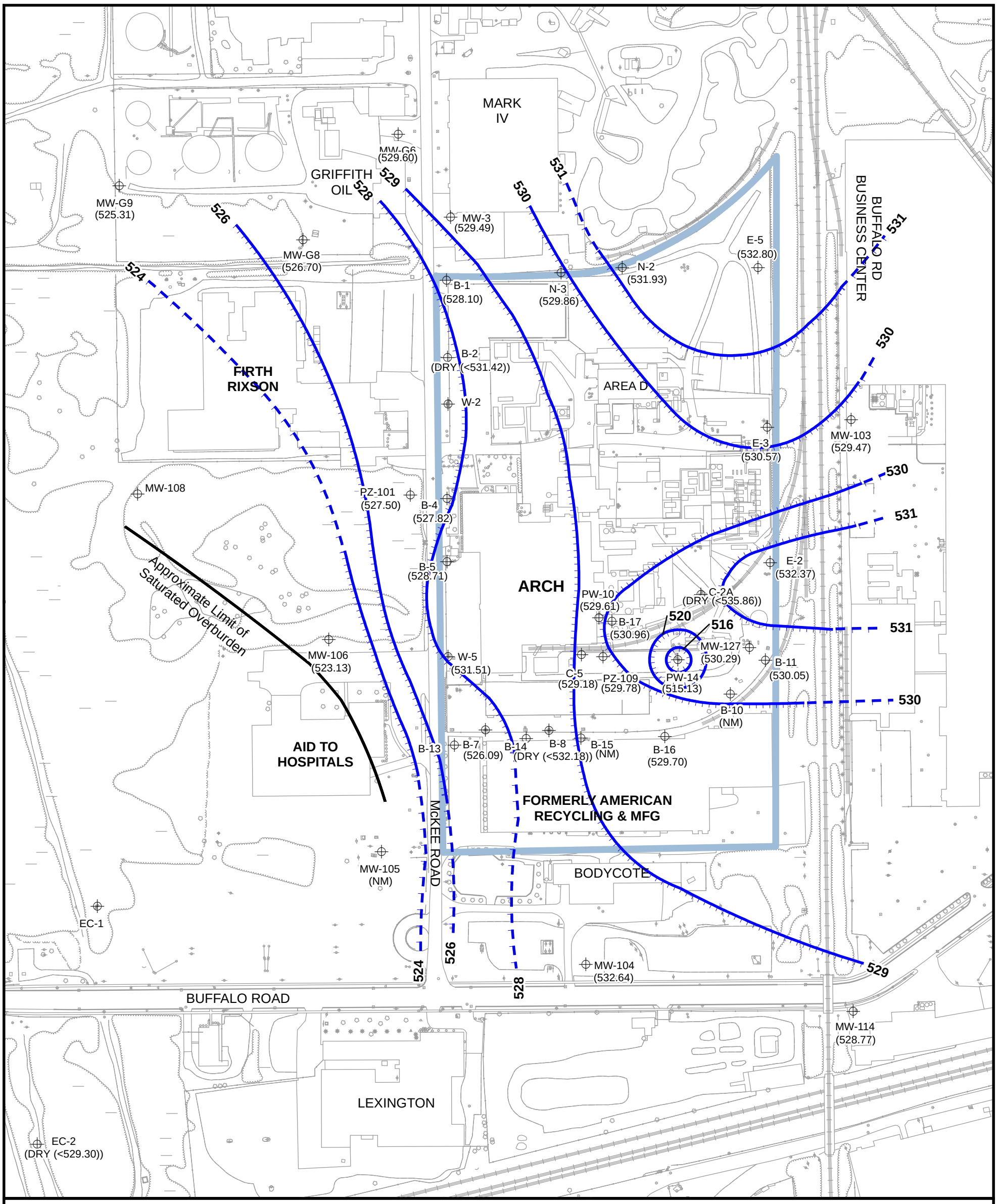

Legend

MW-114 (528.77) — Piezometric Elevation at Well or Piezometer

Interpreted Groundwater Flow Direction

528 — Overburden Piezometric Elevation Contour (MSL)

Property Owned by Lonza

N

NOTES:

1. Water Levels Measured on December 5, 2014
2. Dashed Contours Reflect Uncertainty
2. Measurements at wells W-5 and MW-104 are considered anomalous and were not used in contouring.

0 100 200 400 Feet

Prepared/Date: JEB 01/16/15 | Checked/Date: NMB 01/16/15

Figure 3
Fall 2014
Overburden Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

amec

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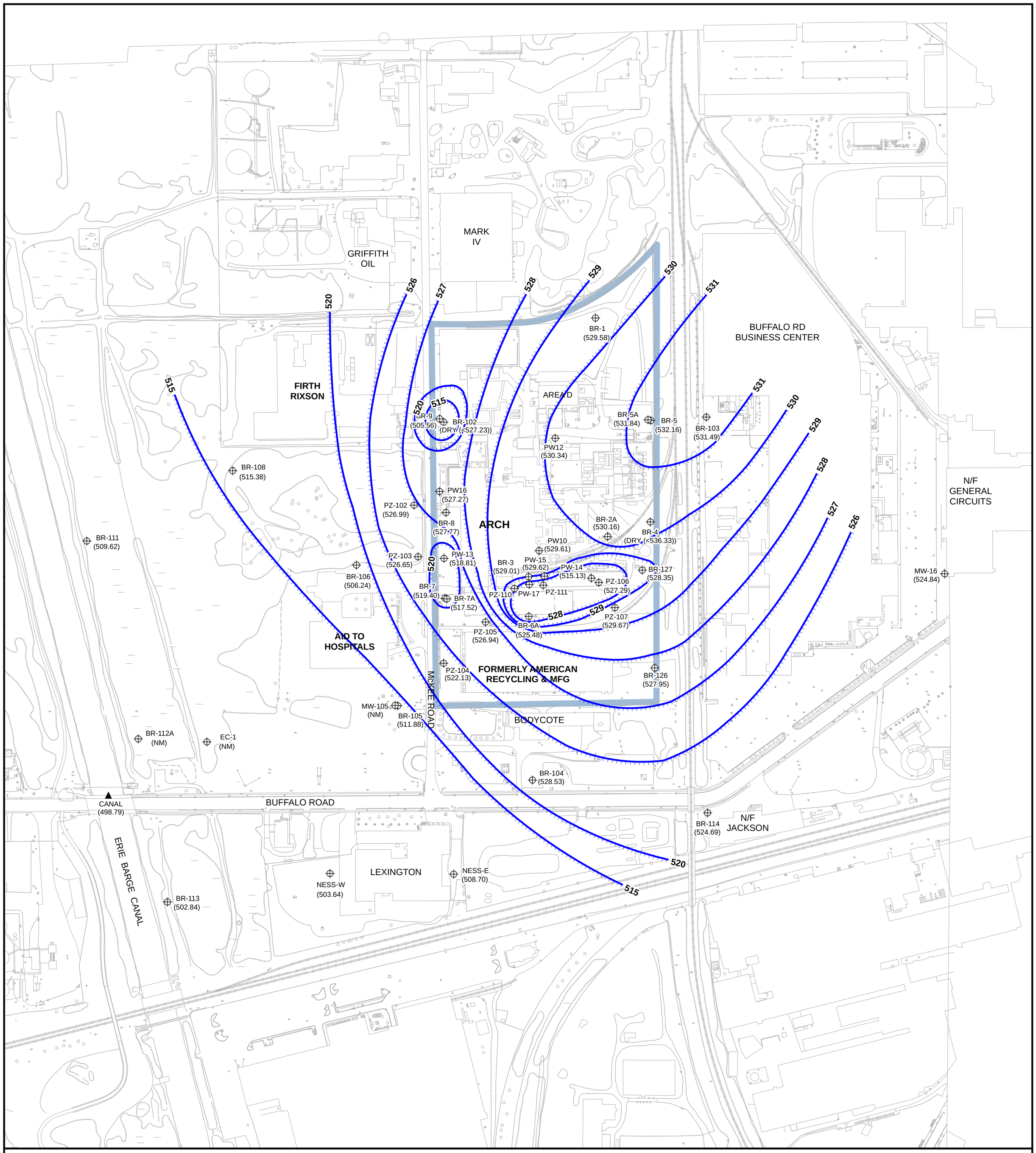

NOTES:

1. Water Levels Measured on December 5, 2014
2. Dashed Contours Reflect Uncertainty
3. Measurements in wells BR-104 and BR-106 are considered anomalous and were not used in contouring.

N

0 100 200 400 Feet

Legend

- BR-6A (525.48) — Piezometric Elevation at Well or Piezometer (Feet MSL)
- CANAL (498.79) — Piezometric Elevation at Surface Water Measuring Point
- Property Owned by Lonza
- Interpreted Groundwater Flow Direction
- 526 — Bedrock Piezometric Elevation Contour (MSL)

Figure 4
Fall 2014
Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

amec

Prepared/Date: JEB 01/16/15 | Checked/Date: NMB 01/16/15

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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 (502.07) — Piezometric Elevation at Deep Bedrock Well

NOTES

1. Water Levels Measured on December 5, 2014
2. Dashed Contours Reflect Uncertainty

N

0 250 500 1,000 Feet

Prepared/Date: JEB 01/15/15 | Checked/Date: NMB 01/15/15

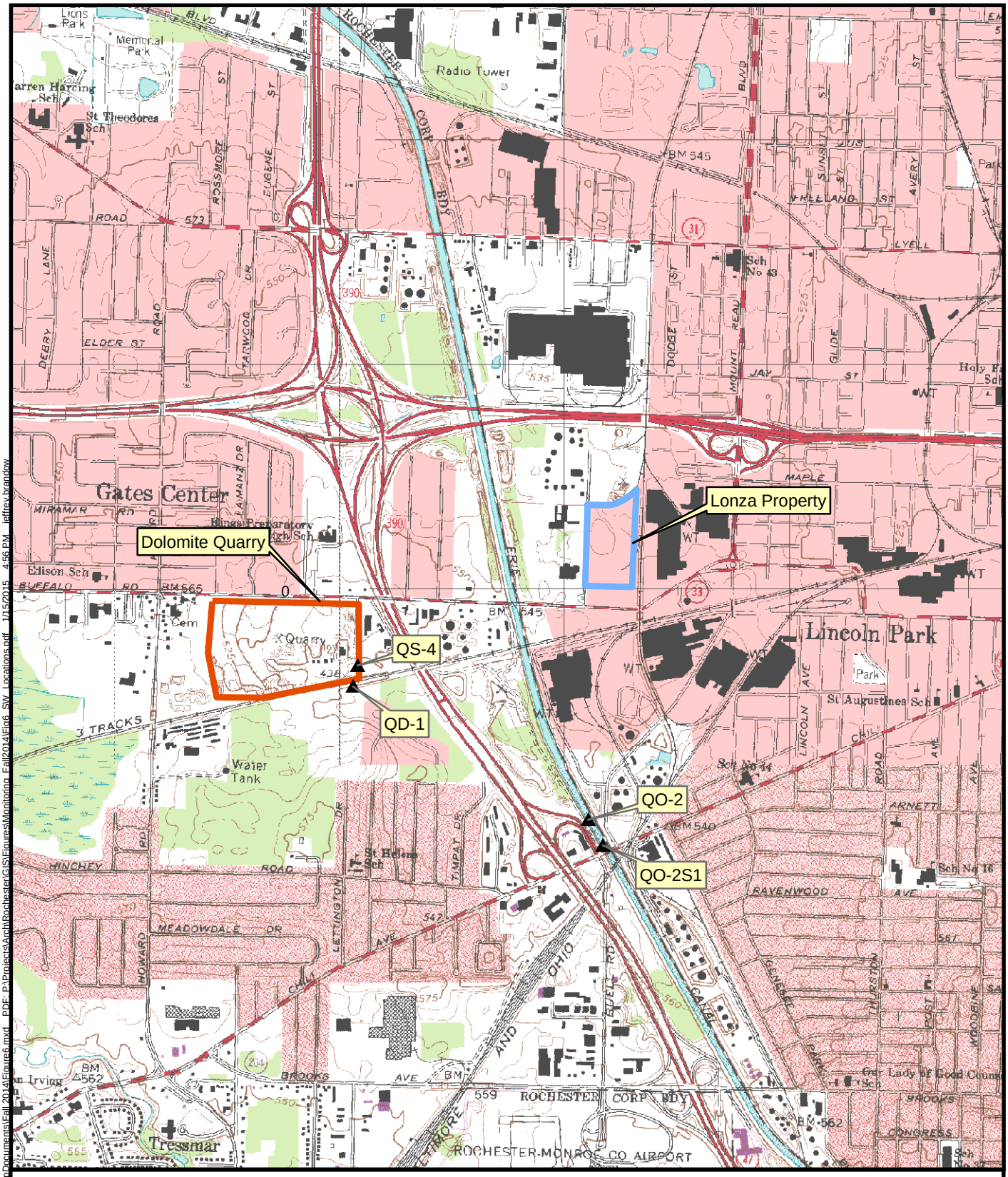
ERIE BARGE CANAL
I-390
FIRTH RIXSON
BUFFALO RD. BUSINESS CENTER
ARCH
BR-9
BR-103
BR-108
BR-111D (502.44)
BR-111
AID TO HOSPITALS
BR-106
BR-3D (484.17)
BR-112D (502.73)
BR-112
BR-105
BR-105D (502.98)
BUFFALO ROAD
BR-104
BR-114
CUMBERLAND FARMS PETROLEUM TERMINAL
BR-113
BR-113D (502.78)
LEXINGTON
GENERAL RAIL SIGNAL CO.
DOLOMITE PRODUCTS QUARRY
PFAUDLER
BR-122D (500.04)
BR-117D (494.43)
BR-117
BR-118
BR-118D (495.60)
BR-123D (500.92)
BR-116D (502.07)
BR-116
LETTINGTON DRIVE
BR-124D (497.85)

494 496 498 500 502 505

Figure 5
Fall 2014
Deep Bedrock Groundwater
Interpreted Piezometric Contours

Arch Chemicals
Rochester, NY

amec



Source:
1:24,000 scale digital topographic map
obtained from New York State GIS
Clearinghouse at: www.nysgis.state.ny.us

Legend

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

Figure 6
Sample Locations
Erie Barge Canal

Arch Chemicals
Rochester, New York

amec

Prepared by JEB	Checked by NMB

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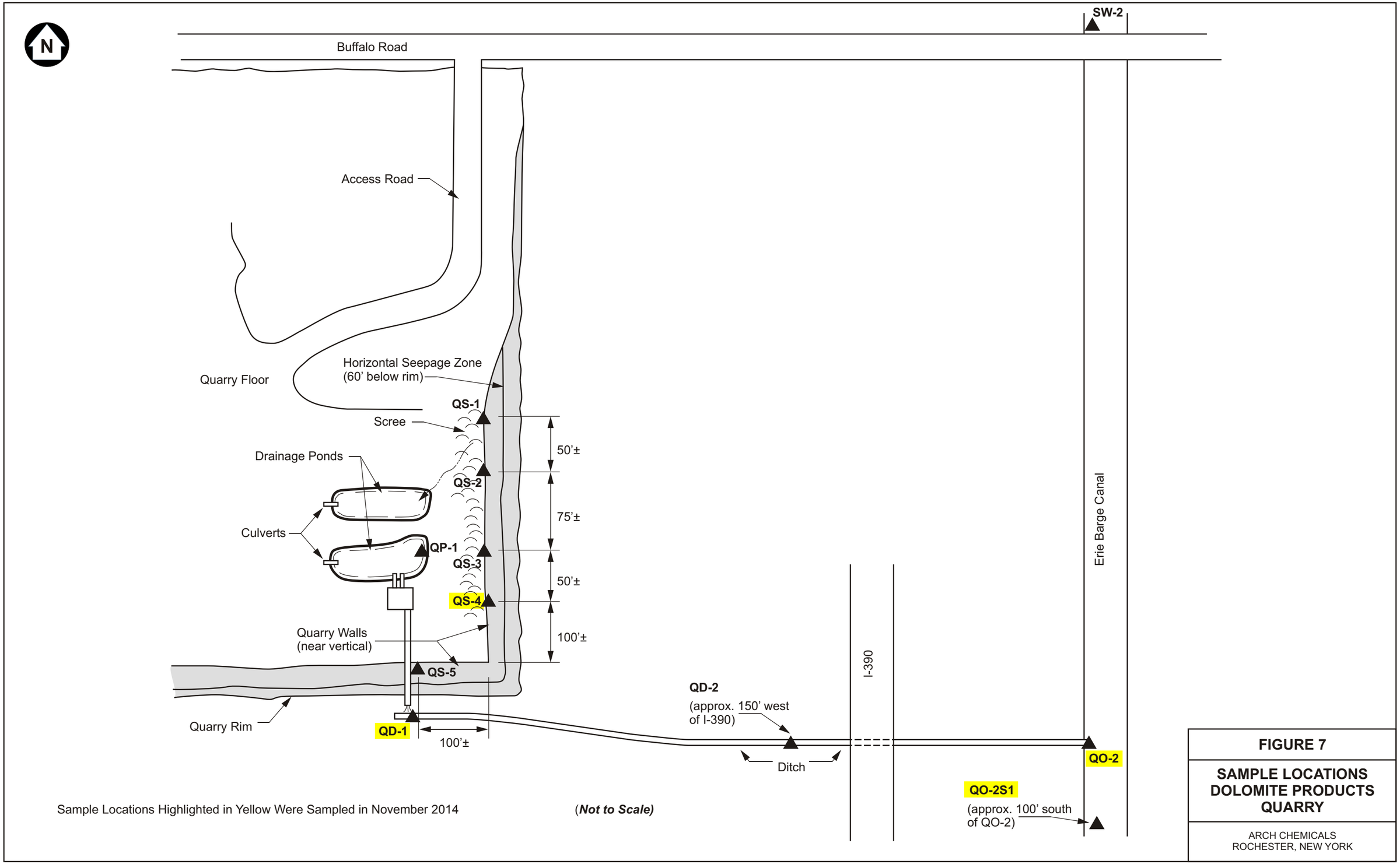


Sample Locations Highlighted in Yellow Were Sampled in November 2014

(***Not to Scale***)

FIGURE 7

SAMPLE LOCATIONS
DOLOMITE PRODUCTS QUARRY

ARCH CHEMICALS
ROCHESTER, NEW YORK

W2004030a.cdr

MARK IV

GRIFFITH OIL

BUFFALO RD BUSINESS CENTER

FIRTH RIXSON

AREA D

BR-9 500

BR-102

BR-5A 40

E-3 (NS)

PW12 81

BR-103 NS

MW-103 (NS)

MW-108 (NS)

BR-108 NS

PZ-101 (26)

B-4 NS

PW-16 6400

PZ-102 120000

B-5 500

PW11

BR-8 190000

ARCH

100

1,000

10,000

100,000

N/F GENERAL CIRCUITS

BR-111D {NS}

PZ-103 230000

PW10 495000

B-17 (320000)

MW-16 (22)

BR-106 30000

MW-106 (100000)

PW13 3900

W-5 NS

BR-3 NS

PW14 1000

BR-127 7500

MW-127 (4900)

PW-17 63000

PW15 160000

B-11 (NS)

BR-7A 22000

PZ-106 5100

BR-6A 28000

PZ-107 1300

AID TO HOSPITALS

B-7 (NS)

PZ-105 18000

B-15 99

B-16 (920)

PZ-104 510

FORMERLY AMERICAN RECYCLING & MFG

BR-126 1400

MW-126 (NS)

McKEE ROAD

BR-105 3500

BR-105D {420}

BR-112D {NS}

BODYCOTE

MW-104 (NS)

BR-104 NS

MW-114 (NS)

BUFFALO ROAD

BR-114 NS

N/F JACKSON

ERIE BARGE CANAL

NESS-W NS

LEXINGTON

NESS-E NS

BR-113D {NS}

Legend

- Property Owned by Lonza
- 100 — Chloropyridine Concentration Contour
- BR-105 0.5 — Monitoring Location with Concentration

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

0 100 200 400 Feet

N

Prepared/Date: JEB 01/16/15 | Checked/Date: NMB 01/16/15

NOTES:

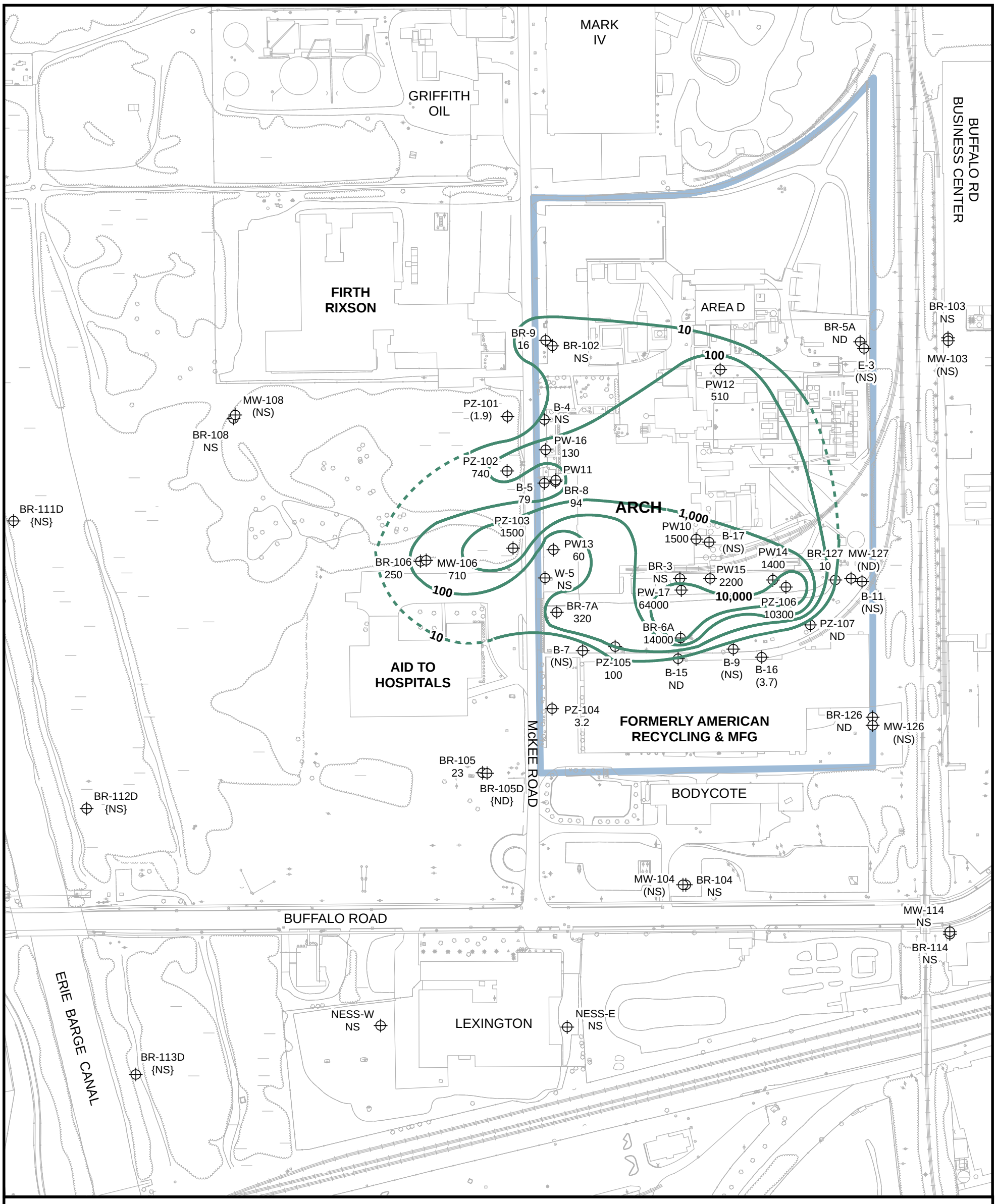
1. Samples Collected November 2014
2. Selected Chloropyridines consist of 2,6-Dichloropyridine, 2-Chloropyridine, 3-Chloropyridine, 4-Chloropyridine, and P-Fluoroaniline.
3. Concentration contours represented for Bedrock Wells and selected Overburden and Deep Bedrock Wells. inferences from historical analytical results.
4. Concentrations are in µg/L

Figure 8
Fall 2014
Selected Chloropyridine Concentration Contours

Arch Chemicals
Rochester, NY

amec

Document: P:\Projects\Arch\Rochester\GIS\MapDocuments\Fall 2014\Fig8_ChloroPyridine_Contours.mxd PDF: P:\Projects\Arch\Rochester\GIS\Figures\Monitoring_Fall2014\Fig8_PYR_Contours.pdf 1/16/2015 10:39 AM jeffrey.brandow



Legend

- Property Owned by Lonza
- **100** VOC Concentration Contour
- B-17 (0.64) Monitoring Location with Concentration
- {1000} Deep Bedrock Well
- (1000) Overburden Well
- 1000 Bedrock Well
- NS Not Sampled
- ND Not Detected

0 100 200 Feet

N

Prepared/Date: JEB 01/16/15 | Checked/Date: NMB 01/16/15

NOTES:

1. Samples Collected in November 2014
2. Selected VOCs consist of Carbon tetrachloride, Methylene chloride Chloroform, Chlorobenzene, TCE, and PCE.
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

Figure 9
Fall 2014
Selected Volatile Organic Compound Concentration Contours

Arch Chemicals
Rochester, NY

amec

Document: P:\Projects\Arch\Rochester\GIS\MapDocuments\Fall 2014\Fig9_VOC_Contours.mxd PDF: P:\Projects\Arch\Rochester\GIS\Figures\Monitoring_Fall2014\Fig9_VOC_Contours.pdf 1/16/2015 10:40 AM jeffrey.brandow

Tables

TABLE 1
FALL 2014 GROUNDWATER SAMPLING AND ANALYTICAL PROGRAM

ARCH CHEMICALS, INC
ROCHESTER, NEW YORK

				ANALYSIS	
SITE / AREA	**WELL / POINT**	**DATE**	**QC TYPE**	**PYRIDINES**	**VOCs**
AID TO HOSPITALS	BR-106	11/6/2014	Sample	X	X
	MW-106	11/6/2014	Sample	X	X
	PZ-101	11/4/2014	Sample		X
	PZ-101	11/6/2014	Sample	X	
	PZ-102	11/4/2014	Sample	X	X
	PZ-103	11/4/2014	Sample	X	X
ARCH ROCHESTER	B-15	11/10/2014	Sample	X	X
	B-16	11/5/2014	Sample	X	X
	B-5	11/4/2014	Sample	X	X
	BR-126	11/10/2014	Sample	X	X
	BR-127	11/5/2014	Sample	X	X
	BR-5A	11/4/2014	Sample	X	X
	BR-6A	11/5/2014	Sample	X	X
	BR-7A	11/7/2014	Sample	X	X
	BR-8	11/4/2014	Sample	X	X
	BR-9	11/6/2014	Sample	X	X
	MW-127	11/5/2014	Sample	X	X
	PW10	11/4/2014	Sample	X	X
	PW12	11/4/2014	Sample	X	X
	PW13	11/10/2014	Sample	X	X
	PW14	11/4/2014	Sample	X	X
	PW15	11/10/2014	Sample	X	X
	PW16	11/4/2014	Sample	X	X
	PW17	11/5/2014	Sample	X	X
	PZ-104	11/7/2014	Sample	X	X
	PZ-105	11/5/2014	Sample	X	X
	PZ-106	11/5/2014	Sample	X	X
	PZ-107	11/5/2014	Sample	X	X
ERIE BARGE CANAL (Samples in canal or property along canal)	QO-2	11/7/2014	Sample	X	
	QO-2S1	11/7/2014	Sample	X	
FORMER GENERAL CIRCUTS	MW-16	11/6/2014	Sample	X	
DOLOMITE PRODUCTS, INC.	QD-1	11/7/2014	Sample	X	
	QS-4	11/7/2014	Sample	X	
RG & E RIGHT OF WAY	BR-105	11/6/2014	Sample	X	X
	BR-105D	11/6/2014	Sample	X	X

TABLE 2
FALL 2014 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-5	B-15	B-16	BR-5A	BR-6A	BR-7A	BR-8	BR-9	BR-105	BR-105D
SAMPLE DATE:	11/4/2014	11/10/2014	11/5/2014	11/4/2014	11/5/2014	11/7/2014	11/4/2014	11/6/2014	11/6/2014	11/6/2014
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270C (ug/L)										
2,6-Dichloropyridine	31.9 J	74.6	332	25.4	4520	3010	20000 U	42	375	38
2-Chloropyridine	467	24	449	14	23,300	18,800	191,000	453	3,090	378
3-Chloropyridine	50 U	10 U	50 U	10 U	2000 U	1000 U	20000 U	25 U	U	25 U
4-Chloropyridine	50 UJ	10 UJ	50 UJ	10 UJ	2000 UJ	1,000 UJ	20000 UJ	25 UJ	UJ	25 UJ
p-Fluoroaniline	50 U	10 U	50 U	10 U	2000 U	1,000 U	20000 U	25 UJ	UJ	25 UJ
Pyridine	50 UJ	10 UJ	50 U	10 UJ	2000 U	1,000 UJ	20000 UJ	25 UJ	UJ	25 UJ

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = Micrograms per liter

TABLE 2
FALL 2014 GROUNDWATER MONITORING RESULTS
CHLOROPYRIDINES

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-106	BR-126	BR-127	MW-16	MW-106	MW-127	PW10	PW12	PW13	PW14
SAMPLE DATE:	11/6/2014	11/10/2014	11/5/2014	11/6/2014	11/6/2014	11/5/2014	11/4/2014	11/4/2014	11/10/2014	11/4/2014
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270C (ug/L)										
2,6-Dichloropyridine	2020	358	874	6 J	6,180 J	353 J	20500	18	292	218
2-Chloropyridine	28,300	1,070	6,140 J	16	97,100	4,510	241,000	22	3,580	732
3-Chloropyridine	2000 U	80 U	514	11 U	10,000 U	400 U	93500	10 U	200 U	76.9 J
4-Chloropyridine	2000 UJ	80 UJ	400 UJ	11 UJ	10,000 UJ	400 UJ	97700 J	10 UJ	200 UJ	100 UJ
p-Fluoroaniline	2000 UJ	80 U	400 UJ	11 UJ	10,000 UJ	400 U	20000 U	41	200 U	100 U
Pyridine	2000 UJ	80 UJ	400 U	11 UJ	10,000 UJ	400 U	42600 J	10 UJ	200 UJ	100 UJ

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = Micrograms per liter

TABLE 2
FALL 2014 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:	11/10/2014	11/4/2014	11/5/2014	11/6/2014	11/4/2014	11/4/2014	11/7/2014	11/5/2014	11/5/2014	11/5/2014
QC TYPE:	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270C (ug/L)										
2,6-Dichloropyridine	6,390 J	389 J	6190	12.6	7940 J	17,300 J	131	2430	633	386
2-Chloropyridine	142,000	6,010	54,600	14	113,000	215,000	378	15,700	3,820	955
3-Chloropyridine	10,000 U	400 U	2,250 J	10 U	10,000 U	20,000 U	20 U	1000 U	234 J	100 U
4-Chloropyridine	10,000 UJ	400 UJ	4,000 UJ	10 UJ	10,000 UJ	20,000 UJ	20 UJ	1000 UJ	400 UJ	100 UJ
p-Fluoroaniline	10,000 U	400 U	4,000 U	10 UJ	10,000 U	20,000 U	20 U	1000 U	400 U	100 U
Pyridine	11,200 J	400 UJ	4,000 U	10 UJ	10,000 U	20,000 U	20 UJ	1000 U	371 J	100 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value
µg/L = Micrograms per liter

TABLE 3
FALL 2014 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	B-5	B-15	B-16	BR-5A	BR-6A	BR-7A	BR-8	BR-9	BR-105	BR-105D
SAMPLE DATE:	11/4/2014	11/10/2014	11/5/2014	11/4/2014	11/5/2014	11/7/2014	11/4/2014	11/6/2014	11/6/2014	11/6/2014
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs BY SW-846 Method 8260/5ML (µg/L)										
1,1,2-Trichloro-1,2,2-Trifluoroethane	10 U	2 U	2 U	2 U	200 U	4.55 J	2 U	38.2	2 U	2 U
1,1-Dichloroethane	10 U	2 U	2 U	2 U	200 U	3.06 J	2 U	7.96	2 U	2 U
1,1-Dichloroethene	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	1.36 J	2 U	2 U
1,2,3-Trichlorobenzene	25 U	5 U	5 U	5 U	500 U	5 UJ	5 U	5 U	5 U	5 U
1,2,4-Trichlorobenzene	25 U	5 U	5 U	5 U	500 U	5 UJ	5 U	5 U	5 U	5 U
1,2-Dichlorobenzene	532	2 U	1.35 J	2 U	200 U	50.4 J	18.9	6.33	5.89	2 U
1,3-Dichlorobenzene	58.9	2 U	2 U	2 U	200 U	28 J	10.8	2 UJ	2 U	2 U
1,4-Dichlorobenzene	22.5	2 U	2.06	2 U	200 U	16.7 J	11.7	2 UJ	2 U	2 U
Acetone	50 U	10 U	10 U	10 U	1000 U	10 UJ	10 U	10 U	10 U	10 U
Benzene	2.5 J	0.7 U	1.09	0.7 U	45.5 J	6.95 J	1.96	47.4 J	1.52	0.746
Bromoform	25 U	5 U	5 U	5 U	500 U	5 UJ	5 U	5 U	5 U	5 U
Carbon disulfide	10 U	2 U	2 U	2 U	200 U	1.01 J	2 U	2 U	2 U	2 U
Carbon tetrachloride	10 U	2 U	2 U	2 U	200 U	14.8 J	2 U	2 U	2 U	2 U
Chlorobenzene	67.1	2 U	3.71	2 U	136 J	81.7 J	94.1	14.1 J	22.5	2 U
Chlorodibromomethane	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	2 U	2 U	2 U
Chloroform	10 U	2 U	2 U	2 U	200 U	106 J	2 U	2 U	2 U	2 U
Cis-1,2-Dichloroethene	10 U	2 U	2 U	2 U	605	5.51 J	2 U	139	4.51	1.1 J
Cyclohexane	50 U	10 U	10 U	10 U	1000 U	10 UJ	10 U	16.8	10 U	10 U
Ethyl benzene	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	1.33 J	2 U	2 U
Isopropylbenzene	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	1.99 J	2 U	2 U
Methyl cyclohexane	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	7.46	2 U	2 U
Methyl Tertbutyl Ether	10 U	2 U	2 U	2 U	200 U	2.97 J	2 U	9.66	2 U	4.77
Methylene chloride	25 U	5 U	5 U	5 U	14200	107 J	5 U	5 U	5 U	5 U
Tetrachloroethene	10 U	2 U	2 U	2 U	200 U	5.67 J	2 U	2 U	2 U	2 U
Toluene	10 U	2 U	2 U	2 U	472	2.77 J	2 U	1.17 J	2 U	2 U
trans-1,2-Dichloroethene	6.47 J	2 U	2 U	2 U	200 U	2 UJ	2 U	2 U	2 U	2 U
Trichloroethene	12.3	2 U	2 U	2 U	156 J	2.51 J	2 U	1.73 J	2 U	2 U
Vinyl chloride	10 U	2 U	2 U	2 U	702	11.9 J	2 U	88.8 J	2 U	2 U
Xylene, o	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	2 U	2 U	2 U
Xylenes (m&p)	10 U	2 U	2 U	2 U	200 U	2 UJ	2 U	2 U	2 U	2 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value.

TABLE 3
FALL 2014 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	BR-106	BR-126	BR-127	MW-106	MW-127	PW10	PW12	PW13	PW14	PW15
SAMPLE DATE:	11/6/2014	11/10/2014	11/5/2014	11/6/2014	11/5/2014	11/4/2014	11/4/2014	11/10/2014	11/4/2014	11/10/2014
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs BY SW-846 Method 8260/5ML (µg/L)										
1,1,2-Trichloro-1,2,2-Trifluoroethane	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	3.32 J	40 U	20 U
1,1-Dichloroethane	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2.68 J	40 U	20 U
1,1-Dichloroethene	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2 UJ	40 U	20 U
1,2,3-Trichlorobenzene	12.5 UJ	5 U	5 UJ	25 UJ	5 U	32.8 J	46.8 J	5 UJ	100 U	50 U
1,2,4-Trichlorobenzene	12.5 UJ	5 U	5 UJ	25 UJ	5 U	185	640 J	5 UJ	55.5 J	56
1,2-Dichlorobenzene	64.9 J	2 U	4.49 J	171 J	2 U	20 U	20 U	17.3 J	40 U	14.1 J
1,3-Dichlorobenzene	3.99 J	2 U	3.52 J	10 UJ	2 U	18.7 J	119 J	3.81 J	40 U	22.4
1,4-Dichlorobenzene	5.98 J	2 U	6.39 J	9.51 J	2 U	19.7 J	88.2 J	3.64 J	40 U	39.7
Acetone	25 UJ	10 U	10 UJ	50 UJ	10 U	83 J	100 U	10 UJ	200 U	100 U
Benzene	14.1 J	1.95	0.989 J	33.6 J	0.7 U	16.4	7 U	8.03 J	14 U	25.5
Bromoform	12.5 UJ	5 U	5 UJ	25 UJ	5 U	740	50 U	5 UJ	100 U	50 U
Carbon disulfide	5 UJ	2 U	3 J	10 UJ	2 U	224	20 U	2 UJ	40 U	274
Carbon tetrachloride	5 UJ	2 U	2 UJ	10 UJ	2 U	471	20 U	2 UJ	40 U	156
Chlorobenzene	249 J	2 U	3.19 J	707 J	2 U	62.9	439 J	43.7 J	40 U	62.3
Chlorodibromomethane	5 UJ	2 U	2 UJ	10 UJ	2 U	43.5	20 U	2 UJ	40 U	20 U
Chloroform	5 UJ	2 U	3.19 J	10 UJ	2 U	561	21.1 J	6.81 J	1310	1610
Cis-1,2-Dichloroethene	5 UJ	2 U	3.74 J	10 UJ	2 U	20 U	20 U	8.96 J	40 U	20 U
Cyclohexane	25 UJ	10 U	10 UJ	50 UJ	10 U	100 U	100 U	10 UJ	200 U	100 U
Ethyl benzene	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	71.8 J	2 UJ	40 U	20 U
Isopropylbenzene	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2 UJ	40 U	20 U
Methyl cyclohexane	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2 UJ	40 U	20 U
Methyl Tertbutyl Ether	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2.54 J	40 U	20 U
Methylene chloride	12.5 UJ	5 U	5 UJ	25 UJ	5 U	116	50 U	6.6 J	74.6 J	46.5 J
Tetrachloroethene	5 UJ	2 U	2 UJ	10 UJ	2 U	283	53.6 J	1.46 J	25.9 J	293
Toluene	5 UJ	2 U	1.12 J	10 UJ	2 U	83.3	312 J	2 UJ	40 U	56.1
trans-1,2-Dichloroethene	5 UJ	2 U	2 UJ	10 UJ	2 U	20 U	20 U	2 UJ	40 U	20 U
Trichloroethene	5 UJ	2 U	3.65 J	10 UJ	2 U	20	20 U	1.24 J	40 U	32.1
Vinyl chloride	5 UJ	2 U	3.45 J	10 UJ	2 U	20 U	20 U	19.4 J	40 U	20 U
Xylene, o	5 UJ	2 U	2 UJ	10 UJ	2 U	10.5 J	148 J	2 UJ	40 U	20 U
Xylenes (m&p)	5 UJ	2 U	2 UJ	10 UJ	2 U	18.3 J	270 J	2 UJ	40 U	20 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value.

TABLE 3
FALL 2014 GROUNDWATER MONITORING RESULTS
VOLATILE ORGANIC COMPOUNDS

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

LOCATION:	PW16	PW17	PZ-101	PZ-102	PZ-103	PZ-104	PZ-105	PZ-106	PZ-107
SAMPLE DATE:	11/4/2014	11/5/2014	11/4/2014	11/4/2014	11/4/2014	11/7/2014	11/5/2014	11/5/2014	11/5/2014
QC TYPE:	FS	FS	FS	FS	FS	FS	FS	FS	FS
VOCs BY SW-846 Method 8260/5ML (µg/L)									
1,1,2-Trichloro-1,2,2-Trifluoroethane	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
1,1-Dichloroethane	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
1,1-Dichloroethene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
1,2,3-Trichlorobenzene	5 U	2500 U	5 U	25 UJ	50 UJ	5 U	5 UJ	500 U	5 U
1,2,4-Trichlorobenzene	5 U	2500 U	5 U	25 UJ	50 UJ	5 U	5 UJ	500 U	5 U
1,2-Dichlorobenzene	47	1000 U	1.41 J	257 J	755 J	2 U	6.28 J	200 U	2 U
1,3-Dichlorobenzene	14.7	1000 U	2 U	138 J	179 J	2 U	2 UJ	200 U	2 U
1,4-Dichlorobenzene	16.6	1000 U	2 U	121 J	155 J	2 U	2.22 J	200 U	2 U
Acetone	10 U	5000 U	10 U	50 UJ	100 UJ	10 U	10 UJ	924 J	10 U
Benzene	2.81	350 U	0.7 U	19 J	25.7 J	0.949	8.38 J	70 U	1.45
Bromoform	5 U	2500 U	5 U	25 UJ	50 UJ	5 U	5 UJ	500 U	5 U
Carbon disulfide	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	1.51 J	2950	2 U
Carbon tetrachloride	2 U	4660	2 U	10 UJ	20 UJ	2 U	2 UJ	520	2 U
Chlorobenzene	132	1000 U	1.94 J	739 J	1540 J	3.16	102 J	200 U	2 U
Chlorodibromomethane	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Chloroform	2 U	51200	2 U	10 UJ	20 UJ	2 U	2 UJ	9480	2 U
Cis-1,2-Dichloroethene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Cyclohexane	10 U	5000 U	10 U	50 UJ	100 UJ	10 U	10 UJ	1000 U	10 U
Ethyl benzene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Isopropylbenzene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Methyl cyclohexane	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Methyl Tertbutyl Ether	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Methylene chloride	5 U	6400	5 U	25 UJ	50 UJ	5 U	5 UJ	500 U	5 U
Tetrachloroethene	2 U	1620	2 U	10 UJ	20 UJ	2 U	2 UJ	303	2 U
Toluene	2 U	1000 U	2 U	10 UJ	14.4 J	2 U	2 UJ	188 J	2 U
trans-1,2-Dichloroethene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Trichloroethene	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Vinyl chloride	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Xylene, o	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	2 UJ	200 U	2 U
Xylenes (m&p)	2 U	1000 U	2 U	10 UJ	20 UJ	2 U	1.02 J	176 J	2 U

Notes:
U = Compound not detected; value represents sample quantitation limit.
J = Estimated value.

TABLE 4
COMPARISON OF FALL 2014
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 2014 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2014 RESULT
ON-SITE WELLS/LOCATIONS								
B-11	8	4,800	1700		8	570	94	
B-15	3	13,000	130	99	3	1,600	0.29	ND
B-16	9	33,000	830	780	9	4,500	8.8	3.7
B-17	7	28,000,000	250,000		7	350,000	6100	
B-4	3	740	21		3	42	6.7	
B-5	3	130,000	54,000	500	3	670	250	79
B-7	5	9,100	360		5	270	26	
BR-126	9	12,000	2,900	1400	9	240	2.6	ND
BR-127	11	29,000	9,800	7500	11	1,300	140	10
BR-3	5	6,500,000	42,000		5	930,000	81000	
BR-5A	10	1,700	150	40	10	9,400	17	ND
BR-6A	11	140,000	16,000	**28000**	11	26,000	2200	**14000**
BR-7A	10	510,000	6,900	**22000**	10	4,400	330	320
BR-8	6	230,000	130,000	**190000**	6	7,800	940	94
BR-9	10	720	170	**490**	10	210	13	1.7
E-3	5	600	77		5	15,000	9.9	
MW-127	11	15,000	1,400	**4900**	11	7,500	790	ND
PW10	10	240,000	77,000	**500000**	10	120,000	1500	1,500
PW12	10	15,000	770	81	10	120,000	8200	510
PW13	10	7,500	3,200	**3900**	10	1,800	350	60
PW14	11	29,000	4,000	1000	11	160,000	19000	1,400
PW15	10	730,000	50,000	**160000**	10	8,300	3700	2,200
PW16	8	52,000	24,000	6400	8	1,200	740	130
PW17	4	37,000	17,000	**63000**	4	66,000	32000	**63000**
PZ-104	10	9,100	1,000	510	10	52	6	3.2
PZ-105	10	190,000	5,400	**18000**	10	9,900	65	**100**
PZ-106	11	120,000	19,000	5100	11	1,400,000	320000	10,000
PZ-107	11	14,000	5,700	1300	11	130,000	23000	ND
W-5	2	450,000	ND		2	2,500	8.7	
OFF-SITE WELLS/LOCATIONS								
BR-103	5	400	2.1		5	46	ND	
BR-104	5	3,100	2.7			11		
BR-105	10	24,000	580	**3500**	10	350	6.6	**23**
BR-105D	10	10,000	410	**420**	10	230	4.1	ND
BR-106	10	26,000	5,300	**30000**	10	12,000	140	**250**
BR-108	5	1,700	17			2		
BR-112D	5	310	24			4.3		
BR-113D	5	490	21			2.8		
BR-114	5	520	20		5	12	0.2	
BR-116	5	12	ND			86		
BR-116D	5	710	27			130		
BR-117D	5	80	3.2			1.9		
BR-118D	5	330	36			6.6		
BR-122D	5	650	74			ND		

TABLE 4
COMPARISON OF FALL 2014
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 2014 RESULT	# EVENTS IN PRIOR 5 YRS	HISTORIC MAXIMUM	5-YEAR MEAN	NOV 2014 RESULT
BR-123D	5	860	40			7		
MW-103	5	97	0.6		5	750	ND	
MW-104	5	180	2.4			5.8		
MW-106	10	130,000	7,600	**100000**	10	4,000	240	**710**
MW-114	5	18	1.4		5	27	22	
MW-16	5	360	7.5	**22**		10		
NESS-E	5	5,000	52			710		
NESS-W	5	2,100	ND			94		
PZ-101	10	27,000	56	26	10	620	3.2	1.9
PZ-102	10	58,000	7,000	**120000**	10	11,000	340	**740**
PZ-103	10	73,000	15,000	**230000**	10	46,000	1100	**1500**
QD-1	10	11	3.0	ND		ND		
QO-2	10	380	7.5	ND		ND		
QO-2S1	10	27	2.0	ND		ND		
QS-4	10	3,400	110	**250**		ND		

Note:
1) Number of samples and mean reflect 5-year sampling period from November 2009 through June 2014. Historic maximum based on all available results from March 1990 through June 2014.
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 2014 exceeds 5-year mean.
5) ND = Not detected
BLANK = Not sampled

TABLE 5
FALL 2014 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:	11/7/2014	11/7/2014	11/7/2014	11/7/2014
QC TYPE:	Sample	Sample	Sample	Sample
SELECTED CHLOROPYRIDINES BY SW-846 Method 8270C (ug/L)				
2,6-Dichloropyridine	10 U	10 U	10 U	30.3
2-Chloropyridine	10 U	10 U	10 U	220
3-Chloropyridine	10 U	10 U	10 U	20 U
4-Chloropyridine	10 UJ	10 UJ	10 UJ	20 UJ
p-Fluoroaniline	10 U	10 U	10 U	20 U
Pyridine	10 UJ	10 UJ	10 UJ	20 UJ

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 2014 THROUGH NOVEMBER 2014

ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

Week Ending	BR-5A [Gal./Wk.]	BR-7A [Gal./Wk.]	BR-9 [Gal./Wk.]	PW-13 [Gal./Wk.]	PW-14 [Gal./Wk.]	PW-15 [Gal./Wk.]	PW-16 [Gal./Wk.]	PW-17 [Gal./Wk.]	BR-127 [Gal./Wk.]	Total [Gal.]
Jun '14										
06/08/14	23,279	83,393	47,314	37,094	878	15,501	24,934	2,773	44,869	280,035
06/15/14	21,447	78,143	47,073	36,033	832	23,417	22,836	2,734	41,095	273,610
06/22/14	21,301	77,868	49,070	36,877	4,689	29,608	21,624	2,828	41,242	285,106
06/29/14	20,838	74,654	48,569	35,997	5,966	29,696	18,987	2,736	39,869	277,313
									Total [Gal.]	1,116,064
Jul '14										
07/06/14	21,631	74,418	50,202	36,494	5,042	28,764	17,386	2,681	41,053	277,670
07/13/14	22,674	80,897	51,859	37,317	4,361	28,420	16,890	2,737	42,342	287,497
07/20/14	20,920	69,058	48,805	34,766	2,310	17,766 *	14,873	2,623	39,028	250,149
07/27/14	21,082	77,077	50,763	35,303	1,918	0 *	13,203	2,638	33,751	235,735
									Total [Gal.]	1,051,051
Aug '14										
08/03/14	23,040	72,303	47,593	30,862	1,629	7,128 *	10,917	1,406 *	18,850	213,728
08/10/14	22,623	80,003	52,732	34,383	1,710	26,047 *	11,804	0 *	17,849	247,151
08/17/14	6,710 **	80,066	54,468	35,663	2,026	27,597	11,844	0 *	16,806	235,180
08/24/14	0	75,030	52,363	35,931	1,963	25,025	11,181	0 *	15,625	217,118
08/31/14	0	76,034	53,040	38,554	1,885	24,384	11,008	0 *	13,381	218,285
									Total [Gal.]	1,131,462
Sep '14										
09/07/14	0	77,492	54,257	39,362	1,885	23,301	10,807	0 *	7,623	214,726
09/14/14	0	68,772	48,969	35,494	1,451	20,293	9,528	0 *	5,520	190,028
09/21/14	0	68,224	47,008	30,755	832	5,129 *	8,969	0 *	5,650	166,567
09/28/14	0	55,604	56,693	32,847	843	13,641 *	8,688	0 *	4,964	173,280
									Total [Gal.]	744,601
Oct '14										
10/05/14	0	72,365	47,903	30,815	803	19,588	7,741	0 *	9,551	188,766
10/12/14	0	79,228	46,235	33,831	818	20,494	8,213	0 *	15,291	204,110
10/19/14	0	75,757	46,405	36,015	793	23,126	8,171	0 *	11,144	201,411
10/26/14	0	72,522	46,139	38,522	792	22,518	7,974	0 *	17,480	205,948
									Total [Gal.]	800,235
Nov '14										
11/02/14	0	70,887	46,346	39,259	797	22,234	7,897	0 *	14,091	201,510
11/09/14	0	71,463	46,220	38,723	801	21,558	7,739	0 *	14,422	200,926
11/16/14	0	73,207	47,334	38,861	835	21,202	7,683	0 *	13,554	202,676
11/23/14	0	52,055	51,172	38,222	814	5,394 *	7,731	0 *	4,698 *	160,085
11/30/14	0	47,805	51,502	23,070	698	0 *	8,324	0 *	42,988	174,387
									Total [Gal.]	939,585
Total 6 Mo. Removal (Gal.)	225,545	1,884,325	1,290,034	921,050	47,371	501,830	316,952	23,156	572,736	5,782,999

Notes:
1) * - Flow rate adversely affected by pump failure, pluggage in discharge line, or other maintenance activity
2) ** - Well BR-5A was shut down 8/13/14 due to very low contaminant concentrations

TABLE 7

MASS REMOVAL SUMMARY
PERIOD: JUNE 2014 THROUGH NOVEMBER 2014

ARCH ROCHESTER
FALL 2014 GROUNDWATER MONITORING REPORT

Well	Total Vol. Pumped (gallons)	Avg. VOC Conc. (ppm)	Avg. PYR. Conc. (ppm)	VOCs Removed (pounds)	PYR. Removed (pounds)
BR-5A	226,000	0.005	0.081	0.009	0.15
BR-7A	1,884,000	0.19	18	3.1	286
BR-9	1,290,000	0.016	0.33	0.17	3.5
PW-13	921,000	0.06	3.7	0.46	28.6
PW-14	47,000	1.7	1.4	0.68	0.54
PW-15	502,000	2.2	96	9.1	401
PW-16	317,000	0.44	15	1.2	41
PW-17	23,000	65	50	12	9.6
BR-127	573,000	0.030	9.5	0.14	45
Totals:	5,783,000			27	815

Notes: VOC and pyridine concentrations used in this table are an average of the analytical results from the Spring 2014 and Fall 2014 sampling events for each well;
Total select VOCs include chlorobenzene, PCE, TCE, methylene chloride, carbon tetrachloride, and chloroform

TABLE 8
2015 SAMPLING SCHEDULE
ARCH CHEMICALS, INC.
ROCHESTER, NEW YORK

ARCH ROCHESTER						**2015**					
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-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	semi-annual monitoring, VOCs & PYR	continue until replaced by trench	1	1	1	1	2	2
	B-5	OB	ON-SITE	semi-annual monitoring, VOCs & PYR	perimeter sentinel/trend monitoring	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	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						45	35	33	29	78	64

Revised: 01/30/15

Prepared by: JEB Checked by: NMB

Appendix A

Groundwater Field Sampling Data Sheets

FIELD REPORT

REMEDIAL INVESTIGATION SAMPLING
LONZA CHEMICAL
ROCHESTER, NEW YORK

Fall 2014 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: D. Robert Gill

Reviewed by: Steven L. Marchetti

Date: December 17, 2014

TABLE OF CONTENTS

1.0 INTRODUCTION

This report describes the sampling of the following points:

- 30 groundwater samples
- Two quarry outfall samples
- One quarry seep sample

These activities were in support of the Phase II Remediation Investigation being conducted at the Lonza Chemical facility in Rochester, New York. The samples were collected from November 4 through November 10, 2014 by Matrix Environmental Technologies Inc. (METI) field personnel.

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 flow 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 purges 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 (SamplePro) 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 on the Sampling Summary Table and the Field Observations Forms.

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.

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 present in the Sampling Summary Table and Field Observation Forms.

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 two40 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 including 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. (umhos)	Temp ©	Turb (NTU)	ORP (mv)	DO (ppm)
B-15	On-Site	OB	11/10/2014	9:30	7.48	13.00	8.03	0.45	11.34	67.2	-101	0.58
B-16	Off-Site	OB	11/5/2014	13:30	7.65	13.35	8.13	0.86	14.17	8.5	-205	0.25
B-5	On-Site	OB	11/4/2014	13:25	12.38	18.12	8.09	2.52	18.10	154.0	-115	0.44
BR-105	Off-Site	BR	11/6/2014	11:25	23.34	25.30	10.99	3.18	11.42	28.9	-254	0.68
BR-105D	Off-Site	BR deep	11/6/2014	10:57	25.30	80.50	11.19	8.07	12.19	56.4	-291	1.88
BR-106	Off-Site	BR	11/6/2014	10:17	23.70	18.00	10.16	5.66	10.94	19.4	-378	0.25
BR-126	Off-Site	BR	11/10/2014	8:42	9.75	NM	7.97	0.82	13.79	20.50	-173.00	0.72
BR-127	On-Site	BR	11/5/2014	14:42	NM	NM	8.90	5.10	14.34	0.0	-186	2.97
BR-5A	On-Site	pumping well	11/4/2014	9:27	5.25	pump	8.16	1.79	14.49	64.1	-171	1.10
BR-6A	On-Site	BR	11/5/2014	11:00	15.53	27.40	8.23	7.37	15.95	23.0	-239	0.18
BR-7A	On-Site	pumping well	11/7/2014	12:30	NM	pump	8.26	2.40	13.02	38.2	-210	5.60
BR-8	On-Site	BR	11/4/2014	12:48	11.76	14.80	9.54	7.27	16.80	20.8	-257	0.55
BR-9	On-Site	pumping well	11/6/2014	13:40	NM	pump	11.39	2.70	13.64	72.0	-108	4.30
MW-106	Off-Site	OB	11/6/2014	9:33	12.96	12.48	8.50	5.58	11.03	80.5	-217	0.55
MW-127	On-Site	OB	11/4/2014	14:22	8.06	11.34	8.42	7.23	14.77	13.8	-119	0.45
MW-16	Off-Site	BR	11/6/2014	8:42	11.80	11.95	6.02	10.60	10.55	20.9	-49	5.90
PW-10	On-Site	pumping well	11/4/2014	10:13	10.45	pump	10.39	58.20	15.86	48.4	-254	0.31
PW-12	On-Site	BR	11/4/2014	8:48	7.32	7.90	8.70	0.21	15.89	26.3	-47	1.06
PW-13	On-Site	pumping well	11/10/2014	10:05	NM	pump	8.02	3.28	14.78	1.7	-188	3.40
PW-14	On-Site	pumping well	11/4/2014	11:15	NM	50.50	7.94	3.78	23.75	169.0	-105	1.29
PW-15	On-Site	pumping well	11/10/2014	10:28	NM	pump	10.61	8.38	14.85	0.0	-245	3.08
PW-16	On-Site	pumping well	11/4/2014	12:22	NM	pump	8.23	9.64	18.18	2.1	-124	4.91
PW-17	On-Site	pumping well	11/5/2014	8:53	22.38	38.50	7.83	10.50	12.24	13.9	-231	0.88
PZ-101	Off-Site	BR	11/4/2014	14:55	16.20	21.75	7.67	3.11	17.42	24.0	-125	0.34
PZ-102	Off-Site	BR	11/4/2014	14:16	13.90	32.75	8.07	635.00	16.30	131.0	-172	0.25
PZ-103	Off-Site	BR	11/4/2014	15:28	15.30	32.55	8.01	7.58	17.10	150.0	-368	0.12
PZ-104	Off-Site	BR	11/7/2014	9:57	14.59	23.80	7.92	2.84	12.75	1.3	-185	0.54
PZ-105	On-Site	BR	11/4/2014	10:18	13.28	31.40	8.55	4.21	14.88	262.0	-387	0.21
PZ-106	On-Site	BR	11/5/2014	9:35	11.14	32.20	10.11	3.23	12.99	68.8	-293	0.47
PZ-107	On-Site	BR	11/5/2014	12:05	9.66	27.80	8.03	0.68	14.68	1.2	-163	0.30
QD-1	Quarry/Canal	quarry ditch	11/7/2014	10:45	NA	NA	9.00	1.31	9.30	81.6	6	9.00
QO-2	Quarry/Canal	quarry outfall	11/4/2014	11:15	NA	NA	9.01	0.79	7.74	20.4	17	8.60
QO-2SA	Quarry/Canal	canal at outfall	11/7/2014	11:30	NA	NA	9.13	8.27	0.32	1.1	5	8.90
QS-4	Quarry/Canal	quarry seep	11/7/2014	9:48	NA	NA	8.96	1.22	8.06	7.4	-99	9.04

** Water level at time of sampling

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	11/3/2014	NM	537.75	#VALUE!		Not measured
B-10	On-Site	OB	11/3/2014	NM	538.80	#VALUE!		Not measured
B-11	On-Site	OB	11/3/2014	DRY	536.00	< 521.83		Dry (at 14.17')
B-15	On-Site	OB	11/3/2014	6.38	535.29	528.91		
B-16	Off-Site	OB	11/3/2014	6.98	536.21	529.23		
B-17	On-Site	OB	11/3/2014	9.58	538.74	529.16		
B-2	On-Site	OB	11/3/2014	NM	539.02	#VALUE!		Not measured
B-4	On-Site	OB	11/3/2014		542.87	542.87		
B-5	On-Site	OB	11/3/2014	11.21	540.21	529.00		
B-7	On-Site	OB	11/3/2014	14.88	541.11	526.23		
B-8	On-Site	OB	11/3/2014	NM	538.88	#VALUE!		Not measured
BR-1	On-Site	BR	11/3/2014	NM	537.28	#VALUE!		Not measured
BR-102	On-Site	BR	11/3/2014	NM	539.43	#VALUE!		Not measured
BR-103	Off-Site	BR	11/3/2014	3.80	533.19	529.39		
BR-104	Off-Site	BR	11/3/2014	12.57	537.56	524.99		
BR-105	Off-Site	BR	11/3/2014	22.45	536.90	514.45		
BR-105D	Off-Site	BR deep	11/3/2014	25.63	536.49	510.86		
BR-106	Off-Site	BR	11/3/2014	18.03	535.74	517.71		
BR-108	Off-Site	BR	11/3/2014	28.85	540.58	511.73		
BR-111	Off-Site	BR	11/3/2014	NM	540.42	#VALUE!		Not measured
BR-111D	Off-Site	BR	11/3/2014	NM	540.34	#VALUE!		Not measured
BR-112D	Off-Site	BR deep	11/3/2014	36.32	547.91	511.59		
BR-113	Off-Site	BR	11/3/2014	NM	543.02	#VALUE!		Not measured
BR-113D	Off-Site	BR deep	11/3/2014	31.38	542.93	511.55		
BR-114	Off-Site	BR	11/3/2014	14.21	539.77	525.56		
BR-116	Off-Site	BR	11/3/2014	29.36	545.38	516.02		
BR-116D	Off-Site	BR deep	11/3/2014	35.65	545.22	509.57		
BR-117	Off-Site	BR	11/3/2014	NM	547.61	#VALUE!		Not measured
BR-117D	Off-Site	BR deep	11/3/2014	49.80	547.16	497.36		
BR-118	Off-Site	BR	11/3/2014	NM	547.79	#VALUE!		Not measured
BR-118D	Off-Site	BR deep	11/3/2014	48.80	547.93	499.13		
BR-122D	Off-Site	BR deep	11/3/2014	45.33	552.34	507.01		
BR-123D	Off-Site	BR deep	11/3/2014	45.55	553.62	508.07		
BR-124D	Off-Site	BR deep	11/3/2014	NM	537.45	#VALUE!		Not measured
BR-126	Off-Site	BR	11/7/2014	9.75	537.90	528.15		well under debris
BR-127	On-Site	BR	11/3/2014	7.25	534.80	527.55		pumping
BR-2	On-Site	BR	11/3/2014	NM	538.97	#VALUE!		Not measured
BR-2A	On-Site	BR	11/3/2014	NM	540.36	#VALUE!		Not measured
BR-2D	On-Site	BR deep	11/3/2014	NM	537.26	#VALUE!		Not measured
BR-3	On-Site	BR	11/3/2014	9.70	538.20	528.50		debris in well
BR-3D	On-Site	BR deep	11/3/2014	NM	537.67	#VALUE!		Not measured
BR-4	On-Site	BR	11/3/2014	NM	539.03	#VALUE!		Not measured
BR-5	On-Site	BR	11/3/2014	NM	536.30	#VALUE!		Not measured
BR-5A	On-Site	pumping well	11/3/2014	5.04	536.35	531.31		
BR-6A	On-Site	BR	11/3/2014	13.84	540.90	527.06		
BR-7	On-Site	BR	11/3/2014	NM	539.10	#VALUE!		Not measured
BR-7A	On-Site	pumping well	11/3/2014	22.12	539.12	517.00		pumping
BR-8	On-Site	BR	11/3/2014	11.79	539.72	527.93		
BR-9	On-Site	pumping well	11/3/2014	31.48	542.17	510.69		pumping
C-2A	On-Site	OB	11/3/2014	NM	539.66	#VALUE!		Not measured
C-5	On-Site	OB	11/3/2014	NM	539.63	#VALUE!		Not measured
CANAL	Off-Site	SW	11/3/2014	NM	544.79	#VALUE!		Not measured
E-2	On-Site	OB	11/3/2014	NM	538.32	#VALUE!		Not measured
E-3	On-Site	OB	11/3/2014	4.65	536.59	531.94		
E-5	On-Site	OB	11/3/2014	NM	539.31	#VALUE!		Not measured
EC-2	Off-Site	BR	11/3/2014	NM	542.00	#VALUE!		Not measured
MW-103	Off-Site	OB	11/3/2014	1.88	533.25	531.37		
MW-104	Off-Site	OB	11/3/2014	7.85	537.54	529.69		
MW-105	Off-Site	OB	11/3/2014	NM	536.91	#VALUE!		Not measured
MW-106	Off-Site	OB	11/3/2014	12.80	535.44	522.64		
MW-114	Off-Site	OB	11/3/2014	10.59	539.69	529.10		
MW-127	On-Site	OB	11/3/2014	7.06	536.87	529.81		
MW-16	Off-Site	BR	11/3/2014	11.38	536.79	525.41		
MW-3	Off-Site	OB	11/3/2014	NM	535.89	#VALUE!		Not measured

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	11/3/2014	NM	534.65	#VALUE!		Not measured
MW-G8	Off-Site	OB	11/3/2014	NM	534.25	#VALUE!		Not measured
MW-G9	Off-Site	OB	11/3/2014	NM	536.60	#VALUE!		Not measured
N-2	On-Site	OB	11/3/2014	NM	537.33	#VALUE!		Not measured
N-3	On-Site	OB	11/3/2014	NM	537.38	#VALUE!		Not measured
NESS-E	Off-Site	BR deep	11/3/2014	26.18	540.31	514.13		
NESS-W	Off-Site	BR deep	11/3/2014	31.68	543.04	511.36		
PW-10	On-Site	pumping well	11/3/2014	9.69	538.76	529.07		
PW-12	On-Site	BR	11/3/2014	7.15	537.49	530.34		
PW-13	On-Site	pumping well	11/3/2014	26.26	536.13	509.87		pumping
PW-14	On-Site	pumping well	11/3/2014	45.60	537.03	491.43		pumping
PW-15	On-Site	pumping well	11/3/2014	10.66	538.32	527.66		pumping
PW-16	On-Site	pumping well	11/3/2014	11.69	539.32	527.63		pumping
PW-17	On-Site	pumping well	11/3/2014	NG	NA	#VALUE!		casing locked
PZ-101	Off-Site	BR	11/3/2014	15.53	542.95	527.42		
PZ-102	Off-Site	BR	11/3/2014	13.82	540.89	527.07		
PZ-103	Off-Site	BR	11/3/2014	13.49	540.20	526.71		
PZ-104	Off-Site	BR	11/3/2014	14.50	536.85	522.35		
PZ-105	On-Site	BR	11/3/2014	9.87	536.93	527.06		
PZ-106	On-Site	BR	11/3/2014	9.89	537.24	527.35		
PZ-107	On-Site	BR	11/3/2014	6.36	538.39	532.03		
PZ-109	On-Site	BR	11/3/2014	NM	538.59	#VALUE!		Not measured
PZ-110	On-Site	BR	11/3/2014	NM	NA	#VALUE!		Not measured
PZ-111	On-Site	BR	11/3/2014	NM	NA	#VALUE!		Not measured
W-5	On-Site	OB	11/3/2014		538.53	538.53		

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	12/4/2014	9.65	537.75	528.10	9:30	DTB 17.00
B-10	On-Site	OB	12/5/2014	NM	538.80	-	9:15	Obstruction at 2.16
B-11	On-Site	OB	12/5/2014	5.95	536.00	530.05	9:50	
B-15	On-Site	OB	12/5/2014	NM	535.29	-	15:17	Man lift parked over well
B-16	Off-Site	OB	12/5/2014	6.51	536.21	529.70	15:15	
B-17	On-Site	OB	12/5/2014	7.78	538.74	530.96	9:34	
B-2	On-Site	OB	12/5/2014	NM	539.02	-	9:00	Dry, DTB 7.60
B-4	On-Site	OB	12/5/2014	15.05	542.87	527.82	10:22	
B-5	On-Site	OB	12/5/2014	11.50	540.21	528.71	9:26	
B-7	On-Site	OB	12/5/2014	15.02	541.11	526.09	11:05	
B-8	On-Site	OB	12/5/2014	NM	538.88	-	9:57	Dry, DTB 6.70
BR-1	On-Site	BR	12/5/2014	7.70	537.28	529.58	9:24	DTB 15.60
BR-102	On-Site	BR	12/5/2014	NM	539.43	-	8:57	Dry, DTB 12.20
BR-103	Off-Site	BR	12/5/2014	1.70	533.19	531.49	14:57	
BR-104	Off-Site	BR	12/5/2014	9.03	537.56	528.53	15:06	
BR-105	Off-Site	BR	12/5/2014	33.51	536.90	503.39	11:48	
BR-105D	Off-Site	BR deep	12/5/2014	25.02	536.49	511.47	11:50	
BR-106	Off-Site	BR	12/5/2014	29.50	535.74	506.24	11:59	
BR-108	Off-Site	BR	12/5/2014	25.20	540.58	515.38	12:06	
BR-111	Off-Site	BR	12/5/2014	30.80	540.42	509.62	12:17	DTB 47.40
BR-111D	Off-Site	BR	12/5/2014	37.90	540.34	502.44	12:15	DTB 78.00
BR-112D	Off-Site	BR deep	12/5/2014	45.18	547.91	502.73	12:21	
BR-113	Off-Site	BR	12/5/2014	40.18	543.02	502.84	13:51	DTB 80.00
BR-113D	Off-Site	BR deep	12/5/2014	40.15	542.93	502.78	13:48	
BR-114	Off-Site	BR	12/5/2014	15.08	539.77	524.69	15:01	
BR-116	Off-Site	BR	12/5/2014	31.42	545.38	513.96	14:10	
BR-116D	Off-Site	BR deep	12/5/2014	43.15	545.22	502.07	14:09	
BR-117	Off-Site	BR	12/5/2014	36.30	547.61	511.31	13:28	DTB 42.50
BR-117D	Off-Site	BR deep	12/5/2014	52.73	547.16	494.43	13:29	
BR-118	Off-Site	BR	12/5/2014	25.20	547.79	522.59	13:24	DTB 41.00
BR-118D	Off-Site	BR deep	12/5/2014	52.33	547.93	495.60	13:22	
BR-122D	Off-Site	BR deep	12/5/2014	52.30	552.34	500.04	14:33	
BR-123D	Off-Site	BR deep	12/5/2014	52.70	553.62	500.92	14:27	
BR-124D	Off-Site	BR deep	12/5/2014	39.60	537.45	497.85	14:20	DTB 98.00+
BR-126	Off-Site	BR	12/5/2014	9.95	537.90	527.95	15:13	DTB 17.00
BR-127	On-Site	BR	12/5/2014	6.45	534.80	528.35	9:49	
BR-2	On-Site	BR	12/5/2014	10.24	538.97	528.73	9:38	DTB 12.46
BR-2A	On-Site	BR	12/5/2014	10.20	540.36	530.16	9:39	DTB 13.45
BR-2D	On-Site	BR deep	12/5/2014	10.54	537.26	526.72	9:40	DTB 13.35
BR-3	On-Site	BR	12/5/2014	9.19	538.20	529.01	10:08	debris in well
BR-3D	On-Site	BR deep	12/5/2014	53.50	537.67	484.17	10:10	DTB 65.06
BR-4	On-Site	BR	12/5/2014	NM	539.03	-	9:41	Dry, DTB 2.70
BR-5	On-Site	BR	12/5/2014	4.14	536.30	532.16	9:18	
BR-5A	On-Site	pumping well	12/5/2014	4.51	536.35	531.84	9:02	
BR-6A	On-Site	BR	12/5/2014	15.42	540.90	525.48	9:56	
BR-7	On-Site	BR	12/5/2014	19.70	539.10	519.40	11:01	DTB 20.20
BR-7A	On-Site	pumping well	12/5/2014	21.60	539.12	517.52	10:59	
BR-8	On-Site	BR	12/5/2014	11.95	539.72	527.77	10:25	
BR-9	On-Site	pumping well	12/5/2014	36.61	542.17	505.56	15:27	
C-2A	On-Site	OB	12/5/2014	NM	539.66	-	9:37	Dry, DTB 3.80
C-5	On-Site	OB	12/5/2014	10.45	539.63	529.18	10:09	DTB 13.20
CANAL	Off-Site	SW	12/5/2014	46.00	544.79	498.79	15:50	Top rail, SW corner
E-2	On-Site	OB	12/5/2014	5.95	538.32	532.37	9:43	DTB 6.25
E-3	On-Site	OB	12/5/2014	6.02	536.59	530.57	9:20	
E-5	On-Site	OB	12/5/2014	6.51	539.31	532.80	9:22	DTB 6.82
EC-2	Off-Site	BR	12/5/2014	NM	542.00	-	13:50	Dry, DTB 12.70
MW-103	Off-Site	OB	12/5/2014	3.78	533.25	529.47	14:57	
MW-104	Off-Site	OB	12/5/2014	4.90	537.54	532.64	15:05	
MW-105	Off-Site	OB	12/5/2014	NM	536.91	#VALUE!		Not measured, could not be located
MW-106	Off-Site	OB	12/5/2014	12.31	535.44	523.13	11:58	
MW-114	Off-Site	OB	12/5/2014	10.92	539.69	528.77	15:00	
MW-127	On-Site	OB	12/5/2014	6.58	536.87	530.29	9:48	
MW-16	Off-Site	BR	12/5/2014	11.95	536.79	524.84	14:51	
MW-3	Off-Site	OB	12/5/2014	6.40	535.89	529.49	11:21	DTB 10.25, No plug or lid on well

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	12/5/2014	5.05	534.65	529.60	11:28	DTB 6.30
MW-G8	Off-Site	OB	12/5/2014	7.55	534.25	526.70	11:43	DTB 13.80
MW-G9	Off-Site	OB	12/5/2014	11.29	536.60	525.31	11:40	DTB 16.80
N-2	On-Site	OB	12/4/2014	5.40	537.33	531.93	12:40	DTB 12.30
N-3	On-Site	OB	12/4/2014	7.52	537.38	529.86	10:42	DTB 8.90
NESS-E	Off-Site	BR deep	12/5/2014	31.61	540.31	508.70	14:02	
NESS-W	Off-Site	BR deep	12/5/2014	39.40	543.04	503.64	13:58	
PW-10	On-Site	pumping well	12/5/2014	9.15	538.76	529.61	9:30	
PW-12	On-Site	BR	12/5/2014	7.15	537.49	530.34	9:15	
PW-13	On-Site	pumping well	12/5/2014	17.32	536.13	518.81	10:56	
PW-14	On-Site	pumping well	12/5/2014	21.90	537.03	515.13	10:34	
PW-15	On-Site	pumping well	12/5/2014	8.70	538.32	529.62	10:07	
PW-16	On-Site	pumping well	12/5/2014	12.05	539.32	527.27	10:21	
PW-17	On-Site	pumping well	12/5/2014	23.05	NA	#VALUE!	10:11	
PZ-101	Off-Site	BR	12/5/2014	15.45	542.95	527.50	10:50	
PZ-102	Off-Site	BR	12/5/2014	13.90	540.89	526.99	10:52	
PZ-103	Off-Site	BR	12/5/2014	13.55	540.20	526.65	10:54	
PZ-104	Off-Site	BR	12/5/2014	14.72	536.85	522.13	15:08	
PZ-105	On-Site	BR	12/5/2014	9.99	536.93	526.94	9:58	
PZ-106	On-Site	BR	12/5/2014	9.95	537.24	527.29	10:38	
PZ-107	On-Site	BR	12/5/2014	8.72	538.39	529.67	9:54	
PZ-109	On-Site	BR	12/5/2014	8.81	538.59	529.78	10:06	DTB 16.90
PZ-110	On-Site	BR	12/5/2014	11.98	NA	#VALUE!	10:14	DTB 31.00
PZ-111	On-Site	BR	12/5/2014	8.05	NA	#VALUE!	10:05	DTB 27.30
W-5	On-Site	OB	12/5/2014	7.02	538.53	531.51	10:58	

APPENDIX A
FIELD OBSERVATION FORMS

04-029

Arch 11-4-14
mm 11-10-14

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW 15

SAMPLING INFORMATION

Date/Time 11-10-14 10:20 Water Level at Sampling (ft)

Method of Sampling Pumping well - sample port Dedicated: (Y) / N

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
10:28	14.85	10.61	8.38 mS/cm	0.0	>45	3.0	

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: 44°F sun + clouds

Sample characteristics: Clear but brown colored

Comments and Observations: Chemical odor

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

Date: 11-10-14 by: DK + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW13

SAMPLING INFORMATION

Date/Time 11-10-14 9:55 Water Level at Sampling (ft)

Method of Sampling Sample port, pumping well Dedicated: (Y) / N

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
10:05	14.78	8.02	3.038 mS/cm	1.7	-188	3.40	

INSTRUMENT CALIBRATION/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: 44°F, Cloudy

Sample characteristics: Clear

Comments and Observations:

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

Date: 11-10-14 by: OK + FB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: B15

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-10-14 9AM

Condition of seal: ( ) Good ( ) Cracked Slip cap % over well

( ) None ( ) Buried

Box hit during construction

Riser Bent [redacted]

Prot. Casing/Riser Height: _____

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

( ) loose ( ) flush mount

( ) Damaged No Bolts

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: 10-10-14 9:05

Date/Time Completed: 9:45

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

Riser Diameter (inches) 2" pvc

Initial Water Level (ft): 6.11

Elevation G/W MSL: _____

Well Total Depth (ft): _____

Method of Well Purge _____

One (1) Riser Vol (gal): _____

Dedicated: (Y) N New tube

Total Volume Purged (gal): 22.3 L

Purged to Dryness: Y / N

Purge Observations:

Start Slight Brown tint, cloudy Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
9:10	6.36	250 mL/min		11.91	8.40	0.427	108	-62	6.40	
9:15	6.73	125		11.50	8.07	0.409	75.7	-74	1.49	
9:20	6.94	~~67.5~~ 67.5		11.61	8.04	0.410	81.3	-86	0.92	
9:25	7.10			11.52	8.04	0.441	78.3	-86	0.64	
9:30	7.48			11.34	8.03	0.449	67.2	-101	0.58	
↳ sample										

45°F, overcast

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR12S

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-10-14 8:05

Condition of seal: ( ) Good (✓) Cracked 25 %

Not a good seal on box

( ) None ( ) Buried

Needs a new road box!

Prot. Casing/Riser Height:

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

( ) loose (✓) flush mount

( ) Damaged No Bolts could use a new Box

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: 11-10-14 8:20

Date/Time Completed: 8:54

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

Riser Diameter (inches) 3" Steel

Initial Water Level (ft): 9.64

Elevation G/W MSL:

Well Total Depth (ft):

Method of Well Purge peristaltic

One (1) Riser Vol (gal):

Dedicated: Y / N New tubing

Total Volume Purged (gal): 2 3/3 L

Purged to Dryness: Y / N

Purge Observations:

Start Brown tint, particles ms/cm

Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
8:27	9.72	250 ml/min		12.58	8.10	0.834	105	-132	4.31	
8:32	9.74	125		13.49	8.00	0.822	23.8	-162	1.40	
8:37	9.74	67.5		13.60	7.98	0.822	21	-168	1.19	
8:42	9.75			13.79	7.97	0.819	20.5	-173	0.72	
		→ SAMPLE								

40°F, overcast

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR7A

SAMPLING INFORMATION

Date/Time 11-7-14 12 Water Level at Sampling (ft)

Method of Sampling Pumping well, sampler or Dedicated: Y / N Sample port

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
12:30	13.02	8.26	2.40 mS/cm	38.2	-210	5.60	

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: Light snow 36°F

Sample characteristics: Clean water

Comments and Observations: DTW: 26.00

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

Date: 11-7-14 by: DKtmy Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QO-251

SAMPLING INFORMATION

Date/Time 11-7-14 11:30 Water Level at Sampling (ft) Canal

Method of Sampling Dipped canal w/a clean bucket Dedicated: Y / N

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
11:30	8.27	9.13	0.318 mS/cm	1.1	5	8.90	

INSTRUMENT CALIBRATION/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: 36°F, Snowing

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: 11-7-14 by: DK + MJ Company: Matrix

FIELD OBSERVATIONS

Facility: Loma Sample Point ID: Q02

SAMPLING INFORMATION

Date/Time: 11-4-14 11:10 Water Level at Sampling (ft): Out fall the canal

Method of Sampling: Dipped out fall going into canal Dedicated: Y / (N)

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
11:15	7.74	9.01	0.787mS/cm	20.4	17	8.60	

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: 36°F, Snow

Sample characteristics: Clear, slight yellow/Brown tint

Comments and Observations:

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

Date: 11-7-14 by: DK & MJ Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: QD1

SAMPLING INFORMATION

Date/Time 11-7-14 10:15 Water Level at Sampling (ft) —

Method of Sampling Dipped into ditch upstream of QD1 Dedicated: Y / (N)

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
10:45	9.30	9.00	1.31 mS/cm	91.6	6	9.00	

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: 36°F Rain + Snow

Sample characteristics: Clear, slight cloudiness

Comments and Observations:

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

11-7-14 by: DK + MJ Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: Quarry Seep

SAMPLING INFORMATION

Date/Time 1/7-14 9:30 Water Level at Sampling (ft)

Method of Sampling Water pouring out of rock wall Dedicated: Y / (N)

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
9:48	8.06	8.96	122 mS/cm	7.4	-99	9.04	

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: 35°F, Rain + Snow

Sample characteristics: Clear

Comments and Observations:

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

Date: 1/7-14 by: DK + MJ Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PZ104

Field Personnel: DK + MJ Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-7-14 8:20 Condition of seal: (✓) Good ( ) Cracked ~~Could use a new plug~~

( ) None ( ) Buried No Bolts

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: 11-7-14 8:32 Date/Time Completed: 9:15

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

Initial Water Level (ft): 14.52 Elevation G/W MSL: _____

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

One (1) Riser Vol (gal): _____ Dedicated: (Y) / N New tube

Total Volume Purged (gal): 2.5 L Purged to Dryness: Y / (N)

Purge Observations: Start Clear Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos~~/cm)	Turb. (NTU)	ORP	DO	Other
8:37	14.60	175 ml/min		10.53	8.05	2.88	9.9	-150	2.70	
8:42	14.60			12.73	7.93	2.84	5.6	-172	>.84	
8:47	14.59	67.5		12.90	7.92	2.84	3.2	-176	0.88	
9:52	14.59			12.93	7.91	2.84	0.0	-184	0.57	
9:57	14.59			12.75	7.92	2.84	1.3	-185	0.59	
↳ Sample										

35°F Rain/Snow

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW16

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-6-14 8:30

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose (✓) flush mount

( ) Damaged NO Bolts

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: 11-6 8:40

Date/Time Completed: 9:05

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 11.39

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N ~~New tube, Lowest depth~~

Total Volume Purged (gal): ____

Purged to Dryness: (Y) / N

Purge Observations:

Start Clear Finish ____

PURGE DATA (if applicable)

mS/cm

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
8:42	11.80	125 mL/min		10.55	6.02	10.6	20.9	-49	5.90	
Well dry @ 8:45, Began sample, small amounts of water coming in.										
	Amber Filled apx. 90%									

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: MW106

Field Personnel: DK + RB Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-6-14 9:08 Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged No Bolts

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: 11-6 9:13 Date/Time Completed: 9:50

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

Initial Water Level (ft): 12.54 Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ Dedicated: (✓) N New tubes left at well

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

Purge Observations: Start Black Cloudy Finish same

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
9:14	12.80			X						
9:19	13.23	125mL/min		11.50	8.76	5.64mS/cm	184	-168	2.60	
9:24	13.05	67.5		11.23	8.70	5.55	97	-197	1.01	
9:28	13.02			11.16	8.67	5.52	67.9	-205	0.73	
9:33	12.96			11.03	8.65	5.58	60.5	-217	0.55	
↳	SAMPLE									

38°F, light rain

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR106

Field Personnel: DKYPB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-6-14 9:50 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) Good ( ) loose (✓) flush mount ( ) Damaged NO BOLTS

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: 11-6 9:51 | Date/Time Completed: 10:32

Surf. Meas. Point: (✓) Pro Casing ( ) Riser | Riser Diameter (inches) 6" Steel

Initial Water Level (ft): ~~11.50~~ tip of probe touching ~~up~~ down well | Elevation GW MSL: ____

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

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

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

Purge Observations: | Start By lock Finish same

cloudy, small particles

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
9:59	23.70			10.09	10.25	5.68 mS/cm	57.7	-292	2.66	
10:02	23.70			↓	↓	↓	↓	↓	↓	
10:07	23.70			10.55	10.21	5.71	49.4	-367	0.79	
10:12	23.70			10.88	10.18	5.68	17.8	-378	0.39	
10:17	23.70			10.94	10.16	5.66	19.4	-378	0.25	
↳	54 mpl	p								

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: DR 11/6/105D

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-6-14 10:40

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: 10:44

Date/Time Completed: ____

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 22.46

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Bailer

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N New Bailer

Total Volume Purged (gal): ____

Purged to Dryness: Y / N

Purge Observations:

Start Lt Brown Cloudy Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
10:47	25.30	unable to draw water up w/ Bailer								
10:57				12.19	11.19	8.07 mS/cm	564	-29.1	1.88	

40°F, Rain

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR105

Field Personnel: DK+PB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11:00 AM 11-6-14 | Condition of seal: (✓) Good ( ) Cracked ____ %

( ) None ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked ( ) Good ( ) loose (✓) flush mount ( ) Damaged No Bolts

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: 11-6-14 11:01 AM | Date/Time Completed: 11:40

Surf. Meas. Point: (✓) Pro Casing ( ) Riser | Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 22.45 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): 3.5L | Dedicated: (Y) N New tube.

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

Purge Observations: | Start Clear Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
11:05	23.34	125mL/min		11	11.08	5 mS/cm	172	-283	1.87	
11:10	23.34			11.56	11.04	3.47	68.6	-260	1.10	
11:15	↓			11.46	11.01	3.25	59.4	-255	0.83	
11:20				11.43	10.99	3.19	26.5	-254	0.69	
11:25	↓			11.42	10.99	3.18	28.9	-254	0.68	
Lg Sample										

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: BR9

SAMPLING INFORMATION

Date/Time 11-6-14 Mo 13:30 Water Level at Sampling (ft) Pumping

Method of Sampling Pumping well Dedicated: (Y) N

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
13:40	13.64	11.39	2.71 mS/cm	72	-108	4.30	

INSTRUMENT CALIBRATION/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: 40°F Rain

Sample characteristics: Clear

Comments and Observations:

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

Date: 11-6-14 by: DK + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Loaza Sample Point ID: BR127

SAMPLING INFORMATION

Date/Time 11-5-14 14:35 Water Level at Sampling (ft) pumping, extraction tubing

Method of Sampling Pumping well Dedicated: ⊗/⊗ Discharge

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

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
14:42	14.34	8.90	5.10 mS/cm	0.0	186	2.97	

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: 45°F, Sunny, windy

Sample characteristics: Clear, slightest yellow tint

Comments and Observations:

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

Date: 11-5-14 by: DK + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: MW27

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-15 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: 14:04

Date/Time Completed: ~~15~~ 14:30

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 7.45

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol ~~(gal):~~ 2.5L

Dedicated: (Y) / N new tube, leave at well

Total Volume Purged (gal): ____

Purged to Dryness: Y / N

Purge Observations:

Start Clear Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/htz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
14:07	7.84	125 mL/min		14.34	8.50	7.02 mS/cm	19	-79	2.67	
14:12	7.95			14.56	8.42	7.21	17.8	-85	1.21	
14:17	8.04			14.72	8.40	7.22	14	-109	0.63	
14:22	8.06			14.77	8.42	7.23	13.8	-119	0.45	
↳	SAMPLE									

C15', Sun + clouds, windy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: B16

Field Personnel: DK + PB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 13:00 | Condition of seal: ( ) Good ( ) Cracked ____ %
(✓) ~~None~~ ( ) Buried

Prot. Casing/Riser Height: ____ | Condition of Prot. Casing/Riser: ( ) unlocked (✓) ~~Good~~
( ) loose ( ) flush mount
( ) Damaged No Bolts

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: 11-5-14 13:12 | Date/Time Completed: 13:40

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

Initial Water Level (ft): 6.93 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N New tubing, left in well

Total Volume Purged (gal): 2.5L | Purged to Dryness: Y / N

Purge Observations: | Start Clear | Finish ____

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~) mL/min	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~) mS/cm	Turb. (NTU)	ORP	DO	Other
13:15	7.41	~~0~~ 250		14.29	8.17	0.785	22.4	-184	3.22	
13:20	7.64	125		14.24	8.11	0.788	8.2	-206	0.76	
13:25	7.67			14.21	8.10	0.833	10.2	-204	0.46	
13:30	7.65			14.17	8.13	0.86	8.5	-205	0.25	
Sample										

45°F, Sun + clouds, windy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ107

Field Personnel: DC

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 11:30

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: 11-5 11:47

Date/Time Completed: 12:15

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 9.37

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge ____

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N we switching, left well

Total Volume Purged (gal): 2L

Purged to Dryness: Y / (N)

Purge Observations:

Start clear, tiny particles Finish clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/lutz~~ mL/min)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
11:49	9.80	250		15.48	8.39	2.50	36.4	-150	2.05	
11:55	9.71	125		14.85	8.03	1.14	18.6	-155	0.78	
12:00	9.70	67.5		14.79	8.01	0.729	4.0	-159	0.41	
12:05	9.66			14.68	8.03	0.694	1.2	-163	0.30	
↳	sample									

45°F cloudy + windy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: BR6A

Field Personnel: DK+PB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 10:32 | 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: 11-5-14 10:37 | Date/Time Completed: 11:15

Surf. Meas. Point: (✓) Pro Casing ( ) Riser | Riser Diameter (inches) 4" Steel

Initial Water Level (ft): 14.24 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N Newtube to leave at well

Total Volume Purged ~~(gal)~~: ≥ 2/3 L | Purged to Dryness: Y / (N)

Purge Observations: | Start Black/cloudy Finish Brown, tiny particles

PURGE DATA (if applicable) Horiba Meter msrm

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
10:40	14.50			15.5	8.25	7.04	320	-171	3.94	
10:45	14.55	125 mL/min		15.59	8.17	7.39	250	-207	1.13	
10:50	14.91			15.78	8.20	7.40	191	-228	0.53	
10:55	15.21	<125 mL/min		15.77	8.22	7.37	46.9	-237	0.29	
11:00	15.53			15.95	8.23	7.37	23	-239	0.18	
↳ sample										

64°F, Sunny, windy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: DZ105

Field Personnel: DK + DB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 9:50 | 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: 11-4-14 9:54 | Date/Time Completed: 10:30

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

Initial Water Level (ft): 9.60 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ | Dedicated: (✓) N New tube to leave at well

Total Volume Purged (gal): 2.75 L | Purged to Dryness: Y / N

Purge Observations: Start very cloudy, Black | Finish cleaner, Black particles

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
9158	10.95	250 mL/min		13.32	8.67	3.92 mS/cm	1000	-334	1.81	
10:03	11.58	125		14.05	8.57	4.21	854	-370	0.79	
10:08	12.10	<125		14.37	8.54	4.24	555	-391	0.45	
10:13	12.85			14.52	8.56	4.23	380	-380	0.33	
10:18	13.28			14.88	8.55	4.21	262	-387	0.21	
↳ Sample										

44°F, Sunny, Windy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ106

Field Personnel: OK + DB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 9:08

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: 11-5 9:12

Date/Time Completed: 9:45

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 9.70

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N New tube, leave at well

Total Volume Purged ~~(gal)~~: 3 1/4 L

Purged to Dryness: Y / (N)

Purge Observations:

Start Brown tint, Black particles

Finish Clear, yellow tint, Black particles

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm)	Turb. (NTU)	ORP	DO	Other
9:15	10.66	250 ml/min		12.37	9.92	3.35 ms/cm	159	-252	3.4	
9:20	11.02	125		13.29	10.14	3.18	200	-276	1.54	
9:25	11.24			13.27	10.16	3.18	115	-292	0.80	
9:30	11.19			13.19	10.13	3.20	89.4	-303	0.59	
9:35	11.14	<125		12.99	10.11	3.23	68.8	-293	0.47	
↳	Sample									

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW17

Field Personnel: DK+PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-5-14 8:30

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

(✓) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose ( ) flush mount

( ) Damaged Insulated box over well

Locked out

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: 8:36

Date/Time Completed: 9:06

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

Riser Diameter (inches) 6" steel

Initial Water Level (ft): 22.25

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (✓) N new tube, leave at well

Total Volume Purged (gal): 1.75 L

Purged to Dryness: Y / (✓)

Purge Observations:

Start Blackish tint Finish Slight yellow tint

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/ml/z~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
8:38	22.30	250mL/min		12.02	7.99	10.4mS/cm	20.3	-193	4.06	
8:43	22.34	250		12.59	7.82	10.5	15.7	-216	1.60	
8:48	22.36	125		12.36	7.83	10.5	14.5	-223	1.22	
8:53	22.38	<125		12.24	7.83	10.5	13.9	-231	0.88	
→	SAMPLE									

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: ~~MW~~ PZ103

Field Personnel: OK+PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-11 15:08

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

( ) None ( ) Buried

Prot. Casing/Riser Height: ____

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

( ) loose ( ) flush mount

( ) Damaged Lid broken at tab

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: 11-4-11 15:10

Date/Time Completed: 15:40

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 13.34

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N new tubing, will leave

Total Volume Purged (gal): 2.125 L

Purged to Dryness: Y / N

Purge Observations: Start Cloudy/dark Brown Finish Clear, slight tint, particles

PURGE DATA (if applicable) Horrible odor

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos~~/cm)	Turb. (NTU)	ORP	DO	Other
15:13	14.15	250mL/min		18.07	8.08	6.98	209	-209	3.39	
15:18	14.75	125mL/min		17.65	8.01	7.39	196	-310	0.74	
15:23	15.08			17.21	8.01	7.55	171	-350	0.35	
15:28	15.30			17.10	8.01	7.58	150	-368	0.12	
↳ Sample										

58°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PZ101

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 14:30

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: 11-4-14 14:32

Date/Time Completed: 15:05

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

Riser Diameter (inches) 2" PVC

Initial Water Level (ft): 15.36

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) N New tube, leave it in well

Total Volume Purged (gal): 2.5 L

Purged to Dryness: Y / (N)

Purge Observations:

Start Clear Finish Clear

PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/btz)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
14:24	15.78	250 ML/min		18.02	8.23	3.47 ms/cm	324	-110	2.38	
14:39	15.88	125 ml/min		17.46	7.71	3.08	72	-100	0.92	
14:44	15.98			17.36	7.69	2.98	34.7	-96	0.64	
14:49	16.08			17.35	7.68	3.03	27.1	-109	0.46	
14:55	16.20			17.42	7.67	3.11	24	-125	0.34	
↳ Sample										

60°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: P2102

Field Personnel: DK+PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 13:53

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: 11-4-14 13:54

Date/Time Completed: 14:28

Surf. Meas. Point: (✓) ~~Prot Casing~~ (✓) Riser

Riser Diameter (inches) 2"

Initial Water Level (ft): 13.80

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (✓) N New tube, left in well

Total Volume Purged ~~(gal)~~: 3.5L

Purged to Dryness: Y / (✓) N

Purge Observations:

Start Brwn, cloudy Finish Clearer, Brwn/Yellow tint, particles

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (gpm/htz)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
13:56	13.93	250mL/min		18.62	8.16	5.53 ms/cm	0.0	-152	3.45	
14:01	13.89	125 ml/min		17.03	8.06	6.15 ms/cm	821	-163	0.96	
14:06	13.89			16.51	8.07	6.29	392	-164	0.67	
14:11	13.90			16.28	8.07	6.37	154	-169	0.46	
14:16	13.90			16.30	8.07	6.35	131	-172	0.25	
↳	Sample									

58°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza | Sample Point ID: B5

Field Personnel: DK+PB | Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 1-4-14 13:00 | 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: 1-4-14 13:00 | Date/Time Completed: 1-4-14 13:37

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

Initial Water Level (ft): 11.34 | Elevation G/W MSL: ____

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

One (1) Riser Vol (gal): ____ | Dedicated: (Y) / N new tube, will leave

Total Volume Purged (~~gal~~): 2.70L | Purged to Dryness: Y / (N)

Purge Observations: | Start Brown tint. Finish Cloudy, Brown tint

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/hr~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
1:04	12.25	125ml/min		8.04	9.00	2.80ms/cm	0.0	-141	2.99	
1:09	12.27			17.96	8.17	2.47	693	-119	0.98	
1:14	12.29			17.95	8.12	2.45	337	-127	0.61	
1:19	12.37			18.02	8.08	2.50	153	-110	0.58	
1:25	12.38			18.10	8.09	2.52	154	-115	0.44	
↳	SAMPLE									

56°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR8

Field Personnel: DK+PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 12:26

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

( ) None ( ) Buried

Metal Lid

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: 11-4-14 12:30

Date/Time Completed: 12:58

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 11.68

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) N New tubing

Total Volume Purged (gal): 3L

Purged to Dryness: Y (N)

Purge Observations:

Start Clear, Brown tint mS/cm

Finish Yellow tint, tiny Brown specs

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
12:33	11.73	250 mL/min		17.54	9.53	7.90	27.6	-149	3.13	
12:38	11.76	250		17.01	9.54	7.28	24.7	-169	1.01	
12:43	11.76	125		16.83	9.52	7.27	23.2	-209	0.71	
12:48	11.76			16.80	9.54	7.27	20.8	-257	0.55	
↳	Sample									

54°F, Cloudy, Windy

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW16

SAMPLING INFORMATION

Date/Time 11-4-14 Water Level at Sampling (ft) pumping well

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 (umhos/cm)	Turb. (NTU)	ORP	DO	Other
12:22	18.18	8.23	9.64 ms/cm	2.1	-129	4.91	

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: 54°F, cloudy, windy

Sample characteristics: Clear, trace black particles

Comments and Observations:

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

Date: 11-4-14 by: DK + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza Sample Point ID: PW14

SAMPLING INFORMATION

Date/Time 11-4-14 11:15 Water Level at Sampling (ft) pumping

Method of Sampling pumping well Dedicated: Y (N)

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

→ sample port Hot Box Enclosure

SAMPLING DATA

Time	Temp (C)	pH (SU)	Conductivity ~~(umhos/cm)~~	Turb. (NTU)	ORP	DO	Other
11:15	23.75	7.94	3.78 mS/cm	169	-105	1.29	

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: 52°F Cloudy

Sample characteristics: Particles, Light Brown tint

Comments and Observations:

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

Date: 11-4-14 by: DK + PB Company: Matrix

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW10

Field Personnel: DK + PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 9:45 AM

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

( ) None ( ) Buried

No plug

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

Horiba Meter

Date/Time Initiated: 11-4-14 9:50

Date/Time Completed: 10:26

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

Riser Diameter (inches) 6" Steel

Initial Water Level (ft): 9.60

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N New tube, leave in well

Total Volume Purged (gal): 2.75L

Purged to Dryness: Y / N

Purge Observations:

Start Yellow tint sheen, m/cm

Finish Yellow/Amber tint Clean

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/btz~~)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~)	Turb. (NTU)	ORP	DO	Other
9:52	9.78	125mL/min		14.90	10.26	57.8	74	-225	2.15	
9:57	10.00			15.44	10.42	60.6	64.3	-251	0.80	
10:02	10.04			15.71	10.41	59.7	56	-253	0.51	
10:07	10.25			15.76	10.41	59.4	52.5	-253	0.44	
10:12	10.45			15.86	10.39	58.2	48.4	-254	0.31	
10:13	SAMPLE									

Reaction in VOA's to HCl, water turned white.

50°F, Cloudy

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: BR5A

Field Personnel: ORT PB

Sample Matrix: Peristaltic - GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 9AM

Condition of seal: Hot Box Enclosure ( ) Good ( ) Cracked ____ %

(✓) None ( ) Buried

old PW, not pumping

( ) unlocked ( ) Good

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) 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: 11-4 9:07 AM

Date/Time Completed: 9:38

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

Riser Diameter (inches) 6"

Initial Water Level (ft): 5.08

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: ✓ / N - new tube, leave in well

Total Volume Purged (gal): 2 L

Purged to Dryness: Y / N

Purge Observations:

Start clear Finish very slight tint, a few orange specs

PURGE DATA (if applicable)

Time	Water Level	Purge Rate (~~gpm/htz~~ mL/min)	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (~~umhos/cm~~ mS/cm)	Turb. (NTU)	ORP	DO	Other
9:10	5.10	125		14.33	8.09	1.06	87	-119	9.12	
9:15	5.15	125		14.41	8.08	1.25	72.6	-158	2.68	
9:20	5.21	125		14.45	8.13	1.78	66.7	-168	1.71	
9:25	5.25	125		14.49	8.16	1.79	64.1	-171	1.10	
9:27	SAMPLE									

50°F, overcast

FIELD OBSERVATIONS

Facility: Lonza

Sample Point ID: PW12

Field Personnel: DKC+PB

Sample Matrix: GW

MONITORING WELL INSPECTION

Date/Time: 11-4-14 8:20AM

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

(✓) unlocked ( ) Good

Prot. Casing/Riser Height: ____

Condition of Prot. Casing/Riser: ( ) 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: 11-4-14 8:28AM

Date/Time Completed: 8:57AM

Surf. Meas. Point: (✓) Pro Casing ( ) Riser 6" Steel

Riser Diameter (inches) 6"

Initial Water Level (ft): 7.19

Elevation G/W MSL: ____

Well Total Depth (ft): ____

Method of Well Purge Peristaltic

One (1) Riser Vol (gal): ____

Dedicated: (Y) / N - Leaving tubing in well

Total Volume Purged ~~(gal):~~ 2.5L

Purged to Dryness: Y / (N)

Purge Observations:

Start Clear Finish Slight Brown Tint

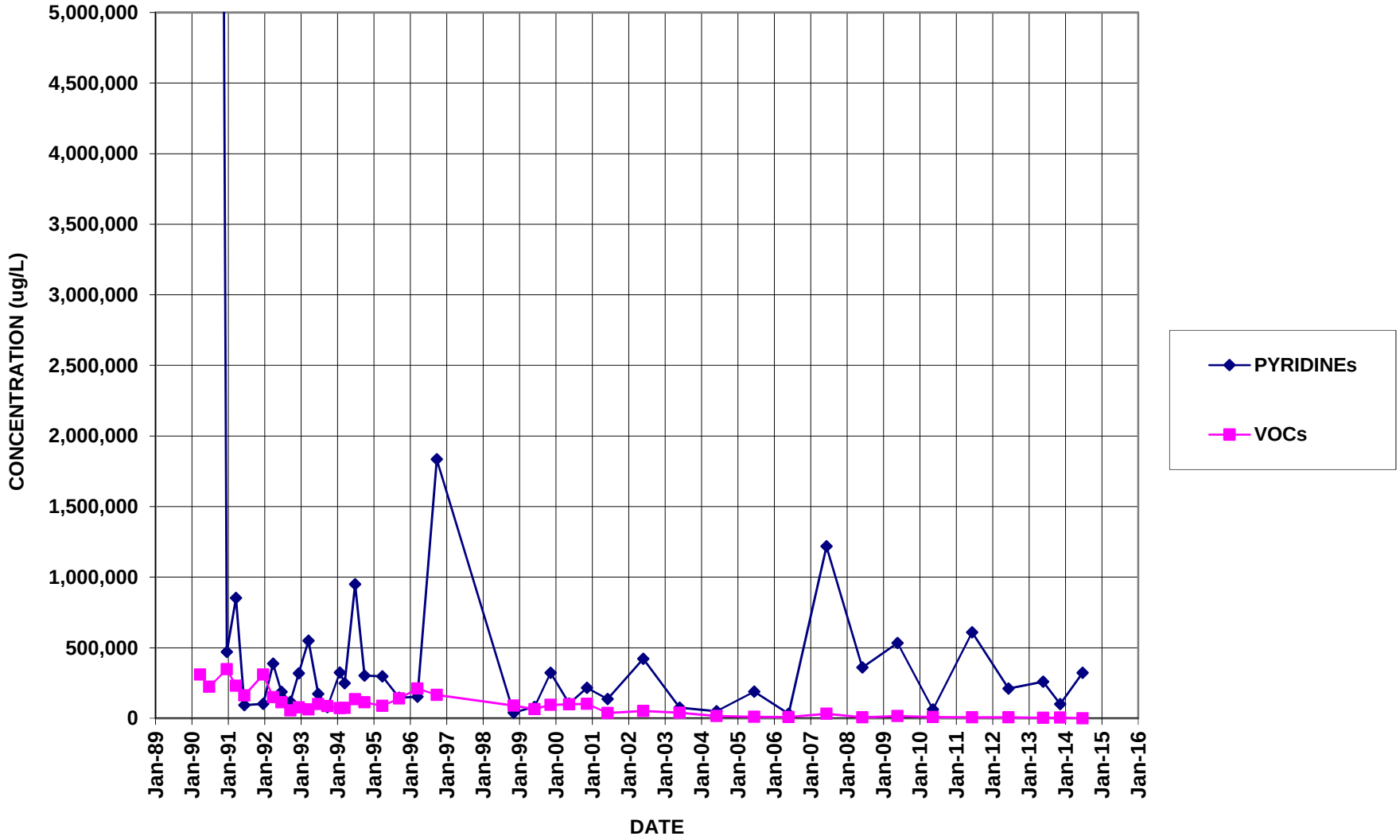
PURGE DATA (if applicable)

Time	Water Level	Purge Rate ~~(gpm/hr)~~	Cumulative Volume	Temp (C)	pH (SU)	Conductivity (umhos/cm) mS/cm	Turb. (NTU)	ORP	DO	Other
8:31	7.31	250 mL/min		15.25	7.48	0.218	20	163	4.01	
8:36	7.32	250		15.60	7.94	0.220	32.8	102	1.79	
8:41	7.32	200		15.70	8.29	0.215	37.5	27	1.29	
8:46	7.32	200		15.89	8.70	0.211	26.3	~~97~~	1.06	
8:48	Sample									

Appendix B

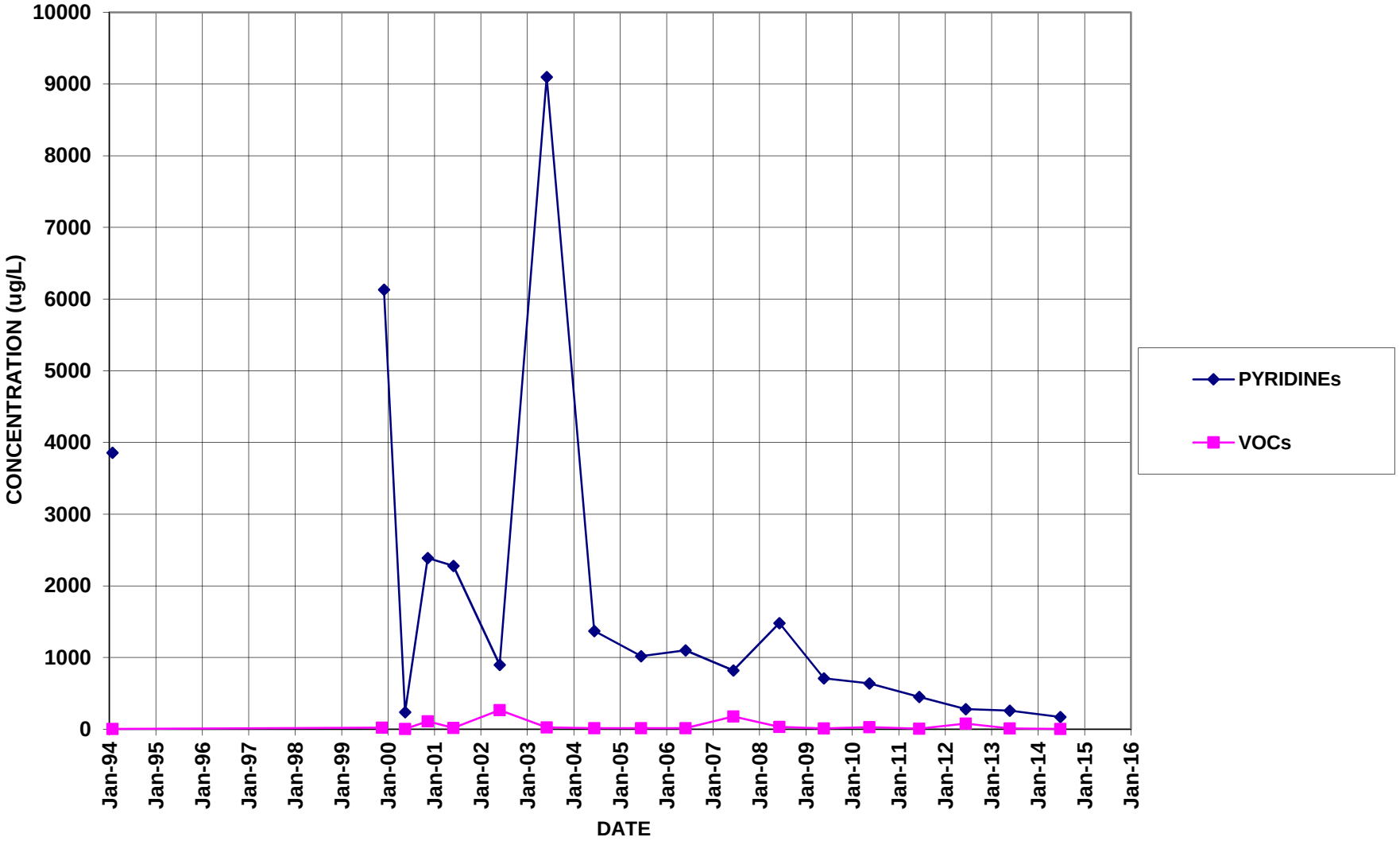
Well Trend Data

B-17



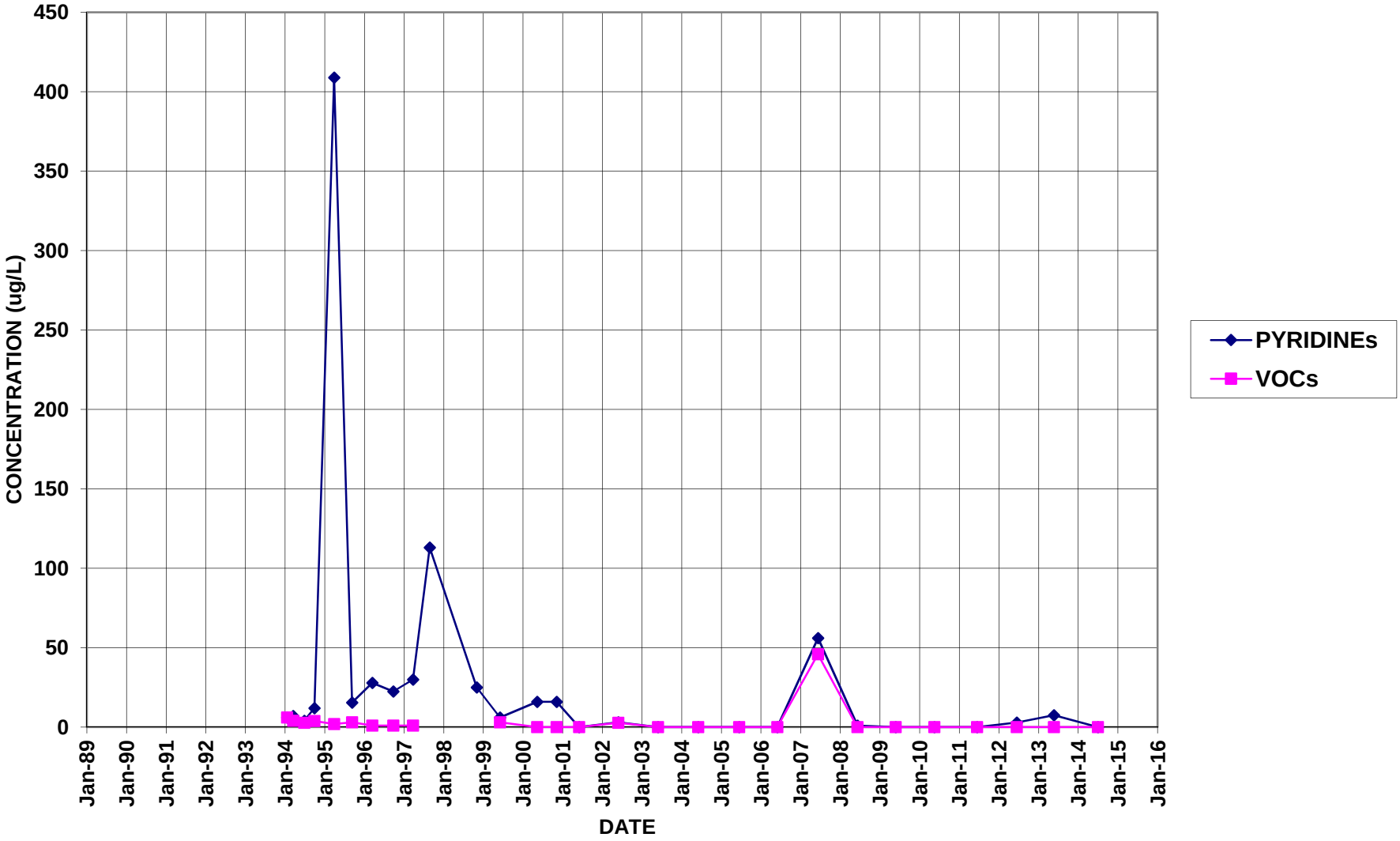
Prepared by: jeb
Reviewed by: nmb

B-7



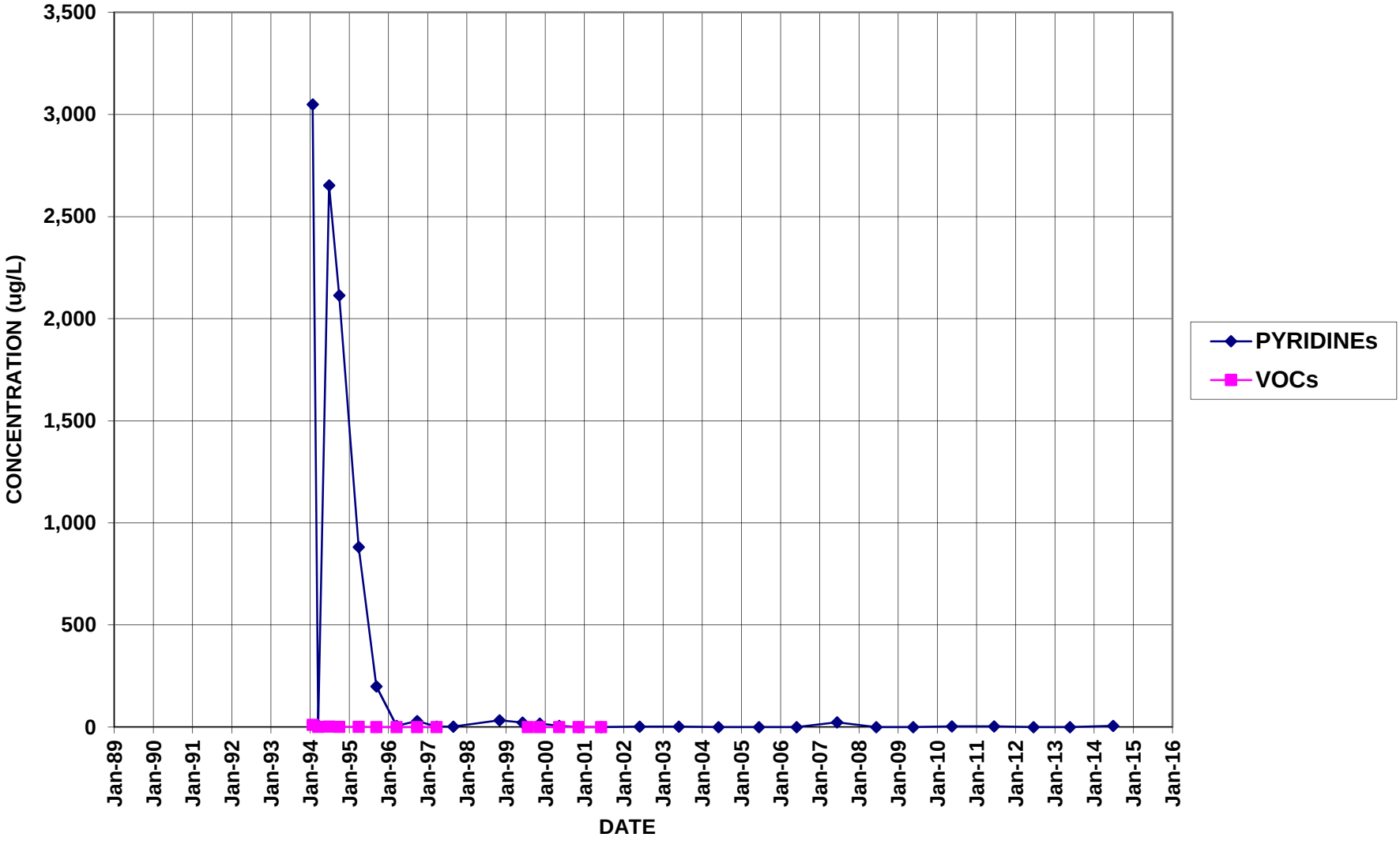
Prepared by: nmb
Reviewed by: jeb

BR-103

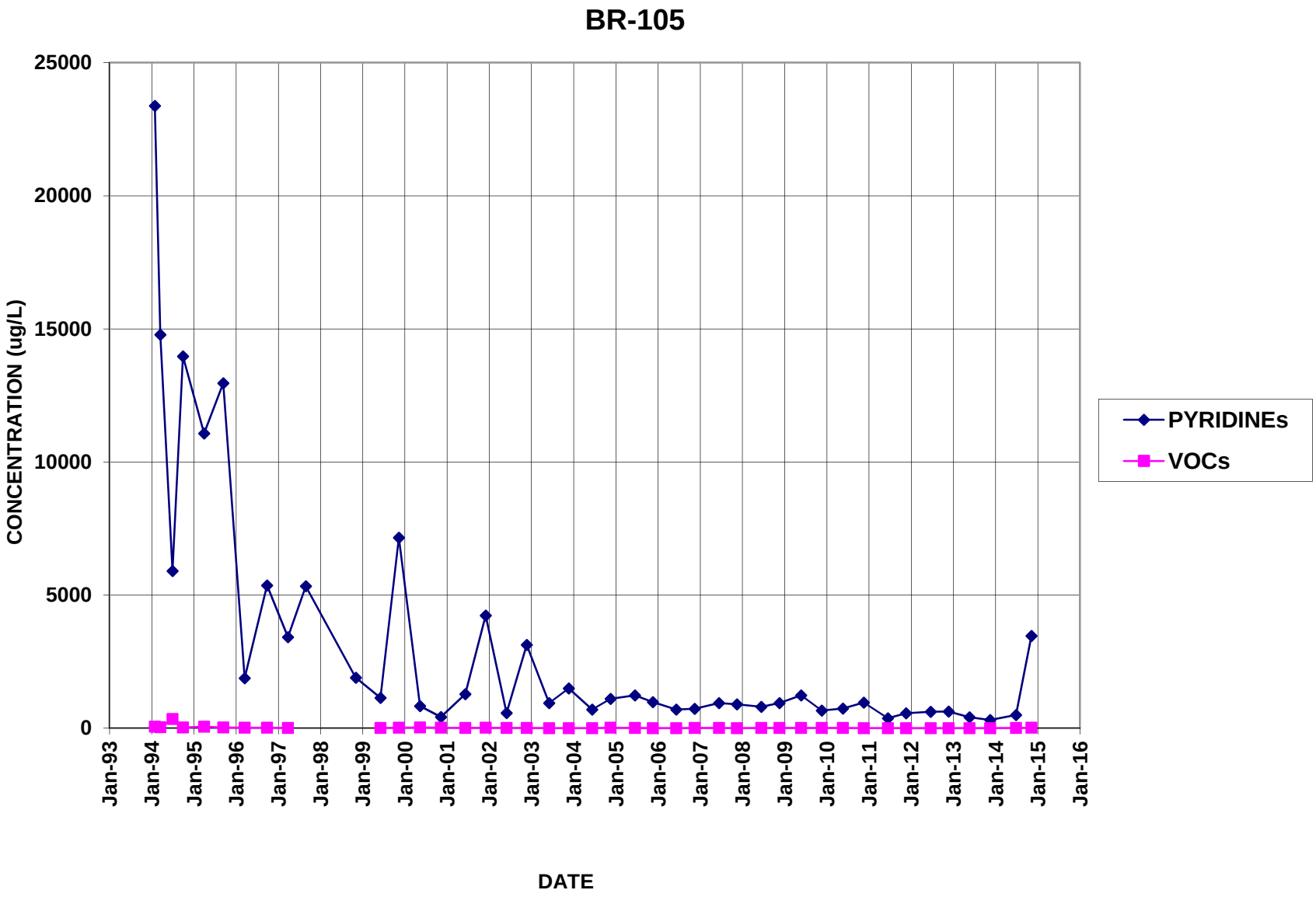


Prepared by: nmb
Reviewed by: jeb

BR-104

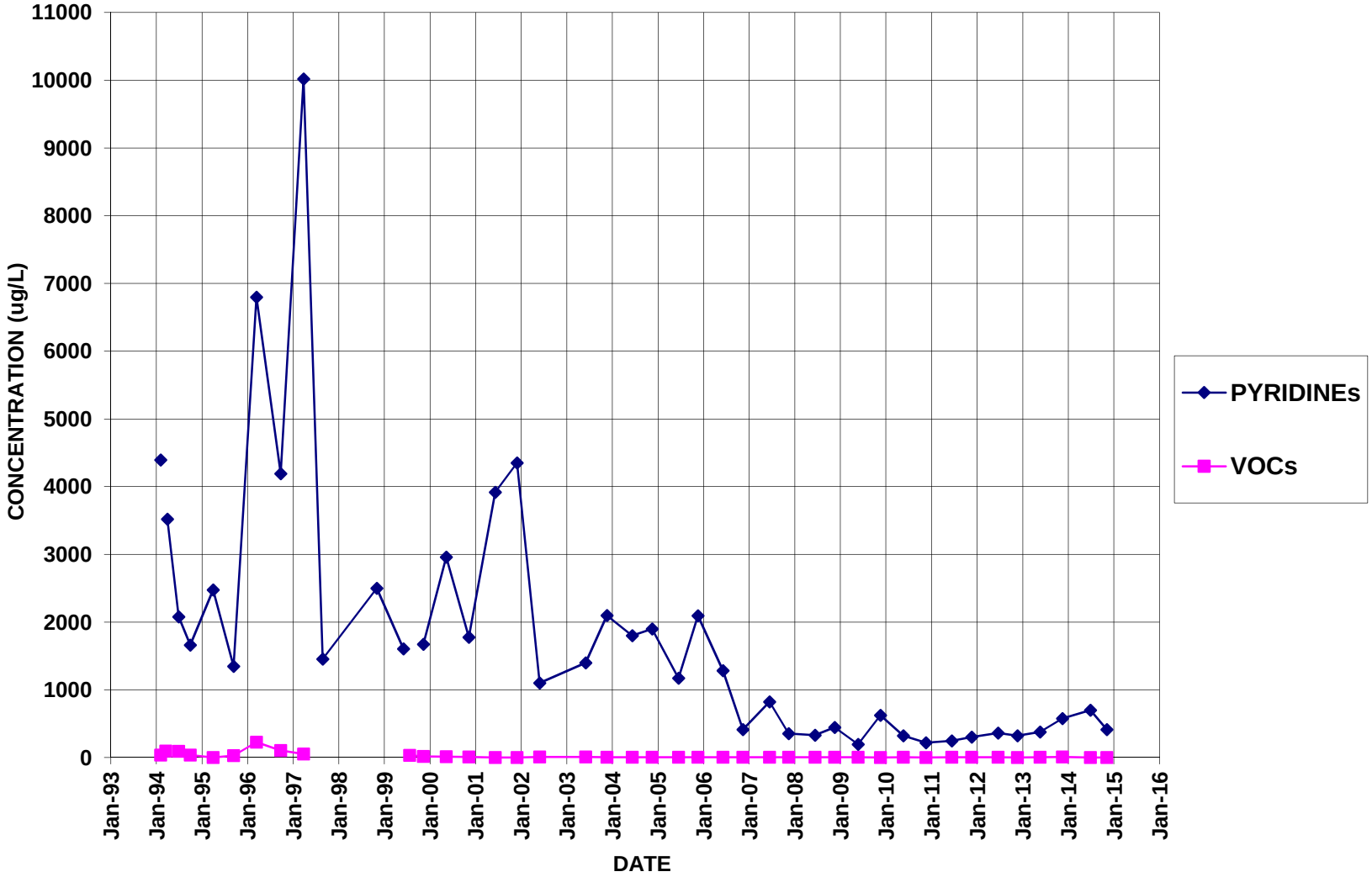


Prepared by: nmb
Reviewed by: jeb



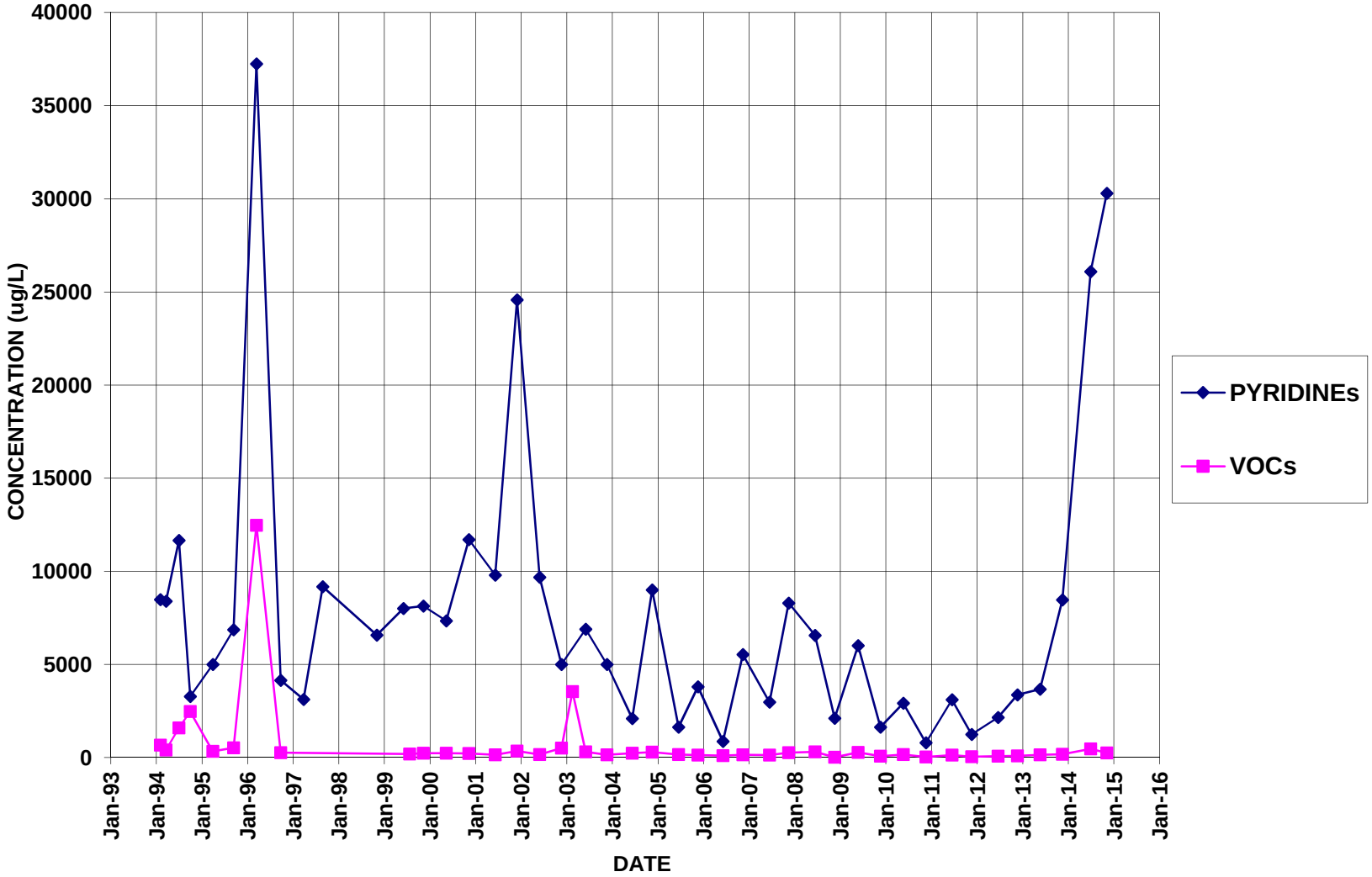
Prepared by: nmb
Reviewed by: jeb

BR-105D



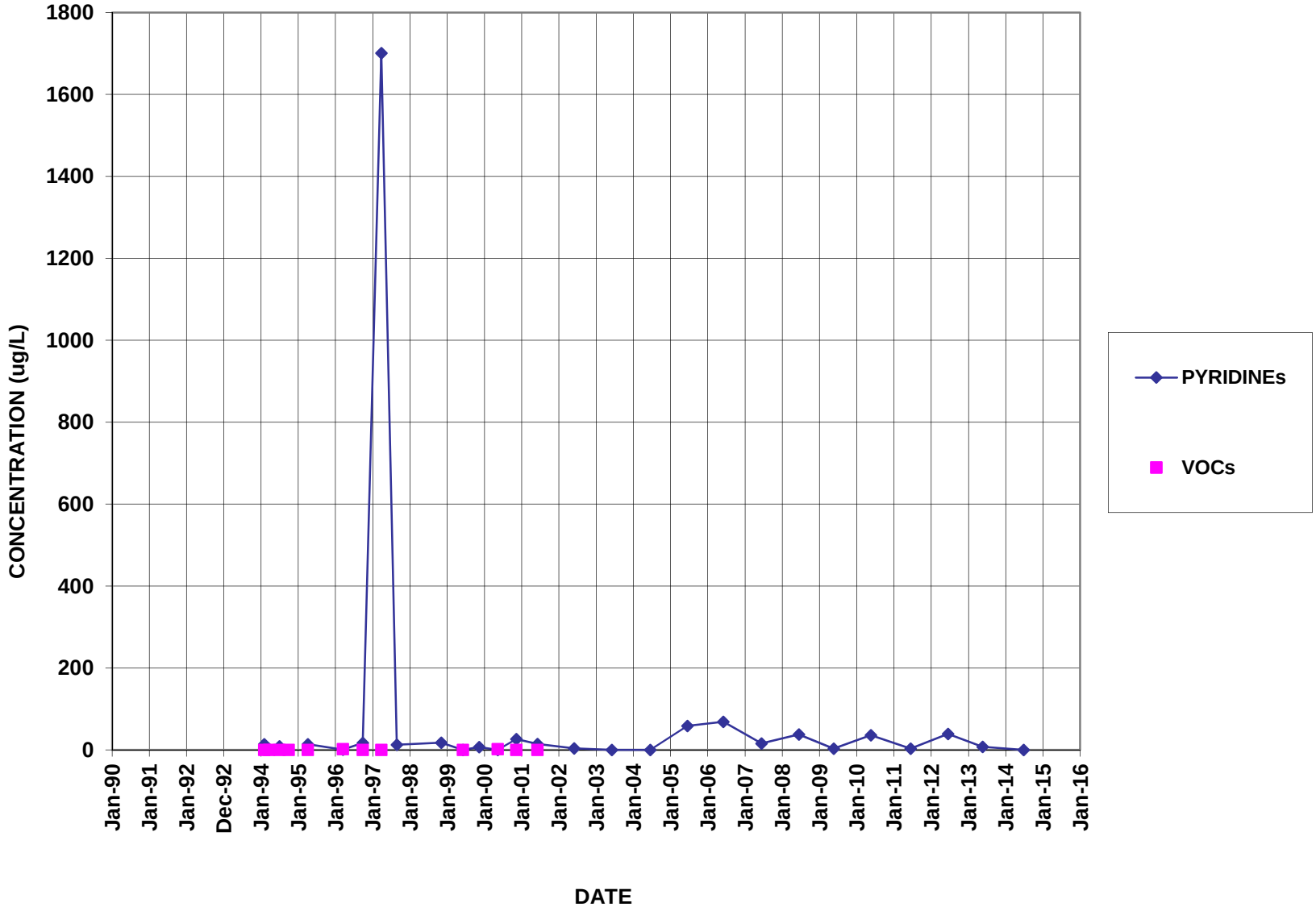
Prepared by: nmb
Reviewed by: jeb

BR-106



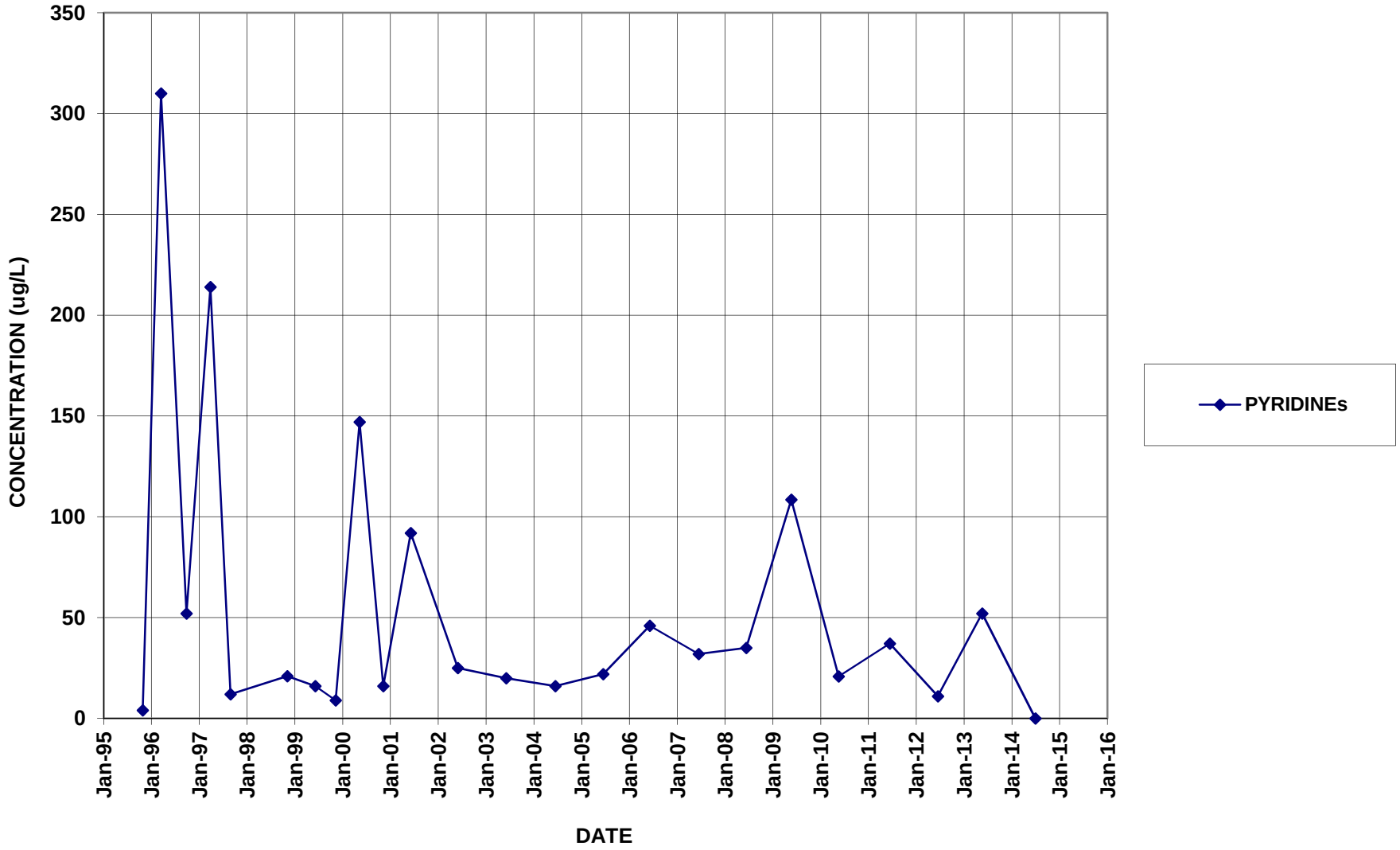
Prepared by: nmb
Reviewed by: jeb

BR-108



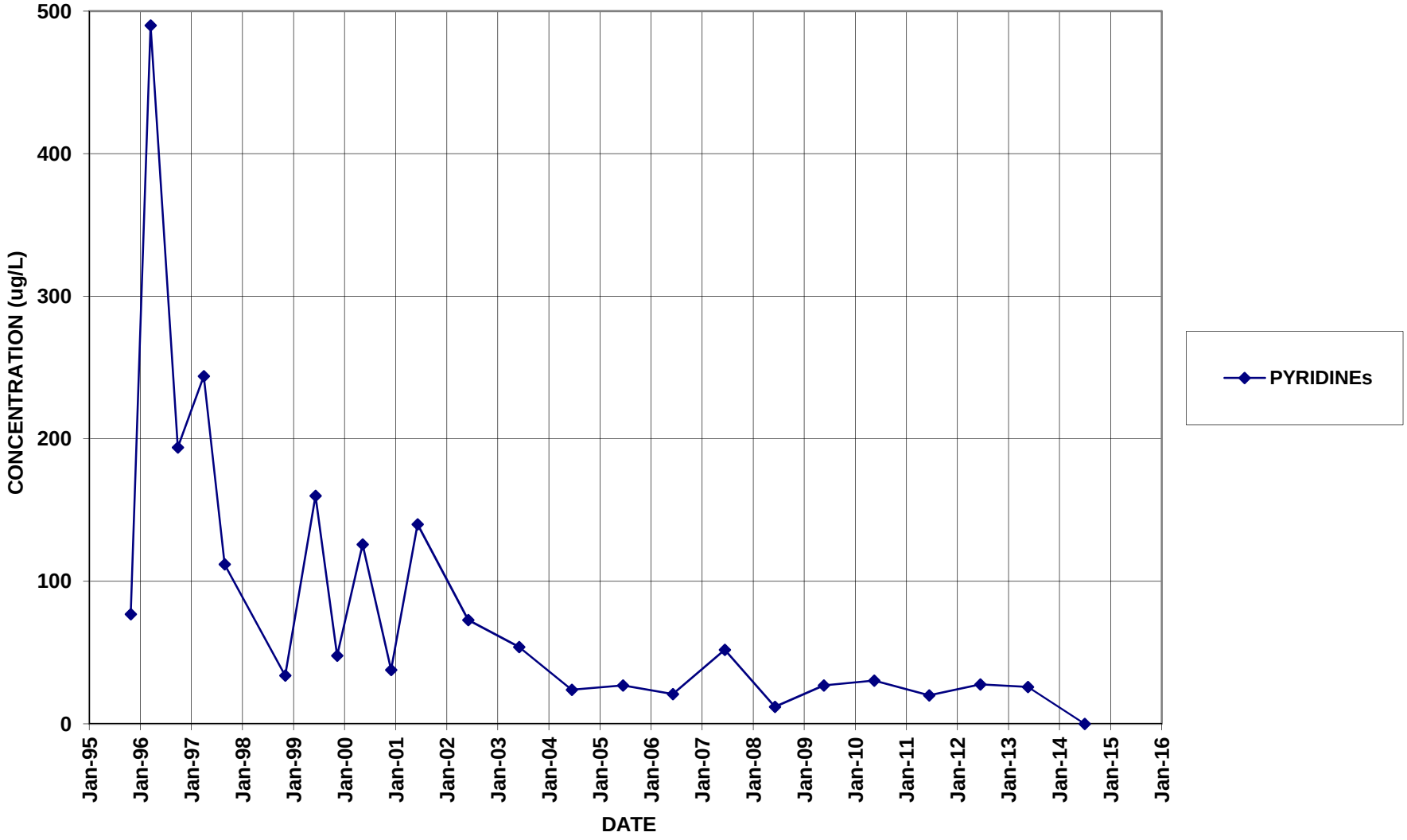
Prepared by: nmb
Reviewed by: jeb

BR-112D



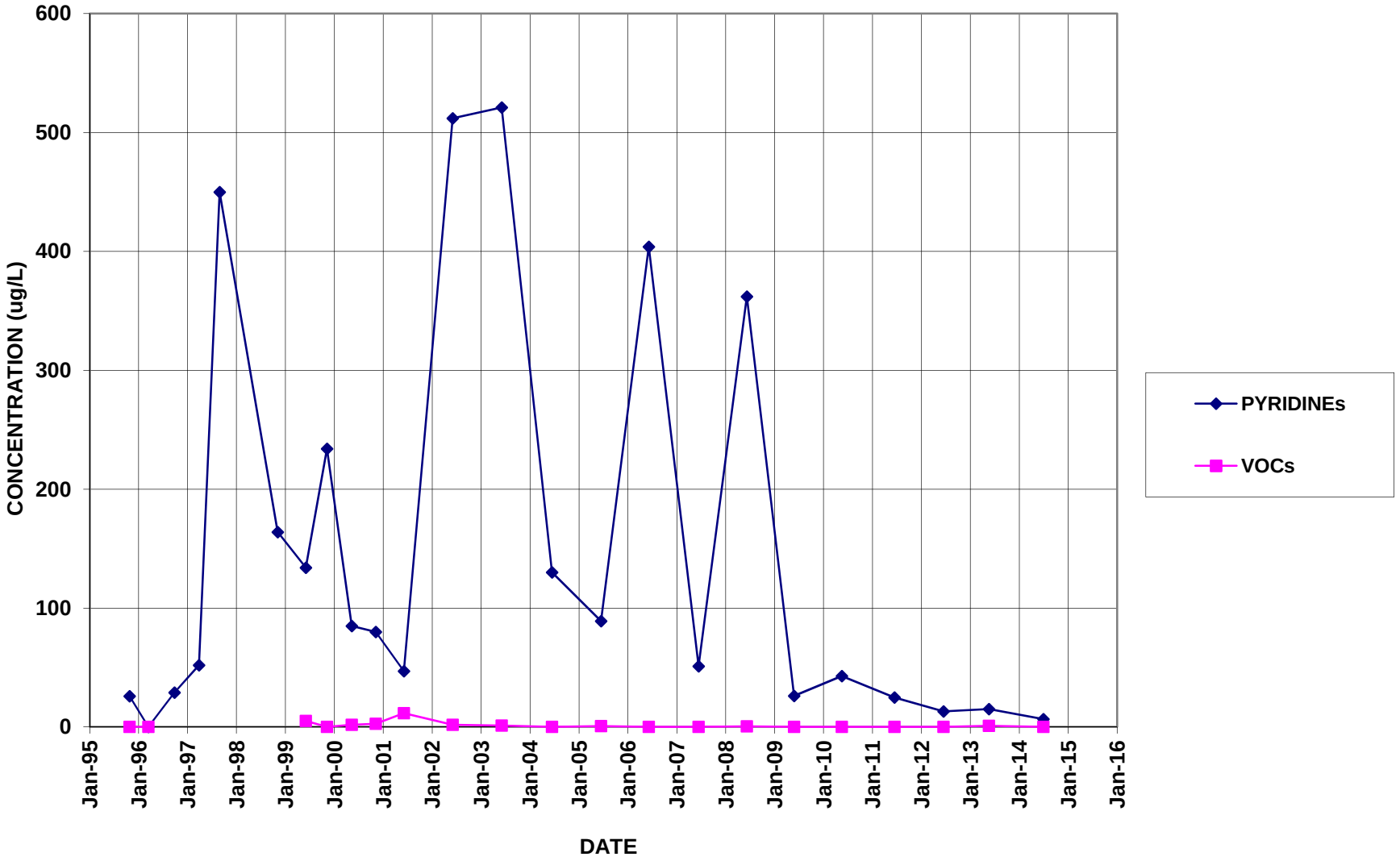
Prepared by: nmb
Reviewed by: jeb

BR-113D



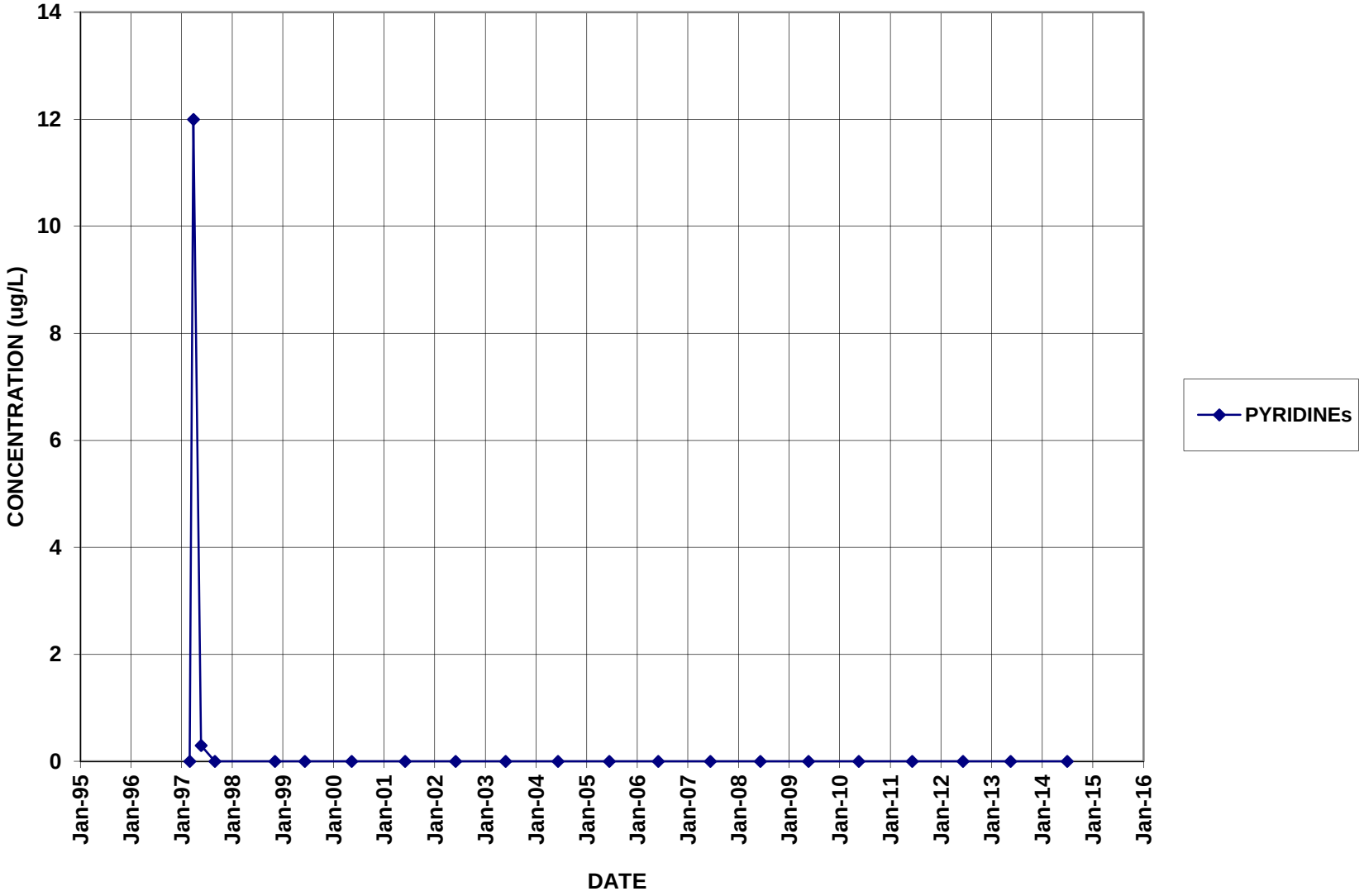
Prepared by: nmb
Reviewed by: jeb

BR-114



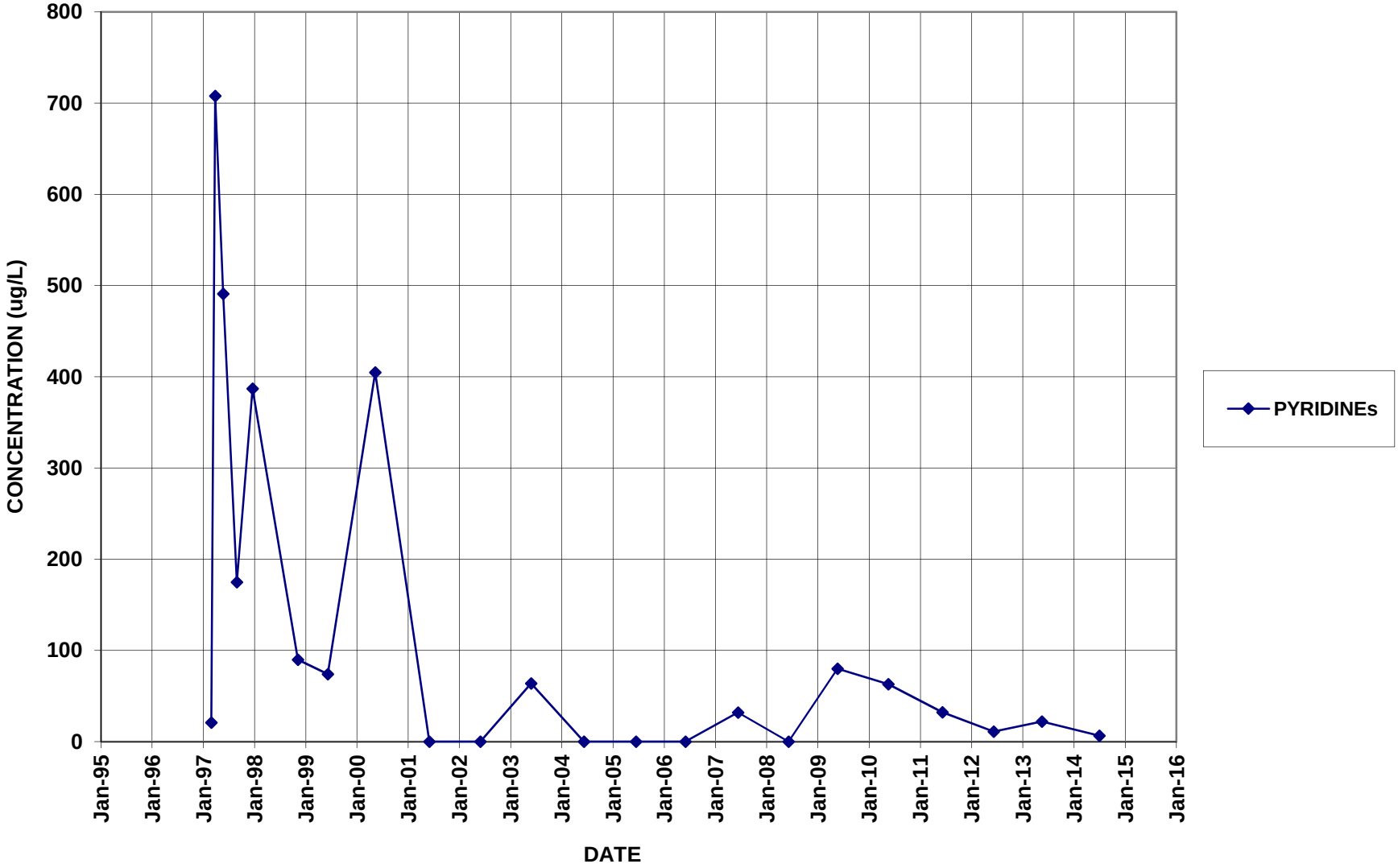
Prepared by: nmb
Reviewed by: jeb

BR-116



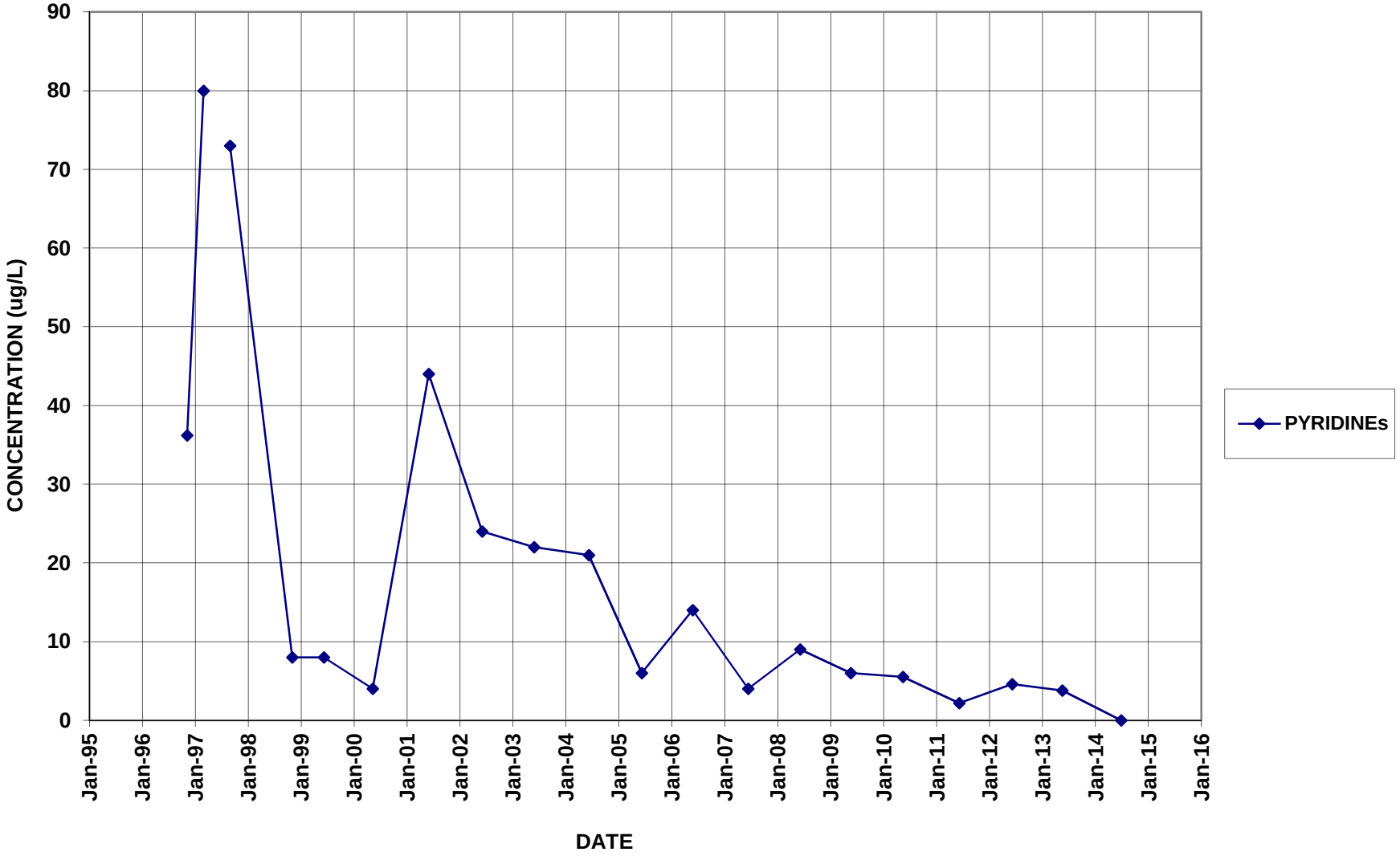
Prepared by: nmb
Reviewed by: jeb

BR-116D



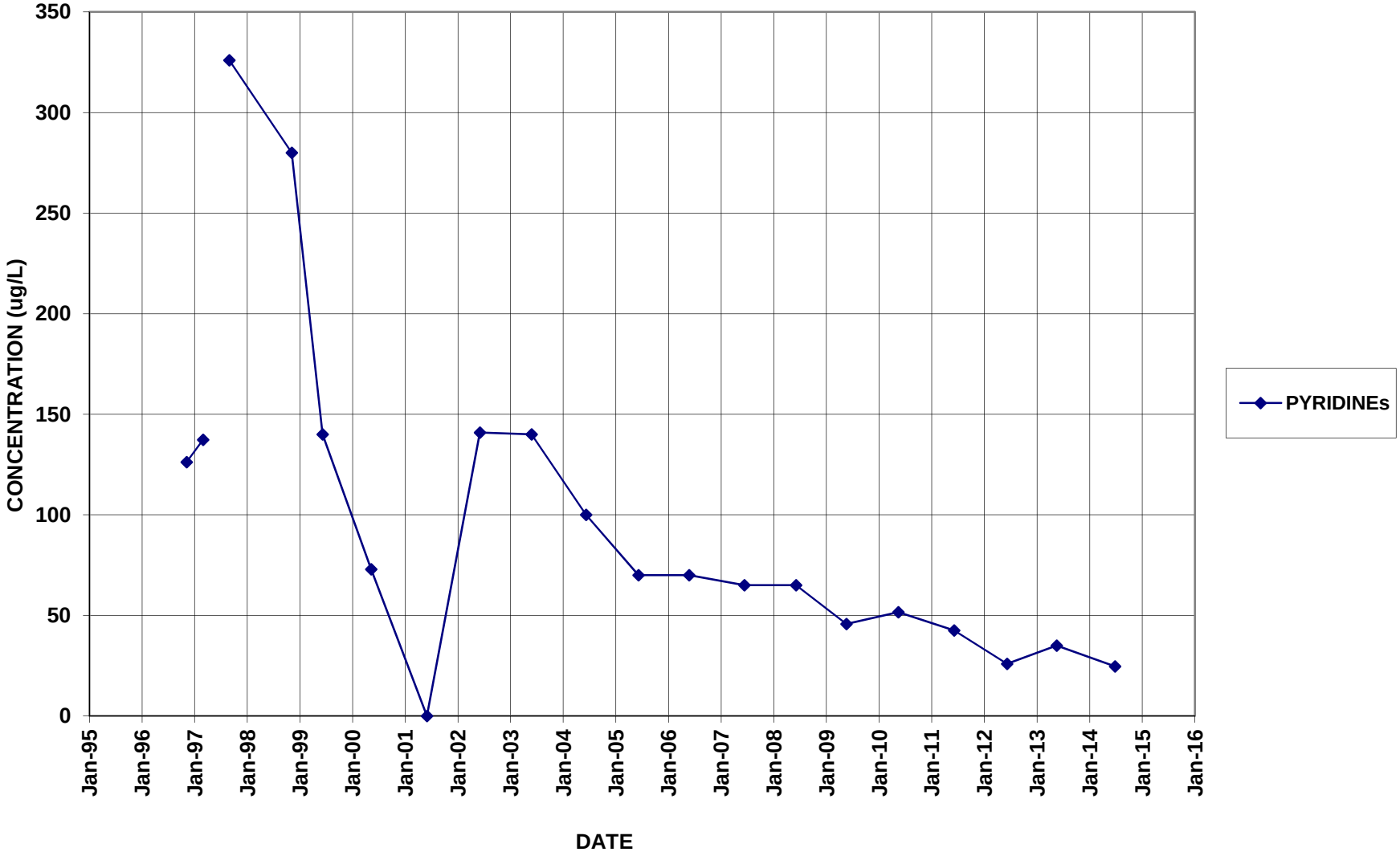
Prepared by: nmb
Reviewed by: jeb

BR-117D



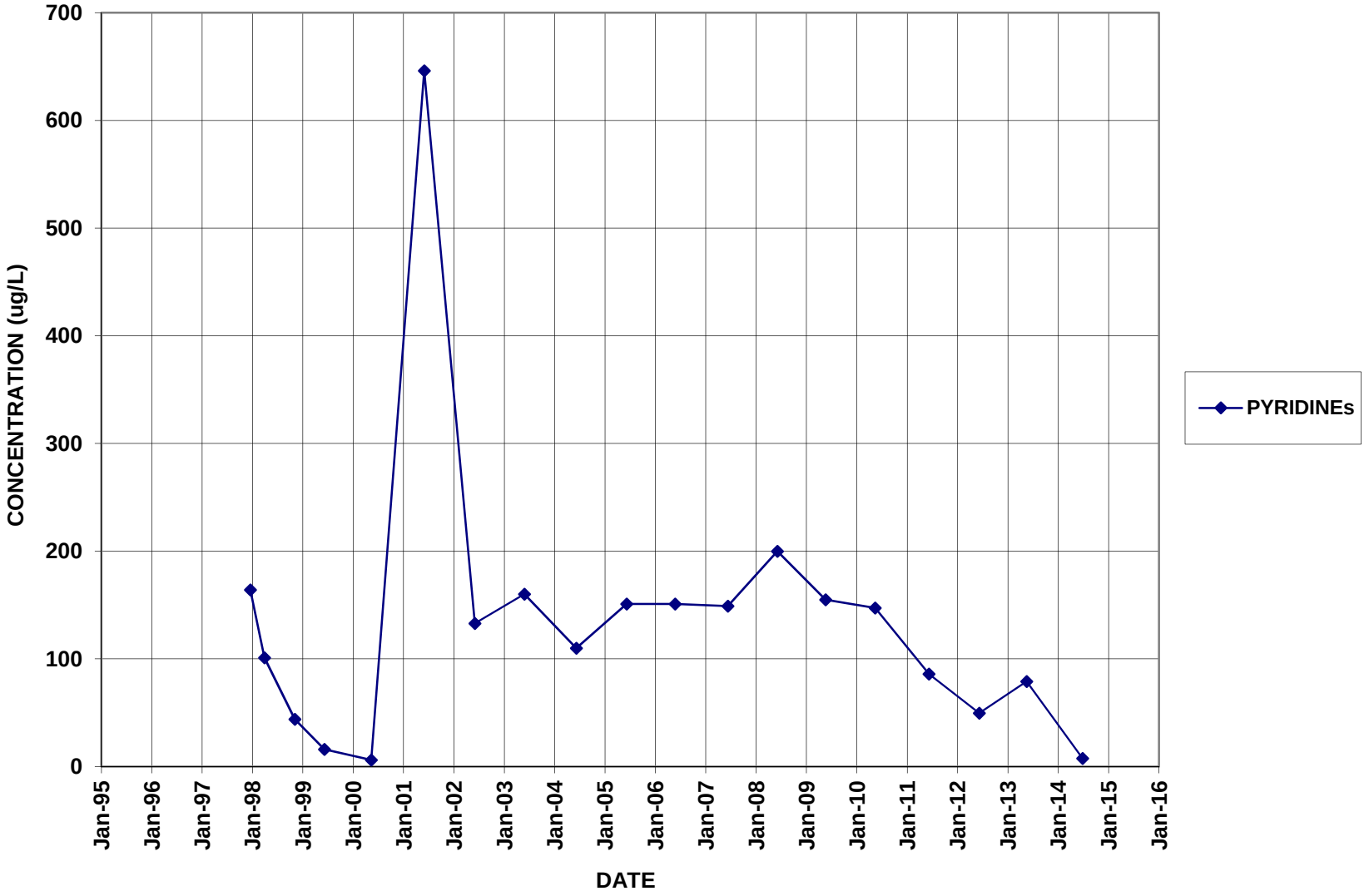
Prepared by: nmb
Reviewed by: jeb

BR-118D



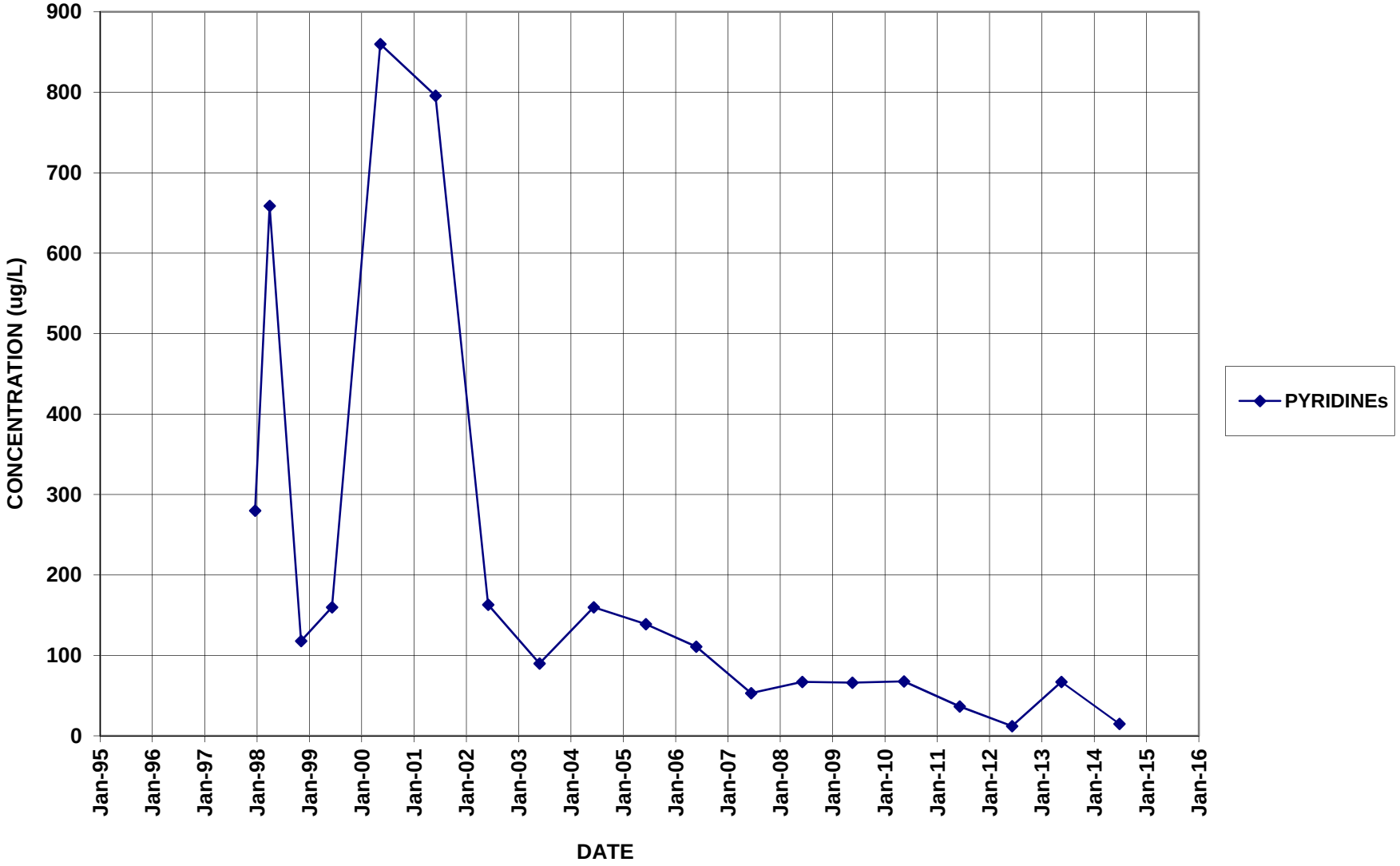
Prepared by: nmb
Reviewed by: jeb

BR-122D



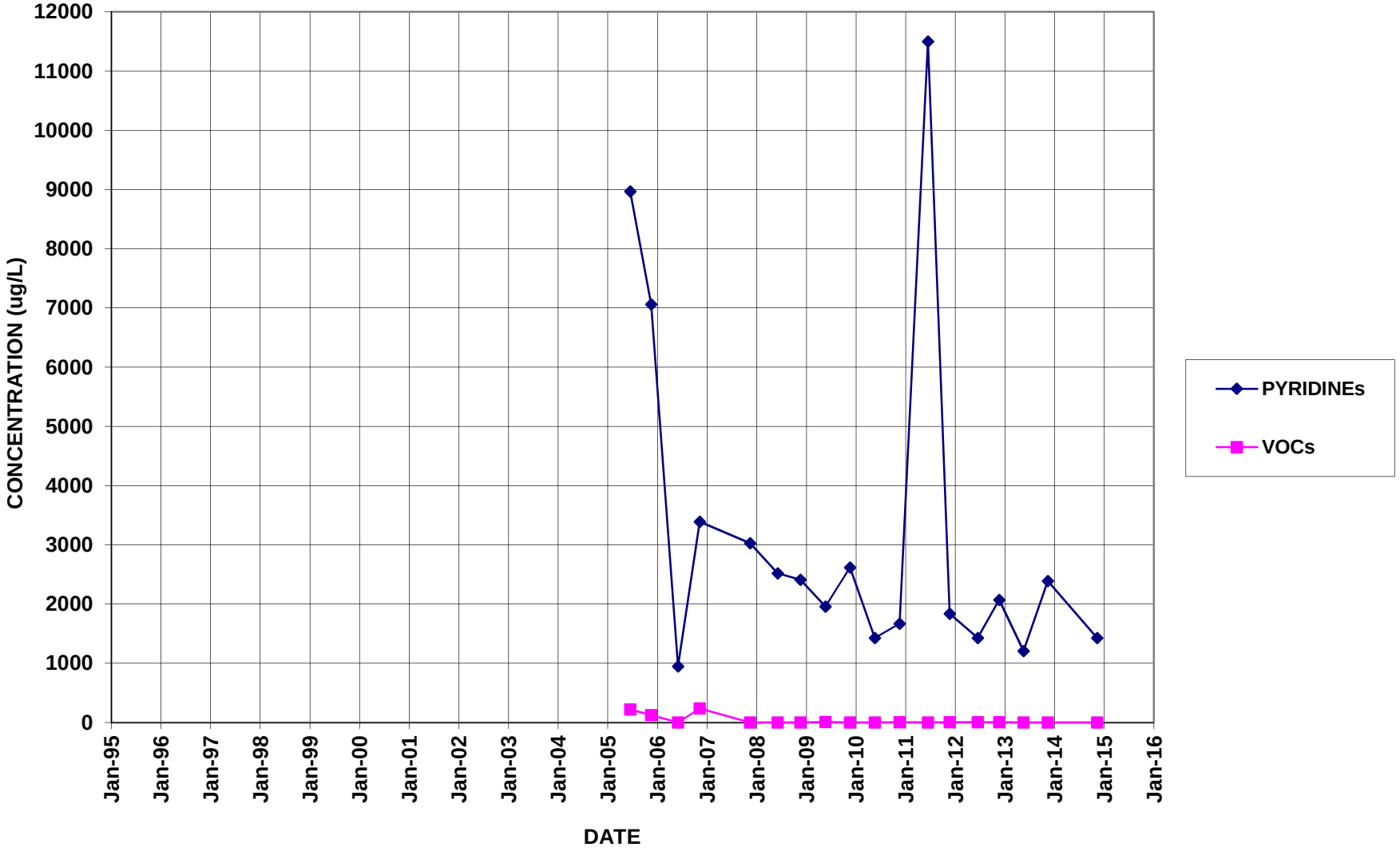
Prepared by: nmb
Reviewed by: jeb

BR-123D



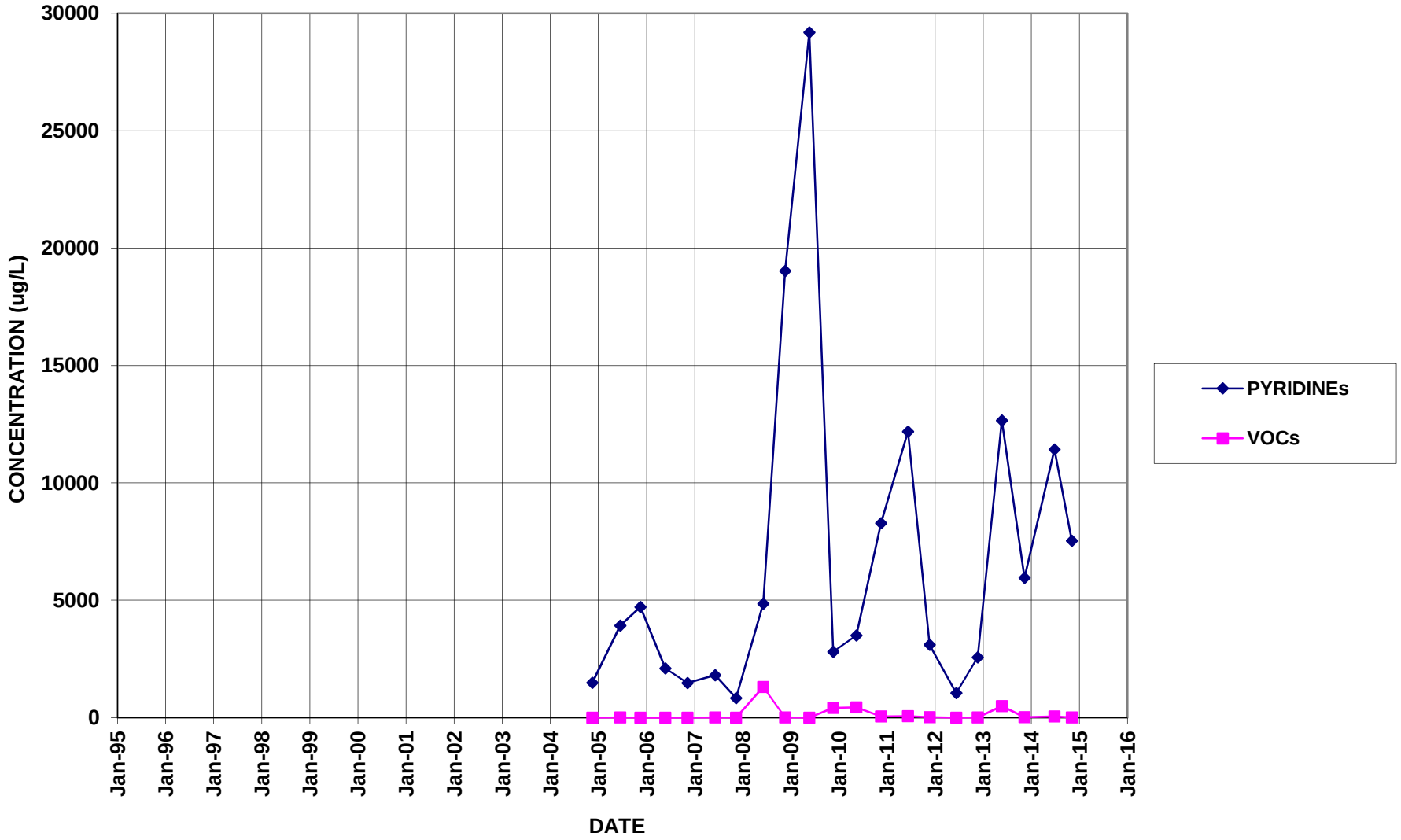
Prepared by: nmb
Reviewed by: jeb

BR-126

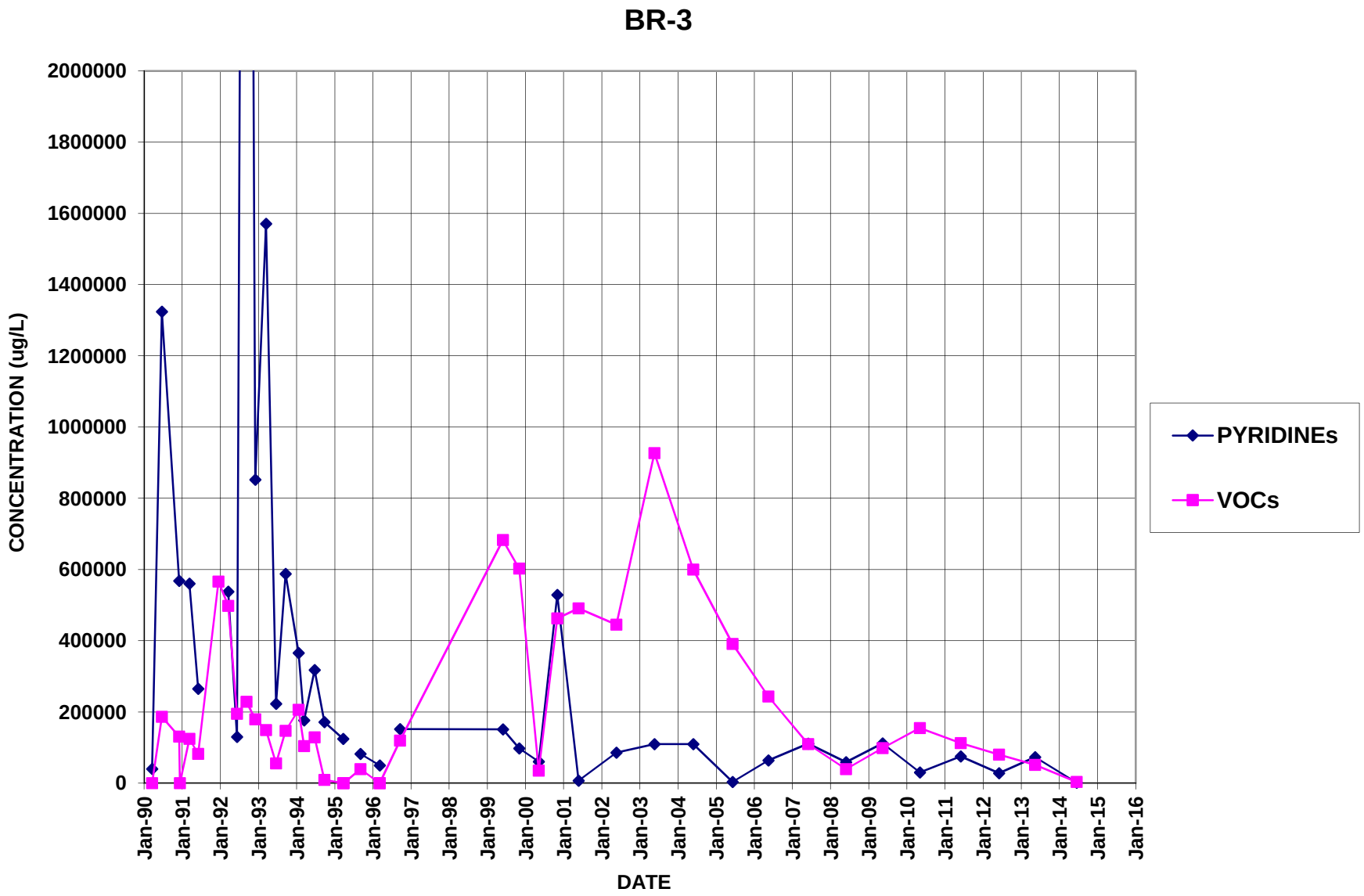


Prepared by: nmb
Reviewed by: jeb

BR-127

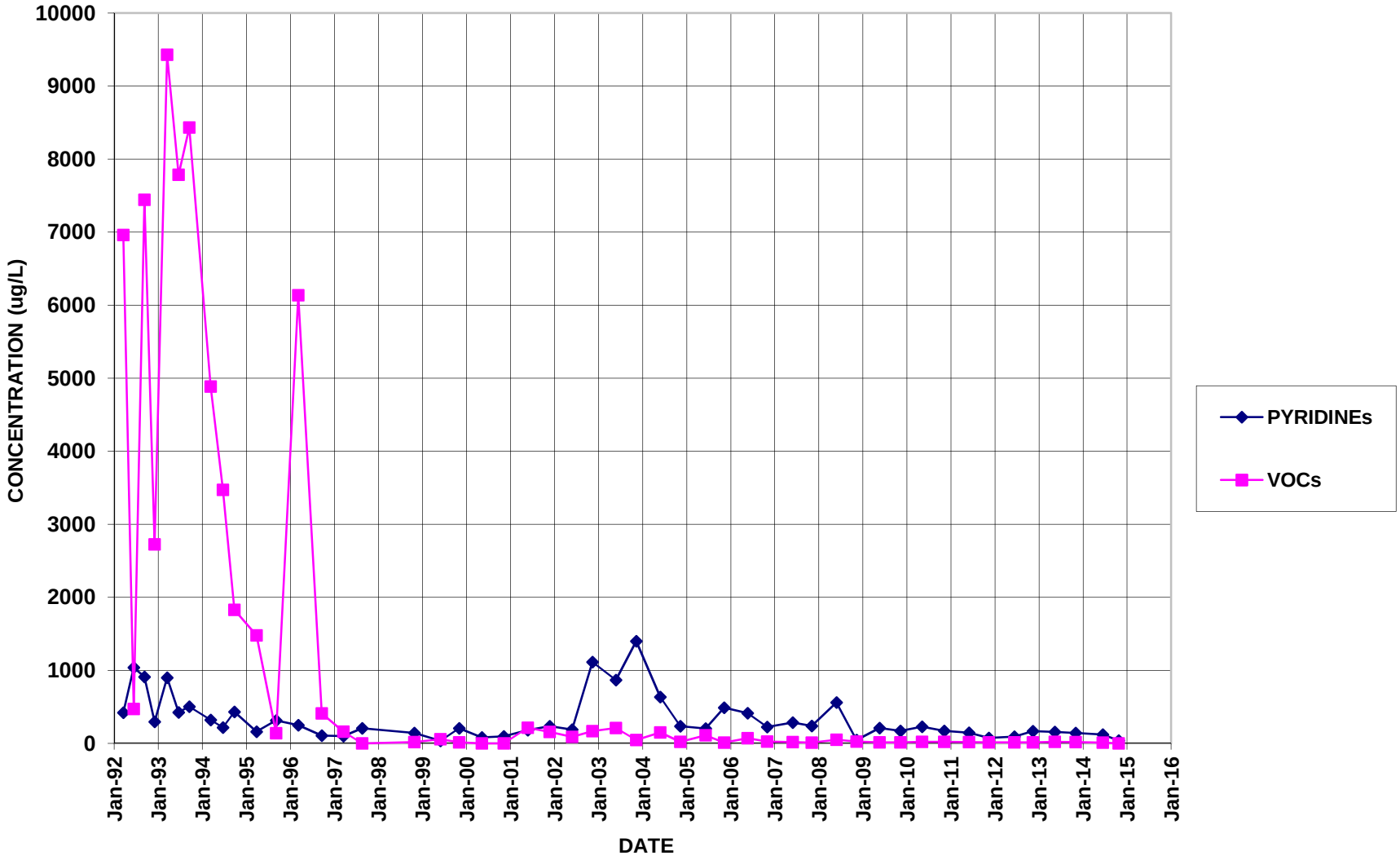


Prepared by: nmb
Reviewed by: jeb



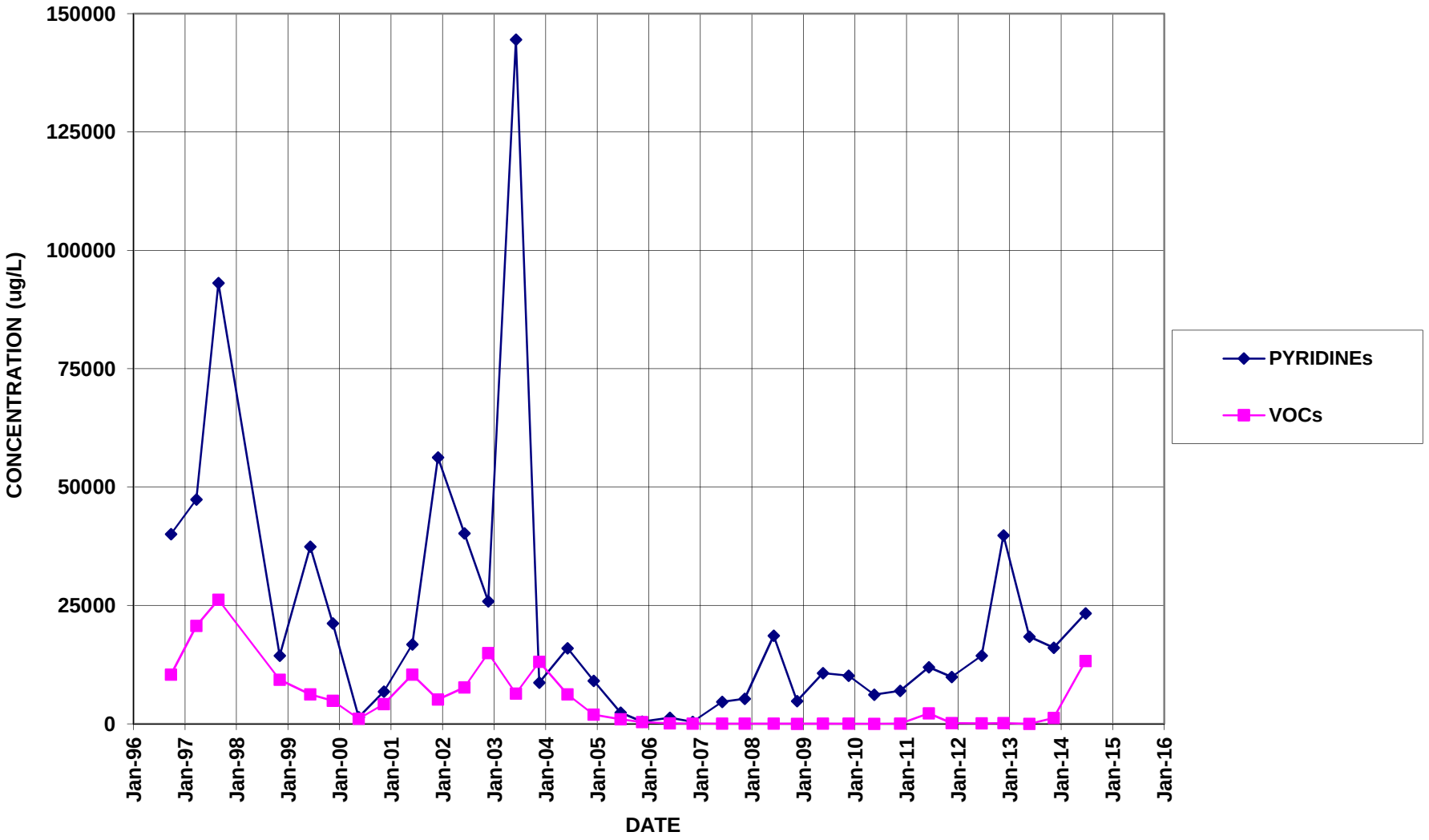
Prepared by: nmb
Reviewed by: jeb

BR-5A

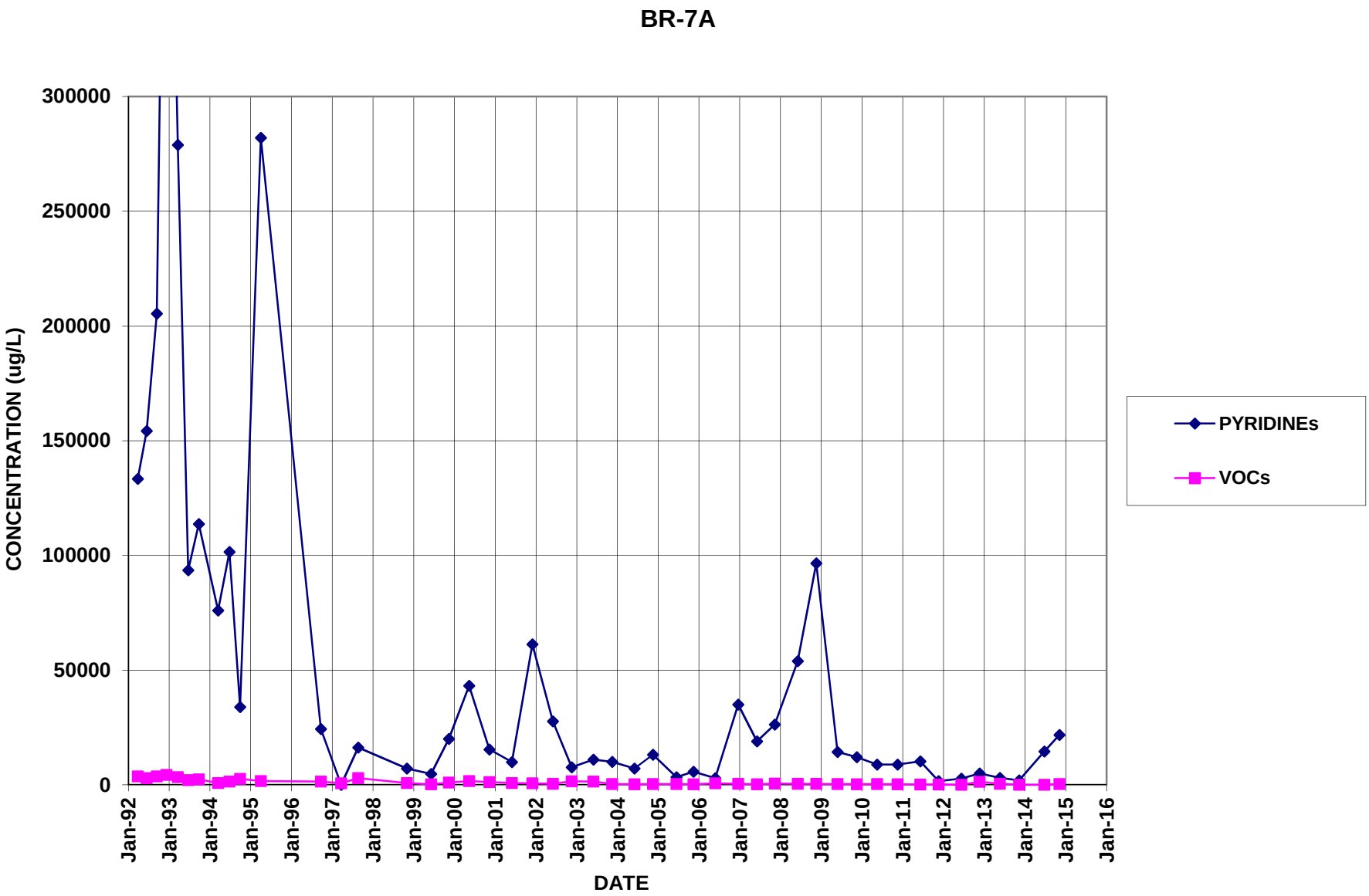


Prepared by: nmb
Reviewed by: jeb

BR-6A

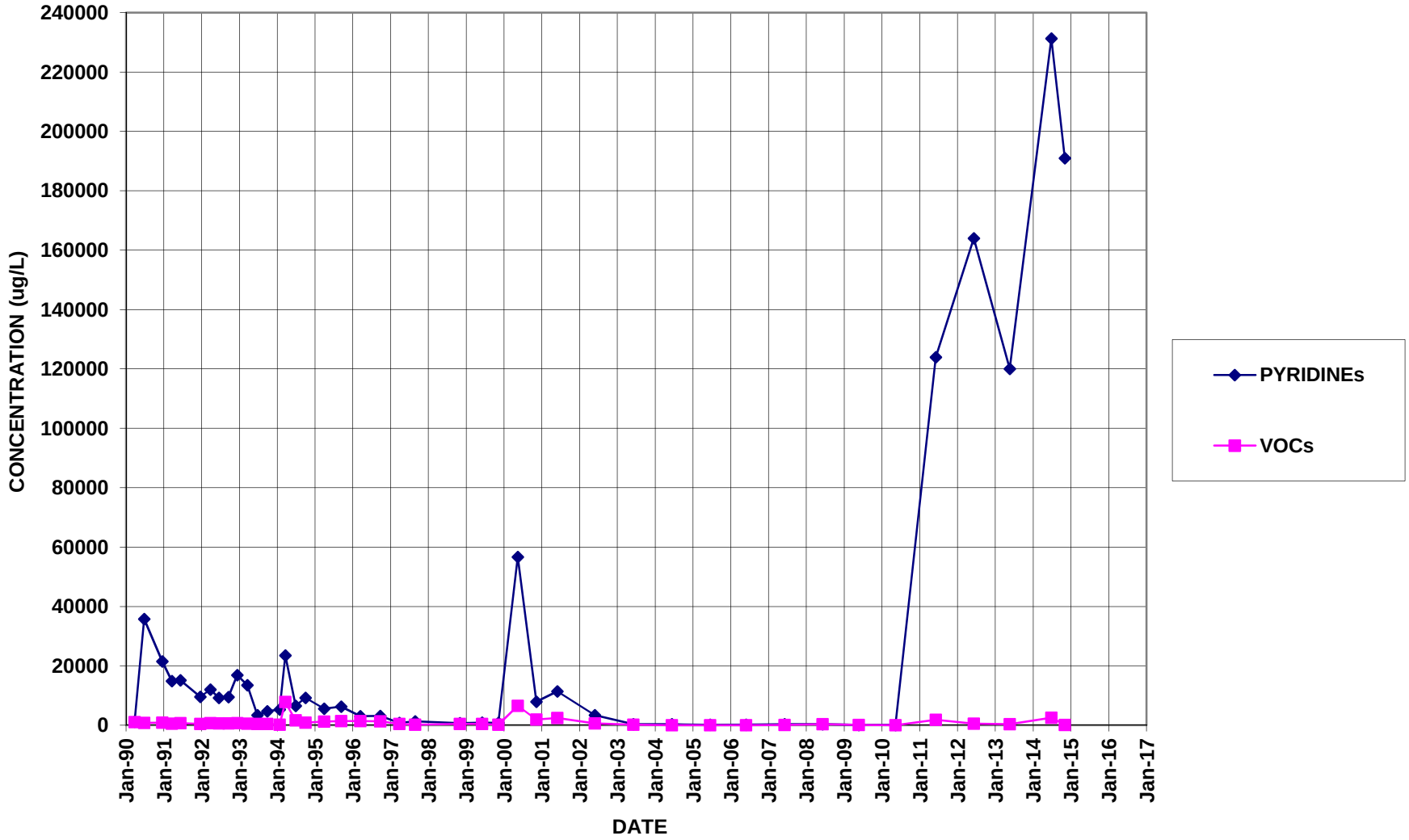


Prepared by: nmb
Reviewed by: jeb



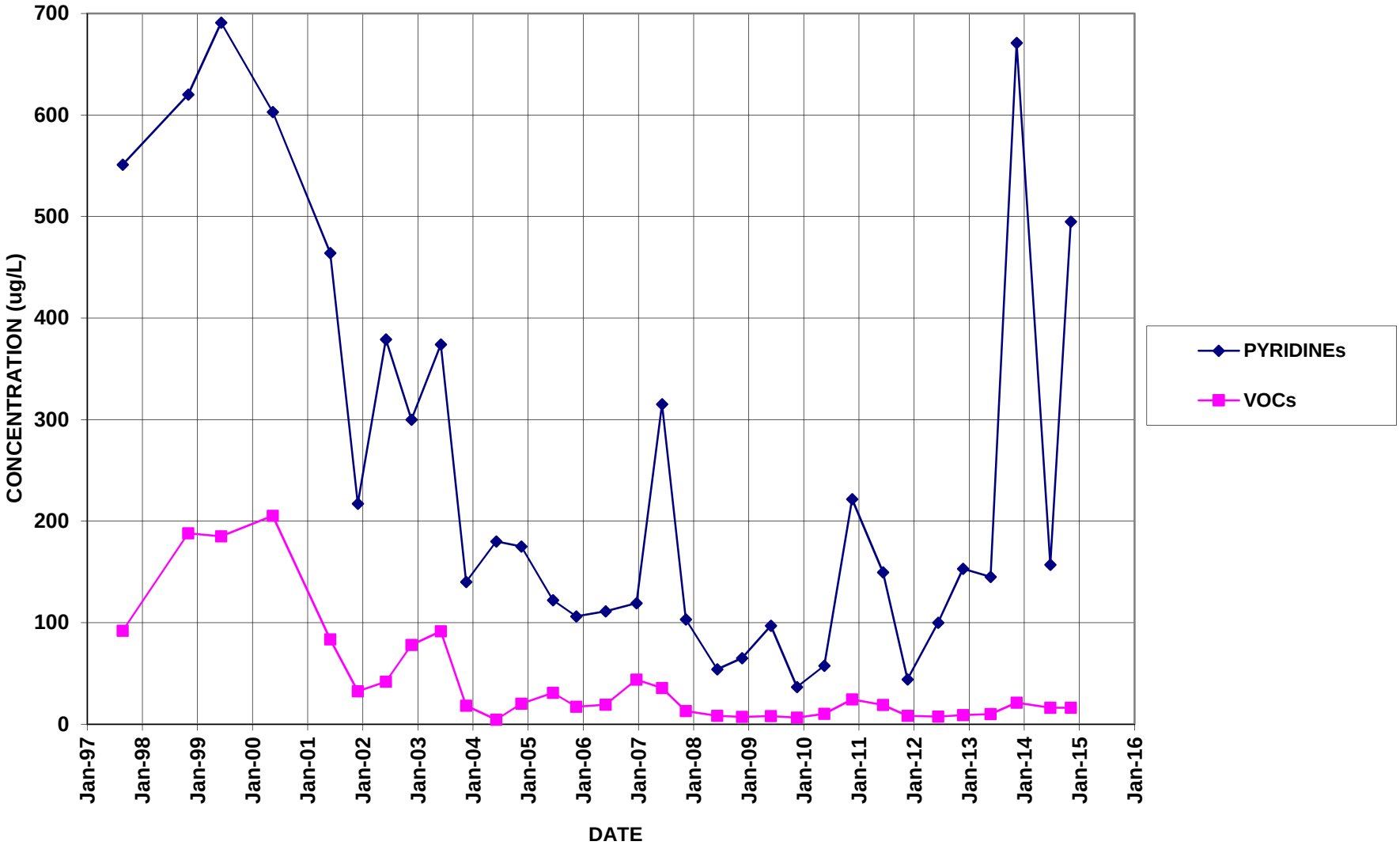
Prepared by: nmb
Reviewed by: jeb

BR-8

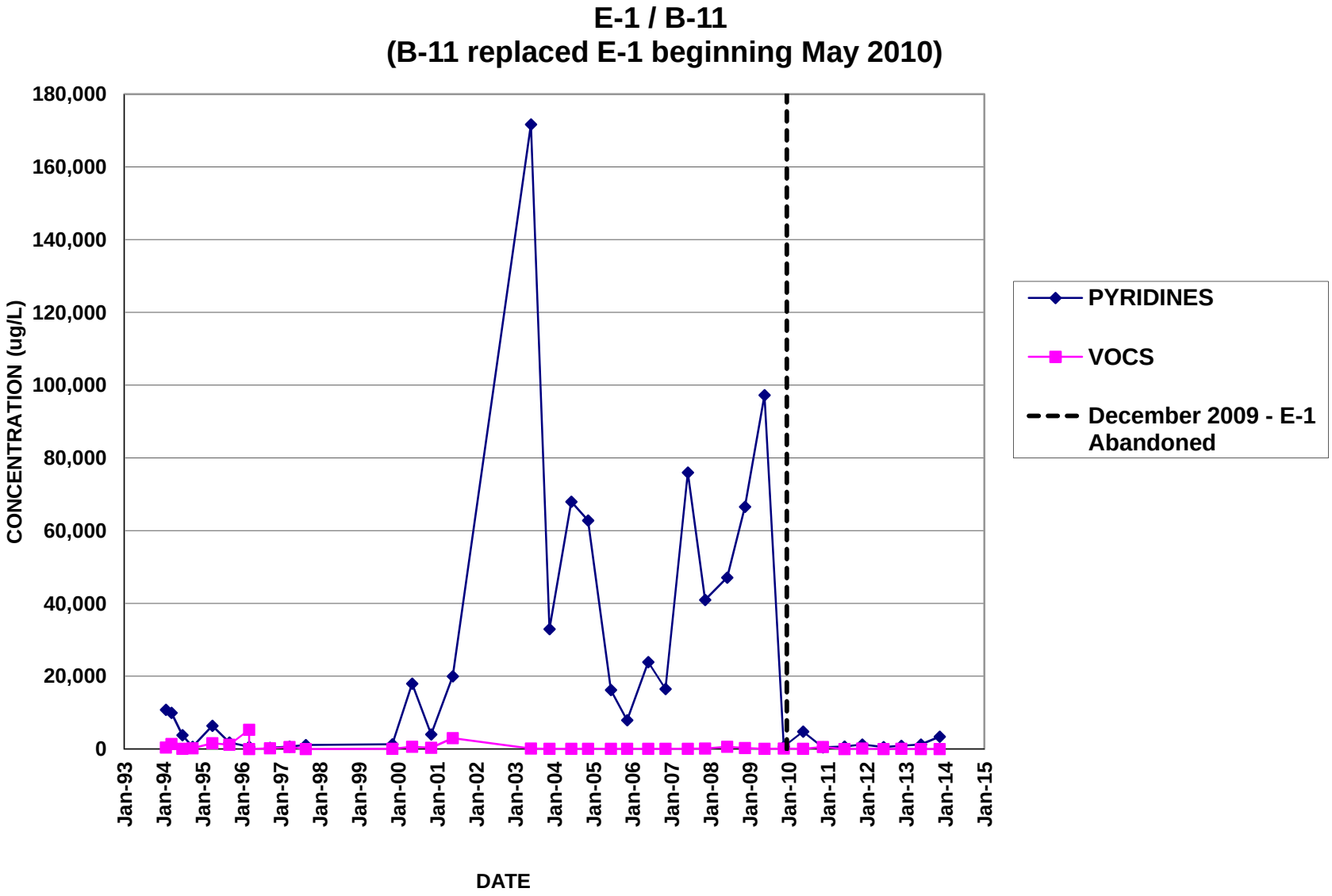


Prepared by: nmb
Reviewed by: jeb

BR-9

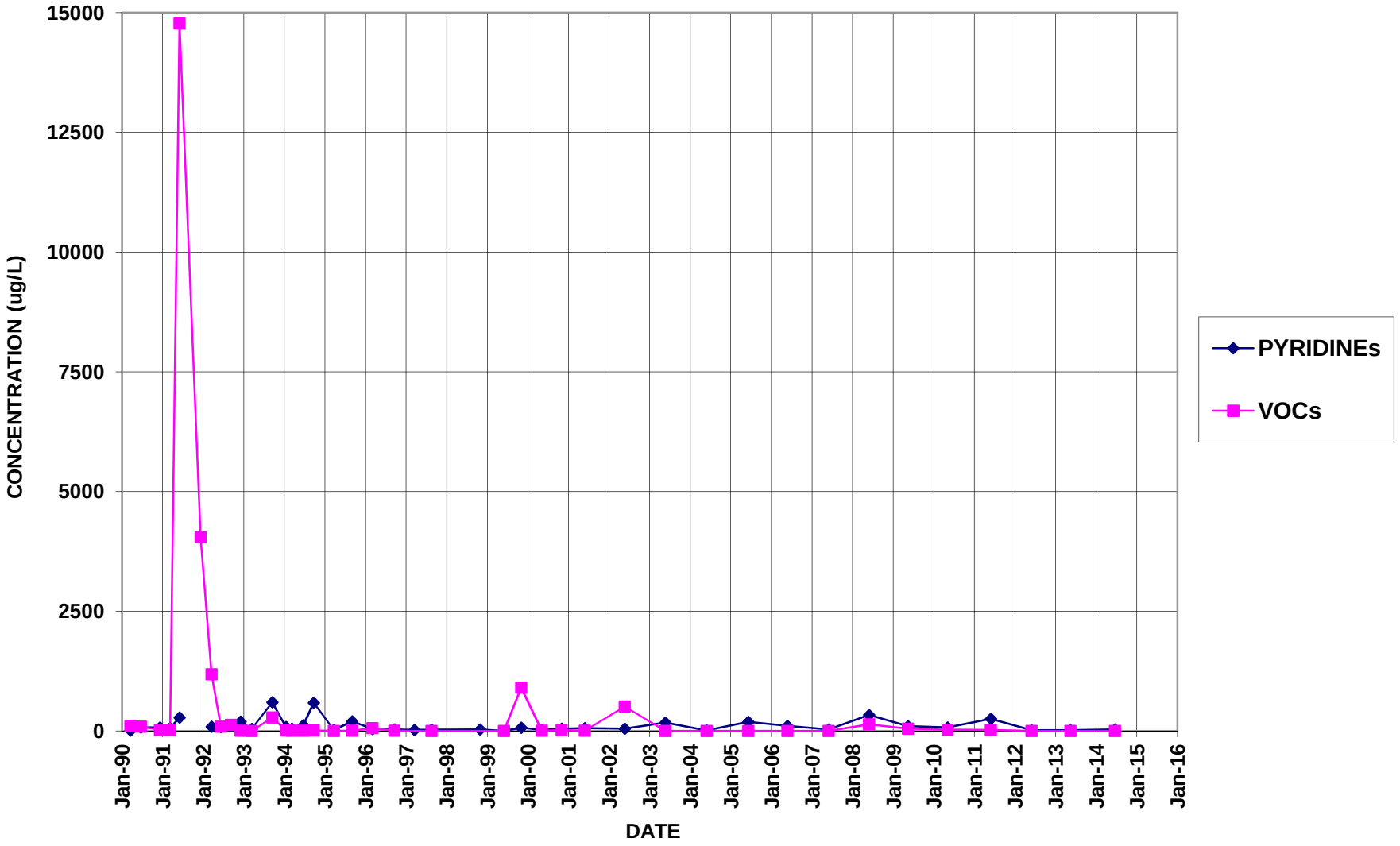


Prepared by: nmb
Reviewed by: jeb



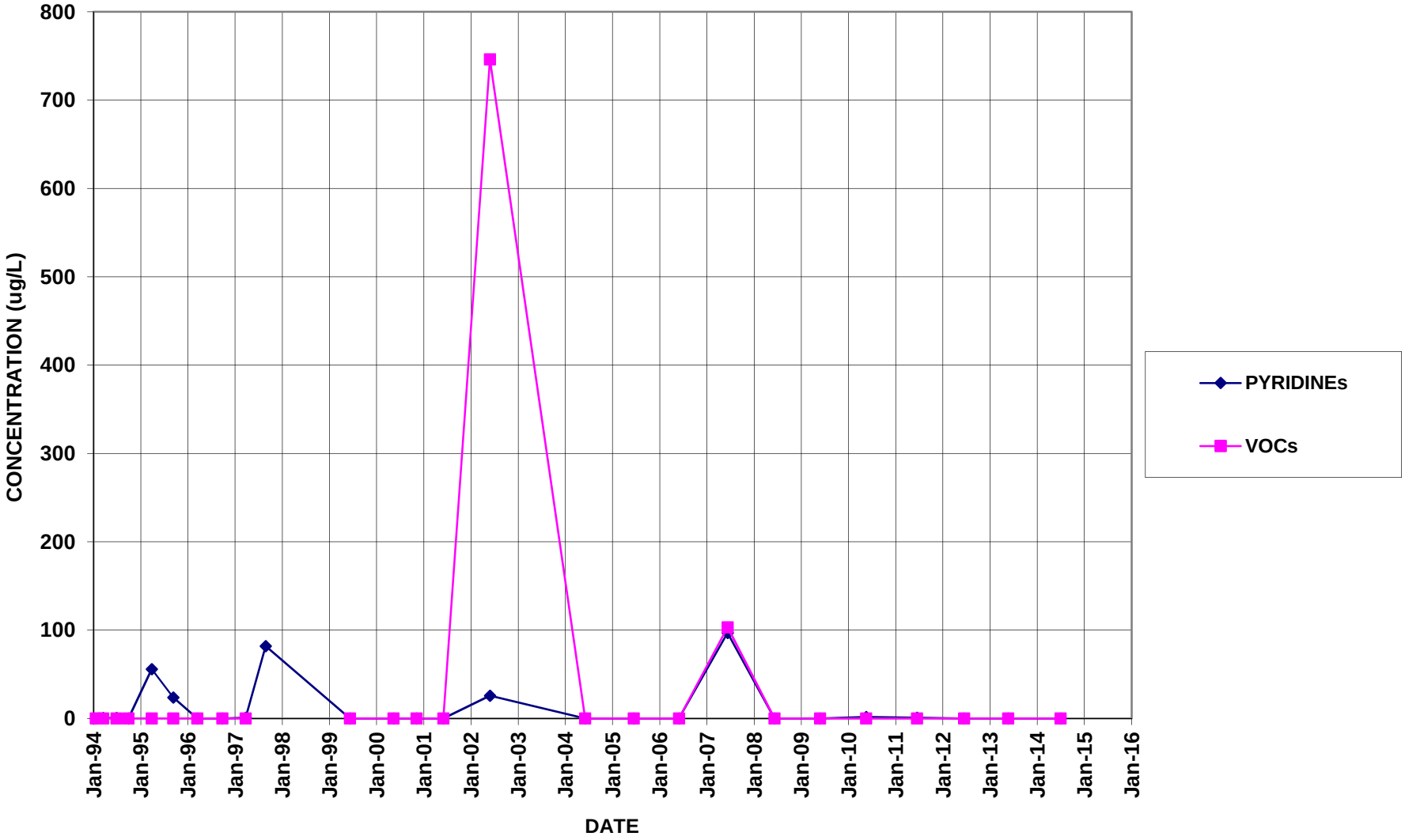
Prepared by: nmb
Reviewed by: jeb

E-3



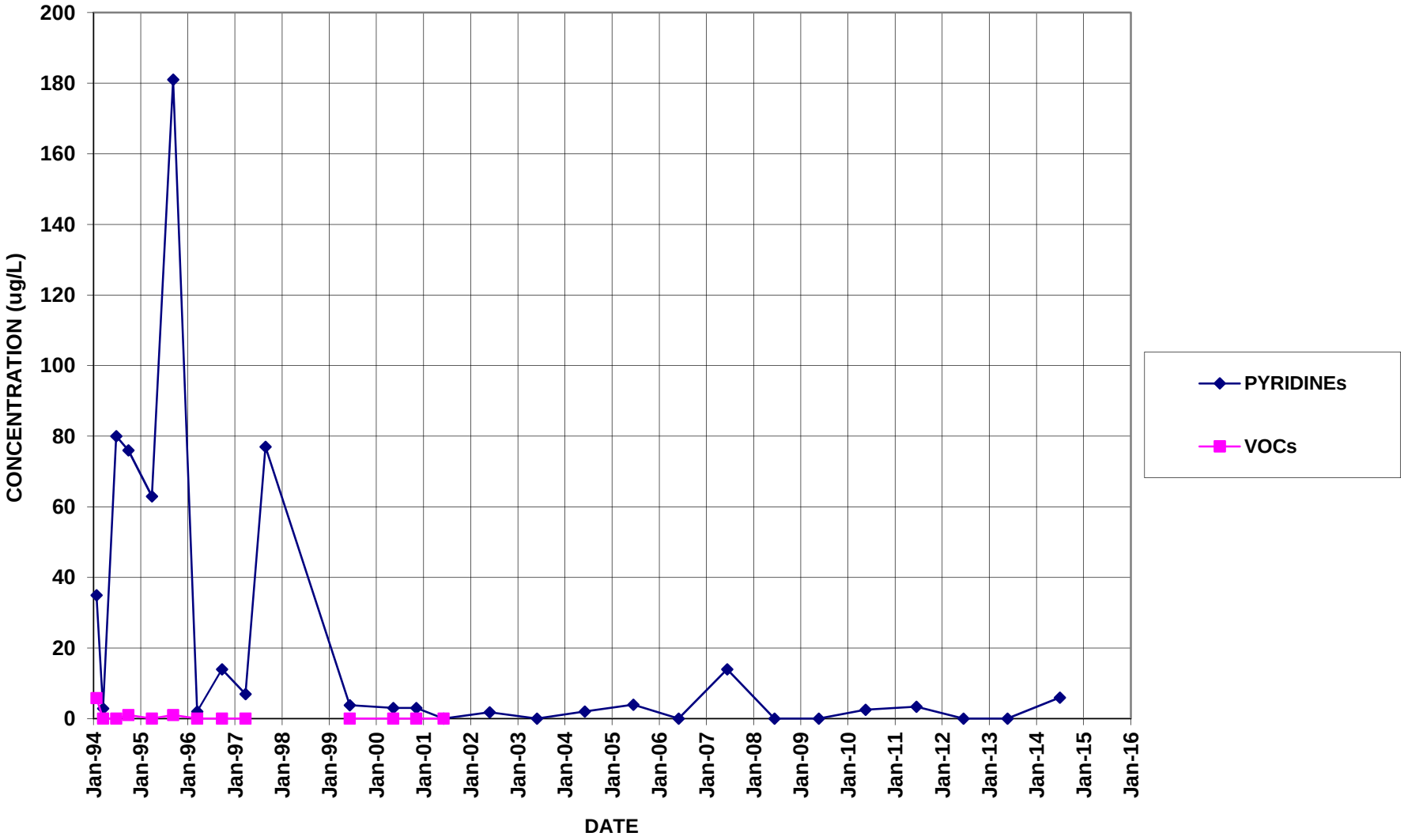
Prepared by: nmb
Reviewed by: jeb

MW-103



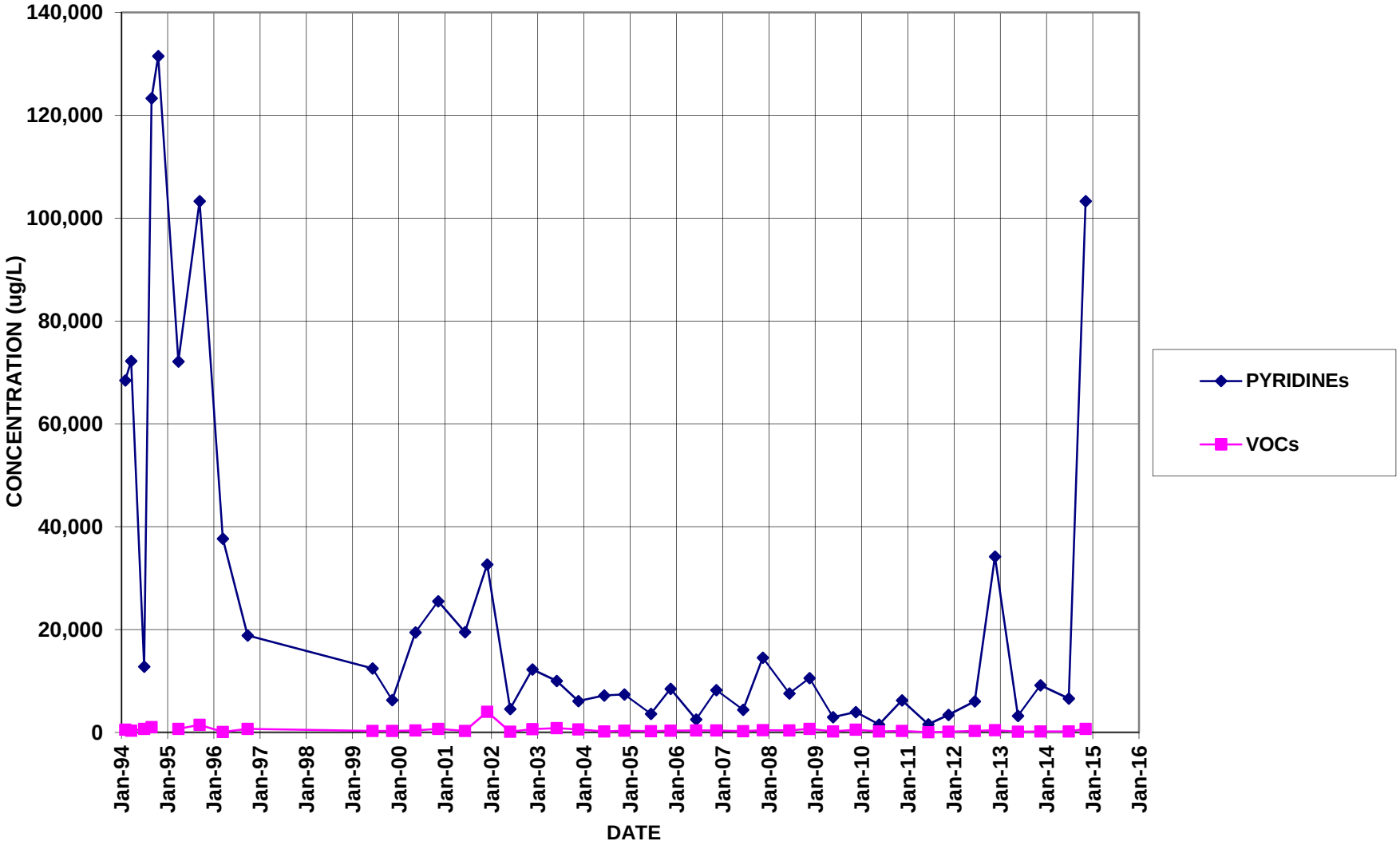
Prepared by: nmb
Reviewed by: jeb

MW-104



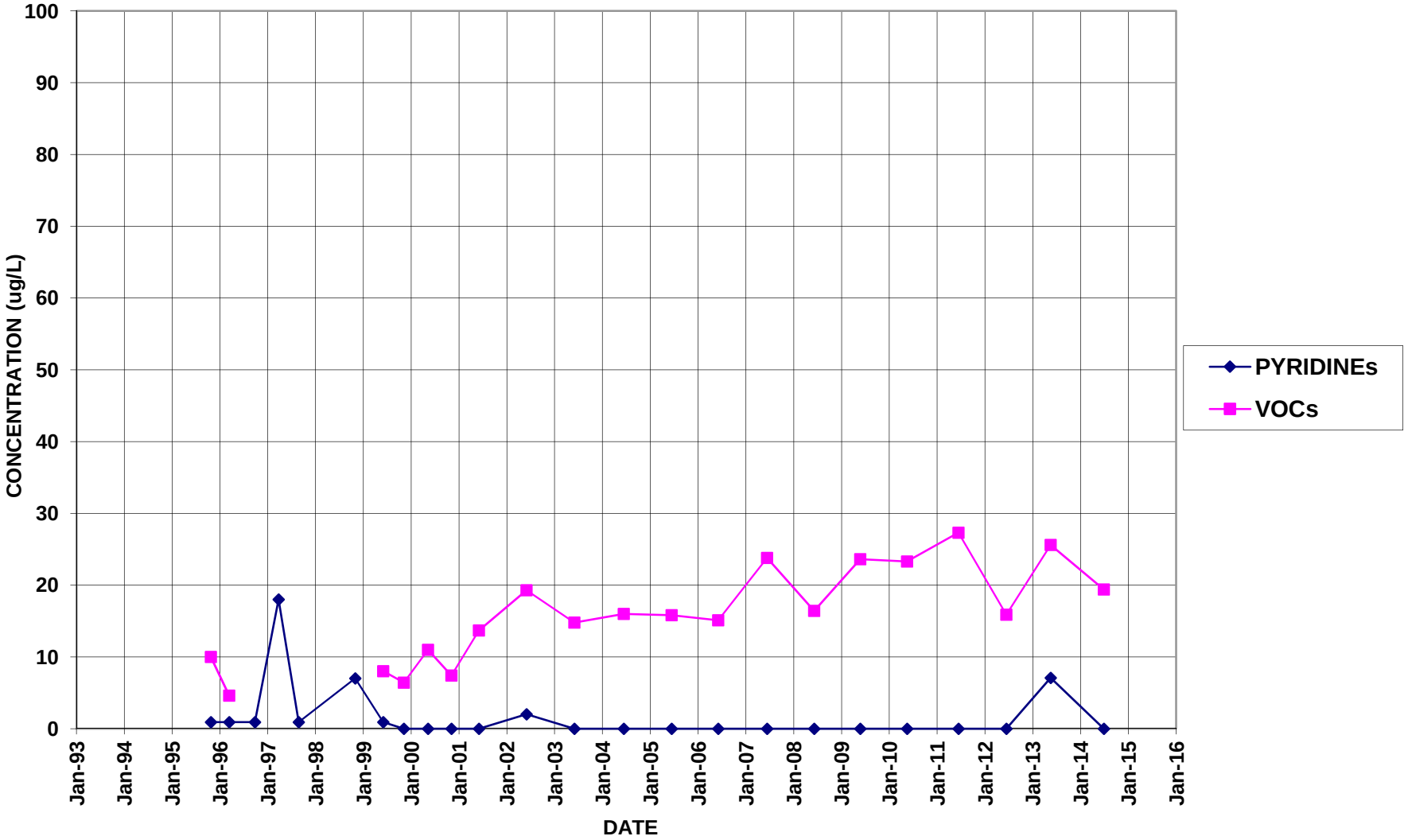
Prepared by: nmb
Reviewed by: jeb

MW-106



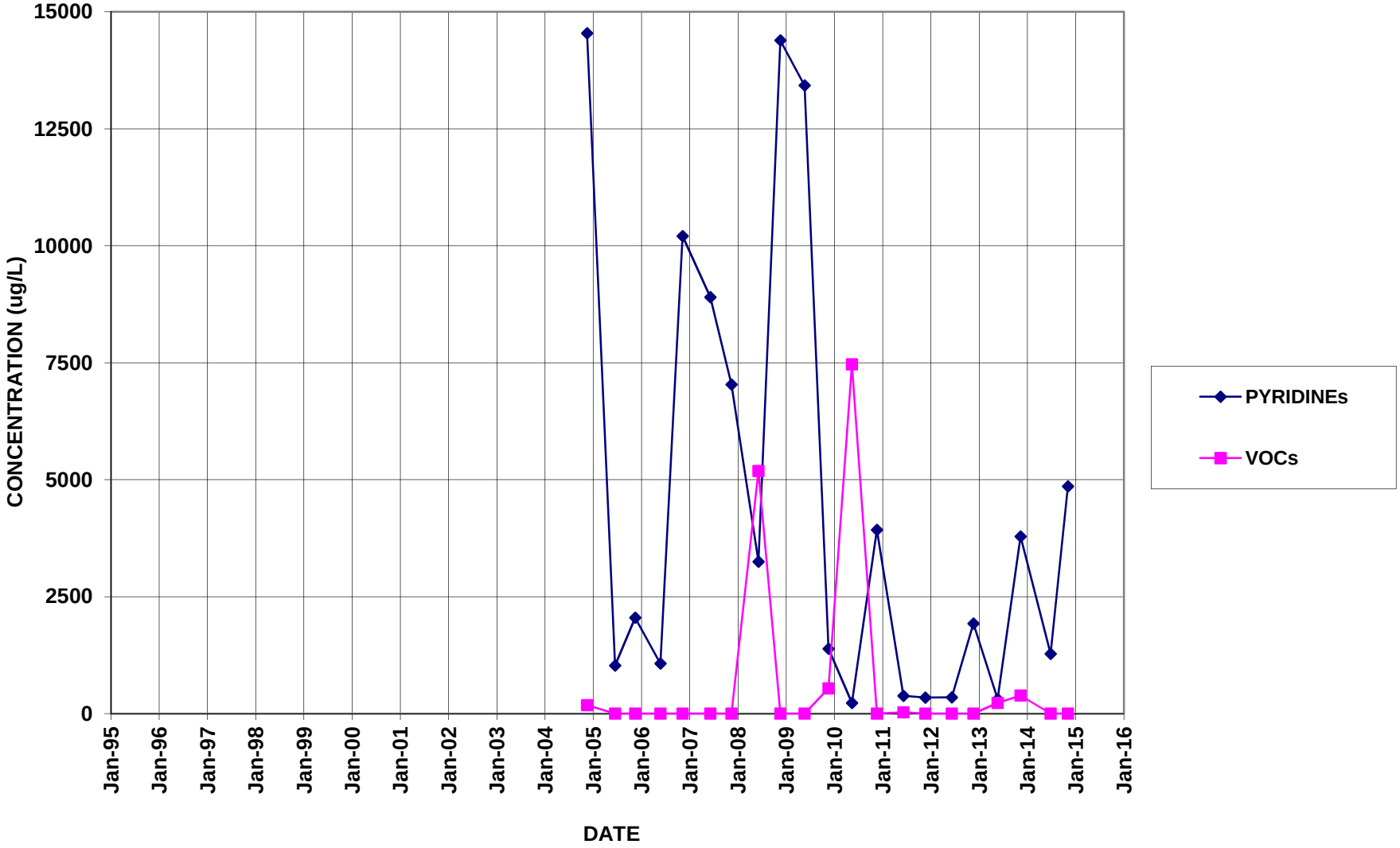
Prepared by: nmb
Reviewed by: jeb

MW-114



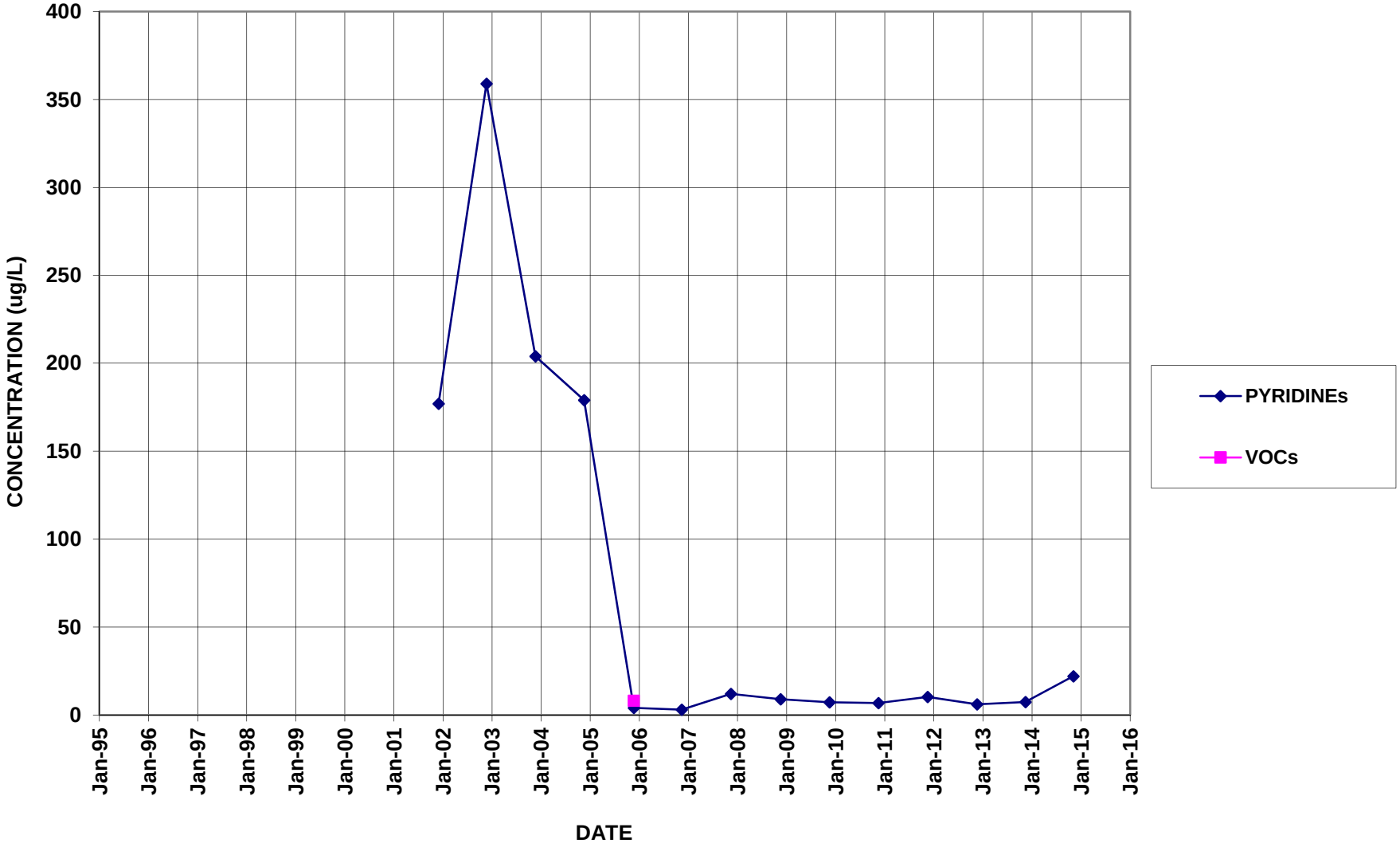
Prepared by: nmb
Reviewed by: jeb

MW-127



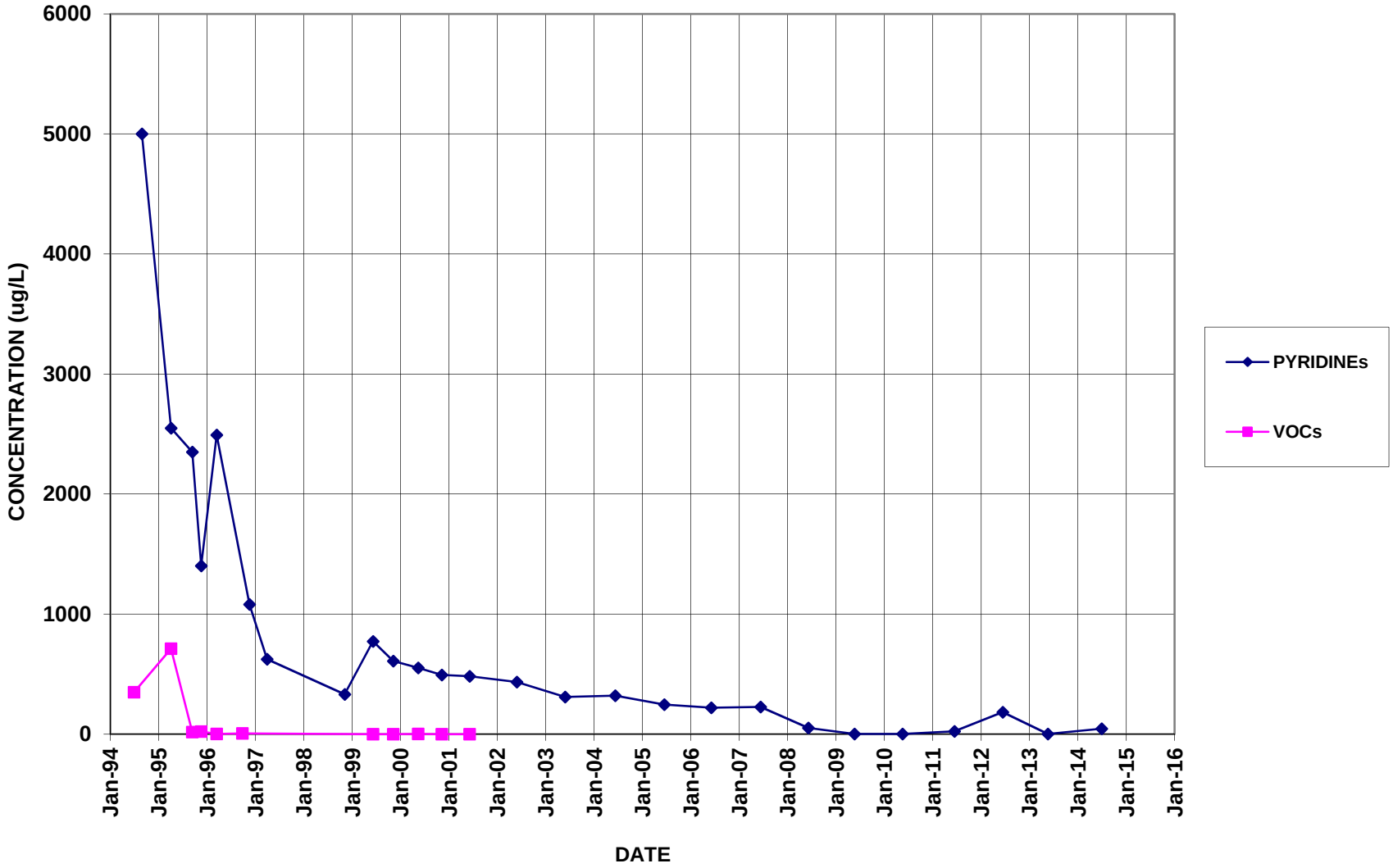
Prepared by: nmb
Reviewed by: jeb

MW-16



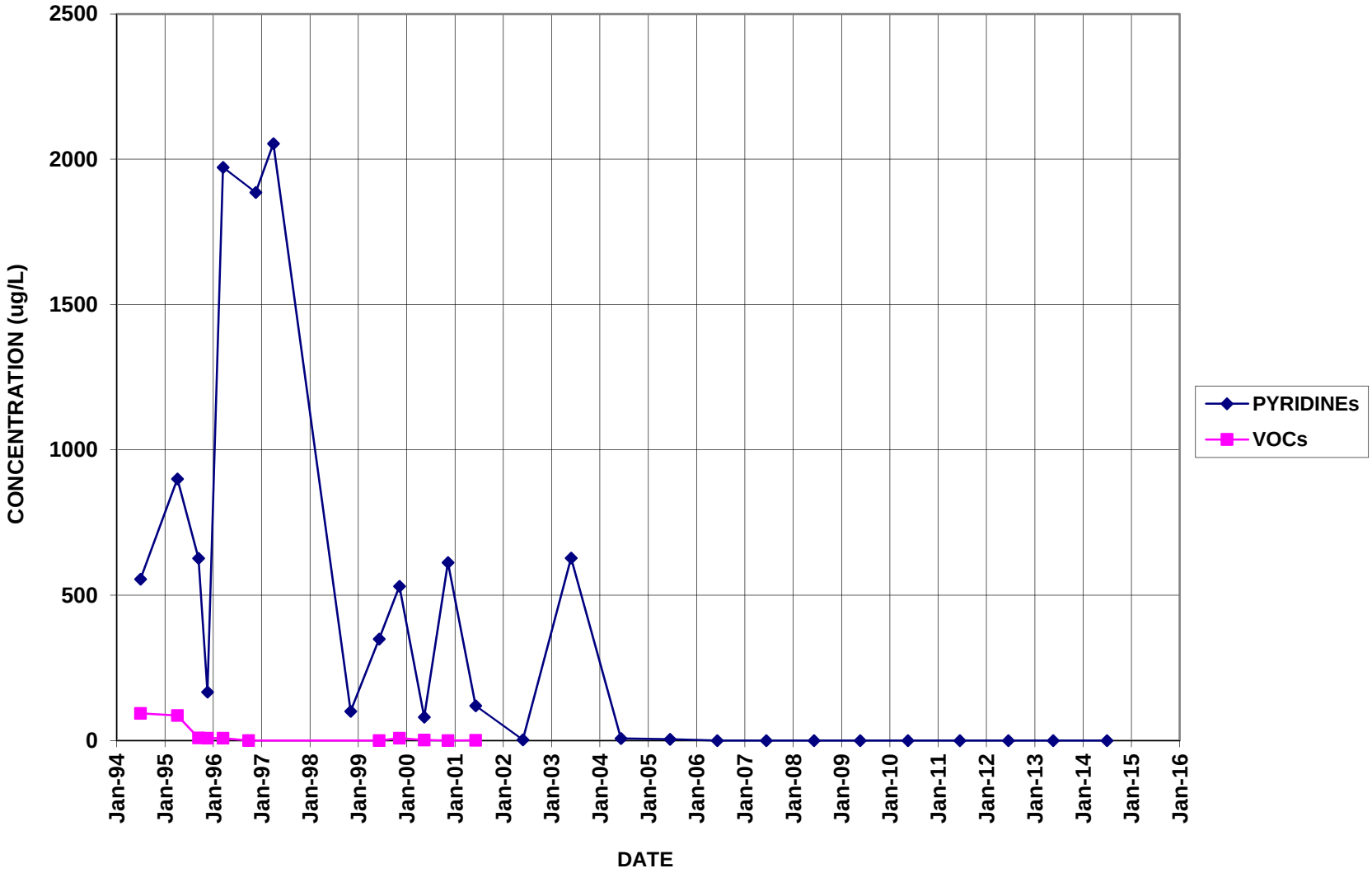
Prepared by: nmb
Reviewed by: jeb

NESS-E



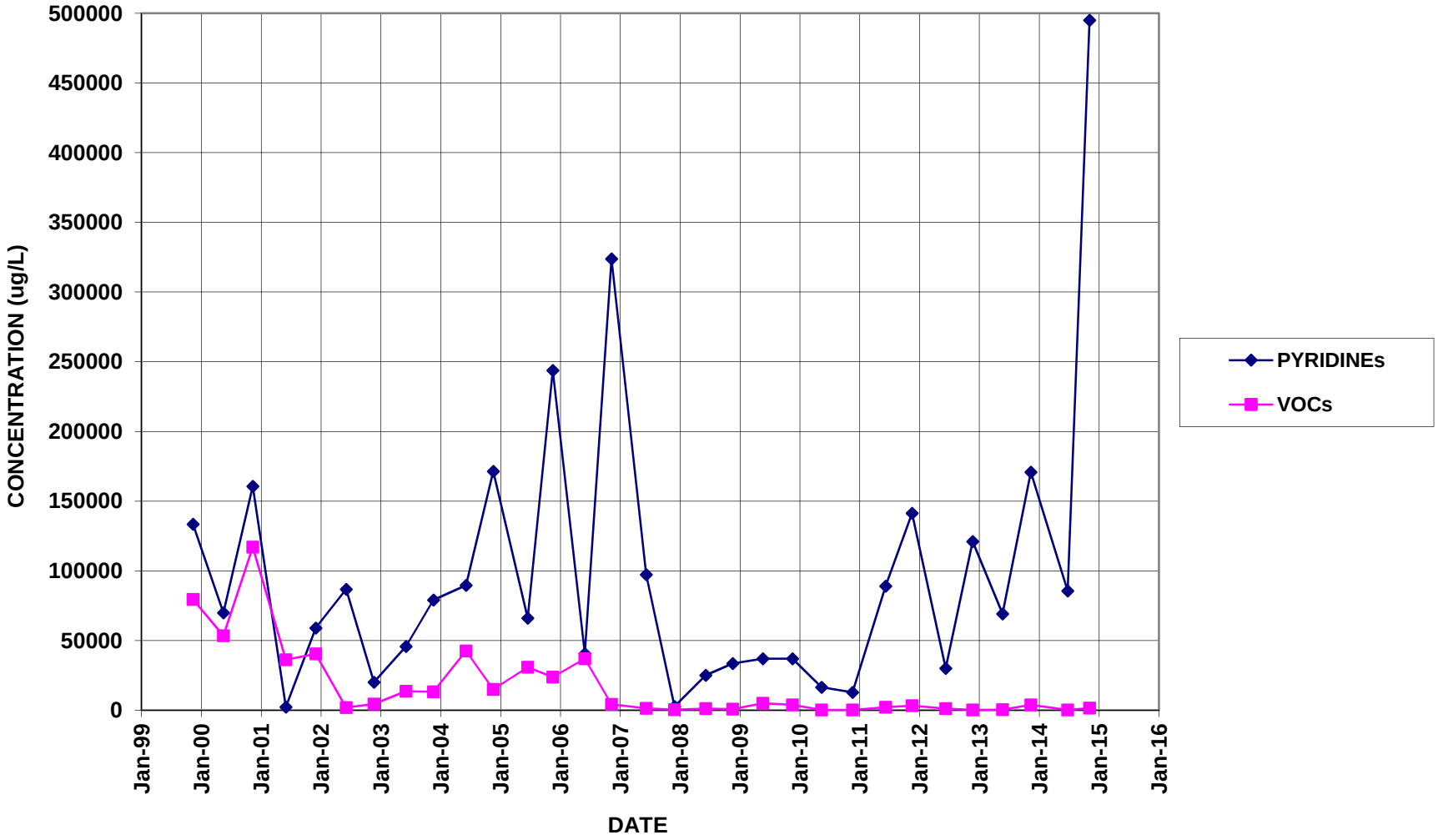
Prepared by: nmb
Reviewed by: jeb

NESS-W



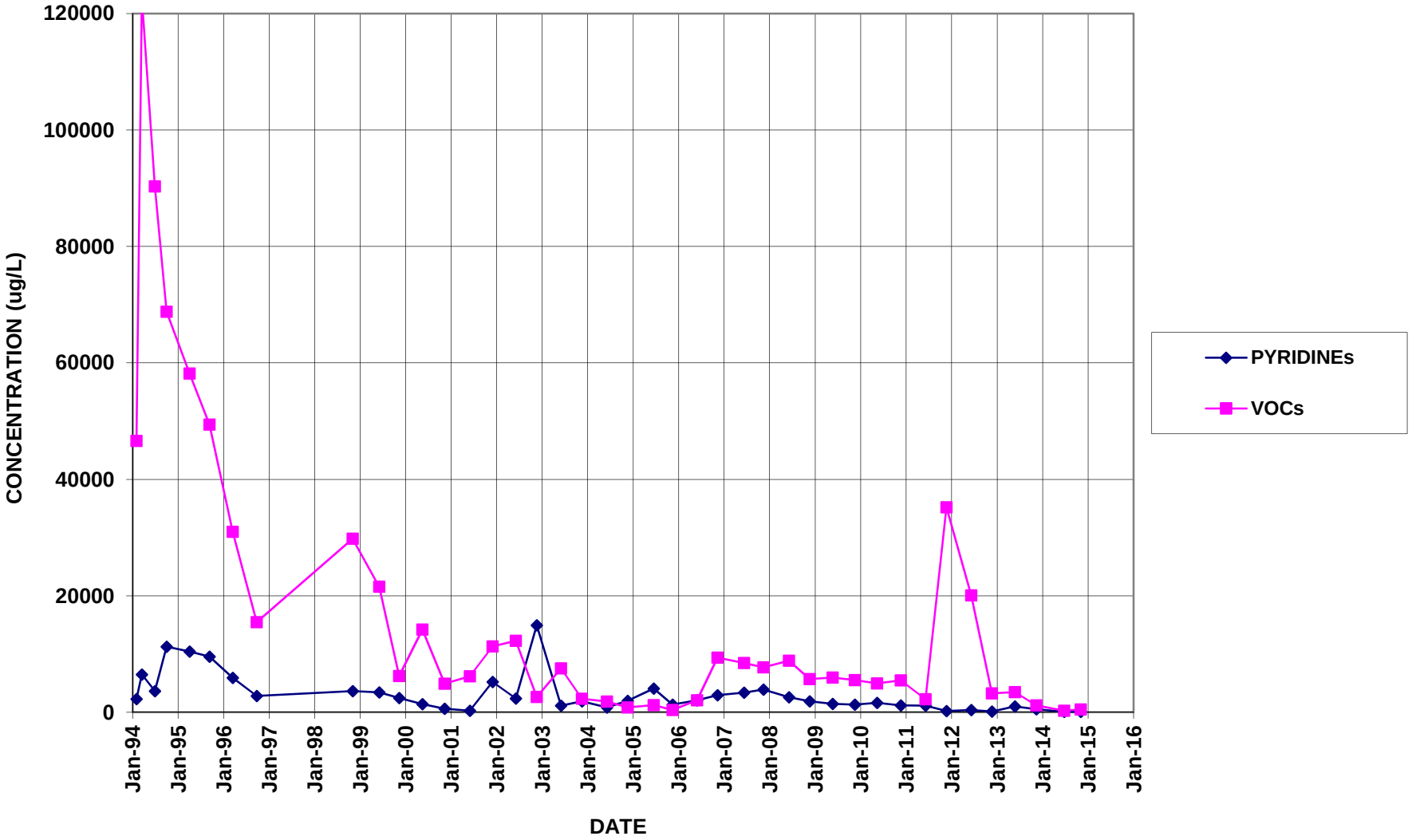
Prepared by: nmb
Reviewed by: jeb

PW10



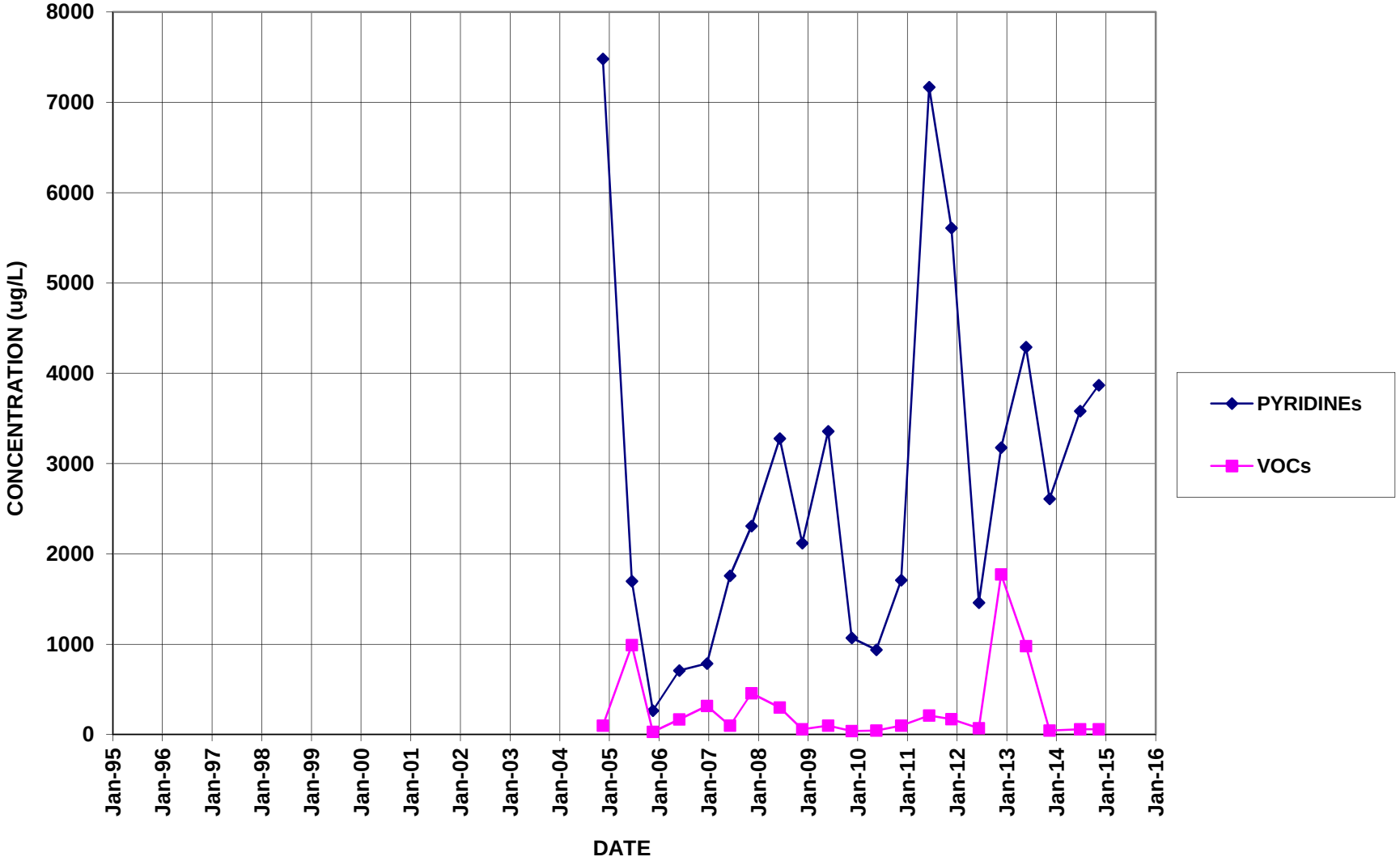
Prepared by: nmb
Reviewed by: jeb

PW12 (Formerly BR-101)



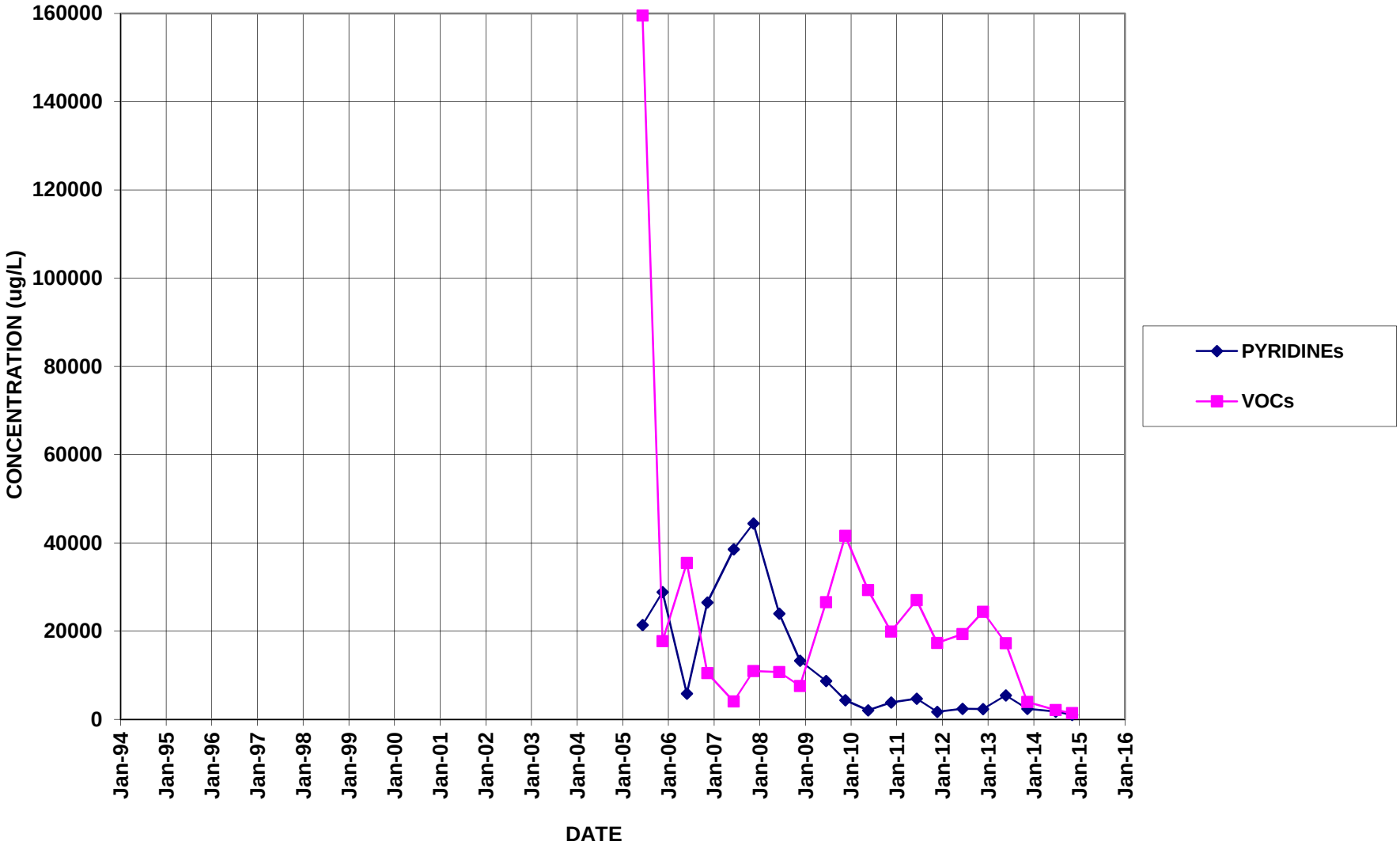
Prepared by: nmb
Reviewed by: jeb

PW13



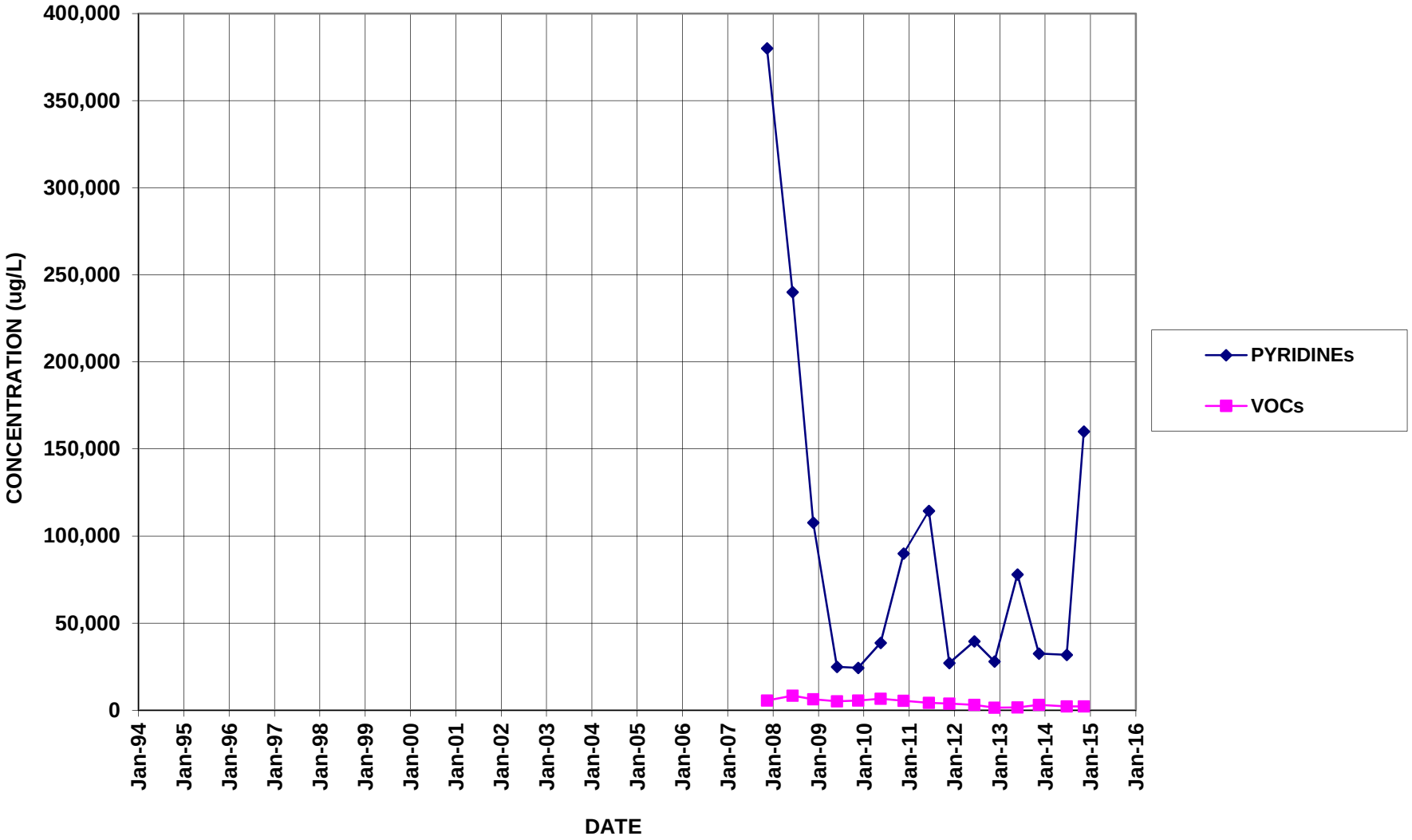
Prepared by: nmb
Reviewed by: jeb

PW14



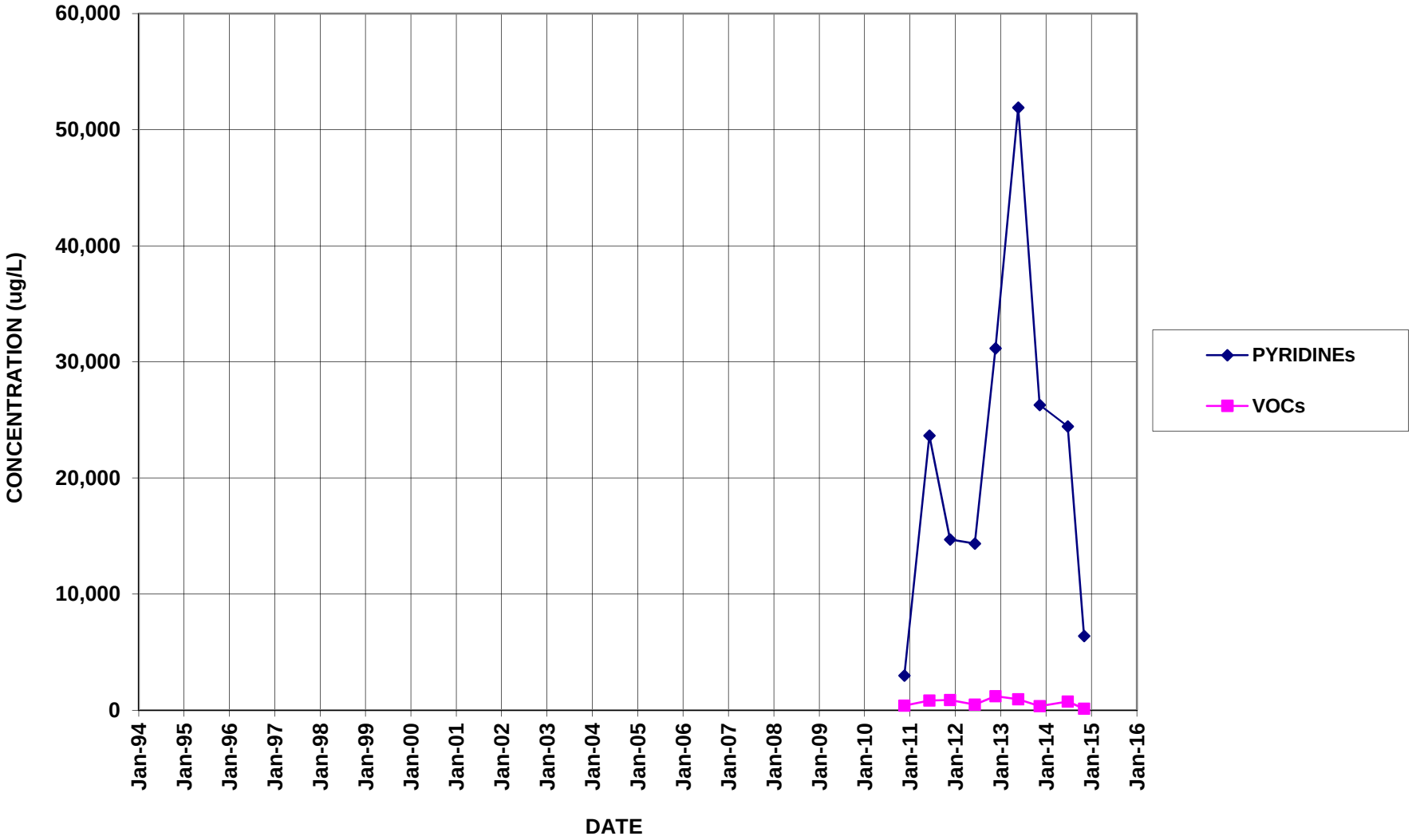
Prepared by: nmb
Reviewed by: jeb

PW15



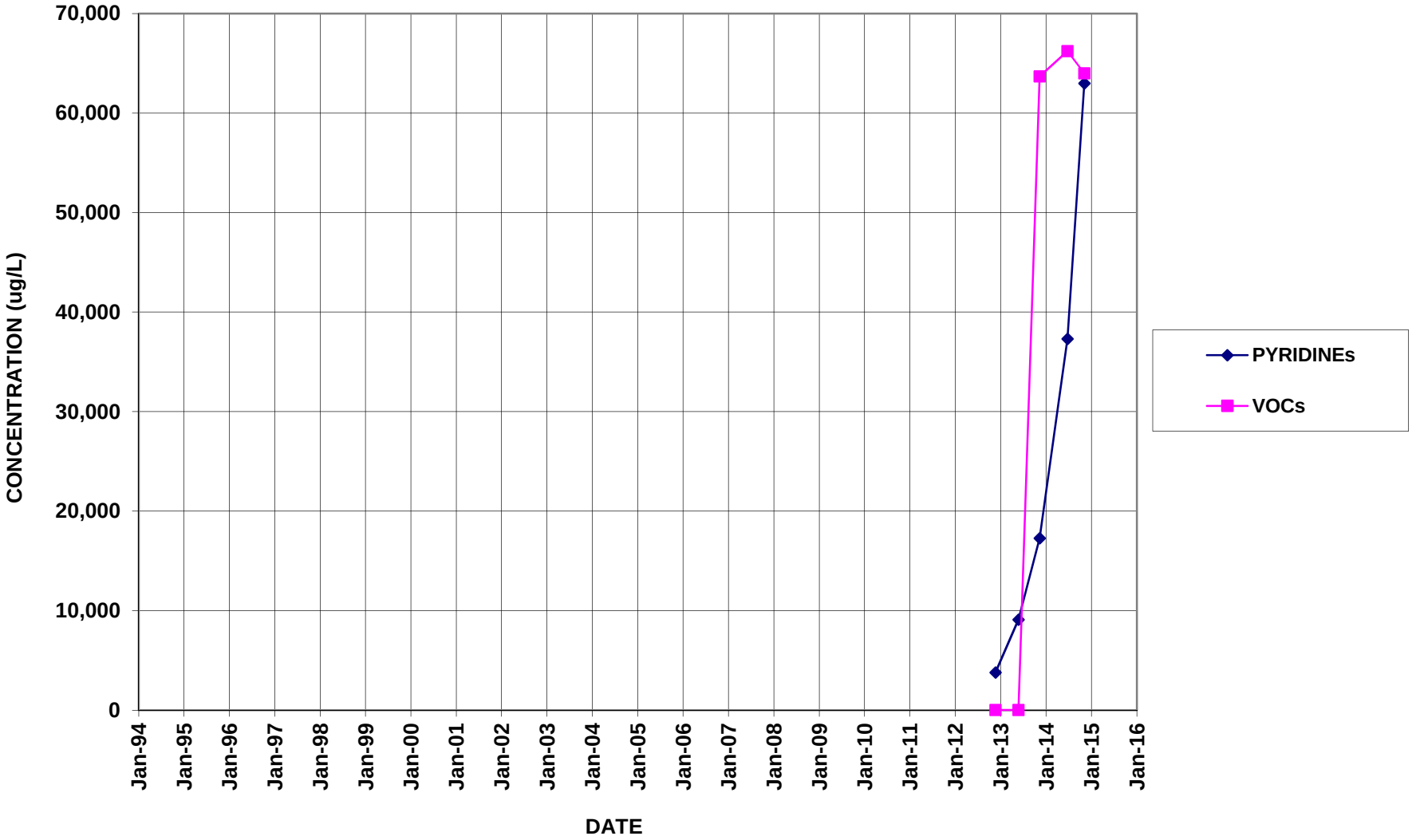
Prepared by: nmb
Reviewed by: jeb

PW16



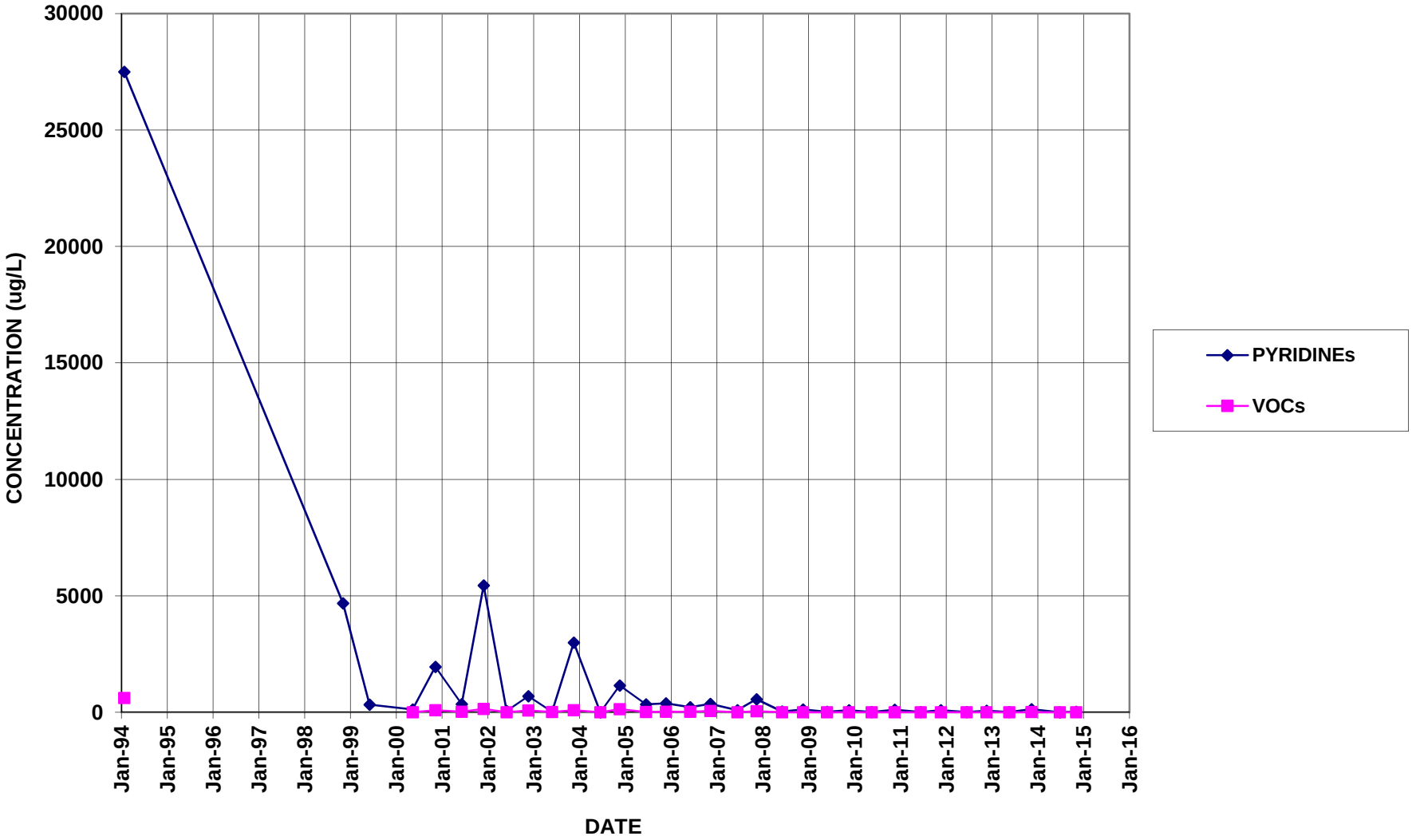
Prepared by: nmb
Reviewed by: jeb

PW17



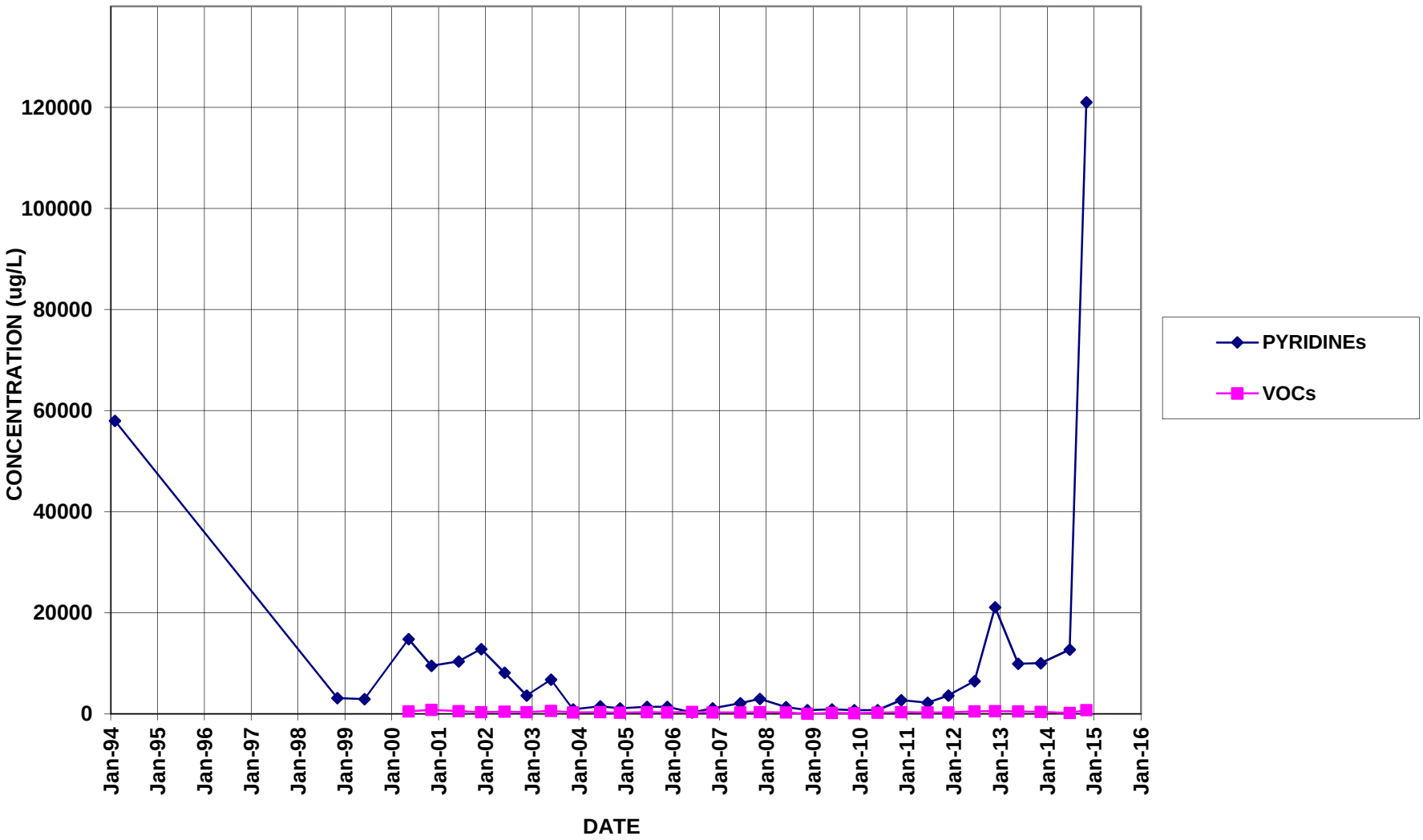
Prepared by: nmb
Reviewed by: jeb

PZ-101



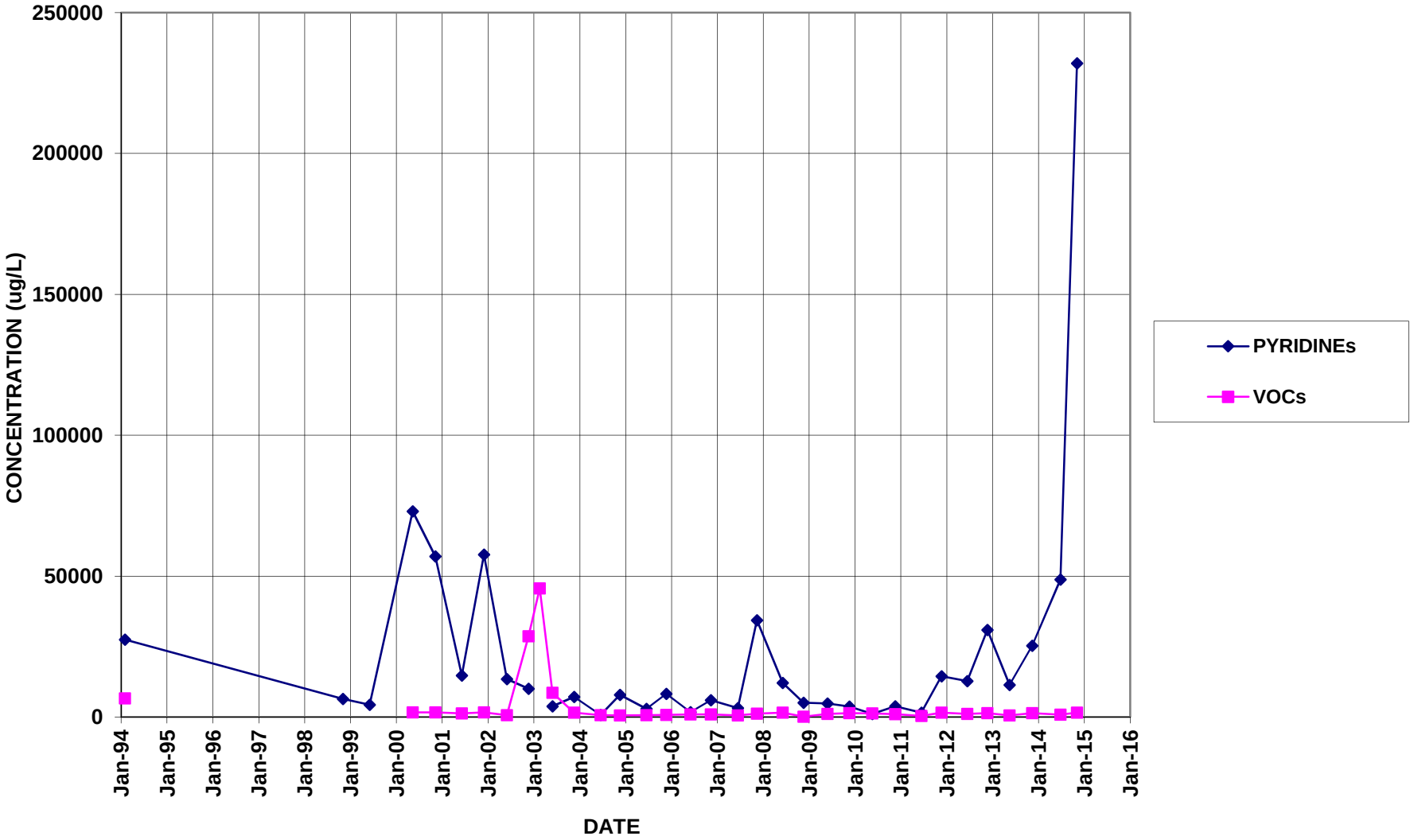
Prepared by: nmb
Reviewed by: jeb

PZ-102



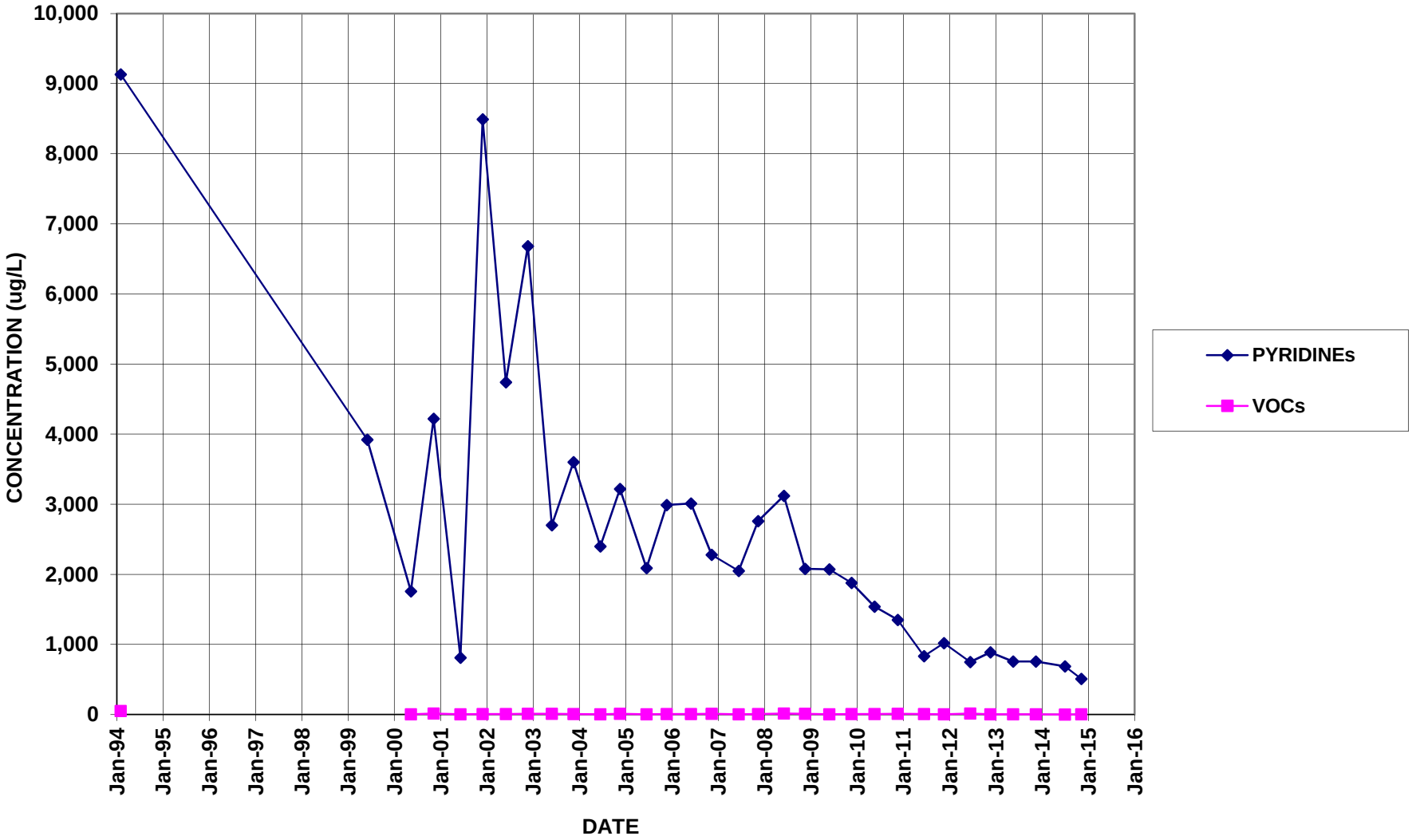
Prepared by: nmb
Reviewed by: jeb

PZ-103



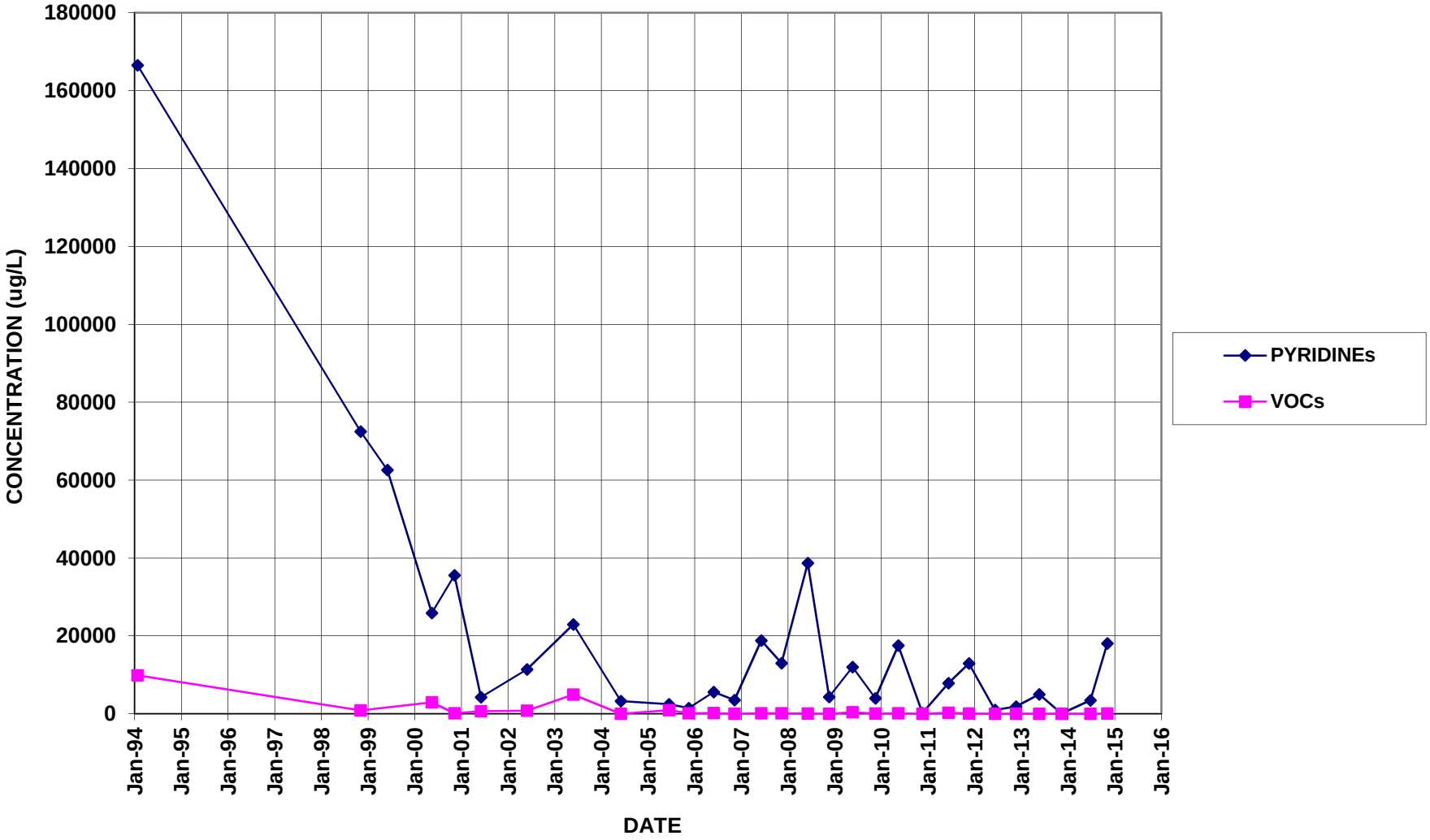
Prepared by: nmb
Reviewed by: jeb

PZ-104



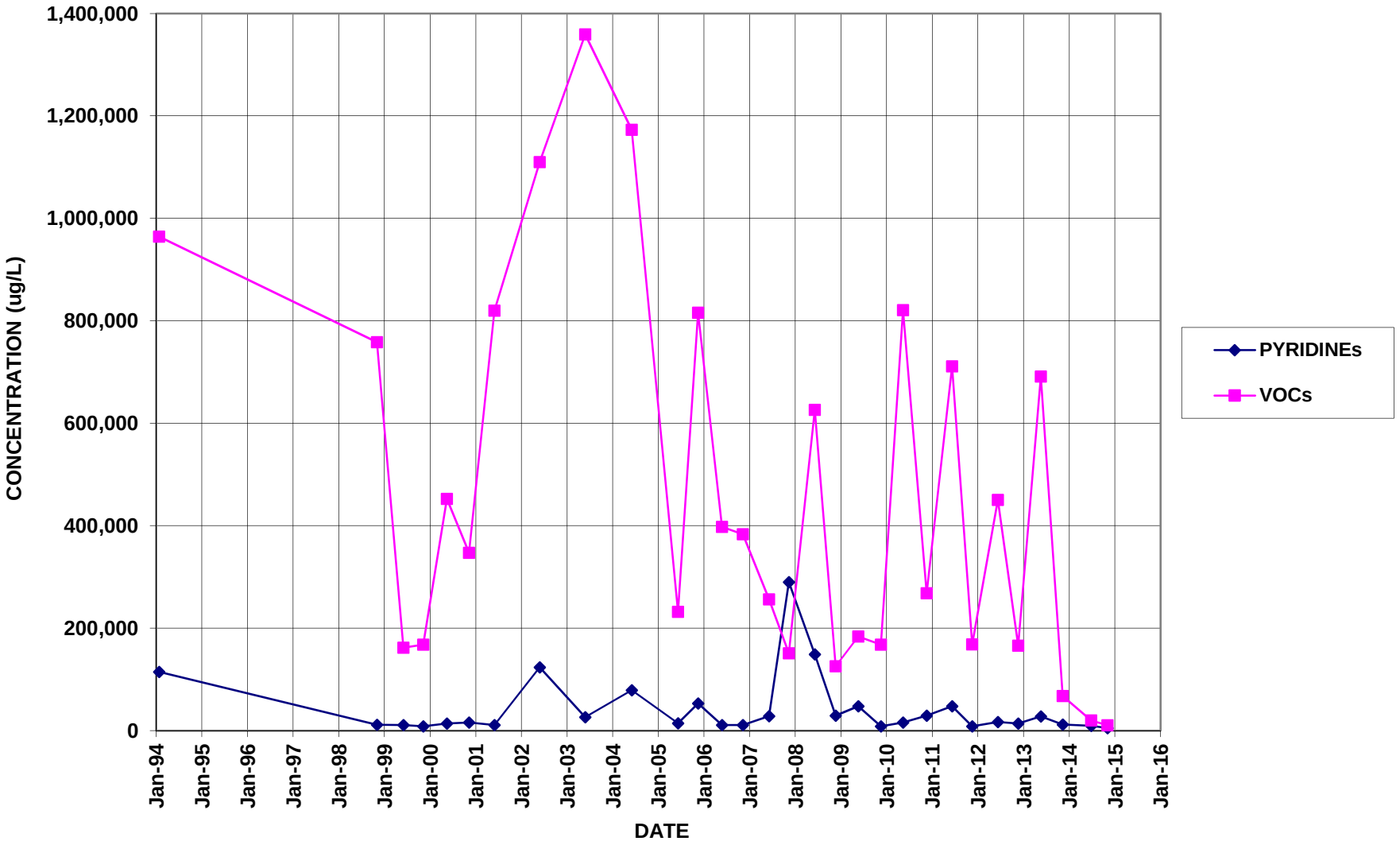
Prepared by: nmb
Reviewed by: jeb

PZ-105



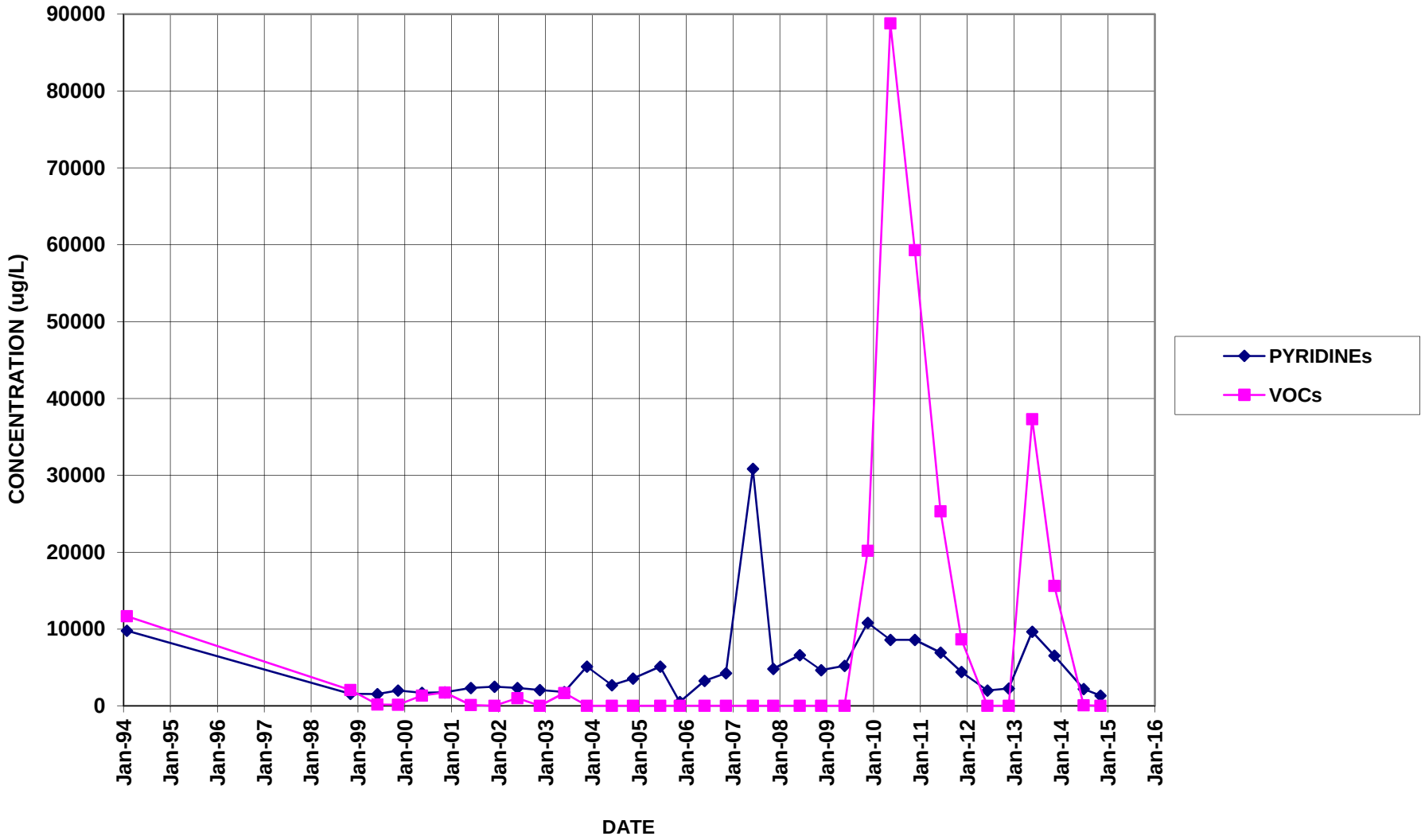
Prepared by: nmb
Reviewed by: jeb

PZ-106

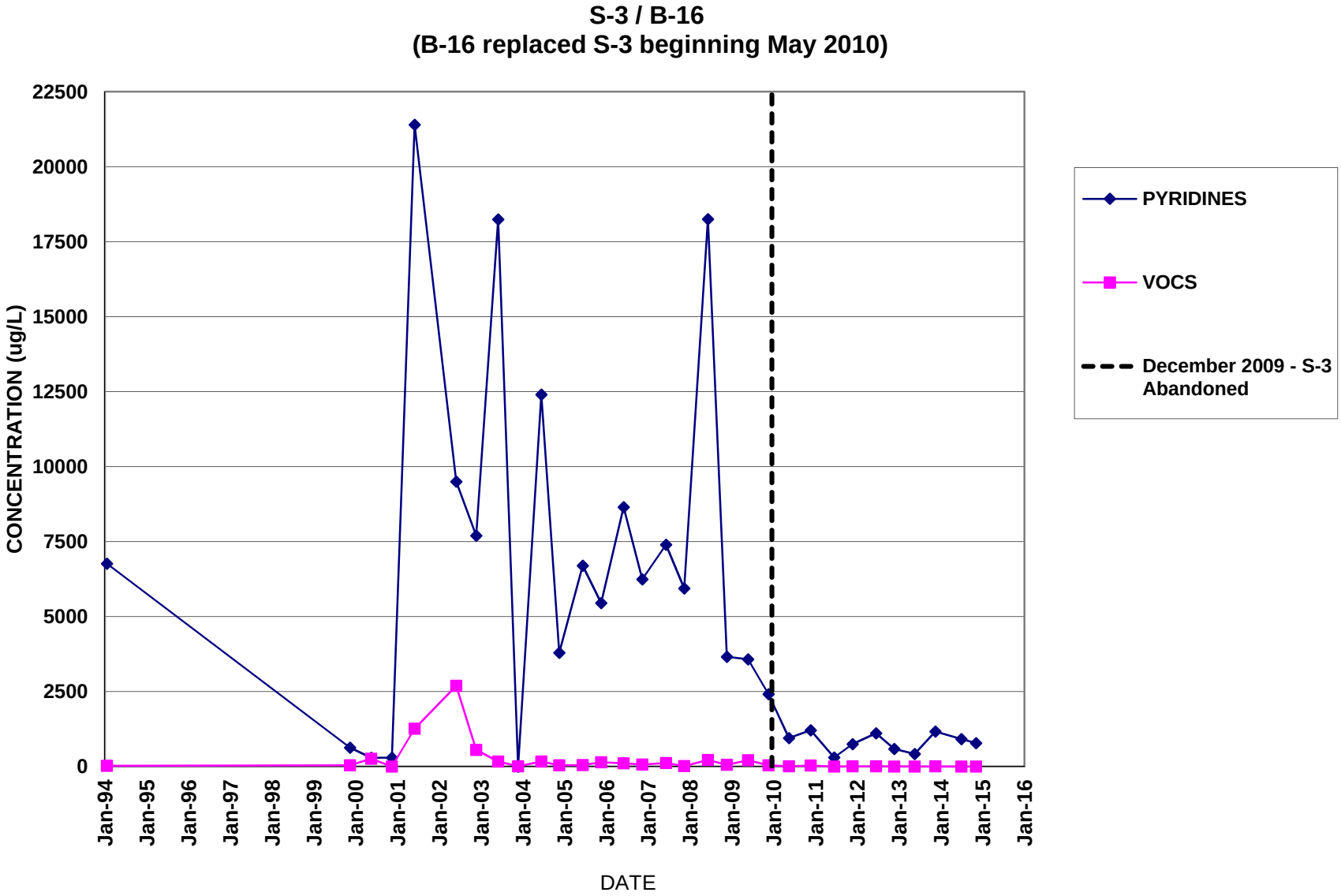


Prepared by: nmb
Reviewed by: jeb

PZ-107

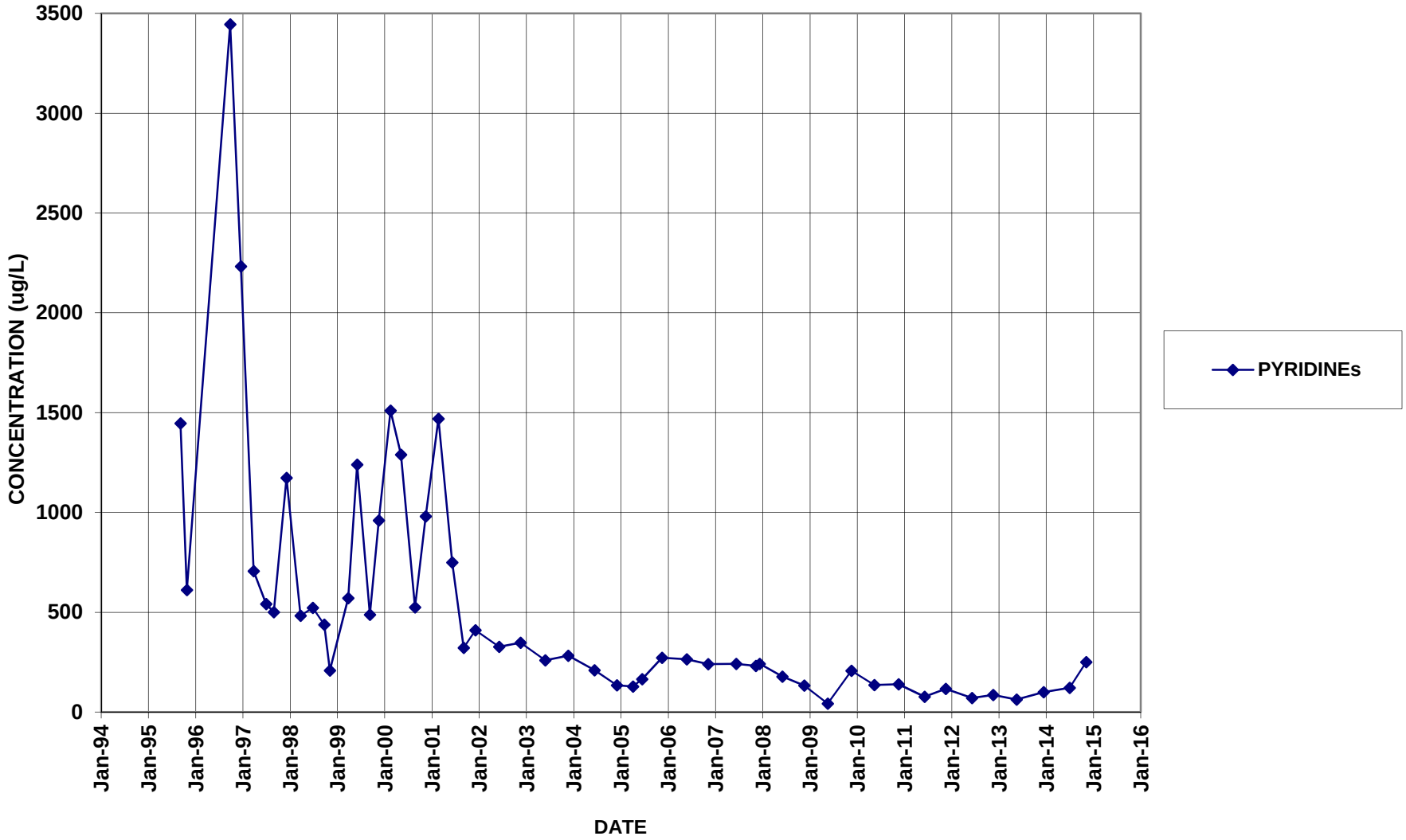


Prepared by: nmb
Reviewed by: jeb



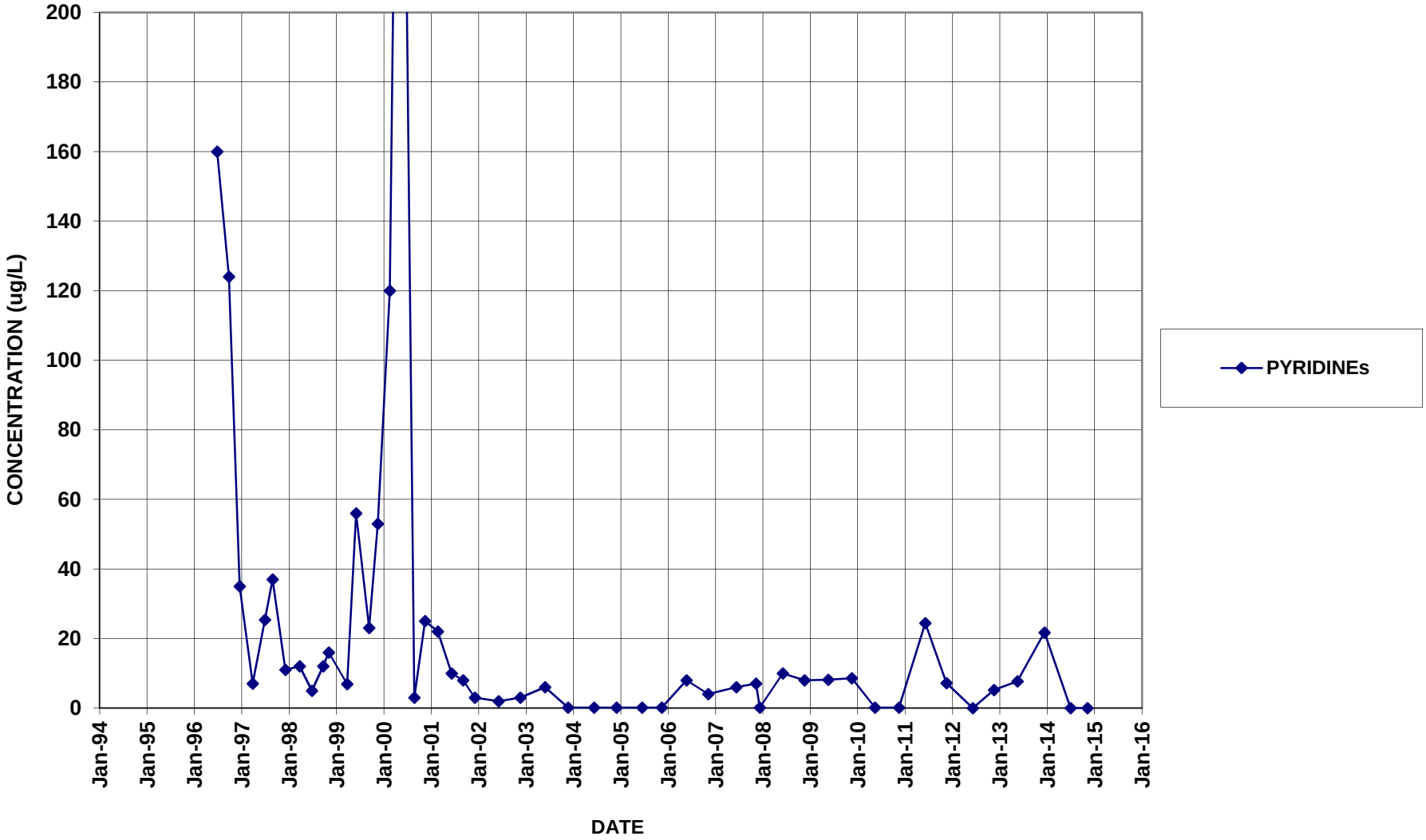
Prepared by: nmb
Reviewed by: jeb

QS-4 (QUARRY SEEP)



Prepared by: nmb
Reviewed by: jeb

QO-2 (QUARRY OUTFALL)



Prepared by: nmb
Reviewed by: jeb